

Washington DNR Timber Sales Program

Updated information is being provided for Bowman Hill #30-102819 timber sale documents as follows:

Documents amended:

Brief Description	DATE
Contract (Draft) – Updated H-141 clause. Added #F.	02/12/2024 WC



TIMBER NOTICE OF SALE

SALE NAME: BOWMAN HILL

AGREEMENT NO: 30-102819

AUCTION: March 27, 2024 starting at 10:00 a.m., **COUNTY:** Whatcom
Northwest Region Office, Sedro Woolley, WA

SALE LOCATION: Sale located approximately 9 miles northeast of Acme, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags, property line and MM-ML Road, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Units #1 and #3.

All timber bounded by white timber sale boundary tags and property lines, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit #2.

All timber bounded by white timber sale boundary tags, property lines, and the MF-ML and MF-58 roads, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit #4.

All timber bounded by white timber sale boundary tags, except that title to the timber within the right-of-way associated with areas of road construction (located outside of units) is not conveyed to the Purchaser unless the road segment is actually constructed.

All forest products above located on part(s) of Sections 27, 28, 29, 30 and 33 all in Township 38 North, Range 6 East, W.M., containing 124 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BVC-SFIFM-018227)

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg Ring DBH Count	Total MBF	MBF by Grade									
			1P	2P	3P	SM	1S	2S	3S	4S	UT	
Douglas fir	16.3	1,342						431	751	160		
Hemlock	13	949						216	445	270	18	
Red alder	13.4	220						29	52	126	13	
Redcedar	15.2	135							95	40		
Silver fir	13.2	113						15	51	47		
Sale Total		2,759										

MINIMUM BID: \$618,000.00 **BID METHOD:** Sealed Bids

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

EXPIRATION DATE: March 31, 2027 **ALLOCATION:** Export Restricted



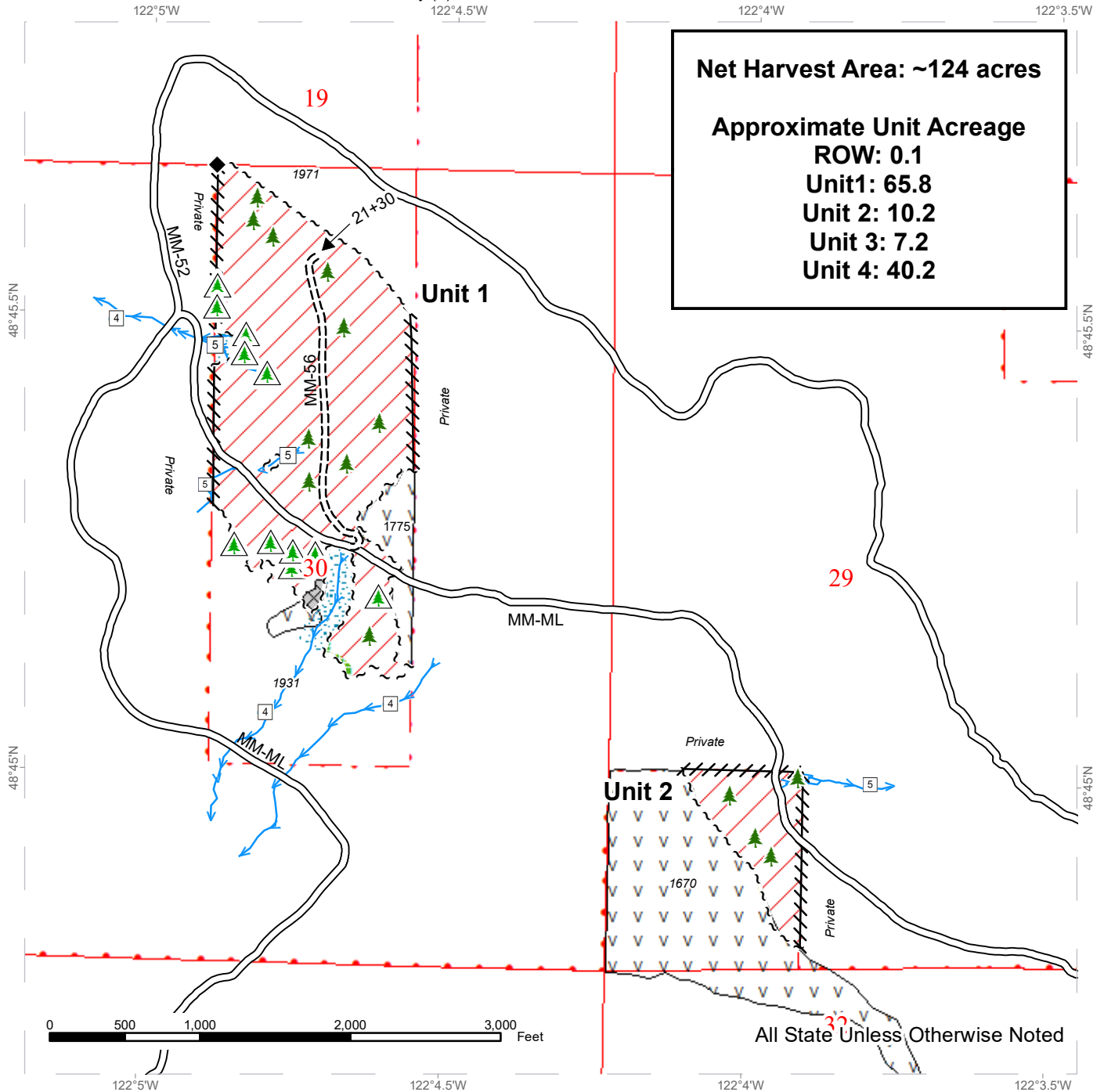
TIMBER NOTICE OF SALE

- BID DEPOSIT:** \$61,800.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.
- HARVEST METHOD:** Cable; shovel, tracked skidder or “6-wheeled rubber-tired skidders with over-the-tire tracks spanning both sets of rear tires” on sustained slopes 40% or less; self-leveling equipment on sustained slopes 55% or less; tethered equipment may be utilized; also, a feller-buncher may be utilized on sustained slopes 40% or less.
- ROADS:** 21.30 stations of required construction. 473.65 stations of required prehaul maintenance.
- Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: McCoy Pit at station 129+50 of the MM-22 Road.
- Development of an existing rock source will involve drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast rock.
- An estimated total quantity of rock needed for this proposal: 91 cubic yards of riprap and 1,665 cubic yards of 3-inch-minus ballast rock.
- Road work and the hauling of rock will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation. The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation.
- ACREAGE DETERMINATION**
- CRUISE METHOD:** Acres determined by GPS traverse. Cruise was conducted via variable plot sample type. See Cruise Narrative for further details. Shapefiles of units are available upon request, and on the DNR website after the BNR meeting in which the sale is presented.
- FEES:**
1. Purchaser shall furnish the State with a check made payable to Mid-Valley Resources, Inc., in the amount of \$500.00 on the day of sale for permit #55-103501, for road use.
 2. \$46,903.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.
- SPECIAL REMARKS:**
1. Trees marked with orange paint represent the last take tree on State land along property line boundaries.
 2. High elevation snow persists on the landscape of the sale area.
 3. Redcedar poles were noted within the sale area.
 4. Cedar salvage may be offered for sale separately from the timber sale and is NOT included in the products sold.

TIMBER SALE MAP

SALE NAME: BOWMAN HILL
AGREEMENT #: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



Net Harvest Area: ~124 acres

Approximate Unit Acreage
ROW: 0.1
Unit 1: 65.8
Unit 2: 10.2
Unit 3: 7.2
Unit 4: 40.2

	DNR Managed Lands		Sale Boundary Tags		Stream Type
	Variable Retention Harvest		Flag Line		Stream Type Break
	Non-Tradeable Leave Clump		Existing Roads		Leave Tree Area <1/4-acre
	Leave Tree Area		Required Construction		Non-Tradeable Leave Trees
	Riparian Mgt Zone		Streams		Survey Monument
	No Entry Zone				



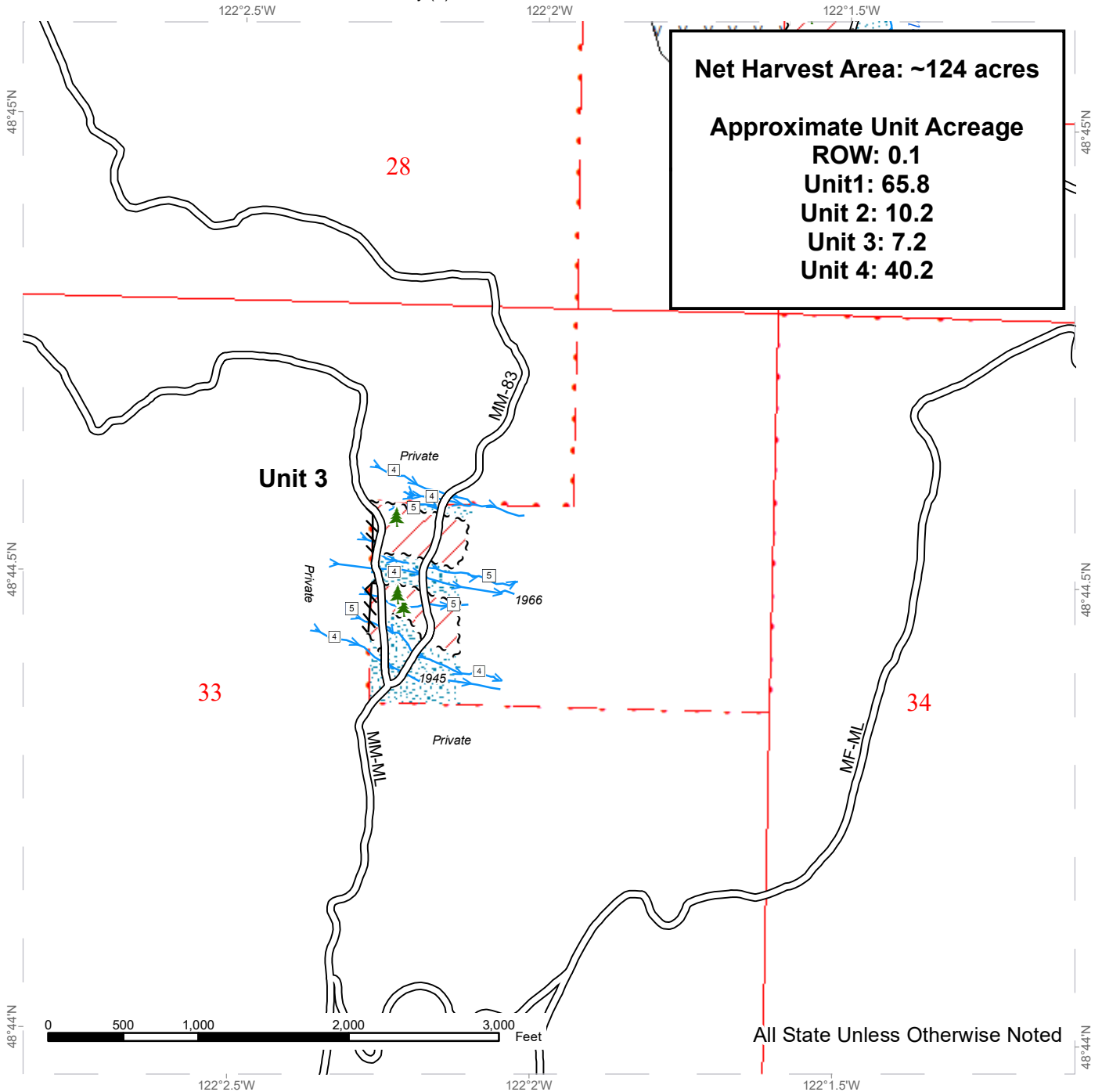
TIMBER SALE MAP

SALE NAME: BOWMAN HILL
AGREEMENT #: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280

Net Harvest Area: ~124 acres

Approximate Unit Acreage
ROW: 0.1
Unit 1: 65.8
Unit 2: 10.2
Unit 3: 7.2
Unit 4: 40.2



All State Unless Otherwise Noted

	DNR Managed Lands		Sale Boundary Tags		Stream Type
	Variable Retention Harvest		Flag Line		Stream Type Break
	Riparian Mgt Zone		Existing Roads		Leave Tree Area <1/4-acre
	No Entry Zone		Streams		



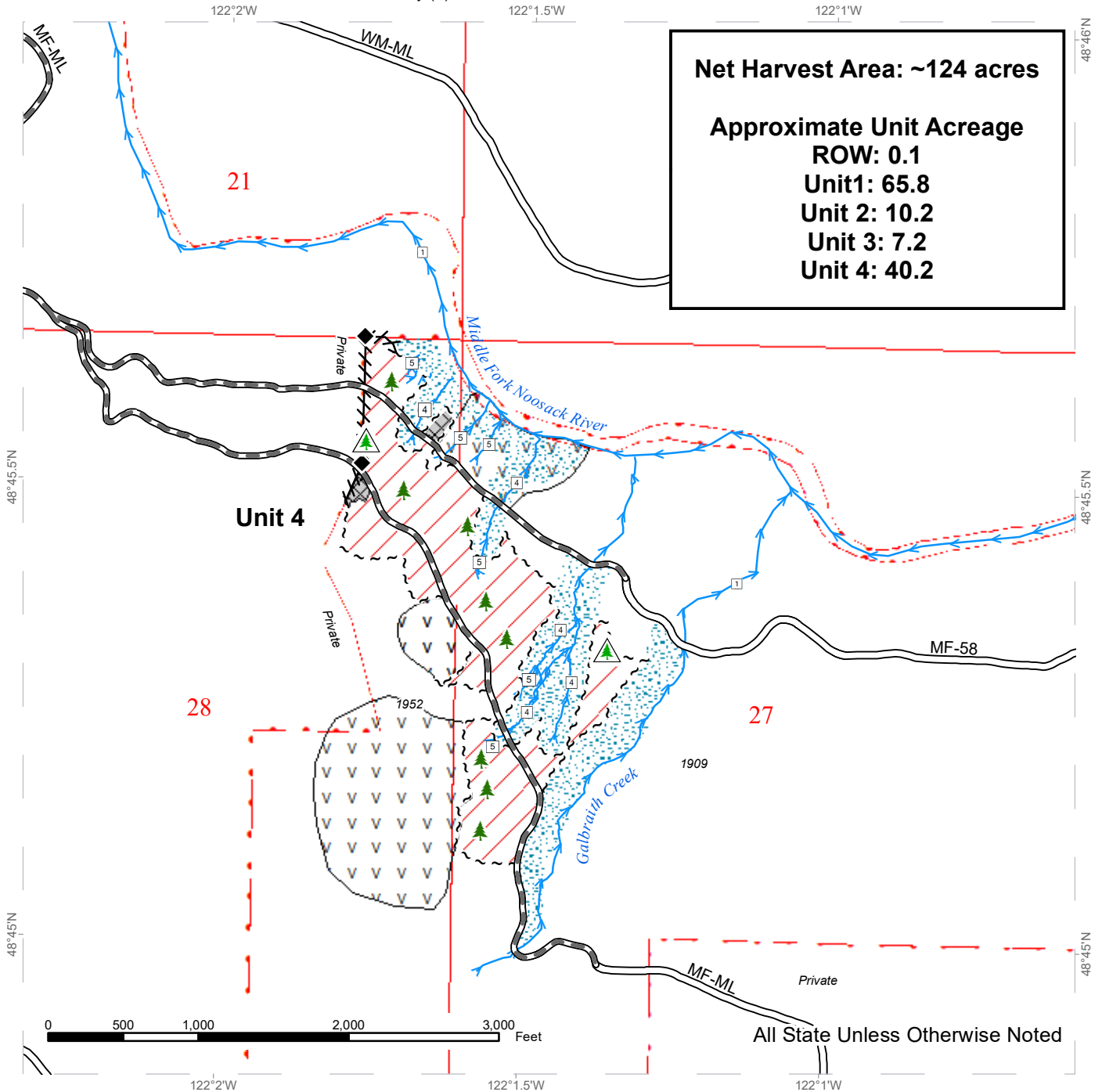
TIMBER SALE MAP

SALE NAME: BOWMAN HILL
AGREEMENT #: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280

Net Harvest Area: ~124 acres

Approximate Unit Acreage
ROW: 0.1
Unit 1: 65.8
Unit 2: 10.2
Unit 3: 7.2
Unit 4: 40.2



All State Unless Otherwise Noted

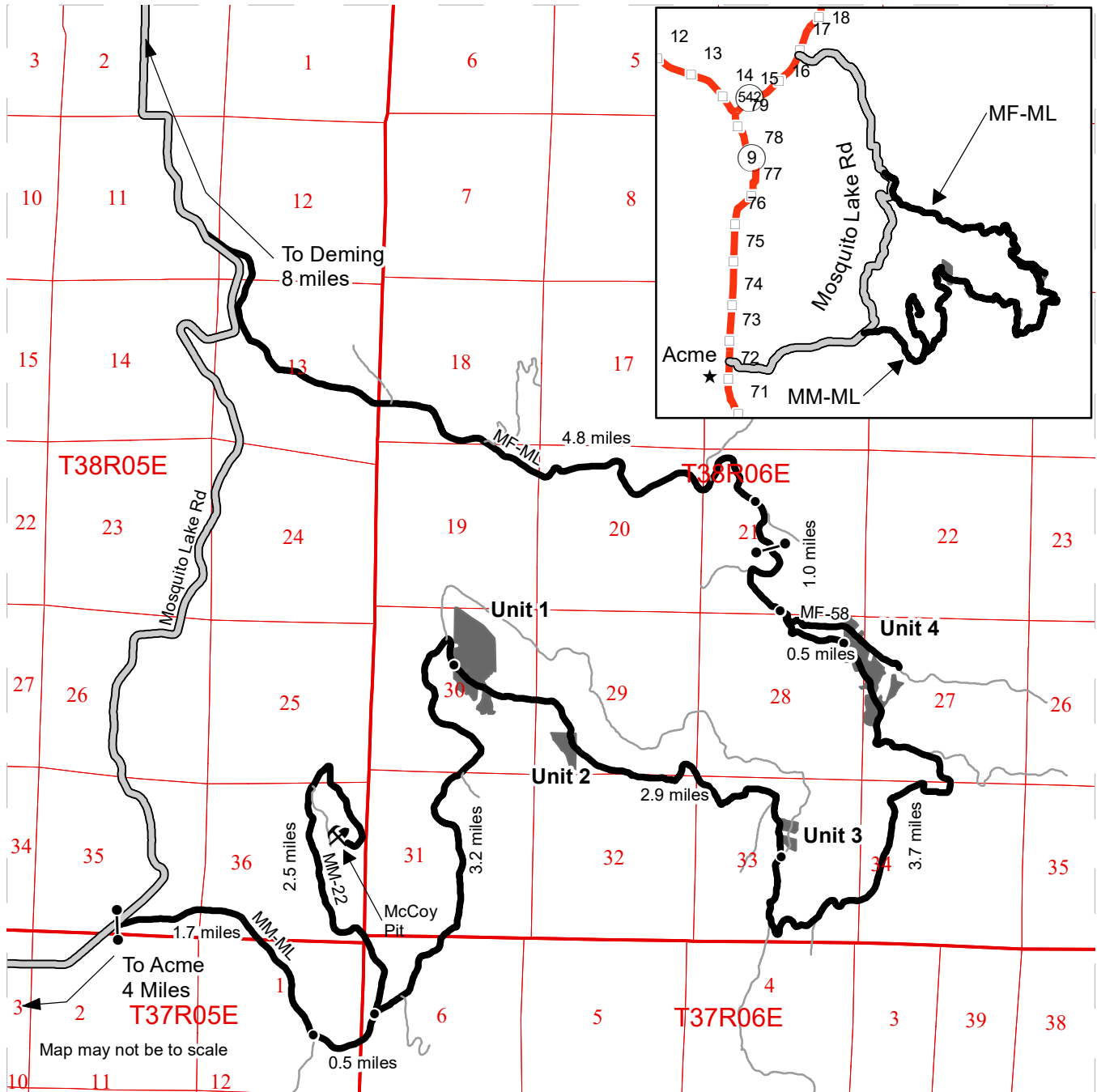
DNR Managed Lands	Sale Boundary Tags	Stream Type
Variable Retention Harvest	Flag Line	Stream Type Break
Non-Tradeable Leave Clump	Existing Roads	Leave Tree Area <1/4-acre
Riparian Mgt Zone	Streams	Non-Tradeable Leave Trees
No Entry Zone		Survey Monument



DRIVING MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



- Timber Sale Unit
- Haul Route
- Other Road
- Highway
- Milepost Markers
- Distance Indicator
- Gate (F1-3 lock)
- Rock Pit

DRIVING DIRECTIONS:

From Acme:
 Turn onto Mosquito Lake Rd. Travel 4 miles. Turn right and proceed through the gate (F1-3 lock) onto MM-ML. Travel 5.4 miles. Arrive at Unit 1

From Deming:
 Travel East on Hwy 542 for 3.2 miles. Turn right onto Mosquito Lake Rd. Travel 4.8 miles. Turn left onto MF-ML (Middle Fork Rd). Travel 6.3 miles. Arrive at Unit 4



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-0102819

SALE NAME: BOWMAN HILL

**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-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on March 27, 2024 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber bounded by white timber sale boundary tags, property line and MM-ML Road, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Units #1 and #3.

