WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: Q SHERRY RIDGE* ***AGREEMENT NO**: 30-98217*

AUCTION: March 24, 2020 starting at 10:00 a.m., Northeast Region Office, Colville, WA

COUNTY: Pend Oreille, Stevens

SALE LOCATION: Sale located approximately 24 miles east of Colville, WA

PRODUCTS SOLD AND SALE AREA: All conifer species (except western red cedar) 7 inches and greater in diameter at breast height excluding two standing snags and two down logs per acre; all green western red cedar 8 inches and greater in diameter at breast height not banded with blue paint in Units 1, 2, and 3 bounded by white timber sale boundary tags; and all right of way timber bounded by orange right of way boundary tags on part(s) of Sections 21, 27, 28 and 29 all in Township 36 North, Range 42 East, W.M., containing 336 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	Total Tons	Price $/Ton	MBF by Grade P	SM	1S	2S	3S	4S	5S	6S	UT
Lodgepole	9.9		3,087	19,345	$17.70					2,056	1,031			
Larch	13.3		1,503	8,705	$17.70				431	777	295			
Red cedar	12.4		370	1,702	$100.00					317	53			
Douglas fir	13.3		323	1,811	$17.70				139	154	30			
Grand fir	14		97	565	$17.70				43	42	12			
Alpine fir	13		81	503	$17.70					77	4			
White pine	11.8		33	206	$17.70					28	5			
Spruce	17		26	162	$17.70					20	6			
Hemlock	14.1		24	150	$17.70					20	4			
Sale Total			5,544	33,149										

MINIMUM BID: $17.7/ton (est. value $726,000.00)

BID METHOD: Sealed Bids

PERFORMANCE SECURITY: $100,000.00

SALE TYPE: Tonnage Scale

EXPIRATION DATE: November 30, 2021

ALLOCATION: Export Restricted

BIDDABLE SPECIES: **White pine, Spruce, Lodgepole, Larch, Hemlock, Grand fir, Douglas fir, Alpine fir**

BID DEPOSIT: $72,600.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Ground based equipment, Rubber tired skidder, and Track skidder. 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: 102.25 stations of required construction. 33.55 stations of required reconstruction. 302.15 stations of required prehaul maintenance. 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. Red cedar 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.

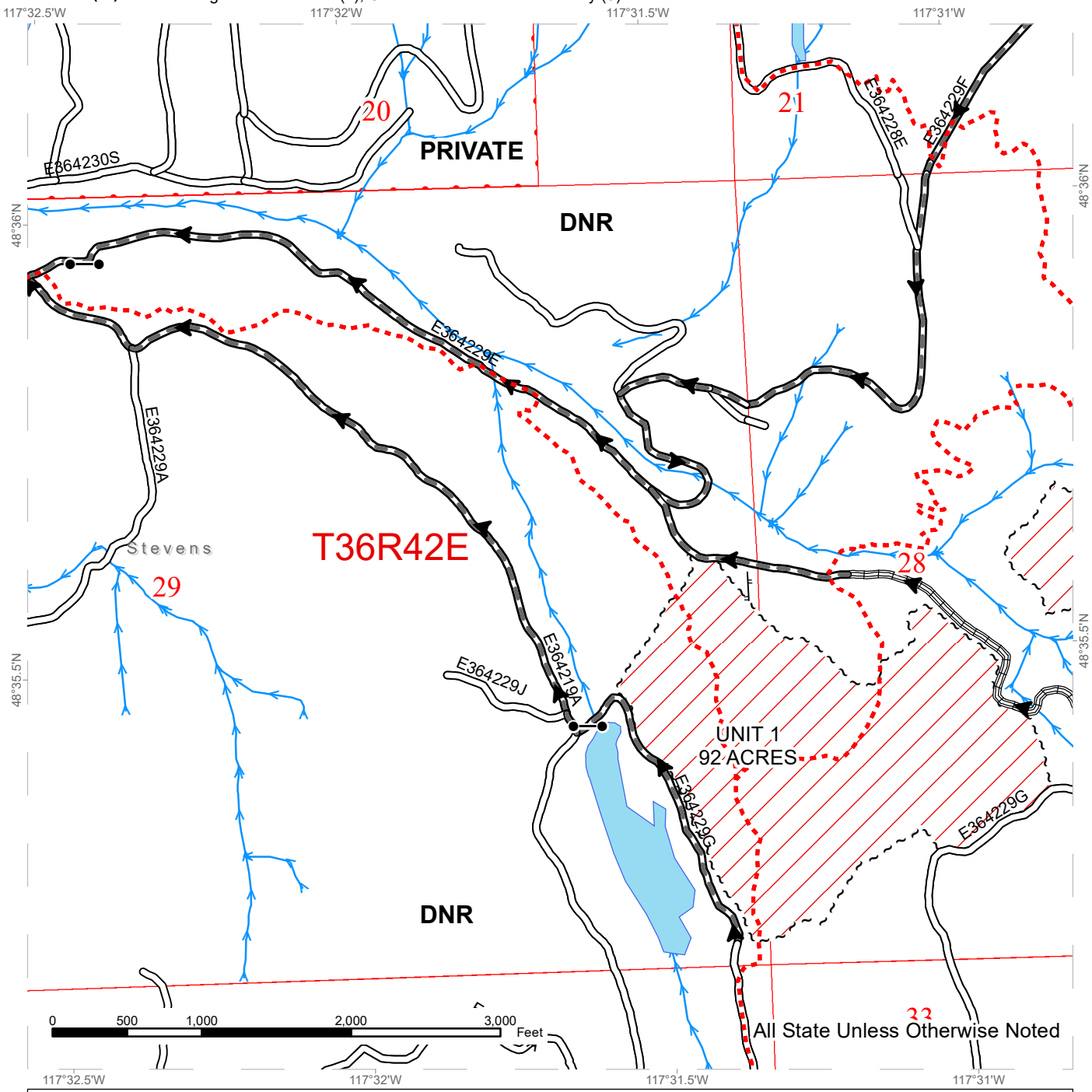
FEES: $94,248.00 is due on day of sale. $1.51 per ton is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: Locked gate restricts access to all units. Contact the Northeast Region Office at (509) 684-7474 for access. Harvesting operations will not be permitted from March 1 to August 1 or later if an active northern goshawk nest is located within a 1/2 mile of the harvest operations during the year of harvest. The road plan requires a rock pit development, 10,300 cubic yard rock crushing project and a fish pipe installation. See road plan for details. Utility and firewood is optional removal see contract clause H-157.

TIMBER SALE MAP

SALE NAME: Q SHERRY RIDGE
AGREEMENT #: 30-098217
TOWNSHIP(S): T36R42E
TRUST(S): Agricultural School (4), Common School and Indemnity (3)

REGION: Northeast Region
COUNTY(S): Pend Oreille, Stevens
ELEVATION RGE: 3480-4360



Variable Retention Harvest
Sale Boundary Tags
Public Land Survey Sections
Existing Roads
Required Pre-Haul Maintenance
Required Reconstruction
Designated Skid Trail
Haul_Route
Streams
Gates
Trails

N

Prepared By: mlou490

Modification Date: mlou490 3/6/2019

TIMBER SALE MAP

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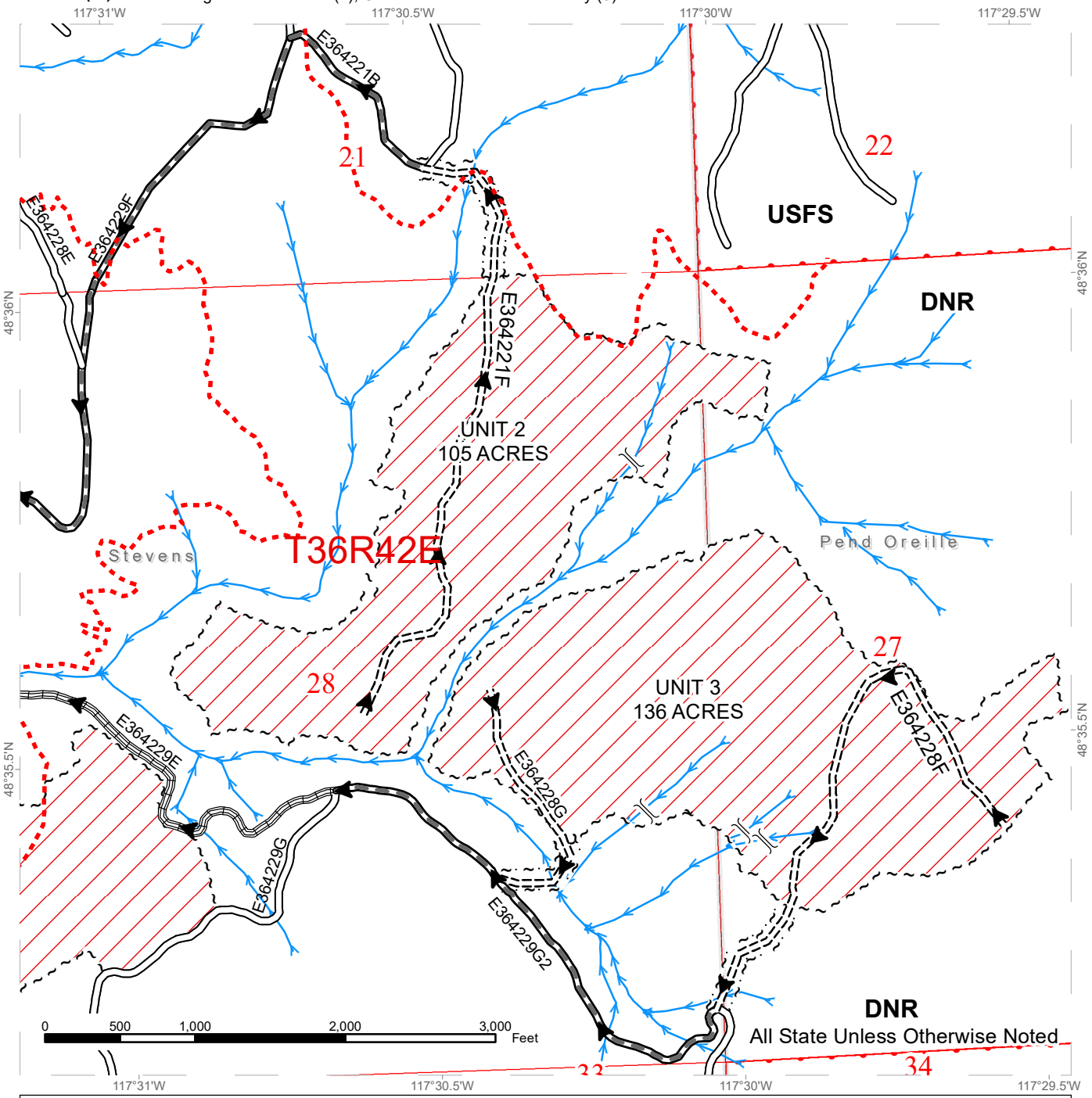


Variable Retention Harvest
Sale Boundary Tags
Right of Way Tags (3 Acres)
Public Land Survey Sections
Existing Roads
Required Pre-Haul Maintenance
Required Construction
Required Reconstruction
Haul_Route
Streams
Temporary Stream Crossing
Trails

N

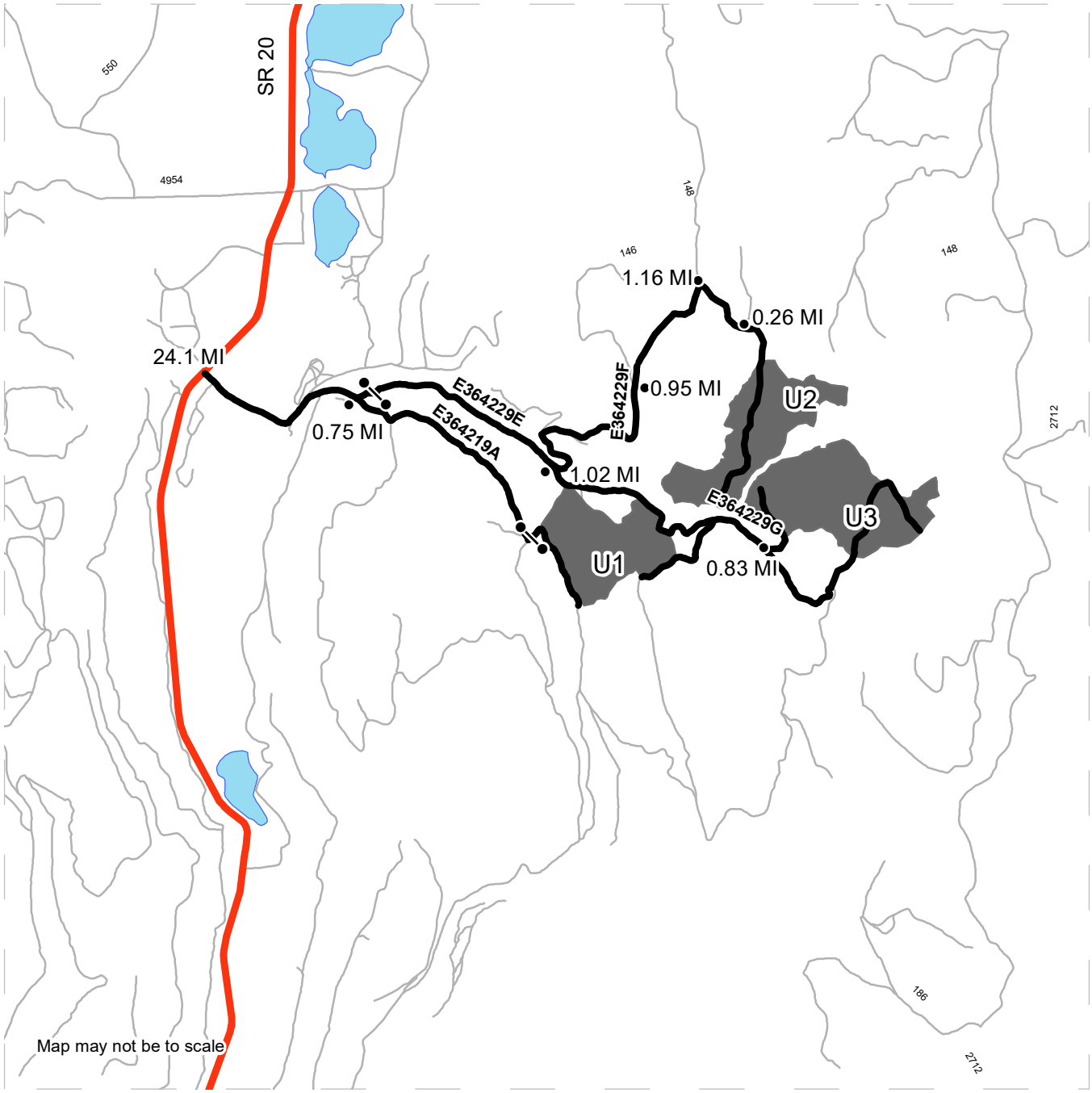
Prepared By: mlou490

Modification Date: mlou490 3/29/2019

DRIVING MAP

SALE NAME: Q SHERRY RIDGE
AGREEMENT#: 30-098217
TOWNSHIP(S): T36R42E
TRUST(S): Agricultural School (4), Common School and Indemnity (3)

REGION: Northeast Region
COUNTY(S): Pend Oreille, Stevens
ELEVATION RGE: 3480-4360



Timber Sale Unit
Haul Route
Other Roads
Distance Indicator
Gate

DRIVING DIRECTIONS:

From the junction of HWY 395 and HWY 20 in Colville, travel east on HWY 20 for 24.1 miles to Sherry Creek Rd. Turn right onto Sherry Creek Rd and travel 0.75 miles and turn left onto the E364229E Rd, proceed for 1.02 miles to Unit 1, from here U3 can be accessed by ATV by proceeding for 0.83 miles to the start of the new construction leading into U3. From the junction of E364229E and E364219A Roads travel east on the E364229E road for 0.92 miles and stay left on the E364229F Rd for 0.26 miles and stay right at the next intersection which turns into the E364229B Road; travel for 1.16 miles and turn right onto the E364221B Road and travel for 0.26 miles to the start of the new construction which leads into U2.

N

Prepared By: mlou490

Modification Date: mlou490 4/22/2019

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BILL OF SALE AND CONTRACT FOR FOREST PRODUCTS

Export Restricted Tonnage Scale AGREEMENT NO. 30-098217

SALE NAME: Q SHERRY RIDGE

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-010 Products Sold and Sale Area

Purchaser was the successful bidder on March 24, 2020 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All conifer species (except western red cedar) 7 inches and greater in diameter at breast height excluding two standing snags and two down logs per acre; all green western red cedar 8 inches and greater in diameter at breast height not banded with blue paint in Units 1, 2, and 3 bounded by white timber sale boundary tags; and all right of way timber bounded by orange right of way boundary tags, located on approximately 336 acres on part(s) of Sections 21, 27, 28, and 29 all in Township 36 North, Range 42 East W.M. in Pend Oreille, and Stevens County(s) as shown on the attached timber sale map and as designated on the sale area.

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

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

G-020 Inspection By Purchaser

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

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to November 30, 2021.

G-040 Contract Term Adjustment - No Payment

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

a. Road and bridge failures which deny access.

b. Access road closures imposed by road owner.

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

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

G-050 Contract Term Extension - Payment

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

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

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

c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the contract value based on the contract payment rate and advertised volume.

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

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

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

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

e. Payment of $346.00 per acre per annum for the acres on which an operating release has not been issued .

f. In no event will the extension charge be less than $200.00.

g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.

b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."

c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.

d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.

e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.

f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.

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

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-090 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 Forest Products Not Designated

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

G-105 Adding Naturally Damaged Forest Products

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

G-110 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

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

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

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

2. Insurers subject to Chapter 48.15 RCW (surplus lines): The State shall be given 20 days advance notice of cancellation. If cancellation is due to non-payment of premium, the State shall be given 10 days advance notice of cancellation.

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

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

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

All insurance provided in compliance with this contract shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. Purchaser

waives all rights against State for recovery of damages to the extent these damages are covered by general liability or umbrella insurance maintained pursuant to this contract.

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

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

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

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

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

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

If Purchaser, subcontractor or sub-subcontractor fails to comply with all State of Washington workers' compensation statutes and regulations and State incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Purchaser

shall indemnify State. Indemnity shall include all fines, payment of benefits to Purchaser or subcontractor employees, or their heirs or legal representatives, and the cost of effecting coverage on behalf of such employees.

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

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at 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 address of record:

G-210 Violation of Contract
G-220 State Suspends Operations

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

G-210 Violation of Contract

a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.

b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.

c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.

d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.

b. The Region Manager will issue a written decision on Purchaser's request within ten business days.

c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; E354024A, E354024R, E364219A, E364229G, E364229E, E364229G2, E364228F, E364228G, E364229F, E364221B, and E364221F. 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 250 pounds of grass seed to a location designated by the Contract Administrator. Seed provided shall meet the following specifications.

50% Alsike Clover, 25% Smooth Brome, 25% Hard Fescue
Seed shall be certified weed free, premixed and delivered to Northeast Region Office in 50 pound bags clearly labeled with the timber sale name on each bag.

G-330 Pre-work Conference

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

the plan of operations is adequate for Purchaser's purposes or complies with applicable laws.

G-340 Preservation of Markers

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

G-360 Road Use Reservation

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

G-370 Blocking Roads

Purchaser shall not block the E364229E, E364229F, E364219A and E364221B roads, unless authority is granted in writing by the Contract Administrator.

G-430 Open Fires

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

G-450 Encumbrances

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

Lease, including the terms and provisions thereof,
For: Permit Range
In Favor of: Jaybraham & Genny Dee Wilma Young
Disclosed by Application No.: 11-C69464
Granted: 1/1/2013
Expires: 12/31/2022

Lease, including the terms and provisions thereof,
For: Permit Range
In Favor of: Jaybraham & Genny Dee Wilma Young
Disclosed by Application No.: 11-C69465
Granted: 1/1/2013
Expires: 12/31/2022

Lease, including the terms and provisions thereof,
For: Land Use License

In Favor of: Department of the Air Force, 336th Training Group
Disclosed by Application No.: 60-B32301
Granted: 2/2/2018
Expires: 2/1/2023

Lease, including the terms and provisions thereof,
For: Land Use License
In Favor of: Washington Department of Fish & Wildlife
Disclosed by Application No.: 60-094981
Granted: 12/29/2016
Expires: Indefinite

Water Right, including the terms and provisions thereof,
For: Stream
In Favor of: Washington State Department of Natural Resources
Disclosed by Application No.: 78-005050
Granted: 6/18/1974
Expires: Indefinite

Water Right, including the terms and provisions thereof,
For: Stream
In Favor of: Washington State Department of Natural Resources
Disclosed by Application No.: 78-005051
Granted: 6/18/1974
Expires: Indefinite

Water Right, including the terms and provisions thereof,
For: Stream
In Favor of: Washington State Department of Natural Resources
Disclosed by Application No.: 78-005052
Expires: Indefinite

Section P: Payments and Securities

P-010 Initial Deposit

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

P-024 Payment for Forest Products

Purchaser agrees to weigh all loads and pay the following rate per ton for forest products conveyed plus $94,248.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

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

P-027 Payment for Removal of Optional Forest Products

Purchaser agrees to weigh all loads and pay the rate of $6.00 per ton for forest products approved for removal from the sale area under clause H-157.

P-040 Weighing and Scaling Costs

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

P-045 Guarantee of Payment

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

P-052 Payment Procedure

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

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

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

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

Forest products included in this agreement which are destroyed, damaged, stolen, lost, or mismanufactured shall be paid for by Purchaser on demand of the State. The rates contained in clause P-024 shall apply.

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section L: Log Definitions and Accountability

L-060 Load Tickets

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

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

The State may also treat load tickets either not accounted for or not returned as lost forest products per clause P-070. All costs associated with computing the billings for lost forest products shall be borne by Purchaser

L-110 State Approval of Log Scaling and Weighing Locations

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

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from March 1 to May 31 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 unit containing the damaged leave tree, as approved by the

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

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

H-015 Skid Trail Requirements

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

Purchaser shall comply with the following during the yarding operation:

a. Skid trails will not exceed 14 feet in width, including rub trees.

b. Skid trails shall not cover more than 10 percent of the total acreage on one unit.

c. Skid trail location will be pre-approved by the Contract Administrator.

d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.

e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.

f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.

g. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 10 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-018 Temporary Stream Crossings

A temporary stream crossing is required to access Units 2 and 3.

Purchaser shall comply with the following during the yarding operation:

a. Adhere to the approved Hydraulic Permit Application (HPA) or Forest Practice Application (FPA) with approved hydraulic project work, if required, amend a current FPA or obtain a new FPA prior to commencing any new stream crossing construction.

b. Location of the temporary stream crossing must be approved by the Contract Administrator.

c. A temporary stream crossing shall not exceed 14 feet in width, including rub trees.

d. Purchaser shall suspend operations during periods of wet weather when a high potential for sediment delivery into typed waters may occur.

e. Temporary stream crossings shall be removed at the time of completion of yarding as required by the Contract Administrator.

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

H-025 Timing Requirements for Timber Removal

All forest products must be removed within 7 days of being felled.

H-030 Timber Falling

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for Units 1, 2 and 3. The plan shall address the harvest operations and be incorporated at the pre work conference, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-050 Rub Trees

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

H-052 Branding and Painting

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

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

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using ground based equipment D6 equivalent or smaller. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-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. Purchaser shall post active logging and CB channel signage at the junction of Highway 20 and E364219A road and "logging use only" signage at the junction of E364229E and E364219A roads.

b. The speed limit from the junction of the E364229E and E364219A roads, and the junction of E364229G and E364219A roads to Highway 20 is 15 mph for all vehicles.

c. All harvesting operations will not be permitted from March 1 to August 1 or later if an active northern goshawk nest is located within a 1/2 mile of harvest operations during the year of harvest.

d. If the dead utility and firewood are removed purchaser shall leave two down logs per acre and two standing snags per acre from the larger diameter classes.

e. 30% of the slash will be dispersed within the units in a manner approved by the Contract Administrator.

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

H-150 Required Removal of Forest Products

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

Species	Net bd ft	Log length (ft)	Log dib
Green WRC	20	16	5.6
All other green species	20	16	4.6

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

H-157 Optional Removal of Forest Products Not Designated

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

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

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

H-160 Mismanufacture

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

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

H-180 Removal of Specialized Forest Products or Firewood

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

H-250 Additional Falling Requirements

Within all units, all live stems 3 inches and greater in diameter at breast height 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 and 3 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 12/17/2018 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on on E354024A, E354024R, E364219A, E364229G, E364229E, E364229G2, E364228F, E364228G, E364229F, E364221B, and E364221F roads. All work shall be completed to the specifications detailed in the Road Plan.

C-080 Landing Locations Approved Prior to Construction

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

C-130 Dust Abatement

Purchaser shall abate dust on the E364219A road used for hauling from July 1 to October 1.

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

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 felling or yarding equipment may operate within Equipment Limitation Zone(s) 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 10 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. If large quantities of bulk fuel/other hazardous materials are stored on site, Purchaser must be able to effectively control a container leak and contain & recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

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

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

ECY - Northwest Region:
1-425-649-7000
(Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties)

ECY - Southwest Region:
1-360-407-6300
(Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)

ECY - Central Region:
1-509-575-2490
(Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)

ECY - Eastern Region:
1-509-329-3400
(Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)

S-131 Refuse Disposal

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

shall be covered/secured such that these waste materials are properly contained during transport.

S-150 Recreation Trail Cleanout

At the completion of logging operations in Unit 1, 2 and in locations where the recreational trail intersects the haul route, Purchaser shall repair any damage to and clean out all logging debris from recreational trail(s).

Section D: Damages

D-010 Liquidated Damages

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

D-021 Failure to Remove Forest Products

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

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

Where:

LD = Liquidated Damage value.

V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal tonnage to date from the cruised tonnage multiplied by the contract bid rates.

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

P = Advance payments received but not yet applied to specific contract requirements.

C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.

A = Administrative Fee = $2,500.00.

