



TIMBER NOTICE OF SALE

SALE NAME: Q HARVARD

AGREEMENT NO: 30-101630

AUCTION: July 25, 2023 starting at 10:00 a.m., Northeast Region Office, Colville, WA

COUNTY: Okanogan

SALE LOCATION: Sale located approximately 15 miles north of Republic, WA, and 9 miles north of Wauconda, WA.

PRODUCTS SOLD AND SALE AREA:

All green conifer species (excluding ponderosa pine) except for leave trees banded with purple paint in Units 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13 bounded by white timber sale boundary tags and all right of way timber bounded by orange right of way tags or marked with orange paint.

All forest products above located on part(s) of Sections 1, 2, 3, 12, 13, 22, 23 and 36 all in Township 38 North, Range 31 East, W.M., containing 515 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Table with columns: Species, Avg Ring DBH, Ring Count, Total MBF, Total Tons, Price \$/Ton, and MBF by Grade (P, SM, 1S, 2S, 3S, 4S, 5S, 6S, UT).

MINIMUM BID: \$9.3/ton (est. value \$240,000.00)

BID METHOD: Sealed Bids

PERFORMANCE SECURITY:

\$48,000.00

SALE TYPE: Tonnage Scale

EXPIRATION DATE: November 15, 2025

ALLOCATION: Export Restricted

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

BID DEPOSIT: \$24,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Dozer, Rubber tired skidder, Ground based equipment, and Cable-Assist. Falling and Yarding will not be permitted from March 15 to June 1 unless authorized in writing by the Contract Administrator due to spring break up.

ROADS: 201.75 stations of required construction. 620.03 stations of required prehaul maintenance. Road construction will not be permitted from March 15 to June 1 unless authorized in writing by the Contract Administrator due to spring break up. The hauling of forest products will not be permitted from March 15 to June 1 unless authorized in writing by the Contract Administrator due to spring break up.



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ACREAGE DETERMINATION

CRUISE METHOD: Acreage determined using GPS methods. Acreage shown above is net harvest acres in harvest units. All 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.

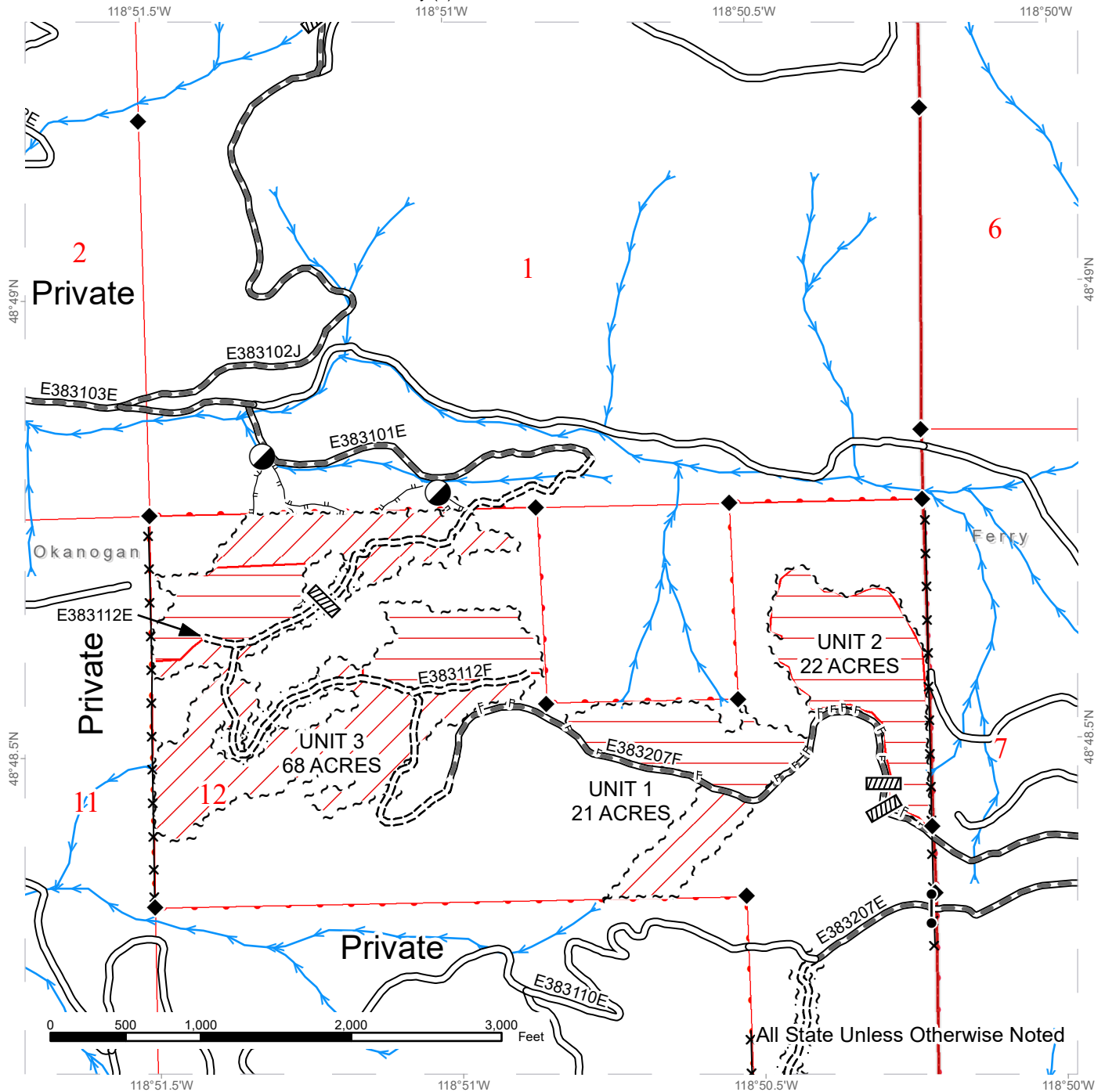
FEES: Within 10 days of day of sale, Purchaser shall provide payment for a road use permit in the amount of \$3,000.00 and 1 mbf of private right of way timber at the purchaser's bid price and payment for 16 mbf of private right of way timber at the purchaser's per mbf bid price. \$79,798.00 is due on day of sale. \$1.64 per ton is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: Locked gate restricts access to the sale area. Contact the Northeast Region Office at (509) 684-7474 for access. There is approximately 181 acres of recommended cable-assist harvesting.

TIMBER SALE MAP

SALE NAME: Q HARVARD
AGREEMENT #: 30-101630
TOWNSHIP(S): T38R31E
TRUST(S): Common School and Indemnity (3)

REGION: Northeast Region
COUNTY(S): Okanogan
ELEVATION RGE: 3320-5000



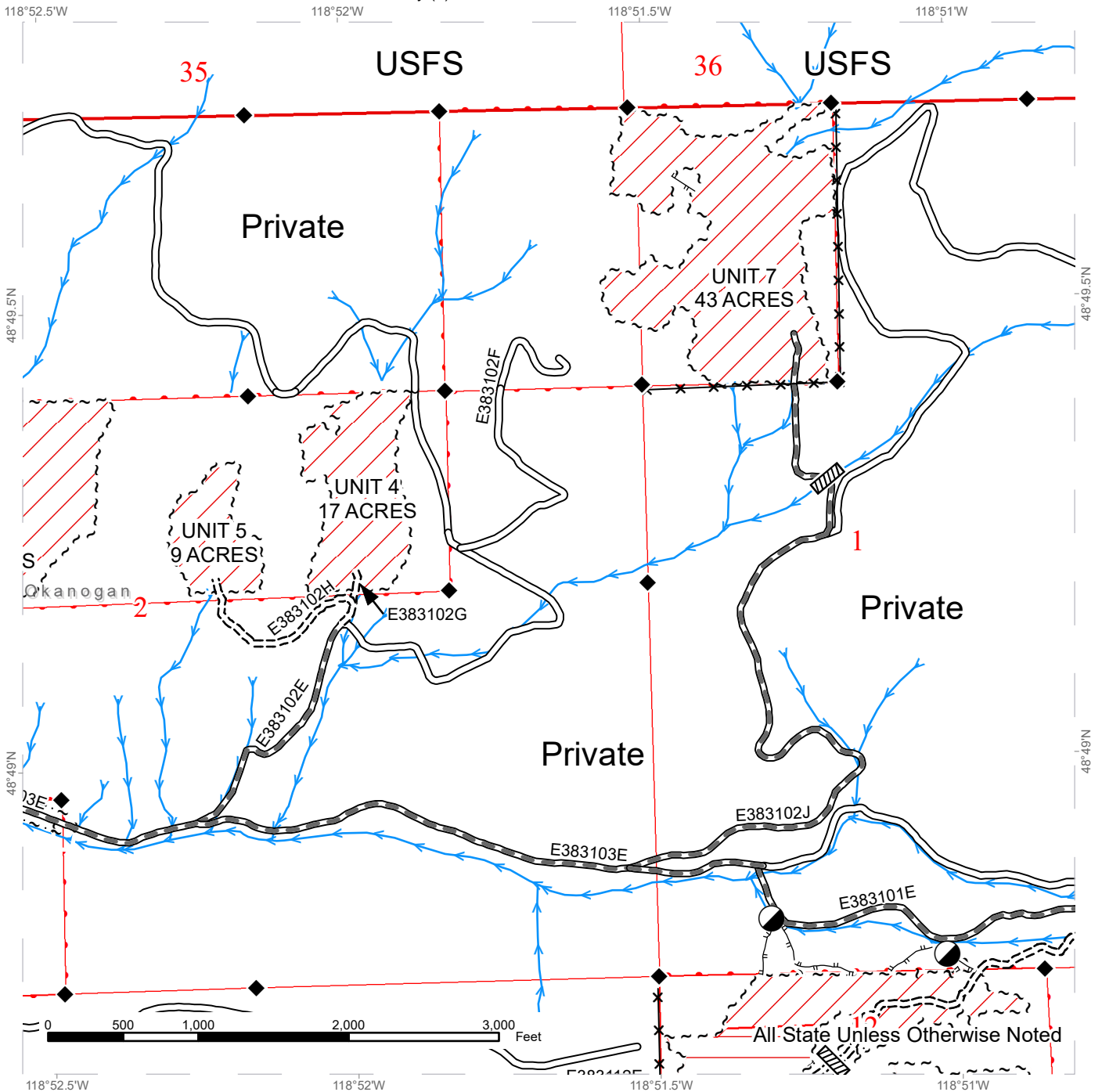
	Public Land Survey Sections		Existing Roads		Streams
	DNR Managed Lands		Required Pre-Haul Maintenance		Fence
	Ground Harvest		Required Construction		Survey Monument
	Recommended Cable-Assist		Designated Skid Trail		Culvert
	Sale Boundary Tags				Designated Landing
	Right of Way Tags = 1 Acre				Gate



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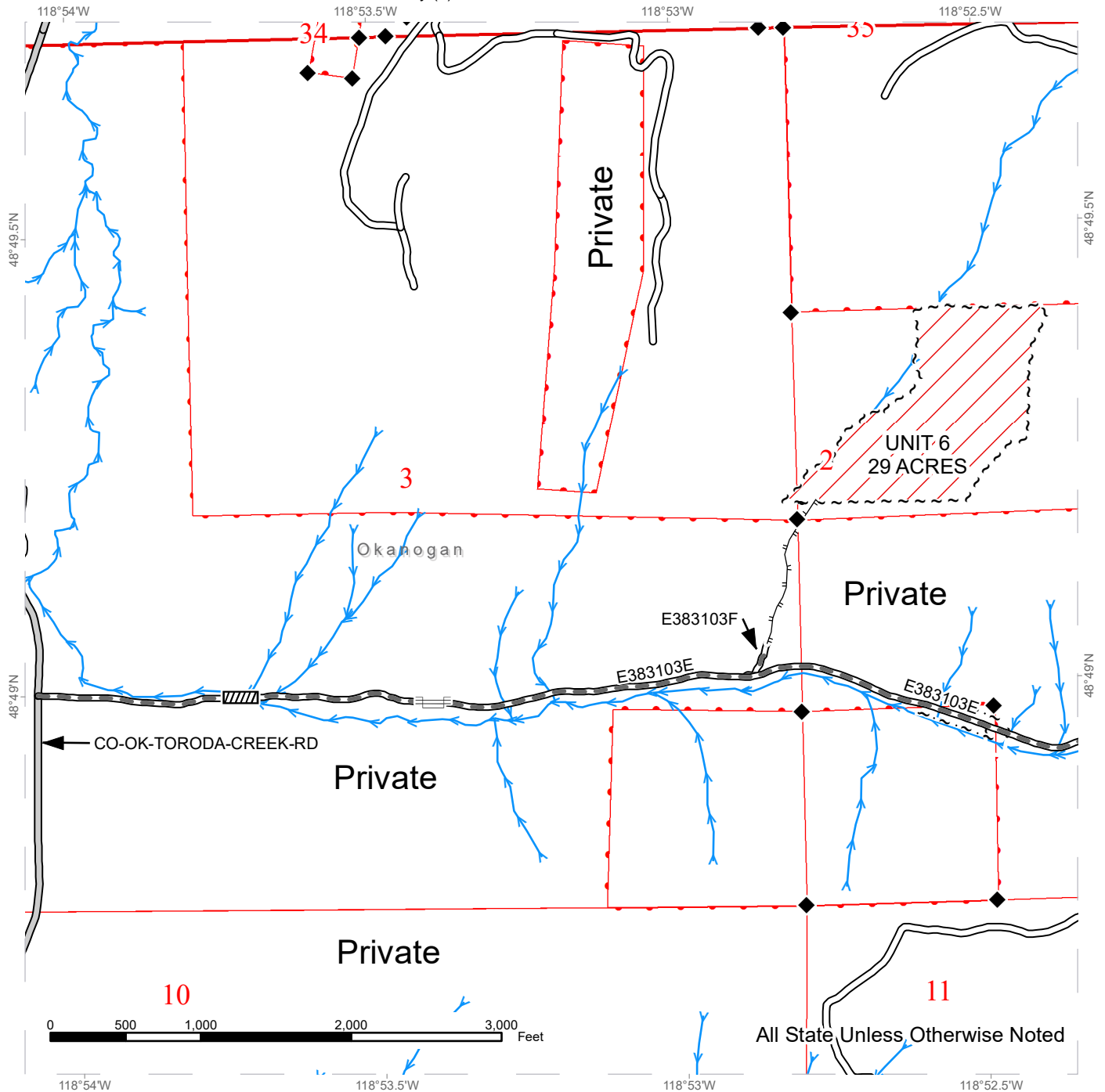
	Public Land Survey Sections		Existing Roads		Streams
	DNR Managed Lands		Required Pre-Haul Maintenance		Fence
	Ground Harvest		Required Construction		Survey Monument
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All State Unless Otherwise Noted

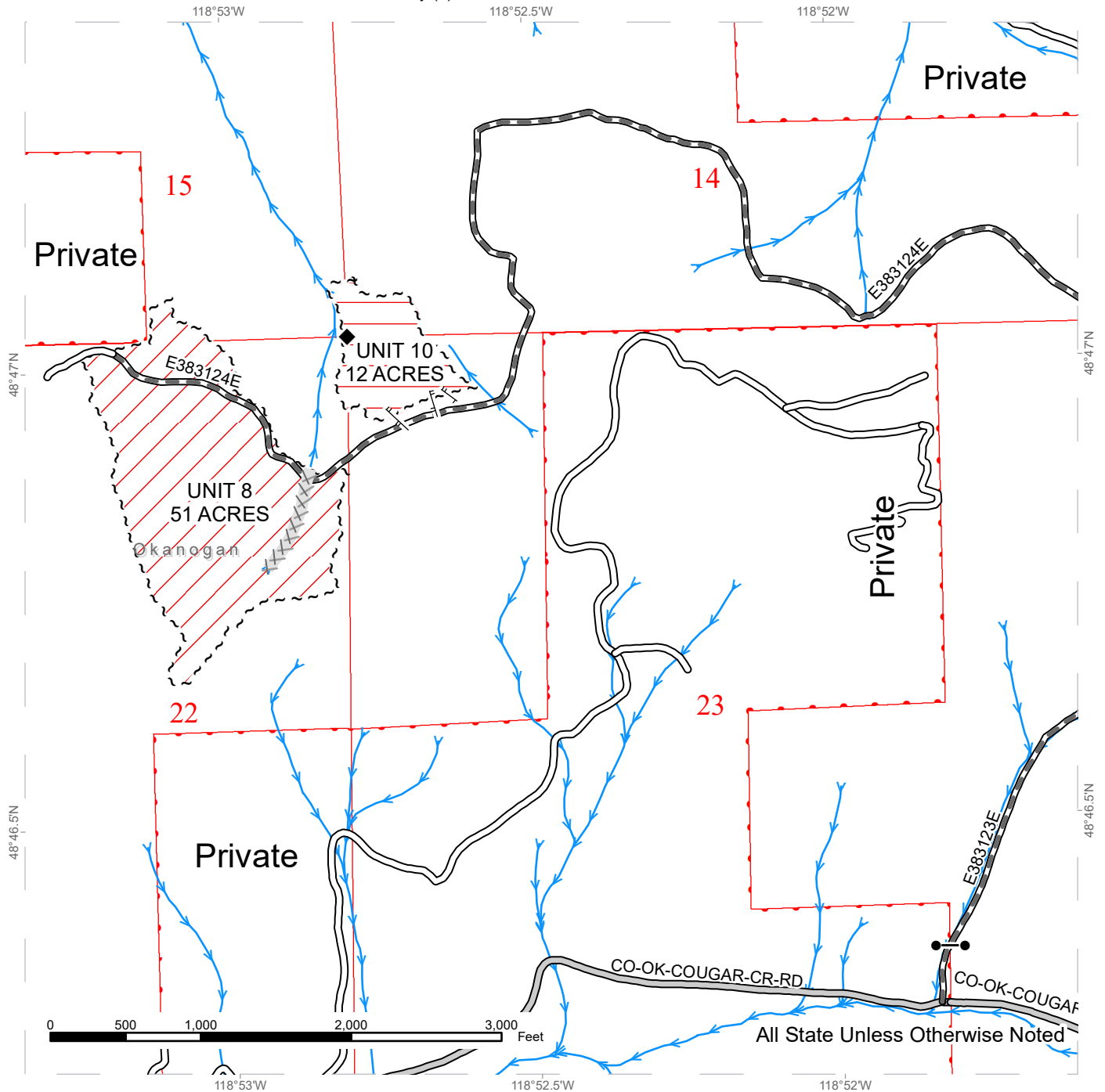
	Public Land Survey Sections		County Road		Streams
	DNR Managed Lands		Existing Roads		Survey Monument
	Ground Harvest		Required Pre-Haul Maintenance		Cattle guard
	Sale Boundary Tags		Designated Skid Trail		Culvert
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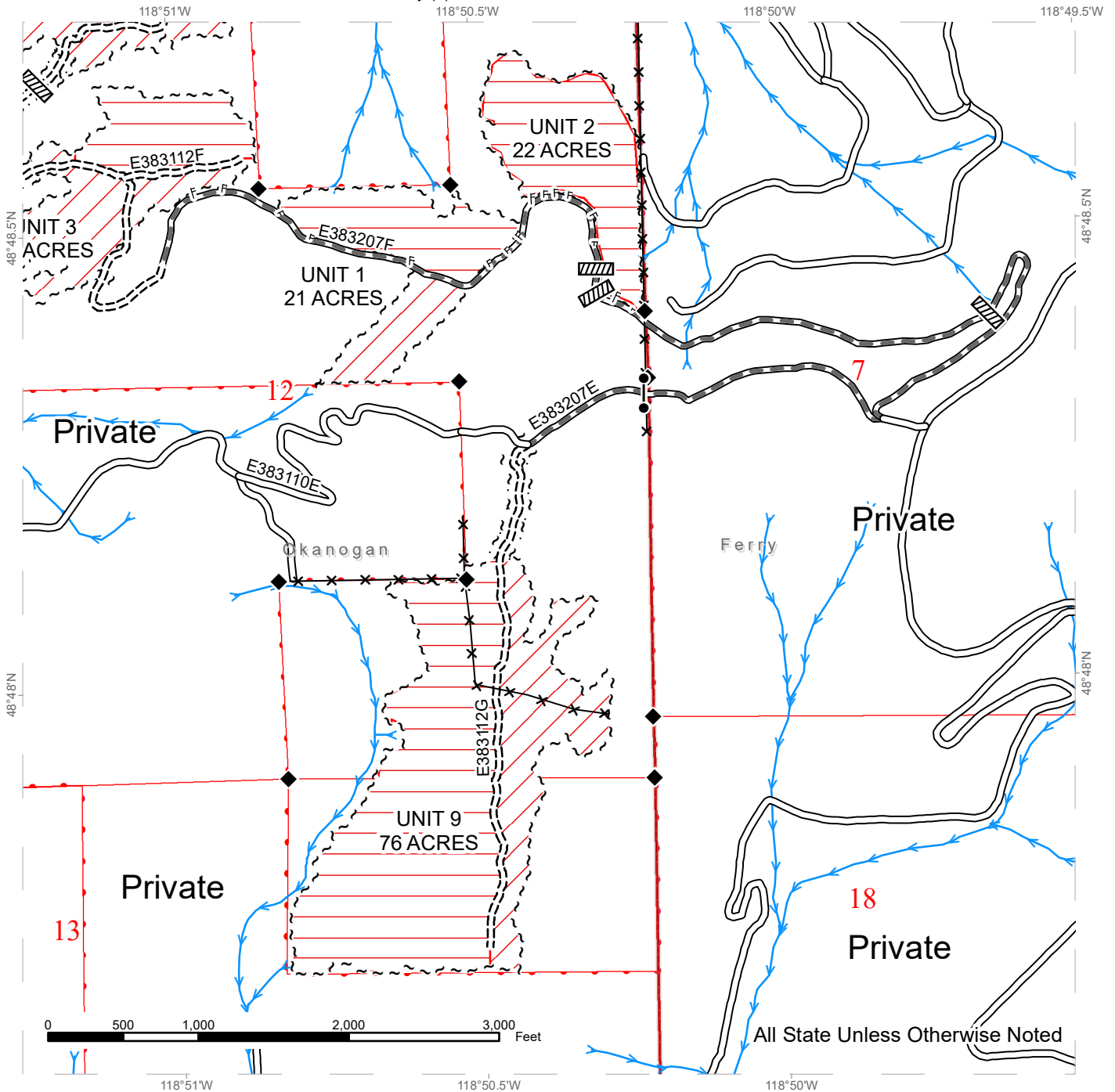
Public Land Survey Sections	County Road	Streams
DNR Managed Lands	Existing Roads	Survey Monument
Ground Harvest	Required Pre-Haul Maintenance	Gate
Recommended Cable-Assist	Designated Skid Trail	
Sale Boundary Tags	Equipment Limitation Zone	



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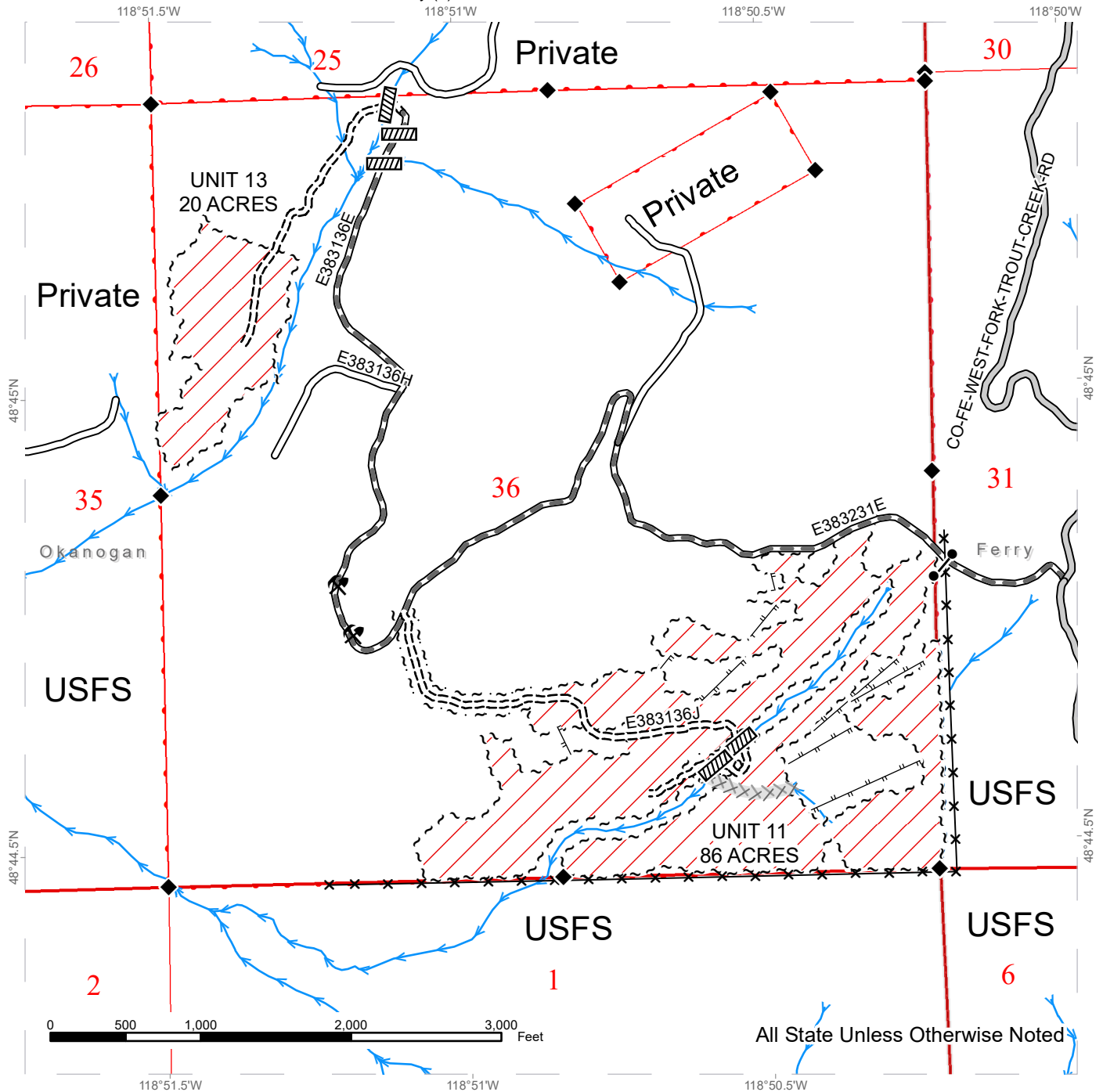


Public Land Survey Sections	Existing Roads	Streams
DNR Managed Lands	Required Pre-Haul Maintenance	Fence
Ground Harvest	Required Construction	Survey Monument
Recommended Cable-Assist	Designated Skid Trail	Culvert
Sale Boundary Tags		Gate
Right of Way Tags = 1 Acre		

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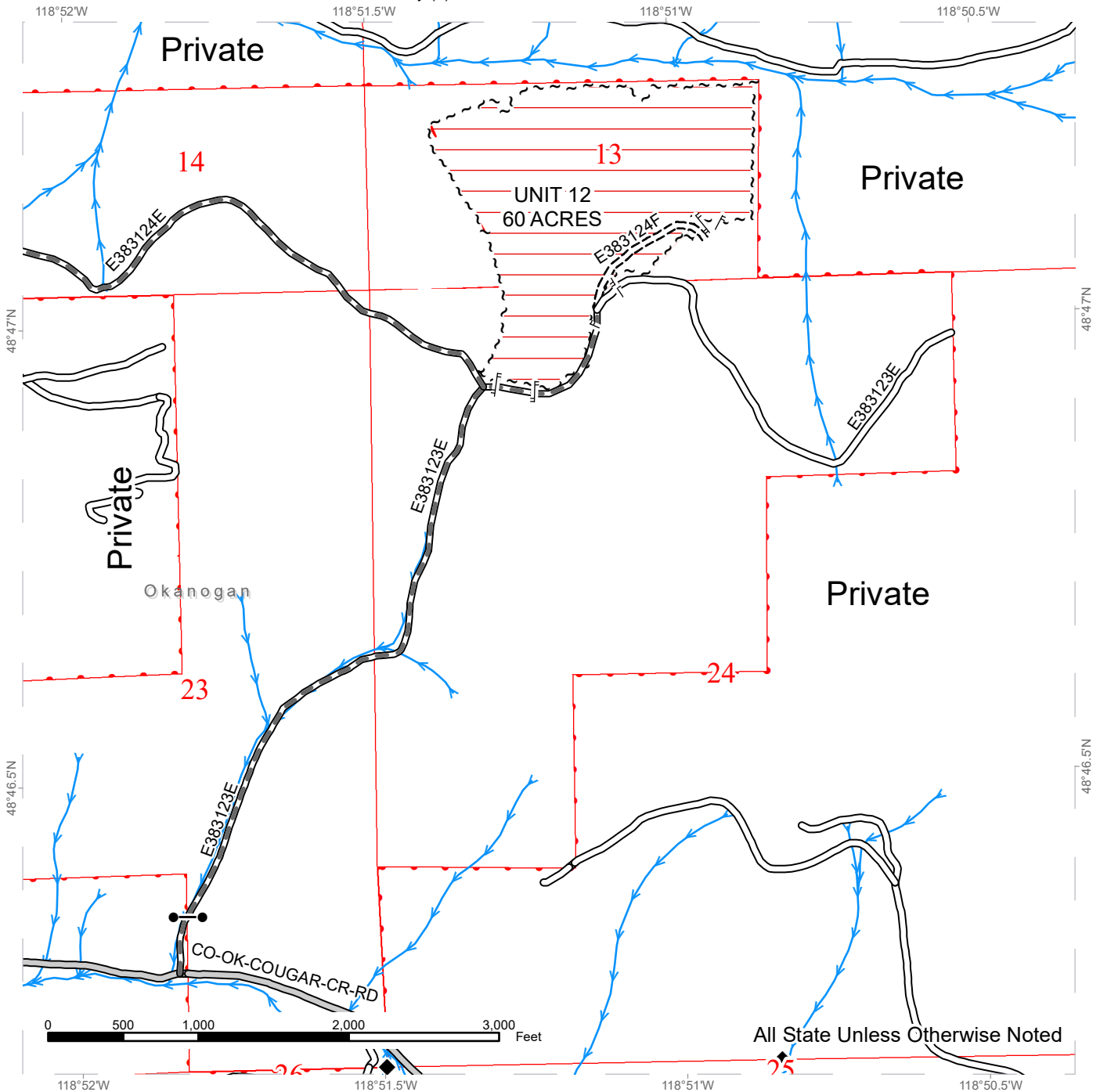
Public Land Survey Sections	County Road	Streams
DNR Managed Lands	Existing Roads	Fence
Ground Harvest	Required Pre-Haul Maintenance	Survey Monument
Sale Boundary Tags	Required Construction	Culvert
Right of Way Tags = 1 Acre	Designated Skid Trail	Gate
	Equipment Limitation Zone	Rock Pit



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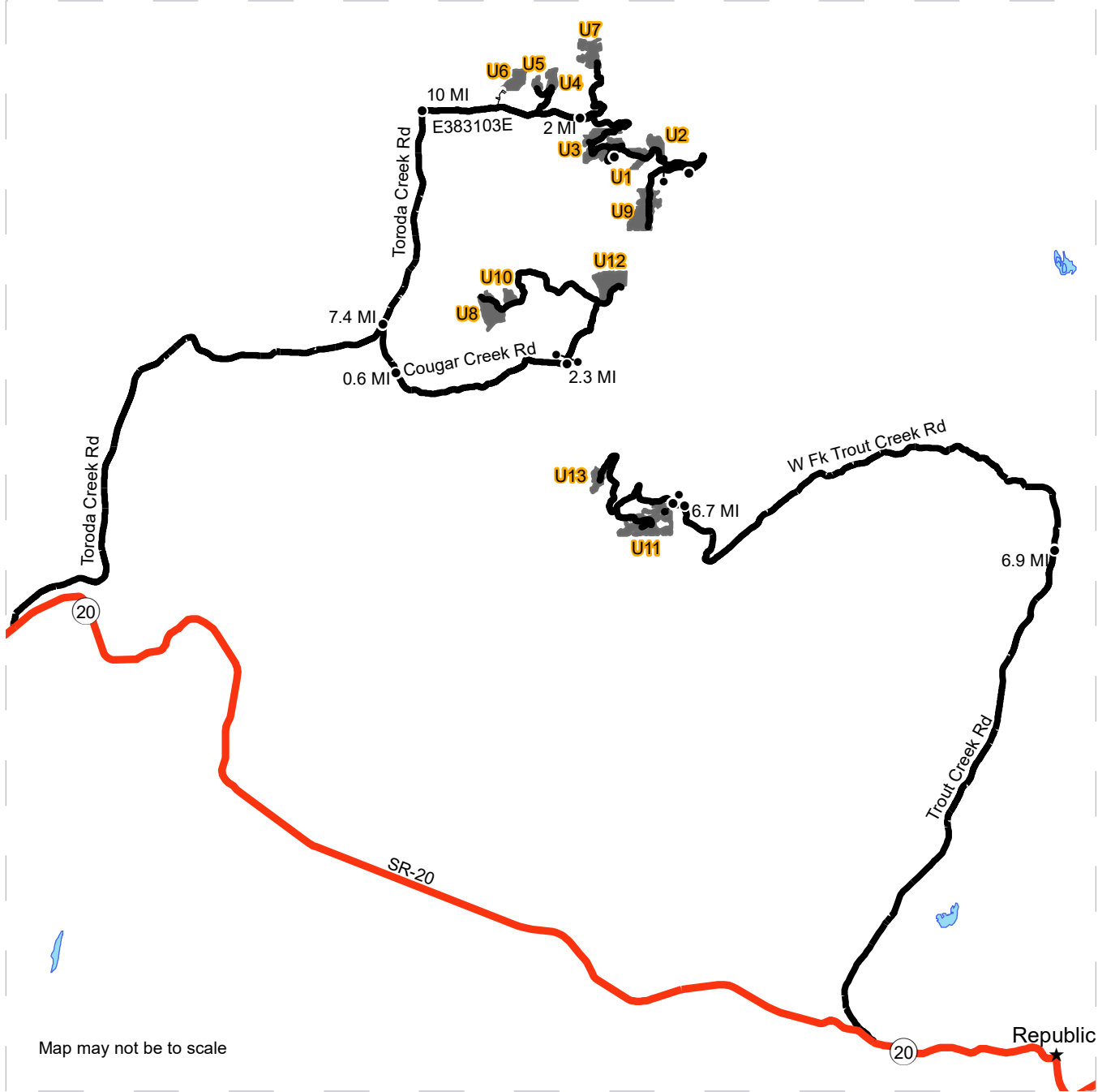


	Public Land Survey Sections		County Road		Streams
	DNR Managed Lands		Existing Roads		Survey Monument
	Ground Harvest		Required Pre-Haul Maintenance		Gate
	Recommended Cable-Assist		Required Construction		Designated Skid Trail
	Sale Boundary Tags				
	Right of Way Tags = 1 Acre				

DRIVING MAP

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Map may not be to scale

	Timber Sale Unit
	Highway
	Haul Route
	Skid Trail
	Distance Indicator
	Gate

DRIVING DIRECTIONS:
 Access units 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 12 from Toroda Creek road via HWY 20. From the intersection of HWY 20 and Toroda Creek road travel north on Toroda Creek road for 7.4 miles and turn right onto Cougar Creek road. Continue on Cougar Creek road for 0.6 miles and turn slight left onto Sheridan Road. Continue south/southeast on Sheridan road for 2.3 miles and turn slight left onto E383112E (locked gate). Units 8, 10, and 12 are accessed from E383112E. Access units 1, 2, 3, 4, 5, 6, 7, and 9 from Toroda creek road via HWY 20. From the intersection of HWY 20 and Toroda creek road travel north/northeast 10 miles and turn right onto E383103E. From E283103E, turn left onto the E383103F road and at end of the road continue by foot to the north/northeast for 1,050 feet to reach unit 1. Units 2-7 are accessed off the, E383102E, E383102J, and E383101E roads. To access unit 9 continue on E383101E road for 1.2 miles then E383101E turns into E383207F. Continue for 1.6 miles then turn right onto E383207E road to unit 9. Access units 11 and 13 from Trout Creek road via HWY 20. From the intersection of HWY 20 and Trout Creek road travel north for 6.9 miles and turn left onto West Fork Trout Creek road. Continue north/northwest for 6.7 miles then turn left onto FS road 2143986. Continue for 0.18 miles to E383231E (locked gate) and access units 11 and 13 from this road.