All timber bounded by white timber sale boundary tags and property lines, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit #2.

All timber bounded by white timber sale boundary tags, property lines, and the MF-ML and MF-58 roads, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit #4.

All timber bounded by white timber sale boundary tags, except that title to the timber within the right-of-way associated with areas of road construction (located outside of units) is not conveyed to the Purchaser unless the road segment is actually constructed.

All forest products described above located on approximately 124 acres on part(s) of Sections 27, 28, 29, 30, and 33 all in Township 38 North, Range 6 East W.M. in Whatcom County(s) as designated on the sale area and as shown on the attached timber sale map.

All forest products described above from the bole of the tree that meet or exceed 2 inches diameter inside bark on the small end are eligible for removal. Above ground components of a tree that remain as by-products after the manufacture of logs,

including but not limited to tree tops, branches, limbs, needles, leaves, stumps, are not eligible for removal under the terms of this contract.

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

G-020 Inspection By Purchaser

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

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to March 31, 2027.

G-040 Contract Term Adjustment - No Payment

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

- a. Road and bridge failures which deny access.
- b. Access road closures imposed by road owner.
- c. Excessive suspensions as provided in clause G-220.
- d. Regulatory actions not arising from Purchaser's failure to comply with this contract which will prevent timber harvest for a period less than 6 months.

G-051 Contract Term Extension - Payment

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

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

- b. Completion of all required roads and compliance with all contract and regulatory requirements.
- c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the total contract price.

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

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

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

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

- e. Payment of \$558.00 per acre per annum for the acres on which an operating release has not been issued in the sale area.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents

are estimates only, provided solely for administrative and identification purposes.

- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-061 Inadvertent Discovery of Cultural Resources

Purchaser acknowledges that cultural resources as defined in WAC 222-16-010 may exist within the timber sale area and that the existence and location of such resources may be unknown at the time this contract is executed. Purchaser has a duty to exercise due care in its operations and in the event any human skeletal remains are discovered by the Purchaser or the State during the course of operations Purchaser shall immediately halt operations and notify local law enforcement in the most expeditious manner possible then notifying the Contract Administrator. In the event cultural resources are discovered by the Purchaser or the State during the course of operations Purchaser shall immediately halt operations and notify the Contract Administrator. Any potential resources shall not be removed or disturbed. Purchaser shall resume operations as directed in writing by the Contract Administrator.

G-062 Habitat Conservation Plan

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the

Services' Incidental Take Permit Nos. TE812521-1 and 1168 (collectively referred to as ITP), or as amended hereafter by the Services. The ITP authorizes the incidental take of certain federally listed threatened and endangered species, as specified in the ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

By signing this contract, Purchaser agrees to comply with the terms and conditions of the ITP, and the HCP, which shall become terms of this contract. The State agrees to authorize the lawful activities of the Purchaser carried out pursuant to this contract, PROVIDED the Purchaser remains in compliance with the terms and conditions of both the HCP and ITP. The requirements set forth in this contract are intended to comply with the terms and conditions of the HCP and ITP. Accordingly, non-compliance with the terms and conditions of the HCP and ITP will render the authorization provided in this paragraph void, be deemed a breach of the contract and may subject Purchaser to liability for violation of the Endangered Species Act.

Any modifications to the contract shall be proposed in writing by Purchaser, shall continue to meet the terms and conditions of the HCP and ITP, and shall require the prior written approval of the Region Manager before taking effect.

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.

- c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

The State shall adjust the total contract price by subtracting from the total contract price an amount determined in the following manner: The State shall

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 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 the Scribner log scale volume, as defined by the Northwest Log Rules Advisory Group, shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Douglas fir	\$246.93	0	\$0.00	\$9.00	\$9.00
Hemlock	\$170.26	0	\$0.00	\$9.00	\$9.00
Red alder	\$202.97	0	\$0.00	\$9.00	\$9.00
Redcedar	\$452.07	0	\$0.00	\$9.00	\$9.00
Silver fir	\$171.28	0	\$0.00	\$9.00	\$9.00
Other	\$247.11	0	\$0.00	\$9.00	\$9.00

G-106 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 State's 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 rate set forth in clause G-101, G-102 or G-103.

G-111 Title and Risk of Loss

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

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

Forest products purchased under this contract are certified as being in conformance with the Sustainable Forestry Initiative 2022 Forest Management Standard under certificate number: BVC-SFIFM-018227.

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

G-220 State Suspends 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; MM-ML, MM-22, MM-2217, MM-56, MM-83, MF-ML, and MF-58. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

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

G-340 Preservation of Markers

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

G-360 Road Use Reservation

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

G-370 Blocking Roads

Purchaser shall not block the MM-ML or MF-ML, 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:

Easements with:

Georgia-Pacific Corporation; #55-000033; dated November 26, 1968.

Georgia-Pacific Corporation; #55-000022 Supplement; dated February 1, 1971.

John Hancock Mutual Life Insurance Company; #55-070084; dated October 5, 1995.

RUP with:

Mid-Valley Resources, Inc.; #55-104249; dated December 1, 2022.

Purchaser shall furnish the State with a check made payable to Mid-Valley Resources, Inc., in the amount of \$500.00 on the date of sale for permit #55-103501, for road use.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-011 Initial Deposit

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

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$71,734.00. The total contract price consists of a \$0.00 contract bid price plus \$71,734.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

Reserve trees are trees required and designated for retention within the sale boundary. Purchaser shall protect reserve trees from being cut, damaged, or removed during operations.

Reserve tree damage exists when one or more of the following criteria occur as a result of Purchaser's operation, as determined by the Contract Administrator:

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 200 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale unit containing the damaged leave tree, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 8 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-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 potential operations outside of the sale boundary. The plan shall address the falling and yarding, 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-051 Branding and Painting

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

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable; shovel, tracked skidder or "6-wheeled rubber-tired skidders with over-the-tire tracks spanning both sets of rear tires" on sustained slopes 40% or less; self-leveling equipment on sustained slopes 55% or less; tethered equipment may be utilized; also, a feller-buncher may be utilized on sustained slopes 40% or less. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-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 on any roads from November 1 to March 31 unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

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

SHOVEL is defined as a low ground pressure track-mounted machine with hydraulic boom and grapple capable of picking up one end of the largest log 25 feet from the center of the machine.

LOG PROCESSOR/DE-LIMBER is defined as a mobile machine with a hydraulic boom capable of simultaneously bucking, delimiting and/or debarking and chipping whole trees while sitting stationary at the landing.

FELLER-BUNCHER/HARVESTER is defined as a track mounted machine with hydraulic boom and cutter head capable of felling, bucking, limbing, and decking logs in one operation.

TRACKED SKIDDER is defined as any tracked tractor or skidder, fixed or articulated, used to drag logs to landings. Logs are generally pulled in groups of six or less, with one end on the ground.

B. Equipment shall remain at least 30 feet from all water courses or areas of wet/soft soils, except as necessary to cross at approved locations. All type 5 streams will have a 30-foot equipment limitation zone measured from each bank. Water course crossing structures must be approved by the Contract Administrator.

C. Temporary log crossings that protect stream bank integrity are required for any typed water crossing during yarding operations and must be approved in writing by the Contract Administrator. Structures shall be limited to crossing points approved in writing by the Contract Administrator. Streambeds and banks shall be protected by the use of log puncheon or other approved structures at these crossing points and removed upon the completion of yarding activities. This applies to both cable and ground-based yarding.

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

E. An on-site pre-work meeting that includes the Contract Administrator and Purchaser will be required after operations have been disrupted (leading to a cessation of operations) or operations moved off site for a period of more than two weeks before any activities resume on site.

F. Marked leave trees may be traded for trees of the same size, species, and similar location with prior approval from the Contract Administrator. Trees marked as non-tradable on the Timber Sale map or with double blue bands of paint cannot be traded.

G. Any and all operations associated with this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the potential for delivery to typed water.

H. Within ground-based logging areas, the operator shall break up concentrations of logging debris greater than 11.5 feet by 11.5 feet.

I. Fall trees away from typed water unless approved by Contract Administrator.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

A. A copy of the timber sale map, contract, and the FPA shall be present on site during active operations.

B. Purchasers shall not operate within non-tradable leave tree patches. Purchaser shall not cut, damage or alter any trees within non-tradeable leave tree patches or trees marked with double bands of blue paint.

C. Purchaser shall obtain written approval from the Contract Administrator prior to operating outside the sale boundaries. If trees are felled outside of the sale boundaries, they are to be left on site.

D. No operations allowed in "No Entry Zones" as shown on Timber Sale Map.

E. Exposed mineral soil created by falling or yarding operations shall be water-barred, grass seeded, and covered in slash as necessary to prevent sediment delivery to types waters. This must be accomplished concurrent with operations before November 1 each active operating season. These mitigations must be maintained though the life of this contract.

F. If felled, trees marked with PINK paint, located in Unit 1, must be left on site.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-250 Additional Falling Requirements

Within Unit 1, all non-merchantable live stems 4 inches or less, shall be felled concurrently with felling operations. Areas of young or immature timber may be excluded from this requirement by the Contract Administrator.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 10/28/2022 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on MM-56, MM-83, and MF-58 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on MM-ML, MM-22, MM-2217, and MF-ML roads. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

When the humidity is 30 percent or lower on the sale area, all operations must cease unless authority to continue is granted by the State in writing.

S-060 Pump Truck or Pump Trailer

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

S-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.

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

obtaining an adequate remedy. These liquidated damages provisions provide greater certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

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

D-041 Reserve Tree Excessive Damage

When Purchaser’s operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay the State as liquidated damages at the rate of \$1,000.00 per tree for all damaged reserve trees that are not replaced in the sale area.

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

Jay Guthrie
Northwest Region Manager

Print Name

Date: _____

Date: _____

Address: _____

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

STATE OF _____)

COUNTY OF _____)

On this _____ day of _____, 20____, before me personally appeared _____

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

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

Notary Public in and for the State of

My appointment expires _____



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

(Revised 9/18)

PRE-CRUISE NARRATIVE

Sale Name: Bowman Hill	Region: Northwest
Agreement #: 30-102819	District: Baker
Contact Forester: Tyson Whiteid Phone / Location: 360-280-0968	County(s): Whatcom
Alternate Contact: Curtis Thompson Phone / Location: 360-540-4999	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Not applicable	See Logging Plan Map
Harvest System: Not applicable	Click here to enter percent sale acres.
Harvest System: Not applicable	Click here to enter percent sale acres.

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
ROW	S30, T38 R06E	03	0.1					0.1	GPS (Garmin)
1	S30, T38 R06E	03	68.2		2.4			65.8	GPS (Garmin)
2	S29, T38 R06E	03	10.6		0.4			10.2	GPS (Garmin)
3	S33, T38 R06E	03	7.5		0.3			7.2	GPS (Garmin)
4	S27 & 28, T38 R06E	03	42.1		1.9			40.2	GPS (Garmin)
TOTAL ACRES			128.5		5.0			123.5	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
ROW	Harvest all timber bounded by white "timber sale boundary" tags	N/A	This ROW is adjacent to Unit 1. It is part of the same stand.
1	Harvest all timber bounded by white "timber sale boundary" tags and timber	N/A	Scattered Leave Trees: 36 Clumped Leave Trees: 513 Total Leave Trees: 549

	type changes (young plantation); except for forest products bounded by yellow leave tree tags, and trees marked with blue paint on the bole and root collar.		
2	Harvest all timber bounded by white "timber sale boundary" tags and timber type changes (young plantation); except for forest products bounded by yellow leave tree tags, and trees marked with blue paint on the bole and root collar.	N/A	Scattered Leave Trees: 11 Clumped Leave Trees: 90 Total Leave Trees: 101
3	Harvest all timber bounded by white "timber sale boundary" tags, last "cut tree" marked with orange "X," and timber type changes (young plantation); except for forest products bounded by yellow leave tree tags, and trees marked with blue paint on the bole and root collar.	N/A	Scattered Leave Trees: 10 Clumped Leave Trees: 64 Total Leave Trees: 74
4	Harvest all timber bounded by white "timber sale boundary" tags, timber type changes (young plantation), and the MF-ML and MF-58 roads; except for forest products bounded by yellow leave tree tags, and trees marked with blue paint on the bole and root collar.	N/A	Scattered Leave Trees: 46 Clumped Leave Trees: 317 Total Leave Trees: 363

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
ROW	WH, DF 5 MBF	See driving map. All gates are accessible with a F1-3 key.	See attached driving and traverse maps
1	WH, DF, RC 1,310 MBF		
2	WH, DF, RC 304 MBF		
3	WH, DF, RC 156 MBF		
4	DF, WH, RC 983 MBF		
TOTAL MBF	2,759 MBF		

REMARKS:

ROW: See Unit 1

Unit 1: Variable, high-elevation, 70-80 year old stand with some areas of stem exclusion.

Unit 2: Variable, high-elevation stand; approximately 75 years old.

Unit 3: Variable, high-elevation stand; approximately 75 years old.

Unit 4: Highly variable stocking and species composition; mid-elevation stand; approximately 80 years old; rocky and broken ground with moderately difficult yarding.

Prepared By: Tyson Whiteid

Date: 11/17/2022

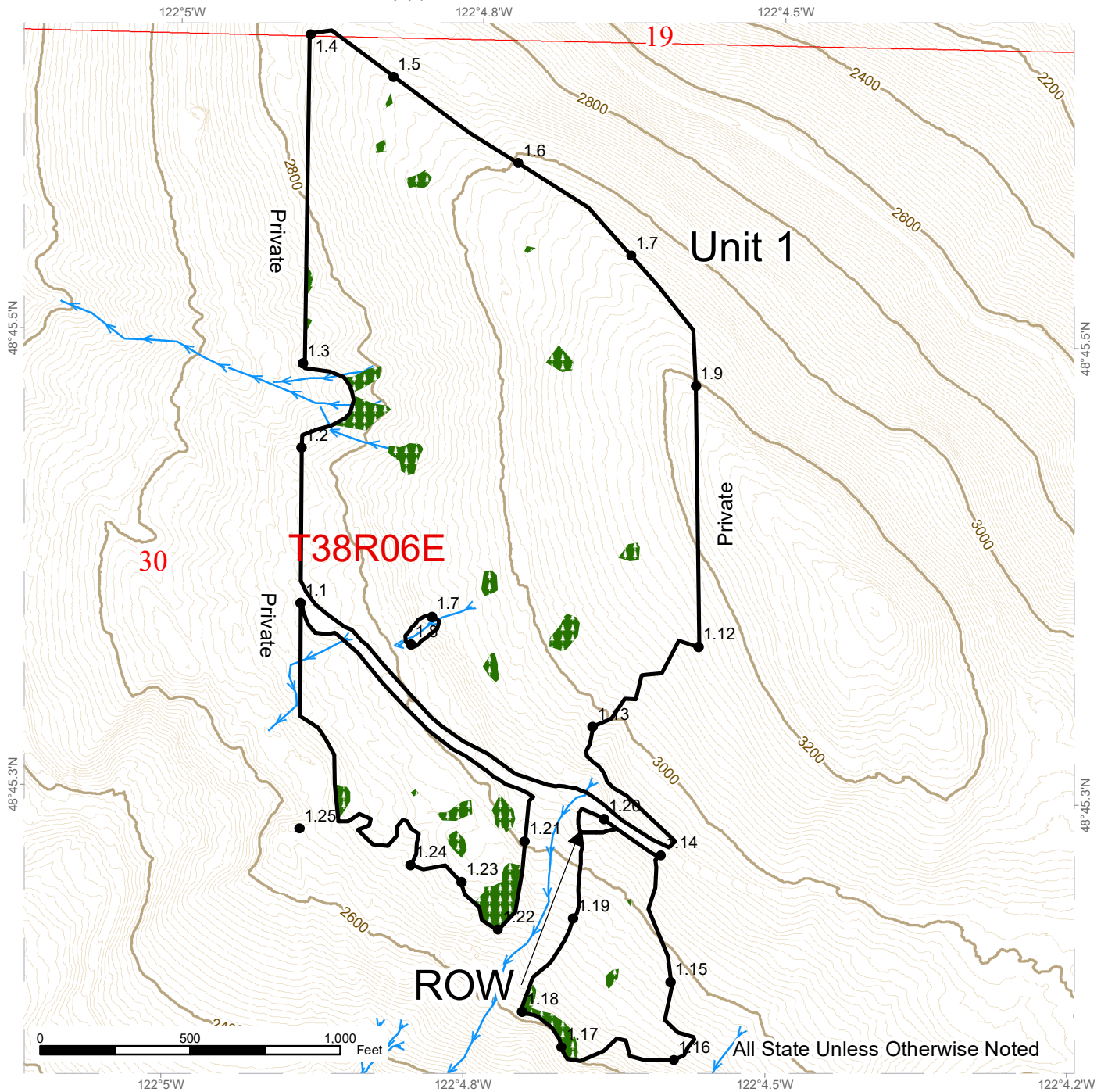
Title: Hamilton Unit Forester

CC:

TRAVERSE MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



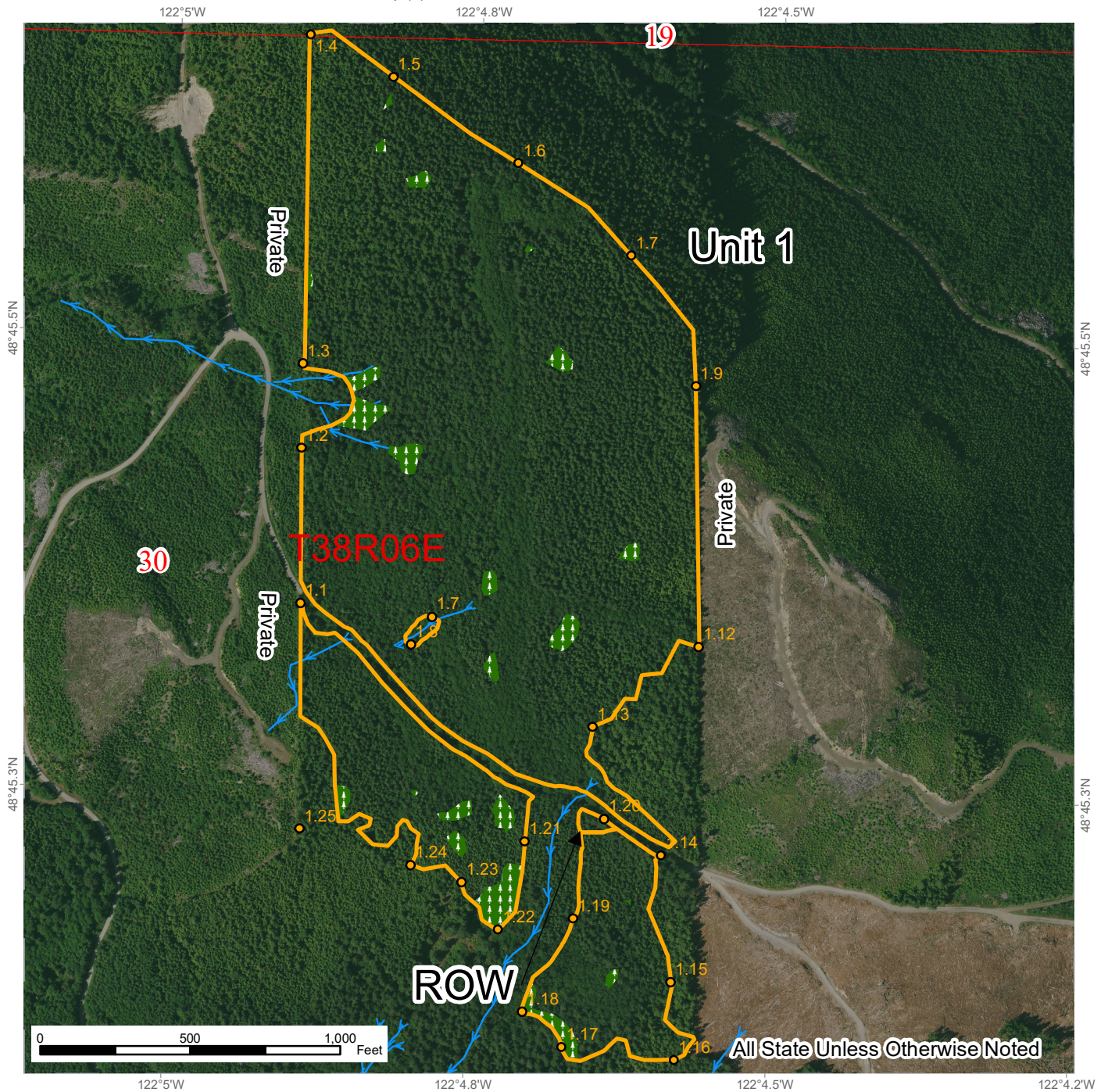
	Harvest Unit
	LTA_poly
	Streams
	Traverse Points