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

Where:

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

D-030 Inadequate Log Accountability

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

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore, Purchaser agrees to pay the State, as liquidated damages, a sum of $100 each time a load of logs does not have branding as required in the contract, $250 each time a load of logs does not have a load ticket as required by the contract, $250 each time a load ticket has not been filled out as required by the plan of operations, $250 each time a load is weighed or scaled at a location not approved as required under this contract, $250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, $250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service per clause L-071, and $250 each unused ticket that is not returned to the State, for any reason.

D-041 Reserve Tree Excessive Damage

When Purchaser’s operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay

the State as liquidated damages at the rate of $1,000.00 per tree for all damaged reserve trees that are not replaced in the units.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

_____	_____
Purchaser	Ken McNamee Northeast Region Manager
_____ Print Name	
Date: _____	Date: _____
Address:	

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

STATE OF _____)
)
COUNTY OF _____)

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

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

_____
Notary Public in and for the State of

_____

My appointment expires _____

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: Northeast

Timber Sale Name: Q Sherry Ridge

Application Number: 30- 098217

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 10,225 **linear feet**
Road to be constructed (optional and required) but not abandoned

Reconstruction: 3,355 **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: 0 **linear feet**
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 30,215 **linear feet**
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: 0 **linear feet**
Roads to be constructed (optional and required) and then abandoned

Temporary Reconstruction: 0 **linear feet**
Roads to be reconstructed (optional and required) and then abandoned

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale 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 9/18)

PRE-CRUISE NARRATIVE

Sale Name: Sherry Ridge	Region: **Northeast**
Agreement #: 30-098217	District: North Columbia
Contact Forester: Nathan Simpkins Phone / Location: 509-675-3191	County(s): Choose a county, Stevens \Pend Oreille
Alternate Contact: Tony Flanagan Phone / Location: 509-481-8032	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	S27,28/T36/R42	04	92.38			.41		91.97	GPS (Garmin)
2	S28,29/T36/R42	04	104.91					104.91	GPS (Garmin)
3	S28,29/T36/R42	03/ 04	135.57					135.57	GPS (Garmin)
RW	S28,29/T36/R42	03/ 04	3.19					3.19	GPS (Garmin)
	Enter Sec / Twp / Rng								Choose an item.
	Enter Sec / Twp / Rng								Choose an item.
	Enter Sec / Twp / Rng								Choose an item.

Revised 03/15/2010 (FRCD)

TOTAL ACRES			336.05			.41		335.64	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Harvest all timber not banded with blue paint, including dead standing and down DF and WL. Leave all hardwoods.	Leave two of the largest snags and two downed logs per acre, preferably WL or DF.	6-8 TPA
2	Harvest all timber not banded with blue paint, including dead standing and downed DF and WL. Leave all hardwoods.	Leave two of the largest snags and two downed logs per acre, preferably WL or DF.	6-8 TPA
3	Harvest all timber not banded with blue paint, including dead standing and downed DF and WL. Leave all hardwoods.	Leave two of the largest snags and two downed logs per acre, preferably WL or DF.	6-8 TPA
RW	Harvest all timber within the orange RW tags.		0 TPA

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	WL,DF/1,600MBF	Accessible from E364229E or E364229G roads through DNR locked gate (master lock)	
2	LP,WL/1,700MBF	Accessible from E364229E, E364229G, or E364221B roads through DNR locked gate (master lock) An ATV is recommended.	
3	LP,WL/2,300MBF	Accessible from E364229E or E364229G roads through DNR locked gate (master lock) An ATV is recommended.	
RW	DF,WL/30MBF	Accessible from E364229E, E364229G, or E364221B roads through DNR locked gate (master lock) An ATV is recommended.	

TOTAL MBF	5,630MBF		

REMARKS:

Dead DF and WL will be sold as firewood. There is a significant amount of trees under 7" DBH that need to be cruised. Typically a 1\100th acre fixed plot is used to capture the 4.0" to 7.9" DBH trees with a minimum 12' log to a 2.6" top.

Prepared By: Nathan Simpkins Date: 11/6/2018	Title: NRS 2	CC: Jim Putnam

Cruise Narrative

Sale Name: Sherry Ridge	**Region:** Northeast
Agreement Number: 30-098217	**District:** North Columbia
Lead Cruiser: Jim Putnam	**Completion Date:** 3/7/2019
Other Cruisers on sale: Dylan Worlock	**Legal:** Sections 21, 27, 28 and 29 T 36 N, R 42 E WM.

Unit Acreage Specifications:

Unit #	Gross Acres	Net Acres	Total Deletions	Existing Roads	Leave Tree Acres	Power Line	Other
1	92.40	92.00	0.40	0.40			
2	104.90	104.90	0.00				
3	135.60	135.60	0.00				
ROW4	3.20	3.20	0.00				
Total	336.10	335.70	0.40	0.40	0.00	0.00	0.00

Cruise Sample Design:

This timber sale was cruised using **variable plot and fixed plot** sampling methods. 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.

To capture the small diameter (7” to 7.9” dbh) timber to remove, a 1/100th acre fixed plot was located at each plot center.

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	290’ x 290’	25%	26%	47
2	40	160	D4H	290’ x 290’	25%	40%	53
3	40	160	D4H	290’ x 290’	25%	33%	72
ROW4	33.61	134.44	D4H	290’	25%	40%	8
Unit #	**Fixed plot size**	**Plot radius**	**Min. log length & top DIB**	**Grid size (plot spacing in feet)**	**DBH range**	**% Cruise to count Actual**	**Total number of Plots**
1-4	1/100th acre	11.78’	12’ to a 4.6” min top dia.	290’ x 290’	7” – 7.9”	Cruise all	180
Total						33%	180

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 and red cedar:** 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 and western red cedar: 8.0 inches DBH All other species: 7.0” DBH - 7.9” DBH included in fixed plot cruise; 8”+ included in variable plot cruise
Log lengths:	Saw logs: 32 feet where possible, minimum of 12 feet
Take / Leave tree description:	Harvest all green timber 7” DBH and greater not banded with blue paint, with the exception of 2 standing and 2 down trees must be left per acre. Leave all hardwoods.
Commercial species observed in sale area, but not in cruise:	
Status codes used:	NA
Sort codes used	D – saw log
Species table used:	NE 2 inch
Grade table used:	Eastgrad
Other tables used (cruise adjustment):	

Field Observations:

Location:	Eastern Stevens county, unit 3 crosses into Pend Oreille County, 17 miles compass direction east of Colville, Washington.
Aspect:	North, East, South and West
Elevation:	3400 to 4400
Slope:	Unit 1 – 0% to 40%, Average 20% Unit 2 – 0% to 45%, Average 25% Unit 3 – 0% to 55%, Average 35%
Harvest Methods:	100% Ground base yarding
Stand Composition:	The stands are second growth lodge pole pine and western larch with larger residual trees. There is a minor component of western red cedar, Douglas-fir, grand fir, subalpine fir, western hemlock, white pine and Engelmann spruce.
Stand Health:	Mistletoe is in all areas of the sale, primarily affecting the western larch. There is a good amount of down timber, mostly lodge pole pine. Throughout the stand, dead standing timber occurs as well.
Timber Quality:	The timber is a mix of domestic quality lodge pole (56%) and western larch (27%). Smaller amounts of western red cedar (7%), Douglas fir (6%), grand fir (2%), subalpine fir (1%), western white pine (<1%), Engelmann spruce (<1%), and western hemlock (<1%) exist in the sale.
Other Considerations:	

Trust and Counties:

	Based on Volume			Based on Acres		
	Pend Oreille	Stevens	Combined	Pend Oreille	Stevens	Total
Unit #	Trust 03 Vol. mbf	Trust 04 Vol. mbf	Vol. mbf	Trust 03	Trust 04	Acres
1	0	1,094	1094	0	92	92
2	57	1509	1566	3.8	101.1	104.9
3	1627	1166	2793	79.1	56.5	135.6
ROW4	23	68	91	0.8	2.4	3.2
Total	1707	3837	5544	83.7	252	335.7
% of Total	30.79%	69.21%	100.00%	24.93%	75.07%	100.00%

Prepared by: Jim Putnam

Title: Forest Check Cruiser

CC: Timber Sales Document Center & File #30-098217

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T36N R42E S28 Ty00U1
THRU
T36N R42E S28 Ty04RW

Project: SHERRY1
Acres 335.70

Page 1
Date 6/26/2019
Time 1:37:54PM

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
WL	D	2		28	2.3	1,313	1,283	431			90	10		6	94		32	13	207	1.33	6.2
WL	D	3		52	4.8	2,432	2,315	777		100				4	96		32	8	87	0.61	26.6
WL	D	4		20		880	880	295	98	2			13	14	72		27	5	35	0.25	25.4
WL	**Totals**			27	3.2	4,625	4,478	1,503	19	52	26	3	3	7	91		30	7	77	0.55	58.3
DF	D	2		43	2.2	424	415	139			98	2			100		32	12	198	1.43	2.1
DF	D	3		47	.1	460	459	154		100				0	100		32	7	83	0.55	5.5
DF	D	4		10	4.0	92	89	30	100				44	33	23		23	5	25	0.26	3.6
DF	**Totals**			6	1.4	976	962	323	9	48	42	1	4	3	93		29	8	86	0.65	11.2
RC	D	3		85	7.8	1,023	942	316		92	8			7	93		32	7	73	0.73	12.8
RC	D	4		15		158	158	53		100			47	53			21	6	23	0.34	6.9
RC	**Totals**			7	6.8	1,181	1,101	370		93	7		7	14	79		28	7	56	0.63	19.8
LP	D	3		66	3.7	6,360	6,126	2,056		99	1				100		32	8	80	0.49	76.9
LP	D	4		34	2.7	3,155	3,070	1,031	86	14			16	24	60		26	5	34	0.25	91.6
LP	**Totals**			56	3.3	9,515	9,196	3,087	29	71	1		5	8	87		29	6	55	0.38	168.5
AF	D	3		95	3.8	240	231	78		100					100		32	8	105	0.68	2.2
AF	D	4		5		12	12	4	100				100				18	5	20	0.24	.6
AF	**Totals**			1	3.7	252	243	81	5	95			5		95		29	8	87	0.62	2.8
ES	D	3		78	2.6	62	61	20		100				3	97		32	10	134	1.21	.5
ES	D	4		22		17	17	6	100					15	85		31	5	46	0.35	.4
ES	**Totals**			0	2.1	79	77	26	22	78				6	94		31	8	94	0.83	.8
WP	D	3		85	13.6	96	83	28		100					100		32	8	83	0.56	1.0
WP	D	4		15		14	14	5	100					100			30	5	30	0.20	.5
WP	**Totals**			1	11.8	110	97	33	15	85				15	85		31	7	66	0.45	1.5
WH	D	3		81	4.9	61	58	19		100					100		32	9	112	0.82	.5
WH	D	4		19		13	13	4	100				58	42			22	5	25	0.31	.5
WH	**Totals**			0	4.1	74	71	24	18	82			11	8	82		27	7	69	0.61	1.0
GF	D	2		44	.8	128	127	43			85	15			100		32	13	247	1.43	.5
GF	D	3		43		126	126	42		100				2	98		32	8	95	0.56	1.3
GF	D	4		13		35	35	12	81	19			19	81			23	5	27	0.26	1.3
GF	**Totals**			2	.3	289	288	97	10	46	37	7	2	11	87		28	8	92	0.62	3.1
Totals					3.4	17,101	16,514	5,544	22	66	11	1	5	8	88		29	7	62	0.45	266.9

TC PSTATS

PROJECT STATISTICS

PROJECT SHERRY1

DATE 6/26/2019

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	00U1	THR	335.70	180	582	S	E
36N	42E	28	SHERRY	04RW						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	180	582	3.2		
CRUISE	112	195	1.7	55,827	.3
DBH COUNT					
REFOREST COUNT	58	148	2.6		
BLANKS	10				
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
LP PINE	104	108.7	9.9	79	18.3	57.5	9,515	9,196	1,816	1,815
W LARCH	38	29.5	13.3	87	7.8	28.3	4,625	4,478	952	952
WR CEDAR	20	16.1	12.4	53	3.8	13.5	1,181	1,101	344	344
DOUG FIR	17	7.3	13.3	73	1.9	7.1	976	962	214	214
GR FIR	4	1.3	14.0	85	0.4	1.4	289	288	55	55
E SPRUCE	3	.4	17.0	79	0.2	.7	79	77	21	21
ALP FIR	4	1.7	13.0	77	0.4	1.5	252	243	50	50
WHEMLOCK	3	.5	14.1	71	0.1	.6	74	71	17	17
W PINE	2	.7	11.8	93	0.2	.6	110	97	21	21
TOTAL	*195*	*166.3*	*11.1*	*78*	*33.4*	*111.1*	*17,101*	*16,514*	*3,490*	*3,489*

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
LP PINE	65.1	6.4	83	88	94			
W LARCH	69.3	11.2	186	210	234			
WR CEDAR	75.2	17.2	87	106	124			
DOUG FIR	114.8	28.7	149	208	268			
GR FIR	63.1	36.1	243	380	517			
E SPRUCE	3.1	2.1	183	187	191			
ALP FIR	61.5	35.1	107	165	223			
WHEMLOCK	24.5	17.0	119	143	168			
W PINE	43.9	41.1	85	145	205			
TOTAL	*94.8*	*6.8*	*126*	*135*	*145*	*359*	*90*	*40*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
LP PINE	70.5	7.0	16	17	19			
W LARCH	62.5	10.1	40	45	49			
WR CEDAR	86.4	19.8	28	35	42			
DOUG FIR	104.9	26.2	32	43	55			
GR FIR	55.3	31.6	47	69	91			
E SPRUCE	26.0	18.0	41	50	59			
ALP FIR	58.7	33.5	23	34	45			
WHEMLOCK	13.5	9.4	31	34	37			
W PINE	65.9	61.7	12	33	53			
TOTAL	*91.1*	*6.6*	*27*	*29*	*31*	*332*	*83*	*37*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
LP PINE	93.2	6.9	101	109	116			
W LARCH	117.4	8.7	27	29	32			
WR CEDAR	246.6	18.4	13	16	19			

TC PSTATS

PROJECT STATISTICS

PROJECT SHERRY1

DATE 6/26/2019

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	00U1	THR	335.70	180	582	S	E
36N	42E	28	SHERRY	04RW						

CL 68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.
SD: .00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	279.0	20.8	6	7	9			
GR FIR	557.6	41.5	1	1	2			
E SPRUCE	723.4	53.9	0	0	1			
ALP FIR	558.9	41.6	1	2	2			
WHEMLOCK	952.5	70.9	0	1	1			
W PINE	928.3	69.1	0	1	1			
TOTAL	*25.8*	*1.9*	*163*	*166*	*169*	*27*	*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
LP PINE	80.9	6.0	54	58	61			
W LARCH	110.4	8.2	26	28	31			
WR CEDAR	242.6	18.1	11	13	16			
DOUG FIR	258.9	19.3	6	7	8			
GR FIR	501.3	37.3	1	1	2			
E SPRUCE	734.4	54.7	0	1	1			
ALP FIR	492.1	36.6	1	2	2			
WHEMLOCK	957.8	71.3	0	1	1			
W PINE	783.8	58.4	0	1	1			
TOTAL			*111*	*111*	*111*			

CL 68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	85.9	6.4	8,608	9,196	9,784			
W LARCH	113.4	8.4	4,100	4,478	4,856			
WR CEDAR	245.6	18.3	900	1,101	1,302			
DOUG FIR	260.4	19.4	776	962	1,149			
GR FIR	483.0	36.0	185	288	392			
E SPRUCE	726.1	54.1	36	77	119			
ALP FIR	527.1	39.3	147	243	338			
WHEMLOCK	986.2	73.4	19	71	122			
W PINE	813.3	60.6	38	97	156			
TOTAL			*16,514*	*16,514*	*16,514*			

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
LP PINE	82.2	6.1	1,704	1,815	1,926			
W LARCH	112.1	8.4	872	952	1,031			
WR CEDAR	244.0	18.2	281	344	406			
DOUG FIR	265.9	19.8	171	214	256			
GR FIR	488.9	36.4	35	55	75			
E SPRUCE	729.2	54.3	10	21	33			
ALP FIR	520.9	38.8	31	50	70			
WHEMLOCK	966.1	72.0	5	17	29			
W PINE	778.4	58.0	9	21	33			
TOTAL			*3,489*	*3,489*	*3,489*			

CL 68.1	COEFF		V BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	19.9	1.5	150	160	170			
W LARCH			145	158	172			
WR CEDAR			67	82	97			
DOUG FIR	159.1	11.8	109	135	162			
GR FIR	282.0	21.0	130	203	276			
E SPRUCE	557.0	41.5	55	119	183			
ALP FIR	431.2	32.1	95	157	218			
WHEMLOCK	1038.1	77.3	34	126	219			
W PINE	666.5	49.6	69	174	279			
TOTAL			*149*	*149*	*149*			

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SHERRY1

Date 6/26/2019

Time 7:58:50AM

T36N R42E S28 T00U1

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
36N	42E	28	SHERRY	00U1	92.00	47	45	S	E

T36N R42E S28 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
RC		D	3	84	8.8	3,182	2,901	267		92	8			8	92		32	7	74	0.72	39.1
RC		D	4	16		538	538	50		100			43	57			21	6	23	0.33	23.2
RC	**Totals**			29	7.5	3,720	3,439	316		93	7		7	16	77		28	7	55	0.61	62.3
WL		D	2	5		300	300	28			100				100		32	12	180	1.09	1.7
WL		D	3	64	5.0	3,804	3,613	332		100					100		32	9	88	0.62	40.9
WL		D	4	31		1,685	1,685	155	100				8	6	86		29	5	40	0.26	41.8
WL	**Totals**			47	3.3	5,789	5,598	515	30	65	5		2	2	96		30	7	66	0.46	84.3
LP		D	3	37		274	274	25		100					100		32	6	50	0.37	5.5
LP		D	4	63		457	457	42	100				9	44	47		28	5	35	0.29	13.1
LP	**Totals**			6		731	731	67	63	37			6	28	67		29	5	39	0.31	18.6
DF		D	3	84		842	842	78		100					100		32	8	92	0.56	9.1
DF		D	4	16	8.1	166	153	14	100				65		35		23	5	24	0.28	6.3
DF	**Totals**			8	1.3	1,008	995	92	15	85			10		90		28	7	65	0.47	15.4
AF		D	3	94	4.7	720	686	63		100					100		32	8	102	0.67	6.7
AF		D	4	6		43	43	4	100				100				18	5	20	0.24	2.1
AF	**Totals**			6	4.4	762	728	67	6	94			6		94		29	8	83	0.60	8.8
WP		D	3	100	20.8	228	181	17		100					100		32	9	95	0.75	1.9
WP	**Totals**			2	20.8	228	181	17		100					100		32	9	95	0.75	1.9
WH		D	3	81	7.4	147	136	12		100					100		32	10	130	0.85	1.0
WH		D	4	19		31	31	3	100				35	65			25	5	30	0.34	1.0
WH	**Totals**			1	6.1	177	167	15	19	81			7	12	81		28	8	80	0.63	2.1
ES		D	3	83	11.8	51	45	4		100					100		32	11	150	1.65	.3
ES		D	4	17		9	9	1	100					100			26	5	30	0.40	.3
ES	**Totals**			0	10.0	60	54	5	17	83				17	83		29	8	90	1.09	.6
Type Totals					4.7	12,476	11,893	1,094	20	75	5		5	7	88		29	7	61	0.50	194.0

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SHERRY1

Date 6/26/2019

Time 7:58:50AM

T36N R42E S28 T00U2

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
36N	42E	28	SHERRY	00U2	104.90	53	58	S	E

T36N R42E S28 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
LP		D	3	65	5.7	6,213	5,861	615		97	3				100		32	8	83	0.54	70.2
LP		D	4	35	6.2	3,230	3,032	318	61	39			11	33	56		27	5	33	0.27	91.3
LP	**Totals**			60	5.8	9,443	8,893	933	21	77	2		4	11	85		29	6	55	0.40	161.5
WL		D	2	36	5.3	1,196	1,132	119			100				100		32	12	178	1.24	6.4
WL		D	3	35	5.2	1,117	1,060	111		100					100		32	9	93	0.66	11.4
WL		D	4	29		879	879	92	96	4			5	16	79		29	5	36	0.26	24.5
WL	**Totals**			21	3.8	3,192	3,071	322	28	36	37		1	4	94		30	7	73	0.53	42.2
DF		D	2	55	3.4	864	834	88			100				100		32	12	198	1.31	4.2
DF		D	3	36		530	530	56		100					100		32	7	79	0.54	6.7
DF		D	4	9		132	132	14	100				29	71			23	5	23	0.23	5.7
DF	**Totals**			10	1.9	1,526	1,497	157	9	35	56		3	6	91		29	8	90	0.67	16.6
RC		D	3	100	.0	368	368	39		100					100		32	6	60	0.65	6.2
RC	**Totals**			2	.0	368	368	39		100					100		32	6	60	0.65	6.2
GF		D	2	35		256	256	27			100				100		32	13	240	1.45	1.1
GF		D	3	50		366	366	38		100					100		32	8	96	0.55	3.8
GF		D	4	15		104	104	11	79	21			21	79			23	5	27	0.26	3.8
GF	**Totals**			5		726	726	76	11	53	35		3	11	86		28	8	83	0.57	8.7
WH		D	3	81		65	65	7		100					100		32	8	90	0.79	.7
WH		D	4	19		15	15	2	100				100				18	5	20	0.24	.7
WH	**Totals**			1	.0	80	80	8	18	82			18		82		25	7	55	0.59	1.5
AF		D	3	100		138	138	14		100					100		32	9	115	0.73	1.2
AF	**Totals**			1		138	138	14		100					100		32	9	115	0.73	1.2
WP		D	3	70		107	107	11		100					100		32	7	70	0.35	1.5
WP		D	4	30		46	46	5	100					100			30	5	30	0.20	1.5
WP	**Totals**			1	.0	153	153	16	30	70				30	70		31	6	50	0.28	3.1
Type Totals					4.5	15,626	14,925	1,566	20	64	16		3	9	88		29	7	62	0.46	240.9

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SHERRY1

Date 6/26/2019

Time 7:58:50AM

T36N R42E S28 T00U3

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
36N	42E	28	SHERRY	00U3	135.60	72	76	S	E

T36N R42E S28 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
LP		D	3	67	2.9	10,587	10,278	1,394		100					100		32	7	78	0.47	130.9
LP		D	4	33	1.1	4,975	4,920	667	97	3			19	19	62		25	5	34	0.24	146.7
LP	**Totals**			74	2.3	15,562	15,198	2,061	31	69			6	6	88		29	6	55	0.36	277.7
WL		D	2	43	1.0	2,096	2,076	281			85	15		10	90		32	13	227	1.42	9.1
WL		D	3	49	4.4	2,455	2,346	318		100				10	90		31	8	83	0.59	28.2
WL		D	4	8		351	351	48	92	8			46	38	16		20	5	23	0.23	15.5
WL	**Totals**			23	2.6	4,902	4,773	647	7	50	37	6	3	12	84		28	8	90	0.67	52.9
DF		D	2	76		356	356	48			100				100		32	12	190	1.60	1.9
DF		D	3	24		113	113	15		100					100		32	6	60	0.49	1.9
DF	**Totals**			2		469	469	64		24	76				100		32	9	125	1.04	3.8
ES		D	3	73		100	100	14		100					100		32	10	140	1.26	.7
ES		D	4	27		36	36	5	100						100		32	5	50	0.34	.7
ES	**Totals**			1		136	136	18	26	74					100		32	8	95	0.80	1.4
RC		D	4	100		19	19	3		100			100				18	6	20	0.50	1.0
RC	**Totals**			0		19	19	3		100			100				18	6	20	0.50	1.0
Type Totals					2.3	21,087	20,594	2,793	25	63	10	1	6	7	87		28	7	61	0.42	336.7

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: SHERRY1

Date 6/26/2019

Time 7:58:50AM

T36N R42E S28 T04RW

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
36N	42E	28	SHERRY	04RW	3.20	8	16	S	E

T36N R42E S28 T04RW

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
RC		D	3	91	9.2	3,764	3,416	11		77	23			5	95		31	11	151	1.62	22.6
RC		D	4	9		329	329	1		100			100				18	6	20	0.41	16.4
RC	**Totals**			13	8.5	4,093	3,745	12		79	21		9	5	86		25	9	96	1.26	39.0
LP		D	3	86		7,066	7,066	23		100					100		32	9	122	0.68	57.7
LP		D	4	14		1,092	1,092	3	100						100		32	5	50	0.29	21.8
LP	**Totals**			29		8,158	8,158	26	13	87					100		32	8	103	0.58	79.5
WL		D	2	15	16.7	1,132	943	3			100				100		32	12	150	1.09	6.3
WL		D	3	82	5.6	5,136	4,849	16		100					100		32	9	98	0.68	49.4
WL		D	4	3		126	126	0	100				100				20	5	20	0.29	6.3
WL	**Totals**			21	7.4	6,394	5,918	19	2	82	16		2		98		31	9	95	0.70	62.0
GF		D	2	76	2.0	5,026	4,923	16			58	42			100		32	14	261	1.39	18.9
GF		D	3	20		1,254	1,254	4		100				25	75		29	9	91	0.62	13.7
GF		D	4	4		258	258	1	100					100			24	5	30	0.29	8.6
GF	**Totals**			23	1.6	6,537	6,434	21	4	19	45	32		9	91		29	10	156	0.95	41.2
DF		D	2	30	2.1	1,069	1,047	3			37	63			100		32	18	470	2.71	2.2
DF		D	3	53	3.7	1,864	1,795	6		100				6	94		32	8	101	0.68	17.8
DF		D	4	17		581	581	2	100						100		32	5	50	0.29	11.6
DF	**Totals**			12	2.6	3,514	3,424	11	17	52	11	19		3	97		32	8	108	0.68	31.6
ES		D	3	100		827	827	3		100				26	74		31	8	95	0.60	8.7
ES	**Totals**			3		827	827	3		100				26	74		31	8	95	0.60	8.7
Type Totals					3.4	29,524	28,507	91	7	66	18	10	2	4	95		30	9	109	0.76	262.1