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	Timber Sale Unit
	Haul Route
	Other Route
	Skid Trail
	Cattle guard
	Culvert
	Distance Indicator
	Gate

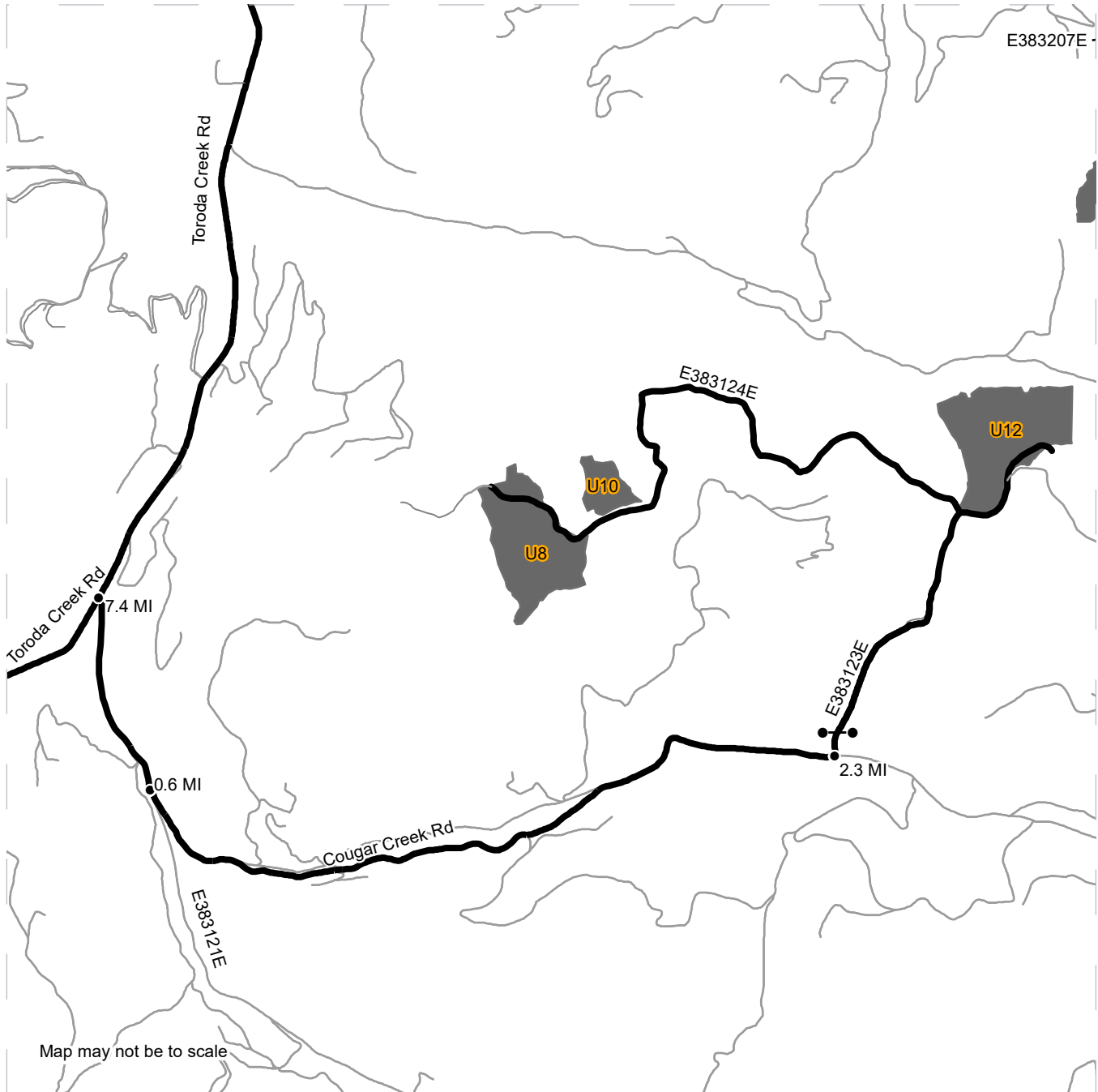
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	Timber Sale Unit
	Haul Route
	Other Route
	Distance Indicator
	Gate

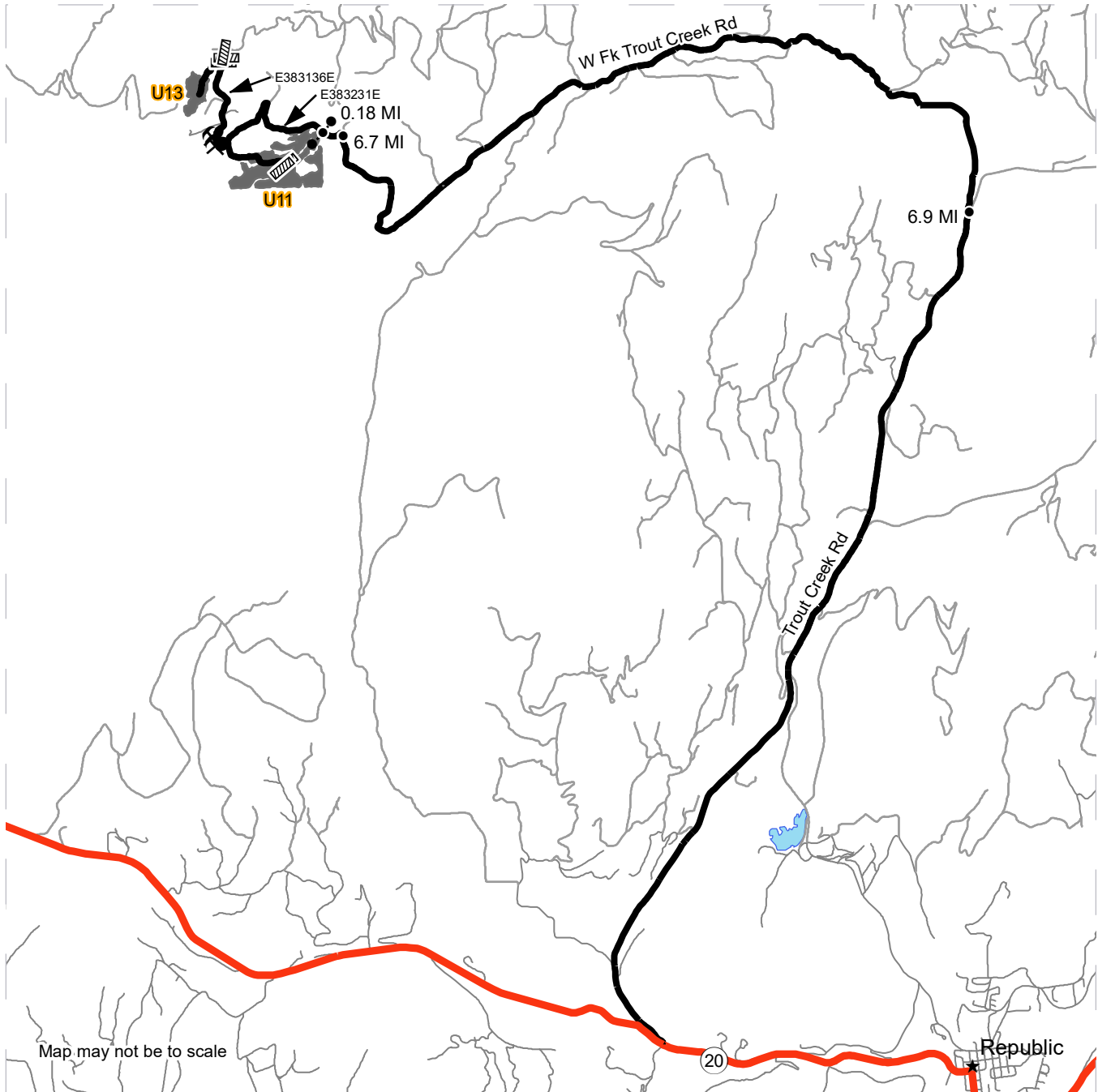
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- Timber Sale Unit
- Highway
- Haul Route
- Other Route
- Town
- Culvert
- Distance Indicator
- Gate
- Rock Pit

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**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Tonnage Scale AGREEMENT NO. 30-0101630

SALE NAME: Q HARVARD

**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 July 25, 2023 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 green conifer species (excluding ponderosa pine) except for leave trees banded with purple paint in Units 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13 bounded by white timber sale boundary tags and all right of way timber bounded by orange right of way tags or marked with orange paint., located on approximately 515 acres on part(s) of Sections 1, 2, 3, 12, 13, 22, 23, and 36 all in Township 38 North, Range 31 East W.M. in Okanogan County(s) as shown on the attached timber sale map and as designated on the sale area.

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

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

G-020 Inspection By Purchaser

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

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to November 15, 2025.

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 \$285.00 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: PwC-SFIFM-513.

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.

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.

Road is defined as the road bed, including but not limited to its component parts, such as cut and fill slopes, 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.

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 Operations

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; E383101E, E383102E, E383102G, E383102H, E383102J, E383103E, E383103F, E383112E, E383112F, E383112G, E383123E, E383124E, E383124F, E383136E, E383136J, E383207E, E383207F and E383231E. 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 420 pounds of grass seed to a location designated by the Contract Administrator. Seed provided shall meet the following specifications.

40% Mountain Brome, 30% Sherman Big Bluegrass, 30% Idaho Fescue
Seed shall be certified weed free, premixed and delivered to Highlands Fire Camp 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 E383103E, E383102G, E383102J, E383101E, E383207E, E383207F, E383231E, West Fork Trout Creek, Old Sheridan and Cougar Creek roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Road Use Permit 101488 with Kretz dated January 22, 2021

Road Use Permit 101135 with Prichard dated January 22, 2021

Road Use Permit 7700-41 with USFS dated July 1, 2021

Special Use Permit with USFS dated July 1, 2021

G-430 Open Fires

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

G-450 Encumbrances

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

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

In Favor of: Maureen P. & Bruce L. Morlang Disclosed by Application No.: 50-084030

Granted: 1/30/2015

Expires: 12/31/2044

Water Right, including the terms and provisions thereof,

For: Stream
In Favor of: DNR
Disclosed by Application No.: 78-002316 Granted: 5/13/1972
Expires: Indefinite

Water Right, including the terms and provisions thereof, For: Stream
In Favor of: DNR
Disclosed by Application No.: 78-002745 Granted: 1/23/1973
Expires: Indefinite

Water Right, including the terms and provisions thereof, For: Creek
In Favor of: DNR
Disclosed by Application No.: 78-002746 Granted: 1/23/1973
Expires: Indefinite

Water Right, including the terms and provisions thereof, For: Spring
In Favor of: DNR
Disclosed by Application No.: 78-002751 Granted: 1/23/1973
Expires: Indefinite

Lease, including the terms and provisions thereof, For: Grazing
In Favor of: Joel Kretz
Disclosed by Application No.: 10-C60851 Granted: 10/1/2015
Expires: 9/30/2025

Lease, including the terms and provisions thereof, For: Grazing
In Favor of: Mike & Toni Henneman Disclosed by Application No.: 10-A74218
Granted: 11/1/2011
Expires: 10/31/2021

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 \$79,798.00 on day of sale and \$1.64 per ton upon removal in

fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

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

P-027 Payment for Removal of Optional Forest Products

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

P-040 Weighing and Scaling Costs

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

P-045 Guarantee of Payment

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

P-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 office listed above on or before the fourteenth of the month following the month in which the timber was removed or, according to an alternate payment schedule as approved by the State with at least one payment each month for timber removed. The alternate payment schedule, once approved by the State, shall become part of this contract and may be changed only with written approval of the State.

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

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

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

P-080 Payment Account Refund

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

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$48,000.00. 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-071 Log and Load Reporting Service

This contract requires the use of a State approved third party Log and Load Reporting Service (LLRS). Purchaser shall ensure log volume measurement data and/or load and weight data is received by the LLRS within 2 business days of logs being measured or weighed. Purchaser agrees to pay the LLRS for log and load data supplied to the State.

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

L-110 State Approval of Log Scaling and Weighing Locations

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

Prior to forest products being hauled, the Contract Administrator must authorize in writing the use of State approved measurement and/or weighing facilities that are at or enroute 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-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 100 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 '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 16 feet in width, including rub trees.
- b. Skid trails shall not cover more than 20 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-025 Timing Requirements for Timber Removal

All forest products must be removed within 30 days of being felled.

H-030 Timber Falling

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for Units 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13. 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 D-6 equivalent or smaller ground skidding equipment, ground based harvesting equipment and cable-assist equipment. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-126 Tailholds on State Land

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

H-127 Tailholds on Private Land

If Purchaser chooses to tailhold on private property, Purchaser shall obtain permit(s) and assumes responsibility for all costs and damages associated with the permit(s). Purchaser must provide the State with a copy of the executed permit(s) or a letter from the landowner indicating that a satisfactory tailhold permit(s) has been consummated between Purchaser and the landowner.

H-130 Hauling Schedule

The hauling of forest products will not be permitted from March 15 to June 1 unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Whole tree yarding is required in all units.
- b. Hand felling of trees and retrieval with bull line and chokers may be required in isolated areas of units.
- c. Road salts shall not be applied to roads for dust abatement or removing of ice from road surfaces.
- d. All slash shall be piled at landings or hauled back into the unit for erosion control where designated by the Contract Administrator.
- e. Slash piled at landings shall be separated from the road prism at completion of harvest.
- f. Appropriate warning signs shall be posted at locations designated by the Contract Administrator.
- g. If snow plowing occurs, snow berms shall be removed at locations designated by the Contract Administrator to allow surface water to drain from roads.
- h. No operations associated with timber harvest, hauling or road work will be permitted within 1/2 mile of an active northern goshawk nest from March 1 to August 1 or later if young are still on the nest.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

a. Purchaser shall comply with conditions outlined in Archaeological Monitoring Permit No. 2021-23.

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

H-150 Required Removal of Forest Products

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

Species	Net bd ft	Log length (ft)	Log dib
All 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-210 Log Length Hauling Restrictions

The maximum log length hauled from the sale area shall not exceed 45 feet unless otherwise approved 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 non-merchantable live stems 3 feet in height and greater excluding ponderosa pine not banded with purple 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 within the units 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 11/16/2020 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on E383101E, E383102E, E383102G, E383102H, E383102J, E383103E, E383103F, E383112E, E383112F, E383112G, E383123E, E383124E, E383124F, E383136E, E383136J, E383207E,

E383207F and E383231E 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 E383101E, E383102E, E383102G, E383102H, E383102J, E383103E, E383103F, E383112E, E383112F, E383112G, E383123E, E383124E, E383124F, E383136E, E383136J, E383207E, E383207F and E383231E roads used for hauling from June 15 to November 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-035 Logging Debris Clean Up

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

S-040 Noxious Weed Control

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

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

S-120 Stream Protection

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

Purchaser shall be responsible for restoring the site in the event of a spill or other releases of hazardous material/waste during operations conducted under this contract.

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 covered in part a., the Purchaser is responsible for immediately notifying all the following:

- Department of Emergency Management at 1-800-258-5990
- National Response Center at 1-800-424-8802
- Appropriate Department of Ecology (ECY) at 1-800-645-7911
- DNR Contract Administrator

S-131 Refuse Disposal

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

S-140 Fence Repair

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

Section D: Damages

D-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These

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

D-021 Failure to Remove Forest Products

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

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

Where:

LD = Liquidated Damage value.

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

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

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

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

A = Administrative Fee = \$2,500.00.

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

Where:

r = daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.

LD = Liquidated damage value.

N = Number of days from date of breach to date payment is received.

D-030 Inadequate Log Accountability

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

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

D-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.

SIGNATURES

This agreement may be executed in any number of counterparts (including by electronic mail in portable document format (.pdf), or by facsimile) each of which shall be deemed an original but all of which, when taken together, shall constitute one and the same Agreement binding on all parties.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Patrick Ryan
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 HARVARD

Application Number: 30- 101630

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 20,175 linear feet
Road to be constructed (optional and required) but not abandoned

Reconstruction: 0 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: 62,003 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

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

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

(Revised 9/18)

PRE-CRUISE NARRATIVE

Sale Name: Q Harvard	Region: Northeast
Agreement #: 30-101630	District: Highlands
Contact Forester: Skyler Goodrich Phone / Location: 509-223-4044 cell 509-322-6610	County(s): Okanogan
Alternate Contact: Matt Smith Phone / Location: 509-223-4044	Other information: Skyler.goodrich@dnr.wa.gov

Type of Sale: Lump Sum	
Harvest System: Ground based Click here to enter text.	80%
Harvest System: Other(Specify) Ground based tether logging	20%
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 Determina tion (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	S12T38R31	03	21	0	0	.26	0	20.7	GPS (Garmin)
2	S12T38R31	03	22	0	0	0	0	22	GPS (Garmin)
3	S12T38R31	03	68	0	0	0	0	68	GPS (Garmin)
4	S2T38R31	03	17	0	0	0	0	17	GPS (Garmin)
5	S2T38R31	03	9	0	0	0	0	9	GPS (Garmin)
6	S2T38R31	03	29	0	0	0	0	29	GPS (Garmin)
7	S1T38R31	03	43	0	0	.23	0	42.7	GPS (Garmin)
8	S22T38R31	03	53	0	0	1.29	0	51.7	GPS (Garmin)
9	S13T38R31	03	76	0	0	0	0	76	GPS (Garmin)

10	S23T38R31	03	12	0	0	0	0	12	GPS (Garmin)
11	S36T38R31	03	86	0	0	0	0	86	GPS (Garmin)
12	S13T38R31	03	60	0	0	0	0	60	GPS (Garmin)
13	S36T38R31	03	20	0	0	0	0	20	GPS (Garmin)
ROW	S3,2,1,36 T38R31	03	8	.22	0	0	0	8	
TOTAL ACRES			524	.22	0	1.78	0	522.1	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
2	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
3	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
4	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
5	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
6	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers,	None	Minimum of 6 leave trees will be left per

	and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.		acre. Leave all PP. This sale complies with procedure 14-006-091
7	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
8	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
9	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
10	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
11	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
12	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091
13	Boundaries marked with white "Timber Sale Boundary" tags, orange flashers, and pink flagging. Remove all green conifers not banded with purple paint. Leave all ponderosa pine. Leave all hardwoods.	None	Minimum of 6 leave trees will be left per acre. Leave all PP. This sale complies with procedure 14-006-091

ROW	Remove all timber dotted with orange paint and also all timber within orange Right-of-Way tags	None	N/A
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OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF/WL 190	Accessed from Toroda Creek	Region Provided Maps
2	DF/WL 185	Accessed from Toroda Creek	Region Provided Maps
3	DF/WL 544	Accessed from Toroda Creek	Region Provided Maps
4	DF/PP 110	Accessed from Toroda Creek	Region Provided Maps
5	DF/PP 110	Accessed from Toroda Creek	Region Provided Maps
6	DF/PP 275	Accessed from Toroda Creek	Region Provided Maps
7	DF/WL 300	Accessed from Toroda Creek	Region Provided Maps
8	DF/WL 364	Accessed from Toroda Creek/gate master lock	Region Provided Maps
9	DF/WL 608	Accessed from Toroda Creek/gate master lock	Region Provided Maps
10	DF/WL 100	Accessed from Toroda Creek/gate master lock	Region Provided Maps
11	DF/WL 602	Accessed from Hwy 20/gate master lock	Region Provided Maps
12	DF/WL 540	Accessed from Toroda Creek/gate master lock	Region Provided Maps
13	DF/WL 175	Accessed from Hwy 20/gate master lock	Region Provided Maps
ROW	DF/WL/PP 10	Access throughout sale area	
TOTAL MBF	4,113		

REMARKS:

External ROW on private ground will be cruised separately. Cruise trees dotted with orange paint and trees within orange Right-of-Way tags. Map will be provided of ROW areas.

Prepared By: Date:	Title:	CC:
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Timber Sale Cruise Report Harvard HI

Sale Name: Q HARVARD

Sale Type: LUMP SUM

Region: NORTHEAST

District: HIGHLANDS

Lead Cruiser: Kevin Parkinson

Other Cruisers:Kevin Parkinson

Cruise Narrative:

Location:

Legal – Sections 1, 2, 3, 12, 13, 22, 23 and 36, T 38 N, R 31 E. WM.

General

Units 11 and 13 are 15 miles north of Republic, Wa. in Okanogan County. The rest of the units are 9 miles north of Wauconda Wa, in Okanogan County.

Access – The sale location for units 11 and 13 is based off Hwy 20 behind a locked gate. The rest of the units are accessed off of Toroda Creek Road; Units 8, 9, 10, and 12 are behind locked gate.

Cruise Design:

This sale was cruised using variable radius plots, utilizing the cruise-count method. The walk-through method was used on plots near boundaries. Each plot was a full plot. ROW 1 was 100% cruised.

-Minor species cruise intensity:

We grade the first tree of all minor species encountered; then follow the set cruise design.

-Min. DBH: 7" DBH for all species

-Log Length: 32' logs where possible, minimum of 12' lengths

-Top DIB: Trees less than 17.5" DBH 4.6" DIB for all species; Trees 17.6" and greater DBH have a minimum top DOB of 40% of DOB at 16' or a 6" top, whichever is greater.

-Take/Leave Prescription: Cut all conifers not marked with purple paint. Within the right-of-way units, remove all conifers that are marked with orange paint.

-Cruise Acres determination: FMA unit acreages with existing road acreages removed.

-Stand composition: The stands are second growth Douglas-fir with minor components of, western larch, Engelmann spruce and lodgepole pine, with larger residual trees. Legacy trees are present within the sale area.

-Timber quality: Timber to be harvested is comprised of domestic quality Douglas-fir (67%), western larch (30%), Engelmann spruce (2%), and lodgepole pine (1%).

-Stand health/defect: Root rot is found scattered throughout the sale area in concentrated patches.. Older timber in the sale area can be rough, with branch clusters, sweep, and crooks. Other defects noted include mistletoe, dead and dying tops, forks, spike knots, wind and snow damage.

-Aspect: North, East, South and West Elevation: 3800'- 5000'.

-Harvesting methods: 80% Ground-based; 20% Ground based tether logging

-Slope:

Unit 1- 0-68%; Avg: 25%
 Unit 2- 0-40%; Avg: 19%
 Unit 3- 0-55%; Avg: 24%
 Unit 4- 0-49%; Avg: 18%
 Unit 5- 0-47%; Avg: 15%
 Unit 6- 0-49%; Avg: 30%
 Unit 7- 0-40%; Avg: 16%
 Unit 8- 0-47%; Avg: 18%
 Unit 9- 0-50%; Avg: 24%
 Unit 10- 0-62%; Avg: 24%
 Unit 11- 0-51%; Avg: 21%
 Unit 12- 0-64%; Avg: 39%
 Unit 13- 0-48%; Avg: 27%

-Other considerations/remarks: This sale exists fairly steep ground. There is evidence of past mining in some of the units. There are patches of jackstraw downed timber in most of the units.

Trust: All units are associated with Trust 3.

Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	13.0			3,126	873	1,682	571
WL	14.5			1,401	432	814	155
ES	12.8			101	33	54	13
LP	12.2			66		52	15
ALL	13.2			4,694	1,338	2,602	754

Timber Sale Notice Weight (tons)

Sp	Tons by Grade			
	All	2 Saw	3 Saw	4 Saw
DF	21,480	4,976	12,175	4,329
WL	8,009	2,169	4,907	933
ES	569	157	319	92
LP	353		268	85
ALL	30,410	7,303	17,669	5,438

Timber Sale Overall Cruise Statistics (Cut + Leave Trees)

BA (sq ft/acre)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR SE (%)	Net Vol (bf/acre)	Vol SE (%)
91.0	3.2	119.6	2.1	10,845	3.9

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
HARVARD U1	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	20.9	21.2	18	6	0
HARVARD U2	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	22.0	22.5	14	5	1
HARVARD U3	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	68.0	68.3	35	10	0
HARVARD U4	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	17.0	16.9	13	5	0
HARVARD U5	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	9.0	8.5	8	5	0
HARVARD U6	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	29.0	28.9	21	8	0
HARVARD U7	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	42.7	42.6	25	8	1
HARVARD U8	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	51.7	53.0	28	9	1
HARVARD U9	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	76.0	75.9	43	12	2
HARVARDU10	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	12.0	11.7	9	5	1
HARVARDU11	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	86.0	86.2	45	12	3
HARVARDU12	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	60.0	60.2	32	11	1
HARVARDU13	B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	20.0	20.4	12	6	0
Row 1	ST: Strip/Percent Sample (1 tree expansion)	1.0		1	1	0
All		515.3	516.2	304	103	10

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	13.9	32	1,711	1,695	1.0	4,976.5	873.2

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	Domestic	7.5	32	3,371	3,264	3.2	12,174.8	1,681.9
DF	LIVE	4 SAW	Domestic	5.2	23	1,115	1,107	0.7	4,328.5	570.4
ES	LIVE	2 SAW	Domestic	15.5	32	64	64	0.0	157.3	33.1
ES	LIVE	3 SAW	Domestic	7.8	32	105	105	0.0	319.2	54.3
ES	LIVE	4 SAW	Domestic	5.4	21	26	26	0.0	92.4	13.4
LP	LIVE	3 SAW	Domestic	8.5	32	100	100	0.0	268.4	51.6
LP	LIVE	4 SAW	Domestic	5.3	24	28	28	0.0	84.4	14.6
WL	LIVE	2 SAW	Domestic	14.1	32	841	838	0.4	2,169.3	431.7
WL	LIVE	3 SAW	Domestic	8.1	32	1,612	1,580	1.8	4,906.7	814.3
WL	LIVE	4 SAW	Domestic	5.3	22	302	301	0.0	932.7	155.4
WL	LIVE	CULL	Cull	15.2	8	13	0	100.0	0.0	0.0

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 8	LIVE	Domestic	5.8	27	2,869	2.5	11,264.6	1,478.2
DF	9 - 11	LIVE	Domestic	9.8	32	1,550	2.8	5,367.4	798.5
DF	12 - 14	LIVE	Domestic	12.9	32	859	1.4	2,631.5	442.9
DF	15 - 19	LIVE	Domestic	16.4	32	734	0.6	2,068.5	378.1
DF	20+	LIVE	Domestic	20.8	32	54	0.0	147.8	27.8
ES	5 - 8	LIVE	Domestic	6.2	26	89	0.0	299.3	45.7
ES	9 - 11	LIVE	Domestic	9.6	32	43	0.0	112.3	22.1
ES	12 - 14	LIVE	Domestic	12.3	32	13	0.0	30.5	6.6
ES	15 - 19	LIVE	Domestic	16.8	32	51	0.0	126.8	26.5
LP	5 - 8	LIVE	Domestic	6.5	27	92	0.0	258.1	47.4
LP	9 - 11	LIVE	Domestic	8.9	32	37	0.0	94.7	18.8
WL	5 - 8	LIVE	Domestic	6.2	27	1,064	0.4	3,327.7	548.3
WL	9 - 11	LIVE	Domestic	10.1	32	857	2.9	2,621.3	441.7
WL	12 - 14	LIVE	Domestic	12.7	32	395	0.5	1,038.0	203.5
WL	12 - 14	LIVE	Cull	14.3	9	0	100.0	0.0	0.0
WL	15 - 19	LIVE	Cull	16.2	7	0	100.0	0.0	0.0
WL	15 - 19	LIVE	Domestic	16.2	32	326	0.1	802.0	167.9
WL	20+	LIVE	Domestic	21.5	32	78	1.2	219.7	40.0

Cruise Unit Report HARVARD U1

Unit Sale Notice Volume (MBF): HARVARD U1

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	13.7			122		98	24
WL	14.2			112	10	96	6
ALL	14.0			234	10	194	29

Unit Cruise Design: HARVARD U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	20.9	21.2	18	6	0