TRAVERSE MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280

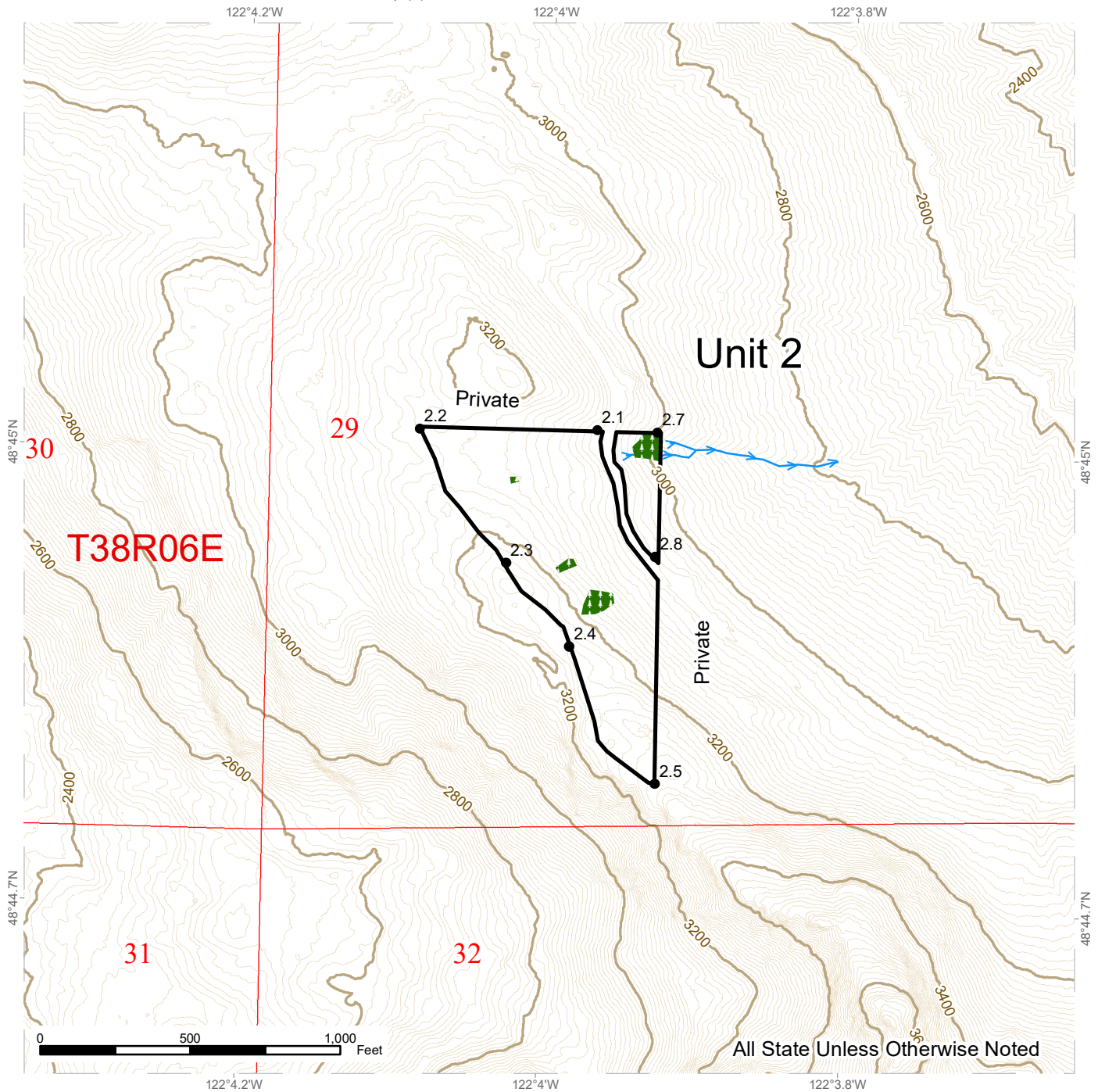


	Harvest Unit
	LTA_poly
	Streams
	Traverse Points

TRAVERSE MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



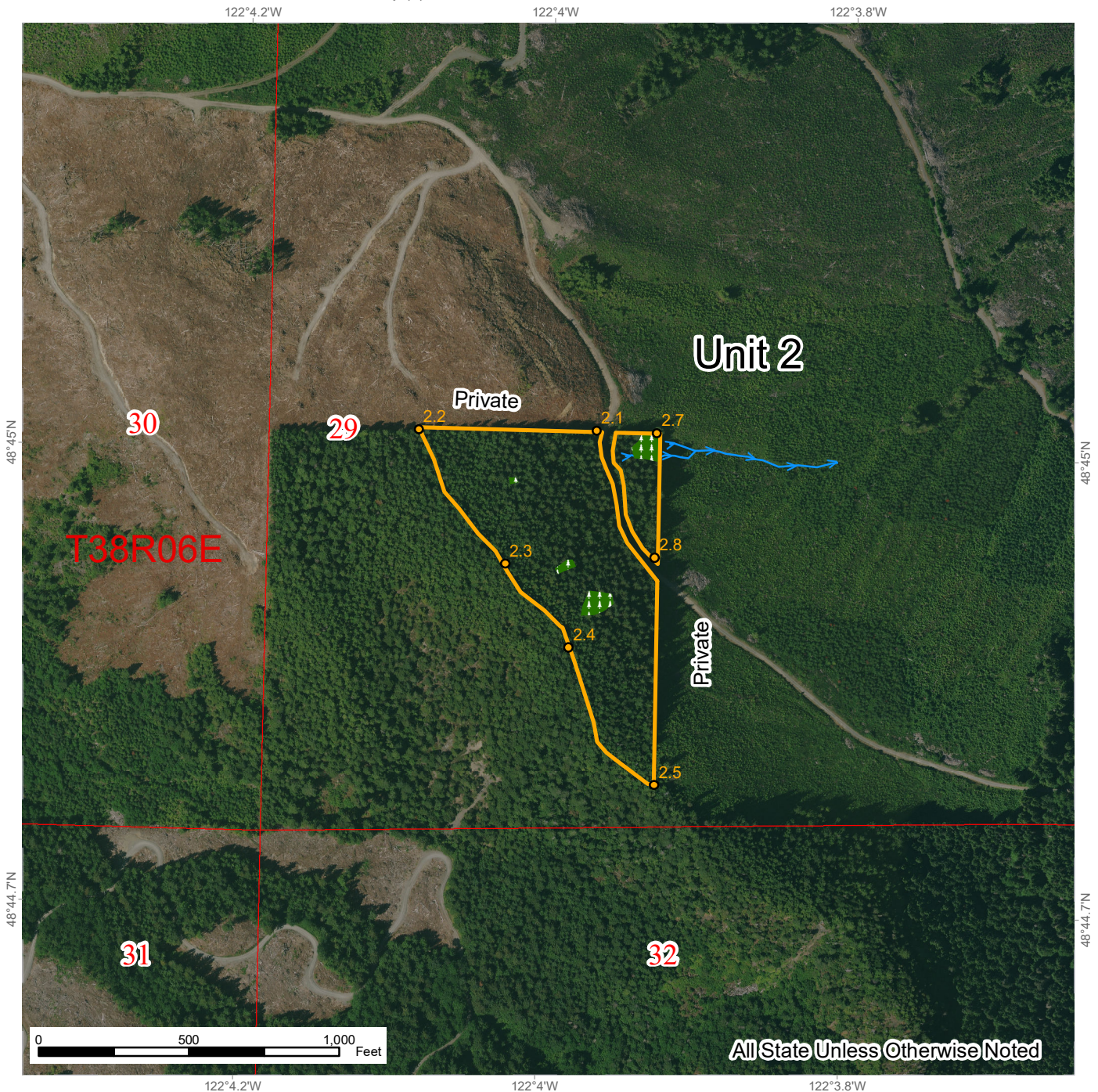
	Harvest Unit
	LTA_poly
	Streams
	Traverse Points



TRAVERSE MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



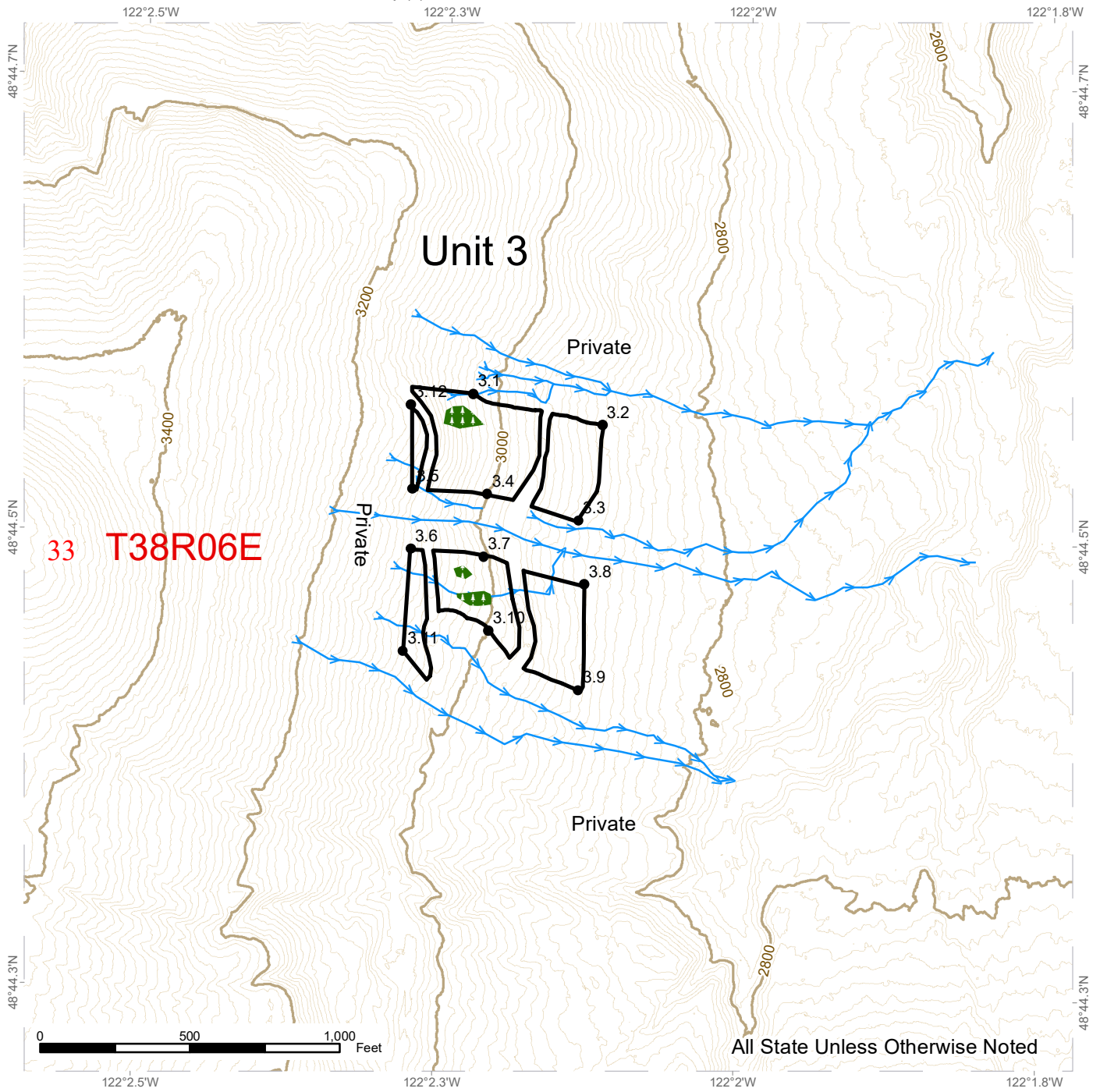
	Harvest Unit
	LTA_poly
	Streams
	Traverse Points



TRAVERSE MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



	Harvest Unit
	LTA_poly
	Streams
	Traverse Points

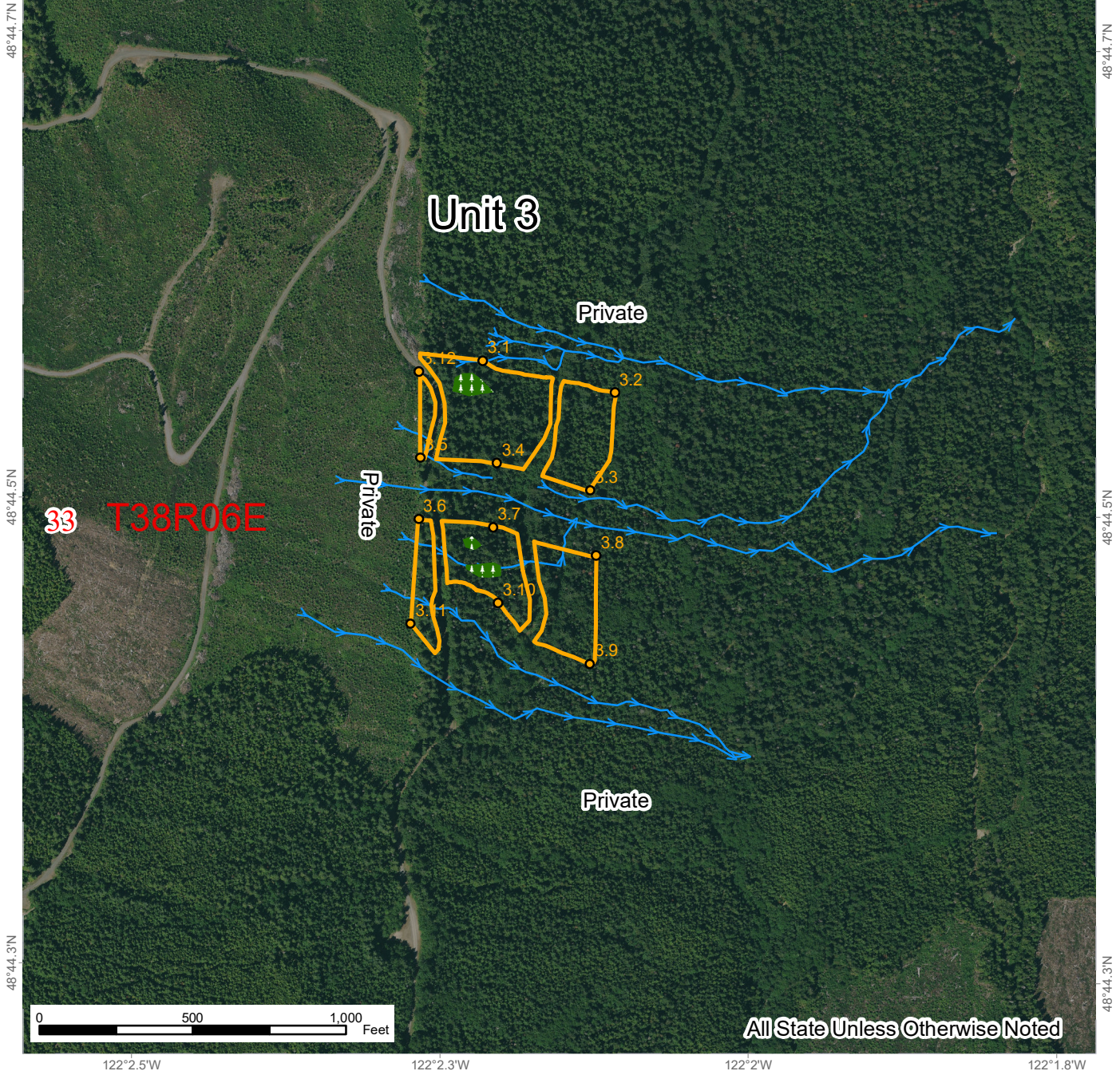


TRAVERSE MAP





SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280

122°2.5'W 122°2.3'W 122°2'W 122°1.8'W



All State Unless Otherwise Noted

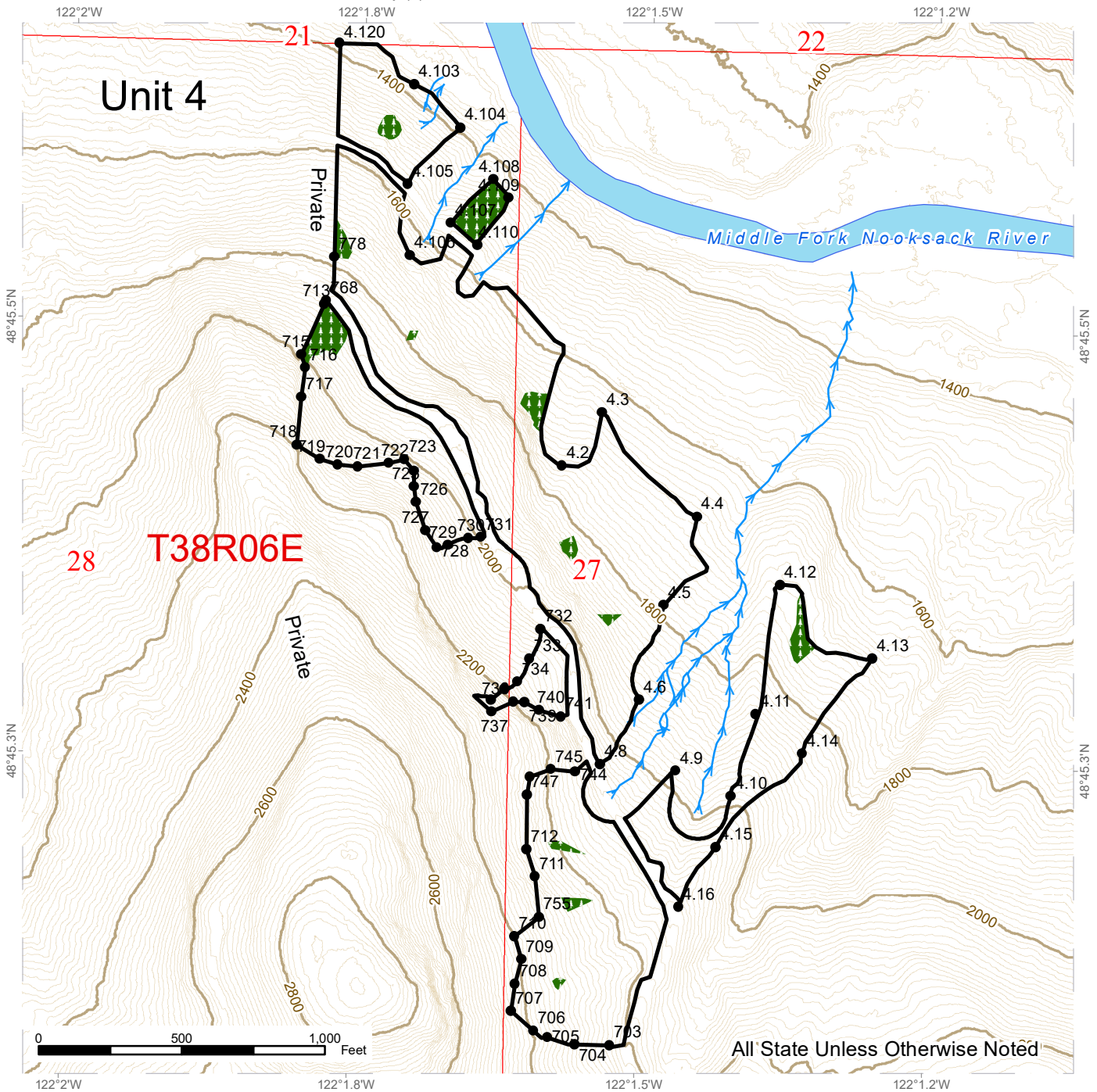
-  Harvest Unit
-  LTA_poly
-  Streams
-  Traverse Points