TC PSPCTLTCM

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

T36N R42E S28 Ty00U1	92.0
T36N R42E S28 Ty00U2	104.9
T36N R42E S28 Ty04R	3.2

Project SHERRY1
Acres 335.70

Page No 1
Date: 6/26/2019
Time 7:58:51AM

Species	S T	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
LP PINE		36,493	56,555	14,629	16.70	10.78	0.38	6,096	6,094	3,194	3,087
W LARCH		9,893	19,555	7,670	32.30	16.34	0.56	3,196	3,196	1,553	1,503
WR CEDAR		5,411	6,631	2,713	21.34	17.41	0.64	1,154	1,155	396	370
DOUG FIR		2,459	3,766	2,044	29.16	19.04	0.66	717	717	328	323
GR FIR		445	1,046	526	41.23	17.54	0.62	184	184	97	97
ALP FIR		567	938	423	29.85	18.04	0.62	169	169	85	81
W PINE		248	497	167	28.08	14.04	0.45	70	70	37	33
E SPRUCE		138	277	187	52.11	26.05	0.83	72	72	27	26
WHEMLOCK		173	345	182	32.94	16.47	0.62	57	57	25	24
Totals		55,827	89,609	28,542	20.98	13.07	0.46	11,714	11,713	5,741	5,544

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	55,827	89,609	28,542	20.98	13.07	0.46	11,714	11,713	5,741	5,544
Totals	55,827	89,609	28,542	20.98	13.07	0.46	11,714	11,713	5,741	5,544

TC PLOGSTVB

Log Stock Table - MBF

T36N R42E S28 Ty00U1
THRU
T36N R42E S28 Ty04RW

Project: SHERRY1
Acres 335.70

Page 1
Date 6/26/2019
Time 7:58:49AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
WL		D	2	30	30	5.3	28	1.9						28						
WL		D	2	32	411	2.1	403	26.8						319		84				
WL		D	3	24	16		16	1.0					16							
WL		D	3	28	8		8	.5			8									
WL		D	3	30	9		9	.6			9									
WL		D	3	32	784	5.0	745	49.5			126	342	277							
WL		D	4	12	4		4	.2		4										
WL		D	4	14	4		4	.3		4										
WL		D	4	16	9		9	.6		9										
WL		D	4	20	23		23	1.5		16	3	4								
WL		D	4	24	36		36	2.4		36										
WL		D	4	26	5		5	.4		5										
WL		D	4	32	214		214	14.2		214										
WL		Totals			1,553	3.2	1,503	27.1		288	146	346	292	347		84				
DF		D	2	32	142	2.2	139	43.1						114	23		2			
DF		D	3	26	0		0	.1				0								
DF		D	3	32	154		154	47.6			101	28	25							
DF		D	4	20	13		13	4.0		13										
DF		D	4	24	4		4	1.2		4										
DF		D	4	26	6		6	1.8		6										
DF		D	4	32	8	15.4	7	2.1		7										
DF		Totals			328	1.4	323	5.8		30	101	28	25	114	23		2			
RC		D	3	24	1		1	.2			1									
RC		D	3	30	22		22	6.0			22									
RC		D	3	32	320	8.4	294	79.4			131	108	30	23	3					
RC		D	4	12	3		3	.7			3									
RC		D	4	14	0		0	.1			0									
RC		D	4	18	7		7	2.0			7									
RC		D	4	20	15		15	3.9			15									
RC		D	4	24	22		22	5.9			22									
RC		D	4	26	6		6	1.7			6									
RC		Totals			396	6.8	370	6.7			207	108	30	23	3					
LP		D	3	32	2,135	3.7	2,056	66.6			917	716	404	19						
LP		D	4	14	11		11	.4		11										

TC PLOGSTVB

Log Stock Table - MBF

T36N R42E S28 Ty00U1
THRU
T36N R42E S28 Ty04RW

Project: SHERRY1
Acres 335.70

Page 2
Date 6/26/2019
Time 7:58:49AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
LP		D	4	16	68		68	2.2	68					
LP		D	4	18	42		42	1.4	42					
LP		D	4	20	46		46	1.5	46					
LP		D	4	24	78		78	2.5	78					
LP		D	4	26	108		108	3.5	108					
LP		D	4	28	22		22	.7	22					
LP		D	4	30	41		41	1.3	41					
LP		D	4	32	643	4.4	615	19.9	469	146				
LP		Totals			3,194	3.3	3,087	55.7	885	1063 716	404 19			
AF		D	3	32	81	3.8	78	95.2		22	55			
AF		D	4	18	4		4	4.8	4					
AF		Totals			85	3.7	81	1.5	4	22	55			
ES		D	3	30	1		1	2.7		1				
ES		D	3	32	20	2.7	20	75.5			20			
ES		D	4	26	1		1	3.2	1					
ES		D	4	32	5		5	18.6	5					
ES		Totals			27	2.1	26	.5	6	1	20			
WP		D	3	32	32	13.6	28	85.2		16	12			
WP		D	4	30	5		5	14.8	5					
WP		Totals			37	11.8	33	.6	5	16	12			
WH		D	3	32	20	4.9	19	81.6		7	12			
WH		D	4	18	2		2	6.4	2					
WH		D	4	20	1		1	4.2	1					
WH		D	4	30	2		2	7.8	2					
WH		Totals			25	4.1	24	.4	4	7	12			
GF		D	2	32	43		43	44.1			36	7		
GF		D	3	24	1		1	1.0		1				
GF		D	3	32	41		41	42.8		41				
GF		D	4	16	2		2	2.3		2				
GF		D	4	24	1		1	.9	1					
GF		D	4	26	9		9	9.0	9					
GF		Totals			97		97	1.7	10	2 42	36	7		

TC PLOGSTVB

Log Stock Table - MBF

T36N R42E S28 Ty00U1
THRU
T36N R42E S28 Ty04RW

Project: SHERRY1
Acres 335.70

Page 3
Date 6/26/2019
Time 7:58:49AM

Spp	ST	So Grt de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
Total		All Species		5,741	3.4	5,544	100.0		1231	1558	1247	851	539	26	90	2			

TC TSTATS

STATISTICS

PROJECT SHERRY1

DATE 6/26/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	00U1	92.00	47	171	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	47	171	3.6		
CRUISE	28	45	1.6	11,867	.4
DBH COUNT					
REFOREST COUNT	15	49	3.3		
BLANKS	4				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WR CEDAR	14	49.7	12.3	51	11.6	40.8	3,720	3,439	1,053	1,053
W LARCH	14	43.8	12.2	90	10.2	35.5	5,789	5,598	1,177	1,177
LP PINE	6	18.6	8.5	60	2.5	7.3	731	731	169	169
DOUG FIR	4	9.1	11.9	77	2.1	7.1	1,008	995	202	202
ALP FIR	3	5.5	12.7	75	1.3	4.8	762	728	152	152
W PINE	1	1.0	15.1	92	0.3	1.2	228	181	45	45
WHEMLOCK	2	1.0	14.4	73	0.3	1.2	177	167	37	37
E SPRUCE	1	.3	19.0	58	0.1	.6	60	54	19	19
TOTAL	*45*	*129.0*	*11.8*	*69*	*28.6*	*98.4*	*12,476*	*11,893*	*2,855*	*2,855*

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
WR CEDAR	67.4	18.7	77	94	112			
W LARCH	49.9	13.8	138	161	183			
LP PINE	34.7	15.4	32	38	44			
DOUG FIR	49.5	28.3	90	125	160			
ALP FIR	78.4	54.3	66	143	221			
W PINE								
WHEMLOCK	17.7	16.6	134	160	186			
E SPRUCE								
TOTAL	*63.9*	*9.5*	*109*	*120*	*132*	*163*	*41*	*18*

CL: 68.1 % SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
WR CEDAR	64.1	17.7	24	29	35			
W LARCH	47.9	13.3	29	34	39			
LP PINE	32.3	14.4	7	8	9			
DOUG FIR	50.2	28.7	18	26	33			
ALP FIR	74.4	51.5	15	30	45			
W PINE								
WHEMLOCK	11.4	10.7	32	36	40			
E SPRUCE								
TOTAL	*61.7*	*9.2*	*26*	*29*	*32*	*152*	*38*	*17*

CL: 68.1 % SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WR CEDAR	113.0	16.5	42	50	58			
W LARCH	86.7	12.6	38	44	49			
LP PINE	316.2	46.1	8	15	22			
DOUG FIR	176.8	25.8	7	9	11			
ALP FIR	299.9	43.7	3	6	8			
W PINE	479.5	69.9	0	1	2			

STATISTICS

PROJECT SHERRY1

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	00U1	92.00	47	171	S	E

CL: 68.1 %	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	685.6	99.9	0	1	2			
E SPRUCE	685.6	99.9	0	0	1			
TOTAL	*23.2*	*3.4*	*122*	*126*	*130*	*22*	*5*	*2*

CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	112.6	16.4	34	41	47			
W LARCH	84.4	12.3	31	35	40			
LP PINE	296.6	43.2	3	5	7			
DOUG FIR	172.6	25.2	5	7	9			
ALP FIR	253.9	37.0	2	3	5			
W PINE	479.5	69.9	0	1	2			
WHEMLOCK	685.6	99.9	0	1	2			
E SPRUCE	685.6	99.9	0	1	1			
TOTAL	*4.2*	*.6*	*94*	*95*	*95*	*1*	*0*	*0*

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	113.3	16.5	2,871	3,439	4,007			
W LARCH	85.8	12.5	4,899	5,598	6,298			
LP PINE	345.1	50.3	287	577	866			
DOUG FIR	173.5	25.3	743	995	1,247			
ALP FIR	265.4	38.7	277	451	626			
W PINE	479.5	69.9	54	181	307			
WHEMLOCK	685.6	99.9	0	167	333			
E SPRUCE	685.6	99.9	0	54	108			
TOTAL			*11,462*	*11,462*	*11,462*			

CL: 68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	113.5	16.5	879	1,053	1,227			
W LARCH	85.3	12.4	1,031	1,177	1,323			
LP PINE	303.6	44.2	64	115	166			
DOUG FIR	173.2	25.2	151	202	253			
ALP FIR	262.4	38.2	59	95	131			
W PINE	479.5	69.9	14	45	77			
WHEMLOCK	685.6	99.9	0	37	74			
E SPRUCE	685.6	99.9	0	19	38			
TOTAL			*2,744*	*2,744*	*2,744*			

CL: 68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR			70	84	98			
W LARCH			138	158	178			
LP PINE	322.9	47.1	39	79	119			
DOUG FIR	58.6	8.5	105	140	176			
ALP FIR	203.6	29.7	58	94	131			
W PINE	331.4	48.3	46	153	260			
WHEMLOCK	685.6	99.9	0	141	282			
E SPRUCE	685.6	99.9	0	91	183			
TOTAL	*337.6*	*49.2*	*116*	*116*	*116*	*4,551*	*1,138*	*506*

TC TSTATS

STATISTICS

PROJECT SHERRY1

DATE 6/26/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	00U2	104.90	53	144	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	53	144	2.7		
CRUISE	34	58	1.7	17,138	.3
DBH COUNT					
REFOREST COUNT	16	29	1.8		
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
LP PINE	35	112.0	10.1	79	19.5	61.9	9,443	8,893	1,887	1,886
W LARCH	8	26.1	12.4	78	6.2	21.9	3,192	3,071	677	677
DOUG FIR	8	12.4	12.7	71	3.0	10.9	1,526	1,497	324	324
WR CEDAR	2	6.2	12.5	63	1.5	5.3	368	368	128	128
GR FIR	2	3.8	13.4	83	1.0	3.8	726	726	140	140
WHEMLOCK	1	.7	13.8	67	0.2	.8	80	80	21	21
ALP FIR	1	.6	15.2	92	0.2	.8	138	138	28	28
W PINE	1	1.5	9.5	94	0.2	.8	153	153	27	27
TOTAL	*58*	*163.4*	*10.9*	*78*	*32.1*	*106.0*	*15,626*	*14,925*	*3,232*	*3,230*

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
LP PINE	73.8	12.5	73	83	94			
W LARCH	64.9	24.5	143	189	235			
DOUG FIR	87.0	32.8	108	161	214			
WR CEDAR	23.6	22.1	47	60	73			
GR FIR	72.2	67.6	79	245	411			
WHEMLOCK								
ALP FIR								
W PINE								
TOTAL	*84.4*	*11.1*	*104*	*117*	*129*	*284*	*71*	*32*

CL: 68.1 % SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
LP PINE	79.0	13.3	15	18	20			
W LARCH	60.9	22.9	32	42	51			
DOUG FIR	84.9	32.0	24	35	46			
WR CEDAR	3.9	3.6	20	21	22			
GR FIR	75.0	70.2	14	48	81			
WHEMLOCK								
ALP FIR								
W PINE								
TOTAL	*83.1*	*10.9*	*22*	*25*	*28*	*276*	*69*	*31*

CL: 68.1 % SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
LP PINE	80.1	11.0	88	99	110			
W LARCH	122.8	16.9	22	26	31			
DOUG FIR	238.0	32.7	9	13	18			
WR CEDAR	393.9	54.1	3	6	9			
GR FIR	326.0	44.7	2	4	6			
WHEMLOCK	728.0	99.9	0	1	1			
ALP FIR	728.0	99.9	0	1	1			
W PINE	728.0	99.9	0	2	3			
TOTAL	*17.9*	*2.5*	*147*	*151*	*155*	*13*	*3*	*1*

STATISTICS

PROJECT SHERRY1

DATE 6/26/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	00U2	104.90	53	144	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

CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	62.3	8.6	43	47	51			
W LARCH	110.9	15.2	19	22	25			
DOUG FIR	233.1	32.0	6	9	11			
WR CEDAR	393.9	54.1	2	5	8			
GR FIR	312.8	42.9	2	4	5			
WHEMLOCK	728.0	99.9	0	1	2			
ALP FIR	728.0	99.9	0	1	2			
W PINE	728.0	99.9	0	1	2			
TOTAL			*89*	*89*	*89*			

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	63.6	8.7	5,933	6,500	7,067			
W LARCH	112.6	15.5	2,596	3,071	3,545			
DOUG FIR	248.3	34.1	721	1,093	1,466			
WR CEDAR	394.5	54.1	169	368	567			
GR FIR	313.3	43.0	414	726	1,038			
WHEMLOCK	728.0	99.9	0	80	160			
ALP FIR	728.0	99.9	0	138	275			
W PINE	728.0	99.9	0	153	307			
TOTAL			*12,129*	*12,129*	*12,129*			

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
LP PINE	59.7	8.2	1,243	1,354	1,465			
W LARCH	112.0	15.4	573	677	780			
DOUG FIR	244.5	33.6	158	238	317			
WR CEDAR	393.9	54.1	59	128	197			
GR FIR	313.7	43.1	80	140	200			
WHEMLOCK	728.0	99.9	0	21	43			
ALP FIR	728.0	99.9	0	28	56			
W PINE	728.0	99.9	0	27	53			
TOTAL			*2,612*	*2,612*	*2,612*			

CL: 68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE			96	105	114			
W LARCH			119	140	162			
DOUG FIR	213.4	29.3	66	101	135			
WR CEDAR	110.9	15.2	32	70	107			
GR FIR	182.6	25.1	110	192	275			
WHEMLOCK	728.0	99.9	0	106	212			
ALP FIR	728.0	99.9	0	183	365			
W PINE	728.0	99.9	0	203	406			
TOTAL	*176.3*	*24.2*	*114*	*114*	*114*	*1,241*	*310*	*138*

TC TSTATS

STATISTICS

PROJECT SHERRY1

DATE 6/26/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	00U3	135.60	72	227	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	72	227	3.2		
CRUISE	43	76	1.8	26,418	.3
DBH COUNT					
REFOREST					
COUNT	26	65	2.5		
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
LP PINE	61	168.9	9.8	80	28.3	88.7	15,562	15,198	2,886	2,886
W LARCH	12	22.4	15.2	91	7.2	28.2	4,902	4,773	1,003	1,003
DOUG FIR	1	1.9	19.5	70	0.9	3.9	469	469	125	125
E SPRUCE	1	.7	16.9	83	0.3	1.1	136	136	36	36
WR CEDAR	1	1.0	10.3	46	0.2	.6	19	19	8	9
TOTAL	*76*	*194.8*	*10.7*	*81*	*37.4*	*122.4*	*21,087*	*20,594*	*4,060*	*4,060*

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
LP PINE	55.8	7.3	86	93	99			
W LARCH	75.3	22.7	217	280	343			
DOUG FIR								
E SPRUCE								
WR CEDAR								
TOTAL	*94.5*	*11.0*	*112*	*125*	*139*	*356*	*89*	*40*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	63.5	8.3	16	18	19			
W LARCH	68.0	20.5	46	58	69			
DOUG FIR								
E SPRUCE								
WR CEDAR								
TOTAL	*96.6*	*11.2*	*22*	*25*	*28*	*373*	*93*	*41*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	47.4	5.6	136	144	152			
W LARCH	129.9	15.3	20	23	27			
DOUG FIR	392.1	46.2	1	2	3			
E SPRUCE	595.8	70.2	0	1	1			
WR CEDAR	848.5	99.9	0	1	2			
TOTAL	*7.7*	*.9*	*169*	*171*	*172*	*2*	*1*	*0*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	34.1	4.0	62	65	68			
W LARCH	124.6	14.7	22	25	29			
DOUG FIR	392.1	46.2	2	4	6			
E SPRUCE	595.8	70.2	0	1	2			
WR CEDAR	848.5	99.9	0	1	1			
TOTAL			*96*	*96*	*96*			

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE	40.3	4.7	10,241	10,752	11,263			

STATISTICS

PROJECT **SHERRY1**

DATE 6/26/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	**42E**	**28**	**SHERRY**	**00U3**	135.60	72	227	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
W LARCH	125.9	14.8	3,621	4,252	4,882			
DOUG FIR	392.1	46.2	252	469	685			
E SPRUCE	595.8	70.2	40	136	231			
WR CEDAR	848.5	99.9	0	19	38			
TOTAL			*15,627*	*15,627*	*15,627*			

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
LP PINE	37.7	4.4	1,893	1,981	2,069			
W LARCH	125.4	14.8	755	886	1,016			
DOUG FIR	392.1	46.2	67	125	183			
E SPRUCE	595.8	70.2	11	36	62			
WR CEDAR	848.5	99.9	0	9	17			
TOTAL			*3,037*	*3,037*	*3,037*			

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
LP PINE			116	121	127			
W LARCH			128	151	173			
DOUG FIR	69.0	8.1	65	121	176			
E SPRUCE	415.2	48.9	36	122	208			
WR CEDAR	848.5	99.9	0	35	69			
TOTAL	*209.5*	*24.7*	*128*	*128*	*128*	*1,753*	*438*	*195*

TC TSTATS

STATISTICS

PROJECT SHERRY1

DATE 6/26/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	04RW	3.20	8	40	S	E

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	8	40	5.0		
CRUISE	7	16	2.3	404	4.0
DBH COUNT					
REFOREST COUNT	1	5	5.0		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WR CEDAR	3	19.5	19.9	54	9.4	42.0	4,093	3,745	1,251	1,249
W LARCH	4	27.9	15.8	100	9.5	37.8	6,394	5,918	1,335	1,335
LP PINE	2	39.8	13.2	99	10.4	37.8	8,158	8,158	1,464	1,464
GR FIR	2	13.7	18.3	106	5.9	25.2	6,537	6,434	1,146	1,146
DOUG FIR	4	21.1	13.5	77	5.7	21.0	3,514	3,424	683	683
E SPRUCE	1	4.4	13.3	90	1.2	4.2	827	827	161	161
TOTAL	*16*	*126.3*	*15.6*	*89*	*42.5*	*168.0*	*29,524*	*28,507*	*6,039*	*6,038*

CONFIDENCE LIMITS OF THE SAMPLE

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

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	41.9	29.0	154	217	279			
W LARCH	25.6	14.6	184	215	246			
LP PINE	33.7	31.5	144	210	276			
GR FIR	50.8	47.6	270	515	760			
DOUG FIR	119.9	68.5	118	375	632			
E SPRUCE								
TOTAL	*84.1*	*21.7*	*228*	*291*	*354*	*301*	*75*	*33*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	62.4	43.2	46	81	116			
W LARCH	17.5	10.0	44	48	53			
LP PINE	24.1	22.5	29	37	46			
GR FIR	40.1	37.6	56	90	124			
DOUG FIR	113.6	64.9	26	73	121			
E SPRUCE								
TOTAL	*73.6*	*19.0*	*52*	*64*	*76*	*231*	*58*	*26*

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	124.7	47.0	10	20	29			
W LARCH	32.0	12.1	24	28	31			
LP PINE	100.2	37.8	25	40	55			
GR FIR	96.0	36.2	9	14	19			
DOUG FIR	159.4	60.1	8	21	34			
E SPRUCE	282.8	106.6		4	9			
TOTAL			*126*	*126*	*126*			

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	126.5	47.7	22	42	62			
W LARCH	31.4	11.8	33	38	42			
LP PINE	100.1	37.7	24	38	52			
GR FIR	94.3	35.5	16	25	34			
DOUG FIR	119.0	44.9	12	21	30			

STATISTICS

PROJECT **SHERRY1**

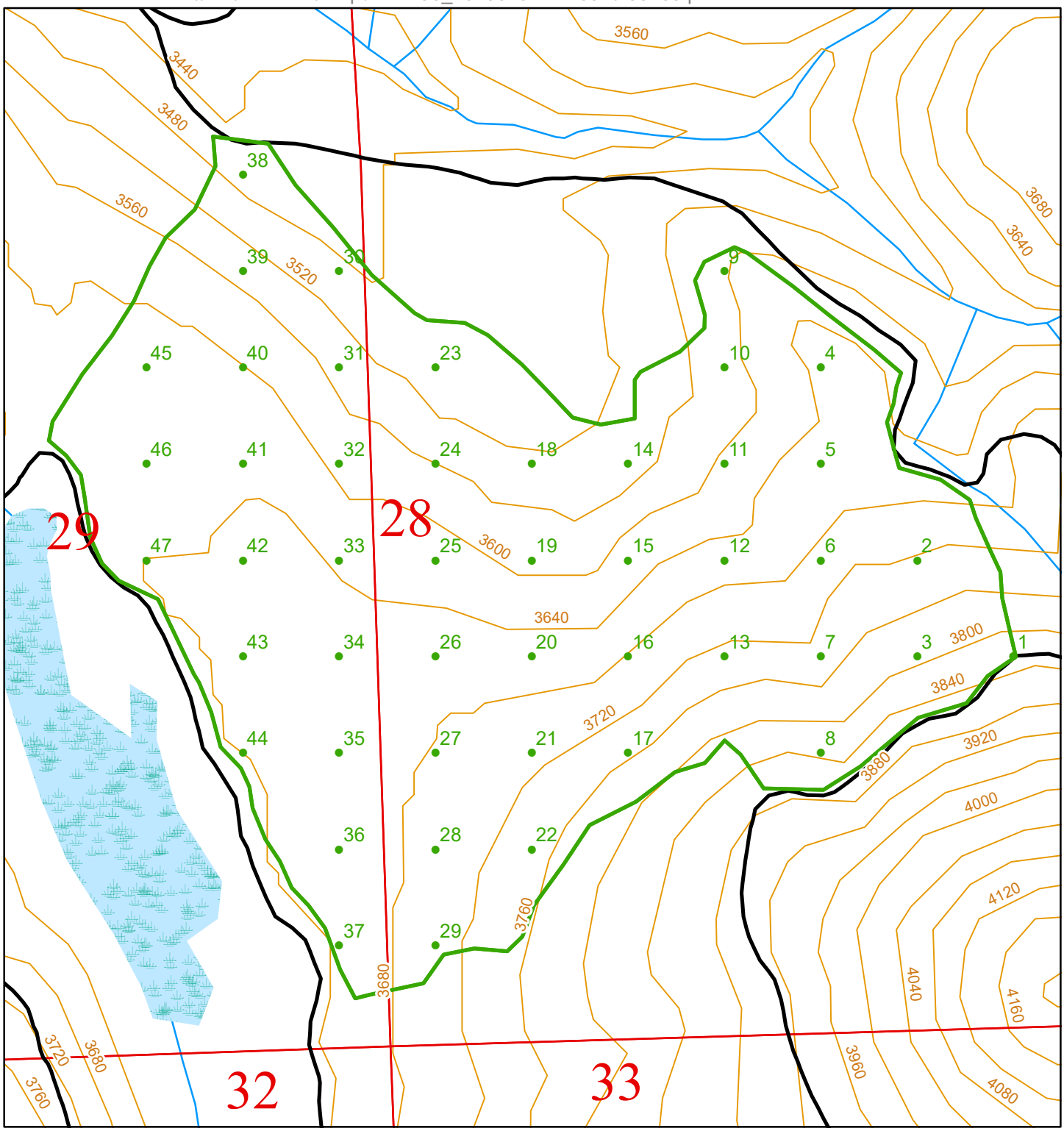
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
36N	42E	28	SHERRY	04RW	3.20	8	40	S	E

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	282.8	106.6		4	9			
TOTAL			*168*	*168*	*168*			

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	124.7	47.0	1,984	3,745	5,506			
W LARCH	33.7	12.7	5,166	5,918	6,671			
LP PINE	100.3	37.8	5,072	8,158	11,243			
GR FIR	94.7	35.7	4,138	6,434	8,731			
DOUG FIR	110.1	41.5	2,002	3,424	4,846			
E SPRUCE	282.8	106.6		827	1,710			
TOTAL			*28,507*	*28,507*	*28,507*			

CL: 68.1 %	COEFF		**NET CUFT FT/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR	126.5	47.7	653	1,249	1,845			
W LARCH	32.0	12.0	1,174	1,335	1,495			
LP PINE	100.1	37.8	911	1,464	2,017			
GR FIR	94.3	35.6	739	1,146	1,554			
DOUG FIR	111.0	41.8	397	683	968			
E SPRUCE	282.8	106.6		161	333			
TOTAL			*6,038*	*6,038*	*6,038*			

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR			47	89	131			
W LARCH			137	157	176			
LP PINE			134	216	297			
GR FIR			164	255	346			
DOUG FIR	92.1	34.7	95	163	231			
E SPRUCE	282.8	106.6		197	407			
TOTAL	*201.0*	*75.8*	*170*	*170*	*170*	*1,838*	*459*	*204*



FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	SHERRY RIDGE U1	Township:	T36R42E
FMA_ID:	289768	DNR Region:	NORTHEAST
Acres:	92	Total Sample Points:	47
County:	STEVENS	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0

D: Deleted Plot
W: Walkthrough Plot

N

0 145 290 580 870 1,160 Feet

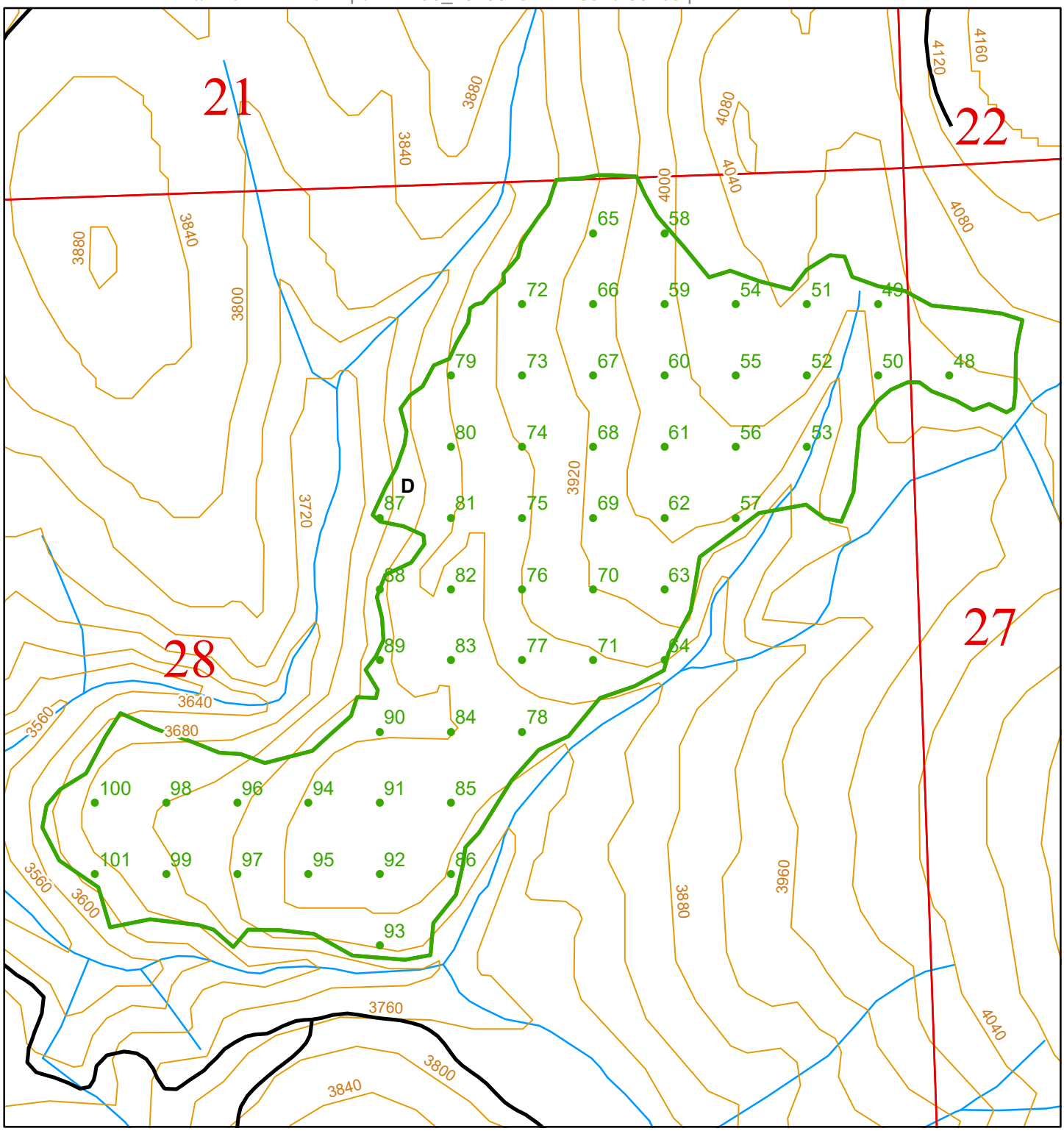
Scale 1:5,100

Legend

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

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Feb 07, 2019 02:47 PM



FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	SHERRY RIDGE U2	Township:	T36R42E
FMA_ID:	289769	DNR Region:	NORTHEAST
Acres:	105	Total Sample Points:	54
County:	STEVENS	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0

D: Deleted Plot
W: Walkthrough Plot

N

0 200 400 800 1,200 1,600 Feet

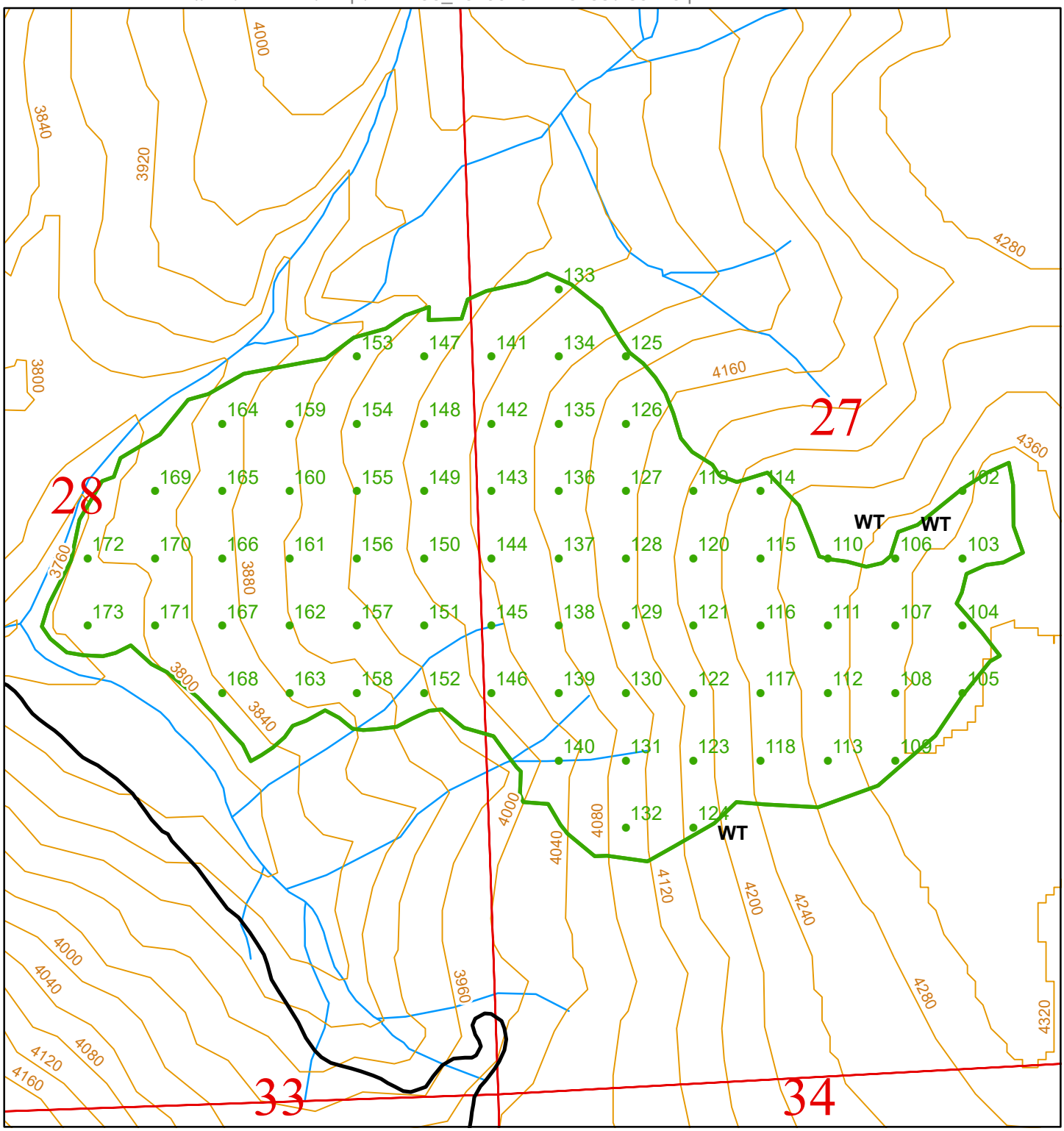
Scale 1:6,900

Legend

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

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Feb 07, 2019 02:49 PM



FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	SHERRY RIDGE U3	Township:	T36R42E
FMA_ID:	289770	DNR Region:	NORTHEAST
Acres:	137	Total Sample Points:	72
County:	STEVENS	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0

D: Deleted Plot
W: Walkthrough Plot

N

0 212.5 425 850 1,275 1,700 Feet

Scale 1:7,300

Legend

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

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Feb 07, 2019 02:52 PM

FPA/N No:	3023302
Effective Date:	02/08/2019
Expiration Date:	02/08/2022
Shut Down Zone:	687
EARR Tax Credit:	[X] Eligible [ ] Non-eligible
Reference:	DNR "Sherry Ridge"
	21,27,28,29-36-42

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

Approved with the following conditions:

Work conducted within the bankfull width of Crossing 1 shall be conducted between July 1 and September 30.

Issued By: Bob Hinds **Region:** Northeast

Title: Forest Practices Forester **Date:** 02/08/2019

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

Issued in person: **[X] Landowner [X]Timber Owner [X] Operator By:** Erin Graves Natural Resources Tech II

Appeal Information

You have thirty (30) days to appeal this Decision and any related State Environmental Policy Act determinations to the Pollution Control Hearings Board in writing at the following addresses:
Physical address: 1111 Israel Rd. SW, Ste 301, Tumwater, WA 98501
Mailing address: P.O. BOX 40903, OLYMPIA, WA 98504-0903
Information regarding the Pollution Control Hearings Board can be found at: http://www.eluho.wa.gov/
At the same time you file an appeal with the Pollution Control Hearings Board, also send a copy of the appeal to the Department of Natural Resources' region office and the Office of the Attorney General at the following addresses:

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

And

Department Of Natural Resources
Northeast Region
225 S Silke Rd
Colville, WA 99114

Other Applicable Laws

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

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

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

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

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

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

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

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

DNR affidavit of mailing:

On this day_____, I placed in the United States mail at Colville, WA,
(date) (post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # 3023302

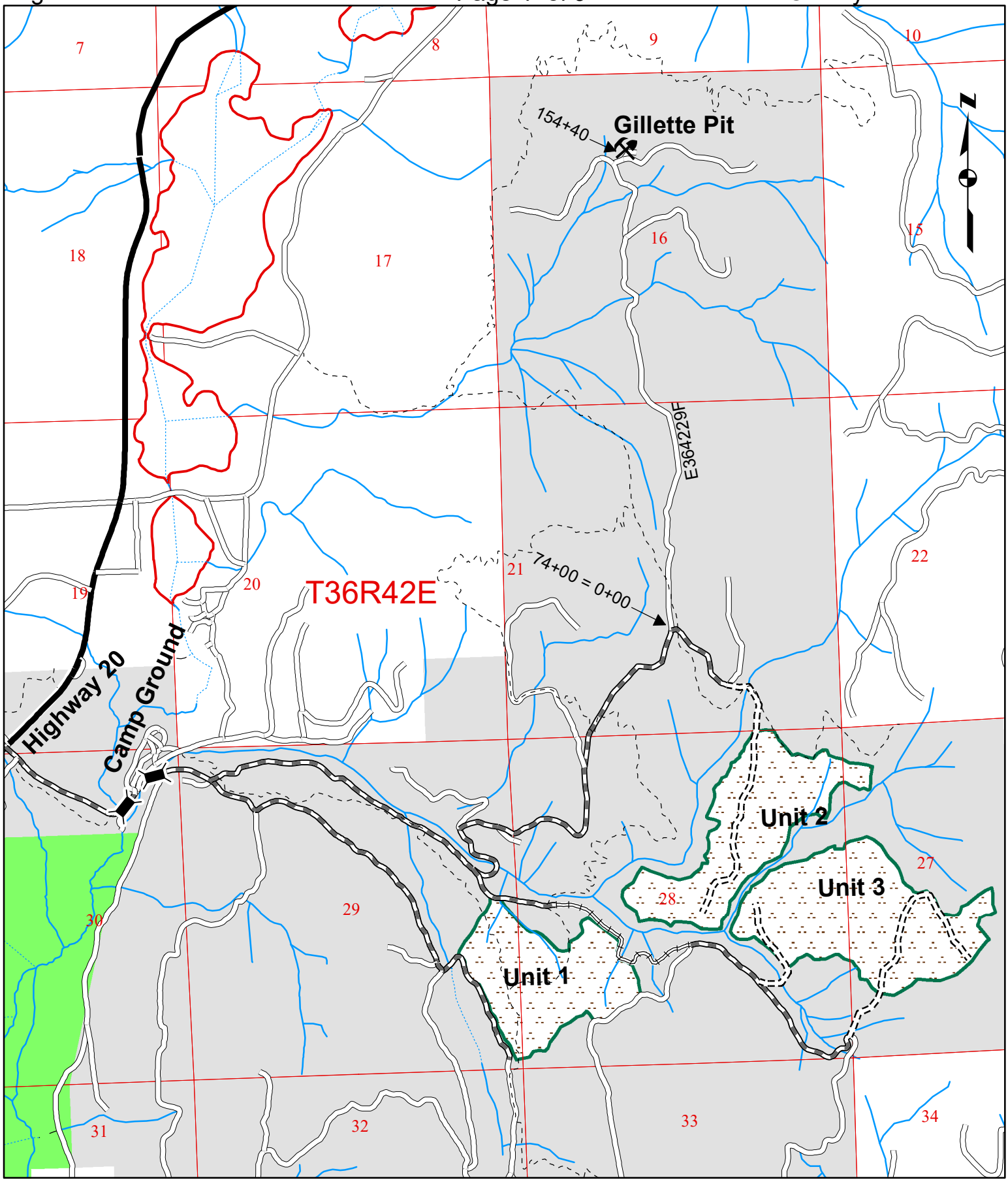
_____ _____
(Printed name) (Signature)

Washington State Department of Natural Resources

Sale Name : Sherry Ridge
Agreement No.: 30-098217

Road Plan Map

Region: Northeast
County.: Stevens



0 500 1,000 2,000 3,000 4,000 Feet

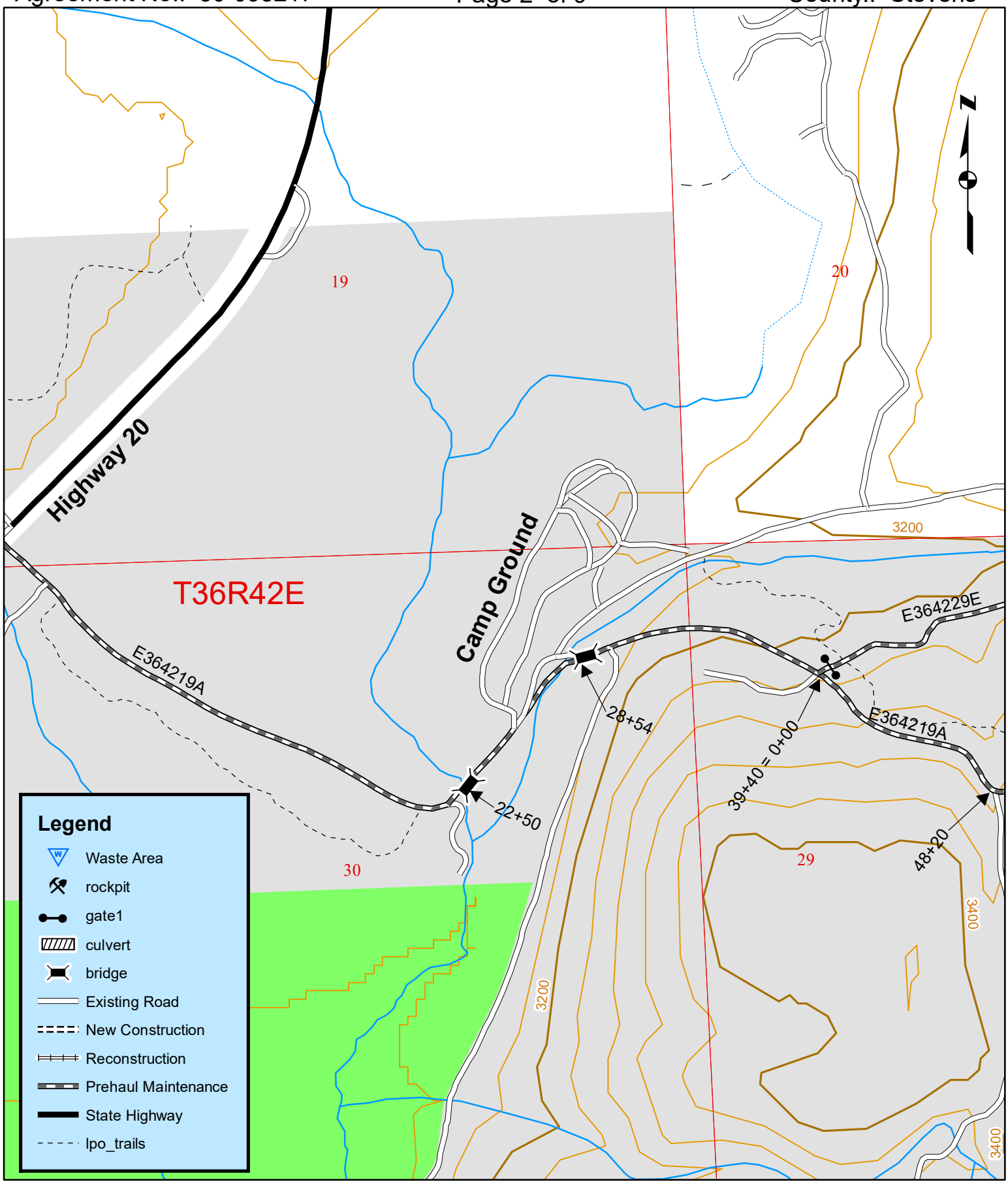
1 inch = 2,000 feet

Washington State Department of Natural Resources

Sale Name : Sherry Ridge
Agreement No.: 30-098217

Road Plan Map

Region: Northeast
County.: Stevens



0 125 250 500 750 1,000 Feet

1 inch = 500 feet

Washington State Department of Natural Resources

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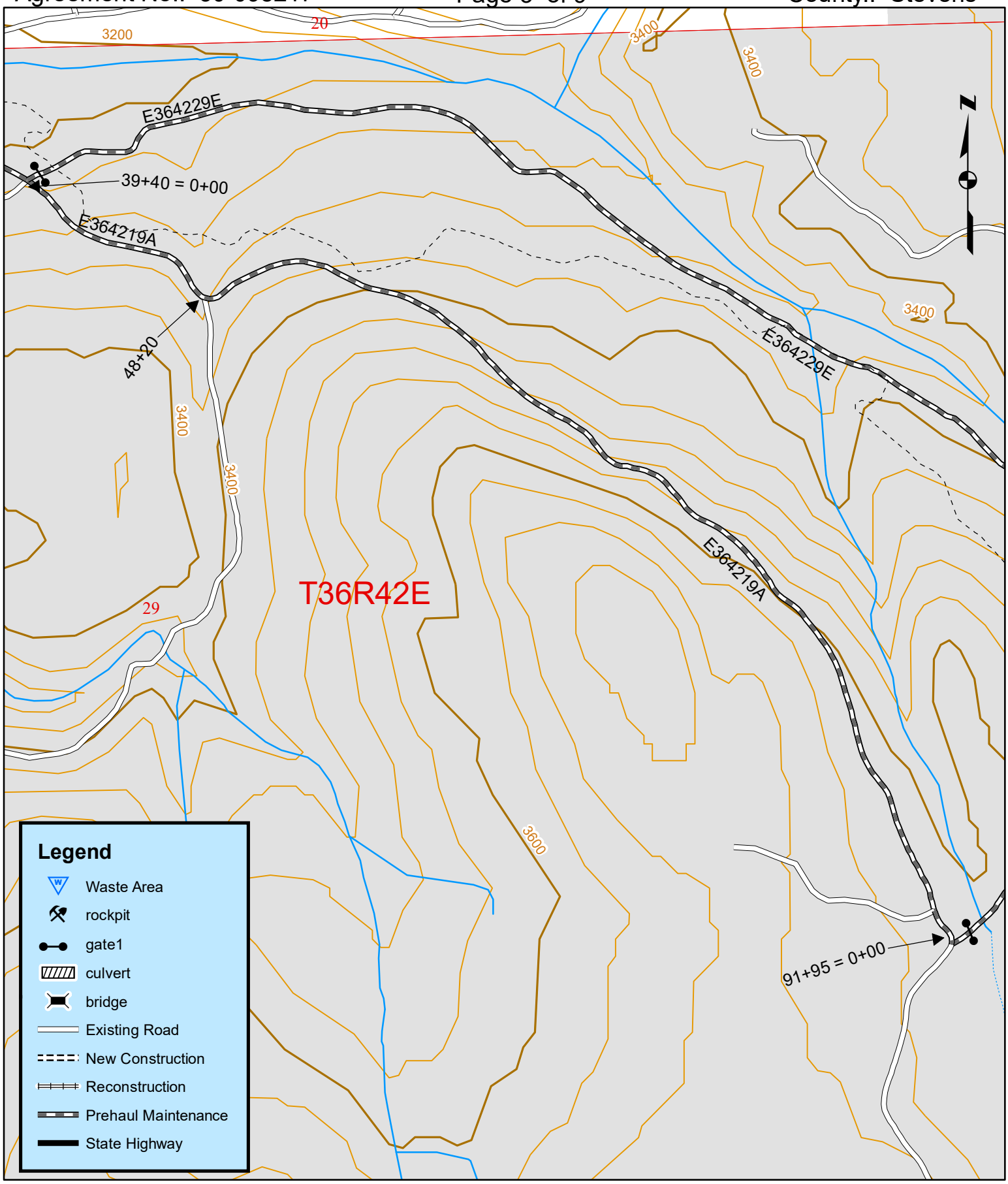
Agreement No.: 30-098217

Road Plan Map

Region: Northeast
County.: Stevens



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1 inch = 500 feet

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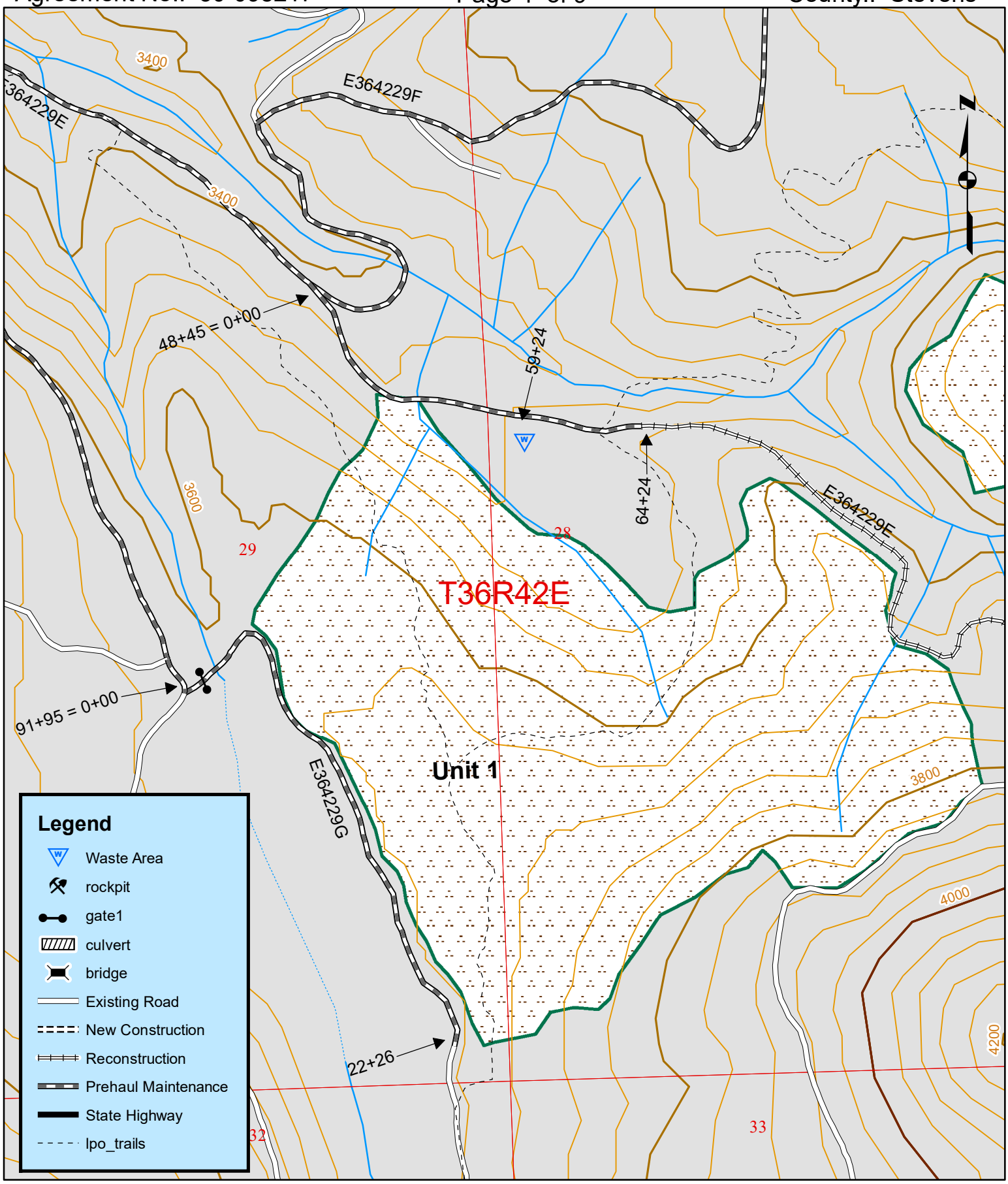