Unit Cruise Summary: HARVARD U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	6	51	2.8	0
WL	9	33	1.8	0
ALL	15	84	4.7	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U1

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	56.7	62.0	14.6	122.0	18.0	7.4	6,915	64.6	16.4
WL	36.7	75.4	17.8	150.3	12.1	4.0	5,512	76.4	18.2
ALL	93.3	53.0	12.5	133.1	17.9	4.6	12,426	55.9	13.3

Unit Summary: HARVARD U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	6	ALL	13.7	59	74	5,830	5,830	0.0	46.7	47.8	12.9	121.8
WL	LIVE	CUT	9	ALL	14.2	70	88	5,345	5,345	0.0	32.3	35.6	9.4	111.7
ALL	LIVE	CUT	15	ALL	13.9	63	80	11,175	11,175	0.0	79.0	83.4	22.3	233.5
ALL	ALL	ALL	15	ALL	13.9	63	80	11,175	11,175	0.0	79.0	83.4	22.3	233.5

Cruise Unit Report HARVARD U2

Unit Sale Notice Volume (MBF): HARVARD U2

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	12.8			121	14	81	26
WL	10.7			64		46	18
ALL	11.9			185	14	127	44

Unit Cruise Design: HARVARD U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	22.0	22.4	14	5	1

Unit Cruise Summary: HARVARD U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	8	40	2.9	0
WL	4	17	1.2	0
ALL	12	57	4.1	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U2

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	57.1	64.2	17.2	116.8	22.5	8.0	6,676	68.0	18.9
WL	24.3	92.4	24.7	126.8	35.0	17.5	3,080	98.8	30.3
ALL	81.4	50.5	13.5	119.8	26.4	7.6	9,756	57.0	15.5

Unit Summary: HARVARD U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	8	ALL	12.8	54	66	5,507	5,507	0.0	52.8	47.1	13.2	121.2
WL	LIVE	CUT	4	ALL	10.7	56	69	2,899	2,899	0.0	36.6	22.9	7.0	63.8
ALL	LIVE	CUT	12	ALL	12.0	55	67	8,406	8,406	0.0	89.4	70.0	20.2	185.0
ALL	ALL	ALL	12	ALL	12.0	55	67	8,406	8,406	0.0	89.4	70.0	20.2	185.0

Cruise Unit Report HARVARD U3

Unit Sale Notice Volume (MBF): HARVARD U3

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WL	14.9			304	143	140	20
DF	10.9			297		181	116
ALL	12.0			601	143	321	137

Unit Cruise Design: HARVARD U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	68.0	68.3	35	10	0

Unit Cruise Summary: HARVARD U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WL	14	57	1.6	0
DF	23	116	3.3	0
ALL	37	173	4.9	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U3

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WL	32.6	109.5	18.5	156.3	27.3	7.3	5,091	112.9	19.9
DF	66.3	66.6	11.3	75.7	32.9	6.9	5,015	74.3	13.2
ALL	98.9	50.3	8.5	102.2	50.0	8.2	10,106	70.9	11.8

Unit Summary: HARVARD U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	23	ALL	10.9	45	54	4,629	4,366	5.7	89.1	57.7	17.5	296.9
WL	LIVE	CUT	14	ALL	14.9	65	81	4,482	4,466	0.3	23.6	28.6	7.4	303.7
ALL	LIVE	CUT	37	ALL	11.8	49	60	9,111	8,832	3.1	112.7	86.3	24.9	600.6
ALL	ALL	ALL	37	ALL	11.8	49	60	9,111	8,832	3.1	112.7	86.3	24.9	600.6

Cruise Unit Report HARVARD U4

Unit Sale Notice Volume (MBF): HARVARD U4

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	15.0			161	49	99	13
WL	17.2			23	11	12	1
ALL	15.2			184	59	111	13

Unit Cruise Design: HARVARD U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	17.0	16.9	13	5	0

Unit Cruise Summary: HARVARD U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
PP		10	1.4	0
DF	21	45	3.5	0
WL	3	5	0.4	0
ALL	24	60	4.6	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U4

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
PP	28.6	55.1	20.8						
DF	69.2	59.7	16.6	139.5	19.4	4.2	9,658	62.7	17.1
WL	7.7	249.8	69.3	177.4	12.7	7.3	1,365	250.1	69.7
ALL	92.3	58.4	16.2	143.3	20.3	4.1	13,227	61.8	16.7

Unit Summary: HARVARD U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	21	ALL	15.0	64	79	9,658	9,443	2.2	55.2	67.7	17.5	160.5
WL	LIVE	CUT	3	ALL	17.2	80	102	1,365	1,365	0.0	4.8	7.7	1.9	23.2
ALL	LIVE	CUT	24	ALL	15.2	65	81	11,023	10,808	2.0	60.0	75.4	19.4	183.7
ALL	ALL	ALL	24	ALL	15.2	65	81	11,023	10,808	2.0	60.0	75.4	19.4	183.7

Cruise Unit Report HARVARD U5

Unit Sale Notice Volume (MBF): HARVARD U5

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	12.4			115	20	67	27
ALL	12.4			115	20	67	27

Unit Cruise Design: HARVARD U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	9.0	8.5	8	5	0

Unit Cruise Summary: HARVARD U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
PP		4	1.3	0
DF	26	42	5.3	0
ALL	26	46	5.8	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U5

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
PP	26.7	43.3	25.0						
DF	105.0	44.1	15.6	124.1	28.3	5.6	13,029	52.4	16.5
ALL	115.0	39.2	13.8	124.1	28.3	5.6	14,269	48.3	14.9

Unit Summary: HARVARD U5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	26	ALL	12.4	58	71	12,772	12,718	0.4	122.2	102.5	29.1	114.5
ALL	LIVE	CUT	26	ALL	12.4	58	71	12,772	12,718	0.4	122.2	102.5	29.1	114.5
ALL	ALL	ALL	26	ALL	12.4	58	71	12,772	12,718	0.4	122.2	102.5	29.1	114.5

Cruise Unit Report HARVARD U6

Unit Sale Notice Volume (MBF): HARVARD U6

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	13.6			229	94	98	37
ALL	13.6			229	94	98	37

Unit Cruise Design: HARVARD U6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	29.0	28.9	21	8	0

Unit Cruise Summary: HARVARD U6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
PP		20	1.8	0
DF	19	85	4.0	0
ALL	19	105	5.0	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U6

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
PP	36.4	54.0	16.3						
DF	81.0	68.8	15.0	115.3	41.0	9.4	9,334	80.1	17.7
ALL	100.0	50.2	11.0	115.3	41.0	9.4	11,531	64.8	14.4

Unit Summary: HARVARD U6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	19	ALL	13.6	53	65	8,142	7,907	2.9	68.0	68.6	18.6	229.3
ALL	LIVE	CUT	19	ALL	13.6	53	65	8,142	7,907	2.9	68.0	68.6	18.6	229.3
ALL	ALL	ALL	19	ALL	13.6	53	65	8,142	7,907	2.9	68.0	68.6	18.6	229.3

Cruise Unit Report HARVARD U7

Unit Sale Notice Volume (MBF): HARVARD U7

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	13.9			435	178	201	57
WL	17.0			14		11	4
ALL	14.0			449	178	211	61

Unit Cruise Design: HARVARD U7

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	42.7	42.6	25	8	1

Unit Cruise Summary: HARVARD U7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
PP		15	2.1	0
DF	34	108	4.3	0
WL	1	7	0.3	0
ALL	35	130	5.2	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U7

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
PP	42.9	78.2	29.6						
DF	86.4	72.5	14.5	123.6	34.3	5.9	10,677	80.2	15.6
WL	5.6	193.4	38.7	105.3	0.0	0.0	590	193.4	38.7
ALL	104.0	62.8	12.6	122.5	34.2	5.8	12,737	71.5	13.8

Unit Summary: HARVARD U7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	34	ALL	13.9	56	69	10,454	10,183	2.6	78.2	82.4	22.1	434.8
WL	LIVE	CUT	1	ALL	17.0	63	78	386	337	12.6	2.0	3.2	0.8	14.4
ALL	LIVE	CUT	35	ALL	14.0	56	69	10,840	10,520	3.0	80.2	85.6	22.9	449.2
ALL	ALL	ALL	35	ALL	14.0	56	69	10,840	10,520	3.0	80.2	85.6	22.9	449.2

Cruise Unit Report HARVARD U8

Unit Sale Notice Volume (MBF): HARVARD U8

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WL	15.0			201	50	131	21
DF	12.1			194	24	117	53
ALL	13.2			395	74	248	74

Unit Cruise Design: HARVARD U8

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	51.7	53.0	28	9	1

Unit Cruise Summary: HARVARD U8

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WL	15	52	1.9	0
DF	19	68	2.4	0
ALL	34	120	4.3	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U8

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WL	37.1	114.2	21.6	143.5	21.6	5.6	5,331	116.2	22.3
DF	48.6	106.6	20.1	90.5	40.4	9.3	4,395	114.0	22.2
ALL	85.7	56.8	10.7	113.5	37.9	6.5	9,726	68.2	12.5

Unit Summary: HARVARD U8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	19	ALL	12.1	46	56	3,764	3,748	0.4	51.9	41.4	11.9	193.8
WL	LIVE	CUT	15	ALL	15.0	71	90	4,047	3,896	3.8	22.1	27.1	7.0	201.4
ALL	LIVE	CUT	34	ALL	13.0	53	66	7,811	7,644	2.1	74.0	68.5	18.9	395.2
ALL	ALL	ALL	34	ALL	13.0	53	66	7,811	7,644	2.1	74.0	68.5	18.9	395.2

Cruise Unit Report HARVARD U9

Unit Sale Notice Volume (MBF): HARVARD U9

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	12.4			475	160	250	65
WL	15.6			130	55	62	13
LP	11.8			5		4	1
ALL	12.8			610	215	316	79

Unit Cruise Design: HARVARD U9

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	76.0	75.9	43	12	2

Unit Cruise Summary: HARVARD U9

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
PP		1	1.0	0
DF	37	167	3.9	0
WL	8	31	0.7	0
LP	1	1	0.0	0
ALL	46	200	4.7	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARD U9

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
PP	20.0	0.0	0.0						
DF	77.7	53.7	8.2	103.4	44.4	7.3	8,034	69.6	11.0
WL	14.4	206.0	31.4	141.4	26.1	9.2	2,039	207.7	32.7
LP	0.5	655.7	100.0	140.9	0.0	0.0	66	655.7	100.0
ALL	93.0	42.2	6.4	109.5	42.1	6.2	10,190	59.6	8.9

Unit Summary: HARVARD U9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	37	ALL	12.4	50	62	6,439	6,254	2.9	72.1	60.5	17.2	475.3
LP	LIVE	CUT	1	ALL	11.8	62	77	66	66	0.0	0.6	0.5	0.1	5.0
WL	LIVE	CUT	8	ALL	15.6	67	84	1,710	1,710	0.0	9.1	12.1	3.1	130.0
ALL	LIVE	CUT	46	ALL	12.8	52	65	8,215	8,030	2.3	81.8	73.1	20.4	610.3
ALL	ALL	ALL	46	ALL	12.8	52	65	8,215	8,030	2.3	81.8	73.1	20.4	610.3

Cruise Unit Report HARVARDU10

Unit Sale Notice Volume (MBF): HARVARDU10

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WL	14.3			88	14	70	5
DF	7.8			5			5
ALL	12.9			92	14	70	9

Unit Cruise Design: HARVARDU10

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	12.0	11.7	9	5	1

Unit Cruise Summary: HARVARDU10

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WL	10	24	2.7	0
DF	1	4	0.4	0
ALL	11	28	3.1	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARDU10

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WL	53.3	77.3	25.8	156.6	15.9	5.0	8,351	78.9	26.3
DF	8.9	118.6	39.5	57.3	0.0	0.0	509	118.6	39.5
ALL	62.2	69.0	23.0	142.4	26.8	8.1	8,860	74.0	24.4

Unit Summary: HARVARDU10

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	7.8	43	52	382	382	0.0	20.1	6.7	2.4	4.6
WL	LIVE	CUT	10	ALL	14.3	74	93	7,307	7,307	0.0	41.8	46.7	12.3	87.7
ALL	LIVE	CUT	11	ALL	12.6	64	80	7,689	7,689	0.0	61.9	53.4	14.7	92.3
ALL	ALL	ALL	11	ALL	12.6	64	80	7,689	7,689	0.0	61.9	53.4	14.7	92.3

Cruise Unit Report HARVARDU11

Unit Sale Notice Volume (MBF): HARVARDU11

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	14.2			545	226	249	70
WL	15.4			259	123	109	28
ES	12.8			95	33	50	12
LP	12.5			26		19	7
ALL	14.3			924	382	426	116

Unit Cruise Design: HARVARDU11

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	86.0	86.2	45	12	3

Unit Cruise Summary: HARVARDU11

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	25	136	3.0	0
WL	16	40	0.9	0
ES	7	18	0.4	0
LP	1	4	0.1	0
ALL	49	198	4.4	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARDU11

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	60.4	84.5	12.6	127.3	40.3	8.1	7,694	93.6	15.0
WL	17.8	129.7	19.3	169.3	24.5	6.1	3,011	132.0	20.3
ES	8.0	209.2	31.2	146.0	40.9	15.5	1,168	213.1	34.8
LP	1.8	323.8	48.3	166.6	0.0	0.0	296	323.8	48.3
ALL	88.0	59.8	8.9	138.3	37.4	5.3	12,169	70.5	10.4

Unit Summary: HARVARDU11

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	25	ALL	14.2	55	67	6,371	6,336	0.5	45.3	49.8	13.2	544.9
ES	LIVE	CUT	7	ALL	12.8	55	68	1,103	1,103	0.0	8.5	7.6	2.1	94.9
LP	LIVE	CUT	1	ALL	12.5	71	89	296	296	0.0	2.1	1.8	0.5	25.5
WL	LIVE	CUT	16	ALL	15.4	71	89	3,011	3,011	0.0	13.7	17.8	4.5	258.9
ALL	LIVE	CUT	49	ALL	14.2	59	72	10,781	10,746	0.3	69.6	77.0	20.3	924.2
ALL	ALL	ALL	49	ALL	14.2	59	72	10,781	10,746	0.3	69.6	77.0	20.3	924.2

Cruise Unit Report HARVARDU12

Unit Sale Notice Volume (MBF): HARVARDU12

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	11.2			261	35	166	61
WL	10.9			134		98	36
LP	12.0			36		29	7
ALL	11.1			431	35	292	104

Unit Cruise Design: HARVARDU12

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	60.0	60.2	32	11	1

Unit Cruise Summary: HARVARDU12

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	21	92	2.9	0
WL	9	33	1.0	0
LP	1	7	0.2	0
ALL	31	132	4.1	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARDU12

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	57.5	66.0	11.7	94.2	39.3	8.6	5,416	76.8	14.5
WL	20.6	124.3	22.0	111.8	22.0	7.3	2,307	126.3	23.2
LP	4.4	322.9	57.1	136.2	0.0	0.0	596	322.9	57.1
ALL	82.5	49.2	8.7	100.8	34.1	6.1	8,318	59.9	10.6

Unit Summary: HARVARDU12

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	21	ALL	11.2	50	61	4,454	4,356	2.2	67.6	46.3	13.8	261.4
LP	LIVE	CUT	1	ALL	12.0	60	75	596	596	0.0	5.6	4.4	1.3	35.8
WL	LIVE	CUT	9	ALL	10.9	62	77	2,443	2,237	8.4	30.9	20.0	6.1	134.2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	31	ALL	11.2	54	67	7,493	7,189	4.1	104.1	70.7	21.2	431.4
ALL	ALL	ALL	31	ALL	11.2	54	67	7,493	7,189	4.1	104.1	70.7	21.2	431.4

Cruise Unit Report HARVARDU13

Unit Sale Notice Volume (MBF): HARVARDU13

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	13.9			161	70	75	16
WL	15.0			66	23	38	5
ES	12.9			5		4	1
ALL	14.1			232	92	117	23

Unit Cruise Design: HARVARDU13

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (20) Measure/Count Plots, Sighting Ht = 4.5 ft	20.0	20.4	12	6	0

Unit Cruise Summary: HARVARDU13

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
PP		3	1.5	0
DF	19	31	2.6	0
WL	6	13	1.1	0
ES	1	1	0.1	0
ALL	26	48	4.0	0

Unit Cruise Statistics (Cut + Leave Trees): HARVARDU13

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
PP	30.0	47.1	33.3						
DF	51.7	119.5	34.5	161.1	44.3	10.2	8,324	127.5	36.0
WL	21.7	107.5	31.0	152.0	19.0	7.7	3,293	109.2	32.0
ES	1.7	346.4	100.0	155.4	0.0	0.0	259	346.4	100.0
ALL	80.0	81.9	23.6	158.3	39.2	7.7	12,668	90.8	24.9

Unit Summary: HARVARDU13

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	19	ALL	13.9	58	72	8,252	8,056	2.4	47.4	50.0	13.4	161.1
ES	LIVE	CUT	1	ALL	12.9	66	83	259	259	0.0	1.8	1.7	0.5	5.2
WL	LIVE	CUT	6	ALL	15.0	72	90	3,363	3,293	2.1	17.7	21.7	5.6	65.9
ALL	LIVE	CUT	26	ALL	14.2	62	77	11,874	11,608	2.2	66.9	73.4	19.5	232.2
ALL	ALL	ALL	26	ALL	14.2	62	77	11,874	11,608	2.2	66.9	73.4	19.5	232.2

Cruise Unit Report Row 1

Unit Sale Notice Volume (MBF): Row 1

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WL	15.8			7	4	2	0
DF	16.5			5	4	1	1
ES	12.8			1	0	1	0
ALL	15.9			13	8	4	1

Unit Cruise Design: Row 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
ST: Strip/Percent Sample (1 tree expansion)	1.0		1	1	0

Unit Cruise Summary: Row 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WL	35	35	35.0	0
DF	36	36	36.0	0
ES	6	6	6.0	0
ALL	77	77	77.0	0

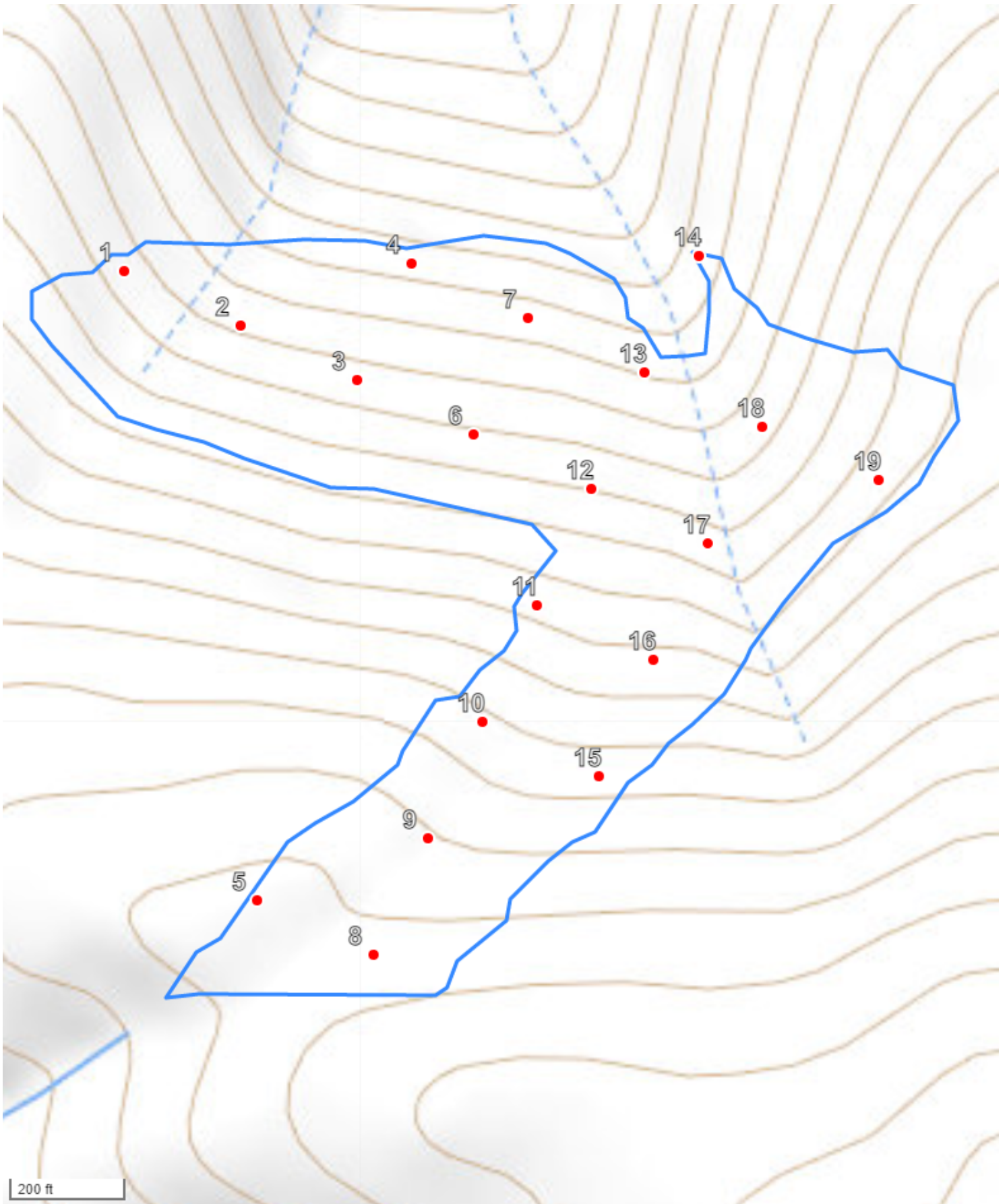
Unit Cruise Statistics (Cut + Leave Trees): Row 1

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WL	47.7	0.0	0.0	136.5	35.7	6.0	6,513	35.7	6.0
DF	53.2	0.0	0.0	101.3	56.4	9.4	5,388	56.4	9.4
ES	5.4	0.0	0.0	154.0	24.3	9.9	830	24.3	9.9
ALL	106.3	0.0	0.0	119.8	46.0	5.2	12,731	46.0	5.2

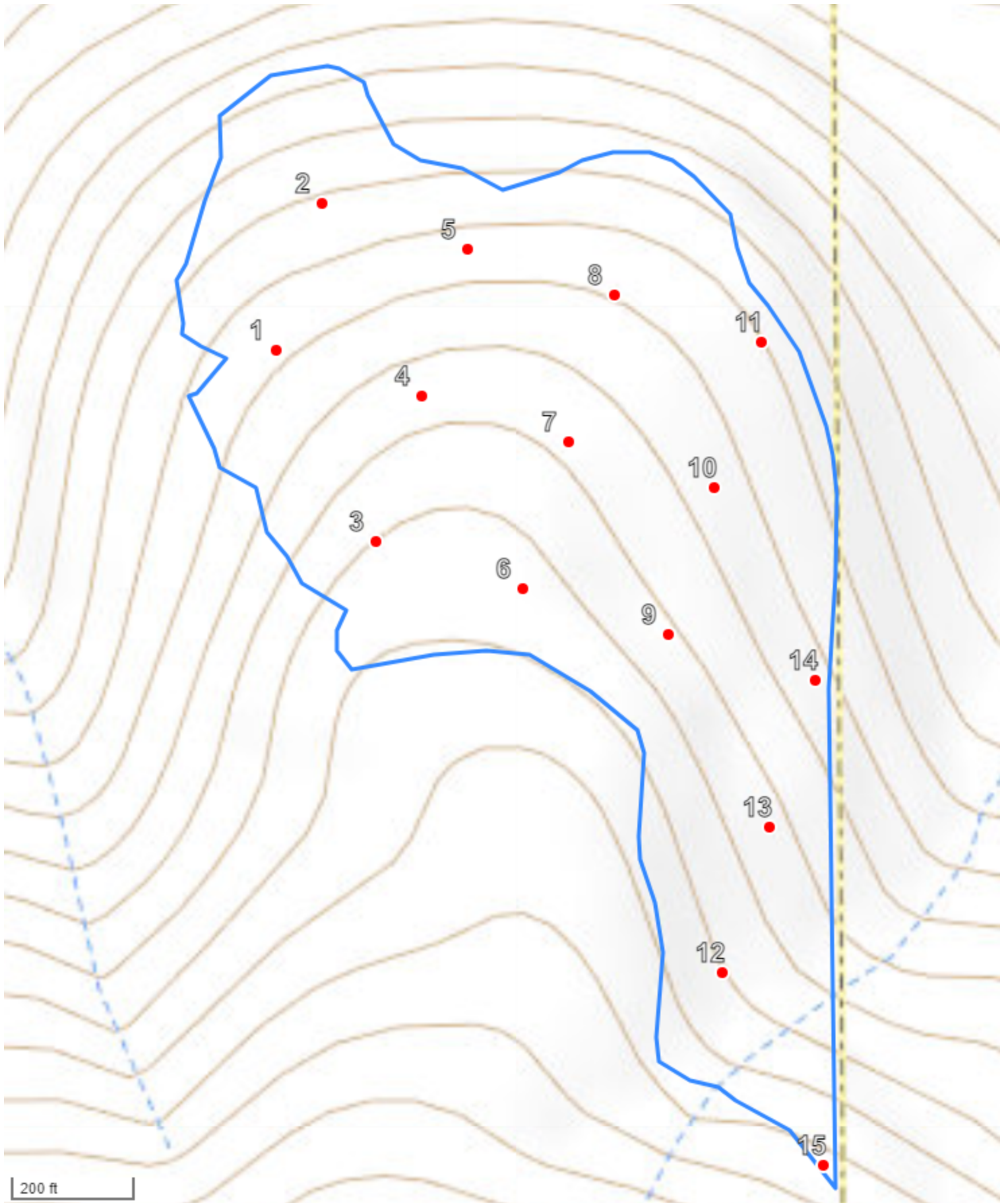
Unit Summary: Row 1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	36	ALL	16.5	53	65	5,388	5,388	0.0	35.8	53.2	13.1	5.4
ES	LIVE	CUT	6	ALL	12.8	66	83	830	830	0.0	6.0	5.4	1.5	0.8
WL	LIVE	CUT	35	ALL	15.8	68	85	6,513	6,513	0.0	35.0	47.7	12.0	6.5

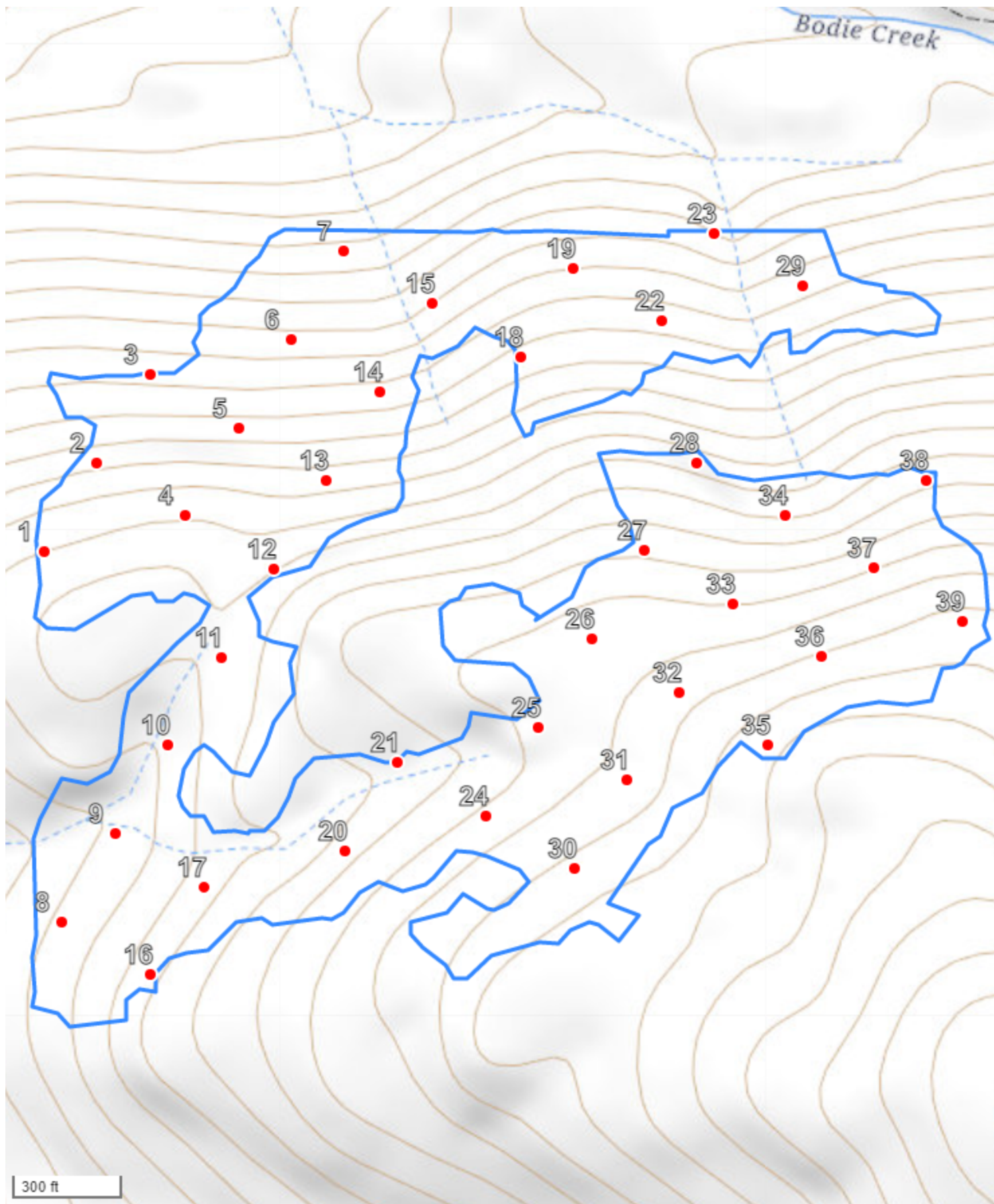
Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	77	ALL	15.9	61	76	12,731	12,731	0.0	76.8	106.3	26.6	12.7
ALL	ALL	ALL	77	ALL	15.9	61	76	12,731	12,731	0.0	76.8	106.3	26.6	12.7