TRAVERSE MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



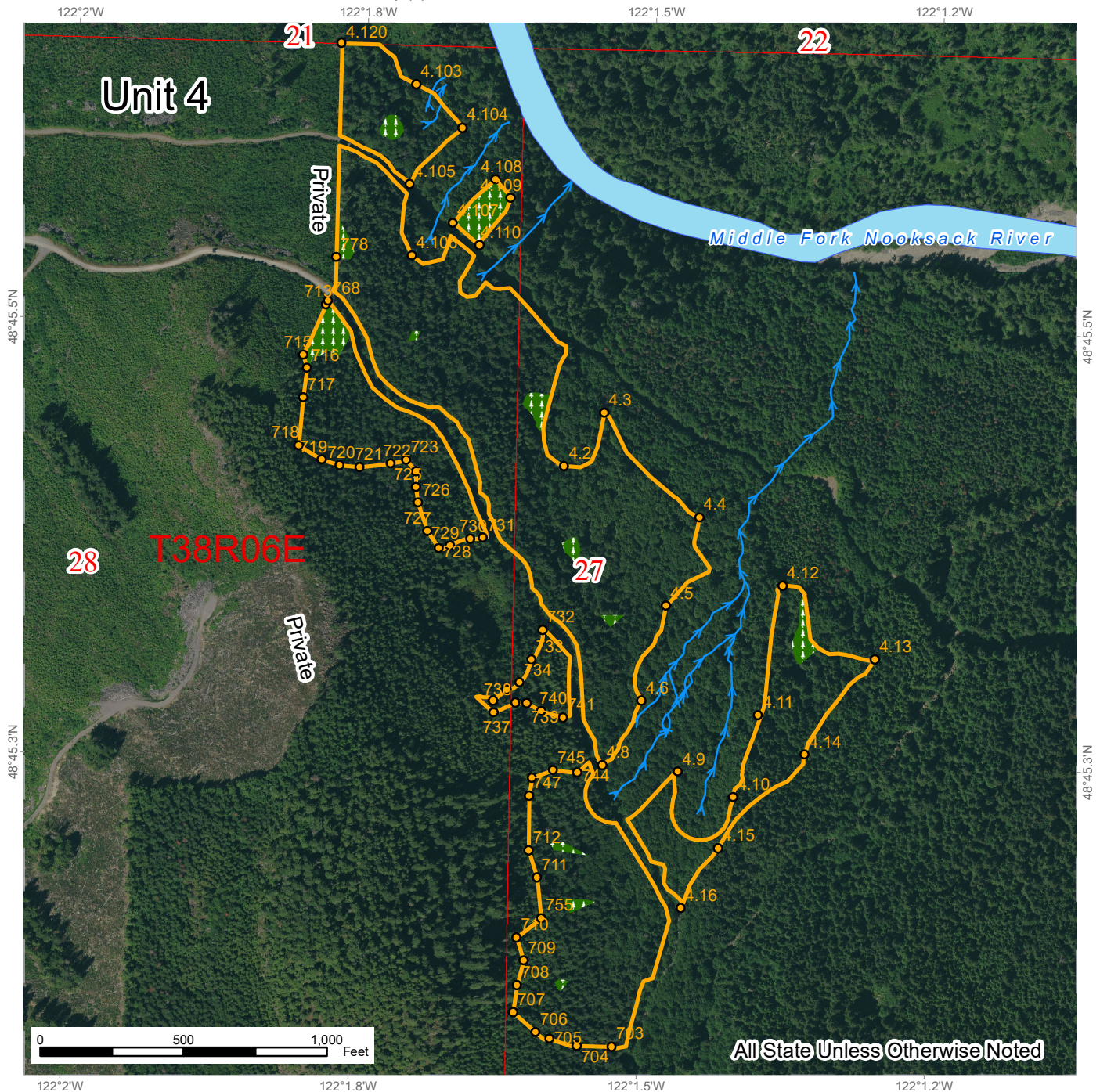
-  Harvest Unit
-  LTA_poly
-  Streams
-  Traverse Points




TRAVERSE MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



	Harvest Unit
	LTA_poly
	Streams
	Traverse Points



Timber Sale Cruise Report Bowman Hill - NW

Sale Name: BOWMAN HILL

Sale Type: LUMP SUM

Region: NORTHWEST

District: BAKER

Lead Cruiser: Matt Llobet

Bowman Hill is a variable retention harvest that consists of four units. All four units are accessible by forest roads. The sale ranges from 1,360 feet to 3,120 feet in elevation and is susceptible to heavy snow accumulation throughout the winter months.

Cruise Design:

All VHR units and right of way were cruised using a 54.4/40 BAF. The smallest merchantable tree cruised throughout the sale had a DBH of 7.0 inches and 5.0 inches at 16 feet.

Conifer log lengths were cruised in 2 foot multiples - maximizing 32-40 ft. lengths. Hardwood log lengths were cruised in 10 foot multiples - no longer than 30 feet long.

If a plot landed near or in a "Leave Tree Area" the leave trees were recorded as leave. A species and DBH was obtained. This volume is not included in the sale volume. Cruise acres are based on FMA acres including leave tree areas.

Unit 1:

The stand characteristics throughout unit one showed a variable timber type with an open understory. The terrain throughout unit one was mild - making for good operator ground. Unit one cruised out at 19mbf per acre of sawlog volume and all live timber showed excellent form. The species composition consists of Douglas fir, Western Hemlock, Pacific Silver fir, Western Red Cedar, and scattered hardwoods. The Douglas fir made up 56% of the unit volume amounting to 726mbf. The average DBH in the Douglas fir was 14 inches and had an average bole length of 60 feet. Western Hemlock and Pacific Silver fir made up 33% of the unit volume amounting to 427mbf. A small component of Western Red Cedar was scattered throughout the unit amounting to 62mbf per acre. WRC pole volume was cruised amounting to 16mbf. All pole volume cruised was in distribution lengths.

Unit 2:

The stand consists of a uniform timber type with an open understory throughout. The operator ground was straightforward with mild terrain. The species composition consists of Douglas fir, Western Hemlock, Pacific Silver fir, and Western Red Cedar. Unit two cruised out at 24mbf per acre of sawlog volume and all timber showed good form. The Douglas fir made up 60% of the unit volume amounting to 160mbf. The Douglas fir had an average DBH of 19 inches and an average bole length of 77 feet.

Unit 3:

The stand characteristics throughout unit three consists of a dominant Douglas fir and white wood timber type. Douglas fir makes up 44% of the volume amounting to 58mbf. The white wood makes up 47% of the volume amounting to 61mbf.

Unit 4:

Stand characteristics throughout unit four show a highly variable timber type with areas of steep operator ground. Species sampled throughout unit four were Western Hemlock, Douglas fir, Pacific Silver fir, Western

Red Cedar, and hardwoods. Unit four cruised out at 23mbf per acre of sawlog volume.

Right of Way:

The right of way unit associated with Bowman Hill is fully timbered new construction.

Logging and Stand Conditions:

Approximately 42% of the sale is cable harvest and the other 58% percent is ground base harvest. All four units showed operator friendly terrain, making for productive harvesting.

Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	16.3			1,342	432	751	160	
WH	13.0			949	216	445	270	18
RA	13.4			220	29	52	126	13
RC	15.2			135		95	40	
SF	13.2			113	15	51	48	
ALL	14.1			2,759	691	1,394	643	31

Timber Sale Notice Weight (tons)

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	10,817	3,271	6,210	1,336	
WH	8,724	1,759	4,052	2,739	174
RA	1,854	224	379	1,140	111
RC	1,325		934	391	
SF	932	107	430	396	
ALL	23,652	5,360	12,004	6,002	285

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 (%)
226.1	4.9	105.9	1.9	23,891	5.2

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
BOWMAN HILL 1	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	68.0	68.2	31	21	0

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
BOWMAN HILL 2	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	11.0	10.6	9	9	0
BOWMAN HILL 3	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	7.4	7.5	5	5	0
BOWMAN HILL 4	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	42.0	42.1	23	23	0
BOWMAN HILL ROW	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.1	0.1	1	1	0
All		128.5	128.4	69	59	0

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	39	3,395	3,360	1.0	3,271.0	431.7
DF	LIVE	3 SAW	Domestic	8.7	35	5,875	5,844	0.5	6,210.1	750.9
DF	LIVE	4 SAW	Domestic	5.6	23	1,252	1,243	0.7	1,335.5	159.7
RA	LIVE	2 SAW	Domestic	12.5	29	235	226	3.5	223.9	29.1
RA	LIVE	3 SAW	Domestic	10.9	28	412	402	2.6	379.2	51.6
RA	LIVE	4 SAW	Domestic	8.4	25	997	980	1.7	1,139.8	125.9
RA	LIVE	UTILITY	Pulp	5.3	29	101	101	0.0	111.4	12.9
RC	LIVE	3 SAW	Domestic	8.4	36	761	738	3.0	933.6	94.9
RC	LIVE	4 SAW	Domestic	5.5	22	313	312	0.2	391.4	40.1
SF	LIVE	2 SAW	Domestic	13.9	39	113	113	0.0	106.7	14.5
SF	LIVE	3 SAW	Domestic	8.6	36	407	399	1.8	429.6	51.3
SF	LIVE	4 SAW	Domestic	5.4	36	369	369	0.0	395.6	47.5
WH	LIVE	2 SAW	Domestic	14.3	38	1,690	1,678	0.7	1,758.7	215.6
WH	LIVE	3 SAW	Domestic	8.8	34	3,492	3,466	0.8	4,051.7	445.3
WH	LIVE	4 SAW	Domestic	5.5	28	2,109	2,101	0.4	2,739.1	269.9
WH	LIVE	CULL	Cull	15.3	13	111	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	6.1	20	137	137	0.0	174.0	17.6

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Domestic	6.0	27	2,503	0.6	2,691.1	321.6
DF	8 - 11	LIVE	Domestic	9.6	36	4,584	0.6	4,854.4	589.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	12 - 15	LIVE	Domestic	13.8	39	2,862	1.1	2,831.5	367.7
DF	16 - 19	LIVE	Domestic	16.9	39	488	0.4	430.6	62.7
DF	20+	LIVE	Domestic	20.1	40	11	5.0	9.0	1.4
RA	5+	LIVE	Pulp	5.4	29	101	0.0	111.4	12.9
RA	5+	LIVE	Domestic	9.1	26	1,608	2.2	1,742.9	206.6
RC	5+	LIVE	Domestic	7.1	28	1,050	2.2	1,325.1	135.0
SF	5 - 7	LIVE	Domestic	6.0	29	516	0.0	542.2	66.4
SF	8 - 11	LIVE	Domestic	10.0	38	252	2.8	283.1	32.4
SF	12 - 15	LIVE	Domestic	12.1	40	52	0.0	55.2	6.6
SF	16 - 19	LIVE	Domestic	17.1	36	61	0.0	51.5	7.8
WH	5 - 7	LIVE	Domestic	5.8	29	2,604	0.3	3,331.1	334.6
WH	5 - 7	LIVE	Pulp	5.9	22	129	0.0	164.9	16.6
WH	8 - 11	LIVE	Pulp	8.1	16	7	0.0	9.1	0.9
WH	8 - 11	LIVE	Domestic	9.1	34	2,870	0.8	3,356.9	368.7
WH	12 - 15	LIVE	Cull	12.0	9	0	100.0	0.0	0.0
WH	12 - 15	LIVE	Domestic	13.3	38	1,259	0.8	1,392.1	161.7
WH	16 - 19	LIVE	Cull	16.4	14	0	100.0	0.0	0.0
WH	16 - 19	LIVE	Domestic	17.2	38	512	1.0	469.5	65.8

Cruise Unit Report BOWMAN HILL 1

Unit Sale Notice Volume (MBF): BOWMAN HILL 1

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	14.1			726	118	484	124	
WH	11.0			399	17	178	198	7
RA	13.3			88	9	19	55	4
RC	12.1			62		36	26	
SF	9.0			35			35	
ALL	12.6			1,310	145	717	438	11

Unit Cruise Design: BOWMAN HILL 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	68.0	68.2	31	21	0

Unit Cruise Summary: BOWMAN HILL 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	38	65	2.1	0
WH	24	43	1.4	0
RA	8	13	0.4	0
RC	8	12	0.4	0
SF	1	3	0.1	0
ALL	79	136	4.4	0

Unit Cruise Statistics (Cut + Leave Trees): BOWMAN HILL 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 (%)
DF	114.1	87.4	15.7	106.7	13.8	2.2	12,181	88.5	15.9
WH	75.5	94.3	16.9	90.4	28.6	5.8	6,824	98.6	17.9
RA	16.8	266.8	47.9	83.5	22.7	8.0	1,401	267.7	48.6
RC	15.5	264.1	47.4	63.9	40.9	14.5	990	267.3	49.6
SF	5.3	409.4	73.5	97.3	0.0	0.0	513	409.4	73.5
ALL	227.2	41.4	7.4	96.4	24.5	2.8	21,909	48.1	7.9

Unit Summary: BOWMAN HILL 1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	38	ALL	14.1	60	79	10,751	10,682	0.6	92.3	100.1	26.7	726.4
RA	LIVE	CUT	8	ALL	13.3	55	69	1,347	1,293	4.0	16.0	15.5	4.2	87.9
RC	LIVE	CUT	5	ALL	11.1	42	56	660	660	0.0	15.4	10.3	3.1	44.9
RC	LIVE	POLE	3	ALL	14.9	56	75	247	247	0.0	3.2	3.9	1.0	16.8
SF	LIVE	CUT	1	ALL	9.0	45	87	513	513	0.0	11.9	5.3	1.8	34.9
WH	LIVE	CUT	24	ALL	11.0	50	71	6,080	5,872	3.4	98.5	65.0	19.6	399.3
ALL	LIVE	POLE	3	ALL	14.9	56	75	247	247	0.0	3.2	3.9	1.0	16.8
ALL	LIVE	CUT	76	ALL	12.4	54	74	19,351	19,020	1.7	234.1	196.2	55.3	1,293.3
ALL	ALL	ALL	79	ALL	12.4	54	74	19,598	19,267	1.7	237.3	200.0	56.4	1,310.2

Cruise Unit Report BOWMAN HILL 2

Unit Sale Notice Volume (MBF): BOWMAN HILL 2

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	18.7			167	85	75	7
WH	12.0			89		67	22
SF	19.1			25	15	8	3
RC	14.7			23		16	6
ALL	14.9			304	100	166	38

Unit Cruise Design: BOWMAN HILL 2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	11.0	10.6	9	9	0

Unit Cruise Summary: BOWMAN HILL 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	19	19	2.1	0
WH	15	15	1.7	0
SF	3	3	0.3	0
RC	8	8	0.9	0
ALL	45	45	5.0	0

Unit Cruise Statistics (Cut + Leave Trees): BOWMAN HILL 2

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	114.9	64.6	21.5	132.2	8.0	1.8	15,199	65.1	21.6
WH	90.7	73.5	24.5	89.0	27.1	7.0	8,072	78.3	25.5
SF	18.1	300.0	100.0	127.4	8.8	5.1	2,312	300.1	100.1
RC	35.6	153.5	51.2	57.7	19.2	6.8	2,053	154.7	51.6
ALL	259.4	30.0	10.0	106.6	31.2	4.6	27,636	43.3	11.0

Unit Summary: BOWMAN HILL 2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	19	ALL	18.7	77	99	15,288	15,199	0.6	60.3	114.9	26.6	167.2
RC	LIVE	CUT	3	ALL	13.0	42	53	770	770	0.0	14.5	13.3	3.7	8.5
RC	LIVE	POLE	5	ALL	16.1	53	66	1,283	1,283	0.0	15.7	22.2	5.5	14.1
SF	LIVE	CUT	3	ALL	19.1	70	89	2,312	2,312	0.0	9.1	18.1	4.2	25.4
WH	LIVE	CUT	15	ALL	12.0	52	64	8,389	8,072	3.8	115.5	90.7	26.2	88.8
ALL	LIVE	POLE	5	ALL	16.1	53	66	1,283	1,283	0.0	15.7	22.2	5.5	14.1
ALL	LIVE	CUT	40	ALL	14.8	60	75	26,759	26,353	1.5	199.4	237.1	60.6	289.9
ALL	ALL	ALL	45	ALL	14.9	59	74	28,042	27,636	1.4	215.1	259.4	66.2	304.0

Cruise Unit Report BOWMAN HILL 3

Unit Sale Notice Volume (MBF): BOWMAN HILL 3

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	21.7			60	41	18	2
SF	12.1			39		29	10
WH	12.8			38	7	24	6
RC	15.8			20		13	7
ALL	14.9			156	48	83	25

Unit Cruise Design: BOWMAN HILL 3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	7.4	7.5	5	5	0

Unit Cruise Summary: BOWMAN HILL 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	6	7	1.4	0
SF	4	4	0.8	0
WH	4	4	0.8	0
RC	5	5	1.0	0
ALL	19	20	4.0	0

Unit Cruise Statistics (Cut + Leave Trees): BOWMAN HILL 3

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	76.2	119.5	53.5	124.4	11.1	4.5	9,481	120.0	53.6
SF	43.6	163.0	72.9	119.5	12.9	6.5	5,203	163.5	73.2
WH	43.6	55.9	25.0	116.9	4.1	2.1	5,092	56.1	25.1
RC	40.0	122.5	54.8	68.0	35.1	15.7	2,720	127.4	57.0
ALL	203.3	37.3	16.7	110.6	25.6	5.9	22,495	45.3	17.7

Unit Summary: BOWMAN HILL 3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	6	ALL	21.7	80	100	8,412	8,126	3.4	25.4	65.3	14.0	60.1
RC	LIVE	CUT	3	ALL	13.8	49	61	1,639	1,632	0.4	23.1	24.0	6.5	12.1
RC	LIVE	POLE	2	ALL	21.5	67	84	1,092	1,088	0.4	6.3	16.0	3.5	8.1
SF	LIVE	CUT	4	ALL	12.1	62	90	5,328	5,203	2.3	54.5	43.6	12.5	38.5
WH	LIVE	CUT	4	ALL	12.8	59	81	5,092	5,092	0.0	48.7	43.6	12.2	37.7
ALL	LIVE	POLE	2	ALL	21.5	67	84	1,092	1,088	0.4	6.3	16.0	3.5	8.1
ALL	LIVE	CUT	17	ALL	14.6	62	84	20,470	20,053	2.0	151.7	176.4	45.2	148.4
ALL	ALL	ALL	19	ALL	14.9	62	84	21,562	21,141	2.0	158.0	192.4	48.6	156.4

Cruise Unit Report BOWMAN HILL 4

Unit Sale Notice Volume (MBF): BOWMAN HILL 4

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	15.2			422	191	177	43	11
DF	18.4			385	187	171	27	
RA	13.4			132	20	32	71	9
RC	21.5			30		30	1	
SF	16.0			15		15		
ALL	15.8			983	398	425	142	20

Unit Cruise Design: BOWMAN HILL 4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	42.0	42.1	23	23	0

Unit Cruise Summary: BOWMAN HILL 4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	33	38	1.7	0
DF	28	30	1.3	0
RA	22	23	1.0	0
RC	5	9	0.4	0
SF	1	1	0.0	0
ALL	89	101	4.4	0

Unit Cruise Statistics (Cut + Leave Trees): BOWMAN HILL 4

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 (%)
WH	89.9	97.6	20.4	128.7	26.5	4.6	11,580	101.1	20.9
DF	71.0	107.0	22.3	138.2	14.6	2.8	9,814	108.0	22.5
RA	40.0	138.2	28.8	81.9	28.1	6.0	3,276	141.0	29.4
RC	15.7	240.5	50.1	82.9	27.2	12.1	1,298	242.0	51.6
SF	2.4	479.6	100.0	145.4	0.0	0.0	344	479.6	100.0
ALL	219.0	40.7	8.5	120.2	29.7	3.1	26,313	50.4	9.1

Unit Summary: BOWMAN HILL 4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	28	ALL	18.4	78	100	9,202	9,160	0.5	35.9	66.3	15.5	384.7
RA	LIVE	CUT	22	ALL	13.4	56	69	3,156	3,133	0.7	39.1	38.3	10.5	131.6
RC	LIVE	CUT	5	ALL	21.5	62	77	790	721	8.8	3.4	8.7	1.9	30.3
SF	LIVE	CUT	1	ALL	16.0	82	105	344	344	0.0	1.7	2.4	0.6	14.5
WH	LIVE	CUT	33	ALL	15.2	67	84	10,122	10,057	0.6	62.0	78.1	20.0	422.4
ALL	LIVE	CUT	89	ALL	15.8	67	84	23,615	23,415	0.8	142.1	193.7	48.4	983.4
ALL	ALL	ALL	89	ALL	15.8	67	84	23,615	23,415	0.8	142.1	193.7	48.4	983.4

Cruise Unit Report BOWMAN HILL ROW

Unit Sale Notice Volume (MBF): BOWMAN HILL ROW

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	16.8			4	1	2	1
WH	13.3			0		0	
RC	24.0			0		0	0
ALL	16.6			5	1	3	1

Unit Cruise Design: BOWMAN HILL ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.1	0.1	1	1	0

Unit Cruise Summary: BOWMAN HILL ROW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	5	6	6.0	0
WH	1	1	1.0	0
RC	1	1	1.0	0
ALL	7	8	8.0	0