0 125 250 500 750 1,000 Feet

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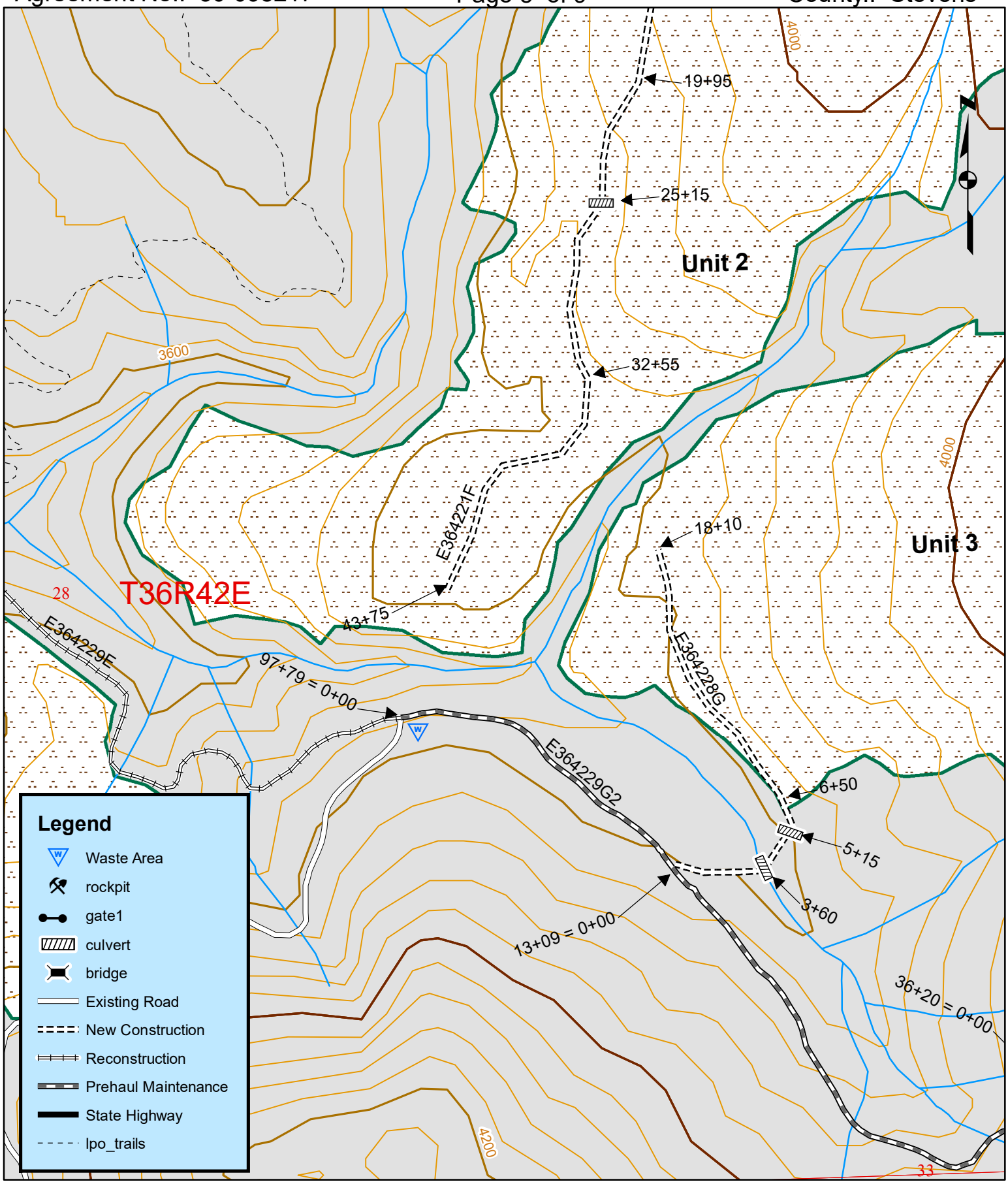

0 125 250 500 750 1,000 Feet

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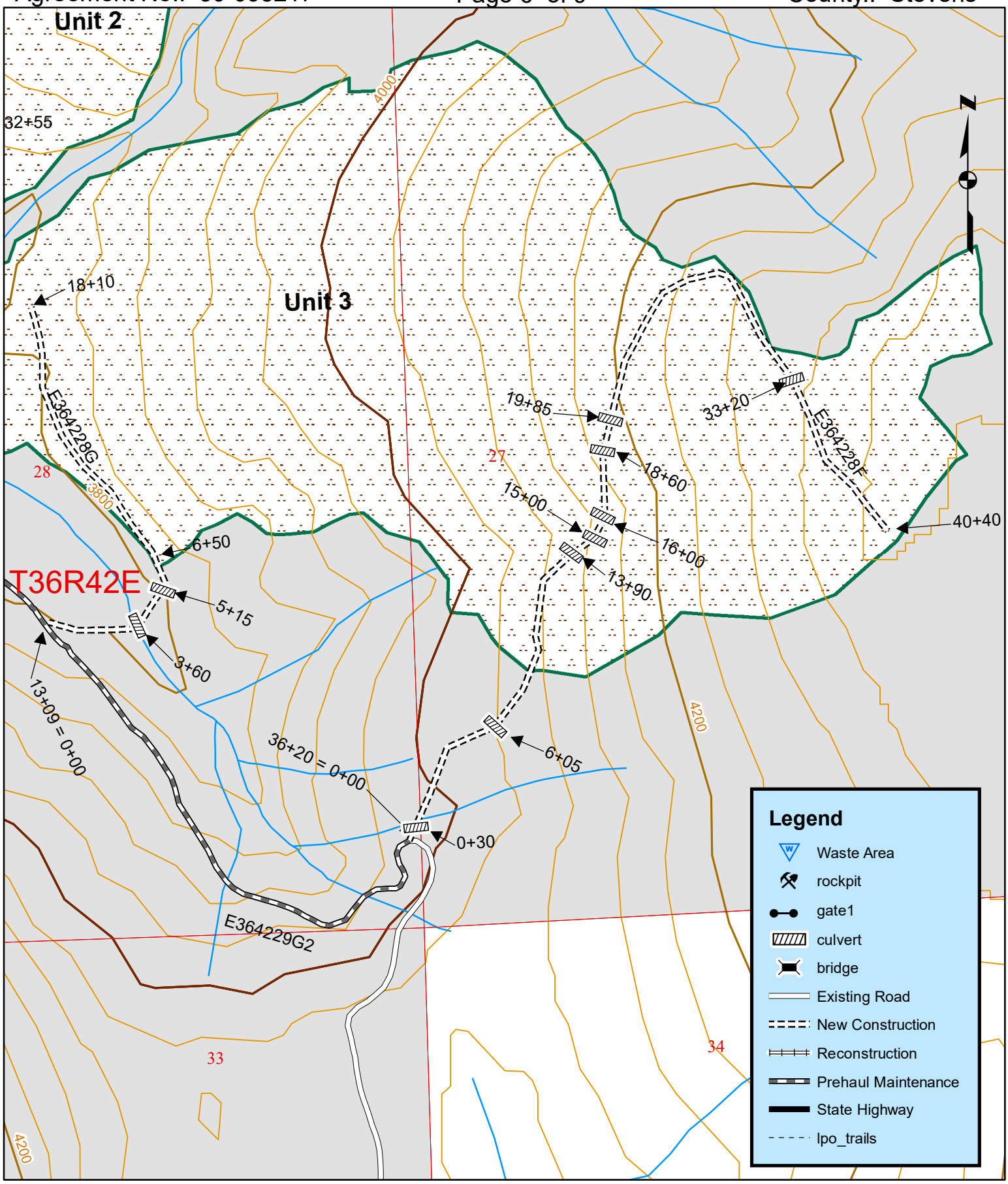

0 125 250 500 750 1,000 Feet

1 inch = 500 feet

Washington State Department of Natural Resources

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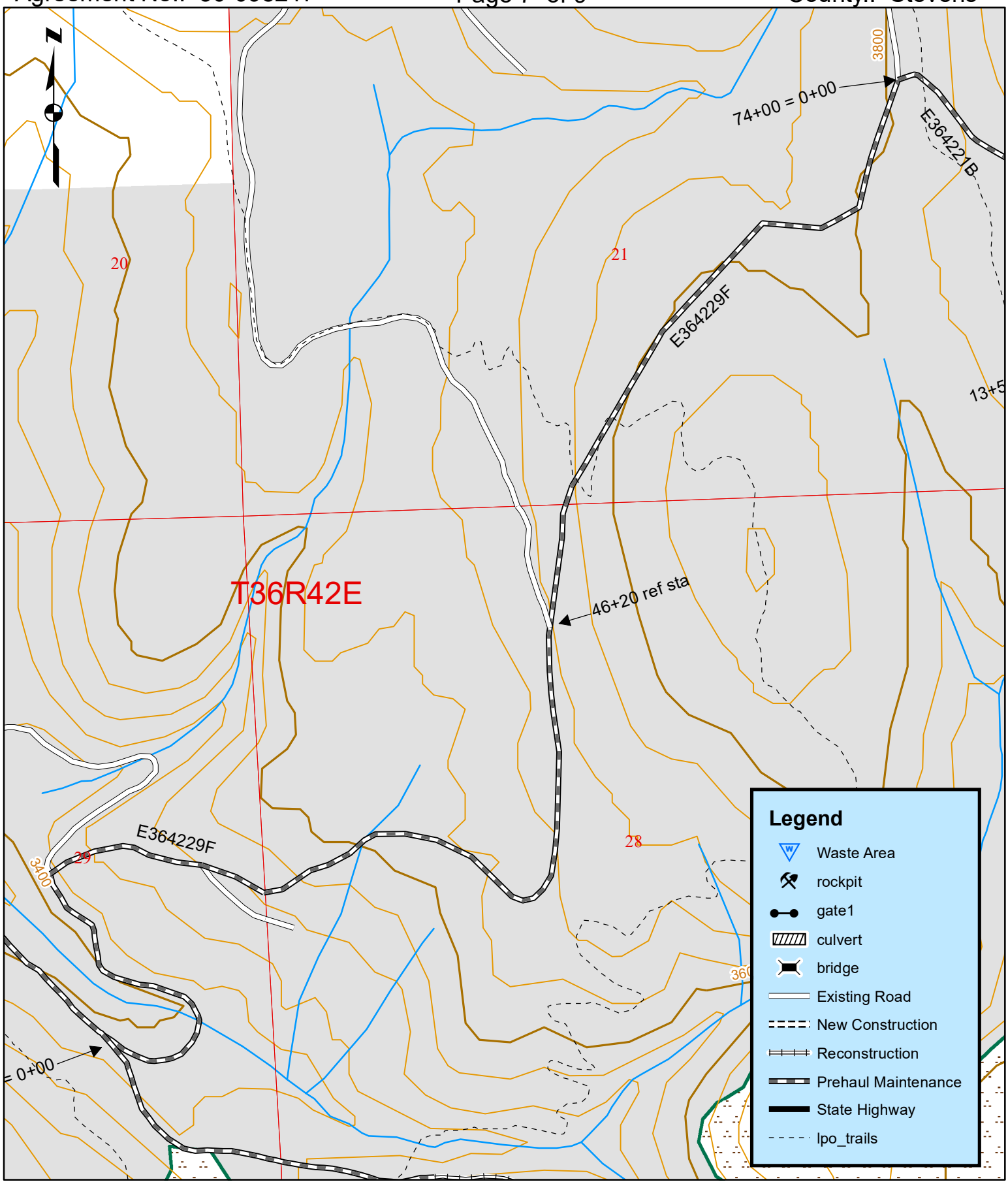
Agreement No.: 30-098217

Road Plan Map

Region: Northeast
County.: Stevens



0 125 250 500 750 1,000 Feet

1 inch = 500 feet

Washington State Department of Natural Resources

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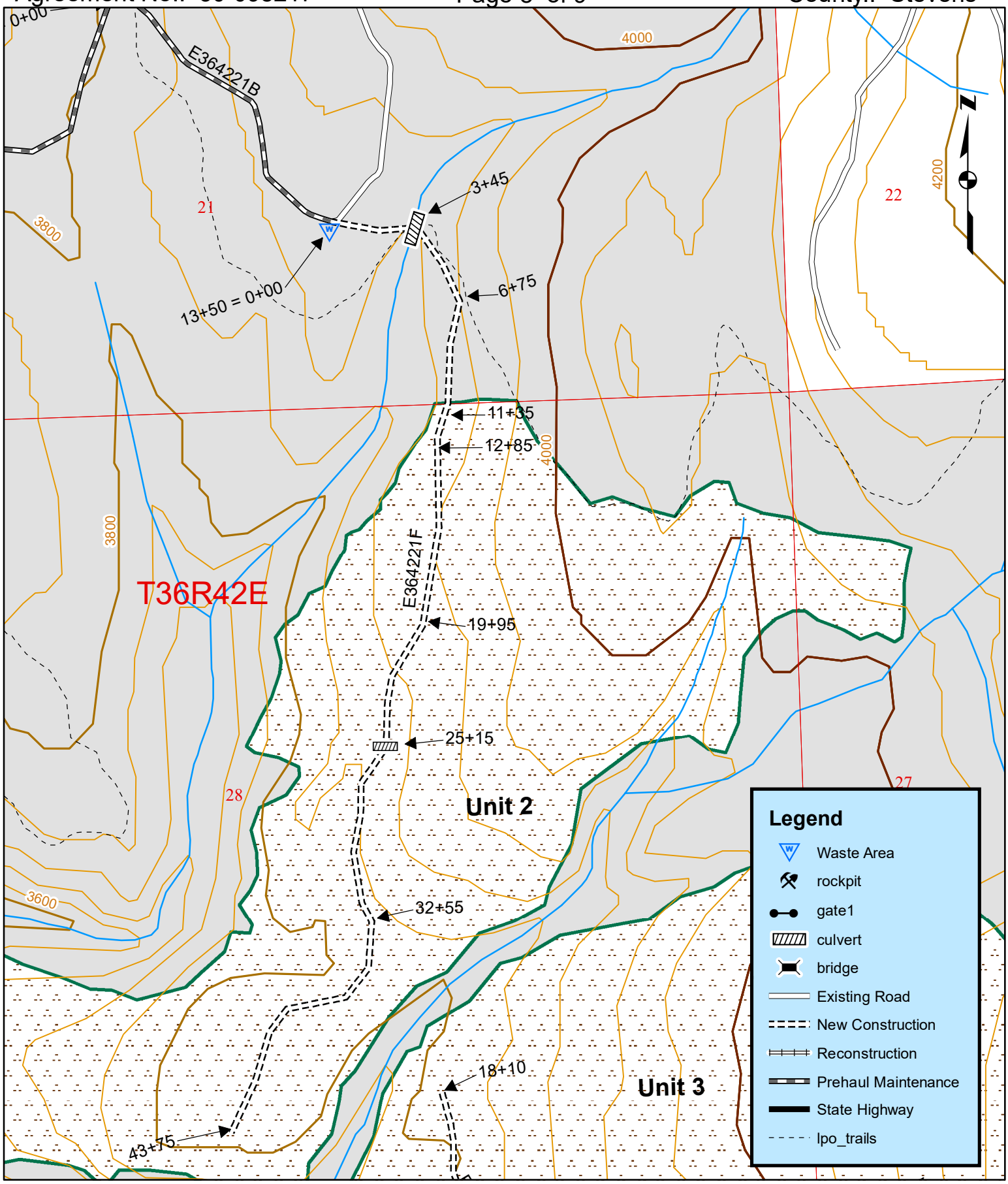
Agreement No.: 30-098217

Road Plan Map

Region: Northeast
County.: Stevens



0 125 250 500 750 1,000 Feet

1 inch = 500 feet

Washington State Department of Natural Resources

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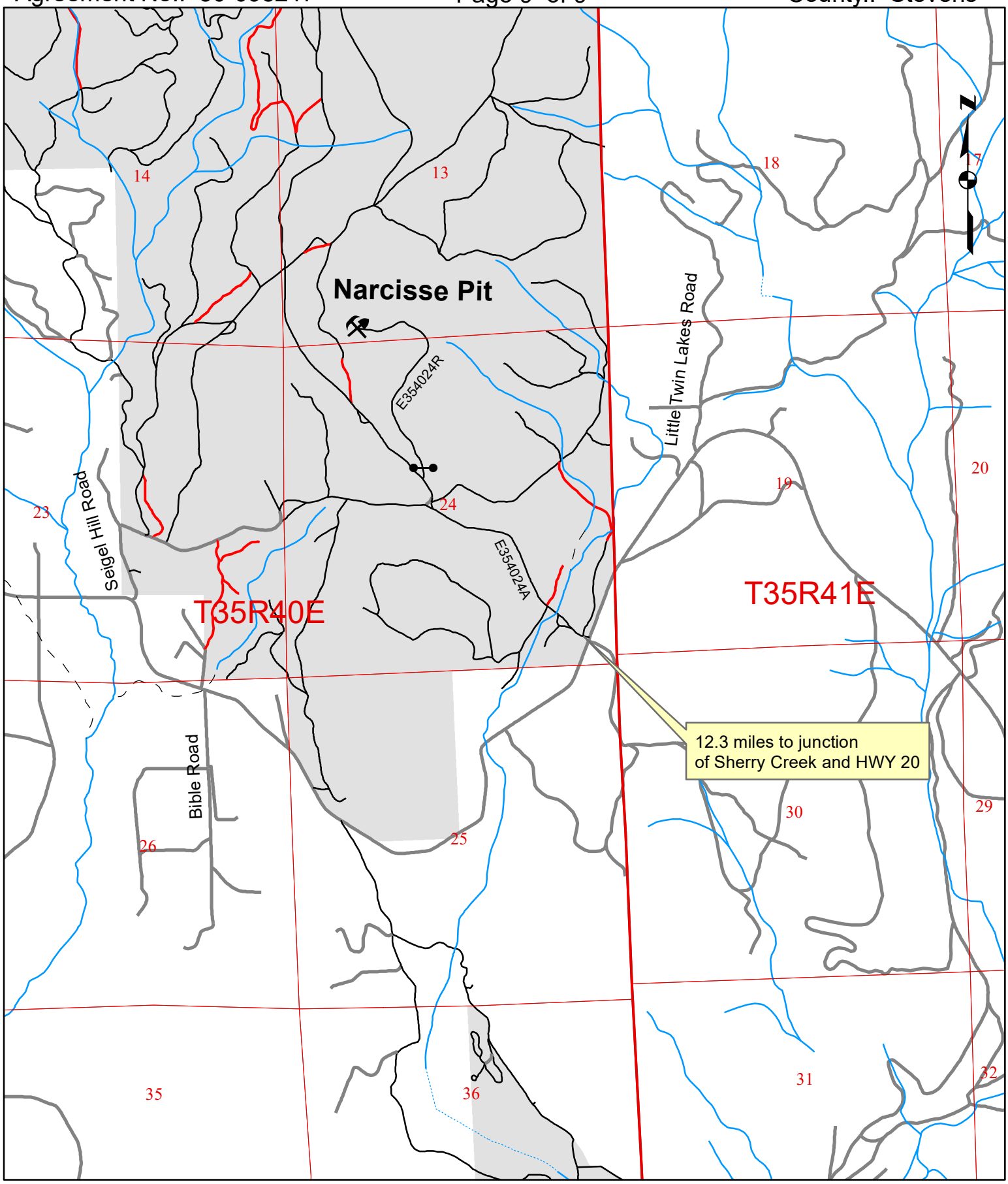
Road Plan Map

Region: Northeast
County.: Stevens



0 500 1,000 2,000 3,000 4,000 Feet

1 inch = 2,000 feet

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

SHERRY RIDGE TIMBER SALE ROAD PLAN
STEVENS COUNTY
NORTH COLUMBIA DISTRICT
NORTHEAST REGION

AGREEMENT NO.: 30-098217 STAFF ENGINEER: GENE GIBBS

DATE: 12/17/2018 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
E364219A	0+00 to 91+95	Prehaul Maintenance
E364229G	0+00 to 22+26	Prehaul Maintenance
E364229E	0+00 to 64+24	Prehaul Maintenance
E364229E	64+24 to 97+79	Reconstruction
E364229G2	0+00 to 36+20	Prehaul Maintenance
E364228F	0+00 to 40+40	New Construction
E364228G	0+00 to 18+10	New Construction
E364229F	0+00 to 74+00	Prehaul Maintenance
E364221B	0+00 to 13+50	Prehaul Maintenance
E364221F	0+00 to 43+75	New Construction

0-4 CONSTRUCTION

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

Road	Stations	Requirements
E364228F	0+00 to 40+40	Construct road in accordance to typical section, culvert and drainage

		sheet and rock list. Install culverts as shown in the culvert and drainage sheet at stations 0+30 and 15+00. Both crossings are non fish live water crossings, install culverts using best management practices.
E364228G	0+00 to 18+10	Construct road in accordance to typical section, culvert and drainage sheet and rock list. Install culverts as shown in the culvert and drainage sheet at stations 3+60 and 5+15. Both crossings are non fish live water crossings, install culverts using best management practices.
E364221F	0+00 to 43+75	Construct road in accordance to typical section, culvert and drainage sheet and rock list. Install culverts as shown in the culvert and drainage sheet and the attached Fish Passage design at station 3+45. This crossing is fish bearing, install culvert using best management practices and in compliance with design specifications and the associated FPA.

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
E364229E	64+24 to 97+79	Reconstuct road in accordance to typical section, culvert and drainage sheet and rock list. Brush road in accordance to Brushing Detail. No sidecast will be permitted. No sidecast permitted, no excavation or

		grubbing permitted on downhill side of road.

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
E364219A	0+00 to 48+20	Reshape road to provide drainage as needed.
E364219A	48+20 to 91+95	Reshape road to provide drainage as needed. Light spot brushing required, brush in accordance to brushing detail.
E364229G	0+00 to 22+26	Reshape road to provide drainage as needed. Light spot brushing required, brush in accordance to brushing detail.
E364229E	0+00 to 64+24	Reshape road to provide drainage as needed. Spot brushing required, brush in accordance to brushing detail.
E364229G2	0+00 to 36+20	Reshape road to provide drainage as needed. Brushing required, brush in accordance to brushing detail.
E364229F	0+00 to 74+00	Reshape road to provide drainage as needed.
E364221B	0+00 to 13+50	Reshape road to provide drainage as needed.

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 MAINTENANCE9-5 .

0-12 DEVELOP ROCK SOURCE

Purchaser may develop an existing rock source. Rock source development will involve drilling, shooting and crushing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STRUCTURES

Purchaser shall provide and install the culvert and materials for a stream simulation fish passage structure on the E364221F station 3+45. Requirements for these structures are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

Stream Simulation Design data is available upon request for the culvert installation on the E364221F station 3+45 at the Department of Natural Resources Northeast Region Office in Colville, WA.

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

1-15 ROAD MARKING

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

- Orange flagging for construction centerline.
- Reconstruction marked on orange ribbon and/or pink tags.

1-16 CONSTRUCTION STAKES SET BY STATE

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

Road	Stations
E364221F	3+45

1-17 CONSTRUCTION STAKES SET BY PURCHASER

Purchaser shall set construction stakes and reference points in accordance with the CONSTRUCTION STAKING SPECIFICATIONS and this road plan. The placement of the construction stakes is subject to the approval of the Contract Administrator. Purchaser shall perform work on the roads in accordance with these construction stakes. Purchaser shall leave the reference points intact after completion of construction.

Road	Stations	Comment
E364221F	3+45	Construction staking for fish pipe installation will include excavation limits, culvert inlet/outlet, edges of culvert, edges of trench bottom, stream diversion, sump location

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 14 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.

November 15 to May 31

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 3 inches on jaw run roads.
- Wheel track rutting exceeds 3 inches on crushed rock roads.
- Wheel track rutting exceeds 6 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

1-32 BRIDGE OR ASPHALT SURFACE RESTRICTION

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

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

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact Administrator upon request.

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

1-43 ROAD WORK AROUND UTILITIES

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser's responsibility to identify any utilities not listed. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including "call before you dig", and liabilities associated with the utilities and their rights-of-way.

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 before timber haul or rock application. 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 than2 inches DBH or over 5 feet high between the marked right-of-way boundaries and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

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

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

3-10 GRUBBING

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

3-12 STUMP PLACEMENT

Purchaser shall place grubbed stumpsoutside of the clearing limits as directed by the Contract Administrator and in compliance with all other clauses in this road plan.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland On road subgrades, or excavation and embankment slopes.
- On slopes greater than 35%.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-31 PILING

Purchaser shall pile organic debris no closer than 20 feet from standing timber and no higher than 10 feet. Debris piles must be burnable, clean, tight, and free of rock and soil. 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. No piling within the Riparian Management Zone (RMZ).

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

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

4-2 PIONEERING

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

- Drainage must be provided on all uncompleted construction.
- Road pioneering operations may not undercut the final cut slope or restrict drainage.
- Culverts at live stream crossings must be installed during pioneering operations 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 14 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:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

- 2 feet for embankment heights at centerline of 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.

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, 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 45% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

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

Road	Waste Area Location	Comments	Volume
E364229E 97+79	SE ¼ of Section 28 Township 36 Range 42		2000
E364229E 59+24	SW ¼ of Section 28 Township 36 Range 42		2000
E364221B 13+50	SE ¼ of Section 21 Township 36 Range 42		2000

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.
- Within a wetland management zone.
- On side slopes steeper than 35%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

4-45 SELECT BORROW

Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume. Select borrow material must be free of rocks greater than 4 inches in any dimension.

4-48 NATIVE MATERIAL

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

4-55 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

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

4-60 FILL COMPACTION

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

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

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 geotextile fabric. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered with a minimum of 12 inches of compacted substrate Purchaser shall apply substrate 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	Type
E364228G	0+00 to 6+50	woven
E364221F	2+95 to 3+95	woven

Purchaser will provide 4 rolls of the above geotextile, any unused geotextile will become the property of the state and delivered to the Northeast culvert yard at 225 South Silke Rd, Colville Washington.

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.

5-12 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 and District Engineer 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

All 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

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts that specify the placement of rock. Energy dissipater installation is subject to approval by the Contract Administrator.

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. Placement must be with a zero-drop-height only. 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 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 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.