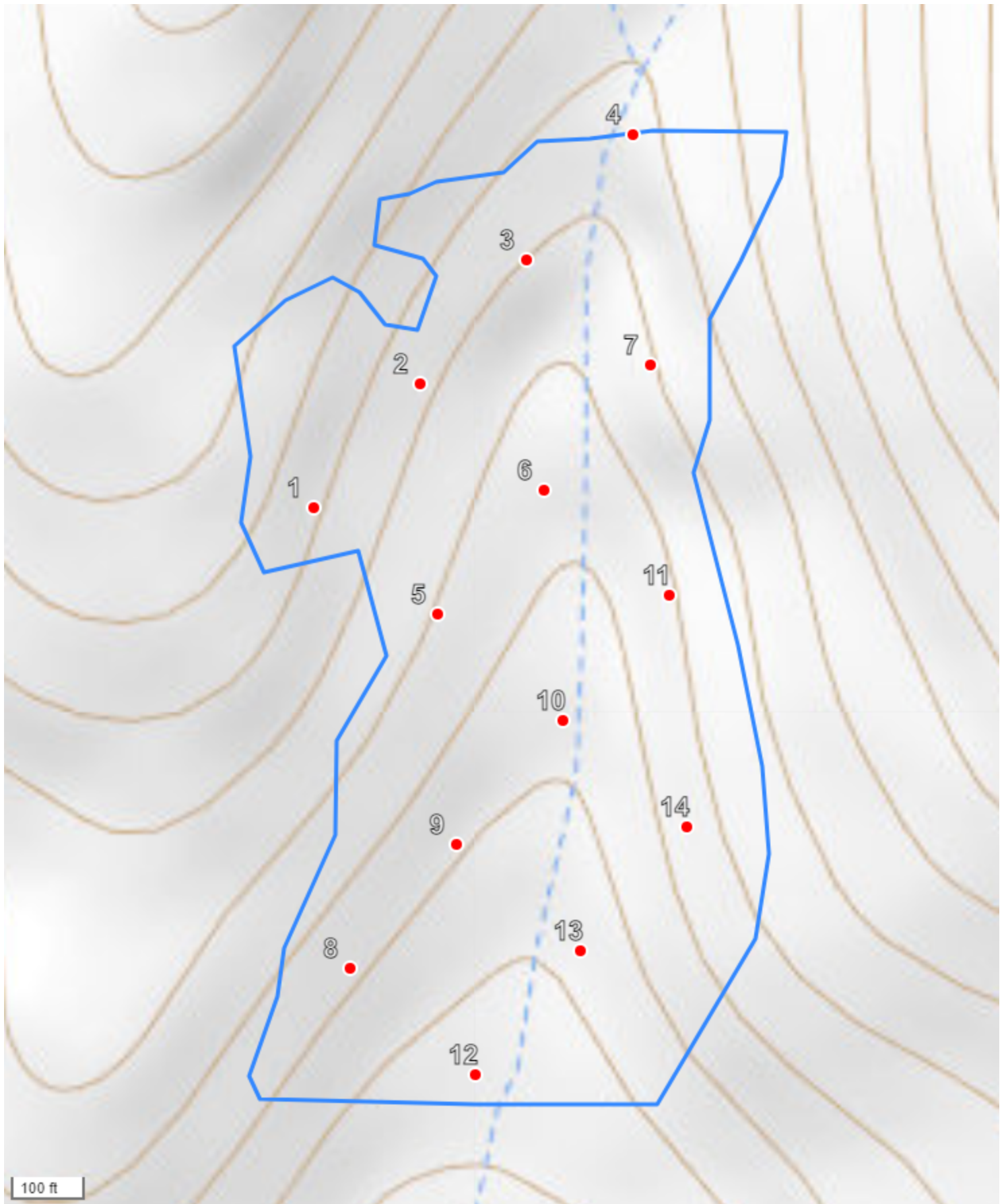
FMA Name: HARVARD U1	N Plots: 19	Plot Spacing: 220.2 ft
Grid Name: HARVARD U1 - 3	Acres Treated: 20.9	Main Azimuth: 25 deg



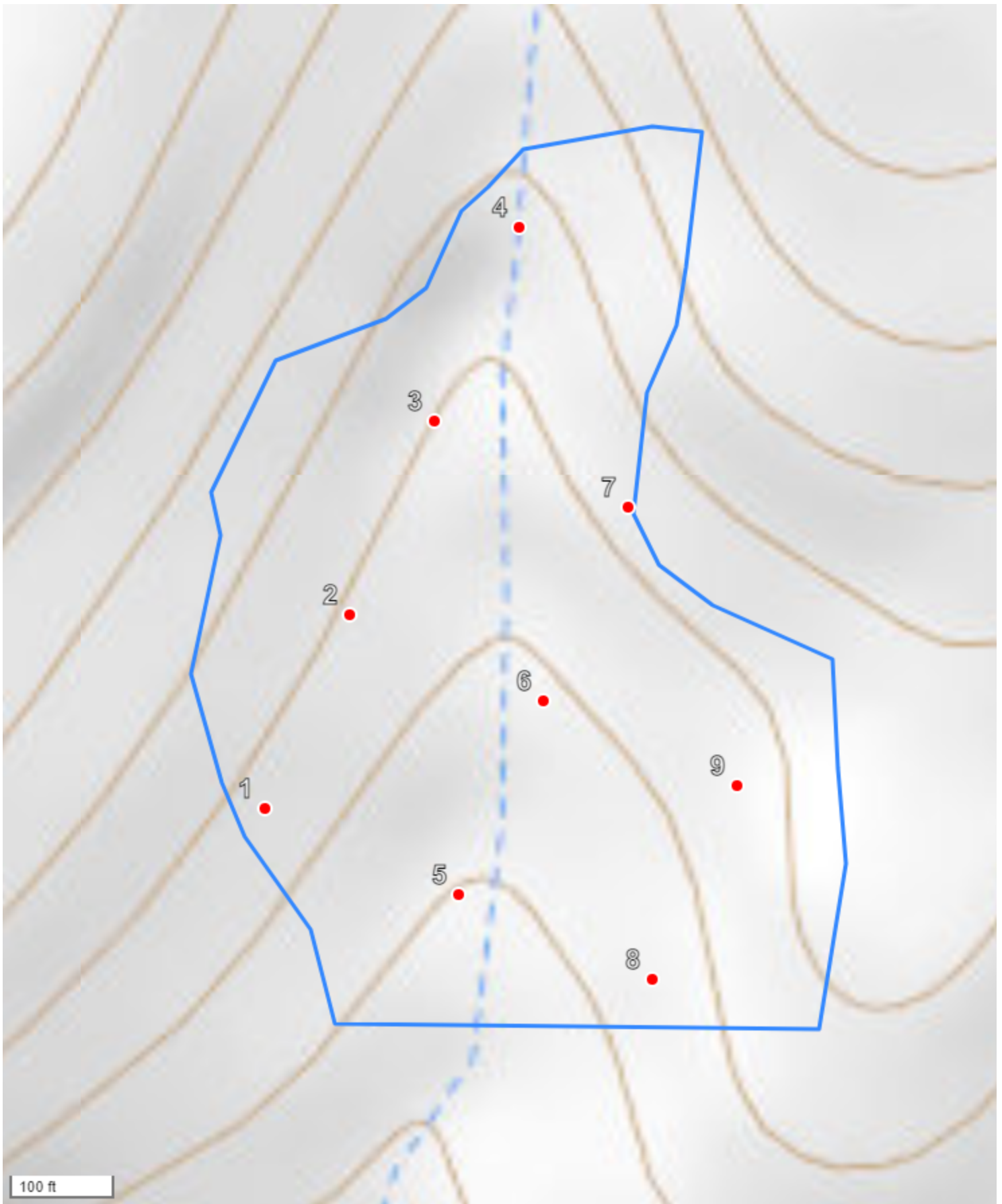
FMA Name: HARVARD U2	N Plots: 15	Plot Spacing: 246.9 ft
Grid Name: HARVARD U2 - 1	Acres Treated: 22	Main Azimuth: 17.5 deg



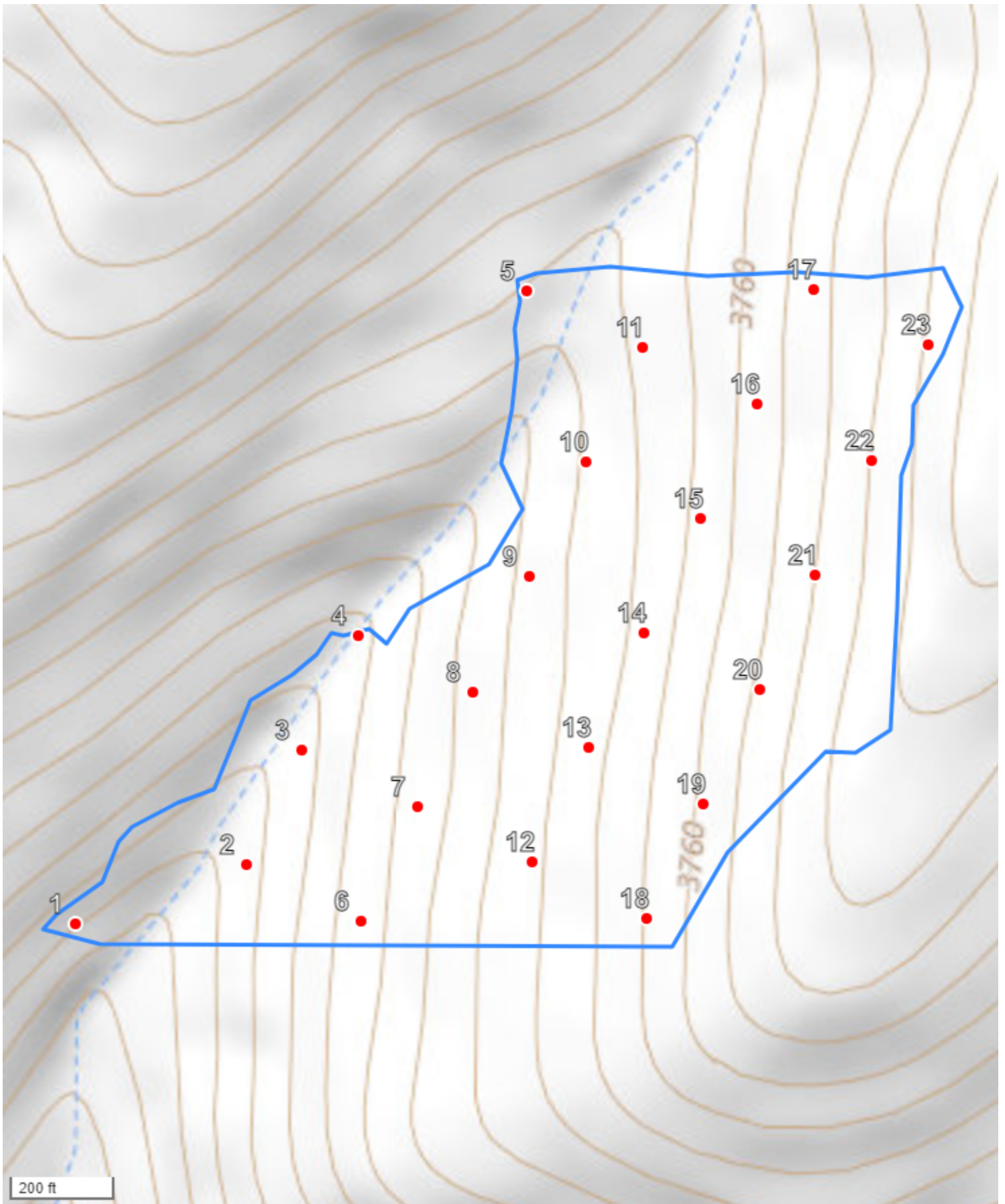
FMA Name: HARVARD U3	N Plots: 39	Plot Spacing: 279.4 ft
Grid Name: HARVARD U3 - 1	Acres Treated: 68	Main Azimuth: 30.9 deg



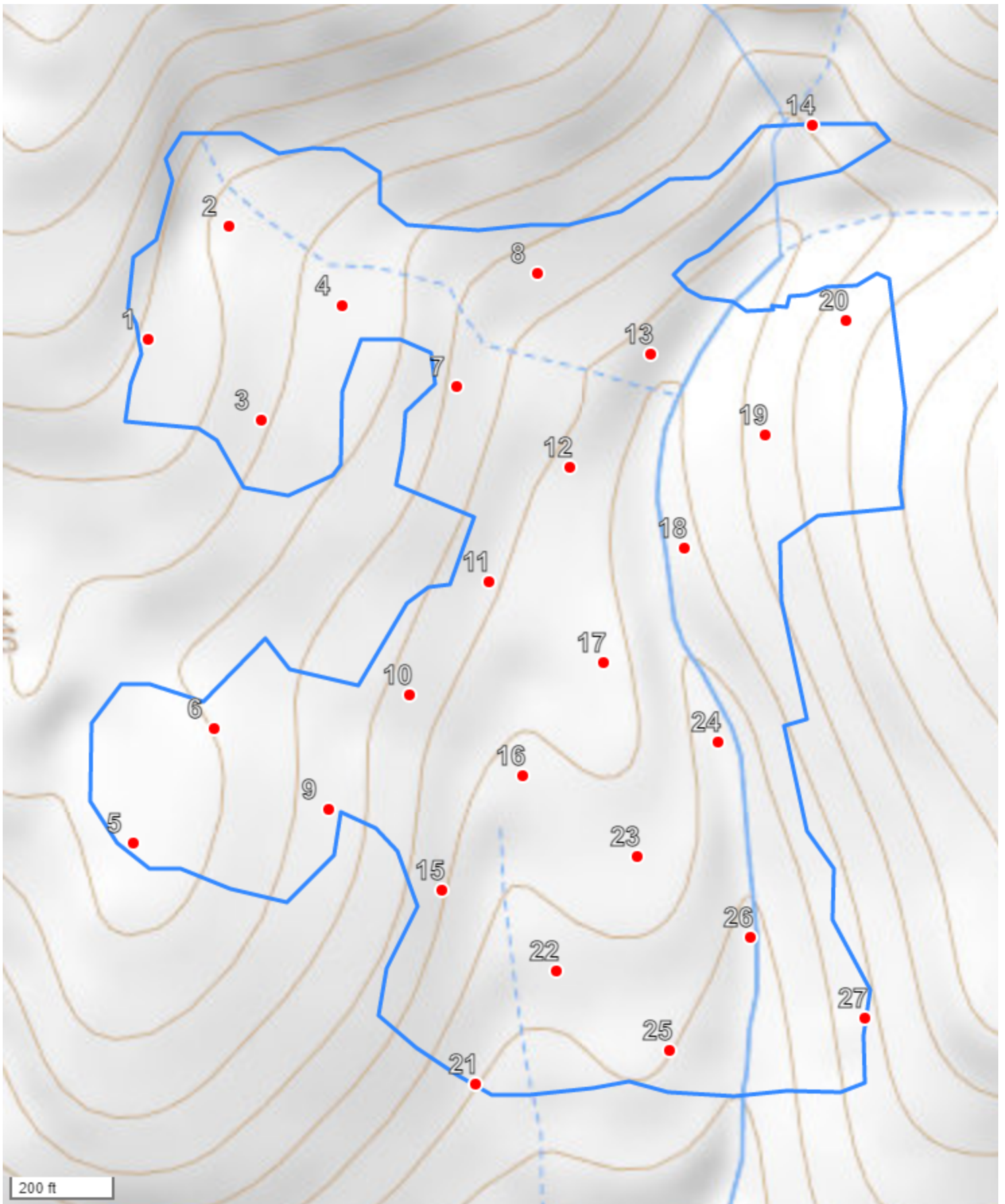
FMA Name: HARVARD U4	N Plots: 14	Plot Spacing: 221 ft
Grid Name: HARVARD U4 - 1	Acres Treated: 17	Main Azimuth: 40.5 deg



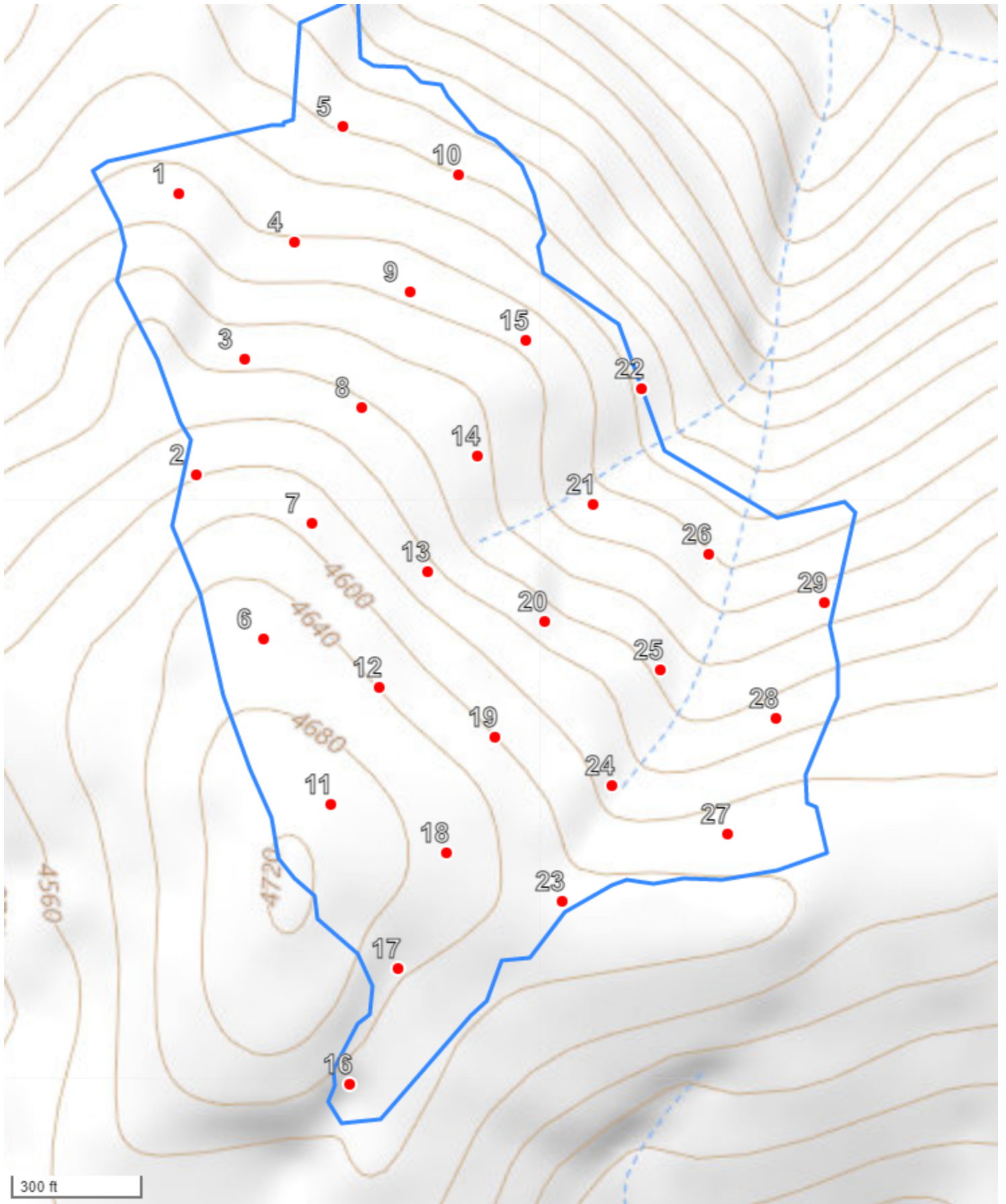
FMA Name: HARVARD U5	N Plots: 9	Plot Spacing: 202.7 ft
Grid Name: HARVARD U5 - 1	Acres Treated: 9	Main Azimuth: 23.7 deg



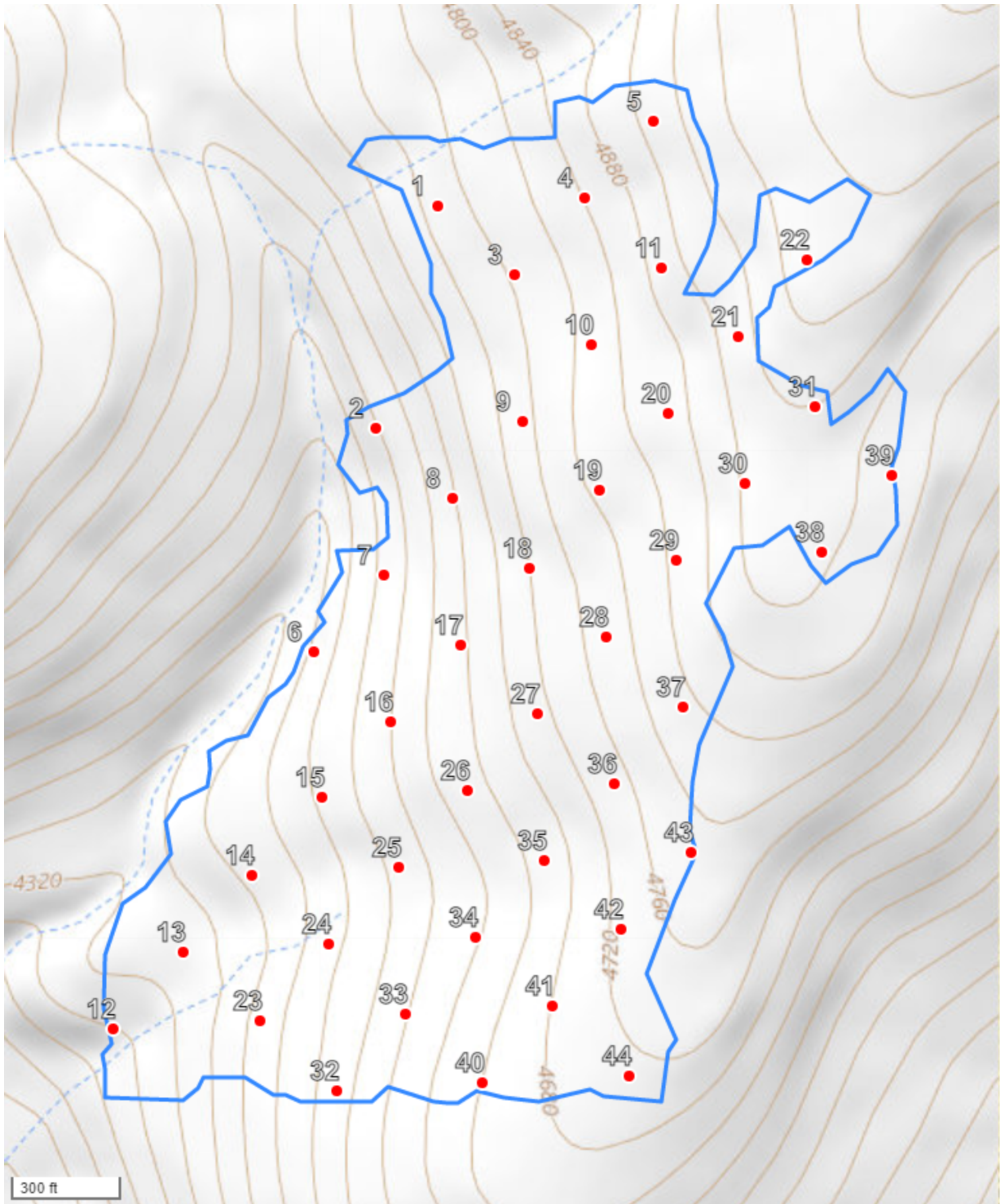
FMA Name: HARVARD U6	N Plots: 23	Plot Spacing: 244.4 ft
Grid Name: HARVARD U6 - 1	Acres Treated: 29	Main Azimuth: 26.1 deg



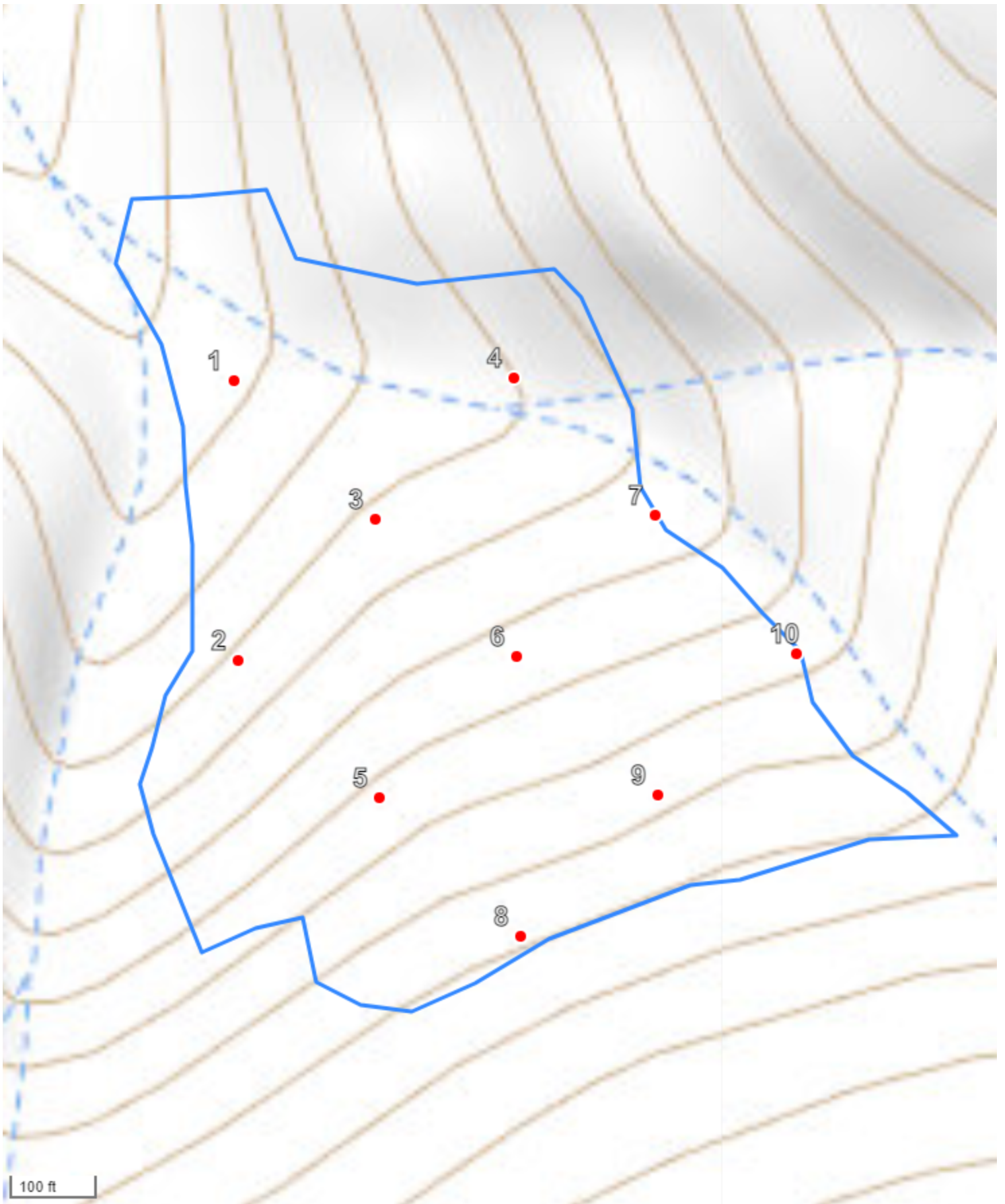
FMA Name: HARVARD U7	N Plots: 27	Plot Spacing: 266.9 ft
Grid Name: HARVARD U7 - 1	Acres Treated: 42.7	Main Azimuth: 35.3 deg



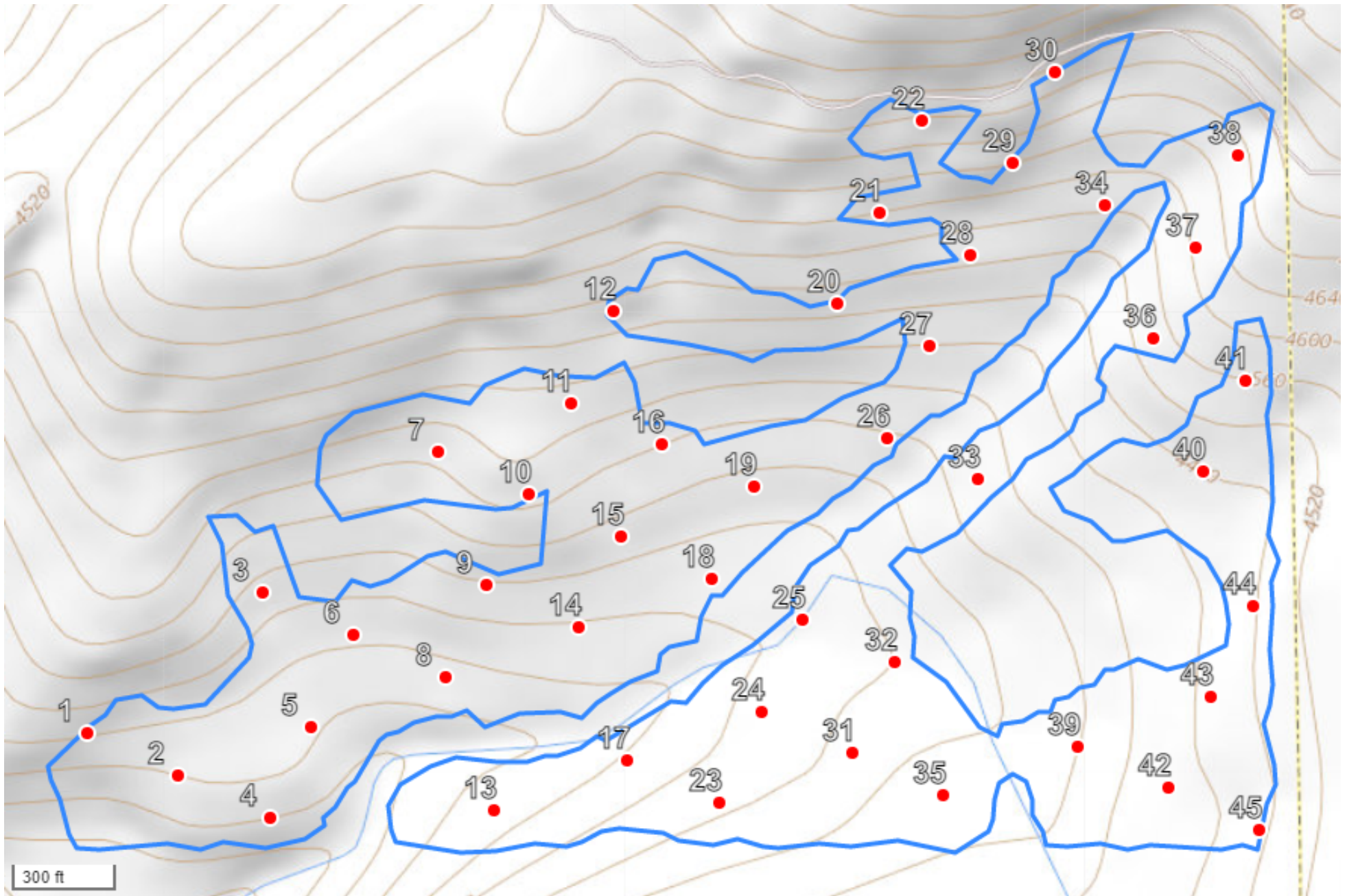
FMA Name: HARVARD U8	N Plots: 29	Plot Spacing: 286.7 ft
Grid Name: HARVARD U8 - 1	Acres Treated: 51.7	Main Azimuth: 22.8 deg



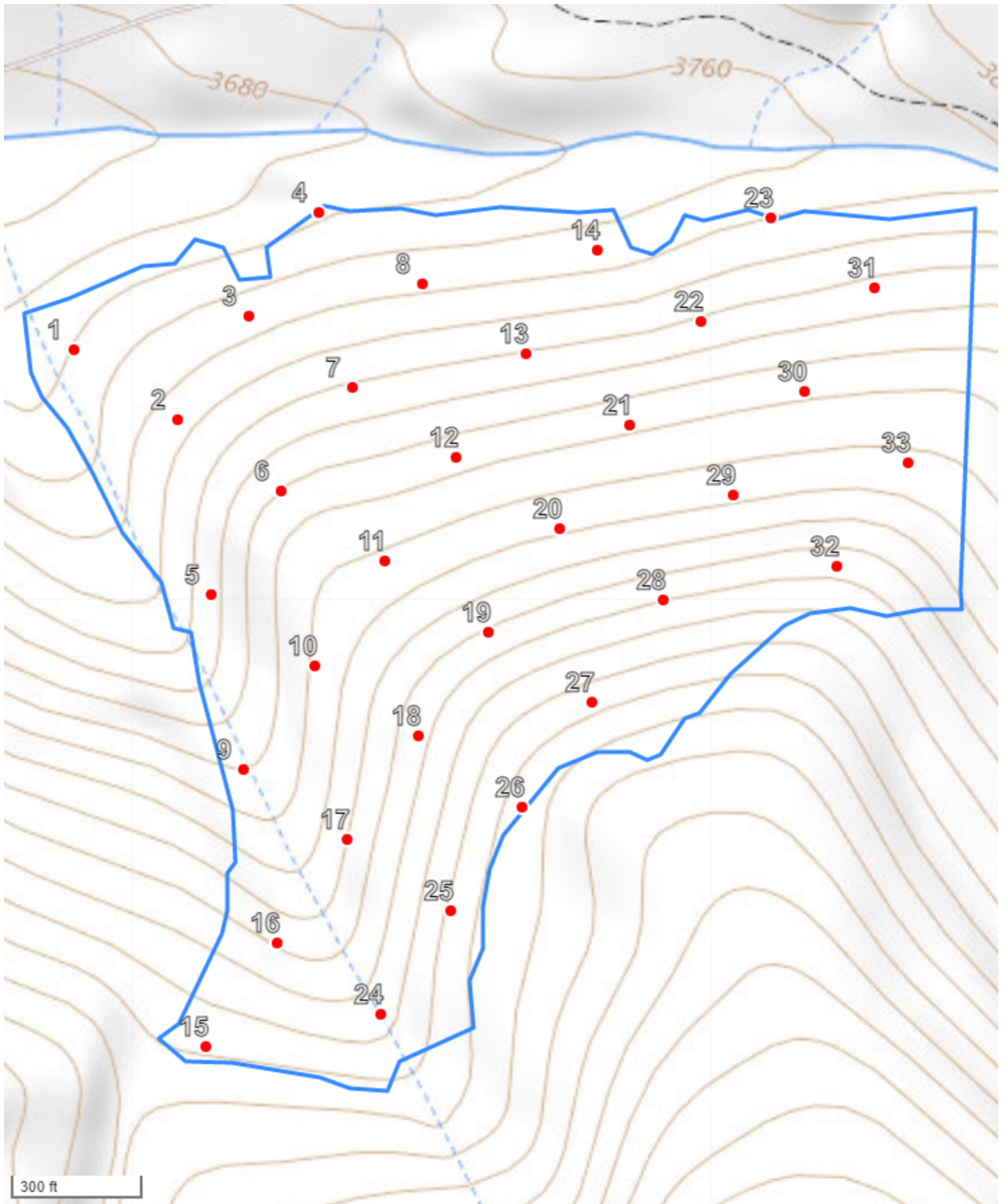
FMA Name: HARVARD U9	N Plots: 44	Plot Spacing: 280.1 ft
Grid Name: HARVARD U9 - 1	Acres Treated: 76	Main Azimuth: 42.1 deg