Unit Cruise Statistics (Cut + Leave Trees): BOWMAN HILL ROW




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	326.6	0.0	0.0	121.6	18.3	8.2	39,712	18.3	8.2
WH	54.4	0.0	0.0	60.1	0.0	0.0	3,273	0.0	0.0
RC	40.0	0.0	0.0	68.4	0.0	0.0	2,737	0.0	0.0
ALL	421.1	0.0	0.0	108.6	28.5	10.8	45,722	28.5	10.8

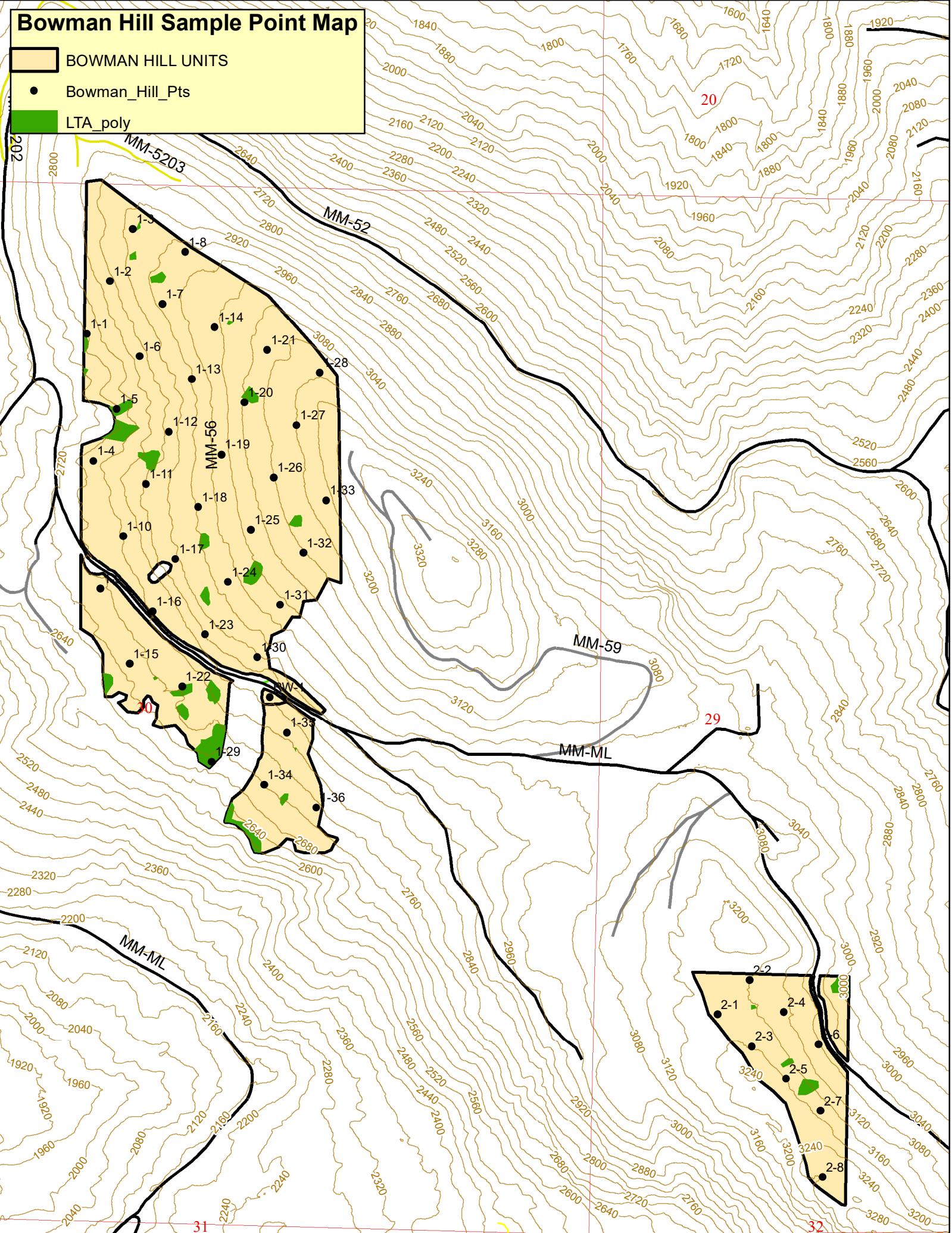
Unit Summary: BOWMAN HILL ROW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	5	ALL	16.8	68	85	40,588	39,712	2.2	212.2	326.6	79.7	4.0
RC	LIVE	CUT	1	ALL	24.0	65	82	2,737	2,737	0.0	12.7	40.0	8.2	0.3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	1	ALL	13.3	64	79	3,273	3,273	0.0	56.4	54.4	14.9	0.3
ALL	LIVE	CUT	7	ALL	16.6	67	83	46,598	45,722	1.9	281.3	421.1	102.8	4.6
ALL	ALL	ALL	7	ALL	16.6	67	83	46,598	45,722	1.9	281.3	421.1	102.8	4.6

Bowman Hill Sample Point Map

-  BOWMAN HILL UNITS
-  Bowman_Hill_Pts
-  LTA_poly



Timber Sale Cruise Report Bowman Hill - NW

Cruise Unit Report BOWMAN HILL 1

Unit Stand Table: BOWMAN HILL 1

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	8	LIVE	CUT	1	8.6	31	55	196	0.0	6.5	2.6	0.9	13.3
DF	10	LIVE	CUT	3	10.6	56	78	869	0.0	13.0	7.9	2.4	59.1
DF	12	LIVE	CUT	6	11.7	57	77	1,622	0.9	21.1	15.8	4.6	110.3
DF	14	LIVE	CUT	5	13.3	60	75	1,270	0.4	13.6	13.2	3.6	86.4
DF	16	LIVE	CUT	12	15.7	67	83	3,398	0.2	23.5	31.6	8.0	231.0
DF	18	LIVE	CUT	5	17.8	67	84	1,470	0.0	7.6	13.2	3.1	100.0
DF	20	LIVE	CUT	2	19.7	79	99	619	0.0	2.5	5.3	1.2	42.1
DF	22	LIVE	CUT	3	21.0	73	92	919	1.9	3.3	7.9	1.7	62.5
DF	24	LIVE	CUT	1	23.0	75	94	320	7.2	0.9	2.6	0.5	21.7
RA	10	LIVE	CUT	1	10.0	50	60	114	0.0	3.5	1.9	0.6	7.7
RA	12	LIVE	CUT	1	12.3	52	71	131	0.0	2.3	1.9	0.6	8.9
RA	14	LIVE	CUT	4	13.7	56	69	639	5.7	7.6	7.7	2.1	43.4
RA	16	LIVE	CUT	1	16.0	60	73	218	0.0	1.4	1.9	0.5	14.8
RA	18	LIVE	CUT	1	17.8	65	80	192	7.6	1.1	1.9	0.5	13.0
RC	10	LIVE	CUT	1	10.0	30	35	133	0.0	6.3	3.4	1.1	9.0
RC	12	LIVE	CUT	2	11.0	56	81	331	0.0	5.2	3.4	1.0	22.5
RC	14	LIVE	CUT	2	13.0	45	54	196	0.0	3.7	3.4	1.0	13.3
RC	14	LIVE	POLE	2	13.8	56	76	172	0.0	2.5	2.6	0.7	11.7
RC	18	LIVE	POLE	1	18.0	57	71	75	0.0	0.7	1.3	0.3	5.1
SF	10	LIVE	CUT	1	9.0	45	87	513	0.0	11.9	5.3	1.8	34.9
WH	8	LIVE	CUT	3	8.4	37	59	636	0.0	20.9	8.1	2.8	43.2
WH	10	LIVE	CUT	6	9.2	50	77	1,340	1.2	35.4	16.2	5.4	91.1
WH	12	LIVE	CUT	5	11.4	56	72	1,084	0.0	19.0	13.5	4.0	73.7
WH	14	LIVE	CUT	6	13.7	56	69	1,723	0.0	15.8	16.2	4.4	117.2
WH	16	LIVE	CUT	2	15.0	59	73	607	0.0	4.4	5.4	1.4	41.3
WH	20	LIVE	CUT	2	19.9	69	86	482	28.4	2.5	5.4	1.2	32.8

Cruise Unit Report BOWMAN HILL 2

Unit Stand Table: BOWMAN HILL 2

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	12	LIVE	CUT	1	12.2	68	96	797	0.0	7.5	6.0	1.7	8.8
DF	14	LIVE	CUT	2	14.6	71	93	1,449	0.0	10.4	12.1	3.2	15.9
DF	18	LIVE	CUT	5	17.9	76	96	3,805	1.3	17.3	30.2	7.1	41.9
DF	20	LIVE	CUT	3	19.9	83	105	2,435	0.0	8.4	18.1	4.1	26.8
DF	22	LIVE	CUT	4	21.7	83	104	3,272	0.6	9.4	24.2	5.2	36.0
DF	24	LIVE	CUT	2	24.1	84	107	1,732	0.0	3.8	12.1	2.5	19.1
DF	26	LIVE	CUT	2	25.4	82	104	1,709	1.2	3.4	12.1	2.4	18.8
RC	10	LIVE	CUT	1	10.8	35	42	248	0.0	7.0	4.4	1.4	2.7
RC	14	LIVE	CUT	1	14.0	45	60	212	0.0	4.2	4.4	1.2	2.3
RC	16	LIVE	CUT	1	15.7	55	68	310	0.0	3.3	4.4	1.1	3.4
RC	14	LIVE	POLE	1	14.5	48	59	202	0.0	3.9	4.4	1.2	2.2
RC	16	LIVE	POLE	2	15.9	55	69	557	0.0	6.4	8.9	2.2	6.1
RC	18	LIVE	POLE	2	17.4	54	67	525	0.0	5.4	8.9	2.1	5.8
SF	16	LIVE	CUT	1	16.0	68	86	732	0.0	4.3	6.0	1.5	8.1
SF	20	LIVE	CUT	1	19.0	72	91	731	0.0	3.1	6.0	1.4	8.0
SF	26	LIVE	CUT	1	25.4	74	94	849	0.0	1.7	6.0	1.2	9.3
WH	10	LIVE	CUT	3	9.9	43	50	1,340	0.0	34.2	18.1	5.8	14.7
WH	12	LIVE	CUT	7	11.9	54	68	3,809	1.6	55.2	42.3	12.3	41.9
WH	14	LIVE	CUT	3	14.0	56	69	1,555	14.1	16.9	18.1	4.8	17.1
WH	16	LIVE	CUT	1	15.2	65	80	624	0.0	4.8	6.0	1.6	6.9
WH	18	LIVE	CUT	1	17.7	70	87	743	0.0	3.5	6.0	1.4	8.2

Cruise Unit Report BOWMAN HILL 3

Unit Stand Table: BOWMAN HILL 3

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	20	LIVE	CUT	1	19.0	73	92	1,150	6.3	5.5	10.9	2.5	8.5
DF	22	LIVE	CUT	3	21.7	83	102	4,211	2.9	12.8	32.7	7.0	31.2
DF	24	LIVE	CUT	2	23.5	81	103	2,765	2.9	7.2	21.8	4.5	20.5
RC	14	LIVE	CUT	2	13.0	46	56	806	0.0	17.4	16.0	4.4	6.0
RC	16	LIVE	CUT	1	16.0	60	77	826	1.6	5.7	8.0	2.0	6.1
RC	22	LIVE	POLE	2	21.5	67	84	1,088	0.0	6.4	16.0	3.5	8.1
SF	10	LIVE	CUT	1	10.0	55	88	1,378	0.0	20.0	10.9	3.4	10.2
SF	12	LIVE	CUT	1	11.0	63	95	1,501	0.0	16.5	10.9	3.3	11.1
SF	16	LIVE	CUT	2	15.0	70	89	2,324	5.1	17.7	21.8	5.6	17.2
WH	10	LIVE	CUT	1	10.0	50	76	1,258	0.0	20.0	10.9	3.4	9.3
WH	12	LIVE	CUT	1	12.0	59	81	1,331	0.0	13.9	10.9	3.1	9.8
WH	16	LIVE	CUT	1	15.0	74	92	1,295	0.0	8.9	10.9	2.8	9.6
WH	18	LIVE	CUT	1	18.0	65	80	1,208	0.0	6.2	10.9	2.6	8.9

Cruise Unit Report BOWMAN HILL 4

Unit Stand Table: BOWMAN HILL 4

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	14	LIVE	CUT	3	14.3	70	89	864	1.2	6.4	7.1	1.9	36.3
DF	16	LIVE	CUT	7	15.8	75	95	2,117	0.0	12.2	16.6	4.2	88.9
DF	18	LIVE	CUT	3	17.9	78	98	916	0.0	4.1	7.1	1.7	38.5
DF	20	LIVE	CUT	4	19.9	87	111	1,351	2.3	4.4	9.5	2.1	56.8
DF	22	LIVE	CUT	3	21.6	83	106	1,020	0.0	2.8	7.1	1.5	42.8
DF	24	LIVE	CUT	5	23.5	84	107	1,729	0.0	3.9	11.8	2.4	72.6
DF	26	LIVE	CUT	3	25.1	90	114	1,163	0.0	2.1	7.1	1.4	48.8
RA	10	LIVE	CUT	3	10.0	50	60	344	0.0	9.6	5.2	1.6	14.5
RA	12	LIVE	CUT	3	12.0	50	63	319	0.0	6.6	5.2	1.5	13.4
RA	14	LIVE	CUT	8	13.9	59	73	1,127	0.0	13.3	13.9	3.7	47.3
RA	16	LIVE	CUT	4	15.5	61	74	642	2.6	5.3	7.0	1.8	27.0
RA	18	LIVE	CUT	4	17.2	63	78	701	0.8	4.3	7.0	1.7	29.4
RC	16	LIVE	CUT	1	15.0	46	56	79	0.0	1.4	1.7	0.4	3.3
RC	22	LIVE	CUT	1	22.0	64	80	136	0.0	0.7	1.7	0.4	5.7
RC	26	LIVE	CUT	2	25.6	75	95	340	10.7	1.0	3.5	0.7	14.3
RC	28	LIVE	CUT	1	28.0	80	102	166	14.6	0.4	1.7	0.3	7.0
SF	16	LIVE	CUT	1	16.0	82	105	344	0.0	1.7	2.4	0.6	14.5
WH	10	LIVE	CUT	3	9.6	52	67	506	0.0	14.2	7.1	2.3	21.3
WH	12	LIVE	CUT	2	11.0	61	75	545	0.0	7.2	4.7	1.4	22.9
WH	14	LIVE	CUT	6	13.4	65	82	1,421	0.0	14.6	14.2	3.9	59.7
WH	16	LIVE	CUT	6	15.7	72	89	1,748	0.0	10.5	14.2	3.6	73.4
WH	18	LIVE	CUT	2	18.4	76	95	613	0.8	2.6	4.7	1.1	25.7
WH	20	LIVE	CUT	5	19.7	81	102	1,688	0.9	5.6	11.8	2.7	70.9
WH	22	LIVE	CUT	2	21.3	75	94	666	1.6	1.9	4.7	1.0	28.0
WH	24	LIVE	CUT	6	23.4	88	111	2,491	1.3	4.8	14.2	2.9	104.6
WH	28	LIVE	CUT	1	28.7	75	93	378	0.0	0.5	2.4	0.4	15.9

Cruise Unit Report BOWMAN HILL ROW

Unit Stand Table: BOWMAN HILL ROW

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	12	LIVE	CUT	1	12.3	63	78	5,872	0.0	66.0	54.4	15.5	0.6
DF	14	LIVE	CUT	1	13.8	69	86	5,503	0.0	52.4	54.4	14.7	0.6
DF	16	LIVE	CUT	1	15.5	61	76	5,235	0.0	41.5	54.4	13.8	0.5
DF	18	LIVE	CUT	1	18.0	75	94	6,593	0.0	30.8	54.4	12.8	0.7
DF	32	LIVE	CUT	1	31.3	89	107	16,508	5.0	20.4	108.9	19.5	1.7
RC	24	LIVE	CUT	1	24.0	65	82	2,737	0.0	12.7	40.0	8.2	0.3
WH	14	LIVE	CUT	1	13.3	64	79	3,273	0.0	56.4	54.4	14.9	0.3



Forest Practices Application/Notification Notice of Decision

FPA/N No: 2819212

Effective Date: 12/28/2023

Expiration Date: 12/28/2026

Shut Down Zone: 658

EARR Tax Credit: Eligible Non-eligible

Reference: Bowman Hill

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

Timing Limitations on Type S and F water(s):

No timing limitations apply.

Condition(s) required for approval/disapproval:

No additional conditions apply.

Issued By: Megan Pike

Region: Northwest Region

Title: Resource Protection Forester

Date: 12/28/2023

Copies to: Landowner, Timber Owner, and Operator

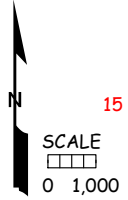
Issued in person: LO TO OP By: Ada Schmidt Date: 12/28/2023



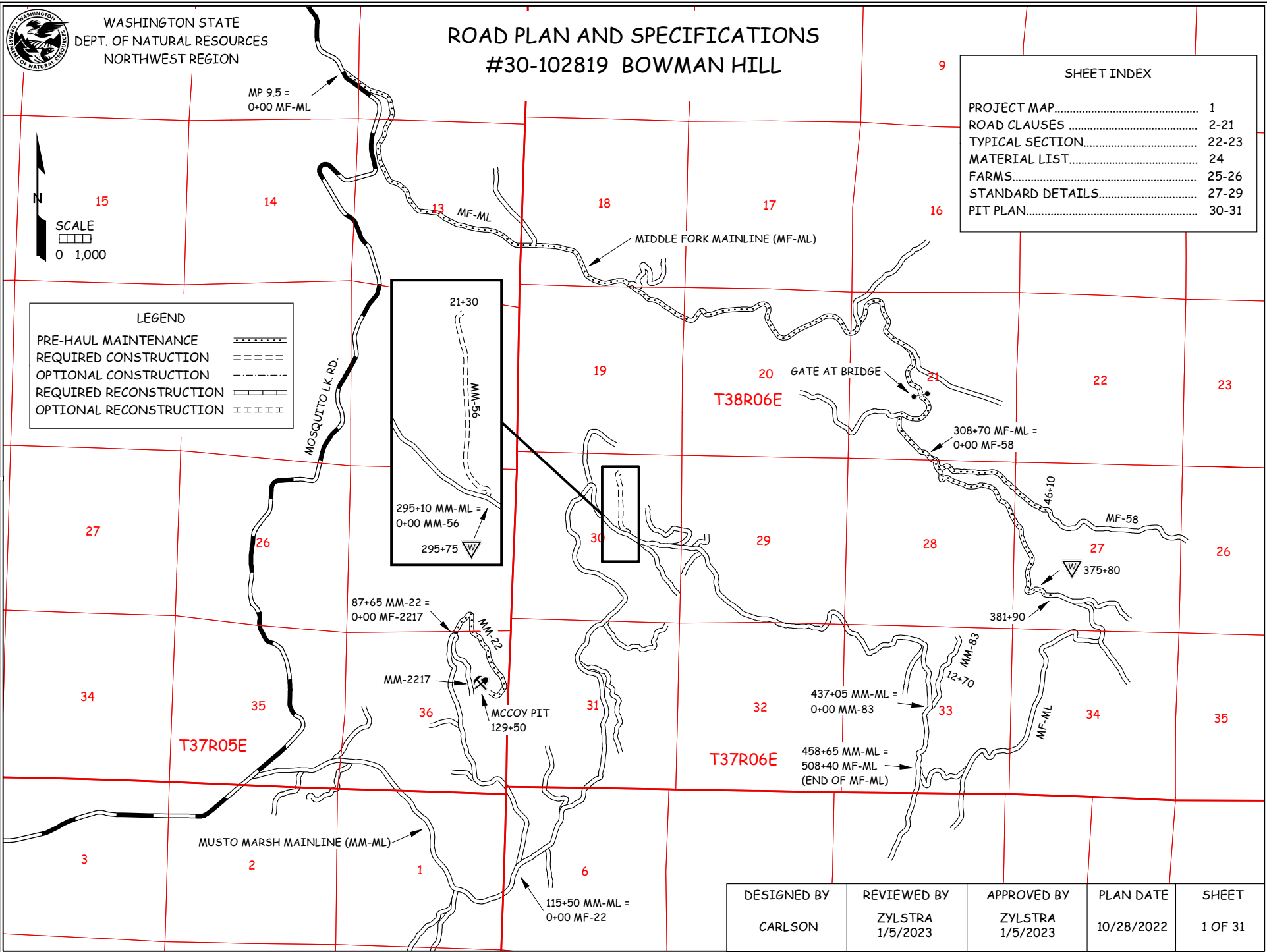
WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

ROAD PLAN AND SPECIFICATIONS #30-102819 BOWMAN HILL

SHEET INDEX	
PROJECT MAP.....	1
ROAD CLAUSES	2-21
TYPICAL SECTION.....	22-23
MATERIAL LIST.....	24
FARMS.....	25-26
STANDARD DETAILS.....	27-29
PIT PLAN.....	30-31



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



DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
CARLSON	ZYLSTRA 1/5/2023	ZYLSTRA 1/5/2023	10/28/2022	1 OF 31

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BOWMAN HILL TIMBER SALE ROAD PLAN
WHATCOM COUNTY
BAKER DISTRICT
NORTHWEST REGION

AGREEMENT NO.: 30-102819

STAFF ENGINEER: CARLSON

DATE: OCTOBER 28, 2022

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

Clauses in this road plan apply to all road related work, including landings and rock source development, unless otherwise noted.