5-30 DRIVABLE WATERBAR CONSTRUCTION

Purchaser shall construct drivable waterbars in accordance with the DRIVABLE WATERBAR DETAIL. Drivable waterbars must be installed concurrently with construction of the subgrade and must be maintained in an operable condition. Purchaser shall install drivable waterbars using a crawler tractor. Use of any other equipment is not allowed without written approval from the Contract Administrator.

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 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 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCKLIST may be created and obtained from the following source(s) on state land at no charge to the Purchaser. 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
Bedrock	NW ¼ of section 16 township 36 range 42	Granite
Stockpile	SW ¼ of section 13 township 35 range 40	1 ¼” minus crushed

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Purchaser may or may not remove rock from the below identified stockpile.

Source	Location	Rock Type	Comments
Stockpile	Gillette Pit	4” Jaw Run	This stockpile is not available for use with this timber sale.
Stockpile	Narcisse Pit	1 ¼” minus crushed	This stockpile is available for the 120 Cubic Yards for spot patching on the E364219A only.

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.

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

Purchaser shall conduct rock source development and use at the following sources, in accordance with a written ROCK SOURCE DEVELOPMENT AND RECLAMATION PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT AND RECLAMATION PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 5 business days before starting any operations in the rock source.

Source	Rock Type	Quantity
Gillette Pit Granite Bedrock	4” Minus Rock	10,300 Cubic Yards

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

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.
- Rock source reclamation plan describing how the area will be left in a condition that will ensure public safety and minimize environmental impacts.

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.
- 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.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale shall not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments larger than three feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount shall be reduced and stockpiled.
- Oversized rock will be reduced to a maximum size of 5 feet in the longest dimension.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 3 working days before any drilling.

- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads and trails before blasting operations.

6-20 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- Purchaser shall provide an onsite weatherproof field laboratory equipped with all necessary testing equipment (oven, sieves, sieve shaker, and scales) for conducting sieve testing of the required aggregate that is being produced. This laboratory must be available for use by the Contract Administrator during the entire crushing operation.
- The crushing operation must be concluded within 30 working days from the time it begins.
- All testing and operations must be performed in accordance with the attached ROCK CRUSHING COMPLIANCE PROCEDURE.
- Purchaser shall produce sieve analysis meeting the specifications for 4-INCH MINUS ROCK crushing operations every at 500, 1000, 2500, 4000, 5500, 7000 and 9000 yards.
- Purchaser may use a commercial testing lab to produce sieve analyses.

6-22 FRACTURE REQUIREMENT FOR ROCK

A minimum of 50% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

6-23 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.

6-26 5/8-INCH MINUS CRUSHED ROCK

% Passing 5/8” square sieve	100%
% Passing 3/8” square sieve	55 - 75%
% Passing U.S. #4 sieve	40 - 60%

Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

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

6-28 1 ¼-INCH MINUS CRUSHED ROCK

% Passing 1 ¼" square sieve	100%
% Passing 5/8" square sieve	55 - 75%
% Passing U.S. #4 sieve	20 - 50%

Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

6-36 4-INCH MINUS ROCK

% Passing 4" square sieve	100%
% Passing 2" square sieve	55 - 75%
% Passing U.S. #4 sieve	15 - 45%

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

6-48 2 ½-FOOT MINUS ENGINEERED STREAMBED MATERIAL

% Passing 30" square sieve	80 - 95%
% Passing 12" square sieve	70 - 85%
% Passing 5" square sieve	40 - 60%
% Passing 1" square sieve	15 - 35%
% Passing U.S. #4 sieve	5 - 20%
% Passing U.S. #200 sieve	8% 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.

6-50 LIGHT LOOSE RIP RAP

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

Quanity	Weight Range	Size Range
20% to 90%	500 lbs. to 1 ton	18"- 28"
15% to 80%	50 lbs. to 500 lbs.	12"- 30"
10% to 20%	50 lbs. max	3"- 8"

6-51 HEAVY LOOSE RIP RAP

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

Quanity	Weight Range	Size Range
30% to 90%	1 ton to 3 ton	28”- 54”
30% to 70%	500 lbs. to 1 ton	18”- 28”
20% to 50%	50 lbs.to 500 lbs.	8”- 18”
10% to 20%	50 lbs. max	3”- 8”

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-58 ROCK MEASUREMENT BY SCALE

Measurement of the 4-INCH MINUS ROCK rock will be accomplished with certified belt scales provided by the Purchaser.

6-59 WEIGHT PER CUBIC YARD MEASUREMENT

At the start of operations, a weight per cubic yard will be calculated as follows:

a) Measure the box of a truck to be used for rock haul.
b) Weigh the truck for tare weight at a state certified platform scale.
c) Flatten off a load of rock in the truck and calculate its exact volume in cubic yards.
d) Weigh the truck for gross weight at a state certified platform scale.
e) Divide the net weight of the load by the volume calculated in step c.

Calculated conversion factors will be valid for no more than 30 days or until rock density or moisture changes significantly, as determined by the Contract Administrator.

6-60 BELT SCALE

Belt scales must meet the following specifications:

a) All belt conveyor scales must comply with the specifications for belt conveyor scales in *Section S – Specifications* of the National Institute of Standards and Technology (NIST) Handbook No. 44 (2012).
b) To test the accuracy of the belt scale, a minimum of two loaded haul trucks must be weighed on a certified platform scale. This weight of the trucks must be compared with the belt scales weight. The compared weight may not vary more than 0.5%. Purchaser shall check the scales accuracy using this method at the start of operations, and after every 3,000 cubic yards crosses the belt or when directed by the Contract Administrator.
c) Under observation of the Contract Administrator, Purchaser shall run daily zero load tests upon request in accordance with the National Institute of Standards and Technology (NIST) Handbook No. 44 (2012).

d) The weighing mechanism must contain a weight totalizer and a self-printing ticket imprinter. The totalizer calibration adjustment and ticket imprinter must be furnished with a hasp to accept a state padlock. A ticket for each truck must be made and delivered to the Contract Administrator upon request.

6-65 ROCK STOCKPILE LOCATION

Purchaser shall stockpile rock as listed below. at the Gillette Pit. Clause 6-67 ROCK STOCKPILE SPECIFICATIONS.

Rock Source	Rock Type	Quantity (c.y.)	Stockpile Location
Granite Bedrock	4" Minus Rock	2500	Gillette Pit NW ¼ Section 16 Township 36 Range 42

6-67 ROCK STOCKPILE SPECIFICATIONS

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

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

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

No equipment other than pneumatic tired equipment may be used on stockpiles. Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

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.

6-76 DRY WEATHER ROCK COMPACTION

The Contract Administrator may require the application of water to facilitate compaction of the rock surfacing. The method of water application is subject to approval by the Contract Administrator.

6-80 WATERING FOR DUST ABATEMENT

Purchaser may use water for dust abatement on the following roads.

Road	Stations
E364219A	0+00 to 39+40

6-81 CHEMICAL TREATMENT FOR DUST ABATEMENT

Purchaser may treat the following roads with Lignin Sulfonate**,** or Magnesium Chloride for dust abatement. No other chemical may be used for dust abatement. The Lignin Sulfonate or Magnesium Chloride may not be used for any other purposes.

Road	Stations
E364219A	0+00 to 39+40

6-82 CHEMICAL RESTRICTION

Purchaser shall not allow chemicals used for dust abatement to enter any streams.

6-83 LIGNIN SULFONATE APPLICATION RATE

The “as supplied” liquid Lignin Sulfonate must be diluted with an adequate amount of water to obtain a 25% solids content for application. Purchaser shall apply Lignin Sulfonate to the surface at a rate not less than 0.5 gallons per square yard (approximately 77.8 gallons per station).

6-84 MAGNESIUM CHLORIDE APPLICATION RATE

Purchaser shall apply Magnesium Chloride to the surface at a rate not less than 0.5 gallons per square yard (approximately 77.8 gallons per station).

6-85 CHEMICAL DUST ABATEMENT EQUIPMENT

Application equipment used to spread dust abatement chemicals must be capable of uniform application. A tanker truck with a “slash pan” or “plate” is not acceptable. Field dilution must be accomplished within the application vehicle.

6-86 TIMING FOR CHEMICAL APPLICATION

Purchaser shall obtain prior written approval from the Contract Administrator for the timing of application for dust abatement chemicals. It is intended that dust abatement chemicals be applied during the summer season.

SECTION 7 – STRUCTURES

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures(s) must be removed to a waste site approved by the contract administrator. 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. Debris entering any stream must be removed immediately, and placed in the site(s) designated for stockpiling or disposal.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

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

7-17 STRUCTURE ACCEPTANCE

The Region Engineer or designee will inspect the structure upon delivery. Acceptance will be issued if the structure meets all specifications and certifications. Structures that are not accepted may not be installed.

7-18 INSTALLATION PRODUCTION SCHEDULE

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

- construction staking
- dewatering
- excavation
- structure placement
- streambed placement
- backfilling/compaction
- stream release
- road rocking

7-19 INSTALLATION STAGE ACCEPTANCE

The Purchaser shall be responsible for ensuring that all materials and procedures used during construction comply with the design. Each phase of construction, according to the production schedule listed in Clause 7-18 INSTALLATION PRODUCTION SCHEDULE, shall be approved in writing by the Contract Administrator, or their designee, before starting construction on the next phase.

The Purchaser shall notify the Contract Administrator in writing when each construction stage is complete. Construction shall not progress to the next phase before written approval by the Contract Administrator.

7-20 INSTALLATION FINAL ACCEPTANCE

Purchaser shall notify the Contract Administrator in writing when each structure is complete. Before final acceptance of the structure installation**.**

7-55 LARGE CULVERT INSTALLATION

Purchaser shall provide and install large culverts in accordance with the Plan and Profile Design Details.

Road	E364221F
Station	3+45
Type	Corrugated Round
Material and Coating Type*	Steel Galvanized
Span	108 in.
Rise	108 in.
Length	56.0 ft.
Depth of Cover	Per Design
Corrugations	3-in x 1-in.
Gauge	10 (0.138 in.)

* See Clause 10-15 CORRUGATED STEEL CULVERT for culvert specifications.

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 2 ½-FOOT MINUS ENGINEERED STREAMBED MATERIAL rock inside the following culvert(s) as specified in the attached design.

Road	Stations
E364221F	3+45

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	Comment
E364229E	0+40	Lock gate open during periods of hauling.
E364229G	0+60	Lock gate open during periods of hauling.

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 within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil within 50 feet of a stream or wetland at a rate of 40 pounds per acre of exposed soil. Grass seed must meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:

a. Common name of seed
b. Net weight
c. Percent of purity
d. Percentage of germination
e. Percentage of weed seed and inert material

5. Seed must conform to the following mixture unless a comparable mix is approved in writing by the Contract Administrator.

Kind and Variety of Seed in Mixture	% by Weight	Minimum % pure seed	Minimum % germination
Aslike Clover	50		
Smooth Broom	25		
Hard Fescue	25		
Inert and Other Crop	0.5		

SECTION 9 – POST-HAUL ROAD WORK

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

Culvert material removed from roads becomes the property of the Purchaser and must be removed from state land.

9-5 POST-HAUL MAINTENANCE

Purchaser shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS on all roads used for rock and log hauling activities including roads listed below.

Road	Stations	Comments
E364229F	74+00 to 154+40	This section of road will be used to access the Gillette pit for rock hauling activities. 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.

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

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).

10-16 CORRUGATED ALUMINUM CULVERT

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

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 GAUGE 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	Gauge	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"	12 (0.109")	3" X 1"

10-30 LIGNIN SULFONATE MATERIALS

Lignin Sulfonate is the chemical residue produced as a by-product of the acid sulfite pulping process, and supplied as a water solution. The base solution may be ammonia, calcium, or sodium and must be water soluble to allow field dilution. Percent solids must be 50% as supplied. When requested by the Contract Administrator, certification must be provided that shows:

- Solids determination has been made in accordance with the modified Technical Association of the Pulp and Paper Industry Standard T629-M53 or by a specific gravity/percent solids verses temperature graph that correlates with the standard.
- The P_h of the delivered material is a 4.5 minimum as determined by AASHTO-T200.

10-31 MAGNESIUM CHLORIDE MATERIALS

Magnesium Chloride is the chemical residue produced as a by-product of the potash production or natural salt brine, and supplied as a water solution. Percent solids must be 28% magnesium by mass, as supplied.

SECTION 11 SPECIAL NOTES

11 RECREATION TRAIL AND ROAD INTERSECTIONS

On the following roads, Purchaser shall construct dirt ramps on the recreation trails to allow for a smooth transition between the rectreation trail and road surface.

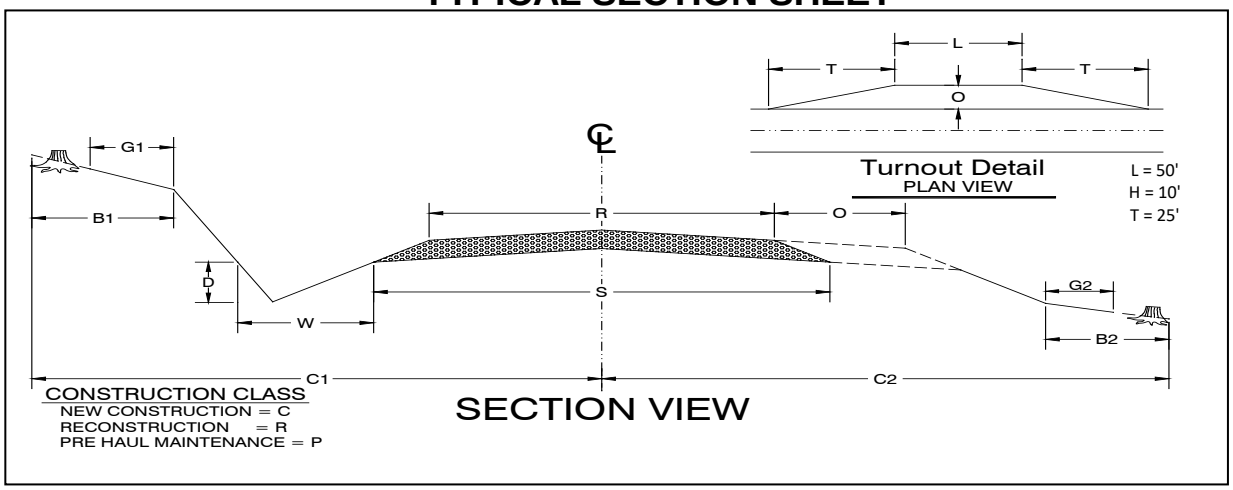
Road	Stations
E364221F	2+65-7+50

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-098217 **Name of Sale: Sherry Ridge**

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)
E364219A	0+00	91+95	P		C	14	12	subgrade shape varies intermittant ditches											
E364229G	0+00	22+26	P		C	14	12	subgrade shape varies intermittant ditches											
E364229E	0+00	64+24	P		C	14	12	subgrade shape varies intermittant ditches											
E364229E	64+24	97+79	R		C	14	12		4					2		4			
E364229G2	0+00	36+20	P		C	14	12	subgrade shape varies intermittant ditches											
E364228F	0+00	40+40	C		C	14	12		4					4	4	6	6		
E364228G	0+00	18+10	C		C	14	12		4					4	4	6	6		
E364229F	0+00	74+00	P		C	14	12	subgrade shape varies intermittant ditches											
E364221B	0+00	13+50	P		C	14	12	subgrade shape varies intermittant ditches											
E364221F	0+00	43+75	C		C	14	12		4					4	4	6	6		

DATE: 2/19/2019 *Optional Page One of One DRAWN BY: RK

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-098217 **Name of Sale: Sherry Ridge** **Date: 1/14/19/2018**

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				
E364228F	0+30	24	14	30	46			5	5					
	6+05	18	16		36									
	13+90	18	16		30			10		X				ditch 50' upslope
	15+00	24	14		30			5	5					
	16+00	18	16		28			5						
	18+60	18	16		30			5						
	19+85	18	16		28			5						
	33+20	18	16		28			5						
E364228G	3+60	36	14		32			10	5					16' running surface
	5+15	24	14		34			5	10					16' running surface
E364221F	3+45	108	10		56									
	25+15	18	16		48			5	5					
2 additional		18	16		32									
2 additional		18	16		40									

STRUCTURE NOTES

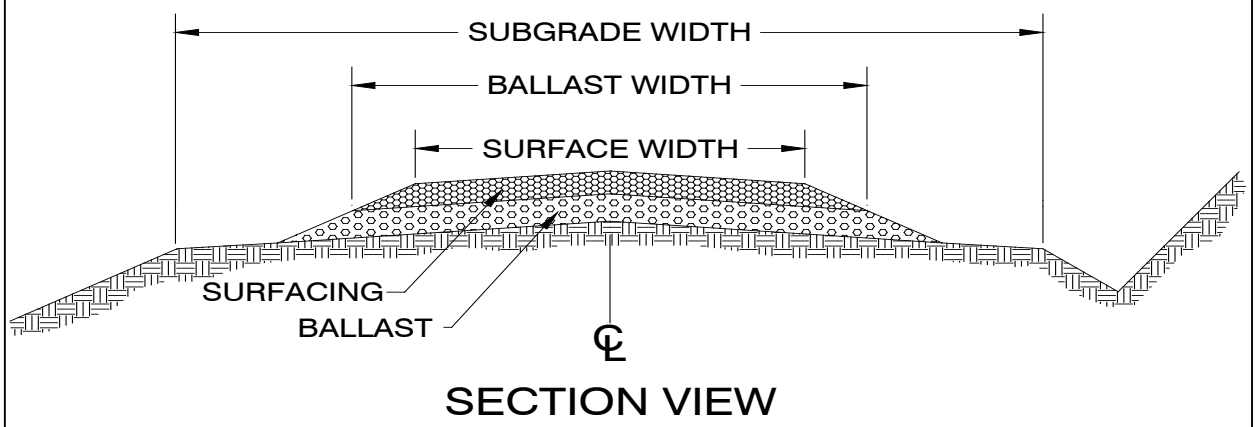
1. Install Headwall - See Detail D1
2. Install Catchbasin - See Detail D1
3. Armor Catchbasin - See Detail D1
4. Armor Ditch
5. Heavy Loose RipRap
6. Light Loose RipRap
7. Step Bevel Pipe Ends
8. Remove Existing Pipe
9. See Rolling Dip Detail D5
10. See Pipe Installation Detail D1
11. Install Energy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

STATE OF WASHINGTON

DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-098217 **Name of Sale: Sherry Ridge**

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)
E364229E	48+45	97+79	14						12	9	46	
E364228F	0+00	40+40	14						12	9	46	
E364228G	0+00	6+50	14						12	12	63	14
E364221F	0+00	6+75	14						12	12	63	
60 CY Rip Rap at station 3+45 on the E364221F												
100 CY 2 ½-FOOT MINUS ENGINEERED STREAMBED MATERIAL at station 3+45 on the E364221F												
E364221F	11+35	12+85	14						12	9	46	
E364221F	19+95	32+55	14						12	9	46	
E364229G2	0+00	36+20	14						12	9	46	
100 CY Rip Rap to armor culverts as specified on the culvert and drainage sheet												
120 CY of 1 1/4" crushed rock for spot patching on the E364219A as directed by the contract administrator												
20 CY of 5/8" crushed rock to be placed at the approaches to the bridges at stations 22+50 and 28+54												
Additional 500 CY of 4" minus rock to be placed as directed by the contract administrator												
stockpile additional 2500 CY of 4" minus rock not to be used without written permission from the												
contract administrator												

DATE:1/14/2019

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

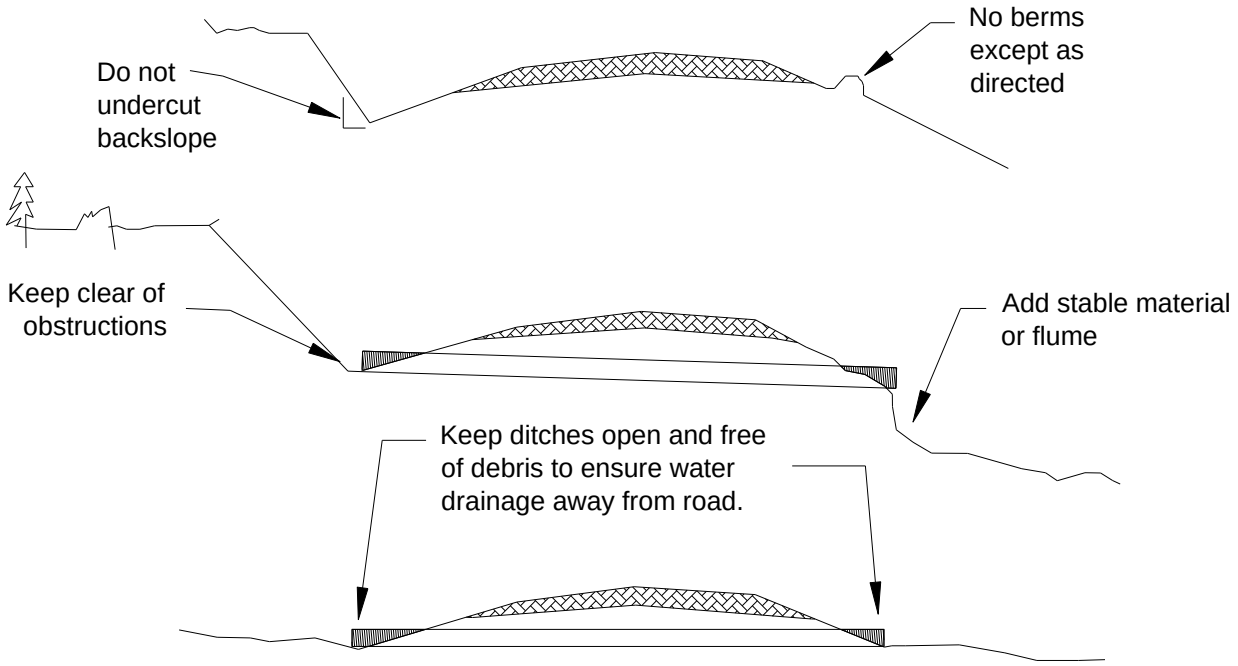
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

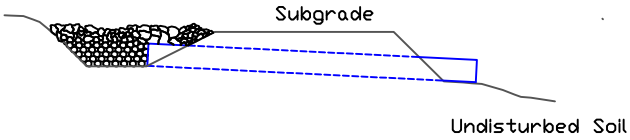
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

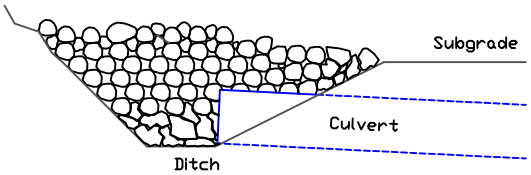
- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.



CULVERT AND DRAINAGE SPECIFICATIONS DETAIL - D1



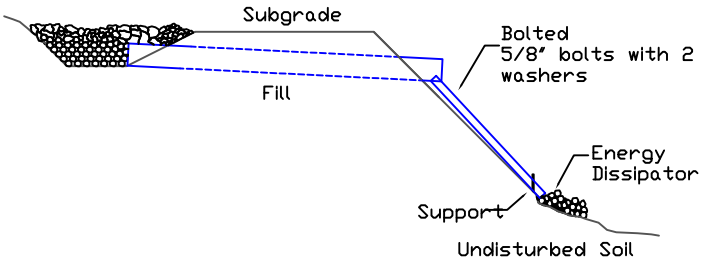
HEADWALLS



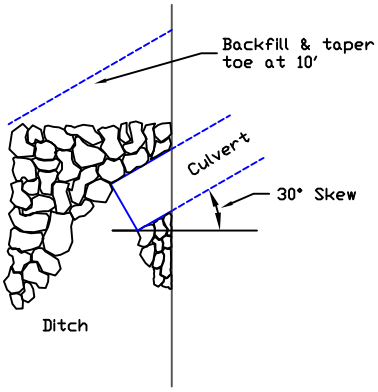
Headwall to be constructed of material that will resist erosion

FLUME

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

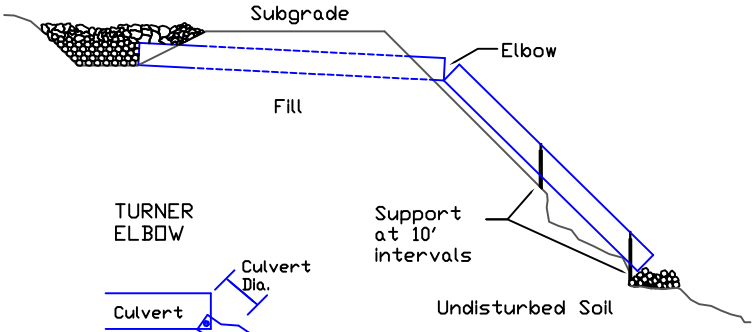


PLAN VIEW

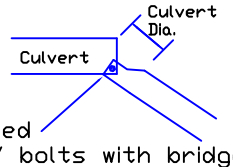


DOWNSPOUT

Use where ground conditions are irregular.