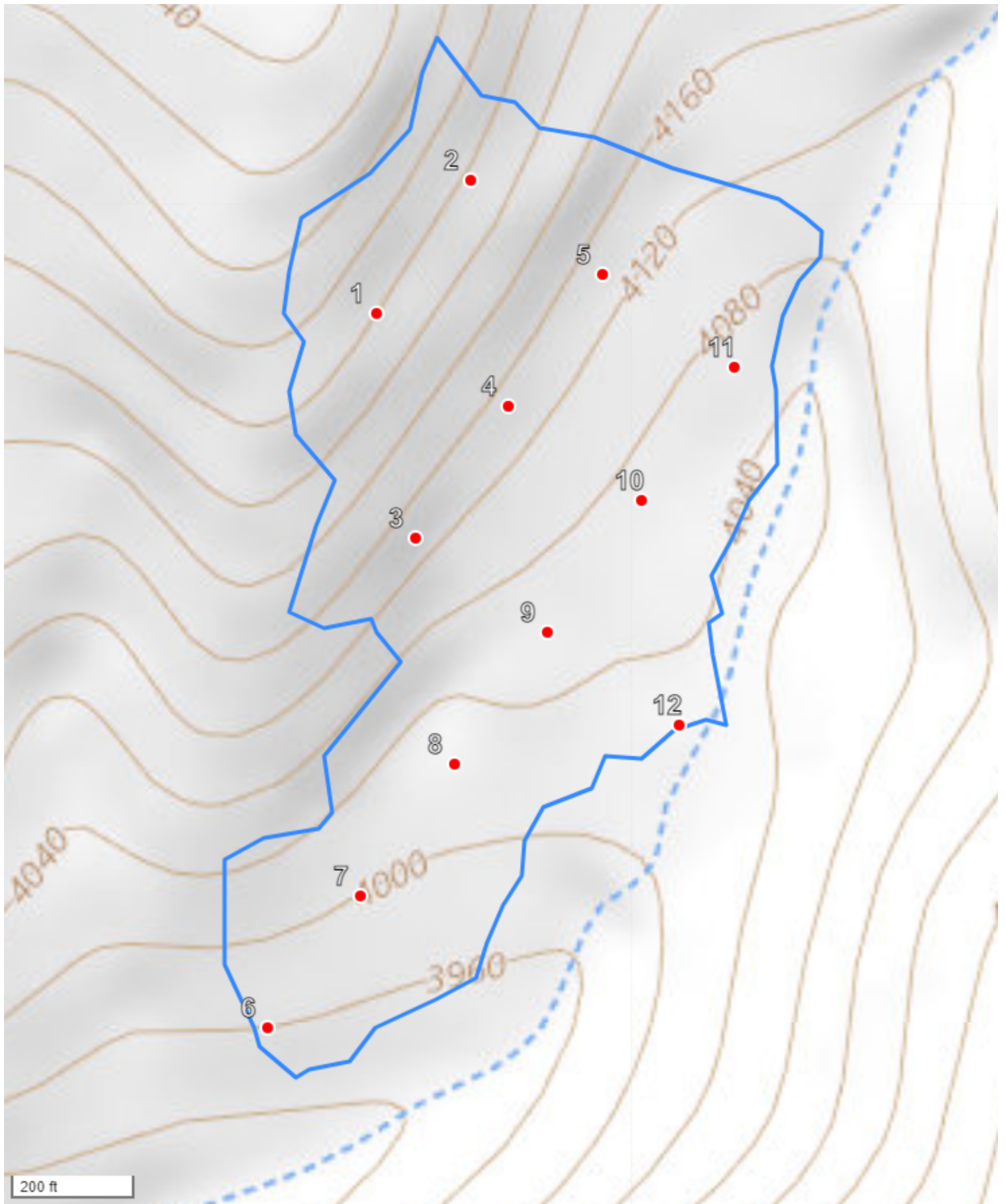
FMA Name: HARVARDU10	N Plots: 10	Plot Spacing: 225.1 ft
Grid Name: HARVARDU10 - 1	Acres Treated: 12	Main Azimuth: 44.4 deg



FMA Name: HARVARDU11	N Plots: 45	Plot Spacing: 288.5 ft
Grid Name: HARVARDU11 - 1	Acres Treated: 86	Main Azimuth: 24.7 deg



FMA Name: HARVARDU12	N Plots: 33	Plot Spacing: 286 ft
Grid Name: HARVARDU12 - 1	Acres Treated: 60	Main Azimuth: 34.3 deg



FMA Name: HARVARDU13	N Plots: 12	Plot Spacing: 261 ft
Grid Name: HARVARDU13 - 1	Acres Treated: 20	Main Azimuth: 35.2 deg



Forest Practices Application/Notification Notice of Decision

FPA/N No: 3024988

Effective Date: 6/1/2021

Expiration Date: 6/1/2024

Shut Down Zone: 678 W

EARR Tax Credit: Eligible Non-eligible

Reference: DNR "Q Harvard"
1,2,3,12,13,14,15,22,23,24,36-38-31

Decision

- Notification Accepted** Operations shall not begin before the effective date.
- Approved** This Forest Practices Application is subject to the conditions listed below.
- Disapproved** This Forest Practices Application is disapproved for the reasons listed below.
- Withdrawn** Applicant has withdrawn the Forest Practices Application/Notification (FPA/N).
- Closed** All forest practices obligations are met.

FPA/N Classification

- Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

- 4 years 5 years

Conditions on Approval/Reasons for Disapproval

Approved without conditions.

Issued By: Kyle Buckmiller

Region: Northeast

Title: Forest Practices Forester

Date: 6/1/2021

Copies to: Landowner, Timber Owner Operator

Issued in person: Landowner Timber Owner Operator

By: Erin Graves NRTII

Appeal Information

You have thirty (30) days to **file** (i.e., **actually deliver**) an appeal in writing of this Decision and any related State Environmental Policy Act (SEPA) determinations to the Pollution Control Hearings Board, the Attorney General's Office, and the Department of Natural Resources' region office. See [RCW 76.09.205](#). The appeal period starts when the applicant receives this decision, which usually happens electronically on the date indicated below.

You must file your appeal at all three addresses below:

Pollution Control Hearings Board	Office of the Attorney General Natural Resources Division	Department Of Natural Resources Northeast Region
<u>Physical Address</u> 1111 Israel Road, SW Suite 301 Tumwater, WA 98501 <u>Mailing address</u> Post Office Box 40903 Olympia, WA 98504-0903	<u>Physical Address</u> 1125 Washington Street, SE Olympia, WA 98504 <u>Mailing Address</u> Post Office Box 40100 Olympia, WA 98504-0100	225 South Silke Road Colville, WA 99114

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

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 <https://www.dnr.wa.gov/programs-and-services/forest-practices/review-applications-fpars/forest-practices-forms-and>. Notify DNR of new Operators within 48 hours.

Continuing Forestland 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 forestland 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 and 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 forestland obligation, the seller must pay the buyer's costs related to continuing forestland obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forestland obligation against the seller.

Failure by the seller to send the required notice to 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 forestland obligation prior to sale.

DNR Affidavit of Mailing

On this day 6/2/2021, I placed in the United States mail at Colville, WA, postage paid, a true and accurate copy of this document. Notice of Decision FPA #3024988

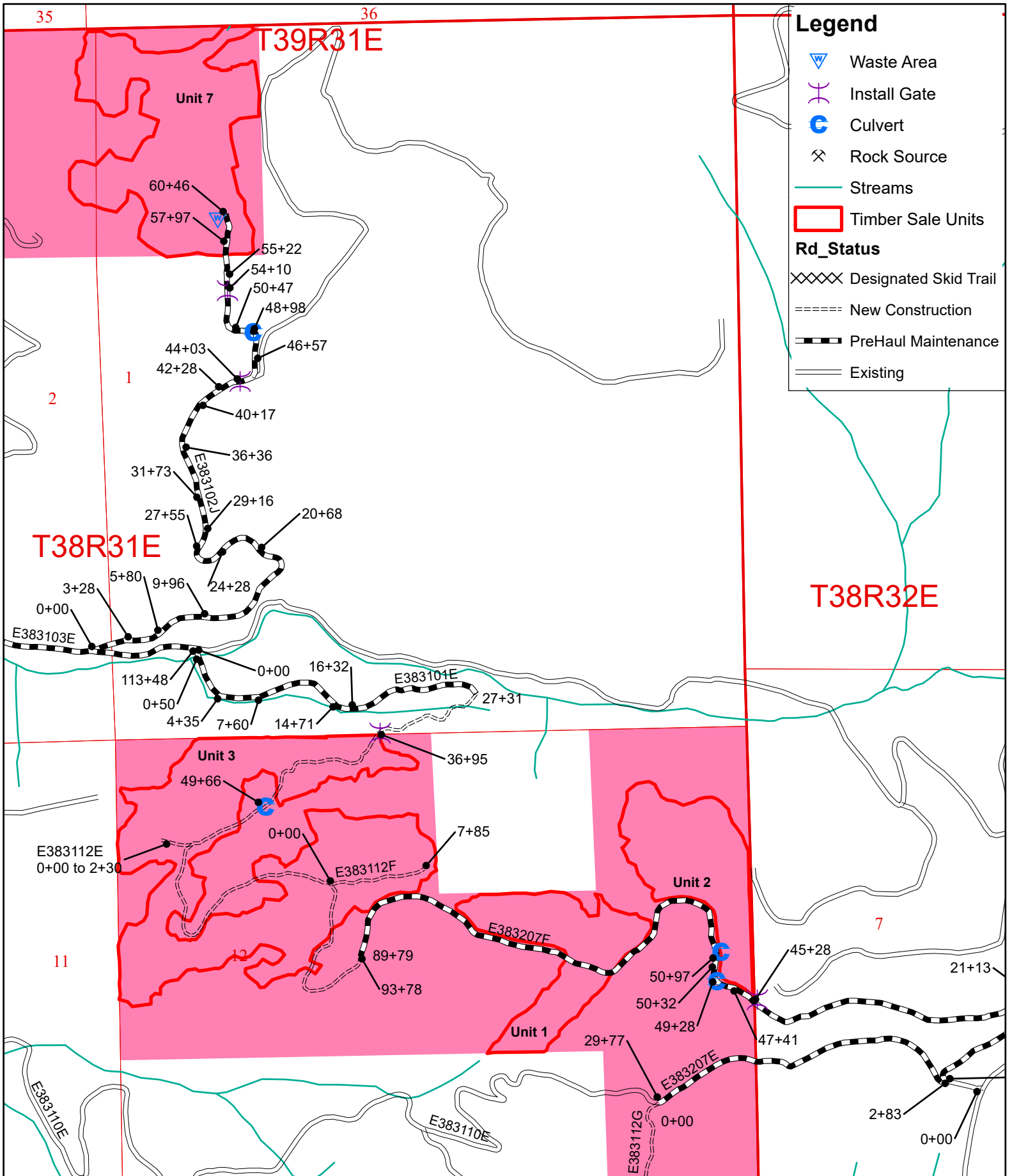
Ronda Nielsen
(Printed Name)

Ronda Nielsen
(Signature)

Washington State Department of Natural Resources

Harvard Road Plan Map

Township 38 N Range 31 & 32 E

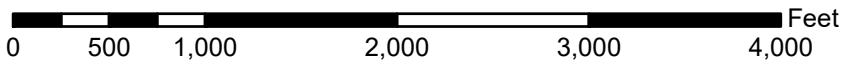


Legend

- Waste Area
- Install Gate
- Culvert
- Rock Source
- Streams
- Timber Sale Units

Rd_Status

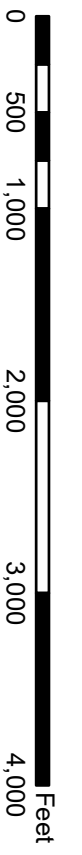
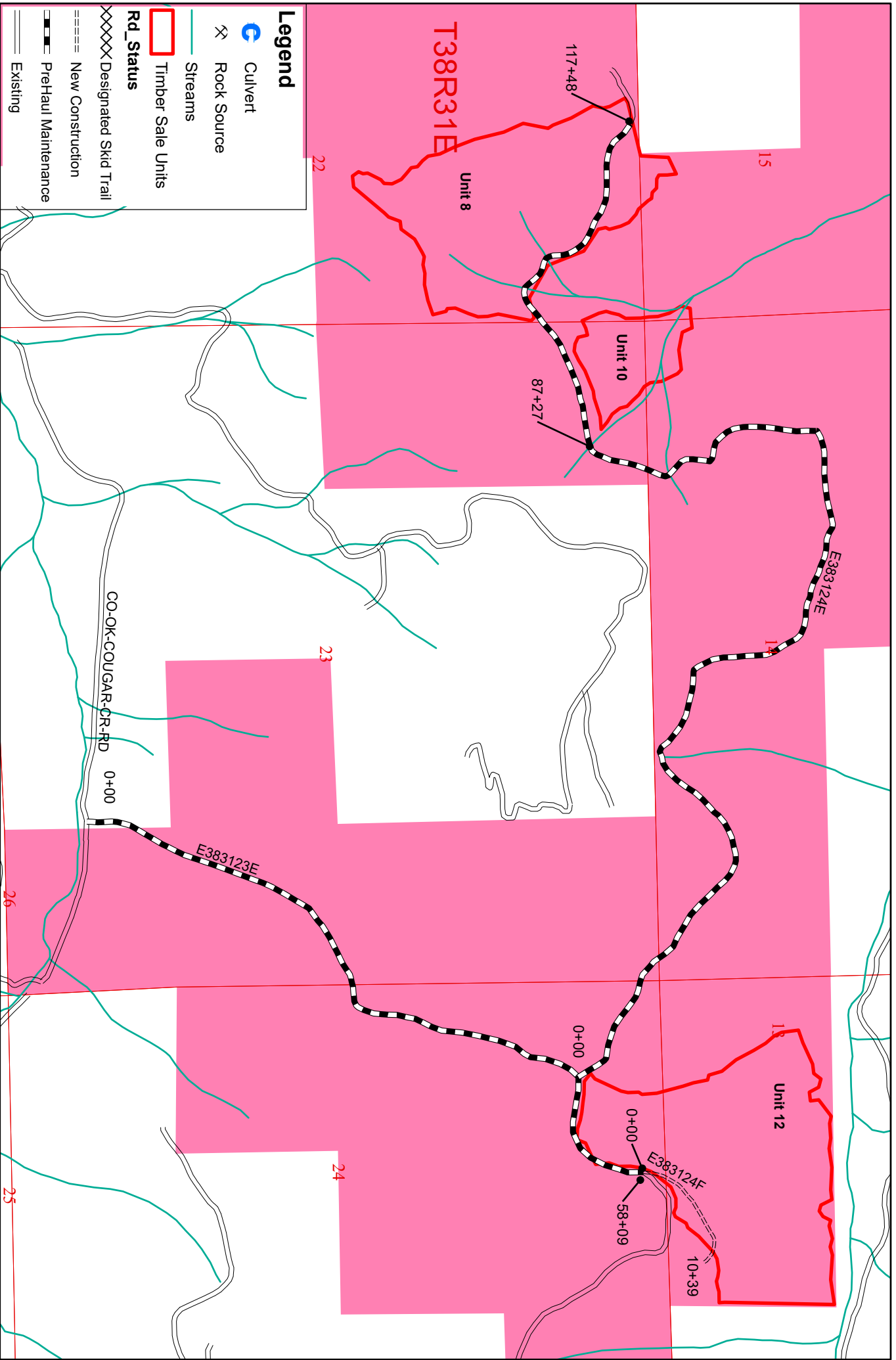
- Designated Skid Trail
- New Construction
- PreHaul Maintenance
- Existing



1 inch = 1,000 feet



Washington State Department of Natural Resources Harvard Road Plan Map Township 38 N Range 31 E



1 inch = 1,000 feet

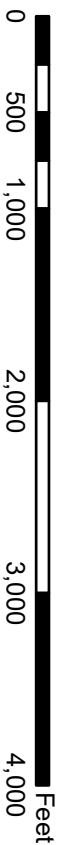
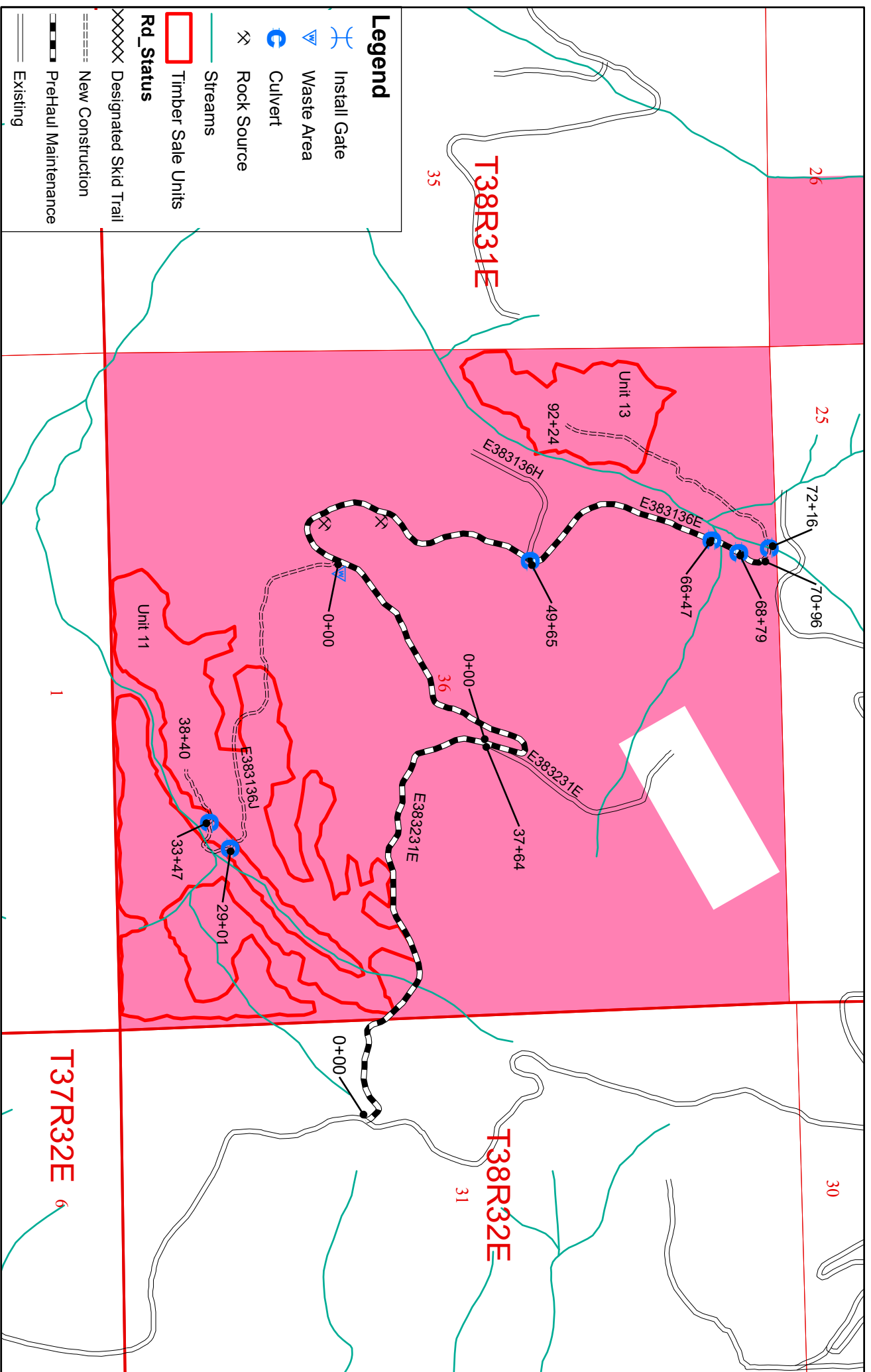


11-16-2020

Legend

- Culvert
- Rock Source
- Streams
- Timber Sale Units
- Designated Skid Trail
- New Construction
- PreHaul Maintenance
- Existing

Washington State Department of Natural Resources Harvard Road Plan Map Township 38 N Range 31 & 32 E



1 inch = 1,000 feet

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

HARVARD TIMBER SALE ROAD PLAN
OKANOGAN COUNTY
HIGHLANDS DISTRICT

AGREEMENT NO.: 30-101630

STAFF ENGINEER: JASON BAUER

DATE: 11/16/20

DRAWN & COMPILED BY: XANDER CULVER

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 are required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
E383101E	27.31	Pre-Haul Maintenance
E383101E	66.47	Construction
E383102E	17.88	Pre-Haul Maintenance
E383102G	3.68	Construction
E383102H	13.30	Construction
E383102J	60.46	Pre-Haul Maintenance
E383103E	113.48	Pre-Haul Maintenance
E383103F	2.87	Construction
E383112E	2.30	Construction
E383112F	7.85	Construction
E383112G	35.21	Construction
E383123E	58.09	Pre-Haul Maintenance
E383124E	117.48	Pre-Haul Maintenance
E383124F	10.39	Construction
E383136E	70.96	Pre-Haul Maintenance
E383136E	21.28	Construction
E383136J	38.40	Construction
E383207E	26.94	Pre-Haul Maintenance
E383207F	89.79	Pre-Haul Maintenance
E383231E	37.64	Pre-Haul Maintenance

0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
E383101E	27+31 to 93+78	See sections 3, 4, and 5.
E383102G	0+00 to 3+68	See sections 3, 4, and 5.
E383102H	0+00 to 13+30	See sections 3, 4, and 5.
E383103F	0+00 to 2+87	See sections 3, 4, and 5.
E383112E	0+00 to 2+30	See sections 3, 4, and 5.
E383112F	0+00 to 7+85	See sections 3, 4, and 5.
E383112G	0+00 to 35+21	See sections 3, 4, and 5.
E383124F	0+00 to 10+39	See sections 3, 4, and 5.
E383136E	70+96 to 92+24	See sections 3, 4, and 5.
E383136J	0+00 to 38+40	See sections 3, 4, and 5.

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.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
E383101E	0+00 to 27+31	Brush, blade, shape, and improve drainage.
E383102E	0+00 to 17+88	Brush, blade, shape, and improve drainage.
E383102J	0+00 to 60+46	Brush, blade, shape, and improve drainage.
E383103E	0+00 to 113+48	Brush, blade, shape, and improve drainage.
E383123E	0+00 to 58+09	Brush, blade, shape, and improve drainage.
E383124E	0+00 to 117+48	Brush, blade, shape, and improve drainage.
E383136E	0+00 to 70+96	Brush, blade, shape, and improve drainage.
E383207E	2+83 to 29+77	Brush, blade, shape, and improve drainage.
E383207F	0+00 to 89+79	Brush, blade, shape, and improve drainage.

E383231E	0+00 to 37+64	Brush, blade, shape, and improve drainage.
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Maintenance includes, but is not limited to brushing, clearing, grubbing, subgrade reshaping, rolling dip, cross drain, and culvert installation, cleaning culverts and ditches, grading, and riprap and rock application. Reference the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications.

0-7 POST-HAUL MAINTENANCE

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

0-12 DEVELOP ROCK SOURCE

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

0-13 STRUCTURES

Purchaser shall provide and install a 72"X 46' full round culvert. Requirements for this structure are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

Purchaser shall perform road work within the tolerances listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET. These tolerances do not supersede clauses 1-6, 4-3, and 4-4.

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

1-6 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 staking of centerline and slope stakes.
4. Road Plan Clauses.
5. Typical Section Sheet.
6. Standard Lists.
7. Standard Details.
8. 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.

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. Construction may not close any road for more than 21 consecutive days.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

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.
- Wooden stakes through switchbacks on new construction

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

1-25 ACTIVITY TIMING RESTRICTION

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

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 4 inches on jaw run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 8 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- In the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which will be developed by the Contact Administrator upon request.

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

1-43 ROAD WORK AROUND UTILITIES

It is the Purchaser's responsibility to identify any utilities. 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.

2-4 PASSAGE OF LIGHT VEHICLES

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

Purchaser shall accomplish all grading using a motor grader.

2-6 CLEANING CULVERTS

Purchaser shall clean the inlets and outlets of all culverts.

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before timber haul can commence and must be done in accordance with the Typical Section Sheet and “Culvert and Drainage Specification Detail”. Pulling ditch material across the road or mixing in with the road surface is not allowed on rock surface roads.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

Purchaser shall cut vegetative material up to 6 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by 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.

3-2 BRUSHING RESTRICTION

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

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 3 inches DBH or over 6 feet high between the marked right-of-way boundaries and within waste and debris areas, or if

not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

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

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

3-10 GRUBBING

Remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. On new construction all stumps shall be removed between 2 feet above the top of the cut slope to 2 feet below the toe of the fill and a minimum of 5' from the edge of the subgrade. Those stumps outside the grubbing limits or cut slopes but with undercut roots shall also be removed. Stumps that will be fully or partially covered with fill material must be removed. Stumps over 22 inches diameter shall be split. Stumps over 40 inches shall be quartered. Grubbing shall be completed before starting excavation and embankment.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Contractor shall complete all disposal of organic debris, except by burning, before the application of rock or timber haul.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, wetland, or within the riparian management zone.
- On road subgrades or embankments.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.
- organic debris may be used as mulch or in slash filter windrows to prevent sediment delivery.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-30 EXCLUSION OF DOZER BLADES

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

3-31 PILING

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

3-32 END HAULING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

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

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

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

4-4 SWITCHBACK STANDARDS

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

Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10% .
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

- 2 feet for embankment heights at centerline of 1 to 6 feet.
- 4 feet for embankment heights at centerline of greater than 6 feet.

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

4-10 DRIVING SURFACE OF NEWLY CONSTRUCTED ROAD

The driving surface of any newly constructed road shall be smooth and drivable. It shall also be gradable without rocks larger than 4" within the top 4" of the surface unless specified in the rock lists.

4-11 KEYED EMBANKMENT

On the following road, Purchaser shall key embankments into the native fill slope in accordance with the KEYED EMBANKMENT DETAIL.

<u>Road</u>	<u>Stations</u>
E383207F	21+13 to 21+43

4-12 FULL BENCH CONSTRUCTION

Where side slopes exceed 50%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed. If designated, Purchaser shall end haul waste material to the location specified by Contract Administrator.

If not designated, when the vertical distance to a slope less than 30% is greater than 75', the full bench excavation material shall be end hauled to a designated location.

4-13 DAYLIGHT EXCAVATION ON EXISTING ROADS

On the following road(s), Purchaser shall excavate the outside shoulder to daylight.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
E383103E	53+91	Waste material shall be spread down the road and side cast.

4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS

Purchaser shall construct the subgrade of intersections to the dimensions shown on the INTERSECTION DETAIL.

4-21 TURNOUTS

Purchaser shall construct turnouts intervisible with a maximum distance of 1,000 feet between turnouts unless otherwise shown on drawings. Locations may be adjusted to fit the final subgrade alignment and sight distances. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-22 TURNAROUNDS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified and as needed and as directed by the Contract Administrator. Ditchouts shall be constructed in a manner that diverts ditch water onto the forest floor and shall have excavation backslopes no steeper than a 1:1 ratio.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-37 WASTE AREA LOCATION

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

Waste material from full bench construction of E383101E from station 27+31 to station 49+66 shall be spread on road E383101E from station 4+35 to station 27+31. The lifts shall be compacted at a depth no greater than 1 foot. Compaction shall be accomplished by routing tracked equipment across the entire road surface.

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 40%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

4-45 SELECT BORROW

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

4-46 COMMON BORROW

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

4-55 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.

4-56 DRY WEATHER SHAPING

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

4-59 SURFACE COMPACTION

On the following road, the Purchaser shall compact the surface with a self-propelled vibratory compactor weighing a minimum of 10,000 lbs. The Purchaser will make 3 passes at 3 mph.

<u>Road</u>	<u>Stations</u>
E383103E	0+00 to 5+25

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material by routing equipment over the entire width of each lift. Waste material may be placed by end-dumping or side casting until sufficiently wide enough to support the equipment.

4-62 DRY WEATHER COMPACTION

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

4-70 SUBGRADE REINFORCEMENT

On the following road, Purchaser shall provide and install geotextile fabric as specified in Clause 10-3 GEOTEXTILE FOR STABILIZATION. Subgrade reinforcement must be installed to a width of 12 feet. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered with a minimum of 9 inches of compacted rock from the Bodie Stock Pile. Purchaser shall apply rock in one lift over the geotextile in accordance with the manufacturer’s specifications.

<u>Road</u>	<u>Stations</u>
E383103E	0+00 to 5+25

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 side cast 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 or aluminum meeting the material specifications in Clauses 10-15 through 10-23. Culvert placement shall precede embankment construction.

All culverts must be new steel meeting the material specifications in Clauses 10-15, 10-21, and 10-23.

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

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

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Staff 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

Cross drain culverts shall be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts shall be installed with a depth of cover specified in the Engineer's design, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

5-20 ENERGY DISSIPATERS

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

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 5 feet shall be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts with No. 10 galvanized smooth wire or 1/2-inch bolts in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts, except for temporary culverts. Headwalls shall also be constructed at all culverts identified on the CULVERT AND DRAINAGE LIST that specifies the placement of rock. Rock shall be placed by zero drop height methods. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameters above the top of the culvert.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culvert(s), Purchaser shall place Heavy Loose Rip Rap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the attached culvert design or Culvert and Drainage List. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>
E383103E	13+58	Heavy Loose Rip Rap
E383102J	48+98	Heavy Loose Rip Rap

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.

5-31 ROLLING DIP CONSTRUCTION

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

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached <NON->DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCKLIST may be obtained from State land at no charge to the Contractor. Use of material from any other source must have prior written approval from the Contract Administrator. If other operators are using, or desire to use the rock source(s), a joint operating plan shall be developed. All parties shall follow this plan. The Contractor shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile on state land at no charge to the Purchaser.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Bodie Stock Pile	T39 R31E Section 34	5/8" Minus

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

The Contractor shall submit a rock source development plan to the Contract Administrator. The plan must be approved before the use of rock from State Land. Upon completion of operations, the rock source shall be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. The Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

Rock source development plans prepared by the Contractor 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.

6-21 IN-PLACE PROCESSING

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

6-22 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.

6-33 3-INCH MINUS CRUSHED ROCK

% Passing 3" square sieve	100%
% Passing 2" square sieve	65 - 95%
% Passing 3/4" square sieve	28 - 70%
% Passing U.S. #4 sieve	10 - 35%
% Passing U.S. #200 sieve	0 - 10%

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.

6-50 LIGHT LOOSE RIP RAP

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

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

6-51 HEAVY LOOSE RIP RAP

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

<u>At Least/Not More Than</u>	<u>*<Weight Range></u>	<u>*<Size Range></u>
-------------------------------	------------------------------	----------------------------

30% / 90%	1 ton to 3 ton	36" - 54"
70% / 90%	500 lbs. to 1 ½ ton	24" - 42"
10% / 30%	50 lbs. max	3" - 8"

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for approved completion of subgrade and drainage installations before rock application.