0-2 REQUIRED ROADS

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
MM-ML	295+10 to 296+70	Pre-haul Maintenance
MM-ML	437+05 to 439+25	Pre-haul Maintenance
MM-22	87+65 to 129+50	Pre-haul Maintenance
MM-56	0+00 to 21+30	Construction
MF-ML	0+00 to 381+90	Pre-haul Maintenance
MF-58	0+00 to 46+10	Pre-haul Maintenance

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to subgrade, landing construction, turnout and turnaround construction, culvert installation, and application of 3-minus ballast rock.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
MM-ML	295+10 to 296+70	Blading, shaping, and ditching the road prism. Cleaning ditches, headwalls, catchbasins, culvert inlet and outlets. Culvert installation Application of a 6" lift of 3-inch minus ballast rock.
MM-ML	437+05 to 439+25	Blading, shaping, and ditching the road prism. Cleaning ditches, headwalls, catchbasins, culvert inlet and outlets. Culvert installation Application of a 6" lift of 3-inch minus ballast rock.
MM-22	87+65 to 129+50	Blading, shaping, and ditching the road prism. Cleaning ditches, headwalls, catchbasins, culvert inlet and outlets.
MF-ML	0+00 to 381+90	Brushing. Pre-haul grading.
MF-58	0+00 to 46+10	Brushing. Blading, shaping, and ditching the road prism. Cleaning ditches, headwalls, catchbasins, culvert inlet and outlets.

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

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

<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. Road Plan Clauses.
3. Typical Section Sheet.
4. Standard Lists.
5. Standard Details.

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-18 REFERENCE POINT DAMAGE

Purchaser shall reset reference points (RPs) that were moved or damaged at any time during construction to their original locations. Excavation and embankment may not proceed on road segments controlled by said RPs until Purchaser resets all moved or damaged RPs.

1-21 HAUL APPROVAL

Purchaser shall not use roads under this road plan for any hauling other than timber cut on the right-of-way, without written approval from the Contract Administrator.

1-23 ROAD WORK PHASE APPROVAL

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

- Right-of-way
 - Falling/decking
 - Clearing/grubbing
- Subgrade Construction
 - Excavation and embankment to subgrade
 - Culvert installation
 - Ditch construction
 - Subgrade compaction
- Rock application
 - Rock compaction
 - Rock depth
- Erosion and sediment control
- Revegetation

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure periods unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Activity</u>	<u>Closure Period</u>
All roads	All activities	November 1 through March 31

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan, and shall put preventative measures in place before operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

1-29 SEDIMENT RESTRICTION

Purchaser shall not allow silt-bearing runoff to enter any streams.

1-30 CLOSURE TO PREVENT DAMAGE

In accordance with Contract Clause G-220 STATE SUSPENDS OPERATION, the Contract Administrator will suspend road work or hauling right-of-way timber, forest products, or rock under the following conditions:

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

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

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contract Administrator upon request. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

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.

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following roads, Purchaser shall use a grader to shape the existing surface before timber hauling. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

<u>Road</u>	<u>Stations</u>
MM-22	87+65 to 129+50 see Clause 0-6 PRE-HAUL MAINTENANCE
MF-ML	0+00 to 381+90 see Clause 0-6 PRE-HAUL MAINTENANCE
MF-58	0+00 to 46+10 see Clause 0-6 PRE-HAUL MAINTENANCE

2-6 CLEANING CULVERTS

On the following roads, Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before any hauling.

<u>Road</u>	<u>Stations</u>
MM-ML	295+10 to 296+70
MM-ML	437+05 to 439+25
MM-22	87+65 to 129+50
MF-58	0+00 to 46+10

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following roads, Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before any hauling and must be done in accordance with the TYPICAL SECTION.

<u>Road</u>	<u>Stations</u>
MM-ML	295+10 to 296+70
MM-ML	437+05 to 439+25
MM-22	87+65 to 129+50
MF-58	0+00 to 46+10

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

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

<u>Road</u>	<u>Stations</u>
MF-ML	0+00 to 381+90
MF-58	0+00 to 46+10

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries 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.

3-8 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 50%.
- Against standing trees.

3-10 GRUBBING

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

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

<u>Road</u>	<u>Disposal Location</u>	<u>Requirement</u>
MF-ML	Station 375+80	Waste area for organic material if constructing split level landings along the MF-ML.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

3-32 END HAULING ORGANIC DEBRIS

If constructing split-level landings above the MF-ML, Purchaser shall end haul organic debris to the designated waste areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

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

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment 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 50 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.

4-5 CUT SLOPE RATIO

Purchaser shall construct excavation slopes no steeper than shown on the following table:

<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:

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

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

4-22 TURNAROUNDS

Purchaser shall construct turnarounds as shown on the TURNAROUND DETAIL. Turnaround type and location are subject to written approval by the Contract Administrator.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 60% if the waste material is compacted and free of organic debris. On side slopes greater than 60%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

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

<u>Road</u>	<u>Disposal Location</u>	<u>Requirement</u>
MF-ML	Station 375+80	Waste area for organic material if constructing split level landings along the MF-ML.
MM-ML	Station 295+75	Endhaul or push excess excavated material generated from construction of the junction of the MM-56 road to create cable landing on downhill side of road.

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.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

4-55 ROAD SHAPING

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

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

SECTION 5 – DRAINAGE

5-5 CULVERTS

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

5-12 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

5-20 ENERGY DISSIPATERS

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

Rock used for energy dissipaters must be light/loose riprap. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Rock must be set in place by machine. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. Rock type shall meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP.

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls must weigh at least 50 pounds. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST shall be obtained from the following source on state land at no charge to the Purchaser. If other operators are using, or desire to use the rock source, a joint operating plan must be developed. All parties shall follow this plan.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
McCoy Pit	Sta. 129+50 of the MM-22 road.	Riprap, 3-inch-minus ballast rock

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written ROCK SOURCE DEVELOPMENT PLAN prepared by the state and included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator

<u>Source</u>
McCoy Pit see SHEETS 30-31

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following:

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

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

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

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Drilling and shooting shall create a level upper operating bench as detailed in the PIT DEVELOPMENT PLAN.
- Oversize material created from the shot may not exceed 10% of the shot.
- Oversize material is defined as rock fragments larger than five feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 3 working days before any drilling. The drilling and shooting plan must include, at a minimum, the mapped location, spacing, and depth of all holes and how the shooting plan will achieve the required results of the PIT DEVELOPMENT PLAN.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

6-15 REQUIRED ROCK SOURCE WORK

The following rock source work is required. Work is to be completed in accordance with the clauses within this section, the PIT DEVELOPMENT PLAN, and as directed by the Contract Administrator.

<u>Source</u>
McCoy Pit see SHEETS 30-31

6-23 ROCK GRADATION TYPES

Purchaser shall provide rock in accordance with the types and amounts listed in the TYPICAL SECTION and MATERIALS LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles or during manufacture and placement into a stockpile. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

6-34 3-INCH MINUS BALLAST ROCK

Ballast rock must be 100% equal to, or smaller than, 3 inches in at least one dimension.

Rock may contain no more than 5 percent organic debris, dirt, and trash. All percentages are by weight.

6-50 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>
20% / 90%	300 lbs. to 1 ton
80% / --	50 lbs. to ½ ton
10% / 20%	50 lbs. max

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

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 8 – EROSION CONTROL

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 4-inch layer of straw to all exposed soils within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event.

8-15 REVEGETATION

Purchaser shall spread seed and fertilizer on all exposed soils within the grubbing limits resulting from road work activities. Cover all exposed soils using manual dispersal of grass seed and fertilizer. Other methods of covering must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the required grass seed and fertilizer.

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

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

8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. Purchaser shall reapply the grass seed and fertilizer in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and fertilizer at no addition cost to the state.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 50 pounds per acre of exposed soil. Grass seed must meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:
 - a. Common name of seed
 - b. Net weight
 - c. Percent of purity
 - d. Percentage of germination
 - e. Percentage of weed seed and inert material
5. Seed must conform to the following mixture.

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>
Creeping Red Fescue	50
Elf Perennial Rye Grass	25
Highland Colonial Bentgrass	15
White Clover	10
Inert and Other Crop	0.5

8-27 FERTILIZER

Purchaser shall evenly spread the fertilizer listed below on all exposed soil inside the grubbing limits at a rate of 200 pounds per acre of exposed soil. Fertilizer must meet the following specifications:

<u>Chemical Component</u>	<u>% by Weight</u>
Nitrogen	16
Phosphorous	16
Potassium	16
Sulphur	3
Inerts	49

SECTION 9 – POST-HAUL ROAD WORK

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-12 LANDING EMBANKMENT REMOVAL

Purchaser shall reduce or relocate the landing embankment. Place excavated material in a waste area approved in writing by the Contract Administrator.

SECTION 10 MATERIALS

10-15 CORRUGATED STEEL CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

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

10-24 GAUGE AND CORRUGATION

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

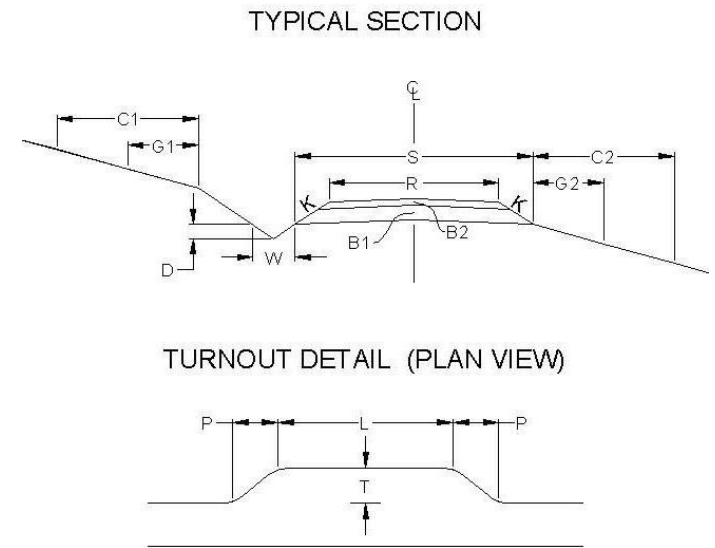
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 48"	14 (0.079")	2 2/3" X 1/2"
54" to 96"	14 (0.079")	3" X 1"

SECTION 11 SPECIAL NOTES

11-1 SPLIT LEVEL LANDINGS – CONTRACT TERMINATION

If split-level landings were constructed above the MF-ML, Purchaser shall clean up all landing debris with potential to fall onto the MF-ML and reconstruct ditches to ensure proper drainage along the MF-ML prior to the termination of the contract.

ROAD #		MM-ML	MM-ML	MM-22	MM-56
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		PRE-HAUL	PRE-HAUL	PRE-HAUL	CONSTRUCT
TOLERANCE CLASS (A/B/C)		A	A	A	C
STATION / MP TO		295+10	437+05	87+65	0+00
STATION / MP		296+70	439+25	129+50	21+30
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	3	3	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	--	--	--	50
TURNOUT WIDTH	T	--	--	--	10
TURNOUT TAPER	P	--	--	--	25
GRUBBING	G1	--	--	--	5
	G2	--	--	--	5
CLEARING	C1	--	--	--	10
	C2	--	--	--	10
ROCK FILLSLOPE	K:1	1½	1½	--	1½
❖ BALLAST DEPTH	B1	6	6	--	12
CUBIC YARDS / STATION		34	34	--	72
➤ TOTAL CY BALLAST		55	75	--	1535
❖ SURFACING DEPTH	B2	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--
➤ TOTAL CUBIC YARDS		55	75	--	1535
SUBGRADE WIDTH	S	13.5	13.5	--	15.0
BRUSHCUT (Y/N)		N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	Y	N



SYMBOL NOTES

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
- Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.

TOTAL 3-INCH-MINUS BALLAST ROCK = 1665 CY
TOTAL RIPRAP = 91 CY

ROAD #		MF-ML	MF-58						
REQUIRED / OPTIONAL		REQUIRED	REQUIRED						
CONSTRUCT / RECONSTRUCT		PRE-HAUL	PRE-HAUL						
TOLERANCE CLASS (A/B/C)		A	A						
STATION / MP TO		0+00	0+00						
STATION / MP		381+90	46+10						
ROAD WIDTH	R	12	12						
CROWN (INCHES @ C/L)		3	3						
DITCH WIDTH	W	3	3						
DITCH DEPTH	D	1	1						
TURNOUT LENGTH	L	--	--						
TURNOUT WIDTH	T	--	--						
TURNOUT TAPER	P	--	--						
GRUBBING	G1	--	--						
	G2	--	--						
CLEARING	C1	--	--						
	C2	--	--						
ROCK FILLSLOPE	K:1	--	--						
❖ BALLAST DEPTH	B1	--	--						
CUBIC YARDS / STATION		--	--						
➤ TOTAL CY BALLAST		--	--						
❖ SURFACING DEPTH	B2	--	--						
CUBIC YARDS / STATION		--	--						
➤ TOTAL CY SURFACING		--	--						
➤ TOTAL CUBIC YARDS		--	--						
SUBGRADE WIDTH	S	--	--						
BRUSHCUT (Y/N)		Y	Y						
BLADE, SHAPE, & DITCH (Y/N)		Y	Y						

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
												18" 16 2 2/3" x 1/2" 24" – 48" 14 2 2/3" x 1/2" 54" – 96" 14 3" x 1"		
MM-ML	295+70	18	70	GM			3	5	H/L	NT	C	Install with outlet prior to (west of) constructed landing.		
MM-ML	437+95	18	40	XX			2	3	L	NT	C			
MM-ML	438+75	18	40	XX			2	3	L	NT	C			
MM-56	0+95	24	40	XX			3	10	H/L	NT	C	Seep		
MM-56	2+10	18	36	XX			2	3	L	NT	C			
MM-56	3+80	18	30	XX			2	3	L	NT	C			
MM-56	5+80	18	30	XX			2	3	L	NT	C			
MM-56	7+35	18	40	XX			2	3	L	NT	C			
MM-56	8+60	18	30	XX			2	3	L	NT	C			
MM-56	10+10	18	30	XX			2	3	L	NT	C			
MM-56	11+35	18	30	XX			2	3	L	NT	C			
MM-56	12+75	18	36	XX			2	3	L	NT	C			
MM-56	14+30	18	30	XX			2	3	L	NT	C			
MM-56	16+10	18	30	XX			2	3	L	NT	C			
MM-56	18+60	18	40	XX			2	3	L	NT	C			
MM-56	20+55	18	40	XX			2	3	L	NT	C			

GM – Galvanized Metal PS – Polyethylene Pipe Single Wall PD – Polyethylene Pipe Dual Wall AM – Aluminized Metal C – Concrete XX – PD or GM
 H – Heavy Loose Riprap L – Light Loose Riprap SR – Shot Rock NT – Native (Bank Run) QS – Quarry Spalls

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the construction materials. Remove slides from ditches and the roadway. Repair fill-failures, in accordance with Clause 4-6 EMBANKMENT SLOPE RATIO, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

- Grade and shape the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET. Inslope or outslope as directed to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, or as directed by the Contract Administrator.
- Remove shoulder berms, created by grading, to facilitate drainage, except as marked or directed by the Contract Administrator.
- For roads with geotextile fabric: spread surface aggregate to fill in soft spots and wheel ruts (barrel spread) to prevent damage to the geotextile fabric.

Drainage

- Prevent silt bearing road surface and ditch runoff from delivering sediment to any streams or wetlands.
- Maintain rolling dips and drivable waterbars as needed to keep them functioning as intended.
- Maintain headwalls to the road shoulder level with material that will resist erosion.
- Maintain energy dissipaters at culvert outlets with non-erodible material or rock.
- Keep ditches, culverts, and other drainage structures clear of obstructions and functioning as intended.
- Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This shall be done even during periods of inactivity.

Preventative Maintenance

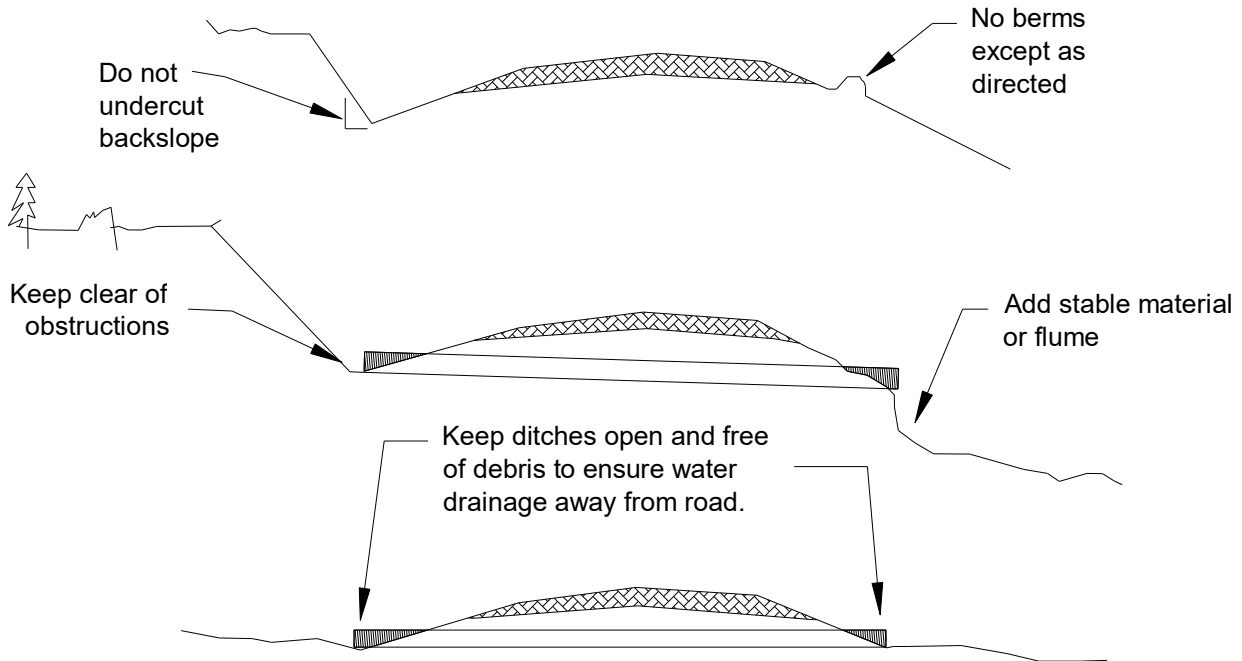
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

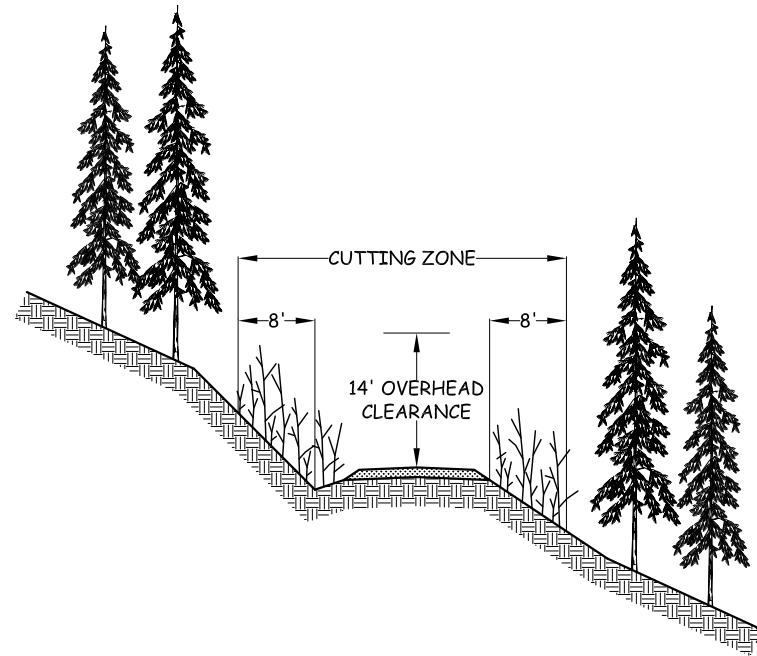
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



ROAD BRUSHING DETAILS



SPECIFICATIONS

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

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

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

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

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

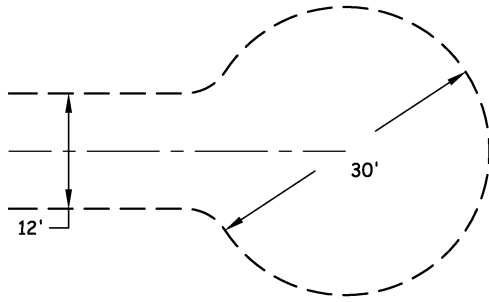
SLASH SHALL BE REMOVED FROM CUT SLOPES ABOVE THE ROAD AND SCATTERED ON EMBANKMENT SLOPES.

DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

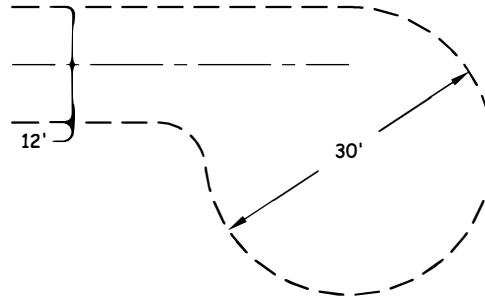
CULVERT INLETS AND OUTLETS SHALL BE CLEANED A MINIMUM DISTANCE OF TWO PIPE DIAMETERS AWAY.

CONTRACT #	PROJECT	SHEET
30-102819	BOWMAN HILL	27 OF 31

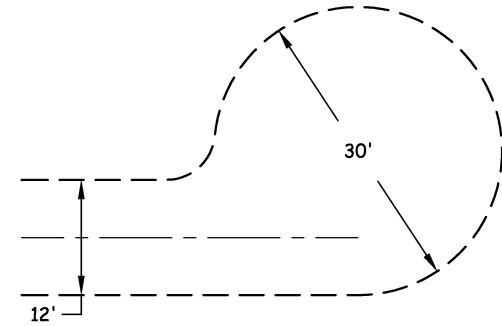
TURNAROUND DETAILS



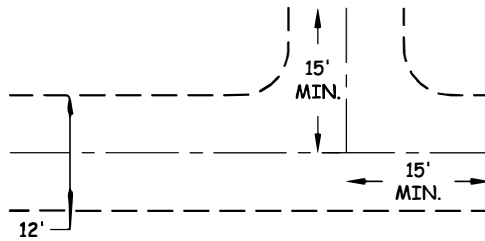
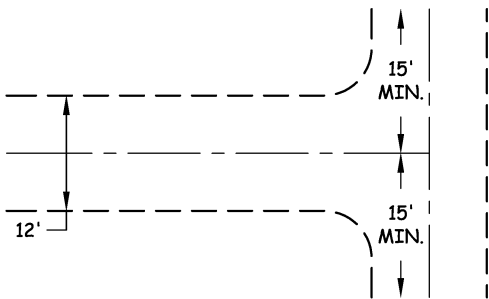
HAMMERHEAD



CUL-DE-SAC

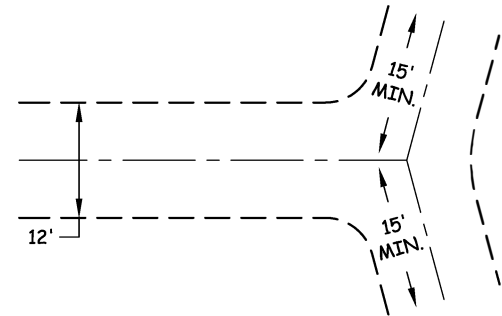


3-POINT WYE



MUST BE CONSTRUCTED WITHIN
100' OF THE END OF THE ROAD.

3-POINT SIDE



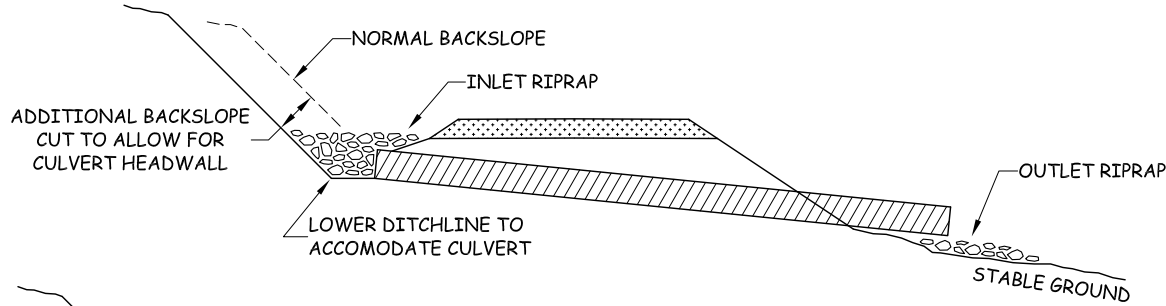
TURNAROUND TYPE AND TURNAROUND LOCATION ARE SUBJECT TO THE APPROVAL OF THE CONTRACT ADMINISTRATOR.

ROCK SHALL BE APPLIED THROUGHOUT THE TURNAROUND TO THE SAME DEPTH AND SPECIFICATIONS AS LISTED IN THE TYPICAL SECTION.

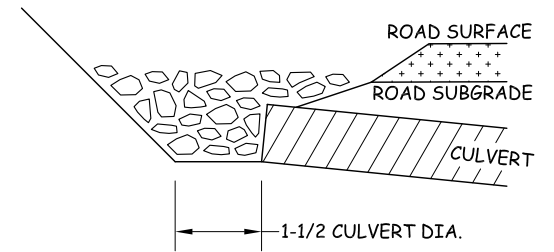
CONTRACT # 30-102819	PROJECT BOWMAN HILL	SHEET 28 OF 31
-------------------------	------------------------	-------------------

CULVERT AND DRAINAGE SPECIFICATIONS

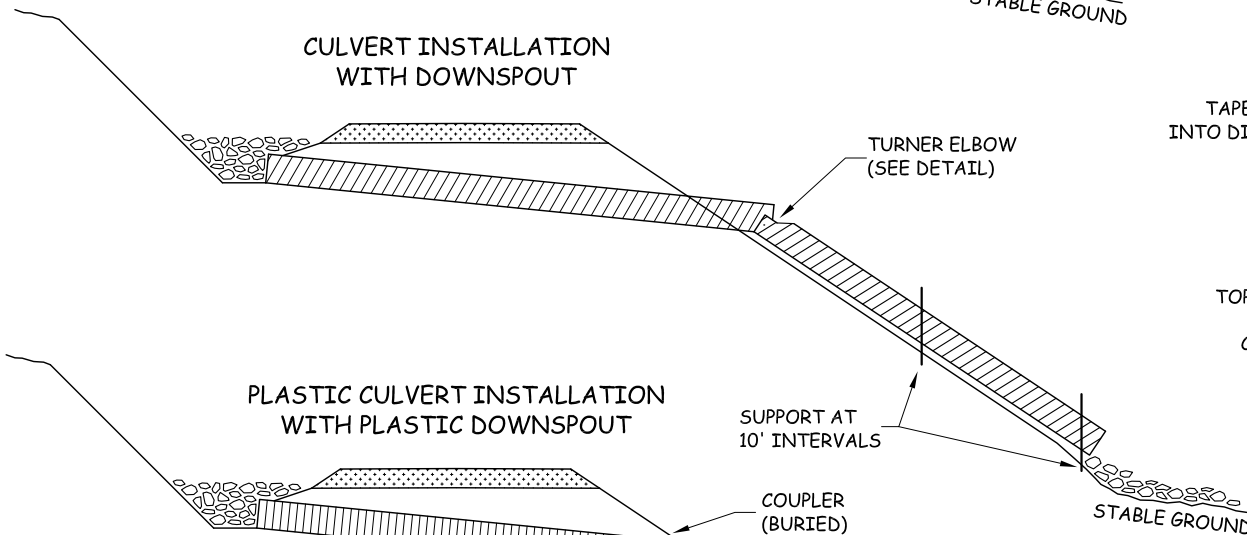
CULVERT INSTALLATION (TYPICAL)



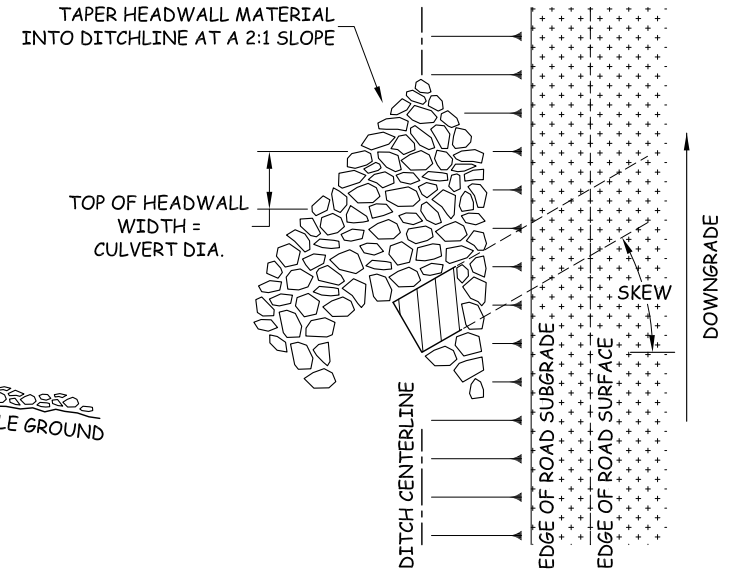
CULVERT HEADWALL - SECTION VIEW



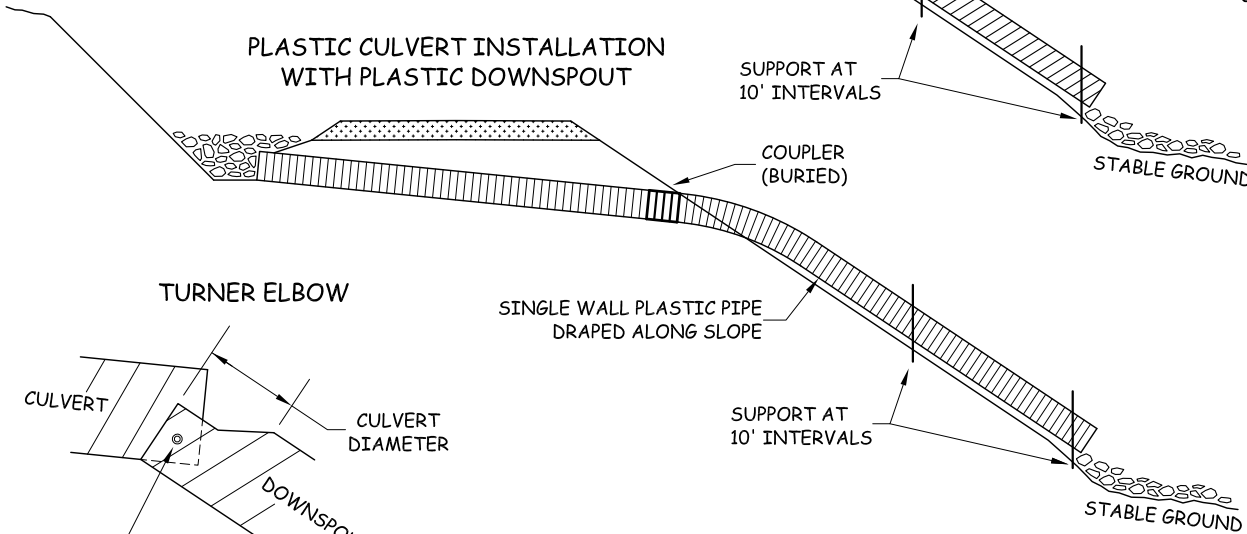
CULVERT INSTALLATION WITH DOWNSPOUT



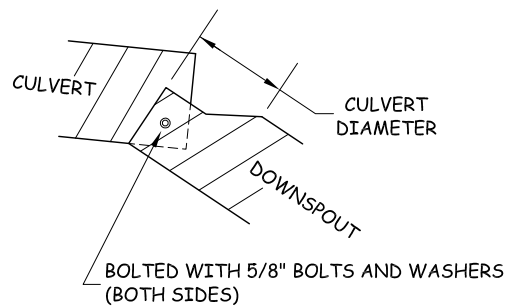
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



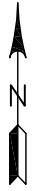
TURNER ELBOW



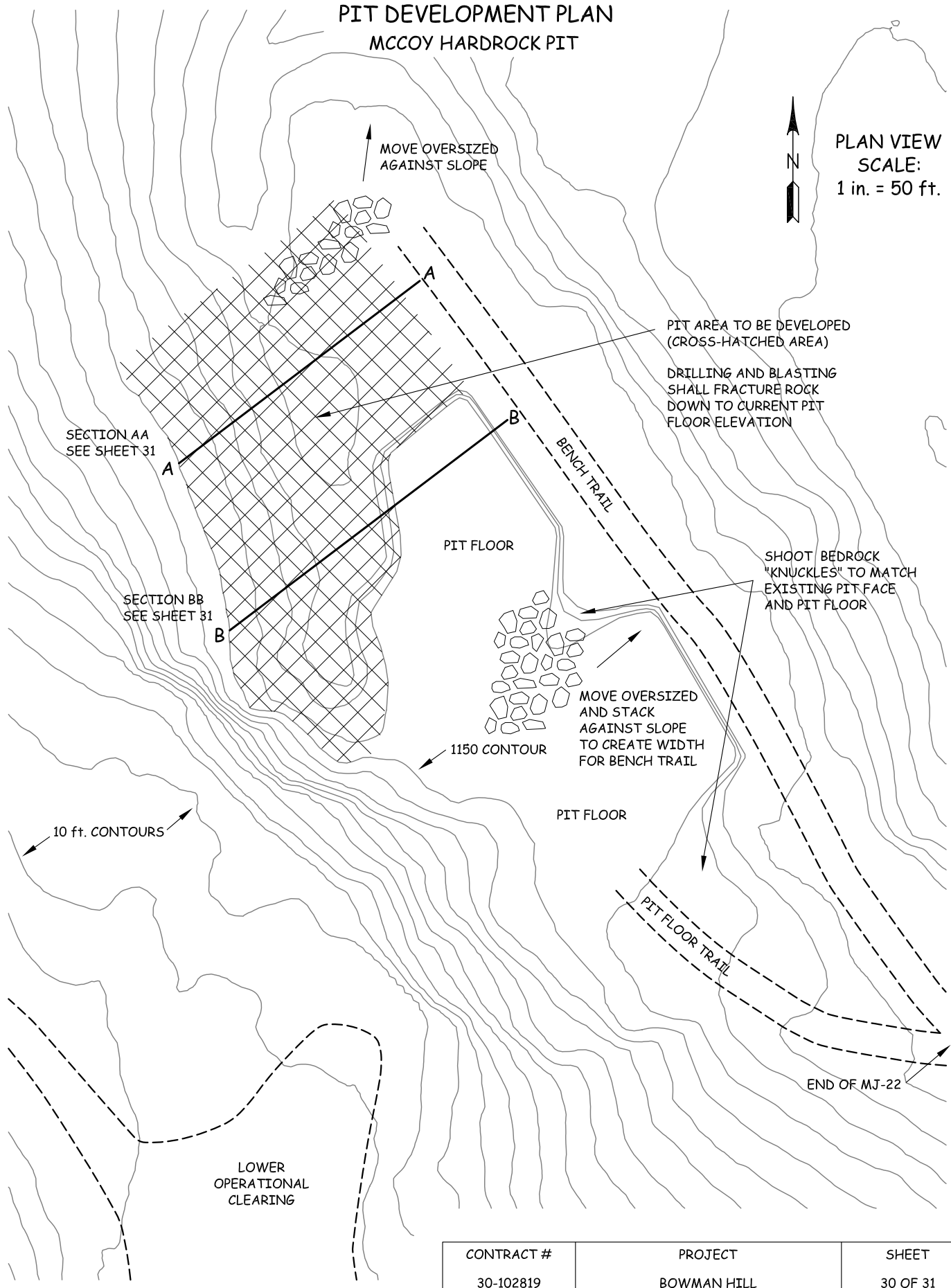
HEADWALL NOTE:
 HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

CONTRACT #	PROJECT	SHEET
30-102819	BOWMAN HILL	29 OF 31

PIT DEVELOPMENT PLAN MCCOY HARDROCK PIT



PLAN VIEW
SCALE:
1 in. = 50 ft.



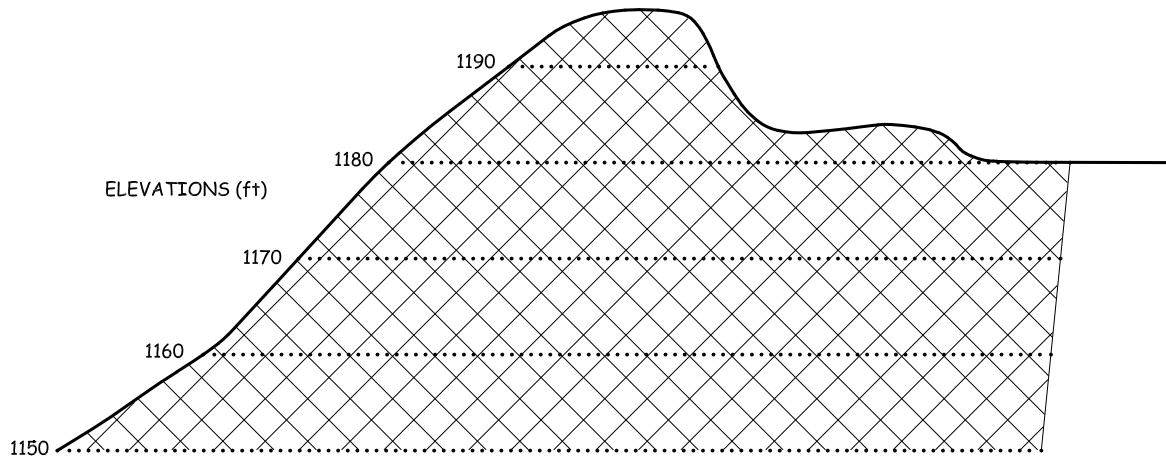
CONTRACT # 30-102819	PROJECT BOWMAN HILL	SHEET 30 OF 31
-------------------------	------------------------	-------------------

PIT DEVELOPMENT PLAN

MCCOY HARDROCK PIT

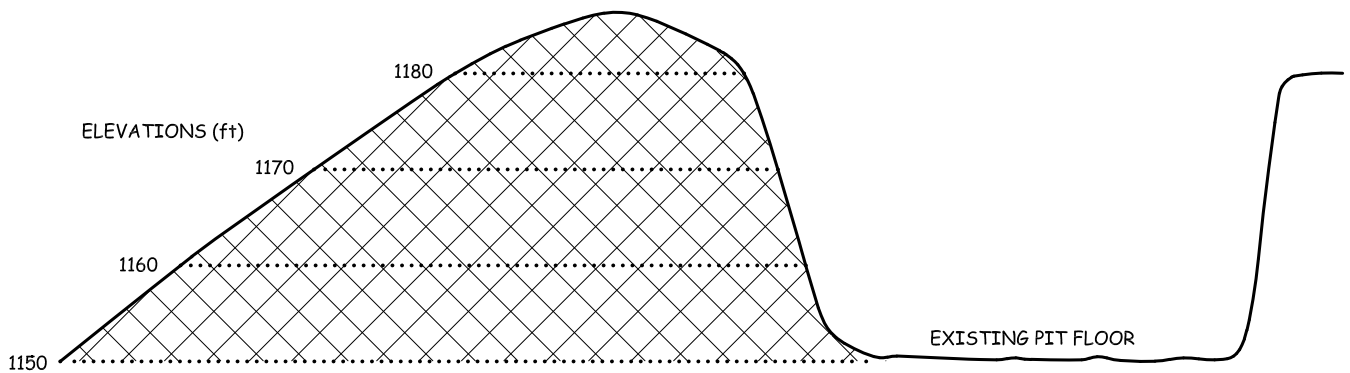
SECTION VIEW AA

SCALE: 1 in. = 20 ft.



SECTION VIEW BB

SCALE: 1 in. = 20 ft.



APPROXIMATE CROSS SECTIONAL AREA AA = 3000 sq. ft.
APPROXIMATE CROSS SECTIONAL AREA BB = 1800 sq. ft.

ESTIMATED TOTAL YARDAGE TO BE DRILLED AND BLASTED
TO EXISTING PIT FLOOR ELEVATION OF 1150 = 12500 cu. yds.

CONTRACT #	PROJECT	SHEET
30-102819	BOWMAN HILL	31 OF 31

ROAD COST SUMMARY

Bowman Hill Timber Sale #30-102819

CONSTRUCTION SUMMARY

ROAD #	STATIONING	TOTAL STATIONS	ROCK PRODUCTION COST	ROCK LOADING COST	ROCK HAUL COST	ROCK SPREADING COST	CONSTRUCTION COST	CULVERT COST	OTHER COST	TOTAL COST	COST/STA
MM-56	0+00 to 21+30	21.3	\$12,280	\$11,039	\$26,532	\$8,064	\$12,962	\$6,807	\$852	\$78,537	\$3,687
									TOTAL	\$78,537	

CONSTRUCTION COSTS include, clearing and grubbing, excavation and embankment, drilling and shooting on grade, and endhaul.