TURNER ELBOW



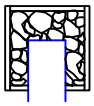
Bolted 5/8" bolts with bridge washers on both sides

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

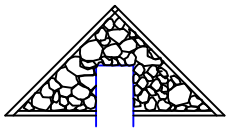
Minimum Cover	Minimum Bed Depth	Min. Trench Width	Nominal Diameter
A	B	C	D
12"	6"	36"	18"
12"	6"	42"	24"
12"	6"	48"	30"
12"	6"	54"	36"

DISSIPATOR SPEC'S
Size in Culvert Diameters

Area	2 X 2
Depth	1
Aggragate	1/3



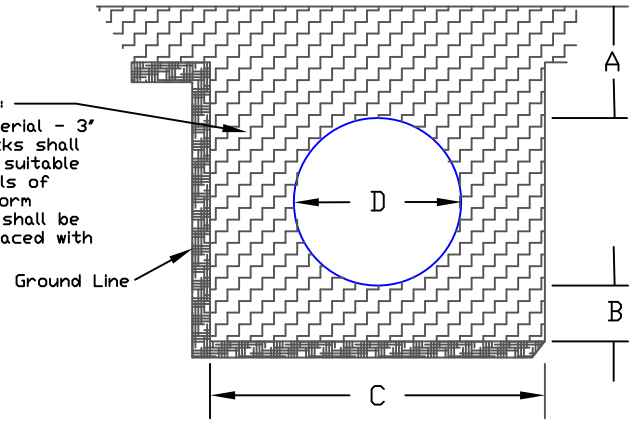
Level



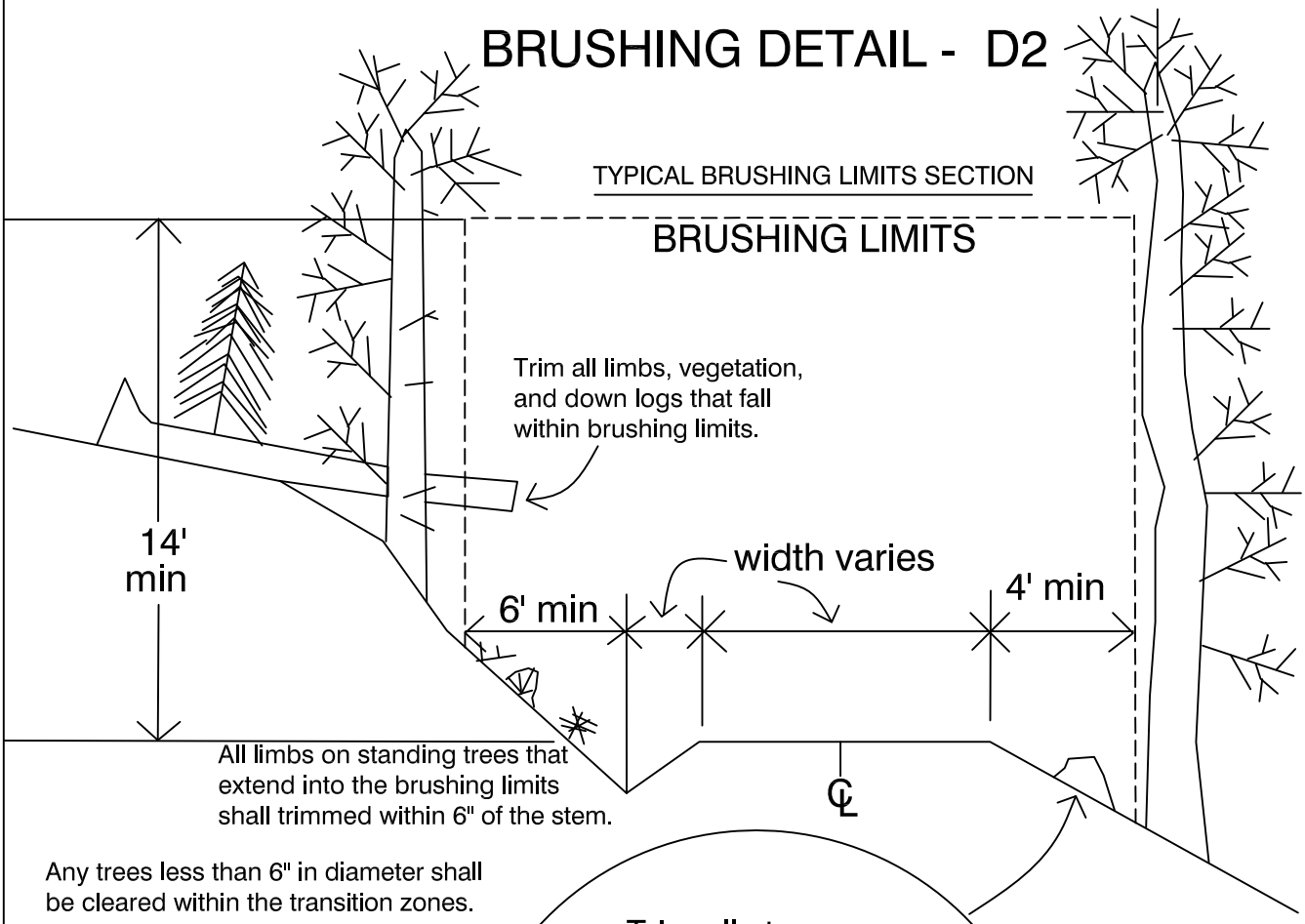
Side Hill

ROAD SURFACE

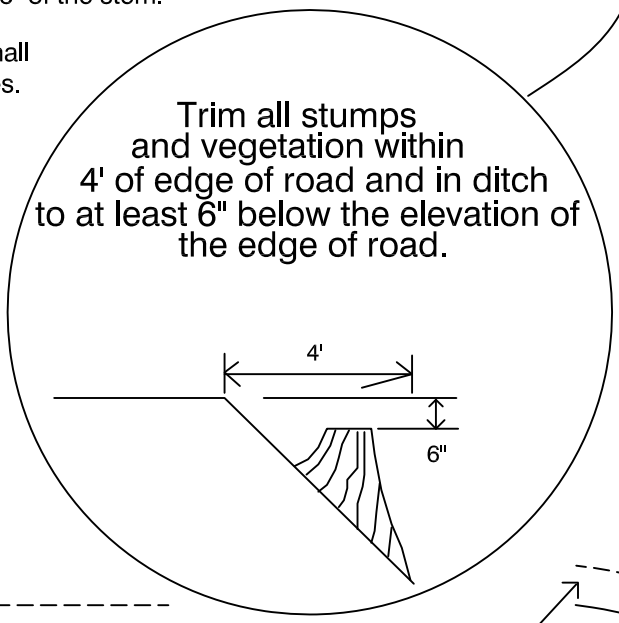
BEDDING MATERIAL:
Use granular material - 3" minus. Large rocks shall be replaced with suitable material. Materials of poor or non-uniform bearing capacity shall be removed and replaced with suitable fill.

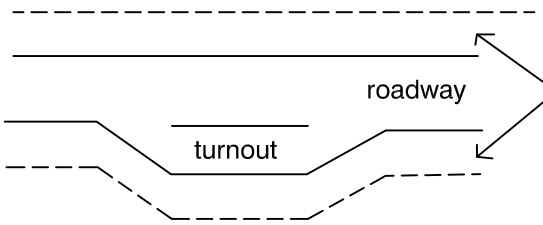


BRUSHING DETAIL - D2



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

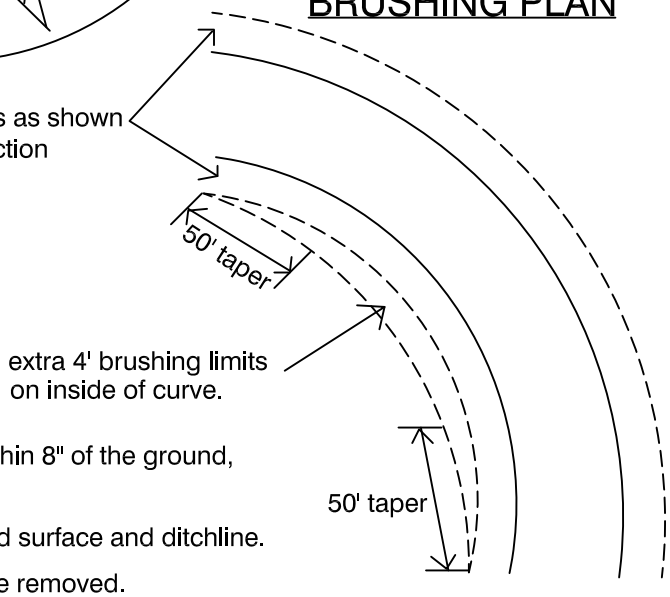




TURNOUT BRUSHING PLAN

Brushing limits as shown on Typical Section

CURVE BRUSHING PLAN

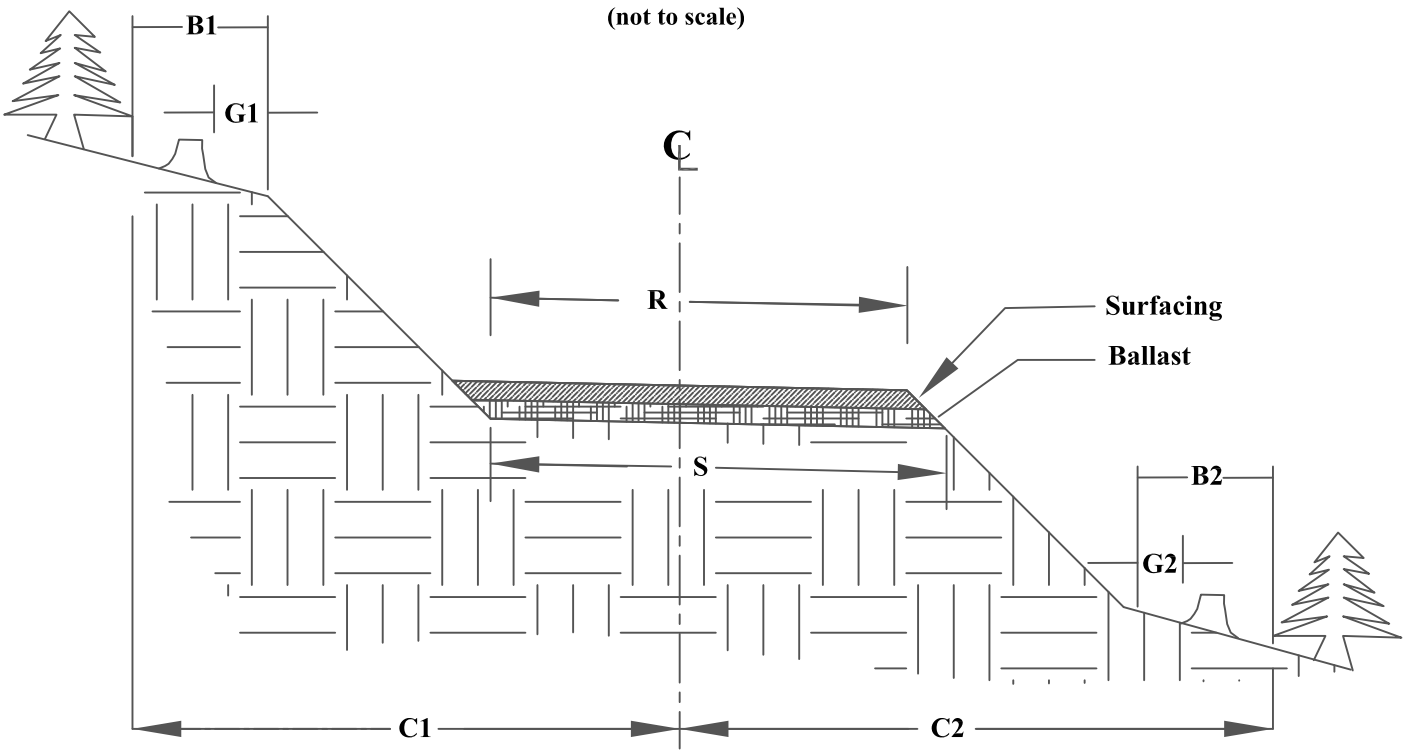


1. All vegetation within the brushing limits shall be cut to within 8" of the ground, unless otherwise directed by the contract administrator.
2. All brush, trees, limbs, etc. shall be removed from the road surface and ditchline.
3. All debris that may roll or migrate into the ditchline shall be removed.

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

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.

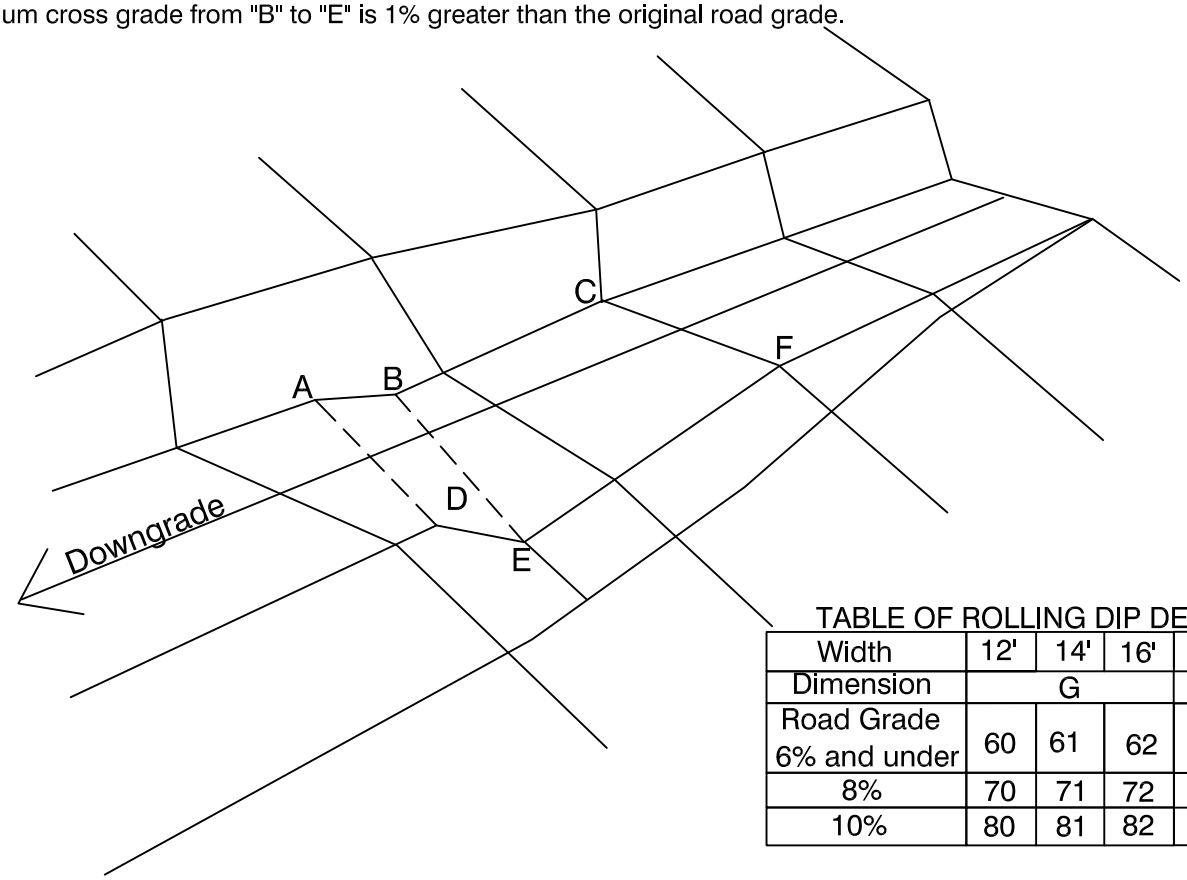
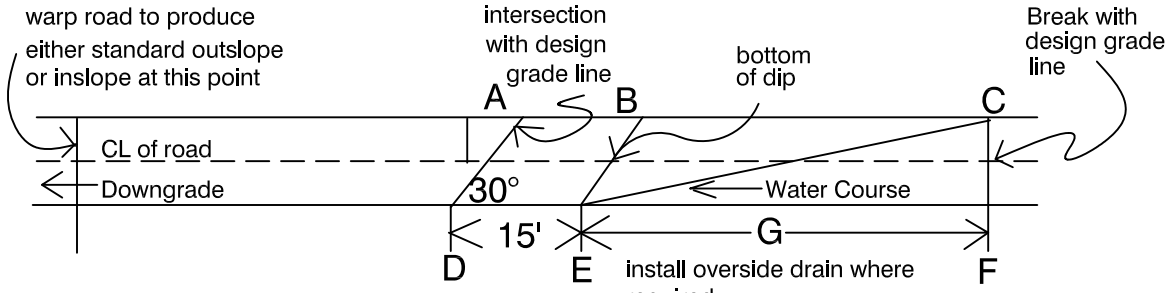
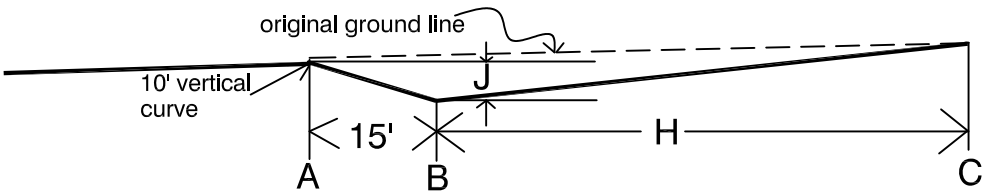


TABLE OF ROLLING DIP DEMENSIONS

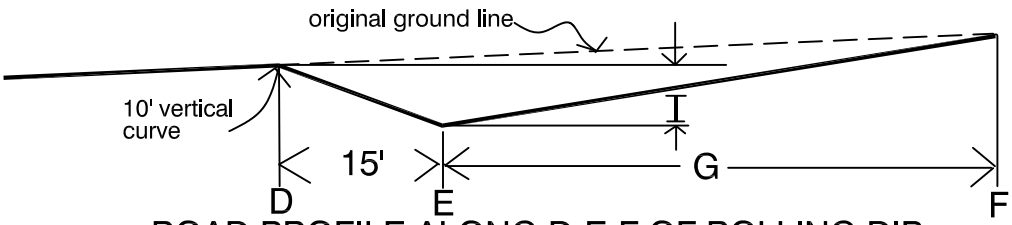
Width	12'	14'	16'	ALL		
Dimension	G			H	I	J
Road Grade 6% and under	60	61	62	52	.8	0.3
8%	70	71	72	62	1.0	0.2
10%	80	81	82	72	1.1	0.1



PLAN OF ROLLING DIP



ROAD PROFILE ALONG A-B-C OF ROLLING DIP

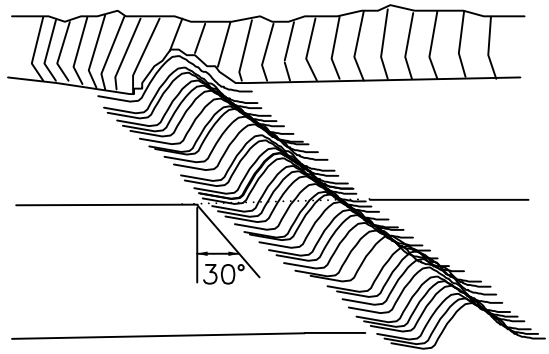


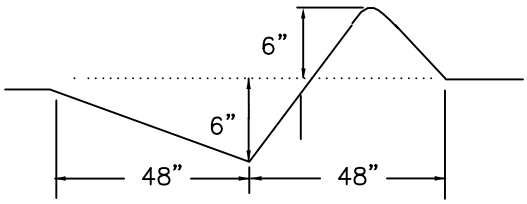
ROAD PROFILE ALONG D-E-F OF ROLLING DIP

Drawn by: GP

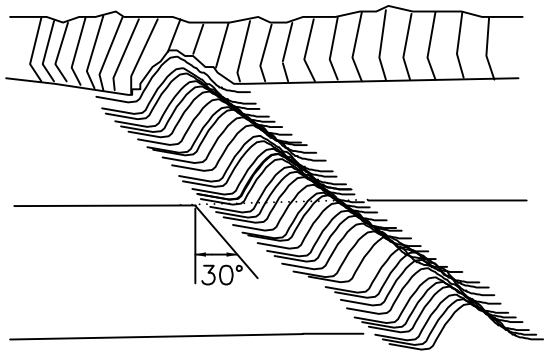
WATERBAR DETAIL–D6

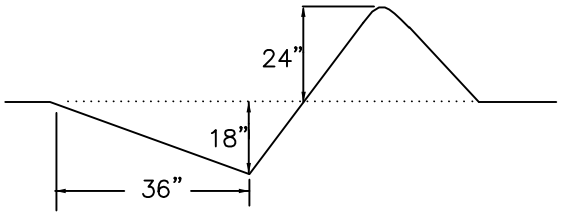
DRIVABLE WATERBAR





NON DRIVABLE WATERBAR



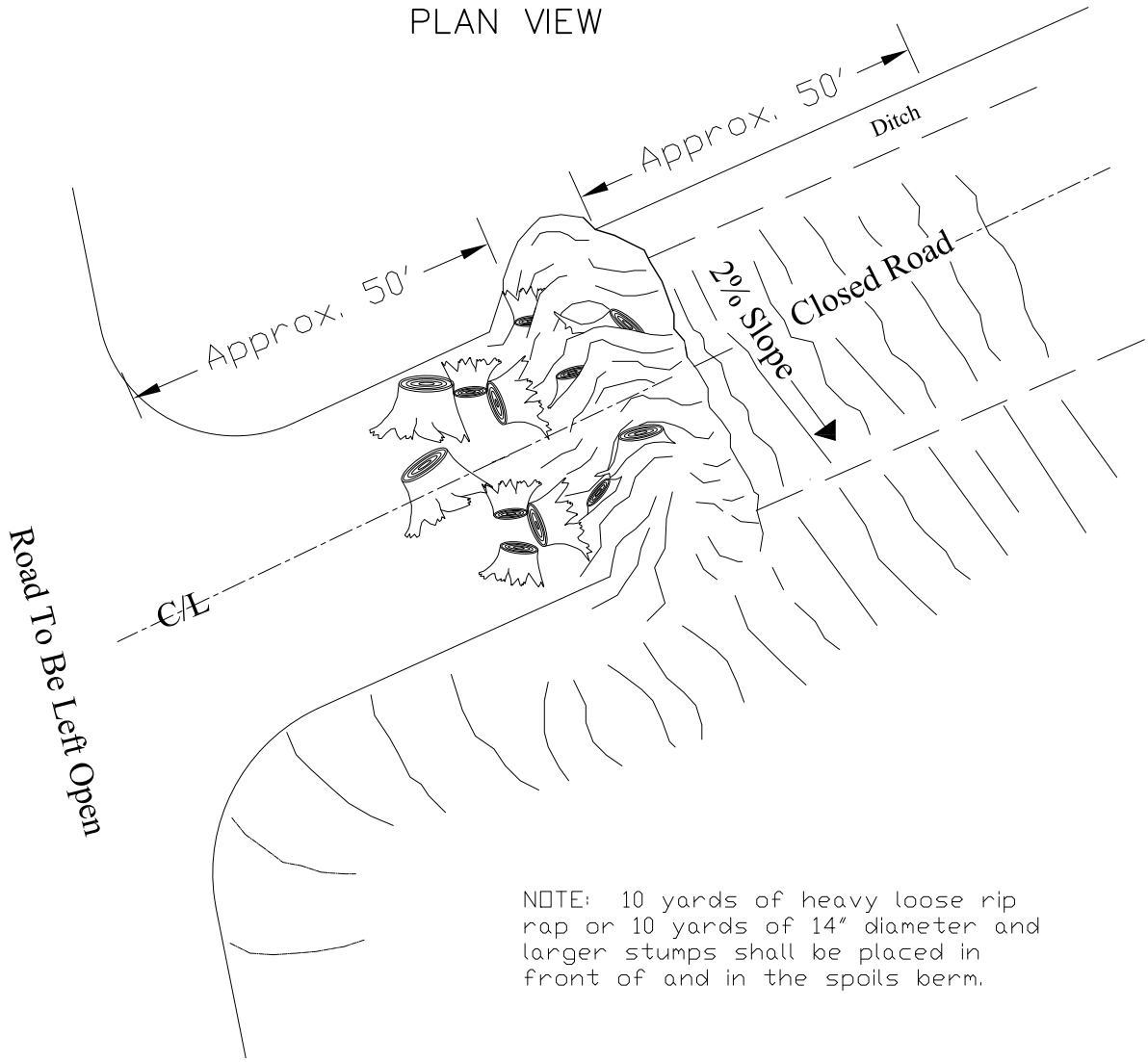


1. Waterbar construction for forest roads Specifications are average and may be adjusted to conditions.
2. Waterbar shall keyed into the bank.
3. The waterbar shall be outsloped for proper drainage.
4. Rock outlet if fill slope is present.

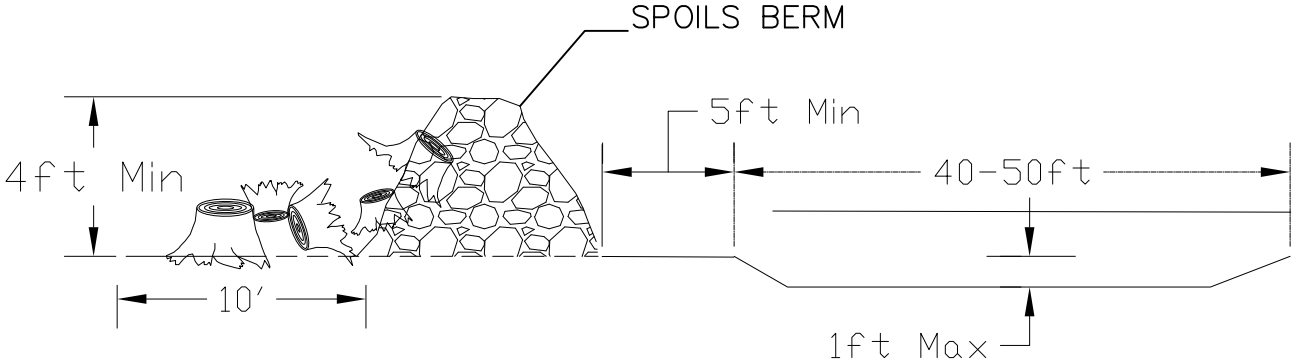
Revised: 05/21/2012

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

Phase I. Equipment Adjustment

Step 1: At start up of crushing operations, the contractor will notify the contract administrator when the rock meets the gradation specifications in the contract. None of the rock crushed during this calibration period will be counted toward the amount required to be crushed, and this rock must be kept separate from accepted rock crushed later.

Step 2: The Purchaser shall produce sieve analysis will test the rock. Two samples will be taken. If the rock meets specifications, crushing may begin. If the rock does not meet specifications, return to Step 1.