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

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

6-80 WATERING FOR DUST ABATEMENT

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

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 from the site. 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, Permits, Designs, Specifications and/or DETAILS.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

Purchaser must construct bank protection in accordance with the stream crossing, design, specifications, and details.

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 (including locating utilities)
- reroute stream flow
- dewatering
- excavation (includes removal and disposal of existing structure)
- installing culvert bedding and compaction
- culvert banding and placement
- backfill compaction, rock application and compaction
- final fill compaction and road surfacing

7-19 INSTALLATION STAGE ACCEPTANCE

Purchaser shall ensure that all materials and procedures used during construction comply with the design. Purchaser shall obtain written approval from the Staff Engineer listed on this contract for each stage of construction, listed in Clause 7-17 INSTALLATION PRODUCTION SCHEDULE, before starting construction on the next stage. Purchaser shall notify the Contract Administrator in writing when each construction stage is complete.

7-20 INSTALLATION FINAL ACCEPTANCE

Purchaser shall notify the Contract Administrator in writing before final acceptance of the structures.

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

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

7-57 CULVERT SHAPE CONTROL

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

7-71 GATE CLOSURE DURING HAUL

Purchaser shall keep gates closed and locked except for passing vehicles. If Purchaser elects to use an alternate plan for gate security, Purchaser shall submit a detailed plan to the Contract Administrator for written approval. For all gates required to be closed and locked during haul, Purchaser may install temporary cattle guards. At the completion of hauling Purchaser shall remove temporary cattle guards, refill holes, and replace gates.

7-65 CATTLE GUARD

On the following road, Purchaser shall clean cattle guard at the following location. This will include removing cattle guard from bases, excavating earthen material between bases the full width of the cattle guard. Installing the cattle guard back on the bases. If the cattle guard is damaged in the process it will be repaired at the Purchasers expense.

<u>Road</u>	<u>Stations</u>
E383103E	23+95

7-76 GATE INSTALLATION

Purchaser shall install the listed gate(s).

<u>Road</u>	<u>Station</u>	<u>Type*</u>	<u>Provided by</u>
E383101E	36+95	Stock	Purchaser
E383207F	45+28	Stock	Purchaser

Stock gate installation(s) must be in accordance with the STOCK GATE DETAIL.

The gate must be installed plumb and aligned to ensure all mating components match with precision. The gate must be installed with a post and locking device to allow the gate to be locked in an open position.

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

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

7-78 GATE SUPPLIED BY PURCHASER

Purchaser shall provide all gates specified for installation in Clause 7-76 GATE INSTALLATION. Purchaser shall obtain written approval for the gates from the Contract Administrator before installation.

7-80 FENCE INSTALLATION

At the following location(s), Purchaser shall provide and install a wood post, wire fence in accordance with the 4 STRAND POST AND WIRE FENCE DETAIL. New construction and replacement of fencing must tie into any existing fences and gates near required construction.

<u>Road</u>	<u>Stations</u>
E383102J	44+03
E383102J	50+47

7-82 4-WIRE GATE INSTALLATION

On the following road, Purchaser shall provide and install 4-wire gates in accordance with the 4-WIRE GATE DETAIL. Gates must be installed to connect into the existing fencing.

<u>Road</u>	<u>Stations</u>	<u>Gate Length</u>
E383102J	44+03	14 feet
E383102J	50+47	14 feet
E383112G	15+83	14 feet

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.

9-10 LANDING DRAINAGE

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

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

SECTION 10 MATERIALS

10-3 GEOTEXTILE FOR STABILIZATION

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

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

The geotextile shall be laid directly on the undisturbed road surface. The crushed rock shall be applied directly on top of the geotextile and compacted.

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.

10-18 CORRUGATED STEEL STRUCTURAL PLATE

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

10-19 CORRUGATED ALUMINUM STRUCTURAL PLATE

Structural plate culverts must be aluminum alloy meeting AASHTO M-219 (ASTM A-746) specifications.

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.

10-23 RUBBER CULVERT GASKETS

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

10-24 GAGE AND CORRUGATION

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

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

FOREST ROAD ACCESS
Road Maintenance Specifications

Prior to Acceptance of Contract or Acceptance on Timber Sale

A. Cuts and Fills

- (1) Maintain slope lines as constructed. Remove slides from the ditches and roadway. Replace fills to 1 ½:1 slopes with selected material or as directed. Remove overhanging material from cut slopes.
- (2) Material from slides or other sources requiring removal must not be deposited in streams or at locations where it will erode into streams or water courses.
- (3) Undesirable slide materials and debris must not be allowed to contaminate or mix with surface material.

B. Roadway Surfaces

- (1) Grade and shape road surface, turnouts and shoulder to original crown, inslope or outslope as directed to provide suitable traveled surface and surface water runoff in an even, unconcentrated manner.
- (2) Blading must not undercut backslopes at bottom of cut slopes.
- (3) Watering may be required to control dust and to retain fine surface rock.
- (4) Desirable surface material shall not be bladed off roadway.
- (5) Replace surface material lost or worn away.
- (6) Remove berms except as otherwise directed by the State.

C. Drainage

- (1) Keep ditches and drainage channels at outlets and inlets of culverts clear of obstructions.
- (2) Inspect and clean culverts at least monthly, with additional inspection during storms and periods of high runoff. This must be done even during periods of inactivity.
- (3) Place non erodable material or rock at drainage outfalls.
- (4) Keep silt bearing surface runoff from contaminating live streams.

D. Structures

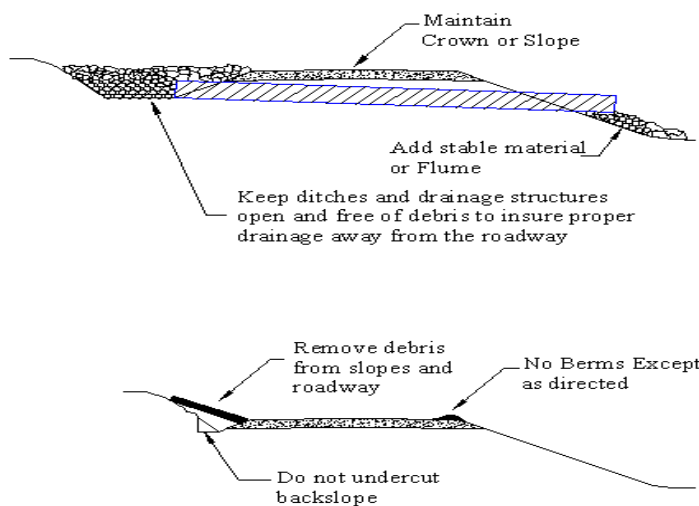
- (1) Repair bridges, culverts, cattle guards, fences and other road structures to conditions required by construction specifications.

E. Termination of Use, or End of Season

- (1) Do maintenance work to minimize damage from the elements such as blading to insure correct runoff, ditch and culvert clearing and water bars.

F. Debris

- (1) Remove fallen timber, limbs, stumps from slopes and roadway, ditchlines and culvert inlets.

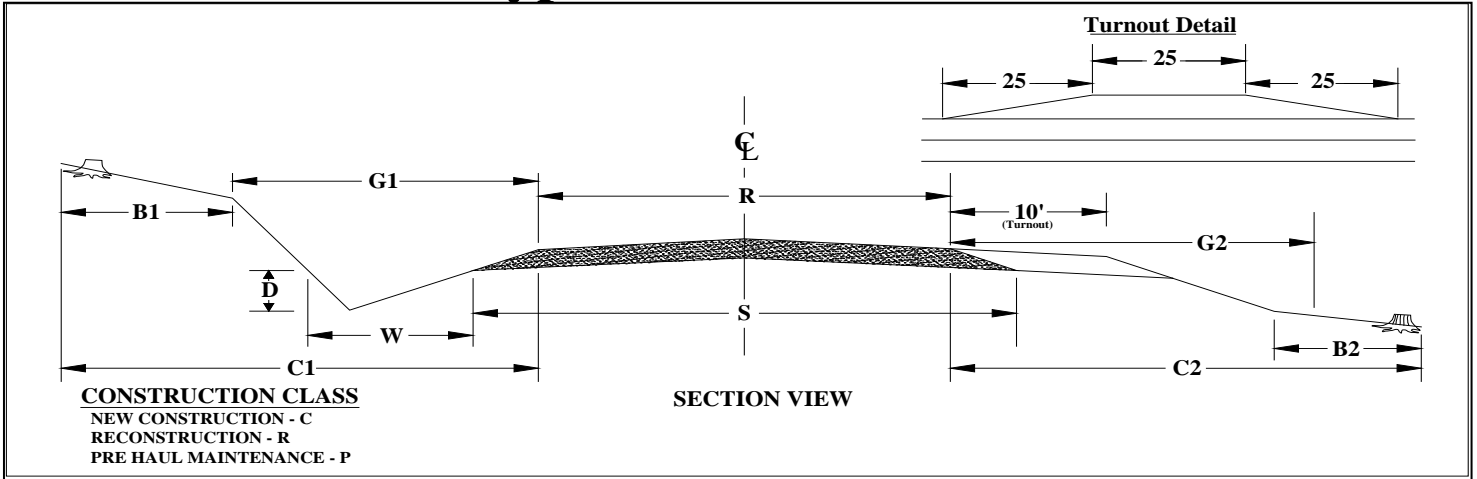


State of Washington
Department of Natural Resources

Application No. : 30-101630

Name of Sale: Harvard

Typical Section Sheet



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	INSLOPE "/>10'	OUTSLOPE "/>10'	CROWN " AT CL	DITCH WIDTH (W)	DITCH DEPTH (D)	DITCH SIDES	DITCH STARTING STATION	DITCH LENGTH (FT)	GRUBBING CUT BANK (G)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (B)	ROAD FILL CLEARING (B)	R/W CUT CLEARING (C1)	R/W FILL CLEARING (C2)
E383101E	0+00	7+60	P		12		3	3	1	R	4+35	325						6	6
E383101E	7+60	16+32	P		12		3	3	1	R	14+71	161						6	6
E383101E	16+32	27+31	P		12		3											6	6
E383101E	27+31	93+78	C	14			3									3	3		
E383102E	0+00	17+88	P		12		3											6	6
E383102G	0+00	3+68	C	14			3									3	3		
E383102H	0+00	13+30	C	14			3									3	3		
E383102J	0+00	60+46	P		12		3	3	1	L	27+55	161						6	6
E383103E	0+00	113+48	P		12		3											6	6
E383103F	0+00	2+87	C	14			3									3	3		
E383112E	0+00	2+30	C	14			3									3	3		
E383112F	0+00	7+85	C	14			3									3	3		
E383112G	0+00	35+21	C	14			3									3	3		
E383123E	0+00	58+09	P		12		3											6	6
E383124E	0+00	117+48	P		12		3											6	6
E383124F	0+00	10+39	C	14			3									3	3		
E383136E	0+00	49+65	P		12		3	3	1	R	48+65	100						6	6
E383136E	49+65	67+64	P		12		3	3	1	R	66+47	117						6	6
E383136E	67+64	70+96	P		12		3	3	1	R	68+77	219						6	6
E383136E	70+96	92+24	C	14			3									3	3		
E383136J	0+00	38+40	C	14			3									3	3		
E383207E	2+83	29+77	P		12		3											6	6
E383207F	0+00	21+13	P		12		3	3	1	L	20+71	42						6	6

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-101630

Name of Sale: Harward

Date: 11-16-20

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						
E383101E	49+66	24		0	30			1	1							1,2,6,10,11,15
E383102E																9
E383102J	48+98	30			42			1	1							1,2,5,10,11,15
E383102J																5 16
E383102J																1 9
E383103E	13+58	72			46			2	2							1,2,5,10,11,15
E383103E																4 9
E383103E	49+65	18			30			1	1							1,2,6,10,11,15
E383136E	66+47	24			30			1	1							1,2,6,10,11,15
E383136E	68+77	18			30			1	1							1,2,6,10,11,15
E383136E	72+16	36			34			2	2							1,2,6,10,11,15
E383136J	29+01	24			32			1	1							1,2,6,10,11,15
E383136J	33+47	24			36			1	1							1,2,6,10,11,15
E383207F																10 9
E383207F	21+13	18			32			1	1							1,2,6,10,11,15
E383207F	49+28	24			34			1	1							1,2,6,10,11,15
E383207F	50+97	18			30			1	1							1,2,6,10,11,15

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. Start Ditch
14. End Ditch
15. For guage refer to Road Plan:
16. See Raised Rock Dip Detail

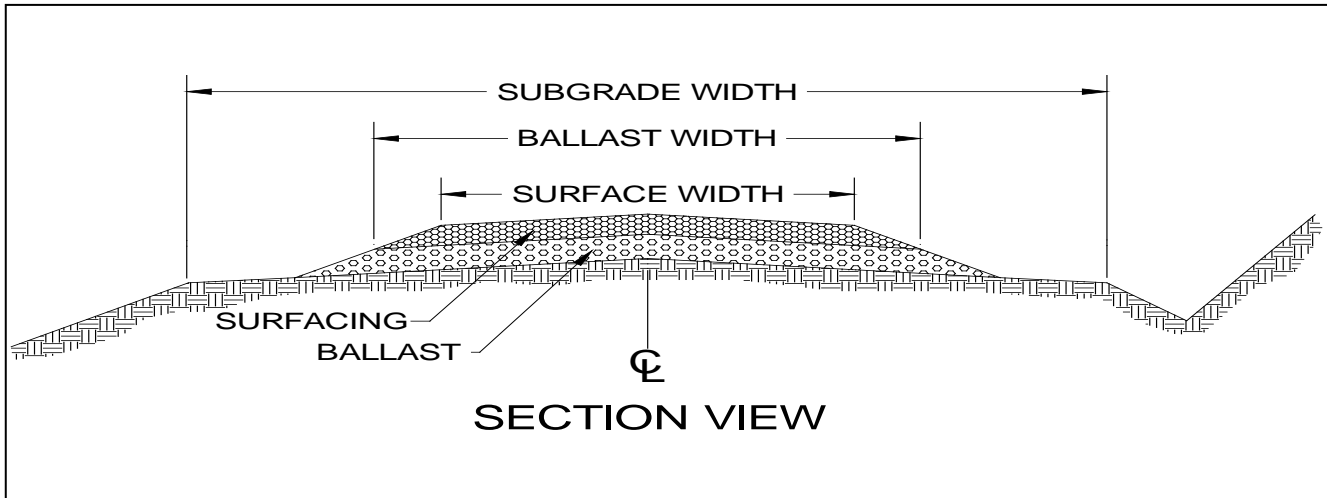
10-23 GUAGE AND CORRUGATION

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-101630

Name of Sale: Harvard

ROCK LIST



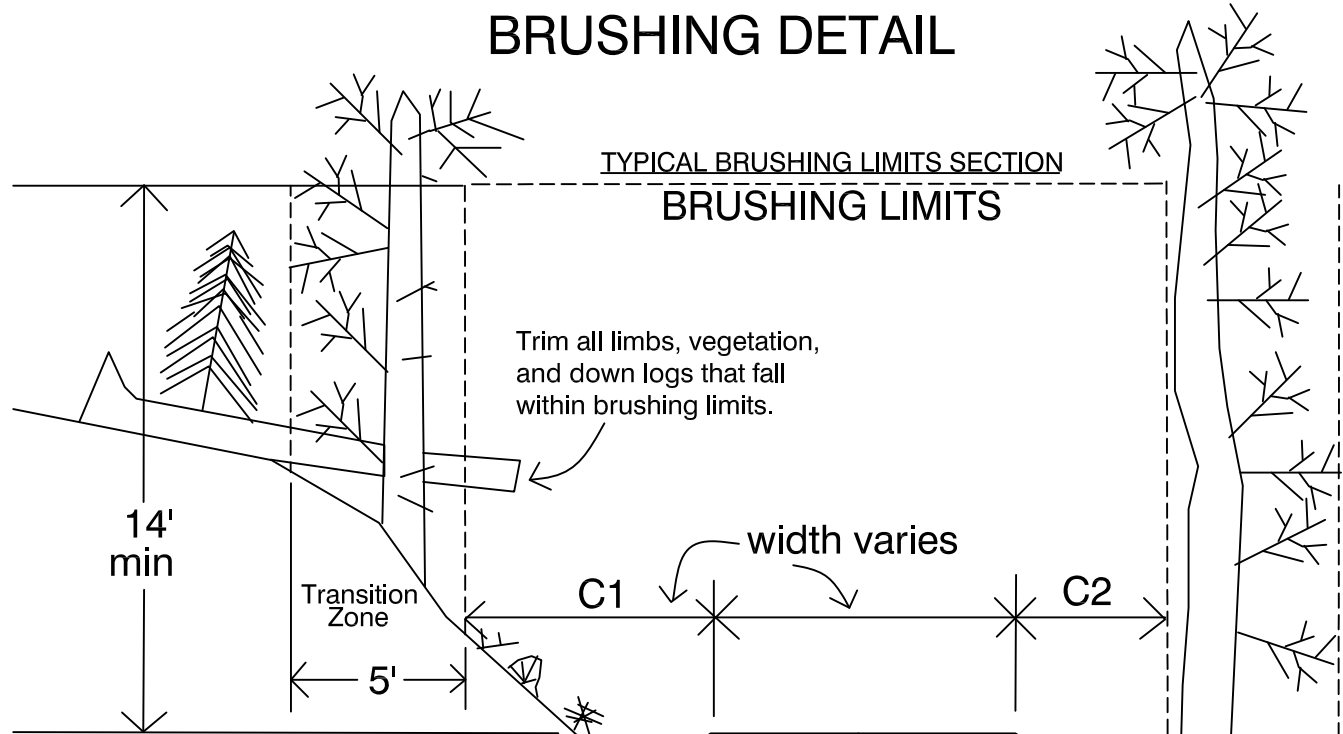
1. ROCK DEPTHS ARE DEFINED AS COMPACTED DEPTHS.
2. LOOSE YARD QUANTITIES ARE DEPENDANT ON SOURCE.
3. ROCK SLOPES SHALL BE 1.5(H) : 1(V).
4. ALL ROCK SOURCES ARE SUBJECT TO APPROVAL BY THE CONTRACT ADMINISTRATOR.
- 5. ROCK QUANTITIES ARE COMPACT QUANTITIES**

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	BALLAST SOURCE	BALLAST WIDTH (ft)	BALLAST DEPTH (in)	BALLAST QTY (cu.yd./sta)	SURFACE SOURCE	SURFACE WIDTH (ft)	SURFACE DEPTH (in)	SURFACE QTY (cu.yd./sta)	FABRIC WIDTH (ft)
E383101E	0+00	1+00							12	3	11	
E383101E	49+16	50+16							14	4	18	
E383102J *	Install 5 raised rock water bars at 1.2 CY each. Total of 6 CY compacted											
E383102J	36+36	40+17							12	4	15	
E383102J	48+48	49+48							16	4	20	
E383103E *	0+00	5+25							12	9	36	12
E383103E	13+08	14+08							14	4	18	
E383103E	77+78	78+78							12	4	15	
E383124E	86+77	87+77							12	4	15	
E383136E	49+15	50+15							12	4	15	
E383136E	65+97	66+97							12	4	15	
E383136E	68+33	69+33							12	4	15	
E383136E	71+66	72+66							12	4	15	
E383136J	28+51	29+51							14	4	18	
E383136J	32+97	33+97							14	4	18	
E383207F	47+41	49+28							12	4	15	
E383207F	50+32	50+97							12	4	15	
											0	
											0	

DATE: 11-16-2020

* Use Bodie Stock Pile

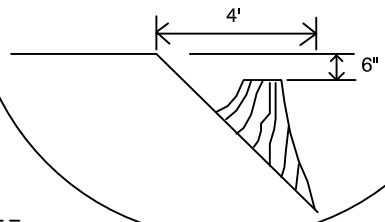
BRUSHING DETAIL



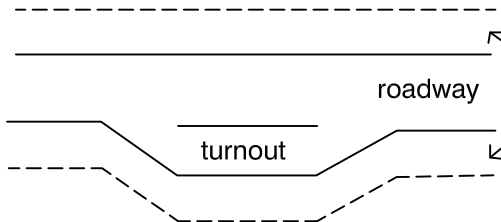
All limbs on standing trees that extend into the brushing limits shall be trimmed within 6" of the stem

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

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

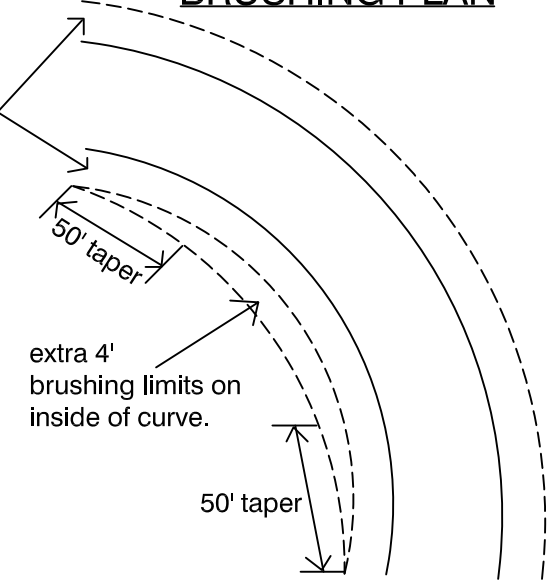


CURVE BRUSHING PLAN



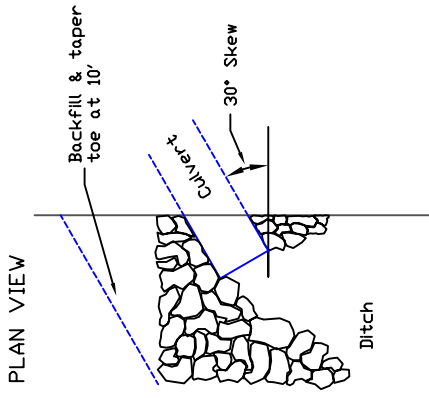
TURNOUT BRUSHING PLAN

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

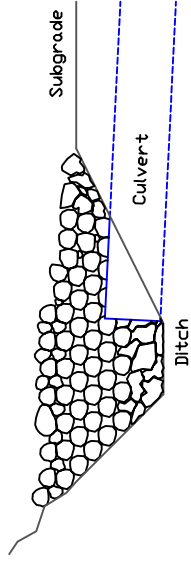


Brushing limits as shown on typical section

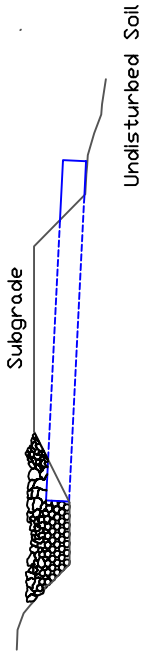
CULVERT AND DRAINAGE SPECIFICATIONS DETAIL - D1



HEADWALLS

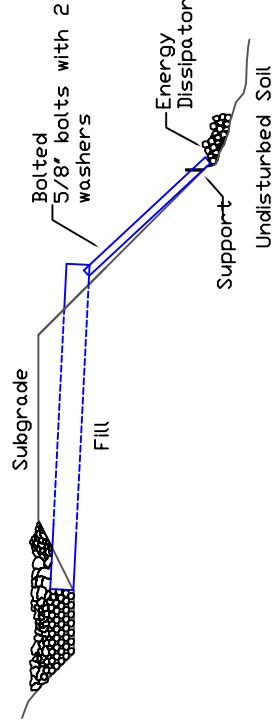


Headwall to be constructed of material that will resist erosion



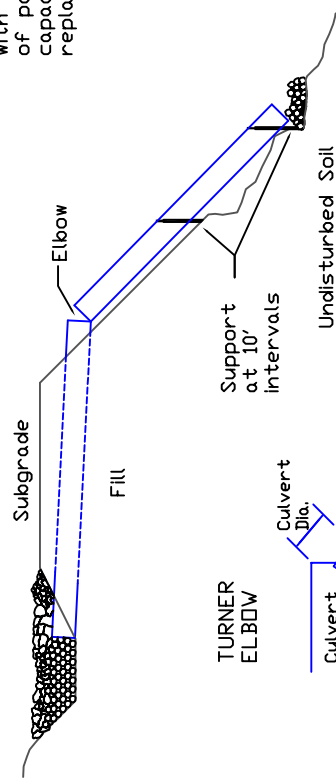
FLUME

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



DOWNSPOUT

Use where ground conditions are irregular.



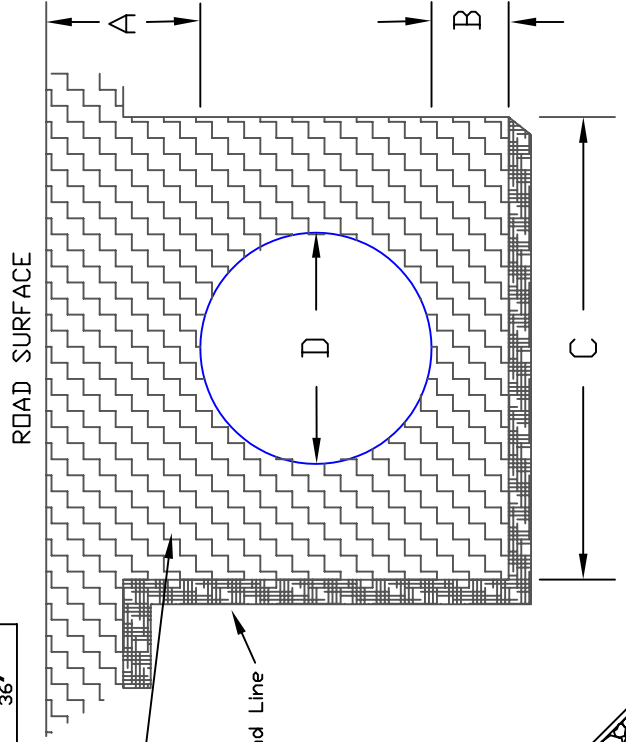
TURNER ELBOW

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

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

CULVERT BACKFILL & BASE PREPARATION

(For Culverts Less Than 36')

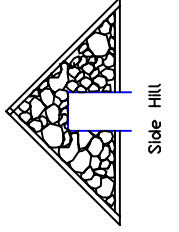
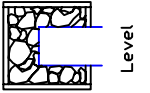


BEDDING MATERIAL:

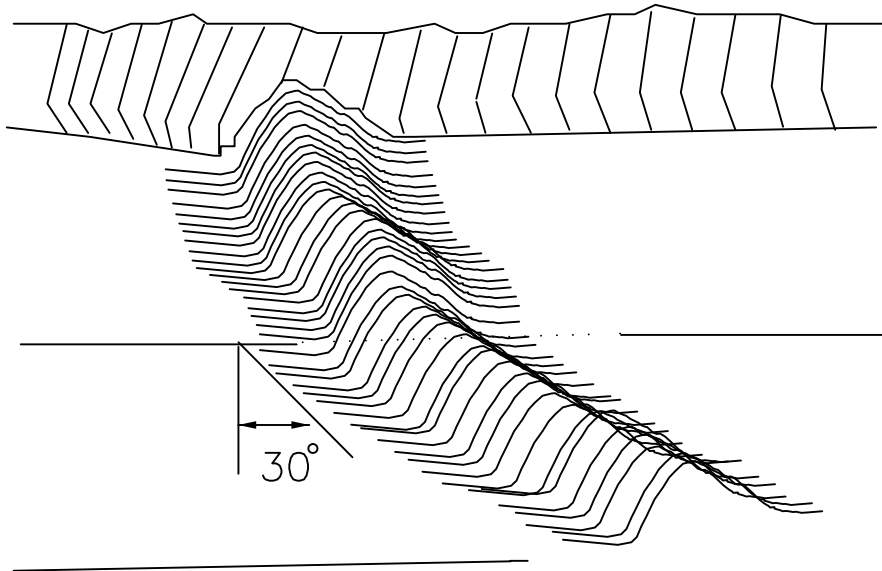
Use granular material - 3' minus. Large rocks shall be replaced with suitable material. Materials of poor or non-uniform bearing capacity shall be removed and replaced with suitable fill.

DISSIPATOR SPEC'S

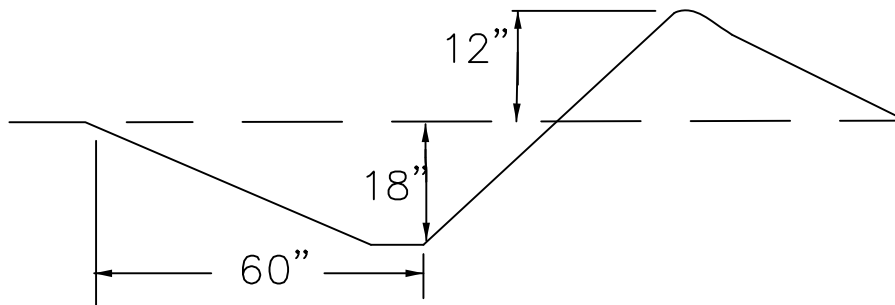
Size in Culvert Diameters
 Area 2×2
 Depth 1
 Aggregate 1/3



Top View

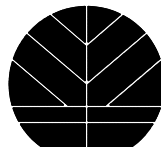


Side View



1. Waterbar construction for forest roads with little or no traffic.
2. Specifications are average and may be adjusted to conditions.
3. Bottom of waterbar must be outsloped to ensure proper drainage.
4. Rock outlet if steep fill slope is present.