OTHER COSTS include erosion control, grass seeding and fertilizer, and miscellaneous other requirements detailed in the road plan.

PRE-HAUL MAINTENANCE SUMMARY

ROAD #	STATIONING	TOTAL STATIONS	ROCK PRODUCTION COST	ROCK LOADING COST	ROCK HAUL COST	ROCK SPREADING COST	CULVERT COST	OTHER COST	PRE-HAUL GRADING AND BRUSHING	TOTAL COST	COST/STA
MM-ML	295+10 to 296+70	1.60	\$440	\$432	\$1,040	\$316	\$1,076	\$2,421	\$36	\$5,761	\$3,600
MM-ML	437+05 to 439+25	2.20	\$600	\$584	\$2,104	\$426	\$1,200	\$2,445	\$50	\$7,409	\$3,368
MM-22	87+65 to 129+50	41.85	\$0	\$0	\$0	\$0	\$0	\$589	\$2,140	\$2,729	\$65
MF-58	0+00 to 46+10	46.10	\$0	\$0	\$0	\$0	\$0	\$3,535	\$2,357	\$5,893	\$128
Pit Expansion								\$45,000		\$45,000	
									TOTAL	\$66,791	

OTHER COSTS include cleaning culverts, ditches, headwalls, catch basins, culvert installation, and miscellaneous other requirements detailed in the road plan.

ROAD COST SUMMARY

Bowman Hill Timber Sale #30-102819

POST-HAUL MAINTENANCE SUMMARY

ROAD #	STATIONING	TOTAL STATIONS	POST-HAUL GRADING COST	OTHER COST	TOTAL COST	COST/STA
MM-ML	295+10 to 296+70	1.60	\$30	\$0	\$30	\$19
MM-ML	437+05 to 439+25	2.20	\$42	\$0	\$42	\$19
MM-22	87+65 to 129+50	41.85	\$793	\$0	\$793	\$19
MM-56	0+00 to 21+30	21.30	\$403	\$0	\$403	\$19
MM-83	0+00 to 12+70	12.70	\$241	\$0	\$241	\$19
MF-58	0+00 to 46+10	46.10	\$873	\$0	\$873	\$19
				TOTAL	\$2,382	

OTHER COSTS include miscellaneous other requirements detailed in the road plan.

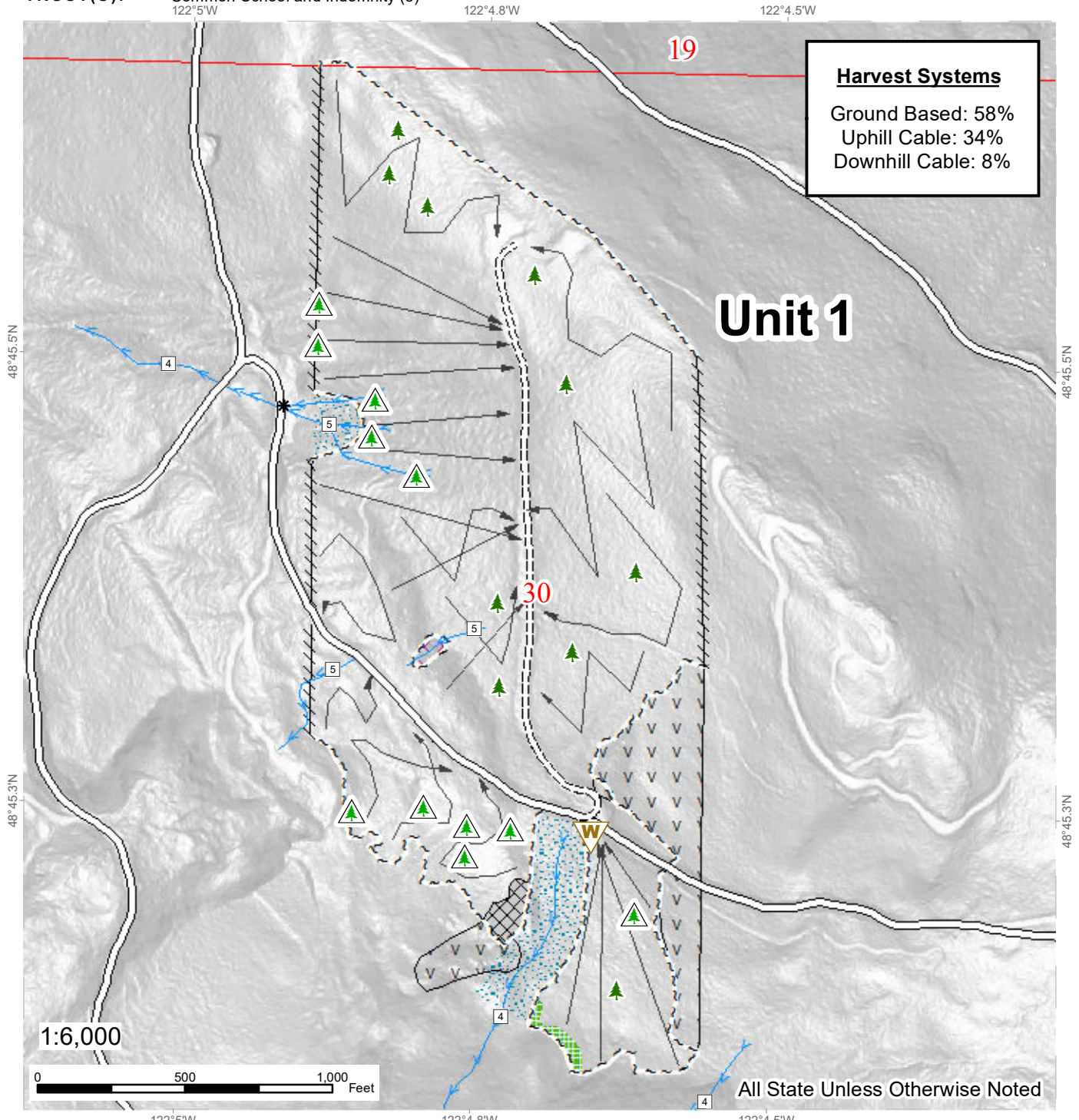
NOTE: ALL MOBILIZATION COSTS HAVE BEEN AMORTIZED IN WITH OTHER COSTS.

TOTAL ROAD COST	\$147,709	
SALE VOLUME (MBF)	2759	CRUISE ESTIMATED VOLUME
ROAD COST/MBF	\$54	

LOGGING PLAN MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



Harvest Systems
 Ground Based: 58%
 Uphill Cable: 34%
 Downhill Cable: 8%

Unit 1

1:6,000



All State Unless Otherwise Noted

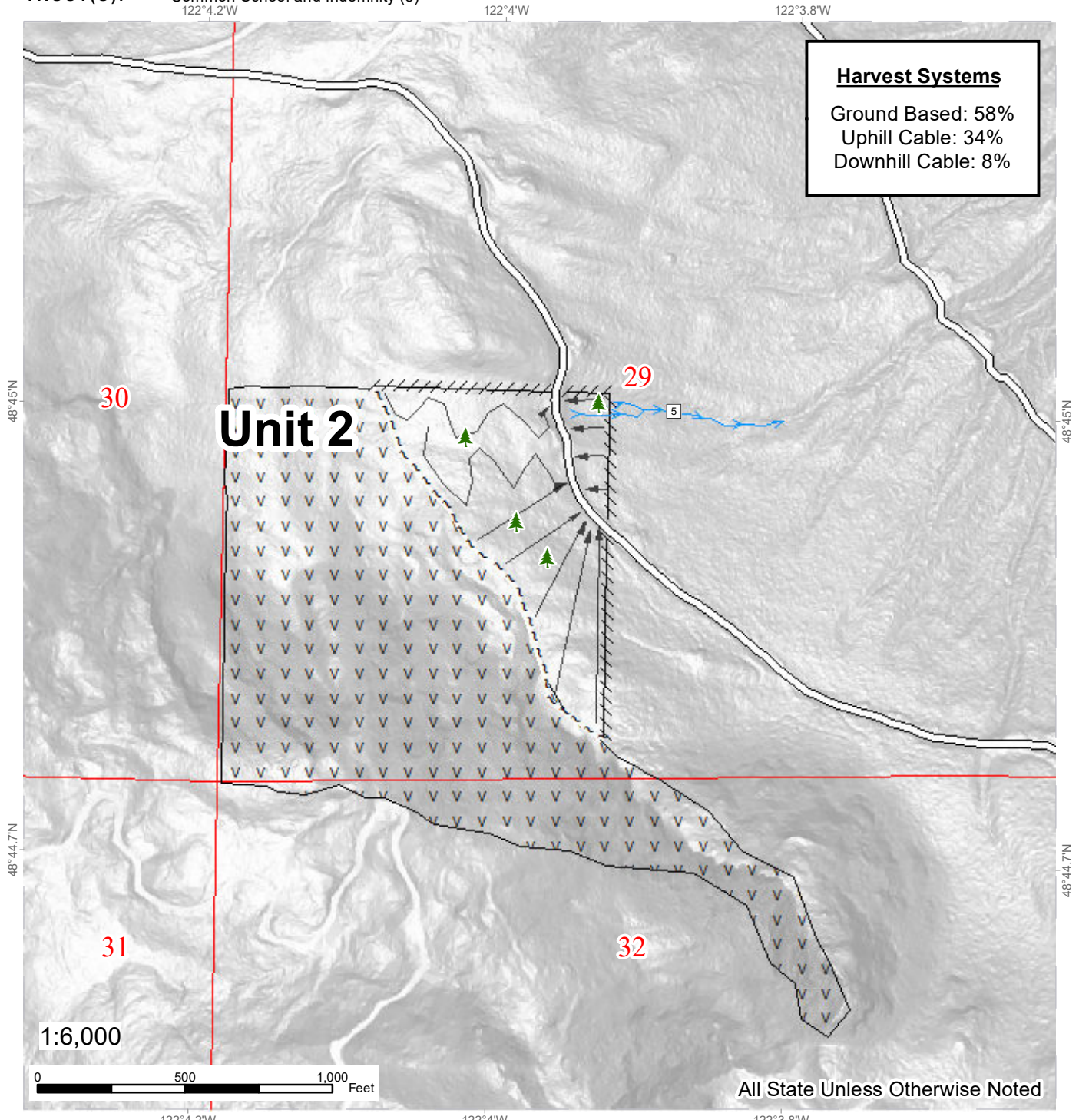
Non-Tradeable Leave Clump	Ground Harvest	Stream Type
Leave Tree Area	Cable Harvest	Stream Type Break
Riparian Mgt Zone	Existing Roads	Leave Tree Area <1/4-acre
No Entry Zone	Required Construction	Non-Tradeable Leave Trees
Potentially Unstable Slopes	Sale Boundary Tags	Waste Area
	Flag Line	
	Streams	



LOGGING PLAN MAP

SALE NAME: BOWMAN HILL
 AGREEMENT#: 30-102819
 TOWNSHIP(S): T38R6E
 TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
 COUNTY(S): Whatcom
 ELEVATION RGE: 1360-3280



Harvest Systems
 Ground Based: 58%
 Uphill Cable: 34%
 Downhill Cable: 8%

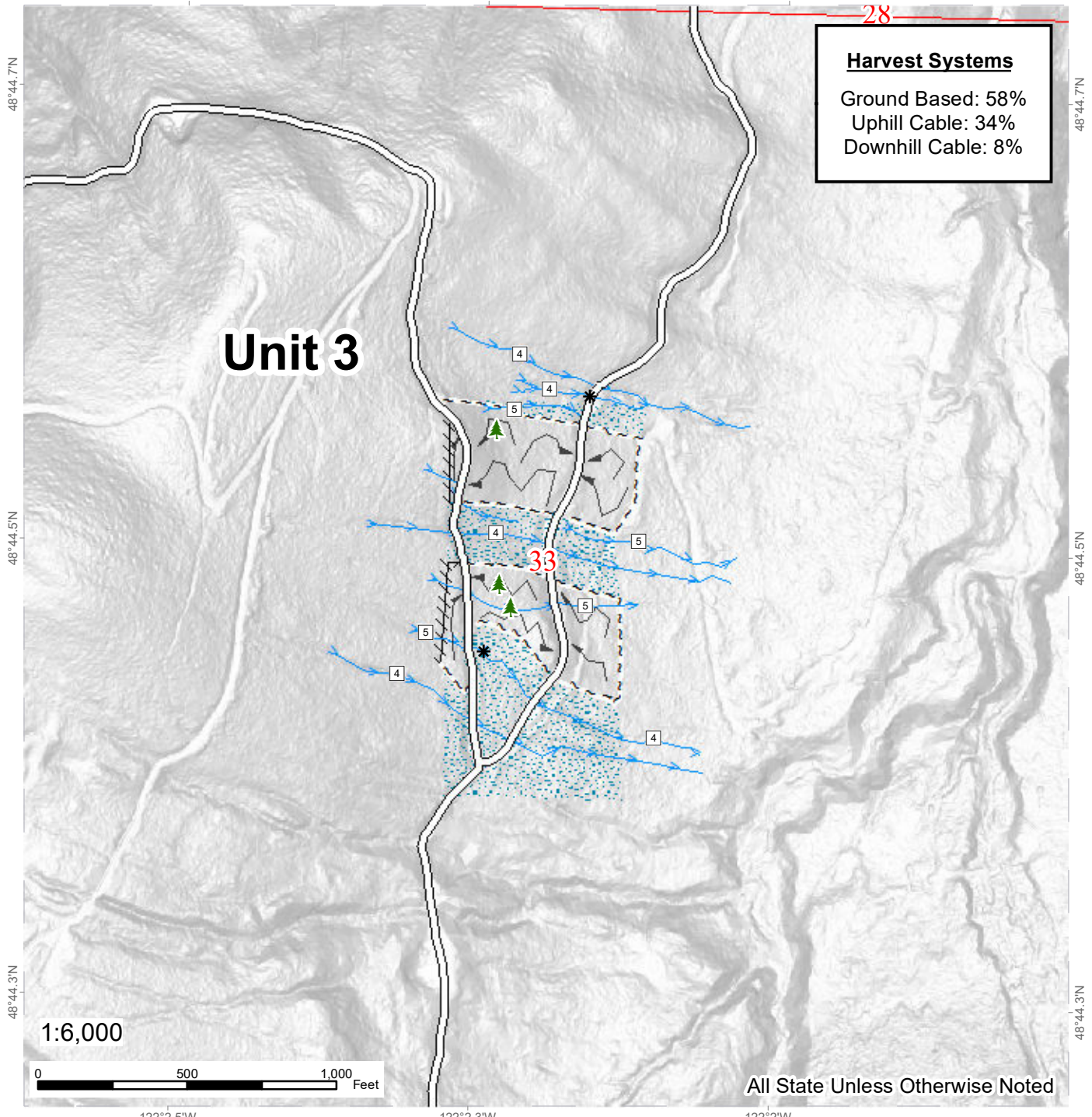
No Entry Zone	Ground Harvest	Stream Type
Cable Harvest	Stream Type Break	Leave Tree Area <1/4-acre
Existing Roads	Sale Boundary Tags	
Flag Line		
Streams		



LOGGING PLAN MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)

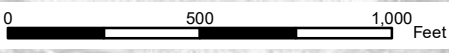
REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



Harvest Systems
 Ground Based: 58%
 Uphill Cable: 34%
 Downhill Cable: 8%

Unit 3

1:6,000



All State Unless Otherwise Noted

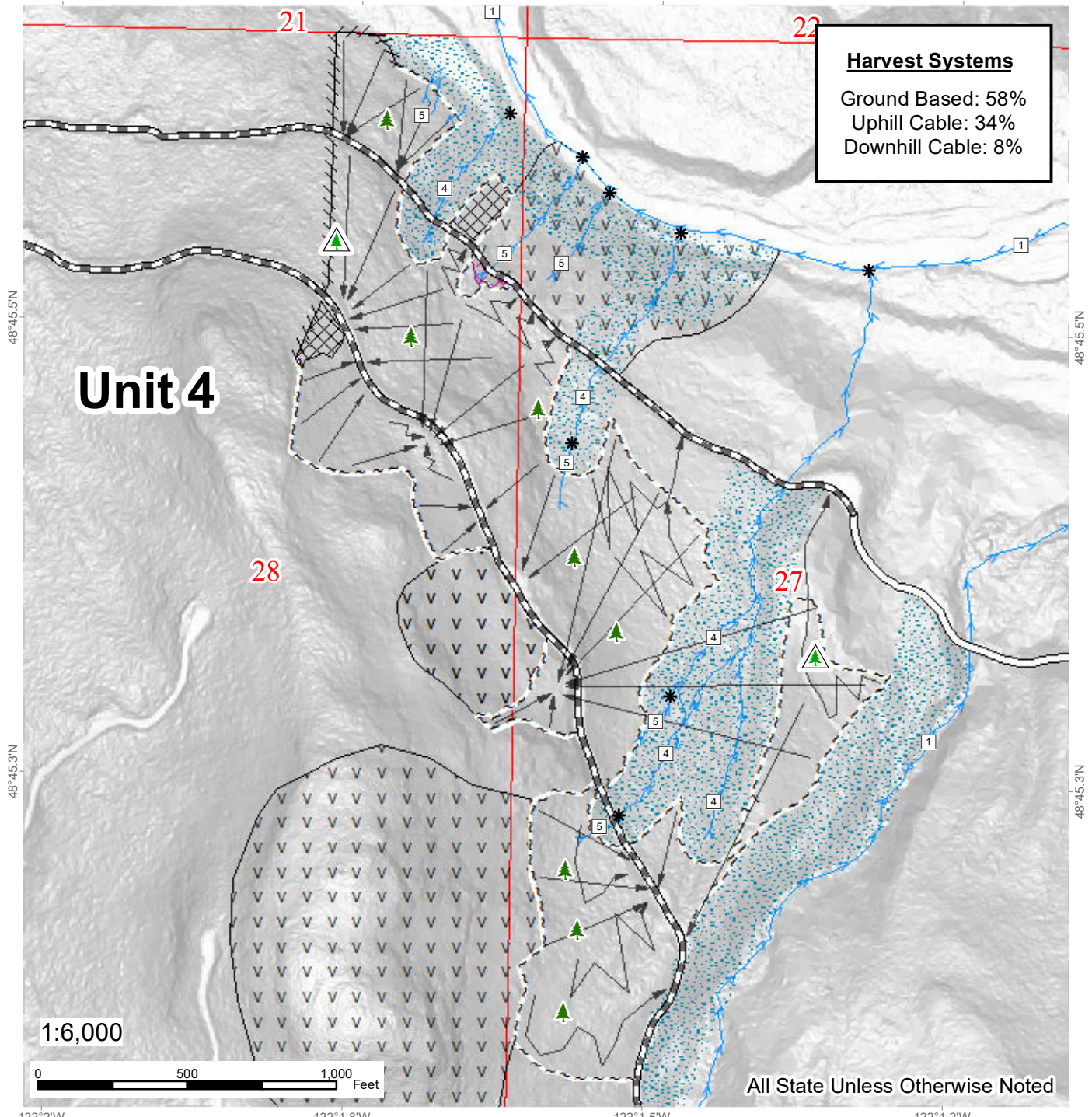
Riparian Mgt Zone	Ground Harvest	Stream Type
Existing Roads	Stream Type Break	Leave Tree Area <1/4-acre
Sale Boundary Tags	Flag Line	Streams



LOGGING PLAN MAP

SALE NAME: BOWMAN HILL
AGREEMENT#: 30-102819
TOWNSHIP(S): T38R6E
TRUST(S): Common School and Indemnity (3)
122°2'W 122°1.8'W 122°1.5'W 122°1.2'W

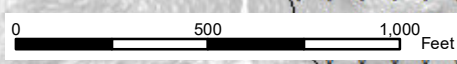
REGION: Northwest Region
COUNTY(S): Whatcom
ELEVATION RGE: 1360-3280



Harvest Systems
 Ground Based: 58%
 Uphill Cable: 34%
 Downhill Cable: 8%

Unit 4

1:6,000



All State Unless Otherwise Noted

	Non-Tradeable Leave Clump		Ground Harvest		Stream Type
	Riparian Mgt Zone		Cable Harvest		Stream Type Break
	No Entry Zone		Existing Roads		Leave Tree Area <1/4-acre
	Potentially Unstable Slopes		Required Pre-Haul Maintenance		Non-Tradeable Leave Trees
			Sale Boundary Tags		
			Flag Line		
			Streams		