Phase II. Production

Step 3: The contract administrator will continue periodic testing to ensure that rock stays in spec. Testing will take place according to the following schedule:

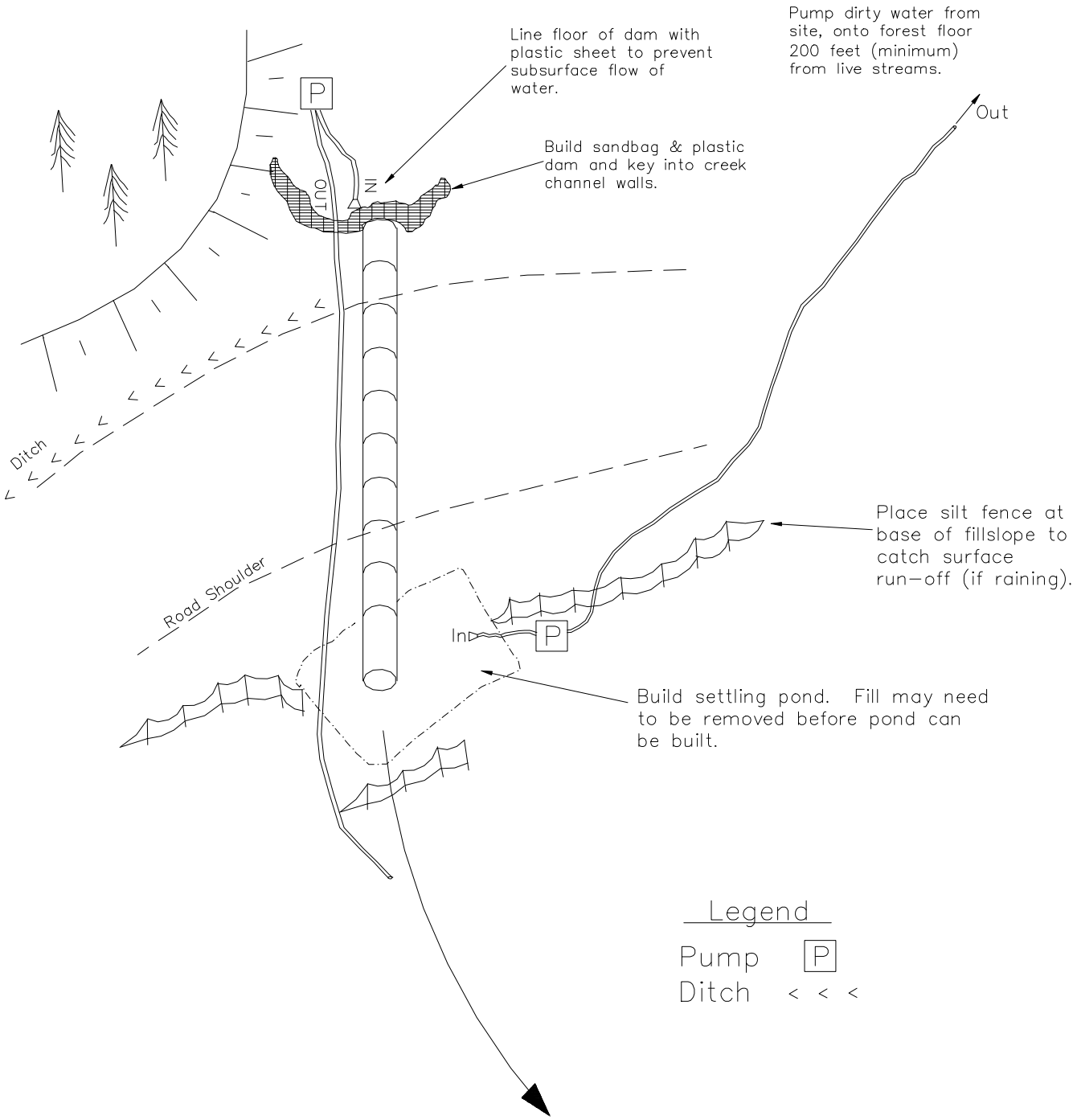
- After the first 500 yards
- After the first 1,000 yards
- After every 1,500 yards thereafter.

a) Any time a sample is out of spec, but is within 5%*, the contractor will be notified and a second sample will be taken later in the day. If the second sample meets specifications, the rock crushed during that day will be accepted. If the second sample also fails to meet spec, none of the rock crushed since the last acceptable test will be counted toward the amount to be crushed.

b) Any time a sample is out of spec and is more than 5% off in any category, none of the rock crushed since the last acceptable test will be accepted and that rock must be kept separate from the stockpile. Return to Step 1.

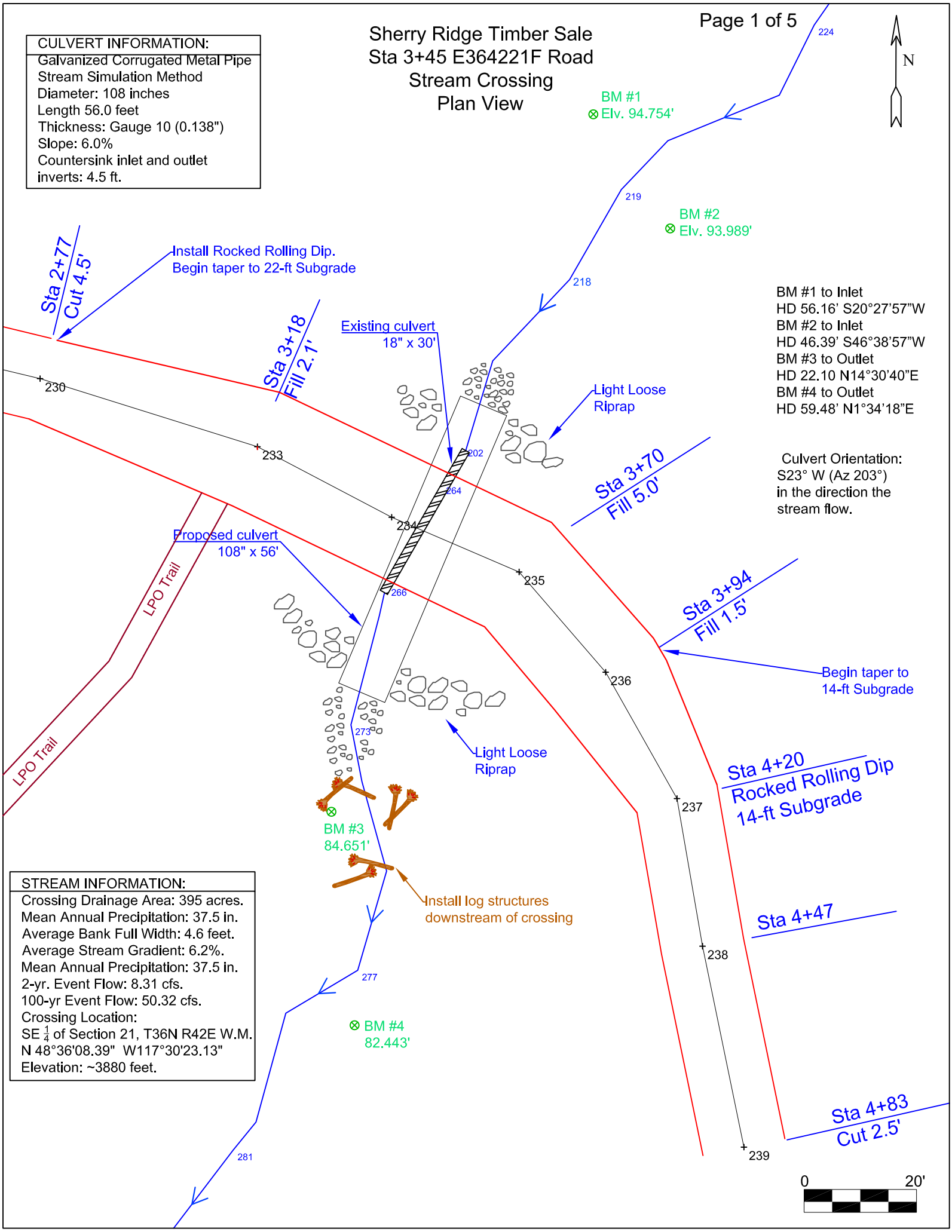
c) Contractors are strongly encouraged to take their own samples regularly and keep their operations in spec to avoid unnecessary expenses.

SETTLING POND AND PUMP DETAIL



Sherry Ridge Timber Sale
Sta 3+45 E364221F Road
Stream Crossing
Plan View

CULVERT INFORMATION:
Galvanized Corrugated Metal Pipe
Stream Simulation Method
Diameter: 108 inches
Length 56.0 feet
Thickness: Gauge 10 (0.138")
Slope: 6.0%
Countersink inlet and outlet inverts: 4.5 ft.



BM #1 to Inlet
HD 56.16' S20°27'57"W
BM #2 to Inlet
HD 46.39' S46°38'57"W
BM #3 to Outlet
HD 22.10 N14°30'40"E
BM #4 to Outlet
HD 59.48' N1°34'18"E

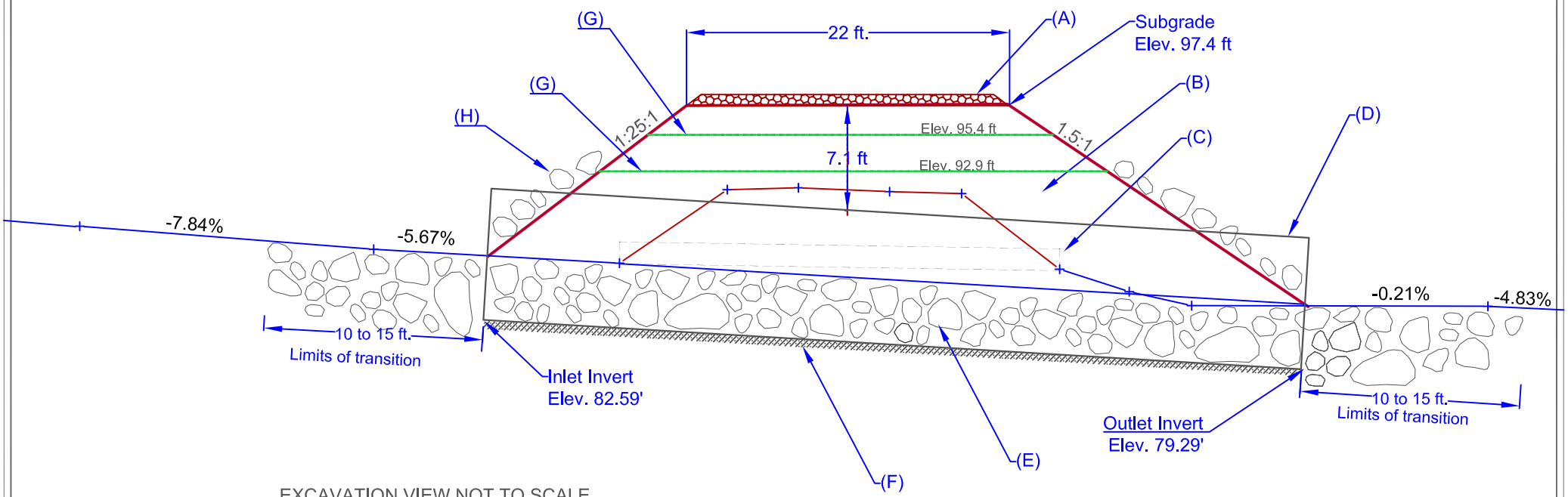
Culvert Orientation:
S23° W (Az 203°)
in the direction the
stream flow.

STREAM INFORMATION:
Crossing Drainage Area: 395 acres.
Mean Annual Precipitation: 37.5 in.
Average Bank Full Width: 4.6 feet.
Average Stream Gradient: 6.2%.
Mean Annual Precipitation: 37.5 in.
2-yr. Event Flow: 8.31 cfs.
100-yr Event Flow: 50.32 cfs.
Crossing Location:
SE $\frac{1}{4}$ of Section 21, T36N R42E W.M.
N 48°36'08.39" W117°30'23.13"
Elevation: ~3880 feet.

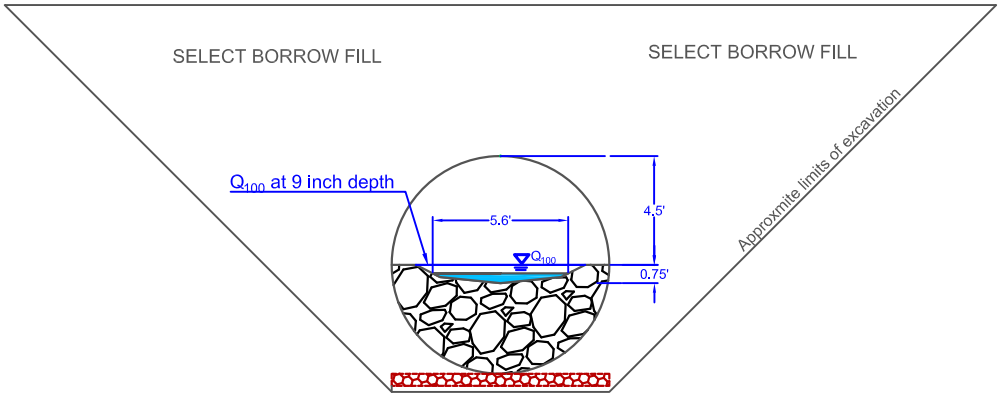
Sherry Ridge Timber Sale
Culvert Installation Detail
Sta 3+45 E364221F Rd
Channel Profile

(A) = 9-inch lift of 4-in minus surface rock
(B) = Select Borrow Fill Material
(C) = Existing 18-in x 30-ft cmp
(D) 108-in x 56-ft 10 gauge round CMP
(E) Engineered Streambed Material
(F) Culvert bedding material
(G) Geotextile reinforcement
(H) Light Loose Riprap Armoring

CULVERT INFORMATION:
Galvanized Corrugated Metal Pipe
Stream Simulation Method
Diameter: 108 inches
Length 56.0 feet
Thickness: Gauge 10 (0.138")
Slope: 6.0%
Countersink inlet and outlet inverts: 4.5 ft.



EXCAVATION VIEW NOT TO SCALE



STREAM INFORMATION:
Crossing Drainage Area: 395 acres.
Mean Annual Precipitation: 37.5 in.
Average Bank Full Width: 4.6 feet.
Average Stream Gradient: 6.2%.
Mean Annual Precipitation: 37.5 in.
2-yr. Event Flow: 8.31 cfs.
100-yr Event Flow: 50.32 cfs.
Crossing Location:
SE $\frac{1}{4}$ of Section 21, T36N R42E W.M.
N 48°36'08.39" W117°30'23.13"
Elevation: ~3880 feet.

0 10'

Sherry Ridge Timber Sale
Culvert Installation Construction Notes

Streambed Rock:
Material for the reconstructed channel see Clause 6-47.
$2\frac{1}{2}$-Foot Minus Engineered Streambed Material

%Passing 30" Square Sieve	80-95%
%Passing 12" Square Sieve	70-85%
%Passing 5" Square Sieve	40-60%
%Passing U.S, #4 Sieve	5 -20%
%Passing U,S, #200 Sieve	5 -10%

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.

Additionally 1 to 2 larger boulders between 18 to 30 inches shall be placed every 10 to 12 feet of reconstructed streambed channel, to provide stability and enhance stream simulation.

Culvert Bedding Material:
Culvert gravel shall be well graded and shall consist of sound, durable particles of gravel, stone, sand and fines, free from sod, roots and organic material and shall meet the following gradation requirements:

%Passing $1\frac{1}{2}$" Square Sieve	100%

Material must be approved by the Contract Administrator.

Compaction of bedding material shall be compacted in lifts not to exceed 6 inches. Compaction shall be accomplished with a vibratory compactor. A minimum of three complete passes.

Backfill Material:
The backfill material shall be Select Borrow per Clause 4-45.
Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume. Select borrow material must be free of rocks greater than 4 inches in any dimension.
Material meeting gradations in Clause 6-36 4-Inch Minus Rock is also acceptable. Excavated material may be acceptable if it meets the specifications for Select Borrow, subject to written approval by the Contract Administrator.

Compaction of backfill material shall be compacted in lifts not to exceed 8 inches. Compaction shall be accomplished with a vibratory trench compactor with a minimum weight of 2,300 lbs. A minimum of four complete passes shall be made at a maximum operating speed of 3 mph resulting in zero deflection. Within two feet of the culvert, compaction shall be accomplished with a portable plate compactor or tamper. A minimum of four complete passes shall be made resulting in zero deflection.

Riprap:
Riprap for armoring must the specifications of Clause 6-50 Light Loose Rip Rap or Clause 6-51 Heavy Loose Rip Rap. Placement must be with a zero-drop-height only. 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. Placed riprap must be stable and must not move when walked on.

Geotextile:
Geotextile material shall be woven and meet the specifications of Clause 10-3 Geotextile for Stabilization. For reference see Clause 4-70 Subgrade Reinforcement.
Layer 1 at elevation 92.9 ft. to reinforce the fill over the culvert. The width will be about 35 feet (in the direction of the culvert), and length shall be a minimum of 25 feet in the traveled direction. Extending at least 12 feet each side of culvert centerline.

Layer 2 is 2.5 feet above Layer 1 at elevation 95.4 ft. The width will be about 27 feet (in the direction of the culvert), and length shall be a minimum of 25 feet in the traveled direction. Extending at least 12 feet each side of culvert centerline.

Layer 3 is at elevation 97.4 ft, the subgrade elevation. Two feet above layer 2. The width shall be the subgrade width about 22 feet, and length shall be a minimum of 100 feet in the traveled direction. Extending from Station 2+95 to Station 3+95. This lift shall be covered by 9-inch lift of compacted 4-inch minus rock.

E364221F New Construction
Station 0+00 Junction with E364229F Road Begin new construction.Subgrade width14 feet.

Station 1+26 No cut or fill, subgrade width14 feet.

Station 2+07 Cut 2.5 feet.subgrade width14 feet.

Station 2+77 Cut 4.5 feet. Install a Rocked Rolling Dip, begin the taper from subgrade width 14 feet to subgrade width 22 feet.

Station 3+18 Fill 2.1 feet. Subgrade is 22 feet.

Station 3+45 Stream Simulation Culvert Installation. Fill over culvert centerline 7.1 feet.

Station 3+70 Fill 5.0 feet. Subgrade wudth 22 feet, plus two feet for fill widening.

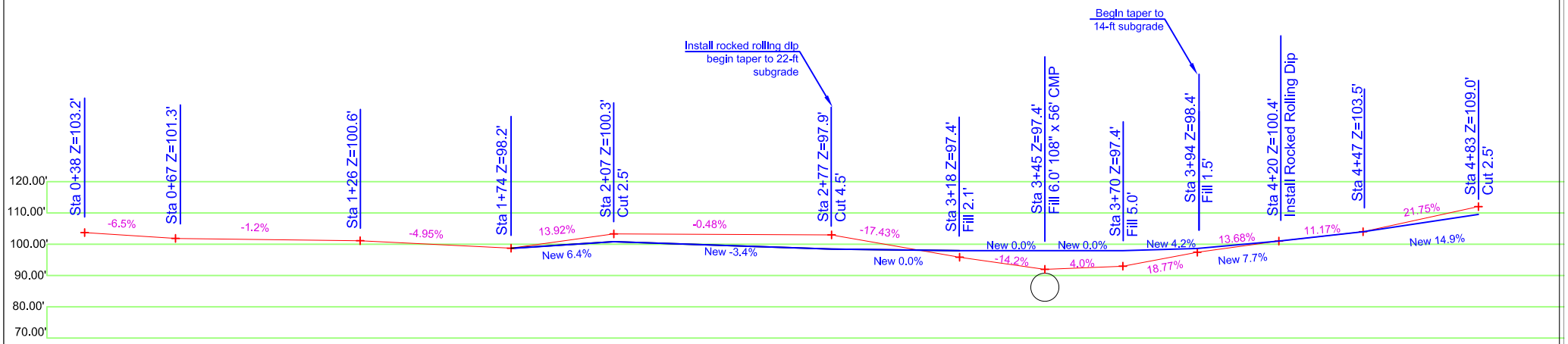
Station 3+94 Fill 1.5 feet. Subgrade width 22 feet. Begin taper to 14 foot subgrade.

Station 4+20 No cut/fill. Subgrade iwidth 14 feet. Install Rocked Rolling Dip.

Station 4+47 No cut/fill. Subgrade iwidth 14 feet.

Station 4+83 Cut 2.5 feet. Subgrade width 14 feet.

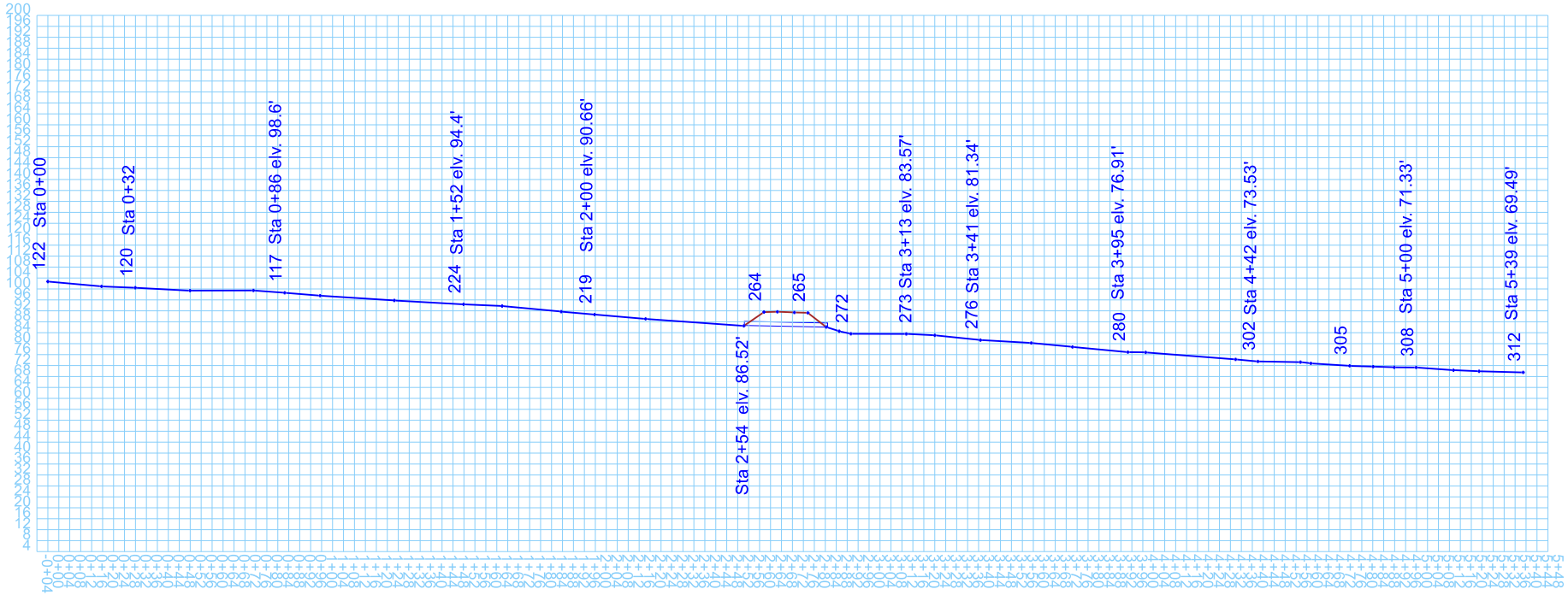
Sherry Ridge Timber Sale
Sta 3+45 E364221F Road
Stream Crossing
Road Profile View



Sherry Ridge Timber Sale
Type F Stream Crossing
Sta 3+45 E364221F Rd
Long Profile

Stream Information:
Crossing Drainage Area: 395 acres.
Mean Annual Preciptation: 37.5 in.
Average Bank Full Width: 4.6 Ft.
Average Stream Gradient: 6.2%
2-yr Event Flow (Q2) = 8.31 cfs.
100-yr Event low (Q100) = 50.32 cfs

0 60'



Pt.122 Sta 0+00 Elev. 102.721'
Pt. 312 Sta 5+39 Elev. 69.492'
(102.721' - 69.492')/ 538.956 =0.06165

Existing culvert 18 in. x 30 ft.
Pt 202 Sta 2+54 Invert Elev. 86.521'
Pt 266 Sta 2+84 Invert Elev. 86.104'

Stream Crossing Location:
SE 1/4 Section 21, T36N R42E W.M.
DNR Managed Land
N48° 36' 08.388" W117° 30' 23.132"
Approx. Elevation:3880 ft.

FILE NAME SherryRidge_TypeF1.TRV		
SCALE 60 Ft/In	DATE 12-14-2018	DRAWN BY Jim English
JOB Long Profile	REVISION 1/1	SHEET 1/1

This map drawn with TRAVERSE PC, Software

Sale Name Sherry Ridge SUMMARY - Road Development Costs

REGION: Northeast CONTRACT #: 30-098217 ENGINEER: Gene Gibbs

DISTRICT: North Columbia DATE: 3/19/2019

	Construction	*Reconstruction*	*Maintenance*	*Deactivation*	
ROAD NUMBERS:	E364228F, E36428G, E364221F	E364229E	E364219A, E364229G, E364229E, E364229G2, E364229F, E364221B		Additional Items Rock Production Includes 10,300 Cubic yards of 4" minus surface rock
ROAD STANDARD:	*Construction*	*Reconstruction*	*Maintenance*	*Deactivation*	*Additional Items*
NUMBER OF STATIONS:	***102.25***	***33.55***	***302.15***		
CLEARING & GRUBBING:	$3,062	$1,174			
EXCAVATION AND FILL:	$56,121	$2,516			
MISC. MAINTENANCE:	$971	$3,028	$10,246		
ROAD ROCK:	$32,346		$39,620		$108,400
ADDITIONAL ROCK:	$4,500				
CULVERTS AND FLUMES:	$30,302				$4,176
STRUCTURES/MATERIALS:					$1,800

TOTAL COSTS:	$127,302	$6,718	$49,866	$0	$114,376
COST PER STATION:	*$1,245*	*$200*	*$165*	*$0*	*$0*

	$/per move	# of moves	Total
MOBILIZATION:	$300	**4**	$1,200

TOTAL (All Roads) =	$299,462
SALE VOLUME mbf =	5,544
TOTAL $/MBF =	$54

Engineer's Notes: culvert includes a 9'x56' fish pipe additional 500 cubic yards of road rock to be placed as needed. 4 rolls of geotextile 2 additional 18x32 cross drains and 2 additional 18x40 cross drains.