Driveable Waterbar Detail



WASHINGTON STATE DEPARTMENT OF
Natural Resources

Northeast Region
Colville, Washington

Designed By: Stash Slabinski 9/06/05

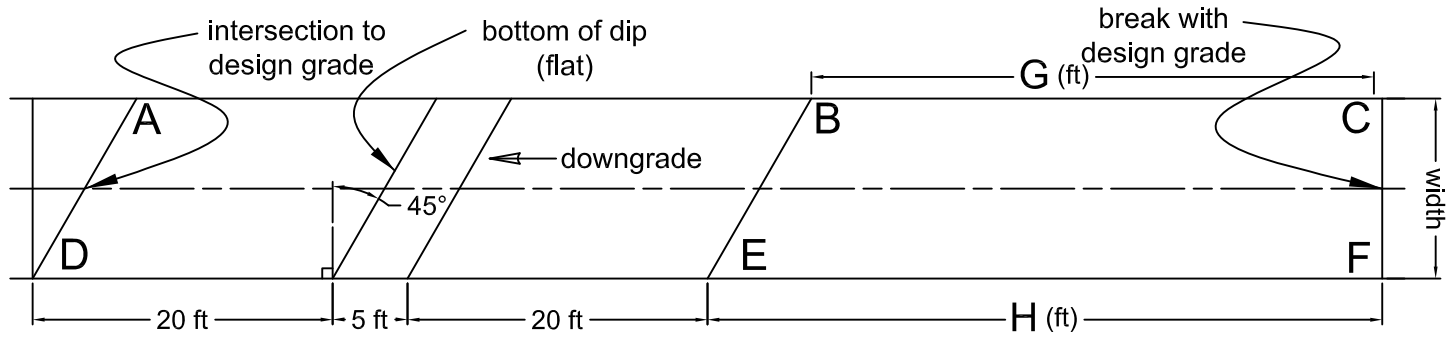
Drawn By: Stash Slabinski 9/06/05

Revised:

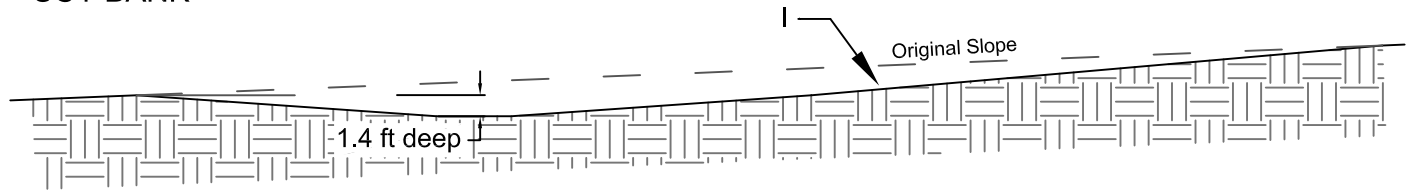
1 OF 1

STANDARD 45° ROLLING DIP

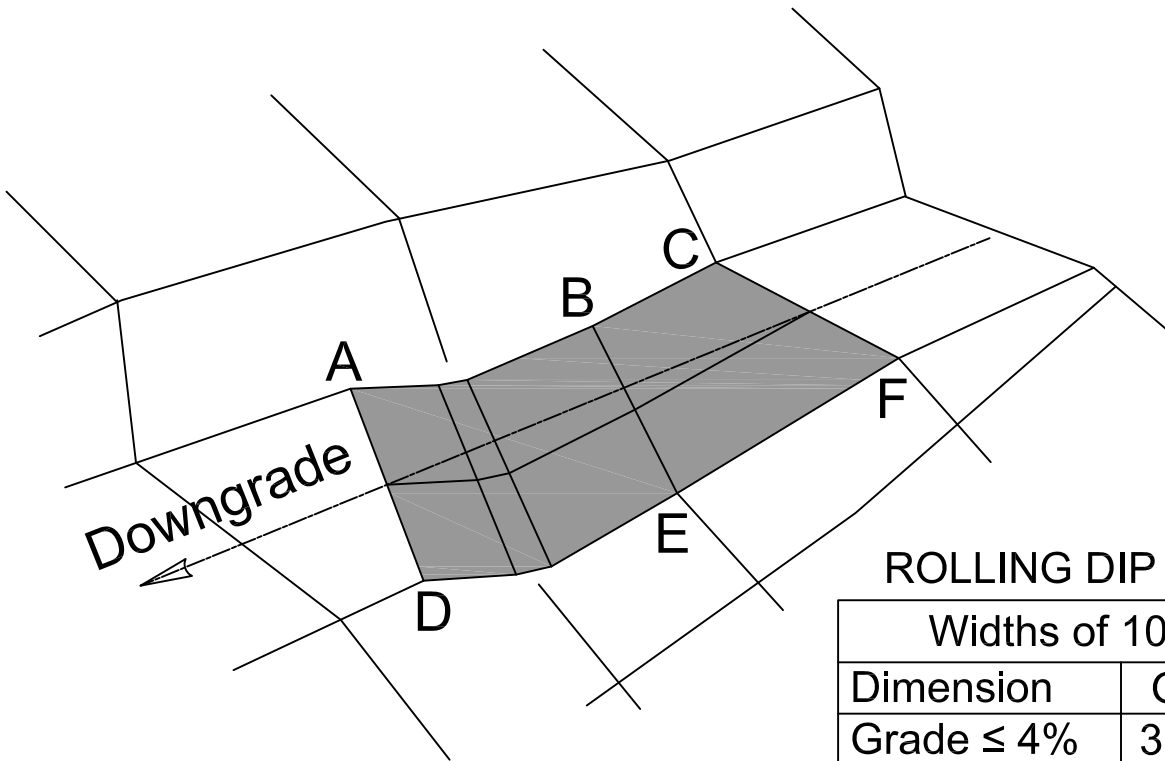
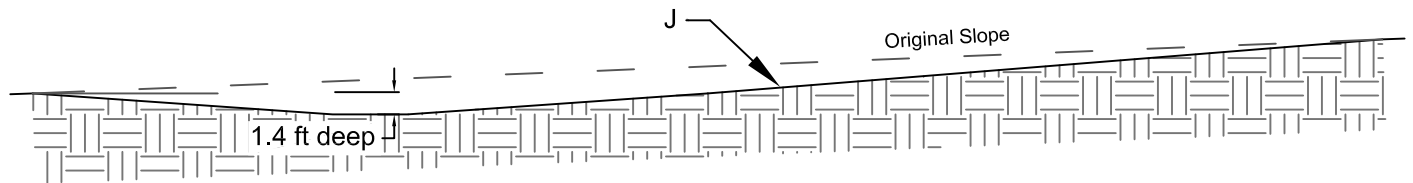
PLAN OF ROLLING DIP



CUT BANK



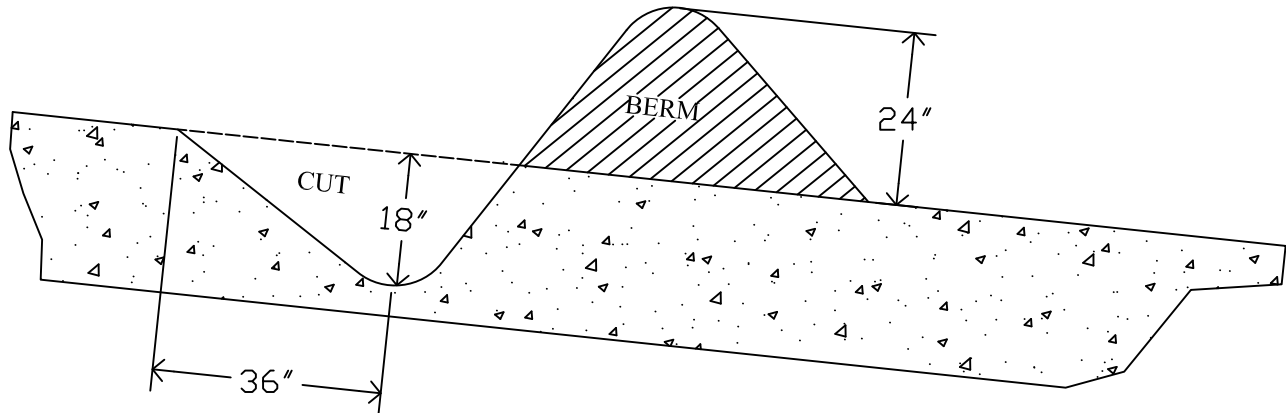
FILL SLOPE



ROLLING DIP DEMENSIONS

Widths of 10' through 14'				
Dimension	G	H	I	J
Grade \leq 4%	38'	45'	9%	8%
Grade = 6%	48'	55'	11%	11%
Grade = 8%	58'	65'	14%	14%

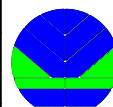
Non-Driveable Water Bar Detail



Notes:

1. WATERBAR CONSTRUCTION FOR FOREST ROADS WITH NO TRAFFIC. SPECIFICATIONS ARE AVERAGE AND MAY BE ADJUSTED TO CONDITIONS.
2. TIE BERM INTO BANK. IF DITCH EXISTS, TIE CUT INTO DITCH.
3. CONSTRUCT CROSS DRAIN BERM APPROXIMATELY 24 IN. HIGH.
4. CUT WATERBAR A MINIMUM OF 18 IN.
5. ENSURE PROPER DRAINAGE AT OUTLET.
6. SKEW WATERBAR 30 DEGREES DOWNGRADE WITH ROAD CENTERLINE.

Non-Driveable Waterbar Detail



WASHINGTON STATE DEPARTMENT OF
Natural Resources

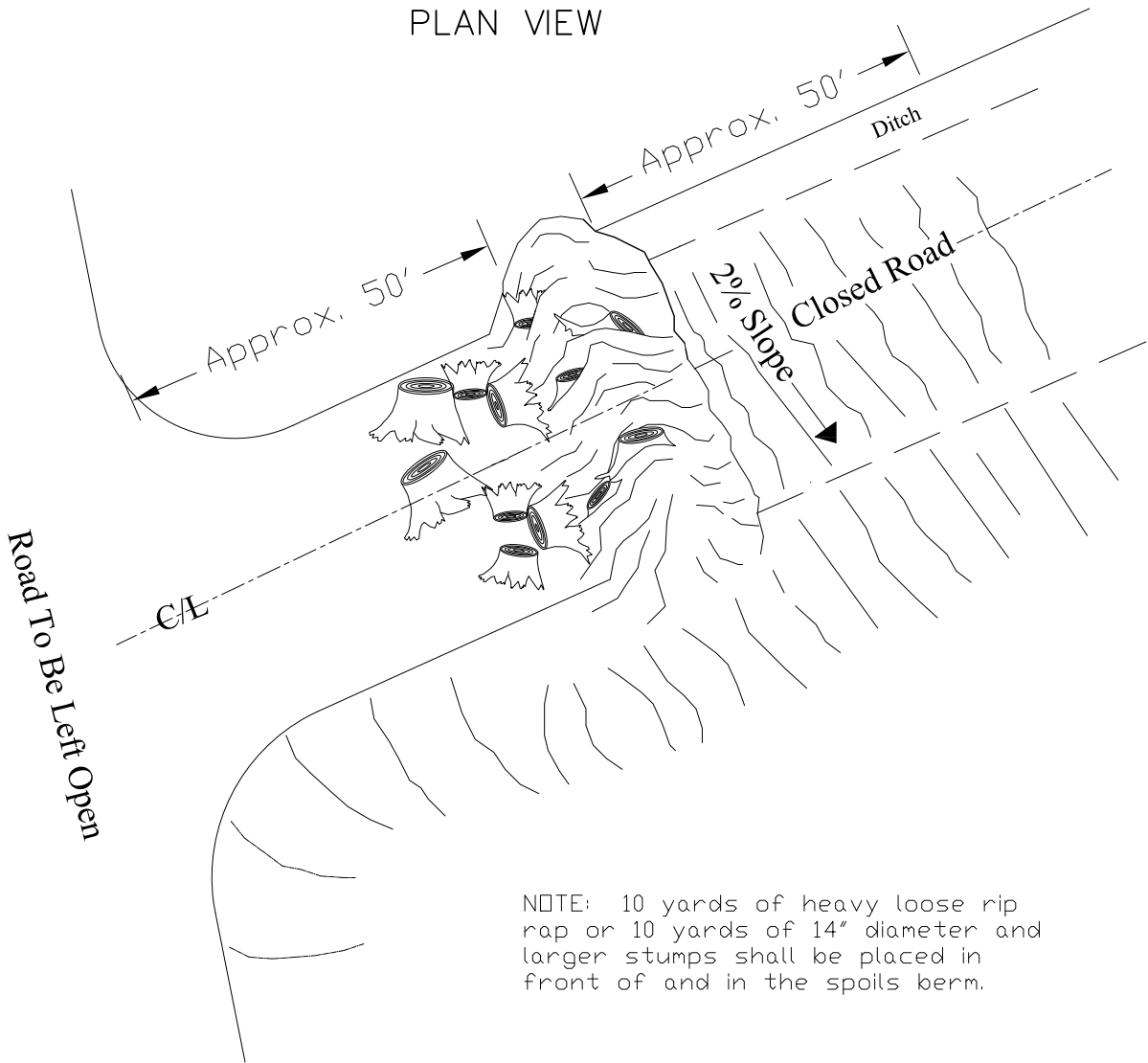
Northeast Region Colville, Washington		
Designed By:	Stash Slabinski	4/21/05
Drawn By:	Stash Slabinski	4/21/05

Revised:

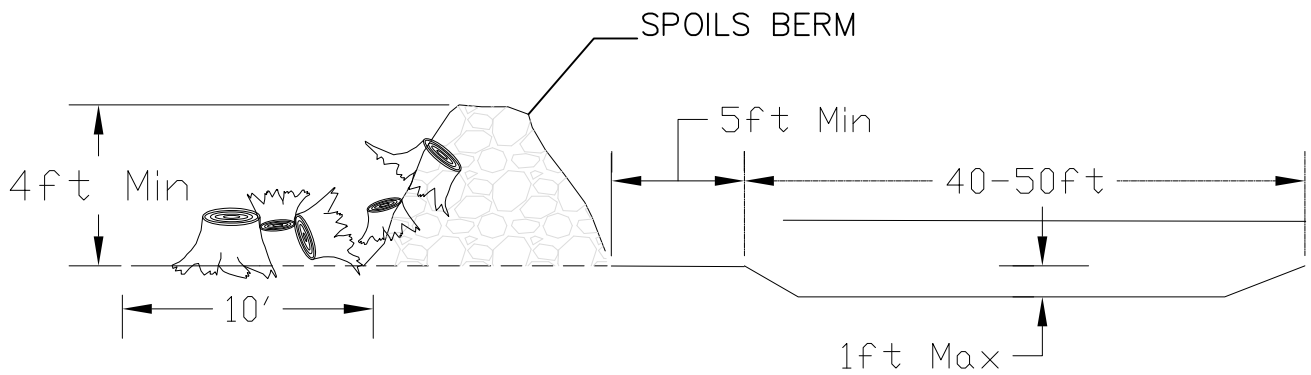
1 OF 1

SPOILS BERM DETAIL

PLAN VIEW

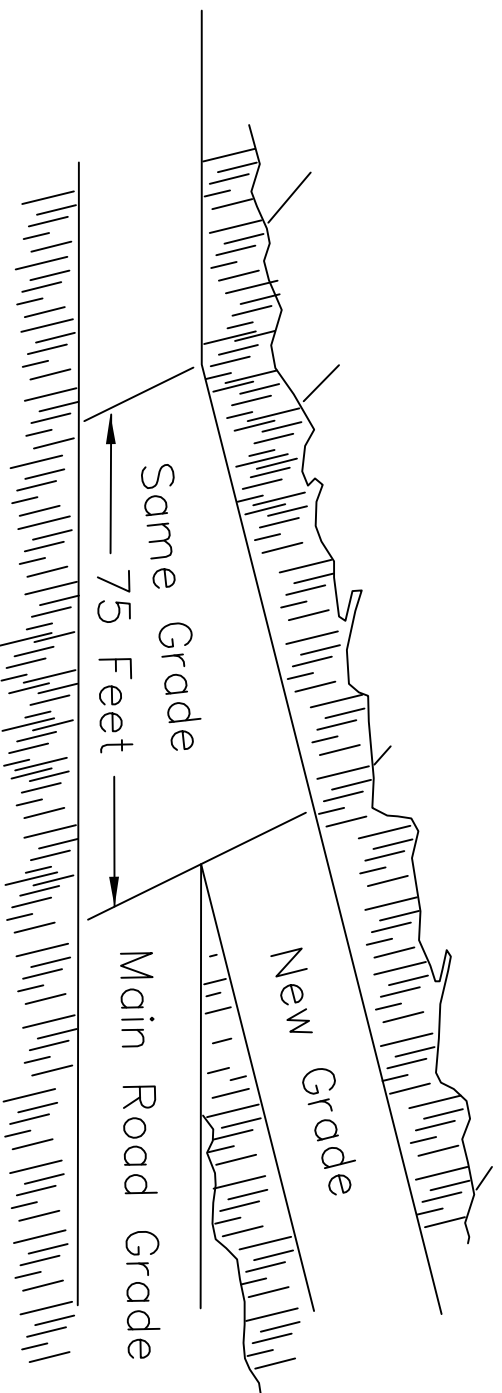


NOTE: 10 yards of heavy loose rip rap or 10 yards of 14" diameter and larger stumps shall be placed in front of and in the spoils berm.



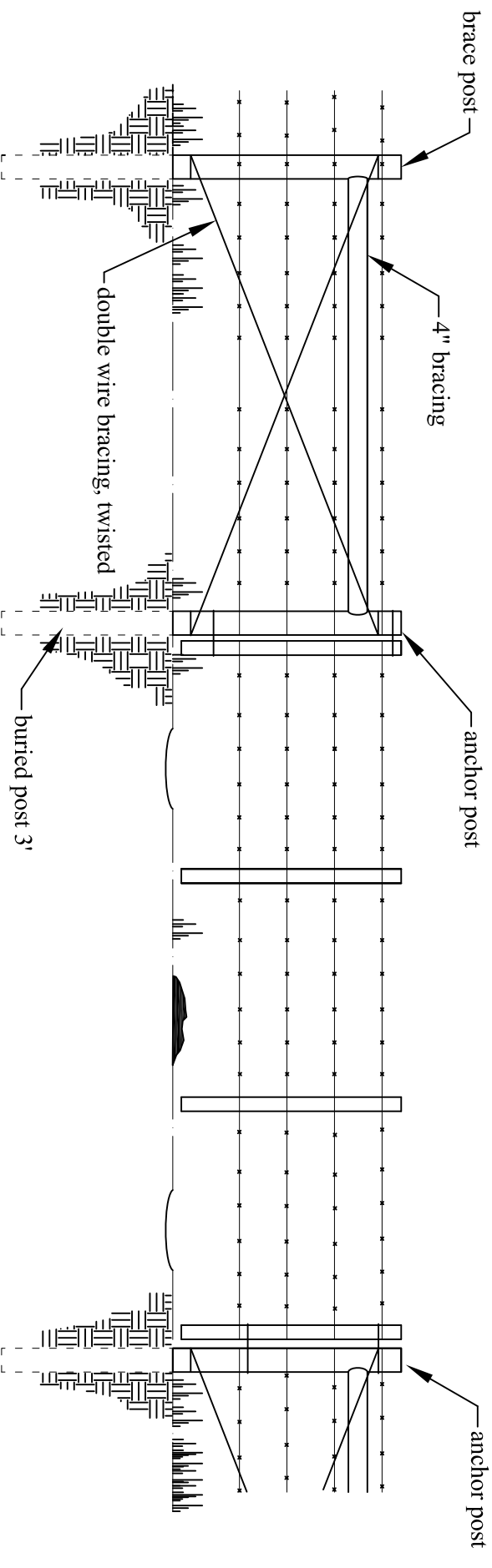
Note: $\frac{1}{3}$ of stumps or rip rap shall be partially buried in the spoils berm and/or road surface.

Intersection Detail

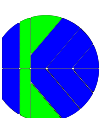


Main road and spur must have the same grade until there is horizontal separation from each other.

4 Strand Wire Gate and Gate Brace Detail



1. First wire from ground must be 14" high.
2. Subsequent wires must be no less than 10" apart.
3. Double wrap all bracing.
4. All brace posts must be 7' long, 5" in diameter, and embedded 3'.
5. Dap braces into posts.
6. Spike braces to posts.
7. There must be 8' on center between anchor post and brace post.
8. The gate stays must be no less than 5' apart and 1 ½" in diameter.
9. Barbed wire must be 12 ½ gauge conventional or 15 ½ gauge high-tension.
2 twisted strands with 14 gauge or heavier two-point barbs on approx. 5 in centers. Class 1 (min. or equivalent) zinc-coating as per ASTM A-121.
10. There must be a gate brace at both ends of the gate.



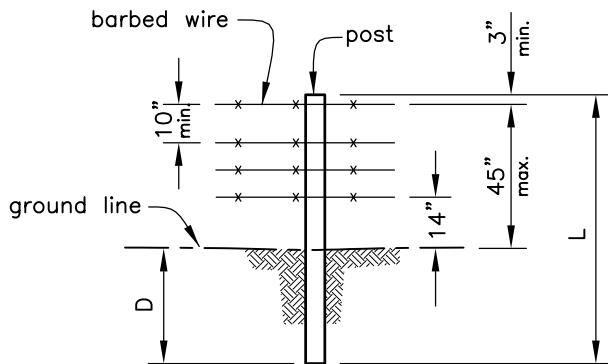
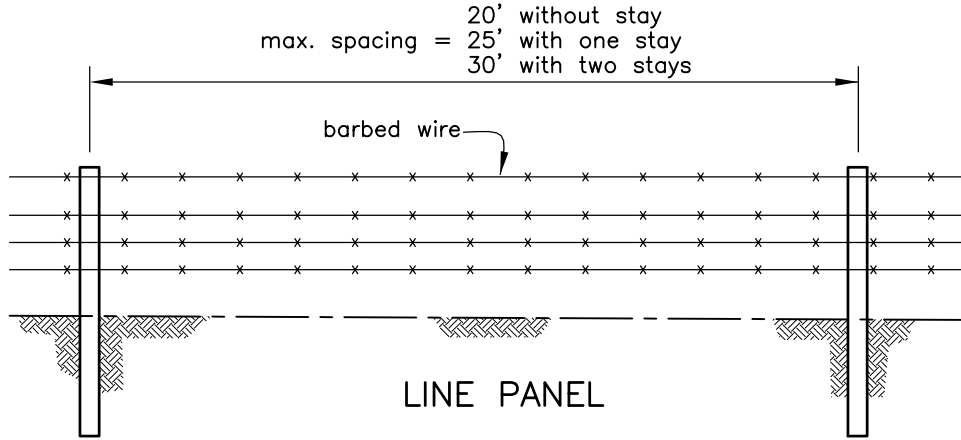
Washington State Department of
Natural Resources

Northeast Region
Colville, Washington

Drawn by: Jason Bauer

Revised: 10/06/2009

4 STRAND STANDARD POST AND WIRE FENCE



BARBED WIRE 12 1/2 gauge conventional or 15 1/2 gauge high-tension

2 twisted strands with 14 gauge or heavier two-point barbs on approx. 5 inch centers.

Class 1 (min. or equiv.) zinc-coating as per ASTM A-121.

BARBED WIRE DETAIL

LINE	Plastic:	L = 6 ft. min. D = 24 in. min. Dia. = 3-3/8 in. min.	Fiberglass:	L = 6 ft. min. D = 24 in. min. Dia. = 1-1/4 in. min.
	Wood:	L = 6 ft. min. D = 24 in. min. Dia. = 3 in. min.	Steel:	L = 5-1/2 ft. min. D = 18 in. min. Standard "T" or "U"; > 1.25 lbs/ft of length
CORNER OR GATE	Wood:	L = 7 ft. min. D = 3 ft. min. Dia. = 5 in. min.	Steel:	L = 7 ft. min. D = 3 ft. min. (set in conc.) Dia. = Round 2-3/8 in. O.D. or Angle iron 2-1/2 x 2-1/2 x 1/4 (in.)
	STAYS	Wood: 1-1/2 in. dia. min. of durable wood Fiberglass: Any manufactured for this purpose Wire: 9 1/2 gauge, zinc coated, twisted, manufactured for this purpose		

SPECIES for all wood: _____

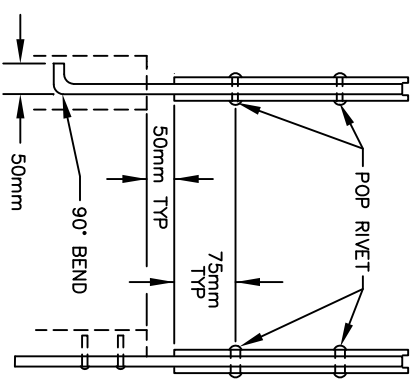
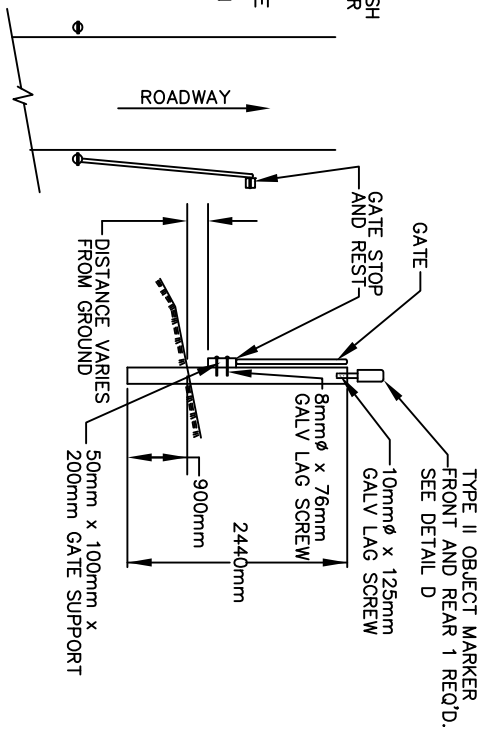
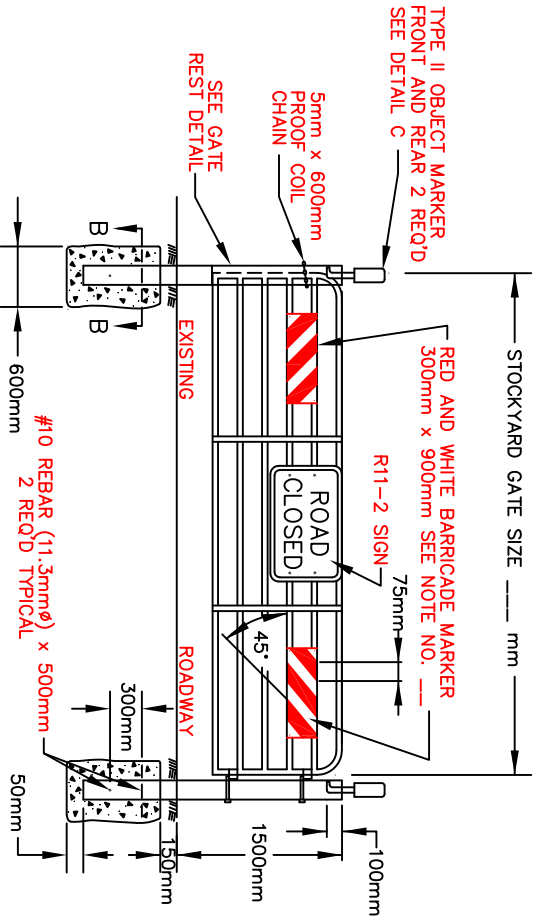
SPECIAL INSTRUCTIONS

Drawing not to scale. Standardized drawing must be adapted to the specific site.

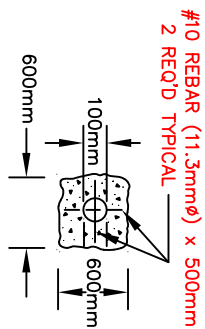
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE	JOB CLASS	Date
	CAD FILE NO. LSK-0010.DWG	Designed _____
	SHEET OF	Drawn _____
		Checked _____
	Approved _____	

STOCK GATE (TUBE GATE) -- OPTION 1

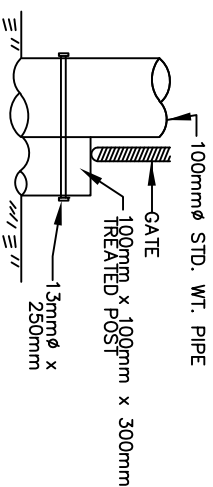
1. THE GATE SHALL BE STOCKYARD TYPE OR ITS EQUIVALENT. THE GATE FRAME SHALL BE FABRICATED FROM 32mm HIGH STRENGTH STEEL TUBING (450MPa, MIN. YIELD STRENGTH). THE VERTICAL STAYS SHALL BE HIGH STRENGTH PRESS FORMED 76mm x 300mm GAUGE STEEL (OR EQUAL) ON BOTH FACES. FINISH ON THE GATE AND THE TWO GATE POSTS SHALL CONSIST OF AT LEAST ONE PRIMER COAT AND ONE COAT OF DARK GREEN SURFACE PAINT.
2. ALL BOLTS AND LAG SCREWS SHOWN INCLUDE WASHERS AND NUTS.
3. BARRICADE MARKER PANELS SHALL BE ALUMINIUM OVERLAIN WITH "3 M" REFLECTIVE SHEETING, WIDE ANGLE FLATTOP, PRESSURE SENSITIVE, NO. 3280, IMPERIAL WHITE TRANSPARENT "STOP SIGN RED" CODE NO. 712 SHALL BE APPLIED BY SILK SCREEN PROCESSING, AIR BRUSHING OR SPRAYING TO PRODUCE STRIPING, EQUAL PRODUCTS AND PROCESSES MAY BE APPROVED.
4. WOODEN POST AND WOODEN GATE REST SHALL BE TREATED WITH PENTA CHLOROPHENAL WITH MINIMUM NET RETENTION OF 8 kg/m³ (DRY CRYSTAL).
5. CONCRETE SHALL CONFORM TO SECTION 602-METHOD A, B OR C.
6. ALL STEEL MEMBERS EXCEPT LAG SCREWS, CHAIN, GATE, FRAME, REBAR, AND BOLTS SHALL BE A-36.



DETAIL C DETAIL D



SECTION B-B



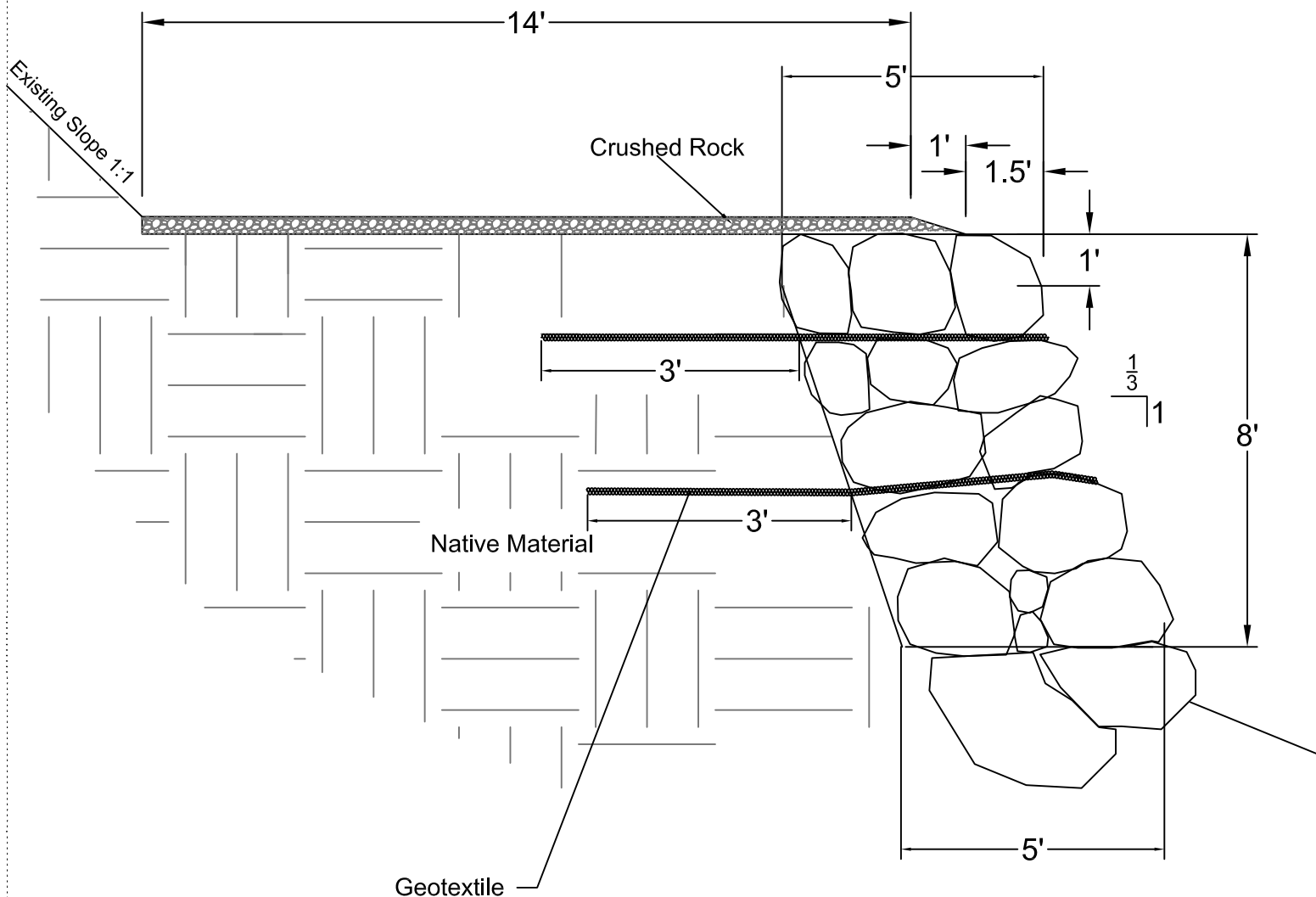
GATE REST DETAIL

ITEM	MATERIAL LIST FOR GATE	DESCRIPTION	QUANTITY
BOLT		13mm ϕ x 250mm - FOR GATE REST	1 EA.
BOLTS		8mm ϕ x 64mm - FOR SIGNS	12 EA.
CHAIN		5mm PROOF COIL CHAIN 600mm LONG	1 EA.
GATE		STOCKYARD TYPE	1 EA.
GATE POSTS		100mm ϕ STANDARD WEIGHT PIPE	2 EA.
REBARS		#10 REBAR (11.3mm ϕ) x 500mm long	4 EA.
SIGN		TYPE II OBJECT MARKER	3 EA.
SIGN		RED AND WHITE BARRICADE MARKER	2 EA.
SIGN		R 11-2	1 EA.
TREATED POST		100mm x 100mm x 2440mm TREATED POST	1 EA.
TREATED POST		100mm x 100mm x 300mm TREATED POST	1 EA.
CONCRETE		FOOTINGS	0.6CU Meter
LAG SCREW		10mm ϕ x 125mm LONG GALV.	2 EA.
LAG SCREW		8mm ϕ x 76mm LONG GALV.	2 EA.
FIR BLOCK		50mm x 100mm x 200mm GATE SUPPORT	1 EA.
STRAP IRON		64mm x 6mm x 500mm TYPE II SIGN MOUNTING BRACKET	3 EA.

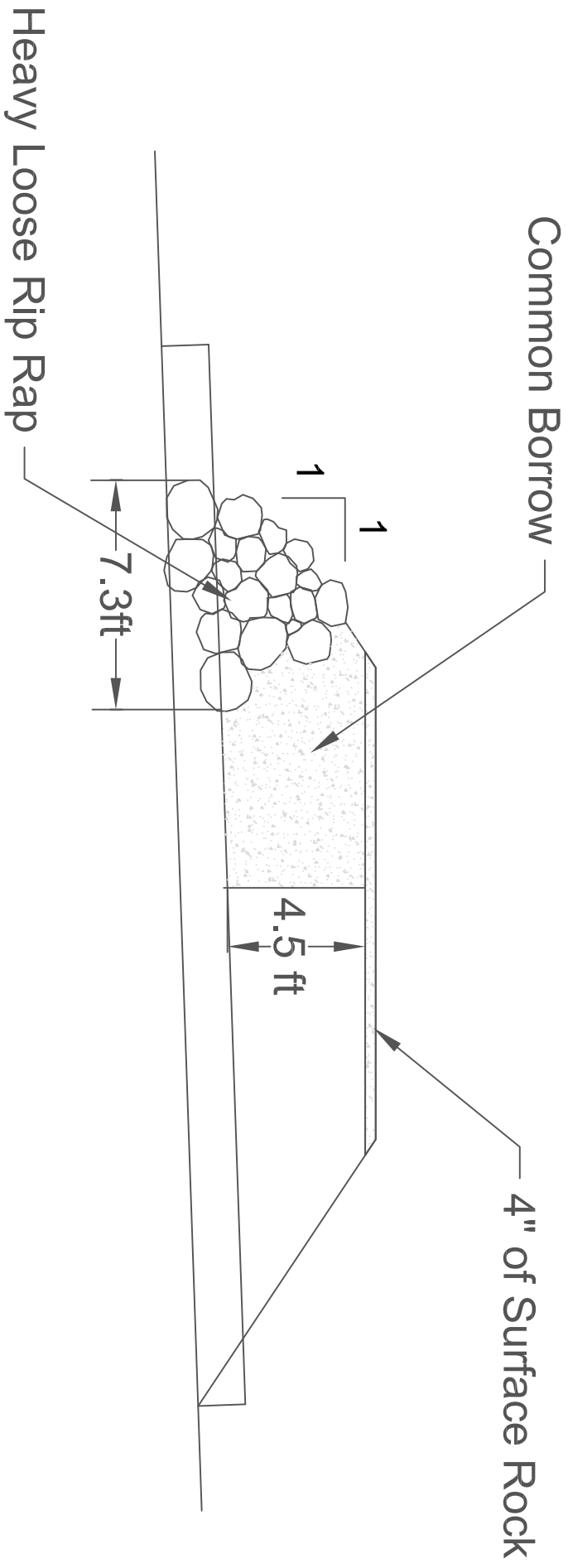
HMM000016
1-22-97

KEYED EMBANKMENT DETAIL

E383207F Station 21+13 to 21+43



- All earthen material in the Geotextile must be compacted with a vibratory plate compactor.
- A minimum of three complete coverages must be made with the compactor in lifts not to exceed 6 inches.
- Geotextile verticle spacing shall be a maximum of 3 feet.
- Geotextile must be installed on a level and smooth surface.
- See Clauses 4-11 KEYED EMBANKMENT and 10-3 GEOTEXTILE FOR STABILIZATION.
- All disturbed soils in the keyed embankment must be compacted in layers not to exceed 6 inches.
- Slope stabilization rock shall be HEAVY LOOSE RIPRAP



Cross Section A

County: *Okanogan*

District: Highlands
 Contract Administrator: Skylar Goodrich
 Project Compliance: Jason Bauer

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Culvert Fill Repair on Road E383101E

Revisions

By Date

Revisions	By	Date

Legal Description:

T 38N R 31E Section 01

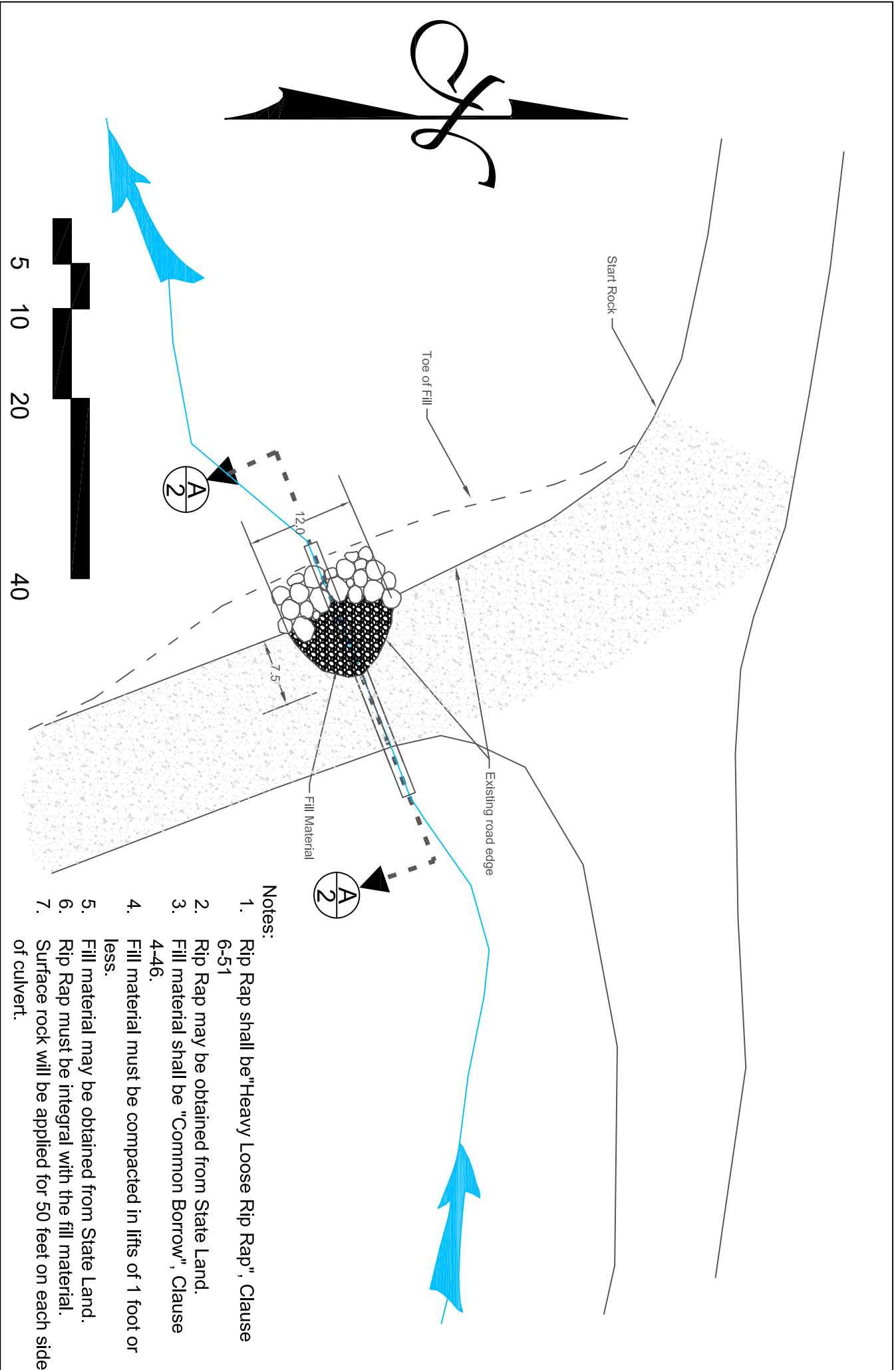
Drawn: JBB Project: Harvard TS

Designed: JBB View: Cross Section

Checked: Date: 11/16/20

FR1

Sheet: 2 of 2



Start Rock
Toe of Fill
Existing road edge
Fill Material
7.5
12.0

- Notes:
1. Rip Rap shall be "Heavy Loose Rip Rap", Clause 6-51
 2. Rip Rap may be obtained from State Land.
 3. Fill material shall be "Common Borrow", Clause 4-46.
 4. Fill material must be compacted in lifts of 1 foot or less.
 5. Fill material may be obtained from State Land.
 6. Rip Rap must be integral with the fill material.
 7. Surface rock will be applied for 50 feet on each side of culvert.

County: *Okanogan*
District: Highlands
Contract Administrator: Skylar Goodrich
Project Compliance: Jason Bauer

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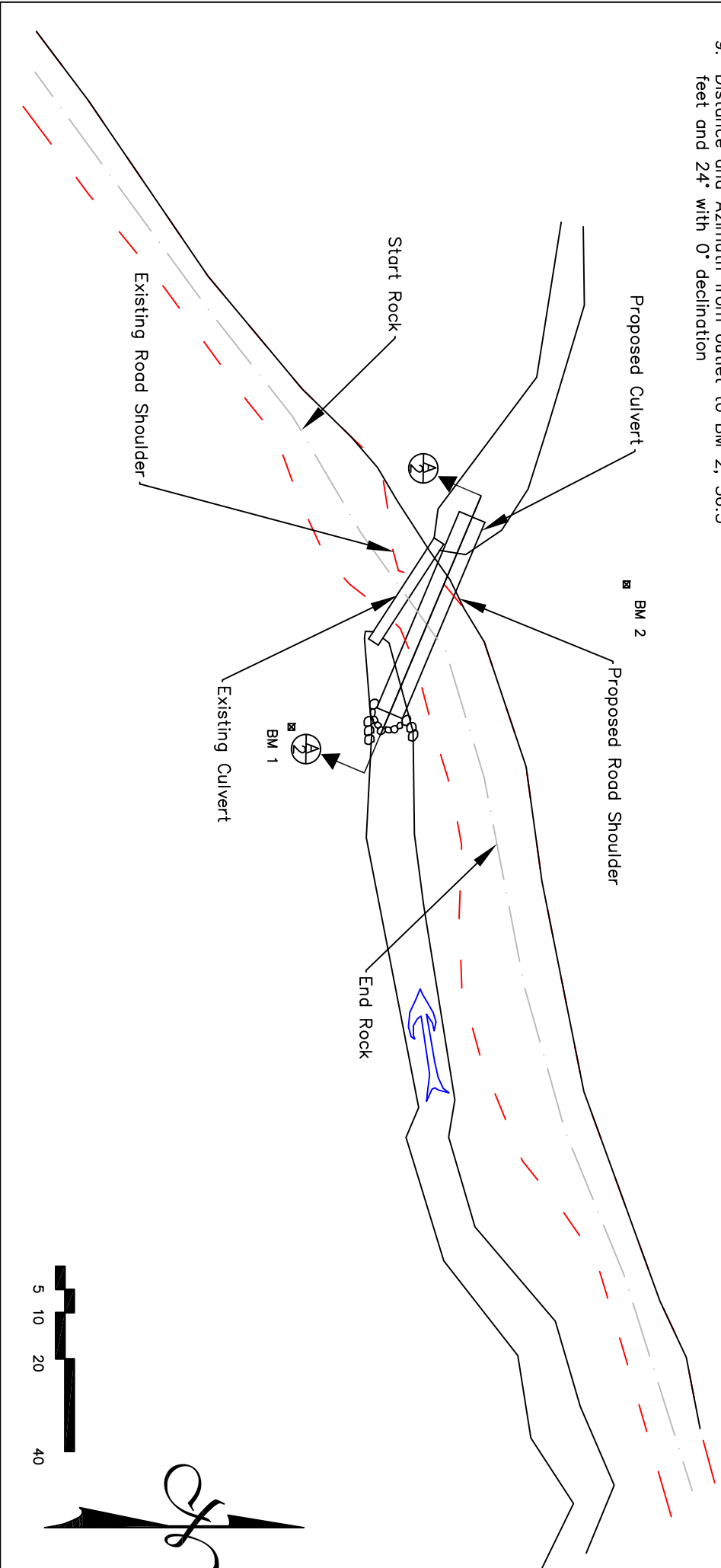
Culvert Fill Repair on Road E383101E

Revisions	By	Date

Legal Description:
T 38N R 31E Section 01

Drawn: JBB	Project: Harvard TS
Designed: JBB	View: Plan View
Checked:	Date: 11/16/20
FR1	
Sheet: 1 of 2	

- Notes:
1. Average BFW is 8.9'
 2. There will be 100' of crushed rock placed 4" deep on each side of the new culvert.
 3. Cover any disturbed soils with grass seed and 2" of straw.
 4. Q100 – 153 ft³/sec
 5. Compact fill from removal of old culvert with a vibratory compactor in lifts not to exceed 1 foot.
 6. Existing culvert is Station 13+58.
 7. Road width above new culvert shall be 16 feet
 8. Distance and Azimuth from inlet to BM 1, 21.5 feet and 172° with 0° declination.
 9. Distance and Azimuth from outlet to BM 2, 36.5 feet and 24° with 0° declination



County: *Okanogan*

District: Highlands
 Contract Administrator: Skylar Goodrich
 Project Compliance: Jason Bauer

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Culvert Replacement on Road E383103E

Revisions

By Date

Legal Description:

T 38N R 31E Section 03

Drawn: JBB Project: Harward TS

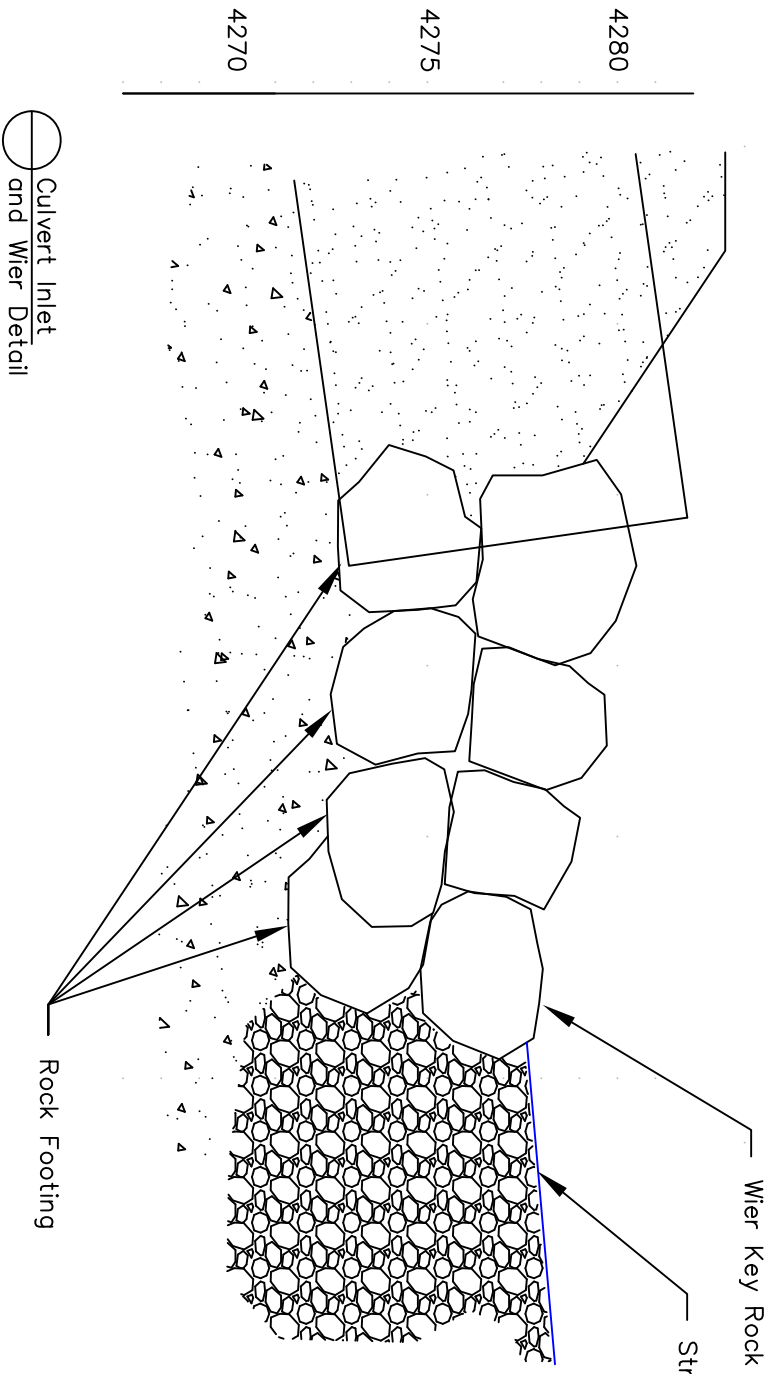
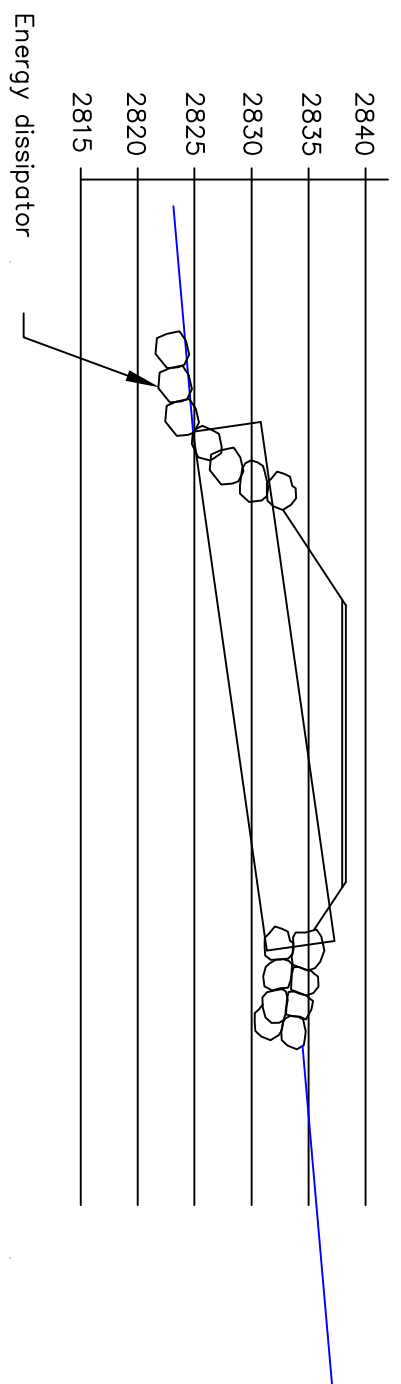
Designed: JBB View: Plan

Checked: Date: 11/16/20

C1

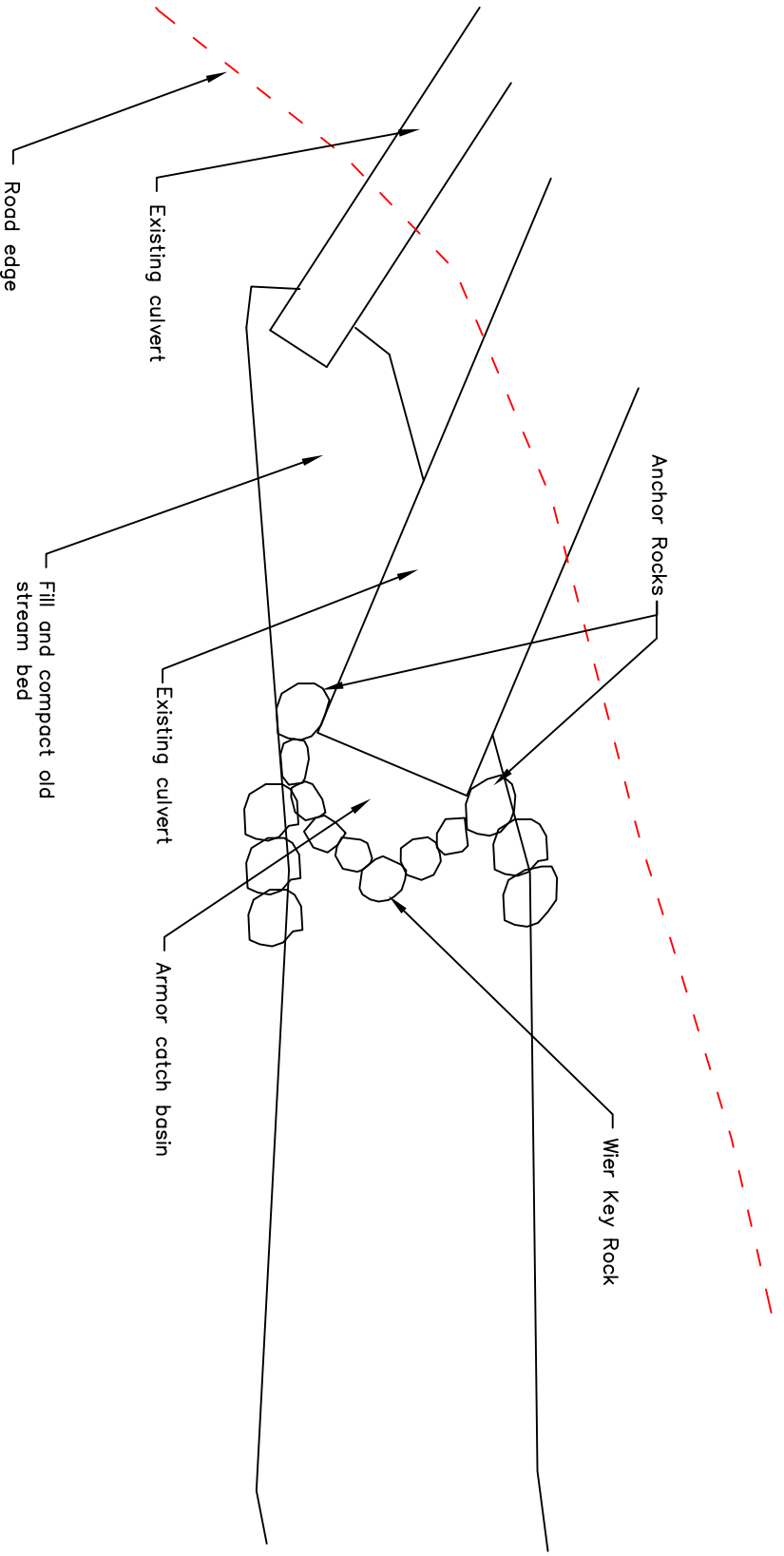
Sheet: 1 of 3

Cross Section A-A

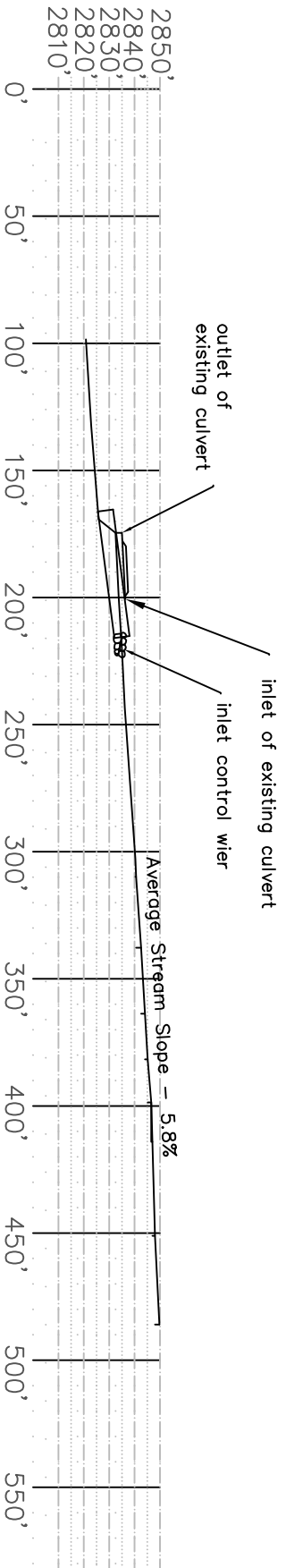


- NOTES:
1. Culvert Dimensions 72"x46'.
 2. Q100-153 ft³/s
 3. Inlet bed elevation is 2831.4.
 4. Outlet bed elevation is 2824.9.
 5. Crushed Rock is 1 1/2 Minus
 6. Bed material and backfill shall be compacted with a vibratory compactor.
 7. Energy dissipator shall be constructed of 2 CY of Heavy Loose Rip Rap
 8. Wier shall be constructed of 2 CY of Heavy Loose Rip Rip.

County: Okanogan		Culvert Replacement on Road E383103E	
District: Highlands		Revisions	
Contract Administrator: Skylar Goodrich		By	Date
Project Compliance: Jason Bauer			
c:\jason\jmr\logo_2.jpg		Legal Description: T 38N R 31E Section 03	
Drawing Location: s:\LANDS\ROADS_TBS\Highlands\Harvard\Harvard CAD		Drawn: JBB	Project: Harvard TS
		Designed: JBB	View: Cross Section
		Checked:	Date: 11/16/20
		C1	
		Sheet: 2 of 3	



Stream Profile



County: *Okonegan*

District: Highlands
 Contract Administrator: Skylar Goodrich
 Project Compliance: Jason Bauer

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Culvert Replacement on Road E383103E

Revisions

By Date

Legal Description:
 T 38N R 31E Section 03

Drawn: JBB Project: Harward TS

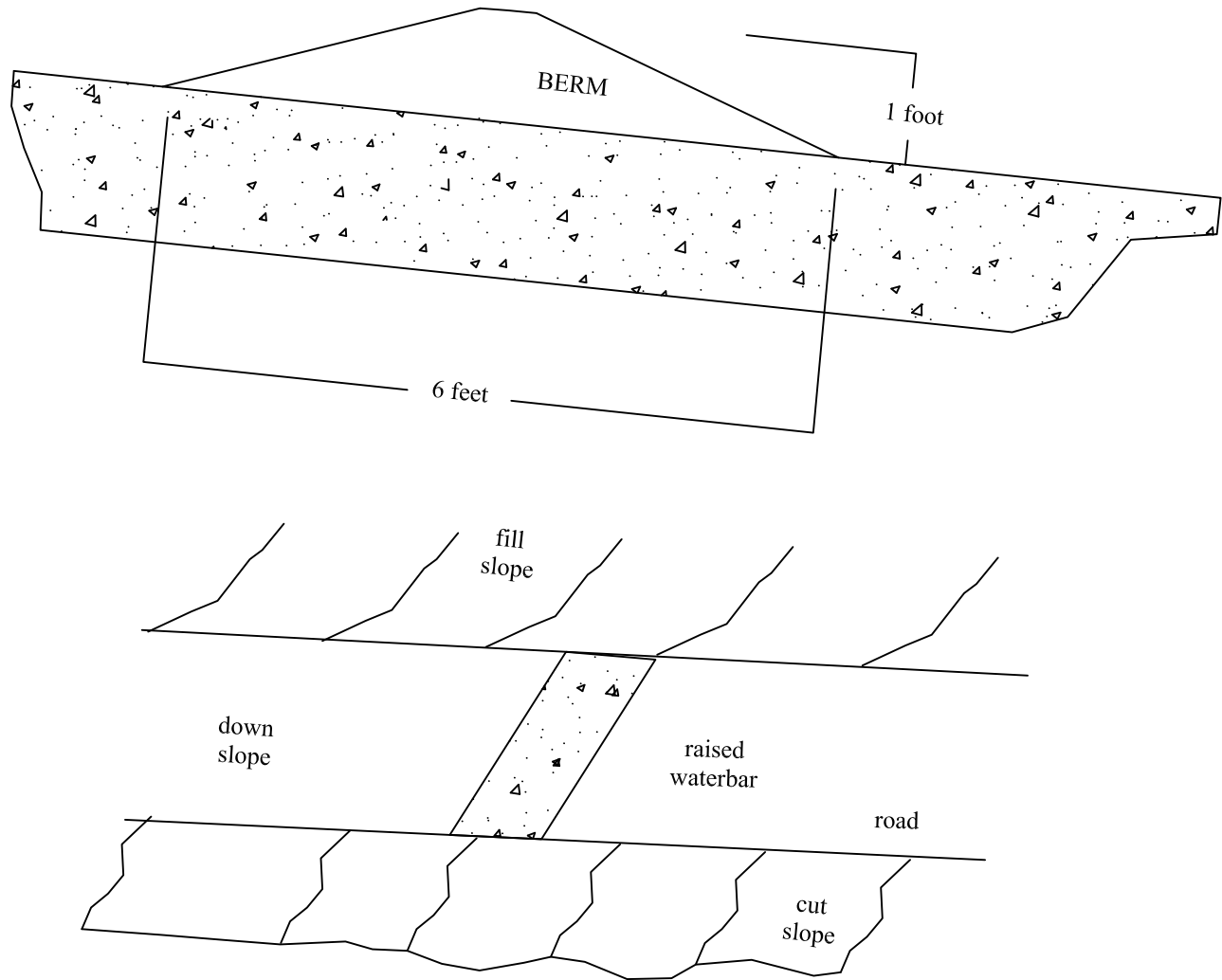
Designed: JBB View: Profile

Checked: Date: 11/16/20

C1

Sheet: 3 of 3

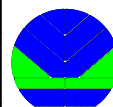
Raised Water Bar Detail



Notes:

1. Raised WaterBar construction for forest roads.
2. Tie berm into cut bank.
3. Construct cross drain berm approximately 12 inches high.
4. Construct cross drain berm 6 feet wide.
5. Ensure proper drainage at outlet.
6. Skew raised waterbar 30 degrees downslope to fill slope.
7. Compact raised water bar with vibratory compactor.

Raised Waterbar Detail



WASHINGTON STATE DEPARTMENT OF
Natural Resources

Northeast Region Colville, Washington		
Designed By:	Jason Bauer	4/21/05
Drawn By:	Jason Bauer	4/21/05

Revised:

1 OF 1

Sale Name - Harvard

REGION: Northeast

CONTRACT #: 30-101630 ENGINEER: Jason Bauer

DISTRICT: Highlands

DATE: 11/16/20

	<i>Construction</i>	<i>Reconstruction</i>	<i>Maintenance</i>	<i>Deactivation</i>	<i>Abandonment</i>
ROAD NUMBERS:	E383101E		E383101E		0
Comments:	E383102G		E383102E		
	E383102H		E383102J		
	E383103F		E383103E		
	E383112E		E383123E		
	E383112F		E383124E		
	E383112G		E383136E		
	E383124F		E383207E		
	E383136E		E383207F		
	E383136J		E383231E		
ROAD STANDARD:	<i>Construction</i>	<i>Reconstruction</i>	<i>Maintenance</i>	<i>Deactivation</i>	<i>Abandonment</i>
NUMBER OF STATIONS:	201.75	0.00	620.03	0.00	0.00
CLEARING & GRUBBING:	\$31,179		\$21,447		0
EXCAVATION AND FILL:	\$39,251	\$0	\$24,474	\$0	\$0
MISC. MAINTENANCE:	\$4,302	\$0	\$10,644		\$0
ROAD ROCK:	\$2,519	\$0	\$12,174		\$0
ADDITIONAL ROCK:			\$0		\$0
CULVERTS AND FLUMES:	\$130,160	\$0	\$48,091		\$0
STRUCTURES/MATERIALS:					\$0

TOTAL COSTS:	\$207,410	\$0	\$116,829	\$0	\$0
<i>COST PER STATION:</i>	<i>\$1,028</i>	<i>\$0</i>	<i>\$188</i>	<i>\$0</i>	<i>\$0</i>

	\$/per move	# of moves	Total
MOBILIZATION:	\$1,000	5	\$5,000

TOTAL (All Roads) = \$329,239

SALE VOLUME mbf =

4,694

TOTAL \$/MBF =

\$70

Engineer's Notes: