



TIMBER NOTICE OF SALE

SALE NAME: WEST OLNEY

AGREEMENT NO: 30-102969

AUCTION: April 26, 2023 starting at 10:00 a.m.,
Northwest Region Office, Sedro Woolley, WA

COUNTY: Snohomish

SALE LOCATION: Sale located approximately 12 miles northeast of Sultan, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags, Sultan Basin Road and a 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 #1 (labelled Unit 1A, Unit 1B, Unit 1C).

All timber bounded by white timber sale boundary tags and existing road grade, 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 orange right-of-way 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 32 and 33 all in Township 29 North, Range 9 East, W.M., containing 131 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Hemlock	15.3		3,736						1,391	1,952	342	51
Douglas fir	18.5	8	785						411	310	45	19
Silver fir	15.6		557						225	265	67	
Redcedar	15.3		338						273	65		
Red alder	13.1		20						4	4	10	2
Sale Total			5,436									

MINIMUM BID: \$247,000.00

BID METHOD: Sealed Bids

**PERFORMANCE
SECURITY:**

\$49,400.00

SALE TYPE: Lump Sum

EXPIRATION DATE: March 31, 2026

ALLOCATION: Export Restricted

BID DEPOSIT: \$24,700.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; shovel, 6-wheeled-rubber-tired-skidders-with-over-the-tire-tracks-spanning-both-sets-of-rear-tires (See below for restrictions) on sustained slopes 40% or less; self-



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leveling harvester on sustained slopes 55% or less; tethered equipment may be utilized (See below for restrictions); also, a feller-buncher may be utilized on sustained slopes 40% or less.

Purchaser must obtain prior written approval from the Contract Administrator for areas as to where to utilize 6-wheeled-rubber-tired-skidders-with-over-the-tire-tracks-spanning-both-sets-of-rear-tires or tethered equipment prior to use. If ground disturbance is causing excessive damage, as determined by the Contract Administrator, the equipment will no longer be authorized. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

ROADS:

127.50 stations of required construction. 14.70 stations of required reconstruction. 41.60 stations of optional construction. 41.60 stations of abandonment, if built. Installation of 50-foot span, pre-constructed modular, gravel deck bridge and pre-cast concrete footings. Installation of a gate. A gate with lock box is available for use, supplied by the State, located at Northwest Region Office. Installation of geotextile fabric installation.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: CSB-118-00 Hard Rock Pit at station 2+00 of the CSB-118 Road. CSB-118-0400 (Proposed) Hard Rock Pit at Station 1+30 of the CSB-118-04 Road. KM-0302 (Rock Exploration) Hard Rock at station 8+00 to 13+00 of the KM-03 Road. KM-0305 (Rock Exploration) Hard Rock at Station 28+00 of the KM-03 Road. KM-0309 (Rock Exploration) Hard Rock at station 44+90 of the KM-03 Road. KM-0100 (Waste Area) Borrow Pit (and stockpile material available, see road plan for details) at Station 2+50 of the KM-01 Road.

Development of new and existing rock source(s) will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, 3-inch-minus ballast rock or surfacing.

An estimated total quantity of rock needed for this proposal: 915 cubic yards of riprap, 10 cubic yards of surfacing (1 ½-INCH-MINUS crushed rock as a leveling course) and 15,930 cubic yards of 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. Cruise acres are based on FMA (Forest Management Activity) acres including leave tree areas. Leave tree volume is not included in the cruise. 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: \$92,412.00 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 two red painted bands and a yellow painted "T" represent the last take tree along property line boundaries.



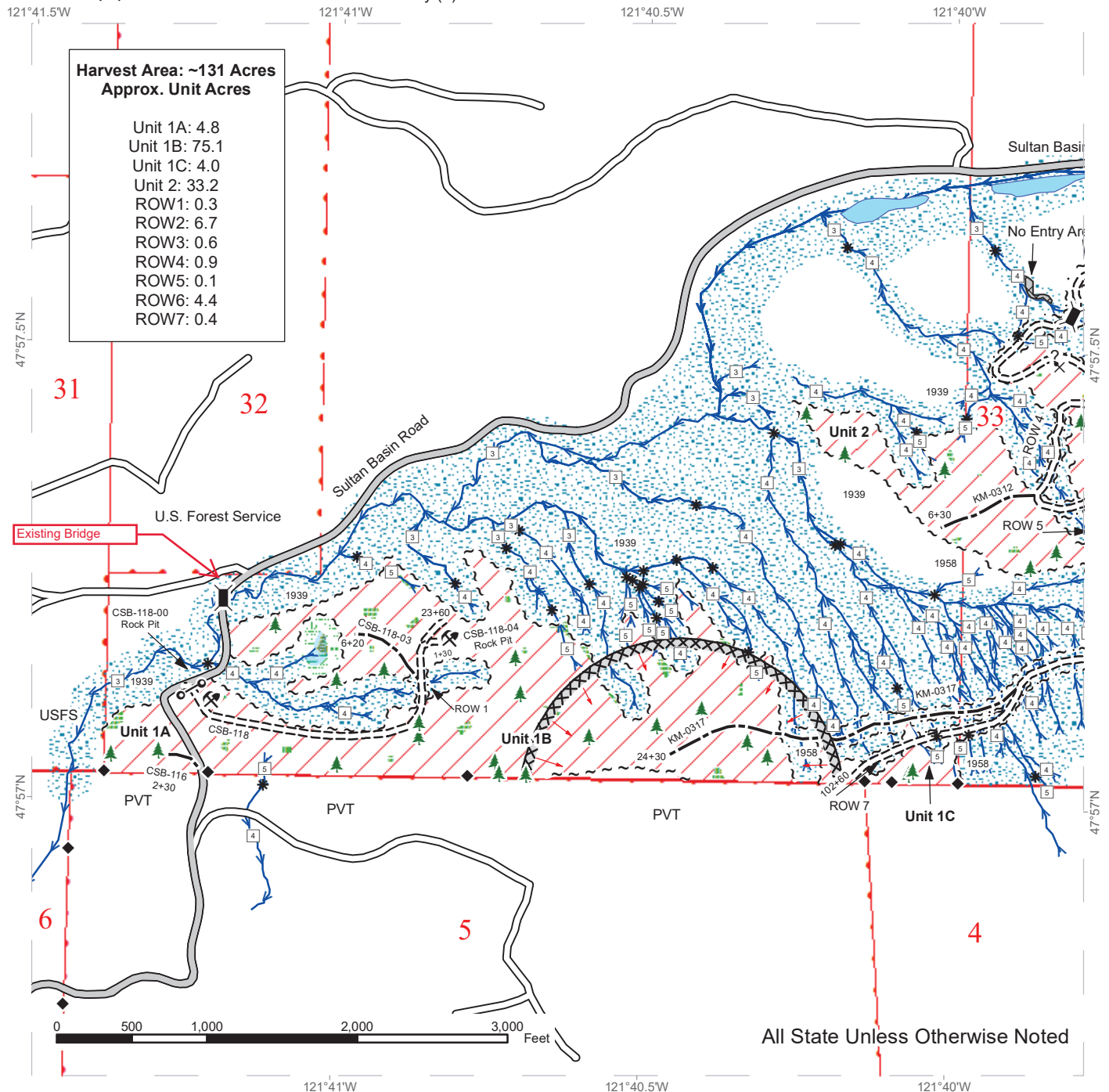
TIMBER NOTICE OF SALE

2. Redcedar and Douglas-fir poles were noted within the sale area, primarily throughout the ground-based harvest area of Unit 1. No formal cruise was conducted for poles.
3. Cedar salvage will be offered for sale separately from the timber sale and is NOT included in the products sold.
4. Cable logging planned to occur in Units 1B and 2. Tail hold restrictions apply. See H-141
5. Intermediate supports, may be necessary for cable yarding.
6. Timing restriction on portions of the KM-ML, KM-01, and KM-03 roads, as well as the KM-0100 rock pit. See H-141 and timber sale map for details.
7. Timing restriction on portions of Unit 1B and 1C. See H-141 and timber sale map for details.
8. Purchaser must obtain a Snohomish County Road Approach Permit. See G-395 for details.

TIMBER SALE MAP

SALE NAME: WEST OLNEY
AGREEMENT #: 30-102969
TOWNSHIP(S): T29R9E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 1760-2440

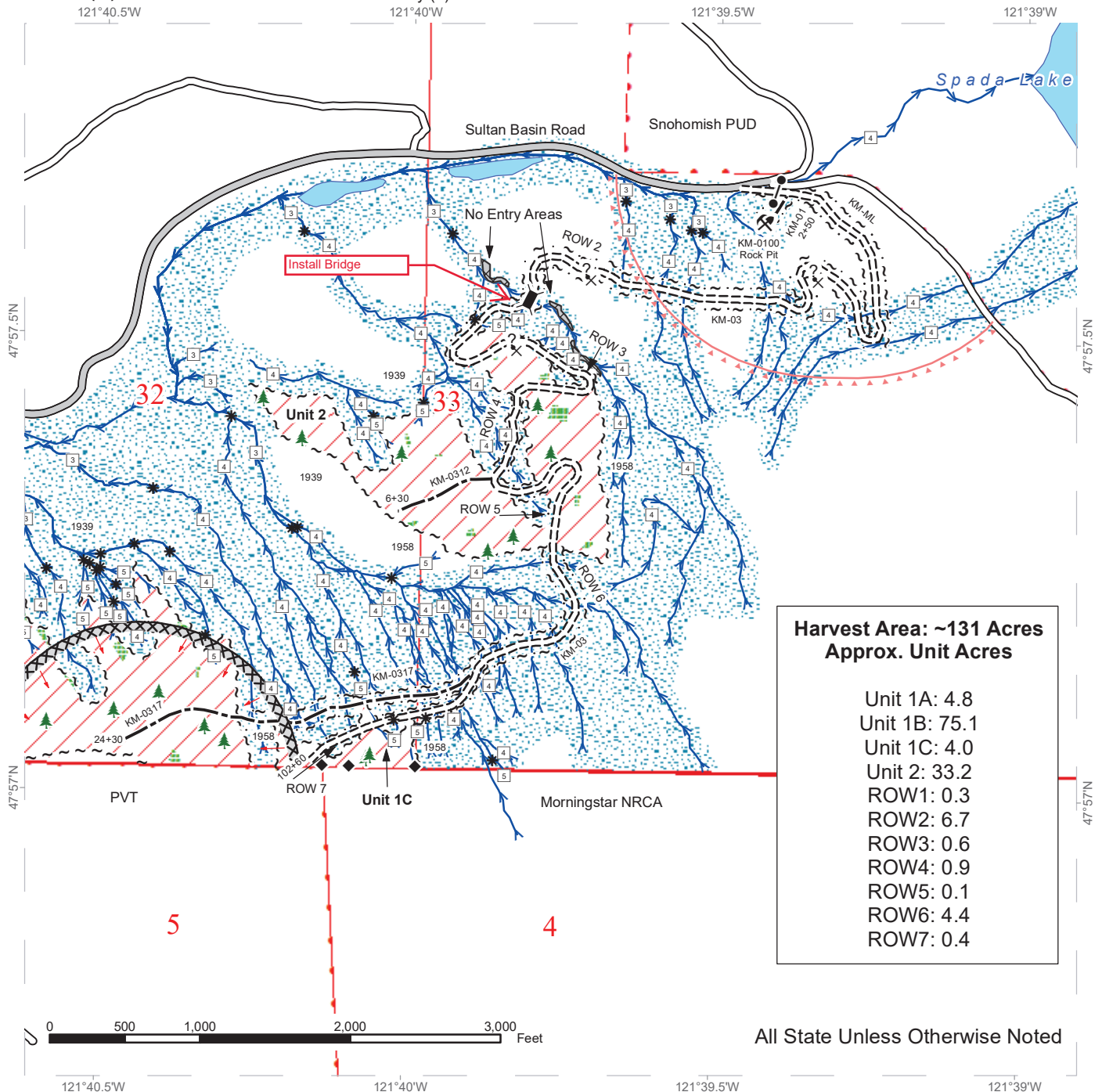


Variable Retention Harvest	Sale Boundary Tags	Survey Monument
DNR Managed Lands	Right of Way Tags	Bridge
Leave Tree Area	County Road	Gate Installation
Riparian Mgt Zone	Existing Roads	Leave Tree Area <1/4-acre
Forested Wetland	Required Construction	Potential Rock Source
Wetland Mgt Zone	Optional Construction	Rock Pit
No Entry Area	Streams	
	Timing Restriction 1	

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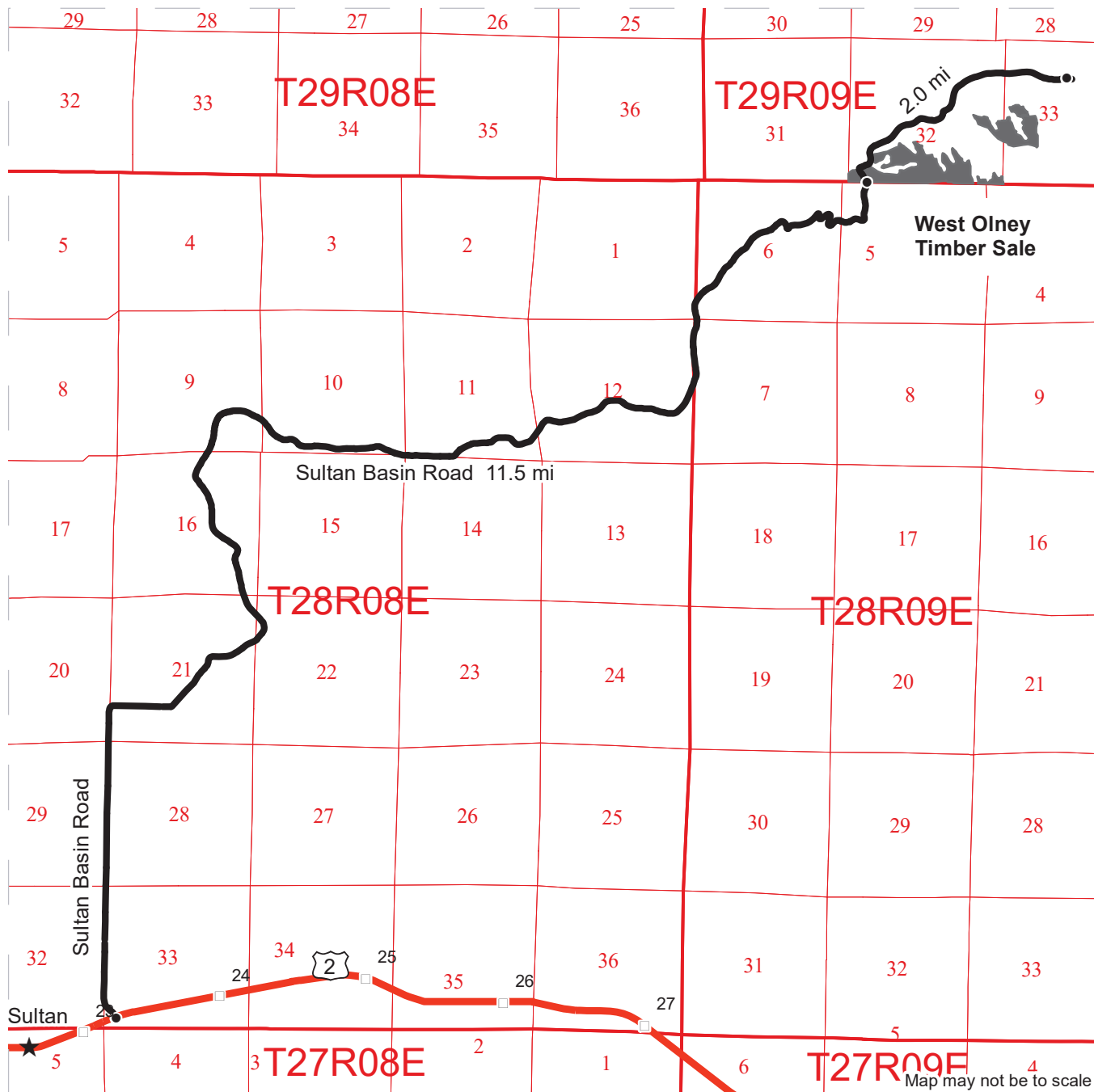


	Variable Retention Harvest		Sale Boundary Tags		Survey Monument
	DNR Managed Lands		Right of Way Tags		Bridge
	Leave Tree Area		County Road		Gate (F1-3)
	Riparian Mgt Zone		Existing Roads		Leave Tree Area <1/4-acre
	No Entry Area		Required Construction		Potential Rock Source
			Optional Construction		Rock Pit
			Streams		Timing Restriction 2
			Timing Restriction 1		

DRIVING MAP

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- Timber Sale Unit
- Haul Route
- Milepost Markers
- Public Land Survey Townships
- Public Land Survey Sections
- Distance Indicator
- Town
- Highway 2

DRIVING DIRECTIONS:

Unit 1

Follow US Route 2 east from Sultan for 1 mile to reach the intersection with the Sultan Basin Road. Turn left at the traffic light onto the Sultan Basin Road and follow north for 11.5 miles and arrive at the beginning of road construction for Unit 1 of the West Olney Timber Sale.

Unit 2

Continue up the Sultan Basin Road for two miles to reach Olney Pass. At Olney Pass, take a far right along the three-pronged intersection to arrive at the KM-ML and the beginning of road construction for Unit 2 of the West Olney Timber Sale.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-0102969

SALE NAME: WEST OLNEY

**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 April 26, 2023 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, Sultan Basin Road and a 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 #1 (labelled Unit 1A, Unit 1B, Unit 1C).

All timber bounded by white timber sale boundary tags and existing road grade, 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 orange right-of-way 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 approximately 131 acres on part(s) of Sections 32, and 33 all in Township 29 North, Range 9 East W.M. in Snohomish 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, 2026.

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 \$981.00 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.

The pricing schedule has not been set for the sale.

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 program Standard under certificate number: PwC-SFIFM-513.

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

The State will bear the cost to repair damages caused by a third party. In all other cases, the Purchaser shall bear responsibility for the costs as described below.

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

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

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

2. Caused by a single event from forces beyond the control of Purchaser, its employees, agents, or invitees, including independent contractors; and
3. Includes, but is not limited to natural disasters such as earthquakes, volcanic eruptions, landslides, and floods.

The repair work identified by the State shall be promptly completed by Purchaser at an agreed price. The State may elect to accomplish repairs by means of State-provided resources.

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Business Auto Policy (BAP). Purchaser shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit not less than \$1,000,000.00 per accident. Such insurance shall cover liability arising out of "Any

Auto". Business auto coverage shall be written on ISO form CA 00 01, or substitute liability form providing equivalent coverage. If necessary the policy shall be endorsed to provide contractual liability coverage and cover a "covered pollution cost or expense" as provided in the 1990 or later editions of CA 00 01. Purchaser waives all rights against State for the recovery of damages to the extent they are covered by business auto liability or commercial umbrella liability insurance.

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at 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; CSB-116, CSB-118, CSB-118-03, CSB-118-04, KM-ML, KM-01, KM-03, KM-0312, KM-0317. 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-395 Road Approach Permit

Purchaser must enter into a road approach permit with Snohomish County.

Purchaser must provide the State with a copy of the executed permit, or a letter from Snohomish County, indicating that a satisfactory road approach permit has been consummated between Purchaser and Snohomish County.

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 \$141,336.00. The total contract price consists of a \$0.00 contract bid price plus \$141,336.00 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 \$49,400.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from November 1 to March 31 BY GROUND-BASED EQUIPMENT unless authorized in writing by the Contract Administrator.

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 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-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-080 Snags Not to be Felled

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

H-090 Designated Trees Felled

All trees designated as last take tree along property lines marked with two red bands of paint and a yellow painted "T" are to be felled into the sale area and shall be felled concurrently with the falling operation.

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable; shovel, 6-wheeled-rubber-tired-skidders-with-over-the-tire-tracks-spanning-both-sets-of-rear-tires (See H-141 for restrictions) on sustained slopes 40% or less; self-leveling harvester on sustained slopes 55% or less; tethered equipment may be utilized (See H-141 for restrictions); 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-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

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-130 Hauling Schedule

The hauling of forest products will not be permitted 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, delimbing 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.

B. Trees shall be felled away from stream channels and any standing water or wet swales when feasible. 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. Maintain a 30-foot equipment limitation zone on either side of all type-5 streams. Water course crossing structures must be approved by the Contract Administrator.

C. 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.

D. 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 six weeks before any activities resume on site.

E. Ground-based yarding shall not exceed 800 feet from any road unless authorized in writing by the Contract Administrator.

F. Purchaser is responsible for all notification signage relating to logging or road construction activity at the Purchaser's expense.

G. The Purchaser shall NOT block the Sultan Basin Road. Flaggers and signage are required, and provided at the Purchaser's expense, when active harvesting operations are within a tree length and a half of the Sultan Basin Road.

H. The KM-ML gate and the proposed CSB-118 gate must be closed and locked at the end of each day. Refer to Timber Sale Prospectus map for gate locations.

I. No tops or limbs will be allowed to accumulate on any landings. Tops and limbs shall be redistributed in the unit to the satisfaction of the Contract Administrator.

J. Except for any non-tradeable leave trees, leave trees may be traded for trees of the same size, species, and similar location with prior approval from the Contract Administrator.

K. Purchaser shall be required to mark tail holds prior to operation and have them approved by the Contract Administrator prior to cable yarding operations.

L. Intermediate supports, if necessary for yarding, shall be marked by the Purchaser and approved by the Contract Administrator prior to felling unit timber.

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. There are “No Entry Area”(s) adjacent to Unit 2, ROW 2, and ROW 3 where no activity is allowed to occur. If any timber from the sale area accidentally falls into the “No Entry Area”(s), the tree(s) must be left where it lands.

C. No operations are permitted on adjacent State Natural Resource Conservation Area (NRCA) land. If during harvest operations, trees fall outside Unit 1B or 1C boundaries onto State NRCA land, the trees shall be left where they lay.

D. A timing restriction will be implemented in portions of Units 1B and 1C as depicted on the timber sale map as Timing Restriction 1. This timing restriction prohibits any activity associated with harvesting timber and road building due to critical wildlife habitat in the vicinity. Harvest activities include but are not limited to: falling, yarding, loading, running chainsaws, or running heavy equipment. The timing restriction will be in effect from March 15 through August 31.

E. A timing restriction will be implemented for the KM-0100 rock pit as well as portions of ROW 2 along the KM-ML, KM-01, and KM-03 as depicted on the timber sale map as Timing Restriction 2. This timing restriction prohibits any blasting associated with road construction or rock pit development within the area mapped as Timing Restriction 2. The timing restriction will be in effect from April 1 through August 31, from one hour before to two hours after official sunrise, and one hour before to one hour after official sunset.

F. Purchaser must obtain prior written approval from the Contract Administrator for areas as to where to utilize 6-wheeled-rubber-tired-skidders-with-over-the-tire-tracks-spanning-both-sets-of-rear-tires or tethered equipment prior to use. If ground disturbance is causing excessive damage, as determined by the Contract Administrator, the equipment will no longer be authorized.

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-230 Tops and Limbs Outside the Sale Boundary

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

Section C: Construction and Maintenance**C-040 Road Plan**

Road construction and associated work provisions of the Road Plan for this sale, dated 7/20/2022 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on CSB-116, CSB-118, CSB-118-03, CSB-118-04, KM-ML, KM-01, KM-03, KM-0312, KM-0317 roads. All work shall be completed to the specifications detailed in the Road Plan.

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-020 Extreme Hazard Abatement

Purchaser shall provide a written Extreme Hazard Abatement plan that meets the requirements of WAC 332-24 prior to the beginning of logging operations. The plan must be acceptable to the Contract Administrator. The plan will identify how Purchaser will accomplish abatement. Purchaser shall also provide, and keep current, a written timetable for completion of all specified work in the plan. The Contract

Administrator's acceptance and approval of Purchaser's hazard abatement plan shall not be construed as any statement or warranty that the hazard abatement plan is adequate for Purchaser's purposes or complies with applicable laws.

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-100 Stream Cleanout

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

S-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

Print Name

Date: _____
Address: _____

Jay Guthrie
Northwest Region Manager

Date: _____

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: Northwest

Timber Sale Name: WEST OLNEY

Application Number: 30- 102969

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 12,750 linear feet
Road to be constructed (optional and required) but not abandoned

Reconstruction: 1470 linear feet
Road to be reconstructed (optional and required) but not abandoned

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

Decommission: 0 linear feet
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 0 linear feet
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: 4160 linear feet
Roads to be constructed (optional and required) and then abandoned

0 linear feet

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

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

(Revised 9/18)

DNR Timber Sale Trust Distribution Form

Sale Name
WEST OLNEY

Agreement Number
102969

Region
Northwest

District
CASCADE

Unit
BOULDER

Legal Location

Section(s)	32, 33	Township	29	Range	9	E/W	E
------------	--------	----------	----	-------	---	-----	---

Auction Date
4/26/2023

Contract Expiration Date
3/31/2025

Sale Acres
131

Sale Class
Board

Sale Method
Lump Sum

Stand Origin Year
1939

FPA Number
2818868

FPA Renewal Date
2/3/2026

Sale Volume Ratio

Conifer		
Silver fir	557	10.20%
Redcedar	338	6.20%
Hemlock	3736	68.70%
Douglas fir	785	14.40%
Totals For Conifer	5416	99.50%
Hardwood		
Red alder	20	0.40%
Totals For Hardwood	20	0.40%
Total	5436	99.90%

Harvest Type

Harvest Type	% of Sale
Variable Retention Harvest	100.00%
Total	100.00%

Trust Distribution Table

County	3	Totals						
31 - Snohomis	100.00%	100.00%						
		100.00%						

DNR Timber Sale Trust Distribution Form

Trust Levy Codes

Instructions:

To ensure proper distribution of funds to the trust beneficiaries of this sale, the State Lands Assistant must review the data in NaturE and sign in the space provided below.

NaturE Data Reviewed by:

X

(Print Name)

(Signature)

Date:

DNR Timber Sale Trust Distribution Form

Trust Distribution Details

31-Snohomish

Trust	Harvest Area	Acres
3	1	138.30
Total for 3		138.30
Total For 31-Snohomish		138.30
Total Acres		138.30

Region	District	Local	Fisc...	Timber Sale	Activity Name	Sale Status
Northwest	Cascade	Boulder	2018	SOUTHERN ACCENTS	WEST OLNEY ROW 1	PLANNED
Northeast	Alpine	Belfair	2019	WEST OLNEY	WEST OLNEY ROW 2	COMPLETED
Olympic	Arcadia	Black Diamond	2020		WEST OLNEY ROW 3	SOLD
Pacific Cascade	Baker	Clallam River	2021		WEST OLNEY ROW 4	
South Puget ...	Black Hills	Copper Mine	2022		WEST OLNEY ROW 5	
Continental	Classical	Continental	2023		WEST OLNEY ROW 6	
County						
Federal	Snohomish		Harvest Type	Treated Acres	Acres %	MBF %
03 - Common School and Indemnity			Regen	138.3	100.0%	100.0%
Total				138.3	100.0%	100.0%
				5,436		
				5,436		

Header Panel

Not Spatial

Washington\NORTHWEST\CASCADE\BOULDER\Decade - 2020\Fiscal Year - 2023\FY - Timber Sale (2)\WEST OLNEY - PLANNED

Admin CD

1924

Ts ID

101013

Sale Name

WEST OLNEY

Status

PLANNED

Acres

138

Plan Date

04/26/2023

Auction Date

Data View

FY - Timber Sale

Timber Sale ID	Timber Sale Name	Status	Planned Date	FPA No.	Pre-Sales Auction Date	Sale Acres	Timber Sale Lock	Comments	Documents
101012	SOUTHERN ACCENTS	SOLD	10/26/2022	2818595	10/26/2022	151.3	Y	High Rock block, A	Yes
101013	WEST OLNEY	PLANNED	04/26/2023			138.3	Y	11 miles up Silt	Yes

FY - Timber Sale FMA Volume

FY - Timber Sale FMAs

FY - Timber Sale Volume

Activity ID	Activity Name	Volume Source	Conifer (MBF)	Hardwood (MBF)	Total (MBF)	Conifer (MBF/Acre)	Hardwood (MBF/Acre)	Total (MBF/Acre)	Biomass Vol. (Tons)	Biomass Vol. (Tons/Ac)
332430	WEST OLNEY ROW 1	CRUISE	13	0	13	34.4	0.0	34.4		
332431	WEST OLNEY ROW 2	CRUISE	195	0	195	24.2	0.0	24.2		
332432	WEST OLNEY ROW 3	CRUISE	17	0	17	17.2	0.0	17.2		
332433	WEST OLNEY ROW 4	CRUISE	20	1	21	13.4	0.7	14.0		
332434	WEST OLNEY ROW 5	CRUISE	2	0	2	26.2	0.0	26.2		
332435	WEST OLNEY ROW 6	CRUISE	90	15	105	16.9	2.8	19.7		
332436	WEST OLNEY ROW 7	CRUISE	3	3	6	5.0	5.0	10.0		
332444	WEST OLNEY U1A	CRUISE	222	0	222	44.6	0.0	44.6		
332427	WEST OLNEY U1B	CRUISE	3320	0	3320	42.9	0.0	42.9		
332428	WEST OLNEY U1C	CRUISE	110	0	110	26.6	0.0	26.6		
332429	WEST OLNEY U2	CRUISE	1425	0	1425	40.9	0.0	40.9		

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









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

















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

















1/24/2023











Washington\NORTHWEST\CASCADE\BOULDER\Decade - 2020\Fiscal Year - 2023\FY - FMA Types (11)\TIM_HARV (45)\WEST OLNEY ROW 5 - LAND_USE_CONV													
Has Shape													
Data View													
FY - FMA													
Activity ID	Legal Description	Activity Name	Activity Type	Technique	Crew	Planned Date	Completed Date	Cancelled Date	Regen Date	Fund Source	Status	Treated Acres	
332430	T29-ON R9-0E S32	WEST OLNEY ROW 1	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023				OPERATING	PLANNED	0.4	
332431	T29-ON R9-0E S33	WEST OLNEY ROW 2	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023				OPERATING	PLANNED	8.0	
332432	T29-ON R9-0E S33	WEST OLNEY ROW 3	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023				OPERATING	PLANNED	1.0	
332433	T29-ON R9-0E S33	WEST OLNEY ROW 4	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023				OPERATING	PLANNED	1.5	
▶ 332434	T29-ON R9-0E S33	WEST OLNEY ROW 5	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023				OPERATING	PLANNED	0.1	
332435	T29-ON R9-0E S33	WEST OLNEY ROW 6	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023				OPERATING	PLANNED	5.3	
332436	T29-ON R9-0E S32	WEST OLNEY ROW 7	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023				OPERATING	PLANNED	0.6	
332444	T29-ON R9-0E S32	WEST OLNEY U1A	TIM_HARV	VRH	PURCHASER	04/26/2023				OPERATING	PLANNED	5.0	
332427	T29-ON R9-0E S32	WEST OLNEY U1B	TIM_HARV	VRH	PURCHASER	04/26/2023			05/04/1965	OPERATING	PLANNED	77.4	
332428	T29-ON R9-0E S32	WEST OLNEY U1C	TIM_HARV	VRH	PURCHASER	04/26/2023				OPERATING	PLANNED	4.1	
332429	T29-ON R9-0E S33	WEST OLNEY U2	TIM_HARV	VRH	PURCHASER	04/26/2023				OPERATING	PLANNED	34.8	
FY - Harvest FY-Harvest Method FY - Harvest Volume FY - SDI FY - Tasks FY - Objectives FY - FMA Overlap FY - RsFRIS FY - Special Concerns FY - Ownership													
Activity ID	Surface Trust CD	Surface Trust	Common School and Indemnity	Timber Trust CD	Timber Trust	County	Overlap Acres						
▶ 332430	3	Common School and Indemnity		3	Common School and Indemnity	Snohomish	0.4						
FY - Harvest FY-Harvest Method FY - Harvest Volume FY - SDI FY - Tasks FY - Objectives FY - FMA Overlap FY - RsFRIS FY - Special Concerns FY - Ownership													
Activity ID	Surface Trust CD	Surface Trust	Common School and Indemnity	Timber Trust CD	Timber Trust	County	Overlap Acres						
332431	3	Common School and Indemnity		3	Common School and Indemnity	Snohomish	8.0						
FY - Harvest FY-Harvest Method FY - Harvest Volume FY - SDI FY - Tasks FY - Objectives FY - FMA Overlap FY - RsFRIS FY - Special Concerns FY - Ownership													
Activity ID	Surface Trust CD	Surface Trust	Common School and Indemnity	Timber Trust CD	Timber Trust	County	Overlap Acres						
332432	3	Common School and Indemnity		3	Common School and Indemnity	Snohomish	1.0						











 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership
Activity ID	Surface Trust CD	Surface Trust	Timber Trust CD	Timber Trust	Common School and Indemnity	County	Overlap Acres		
332433	3	Common School and Indemnity	3	Common School and Indemnity	Snohomish		1.5		

▶	332434	T29-0N R9-0E S33	WEST OLNEY ROW 5	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023		OPERATING	PLANNED	0.1
	332435	T29-0N R9-0E S33	WEST OLNEY ROW 6	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023		OPERATING	PLANNED	5.3
	332436	T29-0N R9-0E S32	WEST OLNEY ROW 7	TIM_HARV	LAND_USE_CONV	PURCHASER	04/26/2023		OPERATING	PLANNED	0.6
	323644	T29-0N R9-0E S32	WEST OLNEY UTA	TIM_HARV	VRH	PURCHASER	04/26/2023		OPERATING	PLANNED	5.0
	332427	T29-0N R9-0E S32	WEST OLNEY UTB	TIM_HARV	VRH	PURCHASER	04/26/2023	05/04/1965	OPERATING	PLANNED	77.4
	332428	T29-0N R9-0E S32	WEST OLNEY UTC	TIM_HARV	VRH	PURCHASER	04/26/2023		OPERATING	PLANNED	4.1
	332429	T29-0N R9-0E S33	WEST OLNEY U2	TIM_HARV	VRH	PURCHASER	04/26/2023		OPERATING	PLANNED	34.8











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 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership				
Activity ID	Overlap Activity ID	Activity Name	Activity Type	Technique	Crew	Planned Date	Completed Date	Cancelled Date	Treated Acres	Overlap Acres			
 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership				
332435	76735	SOUTH OLNEY/CBL U5	TIM_HARV	VRH	PURCHASER	12/22/2024			205.4	5.3			

 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership		
Activity ID	Overlap Activity ID	Activity Name	Activity Type	Technique	Crew	Planned Date	Completed Date	Cancelled Date	Treated Acres	Overlap Acres	
 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership		
332436	76735	SOUTH OLNEY/CBL U5	TIM_HARV	VRH	PURCHASER	12/22/2024			205.4	0.6	

 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership		
Activity ID	Surface Trust CD	Surface Trust	Timber Trust CD	Timber Trust	Common School and Indemnity	County	Overlap Acres				
323644	3	Common School and Indemnity	3	Common School and Indemnity	Snohomish		5.0				

 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership
Activity ID	Surface Trust CD	Surface Trust	Timber Trust CD	Timber Trust	Common School and Indemnity	Timber Trust	County	Overlap Acres	
332427	3	Common School and Indemnity	3	3	Common School and Indemnity	Common School and Indemnity	Snohomish	77.5	

Activity ID	Surface Trust CD	Surface Trust	Timber Trust CD	Timber Trust	Common School and Indemnity	Timber Trust	County	Overlap Acres	
332428	3	Common School and Indemnity	3	3	Common School and Indemnity	Common School and Indemnity	Snohomish	4.2	

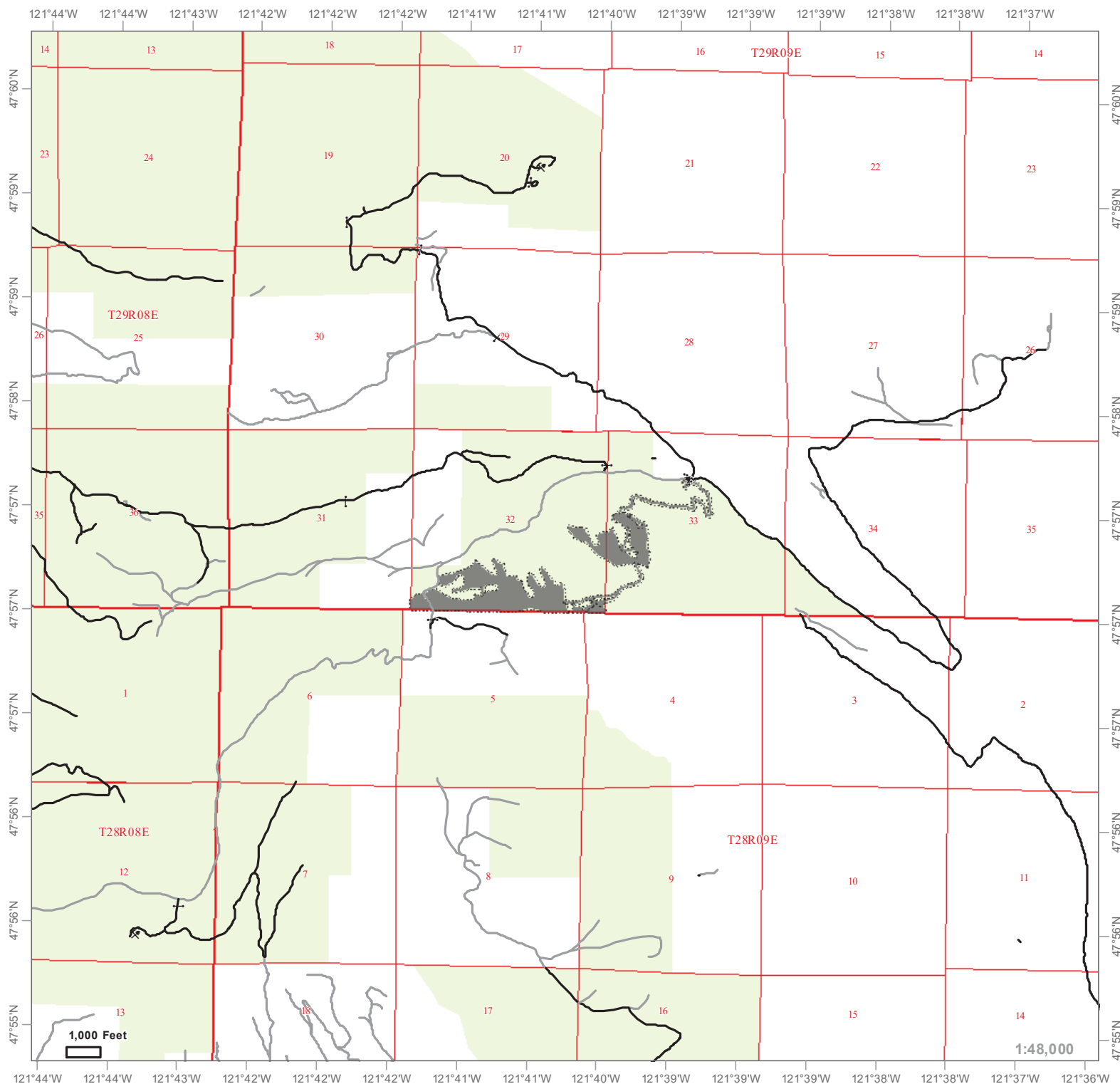
 FY - Harvest	 FY - Harvest Method	 FY - Harvest Volume	 FY - SDI	 FY - Tasks	 FY - Objectives	 FY - FMA Overlap	 FY - RsFRIS	 FY - Special Concerns	 FY - Ownership
Activity ID	Surface Trust CD	Surface Trust	Timber Trust CD	Timber Trust	Common School and Indemnity	Timber Trust	County	Overlap Acres	
332429	3	Common School and Indemnity	3	3	Common School and Indemnity	Common School and Indemnity	Snohomish	34.8	

WEST OLNEY

Timber Sale Review Map

REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER

SALE ID: 101013
SALE AREA: 138.3
SALE STATUS: PLANNED



-  Forest Management Activity
-  DNR Managed Timber Lands
-  Public Land Survey Townships
-  Public Land Survey Sections
-  DNR Active Roads
-  Non-DNR Roads
-  Gates
-  Existing Rock Pit

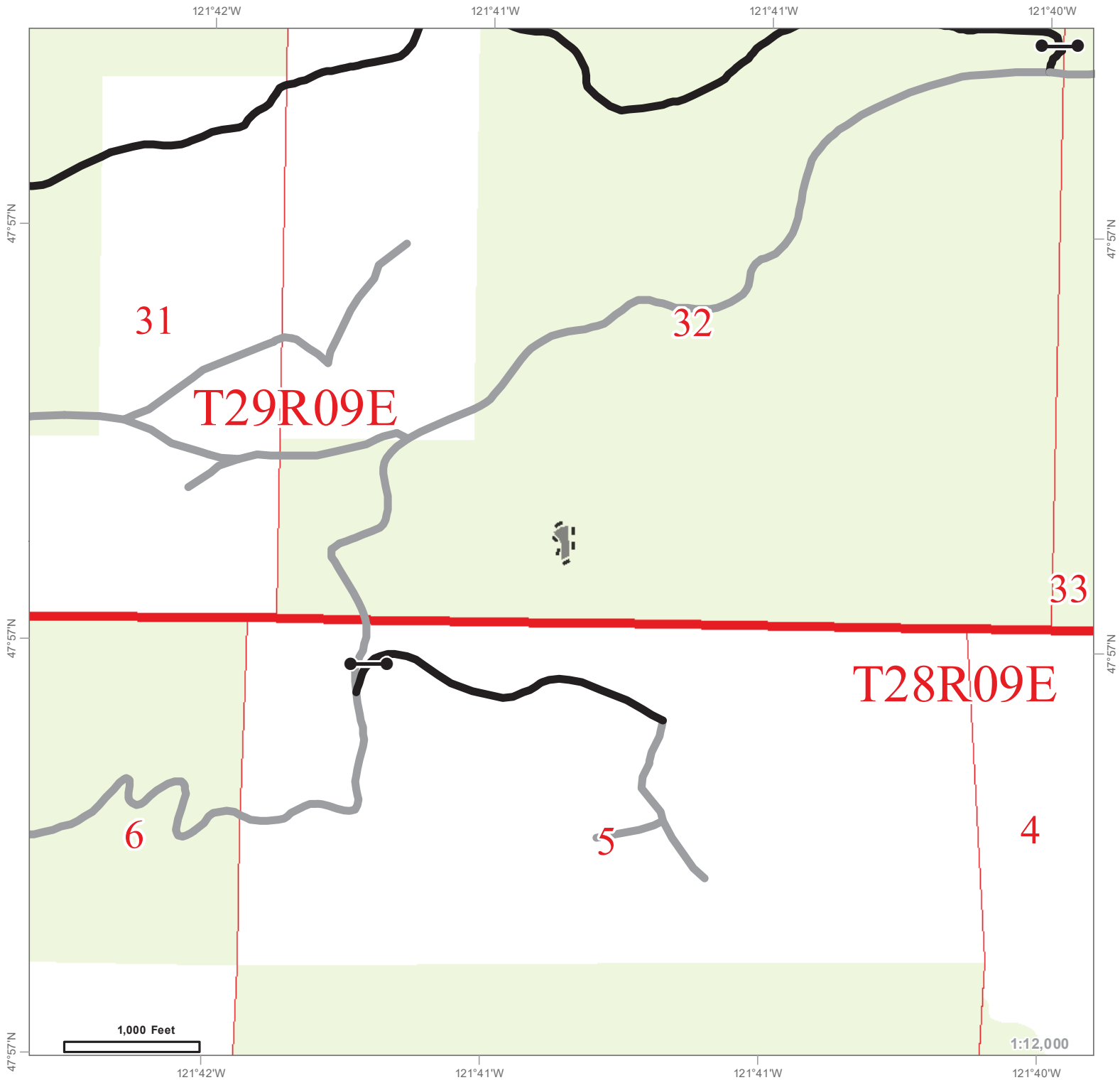
Activity ID	Activity Name	Area (ac)
323644	WEST OLNEY U1A	5
332427	WEST OLNEY U1B	77.4
332428	WEST OLNEY U1C	4.1
332429	WEST OLNEY U2	34.8
332430	WEST OLNEY ROW 1	4
332431	WEST OLNEY ROW 2	8
332432	WEST OLNEY ROW 3	1
332433	WEST OLNEY ROW 4	1.5
332434	WEST OLNEY ROW 5	.1
332435	WEST OLNEY ROW 6	5.3
332436	WEST OLNEY ROW 7	.6

WEST OLNEY

Timber Sale Review Map

REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER

SALE ID: 101013
SALE AREA: 0.4
SALE STATUS: PLANNED

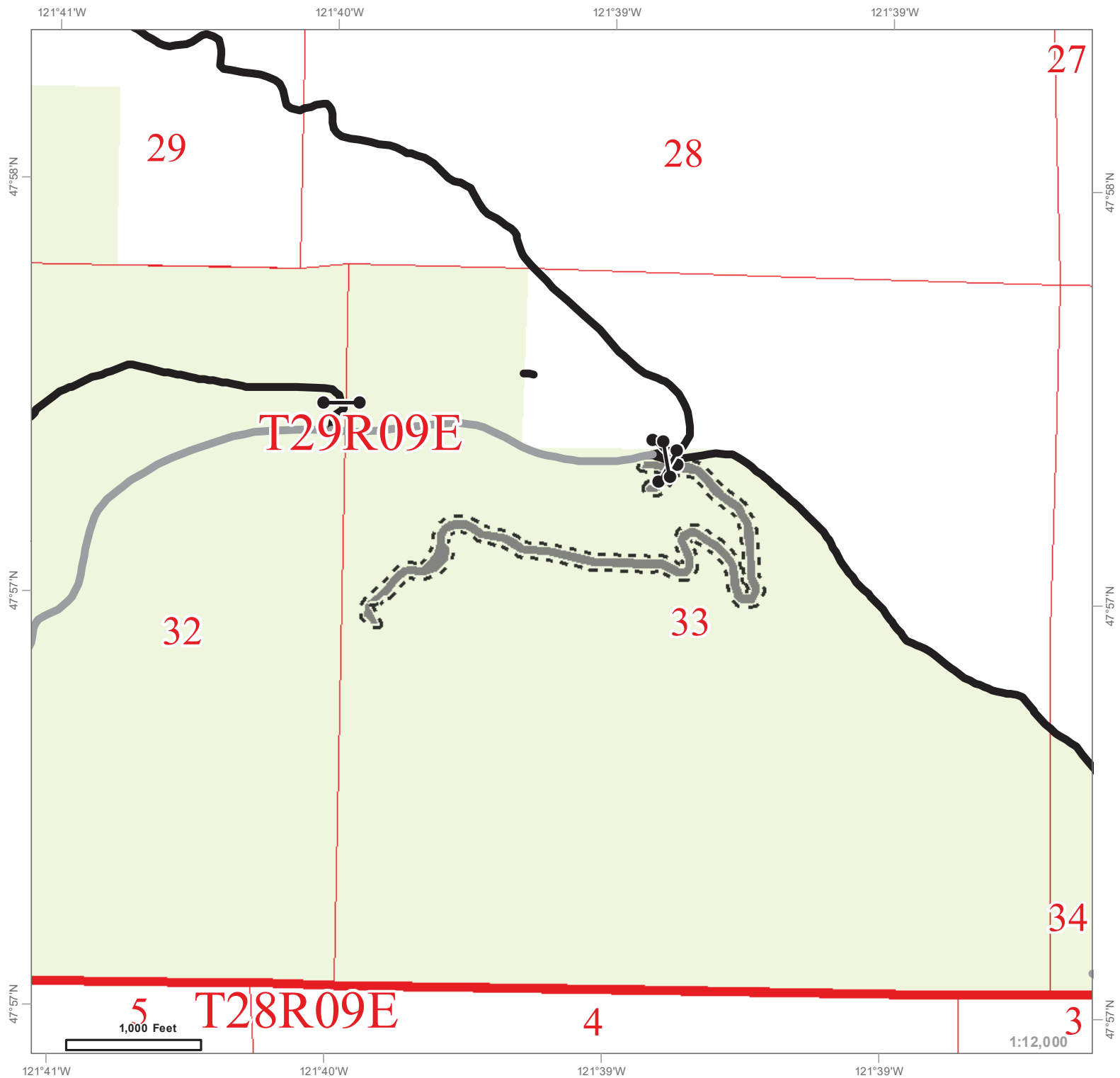


- Forest Management Activity
- DNR Managed Timber Lands
- Public Land Survey Townships
- Public Land Survey Sections
- DNR Active Roads
- Non-DNR Roads
- Gates

Activity ID	Activity Name	Area (ac)
332430	WEST OLNEY ROW 1	0.37753429

Timber Sale Review Map

SALE ID:	101013
SALE AREA:	8
SALE STATUS:	PLANNED



-  Forest Management Activity
  DNR Active Roads
-  DNR Managed Timber Lands
  Non-DNR Roads
-  Public Land Survey Townships
  Gates
-  Public Land Survey Sections

Activity ID	Activity Name	Area (ac)
332431	WEST OLNEY ROW 2	8.0457755

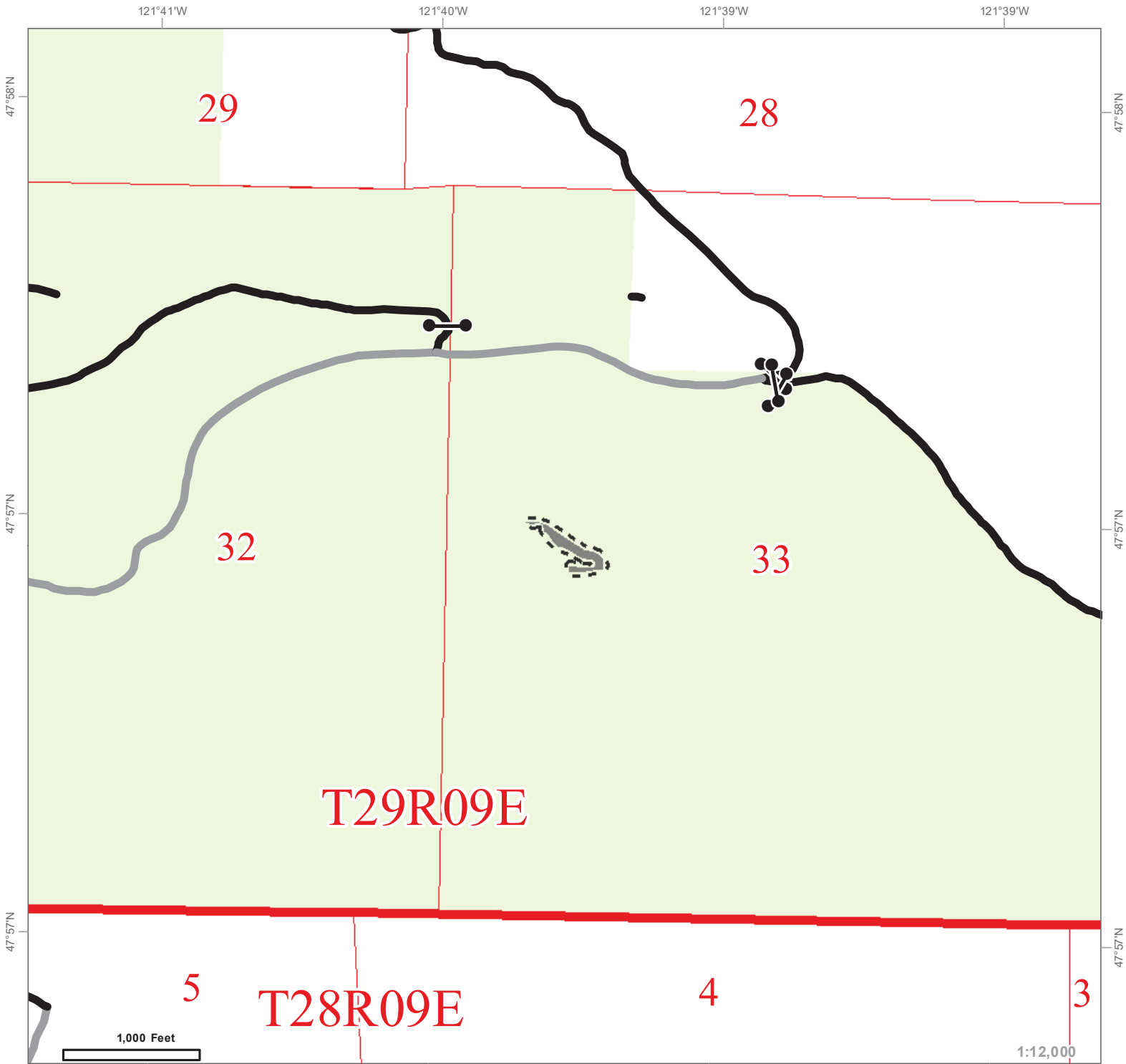
Prepared By: TKLE490
Creation Date: 1/24/2023

WEST OLNEY

Timber Sale Review Map

REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER

SALE ID: 101013
SALE AREA: 1
SALE STATUS: PLANNED



Forest Management Activity

DNR Managed Timber Lands

Public Land Survey Townships

Public Land Survey Sections

DNR Active Roads

Non-DNR Roads

Gates

Prepared By: TKLE490
Creation Date: 1/24/2023

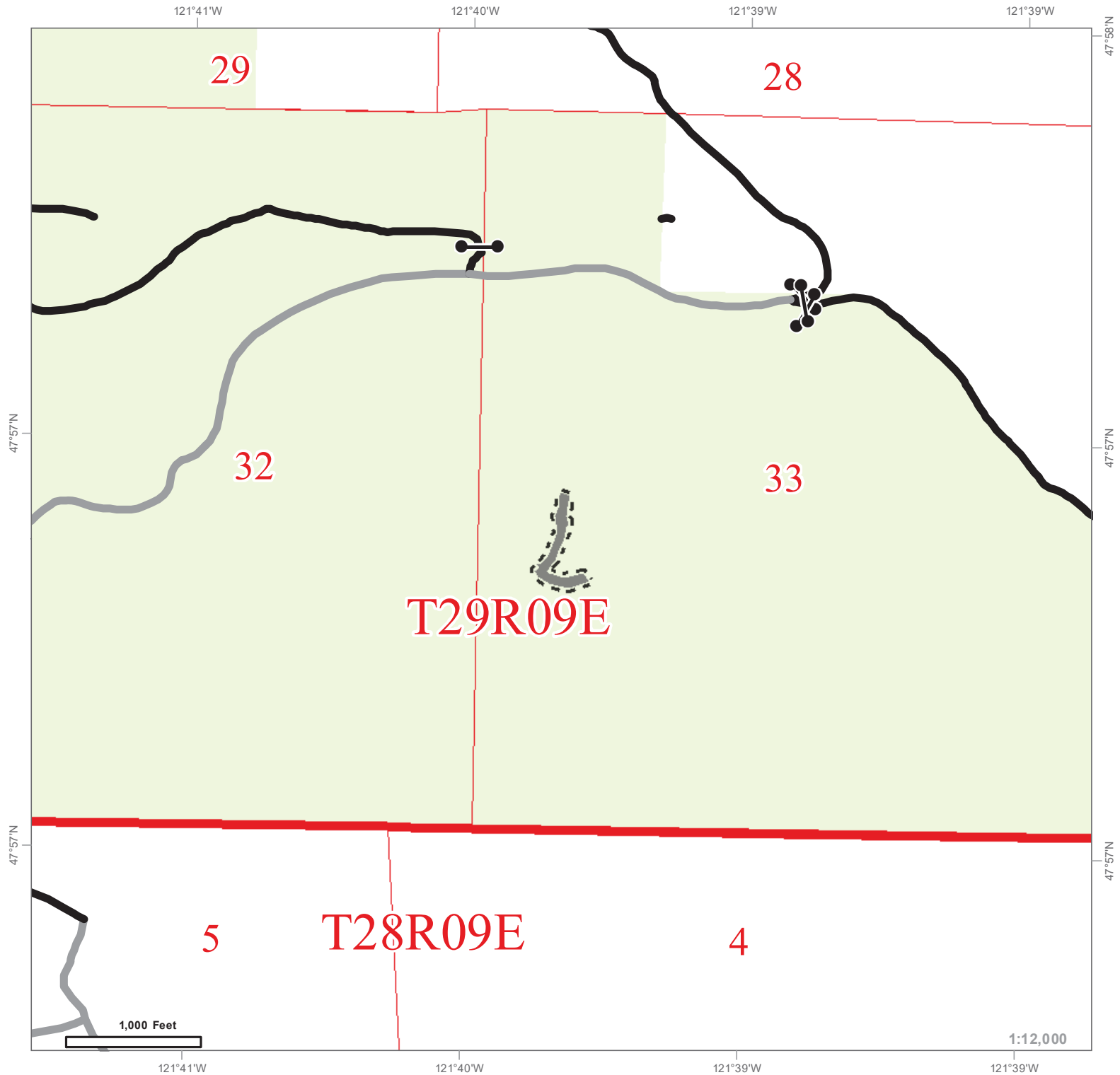
Activity ID	Activity Name	Area (ac)
332432	WEST OLNEY ROW 3	0.9858736

WEST OLNEY

Timber Sale Review Map

REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER

SALE ID: 101013
SALE AREA: 1.5
SALE STATUS: PLANNED

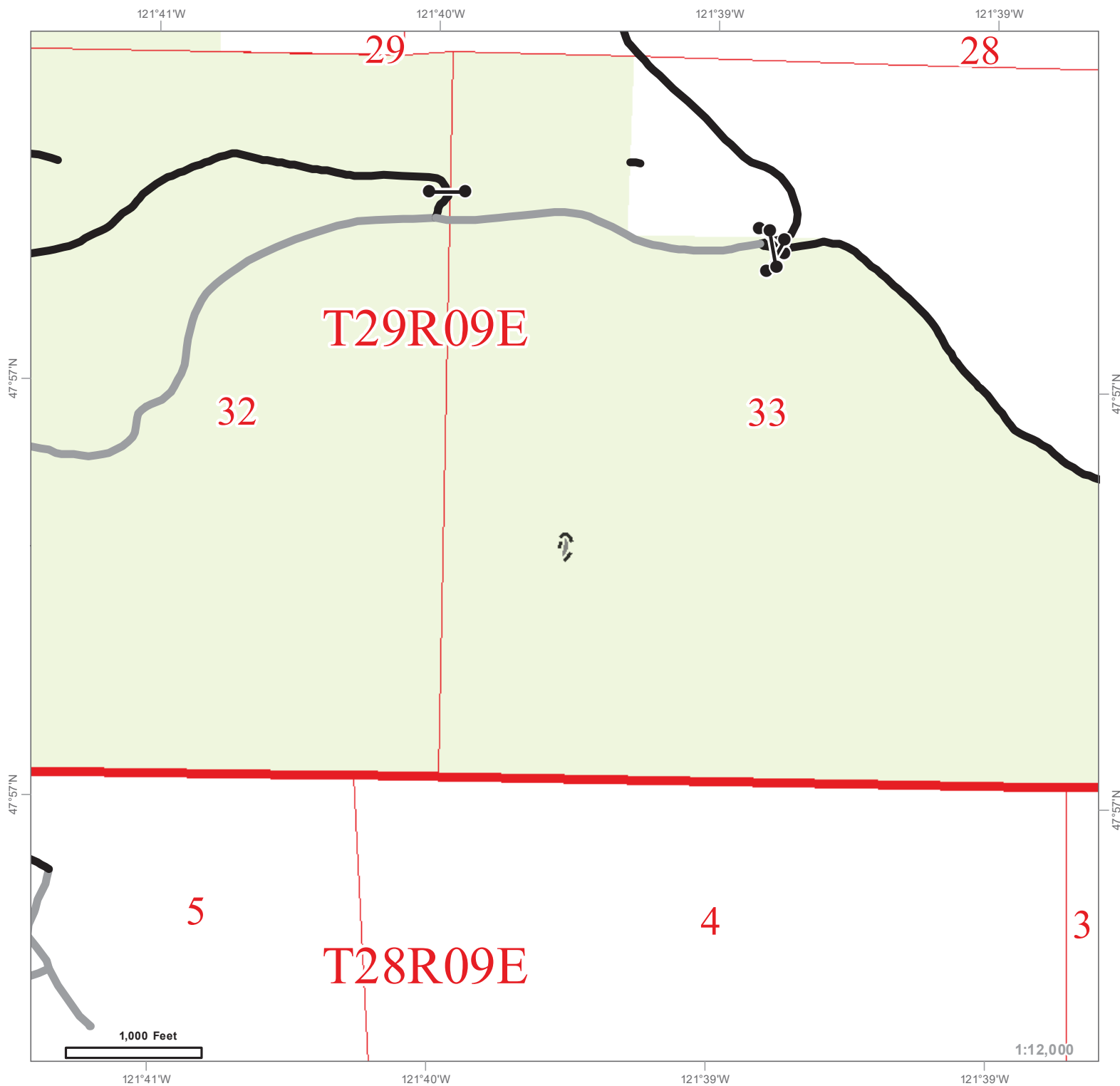


- Forest Management Activity
- DNR Managed Timber Lands
- Public Land Survey Townships
- Public Land Survey Sections
- DNR Active Roads
- Non-DNR Roads
- Gates


Activity ID	Activity Name	Area (ac)
332433	WEST OLNEY ROW 4	1.49753872

Timber Sale Review Map

SALE ID:	101013
SALE AREA:	0.1
SALE STATUS:	PLANNED



Activity ID	Activity Name	Area (ac)
332434	WEST OLNEY ROW 5	0.07640904

-  Forest Management Activity
  DNR Active Roads
-  DNR Managed Timber Lands
  Non-DNR Roads
-  Public Land Survey Townships
  Gates
-  Public Land Survey Sections

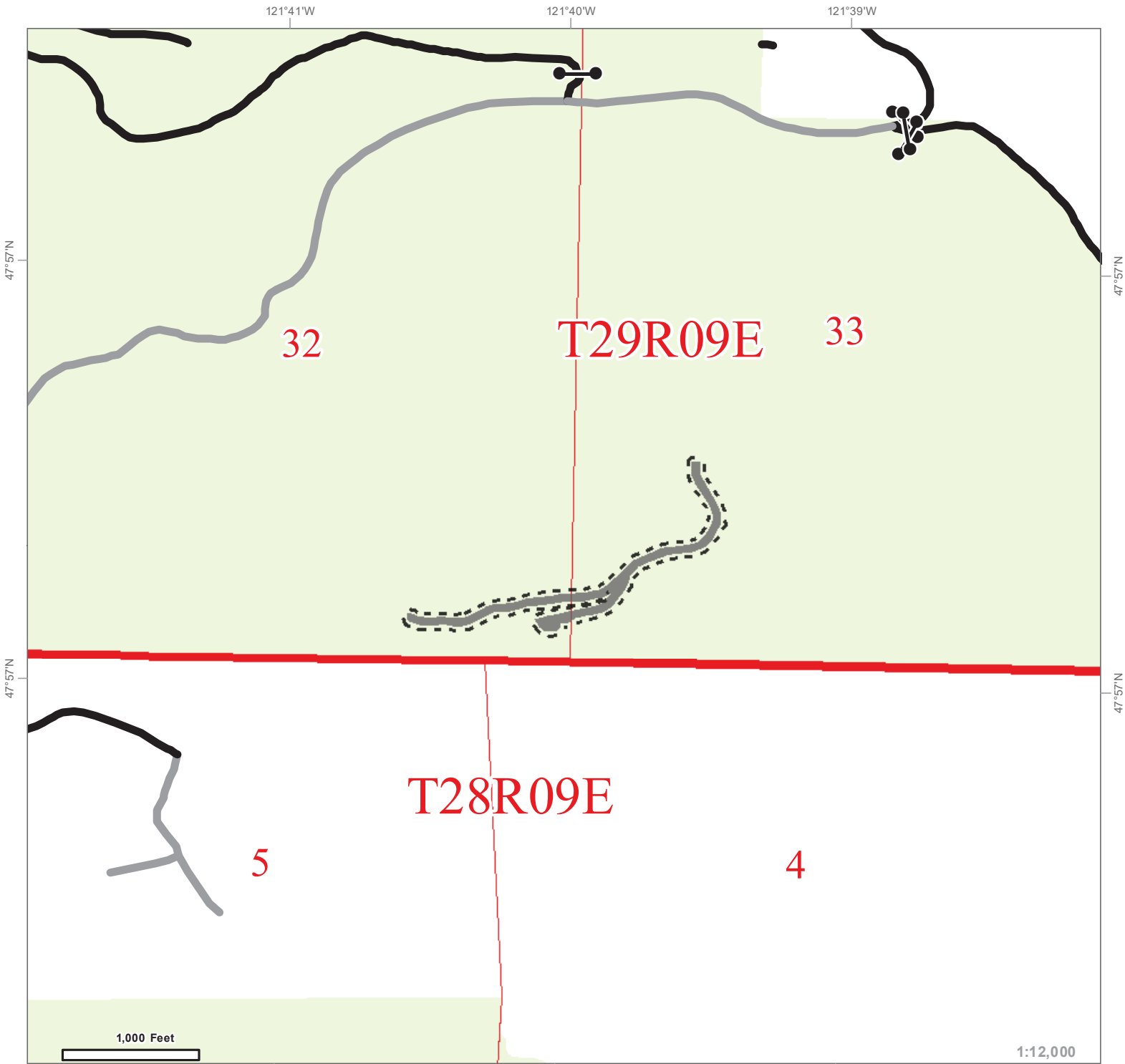
Prepared By: TKLE490
Creation Date: 1/24/2023

WEST OLNEY

Timber Sale Review Map

REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER

SALE ID: 101013
SALE AREA: 5.3
SALE STATUS: PLANNED



Forest Management Activity

DNR Managed Timber Lands

Public Land Survey Townships

Public Land Survey Sections

DNR Active Roads

Non-DNR Roads

Gates

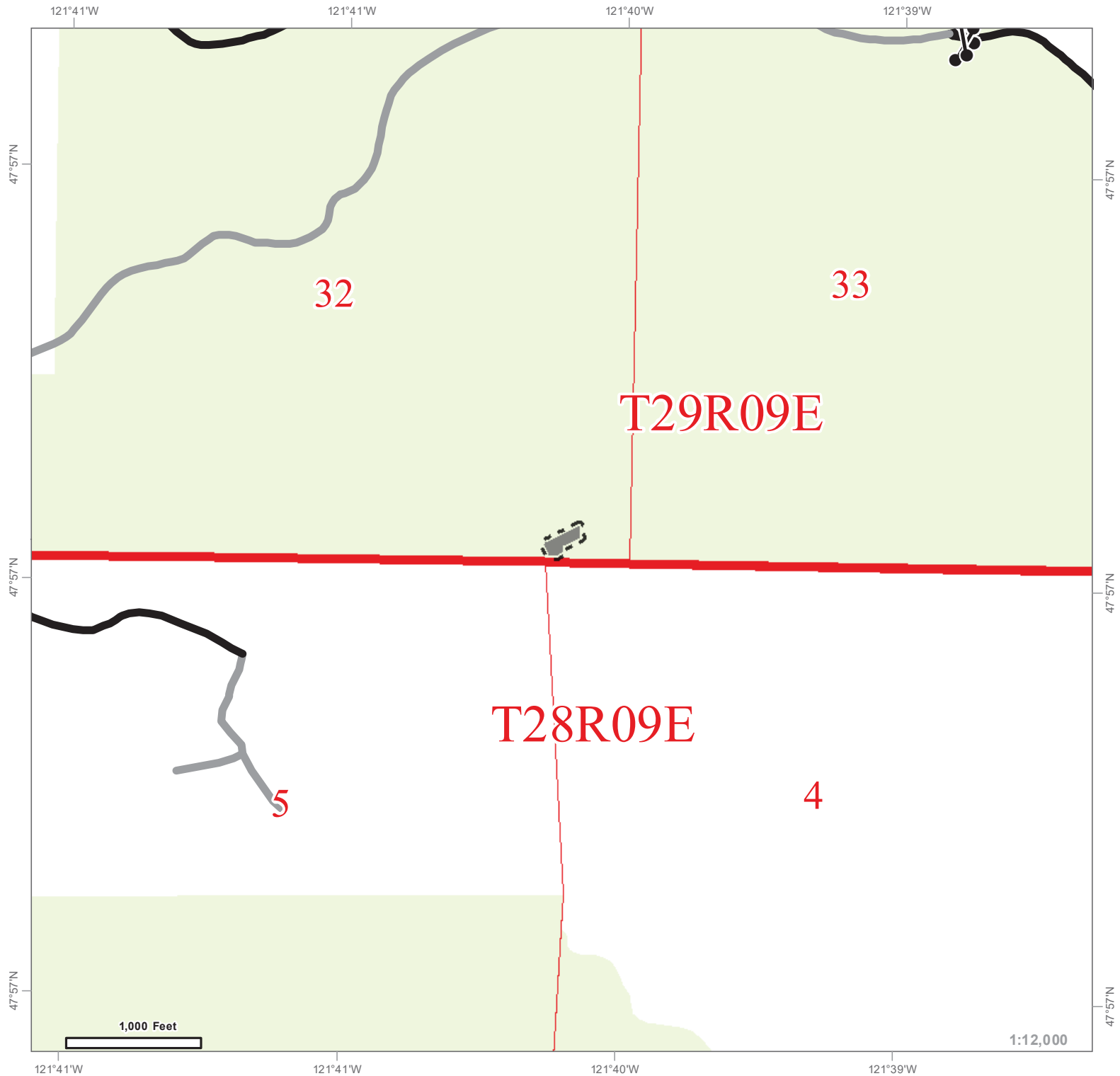
1,000 Feet


1:12,000

Activity ID	Activity Name	Area (ac)
332435	WEST OLNEY ROW 6	5.34275594

Timber Sale Review Map

SALE ID:	101013
SALE AREA:	0.6
SALE STATUS:	PLANNED



-  Forest Management Activity
  DNR Active Roads
-  DNR Managed Timber Lands
  Non-DNR Roads
-  Public Land Survey Townships
  Gates
-  Public Land Survey Sections

Activity ID	Activity Name	Area (ac)
332436	WEST OLNEY ROW 7	0.59986693

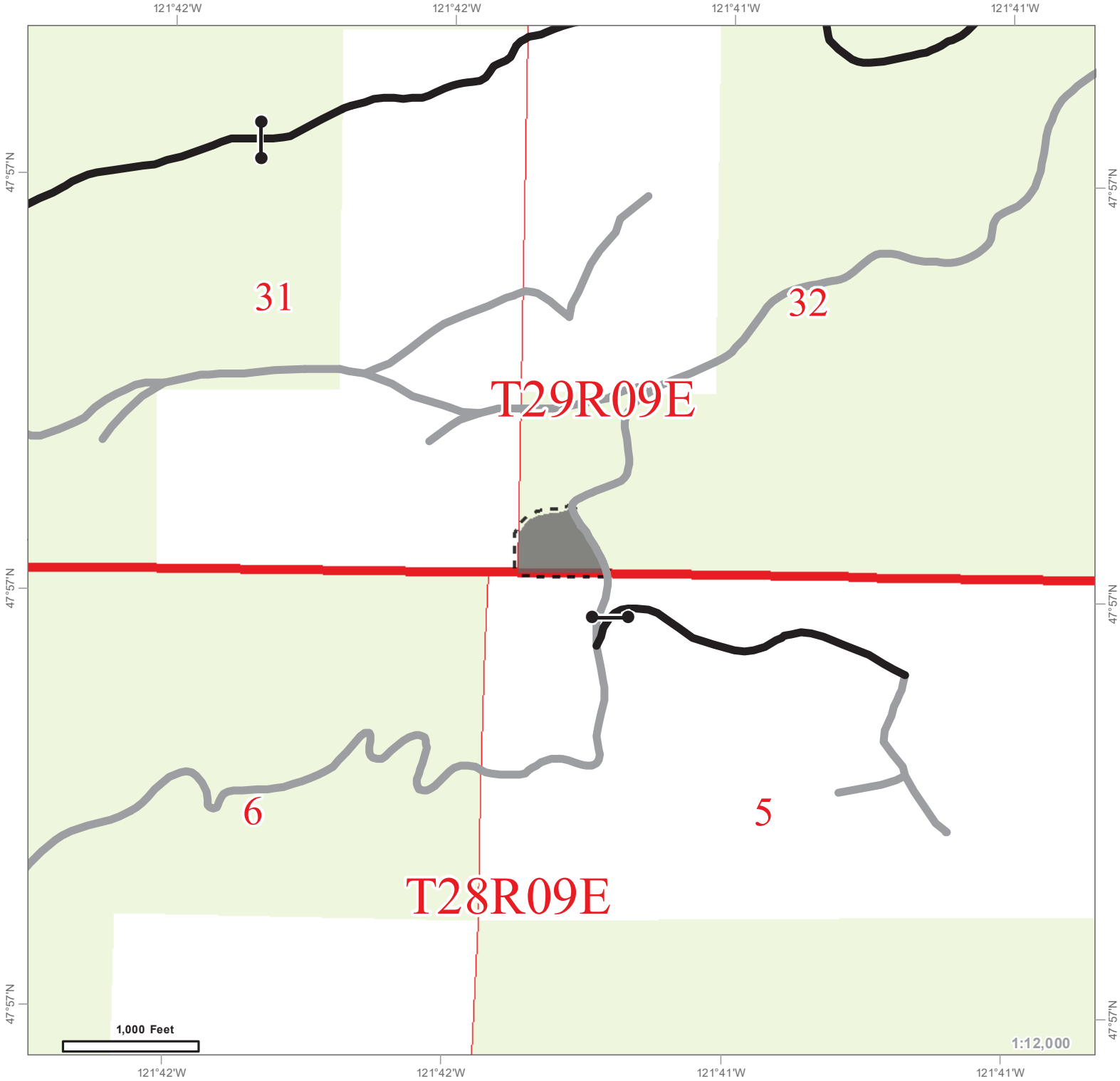
Prepared By: TKLE490
Creation Date: 1/24/2023


WEST OLNEY


Timber Sale Review Map


REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER


SALE ID: 101013
SALE AREA: 5
SALE STATUS: PLANNED





**Forest Management Activity**


**DNR Managed Timber Lands**

**Public Land Survey Townships**

**Public Land Survey Sections**

**DNR Active Roads**

**Non-DNR Roads**

**Gates**

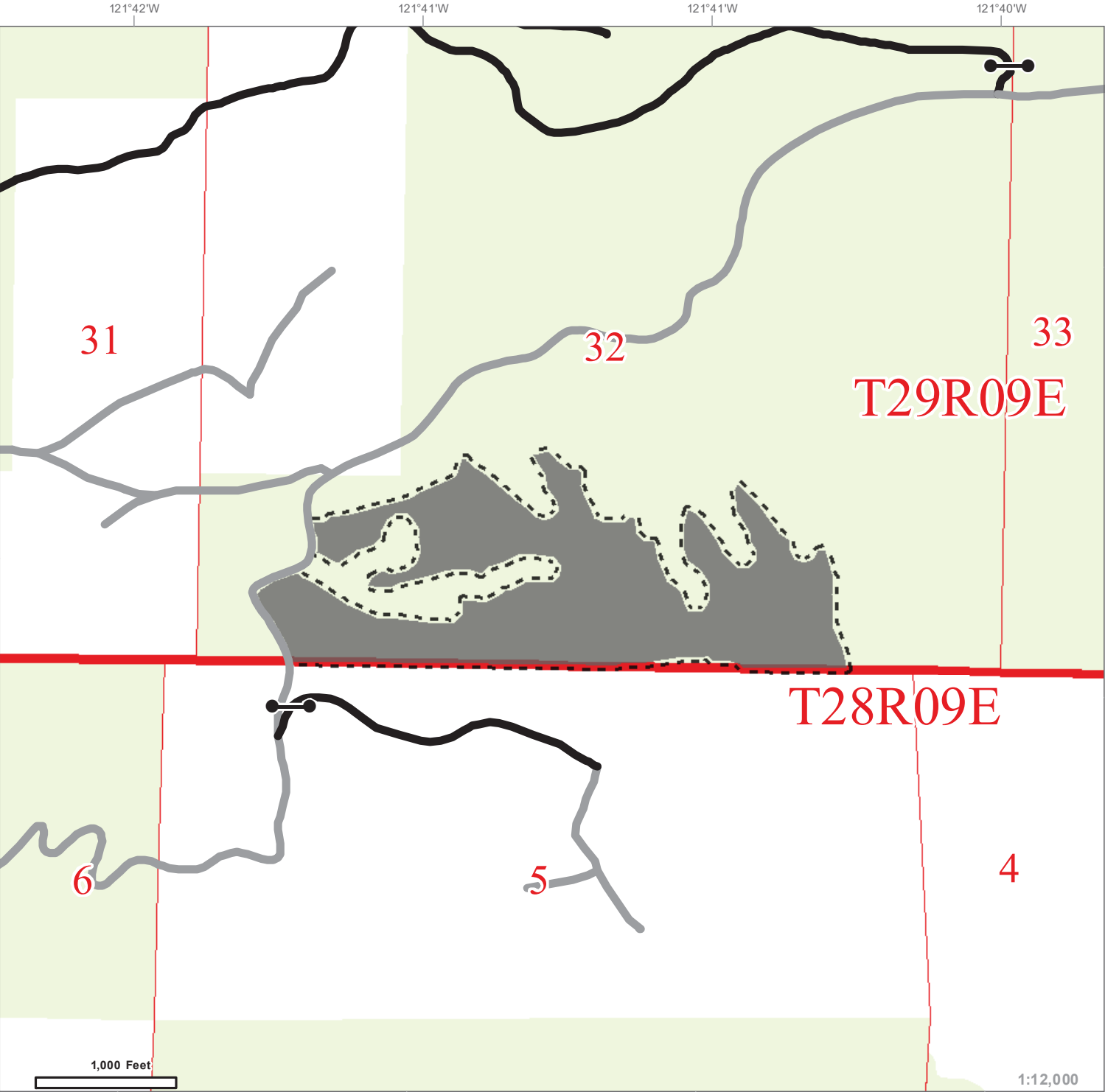
Activity ID	Activity Name	Area (ac)
323644	WEST OLNEY U1A	4.9759415

WEST OLNEY

Timber Sale Review Map

REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER

SALE ID: 101013
SALE AREA: 77.4
SALE STATUS: PLANNED



Forest Management Activity

DNR Managed Timber Lands

Public Land Survey Townships

Public Land Survey Sections

DNR Active Roads

Non-DNR Roads

Gates

Prepared By: TKLE490
Creation Date: 1/24/2023

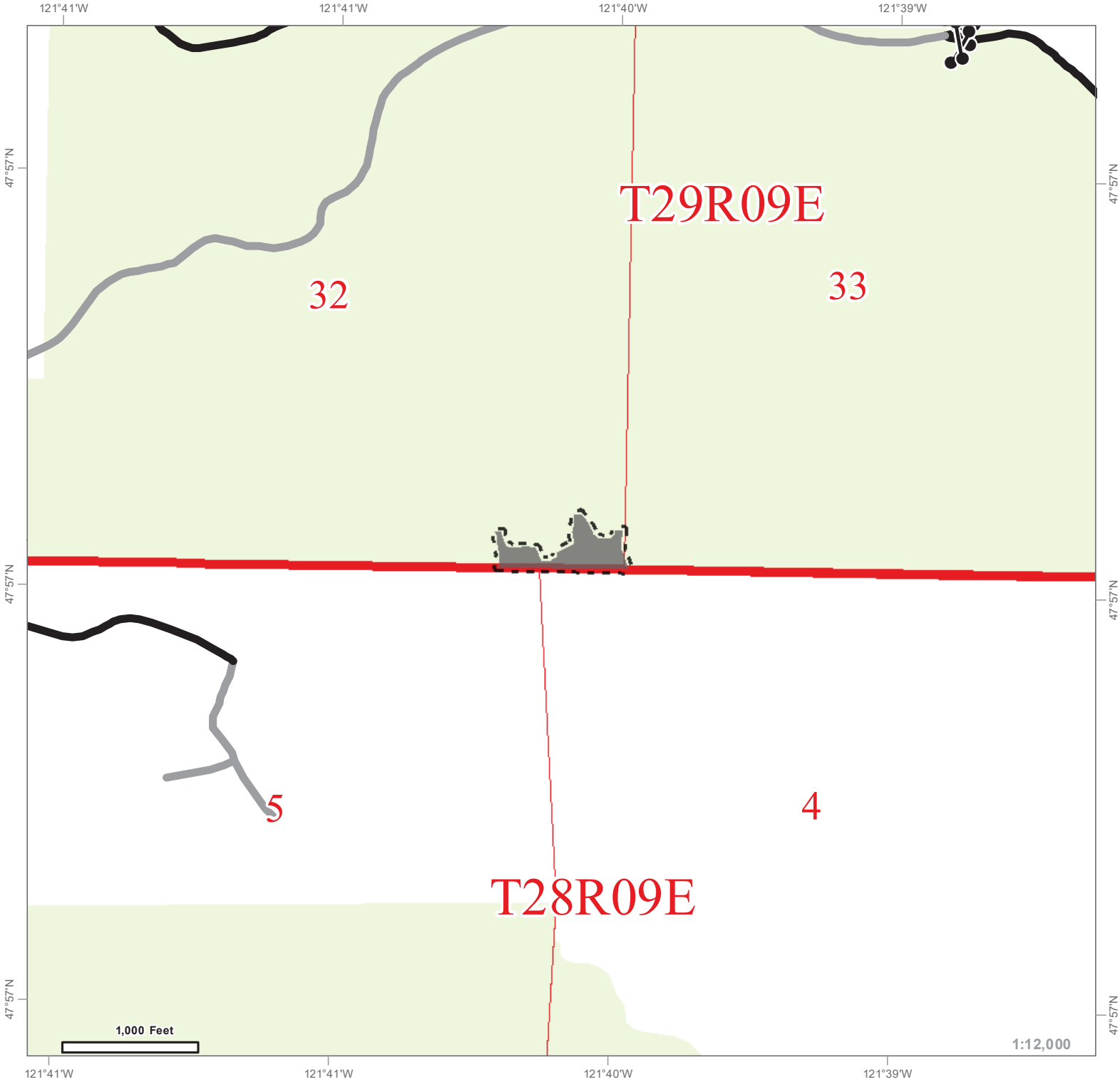
Activity ID	Activity Name	Area (ac)
332427	WEST OLNEY U1B	77.44262516


WEST OLNEY

Timber Sale Review Map


REGION: NORTHWEST
DISTRICT: CASCADE
ADMIN: BOULDER

SALE ID: 101013
SALE AREA: 4.1
SALE STATUS: PLANNED







Forest Management Activity




DNR Managed Timber Lands




Public Land Survey Townships




Public Land Survey Sections




DNR Active Roads



Non-DNR Roads



Gates



N

Activity ID	Activity Name	Area (ac)
332428	WEST OLNEY U1C	4.1366287

WEST OLNEY

Timber Sale Review Map

REGION: NORTHWEST

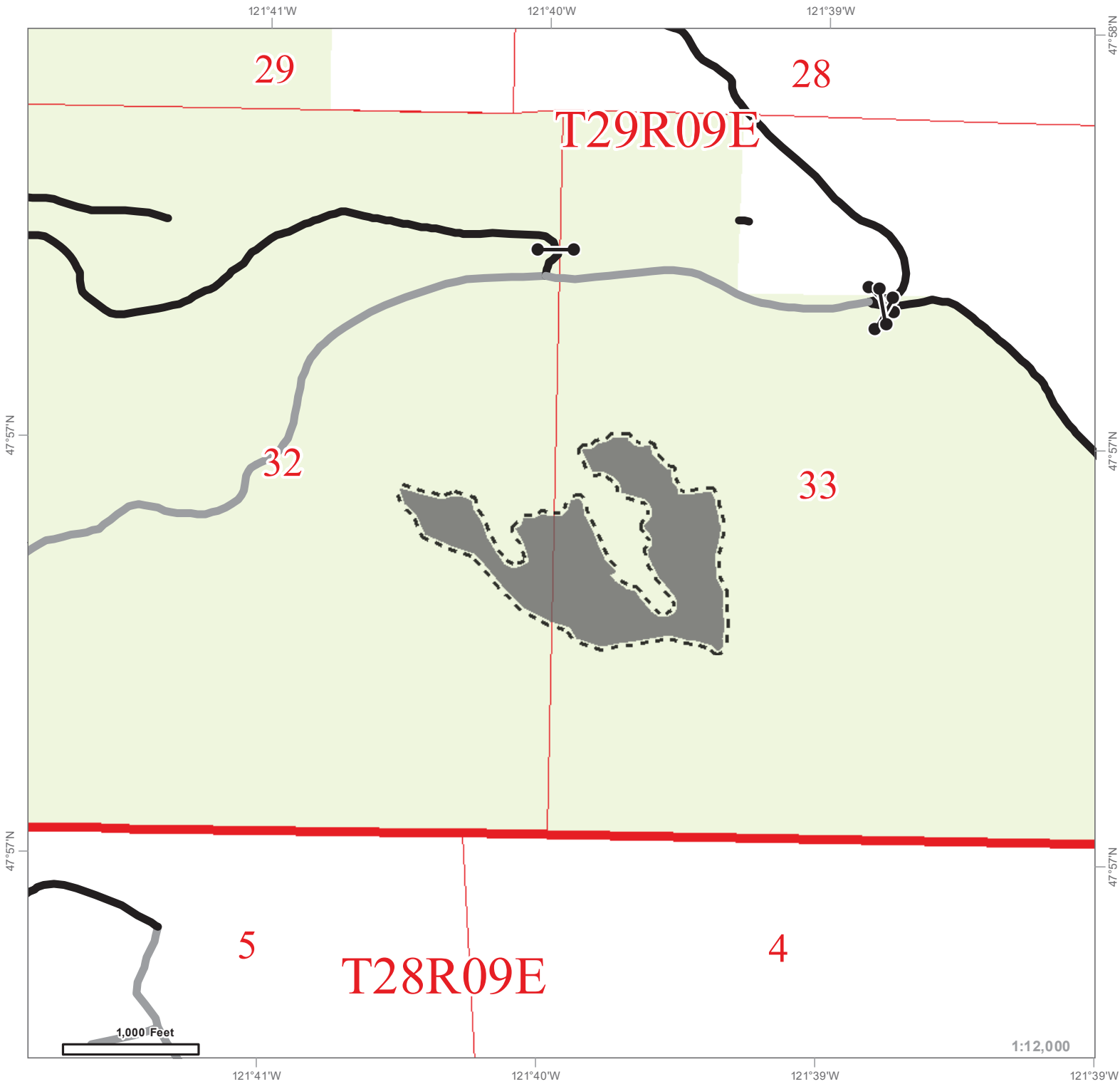
DISTRICT: CASCADE








ADMIN: BOULDER

SALE ID: 101013

SALE AREA: 34.8

SALE STATUS: PLANNED



	Forest Management Activity		DNR Active Roads
	DNR Managed Timber Lands		Non-DNR Roads
	Public Land Survey Townships		Gates
	Public Land Survey Sections		

Activity ID	Activity Name	Area (ac)
332429	WEST OLNEY U2	34.83855716

**State of Washington
Department of Natural Resources
Timber Bill of Sale Extension Charges**

Extension Per Acre Charge Worksheet

Agreement No.:

Sale Name:

Region: ▼

Sale Method: ▼

Harvest Type: ▼

Geographic Area: ▼

Site Class (westside only): ▼

1. Growth Loss
 2. Additional Growth
 3. Loss thru Disrupt.
- Per Acre Charge**

Westside PC/Thin		Westside Evenage		Eastside PC/Thin		Eastside Evenage	
scale	lump	scale	lump	scale	lump	scale	lump
			15.00				
			920.45				
			46.02				
\$0.00	\$0.00	\$0.00	\$981.47	\$0.00	\$0.00	\$0.00	\$0.00

Total Per Acre Charge: **\$981.00**

This figure to be Input into the G-050 or G051 clause.

PRE-CRUISE NARRATIVE

Sale Name: West Olney VRH	Region: Northwest
Agreement #: 30-102969	District: Cascade
Contact Forester: John Moon Phone / Location: (360) 770-4436	County(s): Snohomish
Alternate Contact: Click here to enter text. Phone / Location: Click here to enter text.	Other information: Click here to enter text.

Type of Sale: Lump Sum	See Logging Plan Map
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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 Determinatio n (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1A VRH	32/T29/R09E	3	5.0	-	0.2	-	-	4.8	GPS (Garmin)
1B VRH	32/T29/R09E	3	77.7	-	1.9	0.7	-	75.1	GPS (Garmin)
1C VRH	32/T29/R09E33 /T29/R09E	3	4.2	-	-	0.2	-	4.0	GPS (Garmin)
2A VRH	32/T29/R09E 33/T29/R09E	3	34.8	-	0.9	0.7	-	33.2	GPS (Garmin)
ROW 1	32/T29/R09E	3	0.4	-	-	0.1	-	0.3	GPS (Garmin)
ROW 2	33/T29/R09E	3	8.0	-	-	1.3	-	6.7	GPS (Garmin)
ROW 3	33/T29/R09E	3	1.0	-	-	0.4	-	0.6	GPS (Garmin)
ROW 4	33/T29/R09E	3	1.5	-	-	0.6	-	0.9	GPS (Garmin)
ROW 5	33/T29/R09E	3	0.1	-	-	-	-	0.1	GPS (Garmin)
ROW 6	32/T29/R09E 33/T29/R09E	3	5.3	-	-	0.9	-	4.4	GPS (Garmin)
ROW 7	32/T29/R09E	3	0.6	-	-	0.2	-	0.4	GPS (Garmin)
TOTAL ACRES			138.6	-	3.0	5.1	-	130.5	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription:	Special Management areas:	Other conditions (# leave trees, etc.)
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	(Leave, take, paint color, tags, flagging etc.)		
1A	Unit 1A is a Variable Retention Harvest (VRH). Take all trees bounded by white "Timber Sale Boundary" tags to the north, the adjacent Sultan Basin Road to the east, and last take trees marked with two red bands and a yellow "T" to the west and south. All trees marked with blue paint and/or within areas bounded by yellow "Leave Tree Area" tags are designated as leave trees.	N/A	Leave Tree Clump:40 Leave Tree Scattered:6 Total - 46
1B	Unit 1B is a Variable Retention Harvest (VRH). Take all trees bounded by white "Timber Sale Boundary" tags to the north and east, the adjacent Sultan Basin Road to the west, and last take trees marked with two red bands and a yellow "T" to the south. All trees marked with blue paint and/or within areas bounded by yellow "Leave Tree Area" tags are designated as leave trees.	N/A	Leave Tree Clump:584 Leave Tree Scattered:55 Total - 639
1C	Unit 1C is a Variable Retention Harvest (VRH). Take all trees bounded by white "Timber Sale Boundary" tags to the north, west and east, and last take trees marked with two red bands and a yellow "T" to the south. All trees marked with blue paint are designated as leave trees.	N/A	Leave Tree Scattered:11 Total - 11
2A	Unit 2 is a Variable Retention Harvest (VRH). Take all trees bounded by white "Timber Sale Boundary" tags to the south, west and east, and the adjacent KM-03 to the north. All trees marked with blue paint and/or within areas bounded by yellow "Leave Tree Area" tags are designated as leave trees.	N/A	Leave Tree Clump:246 Leave Tree Scattered:32 Total - 278
ROW1 ROW2 ROW3 ROW4 ROW5 ROW6	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 30-foot average ROW width from centerline	N/A	
ROW7	Right of Way (ROW): Take all trees bounded by orange "Right of way tags". 40-foot average ROW width from centerline	N/A	

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1A	WH, DF / 135	Access 11 miles up Sultan Basin Road. No key needed.	See attached pre-cruise and vicinity map.
1B	WH, DF / 2,000	Access 11 miles up Sultan Basin Road. No key needed.	Same as above.
1C	WH, SF / 110	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
2	WH, SF / 900	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
ROW1	WH, DF / 10	Access 11 miles up Sultan Basin Road. No key needed.	Same as above.
ROW2	WH, DF / 175	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
ROW3	WH, DF / 15	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
ROW4	WH, DF / 20	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
ROW5	WH, SF / 5	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
ROW6	WH, SF / 120	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
ROW7	WH, SF / 10	Access 13 miles up Sultan Basin Road at Olney Pass. No key needed.	Same as above.
TOTAL MBF	3500 MBF		

REMARKS:

- There are two distinct timber types within the sale area that differentiate around an elevation of 2,200 feet. The lower elevation timber is around 80 years old with a diverse mix of western hemlock, Douglas-fir, western red cedar, and pacific silver fir. Many of the silver firs in this elevation range are actually 20 years older, likely being advanced regen during the previous harvest. The upper elevation timber is noticeably shorter, around 60 years old, and composed of mostly western hemlock and silver fir. The lower elevation incorporates Units 1A, 2B, most of 1B, and the lower reaches of 2A. The upper elevation incorporates Units 1C, most of 2A, and the upper reaches of 1B.
- Unit 1B has been the site of cedar bark harvesting events for the last two years. A majority of the western red cedars along the CSB-118 have been stripped of their outer bark but the heartwood remains in good condition.
- The southern boundary of Unit 1A and 1B is shared with the Lervick Family. The southern boundary of Unit 1C is shared with the Morningstar NRCA. The west boundary of Unit 1A is shared with the Forest Service.
- The south-central boundary of Unit 1B has extraordinarily steep slopes, proceed with caution in this area.
- GPS points are marked with lime green flagging.

Driving Directions

Unit 1

Follow US Route 2 east from Sultan for 1 mile to reach the intersection with the Sultan Basin Road. Turn left at the traffic light onto the Sultan Basin Road and follow north for 11.6 miles and arrive at the beginning of road construction for Unit 1 of the West Olney Timber Sale.

Unit 2

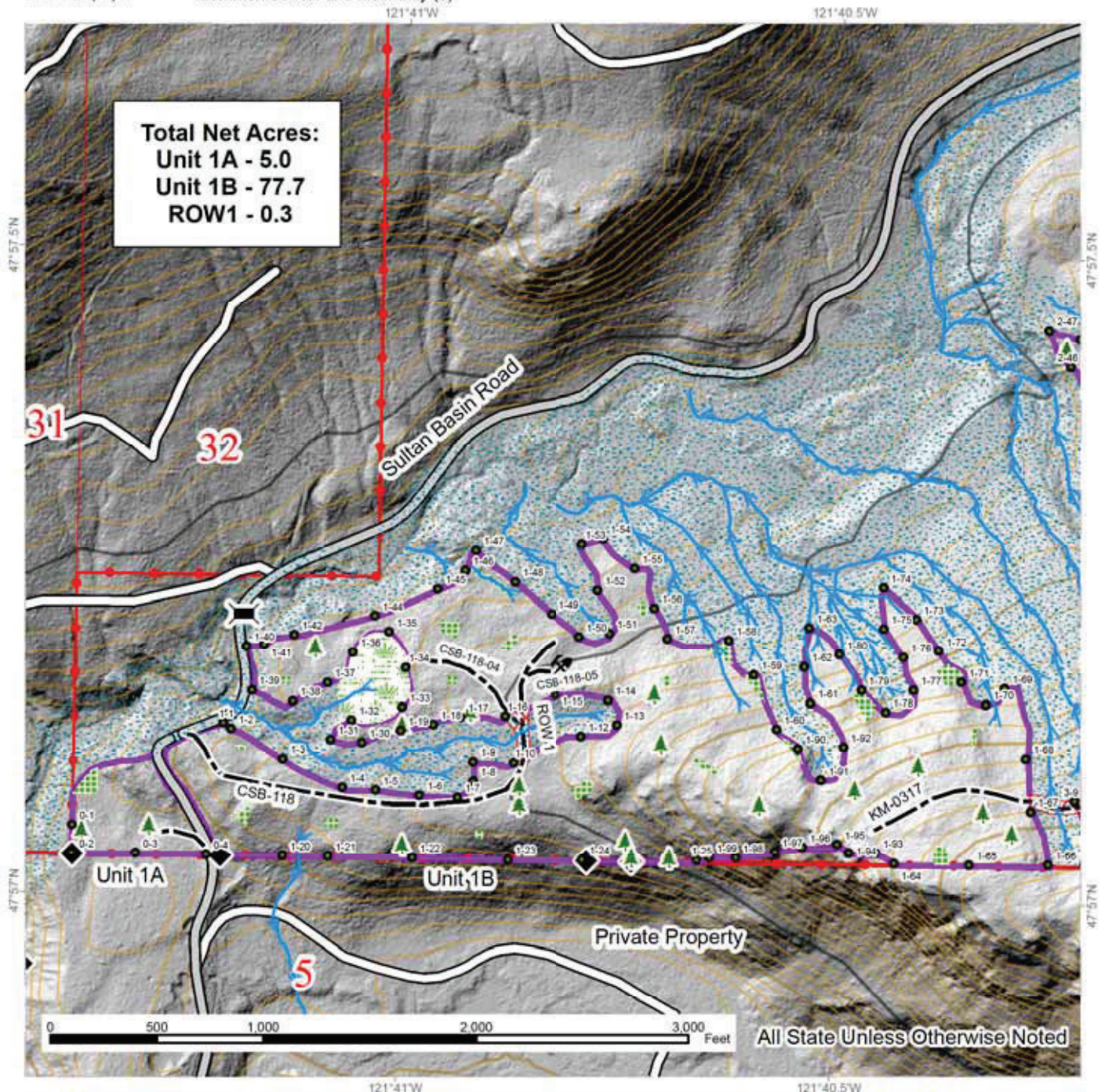
Continue up the Sultan Basin Road for 2 miles to reach Olney Pass. At Olney Pass, take a far right along the three pronged intersection to arrive at the KM-ML and the beginning of road construction for Unit 2 of the West Olney Timber Sale.

Prepared By: Chris Scelsa Date: 8/23/2022	Title: Pre Sales Forester	CC:
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TRAVERSE MAP

SALE NAME: WEST OLNEY
 AGREEMENT #: 30-102969
 TOWNSHIP(S): T29R9E
 TRUST(S): Common School and Indemnity (3)

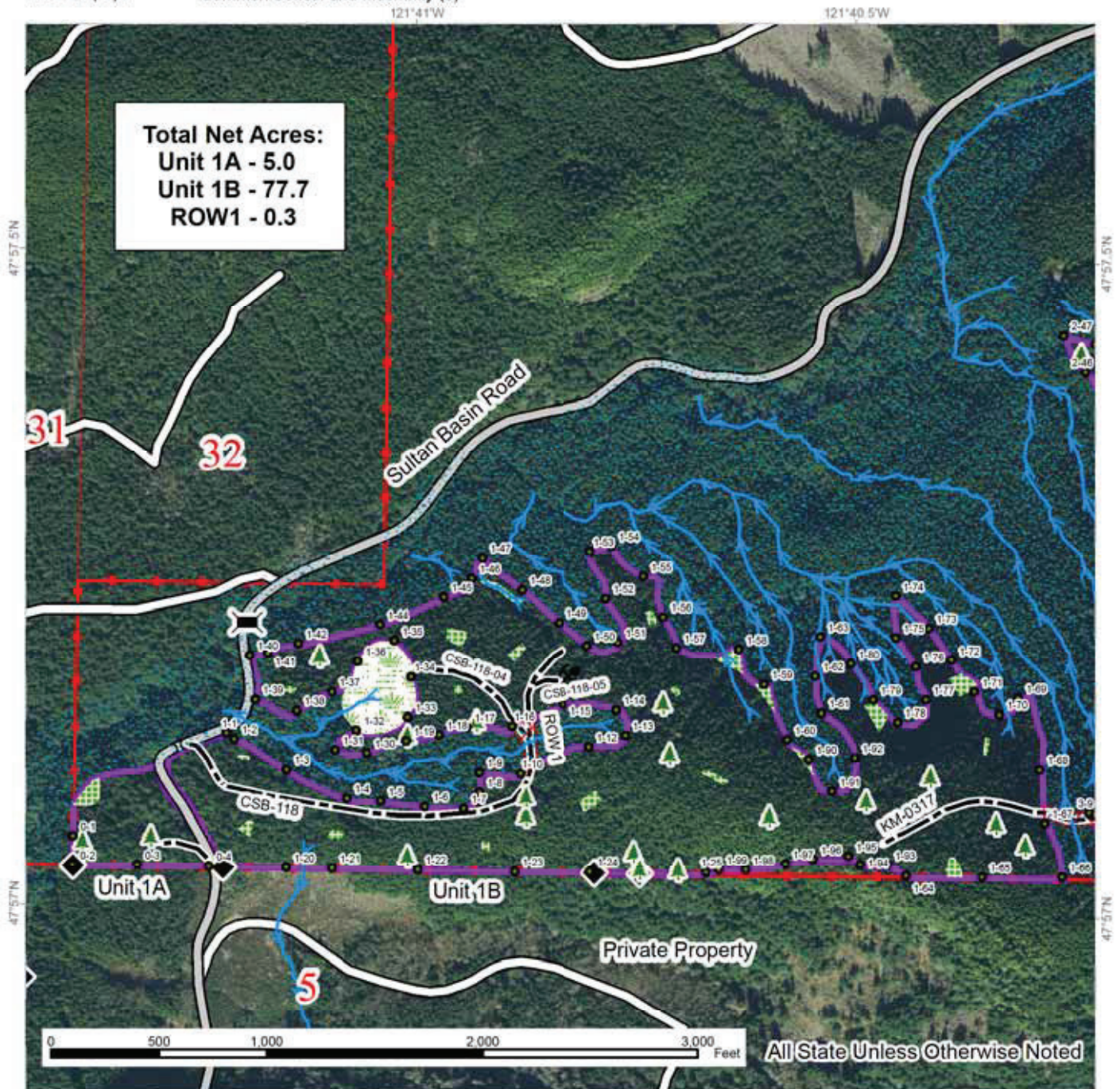
REGION: Northwest Region
 COUNTY(S): Snohomish
 ELEVATION RGE: 1760-2440



TRAVERSE MAP

SALE NAME: WEST OLNEY
 AGREEMENT #: 30-102969
 TOWNSHIP(S): T29R9E
 TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
 COUNTY(S): Snohomish
 ELEVATION RGE: 1760-2440

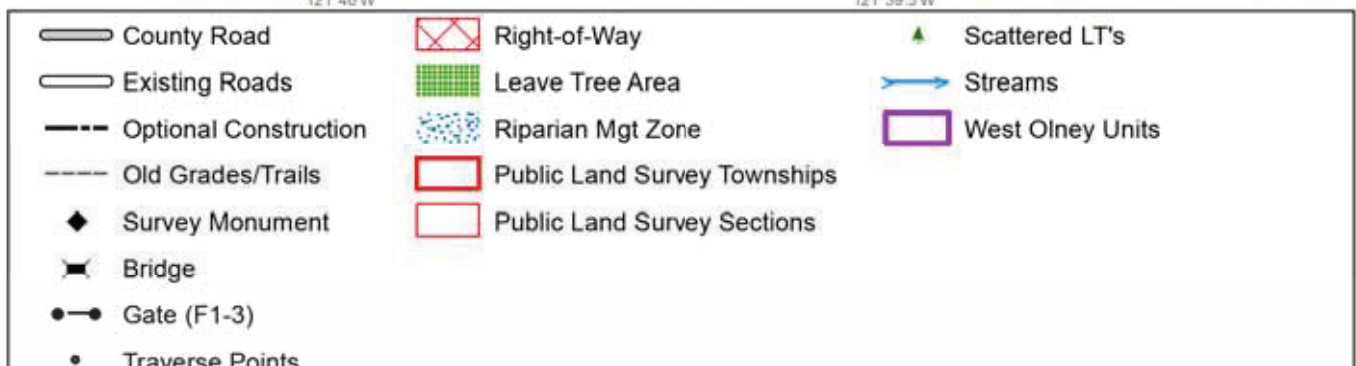
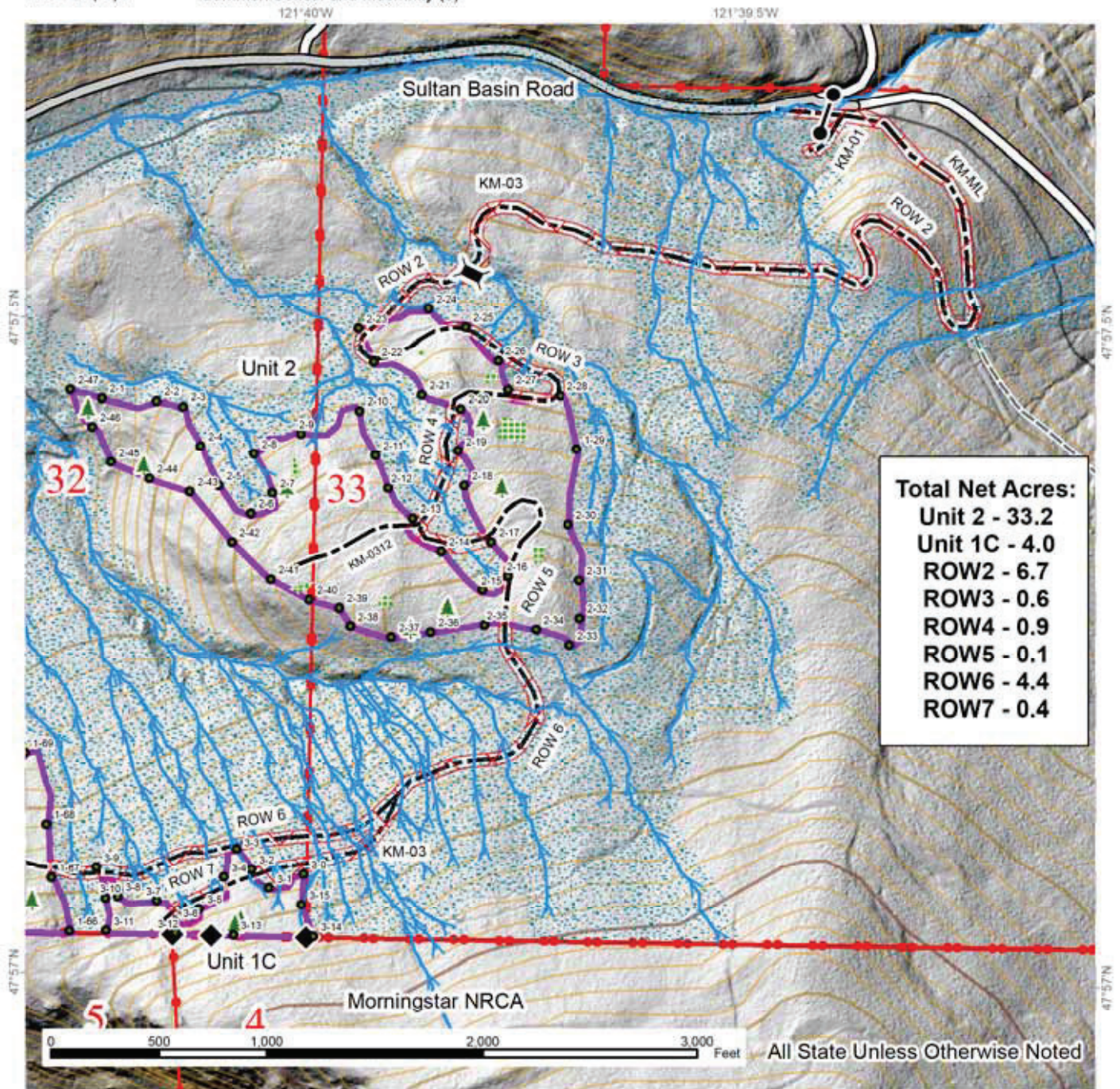


County Road	Right-of-Way	Scattered LT's
Existing Roads	Leave Tree Area	Streams
Optional Construction	Riparian Mgt Zone	West Olney Units
Survey Monument	Wetland Mgt Zone	
Bridge	Forested Wetland	
Rock Pit	Public Land Survey Townships	
Traverse Points	Public Land Survey Sections	

TRAVERSE MAP

SALE NAME: WEST OLINEY
AGREEMENT #: 30-102969
TOWNSHIP(S): T29R9E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 1760-2440



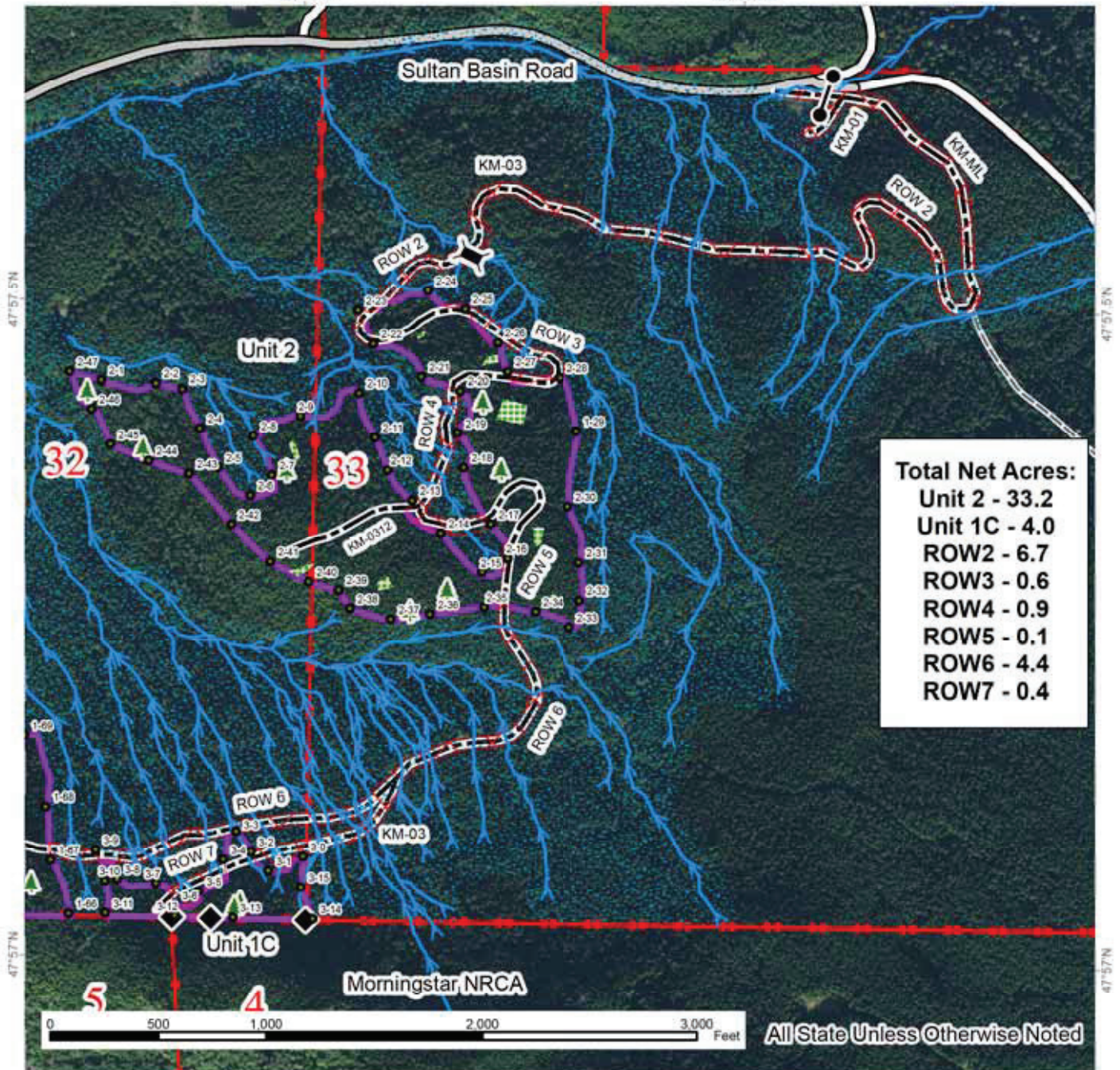
TRAVERSE MAP

SALE NAME: WEST OLINEY
 AGREEMENT #: 30-102969
 TOWNSHIP(S): T29R9E
 TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
 COUNTY(S): Snohomish
 ELEVATION RGE: 1760-2440

121°40'W

121°39.5'W



Total Net Acres:
 Unit 2 - 33.2
 Unit 1C - 4.0
 ROW2 - 6.7
 ROW3 - 0.6
 ROW4 - 0.9
 ROW5 - 0.1
 ROW6 - 4.4
 ROW7 - 0.4

- | | | |
|-----------------------|------------------------------|------------------|
| County Road | Right-of-Way | Scattered LT's |
| Existing Roads | Leave Tree Area | Streams |
| Optional Construction | Riparian Mgt Zone | West Olney Units |
| Old Grades/Trails | Public Land Survey Townships | |
| Survey Monument | Public Land Survey Sections | |
| Bridge | | |
| Gate (F1-3) | | |
| Traverse Points | | |

Timber Sale Cruise Report West Olney - NW

Sale Name: WEST OLNEY

Sale Type: LUMP SUM

Region: NORTHWEST

District: CASCADE

Lead Cruiser: Matt Llobet

Location:

West Olney is a four unit timber sale located North of Sultan off the Sultan Basin road. The sale ranges from 1,760 feet to 2,440 feet in elevation. Units 1A and 1B have good road access, while units 1C and 2 require a hike-in.

Cruise Design:

All VHR units and ROW were cruised using a 54.4/40 BAF and a 1:1 sample ratio was applied. 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 1 showed a uniform timber type with an open understory. The species composition consists of Douglas fir, Western Hemlock, Western Red Cedar, Pacific Silver fir, and hardwoods. Terrain throughout unit 1 was generally mild with scattered rocky outcroppings. Western Red Cedar and Douglas fir poles were cruised throughout unit 1 - primarily throughout the ground base harvest portion.

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, Western Red Cedar, and hardwoods. All live timber showed excellent form with minor defect.

Right of Way:

The right of way volume associated with West Olney is a combination of fully timbered new construction and partially timbered old road grade.

Logging and Stand Conditions:

Approximately 40% of the sale is uphill cable harvest and the other 60% percent is ground base harvest. All four units consist of an open understory with mild/steep terrain. At this elevation, this sale is susceptible to heavy snow accumulation in the winter months.

Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	15.3			3,736	1,391	1,952	342	51
DF	18.5	8.0		785	411	310	45	20
SF	15.6			557	225	265	68	
RC	15.3			338		273	65	
RA	13.1			19	4	4	10	2
ALL	15.6			5,436	2,030	2,803	530	73

Timber Sale Notice Weight (tons)

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
WH	32,405	10,996	17,739	3,222	449
DF	5,733	2,763	2,392	411	168
SF	4,364	1,626	2,127	610	
RC	2,980		2,442	537	
RA	168	29	32	89	19
ALL	45,649	15,413	24,732	4,869	635

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 (%)
315.8	3.3	133.5	1.7	42,265	3.7

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
WEST OLNEY U1A	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	5.0	5.0	5	5	0
WEST OLNEY U1B	B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	76.8	77.4	53	27	1
WEST OLNEY U1C	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	4.0	4.1	4	4	0
WEST OLNEY U2	B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting	34.1	34.8	25	13	1

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
	Ht = 4.5 ft					
WEST OLNEY ROW 1	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.3	0.4	1	1	0
WEST OLNEY ROW 2	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	6.7	8.1	7	7	0
WEST OLNEY ROW 3	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.6	1.0	1	1	0
WEST OLNEY ROW 4	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.9	1.5	3	3	0
WEST OLNEY ROW 5	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.1	0.1	1	1	0
WEST OLNEY ROW 6	B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	4.4	5.3	8	8	0
WEST OLNEY ROW 7	B2: VR, 2 BAF (54.44, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.4	0.6	1	1	0
All		133.3	138.3	109	71	2

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	14.2	34	2,650	2,580	2.6	2,345.0	344.0
DF	LIVE	2 SAW	HQ-B	14.6	40	502	502	0.0	417.4	66.9
DF	LIVE	3 SAW	Domestic	9.0	37	2,325	2,321	0.2	2,391.7	309.4
DF	LIVE	4 SAW	Domestic	6.2	24	336	336	0.0	410.8	44.7
DF	LIVE	CULL	Cull	11.1	13	66	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	8.4	37	152	152	0.0	167.8	20.2
RA	LIVE	2 SAW	Domestic	12.3	30	31	31	0.0	28.8	4.1
RA	LIVE	3 SAW	Domestic	10.4	21	28	27	2.4	31.7	3.7
RA	LIVE	4 SAW	Domestic	7.8	27	72	72	0.8	88.5	9.6
RA	LIVE	UTILITY	Pulp	7.5	29	15	15	0.0	18.6	2.0
RC	LIVE	3 SAW	Domestic	9.2	36	2,087	2,047	1.9	2,442.3	272.9
RC	LIVE	4 SAW	Domestic	5.5	24	497	491	1.3	537.3	65.4
RC	LIVE	CULL	Cull	14.5	9	220	0	100.0	0.0	0.0
SF	LIVE	2 SAW	Domestic	14.1	39	1,754	1,683	4.0	1,625.9	224.4
SF	LIVE	3 SAW	Domestic	9.2	37	2,024	1,985	1.9	2,127.1	264.6

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
SF	LIVE	4 SAW	Domestic	5.8	27	512	512	0.0	610.4	68.2
SF	LIVE	CULL	Cull	18.2	7	124	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	13.9	39	10,457	10,433	0.2	10,995.8	1,390.8
WH	LIVE	3 SAW	Domestic	8.8	36	14,704	14,647	0.4	17,739.3	1,952.4
WH	LIVE	4 SAW	Domestic	5.7	27	2,563	2,563	0.0	3,221.9	341.7
WH	LIVE	CULL	Cull	11.7	13	582	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.1	26	381	381	0.0	448.5	50.8

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Cull	6.0	15	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Domestic	6.5	30	769	0.0	864.2	102.5
DF	5 - 7	LIVE	Pulp	7.1	32	84	0.0	99.3	11.2
DF	8 - 11	LIVE	Pulp	9.1	40	67	0.0	68.5	9.0
DF	8 - 11	LIVE	Domestic	10.2	37	1,887	0.2	1,938.3	251.6
DF	12 - 15	LIVE	Domestic	13.3	35	1,640	2.0	1,543.9	218.6
DF	12 - 15	LIVE	HQ-B	14.4	38	352	0.0	297.3	46.9
DF	16 - 19	LIVE	HQ-B	16.9	40	132	0.0	106.1	17.5
DF	16 - 19	LIVE	Domestic	17.7	37	870	3.6	746.7	116.0
DF	16 - 19	LIVE	Cull	19.1	10	0	100.0	0.0	0.0
DF	20+	LIVE	Domestic	20.1	40	70	5.0	54.3	9.4
DF	20+	LIVE	HQ-B	20.2	34	19	0.0	14.1	2.5
RA	5 - 7	LIVE	Domestic	6.9	27	32	0.5	37.3	4.2
RA	5 - 7	LIVE	Pulp	7.5	29	15	0.0	18.6	2.0
RA	8+	LIVE	Domestic	9.6	26	99	1.1	111.6	13.1
RC	5+	LIVE	Domestic	7.4	31	2,538	1.8	2,979.5	338.3
RC	5+	LIVE	Cull	14.0	9	0	100.0	0.0	0.0
SF	5 - 7	LIVE	Domestic	6.1	28	820	0.0	967.5	109.4
SF	8 - 11	LIVE	Domestic	10.0	36	1,676	2.3	1,770.0	223.4
SF	12 - 15	LIVE	Domestic	13.0	39	966	4.7	1,013.9	128.8
SF	12 - 15	LIVE	Cull	14.3	6	0	100.0	0.0	0.0
SF	16 - 19	LIVE	Domestic	16.3	40	645	2.4	555.8	85.9
SF	16 - 19	LIVE	Cull	18.3	8	0	100.0	0.0	0.0
SF	20+	LIVE	Cull	21.8	5	0	100.0	0.0	0.0
SF	20+	LIVE	Domestic	22.0	40	72	9.0	56.2	9.6
WH	5 - 7	LIVE	Pulp	5.2	30	381	0.0	448.5	50.8
WH	5 - 7	LIVE	Cull	5.8	29	0	100.0	0.0	0.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	5 - 7	LIVE	Domestic	6.1	30	5,376	0.3	6,968.5	716.7
WH	8 - 11	LIVE	Cull	8.2	5	0	100.0	0.0	0.0
WH	8 - 11	LIVE	Domestic	9.6	36	11,834	0.3	13,992.7	1,577.4
WH	12 - 15	LIVE	Domestic	13.5	39	8,431	0.2	9,121.7	1,123.8
WH	12 - 15	LIVE	Cull	14.4	18	0	100.0	0.0	0.0
WH	16 - 19	LIVE	Cull	16.9	16	0	100.0	0.0	0.0
WH	16 - 19	LIVE	Domestic	17.0	40	1,934	0.2	1,821.6	257.8
WH	20+	LIVE	Domestic	22.5	40	68	0.0	52.4	9.1
WH	20+	LIVE	Cull	24.1	5	0	100.0	0.0	0.0

Cruise Unit Report WEST OLNEY U1A

Unit Sale Notice Volume (MBF): WEST OLNEY U1A

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	18.3			122	70	48	5	
WH	14.3			71	33	29		9
SF	20.5			26	15	11		
RC	12.4			3		3		
ALL	16.4			222	118	90	5	9

Unit Cruise Design: WEST OLNEY U1A

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	5.0	5.0	5	5	0

Unit Cruise Summary: WEST OLNEY U1A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	11	11	2.2	0
WH	8	9	1.8	0
SF	2	2	0.4	0
RC	1	1	0.2	0
ALL	22	23	4.6	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY U1A

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	137.5	122.0	54.5	178.0	23.5	7.1	24,469	124.2	55.0
WH	112.5	82.4	36.9	142.1	30.3	10.7	15,986	87.8	38.4
SF	25.0	136.9	61.2	206.6	32.2	22.7	5,165	140.7	65.3
RC	8.0	223.6	100.0	68.0	0.0	0.0	544	223.6	100.0
ALL	283.0	36.6	16.4	163.1	31.0	6.6	46,165	48.0	17.7

Unit Summary: WEST OLNEY U1A

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	9	ALL	17.8	91	116	20,122	20,020	0.5	65.1	112.5	26.7	100.1
DF	LIVE	POLE	2	ALL	21.3	98	125	4,472	4,449	0.5	10.1	25.0	5.4	22.2
RC	LIVE	CUT	1	ALL	12.4	44	63	544	544	0.0	9.5	8.0	2.3	2.7
SF	LIVE	CUT	2	ALL	20.5	92	117	5,355	5,165	3.5	10.9	25.0	5.5	25.8
WH	LIVE	CUT	8	ALL	14.3	69	90	15,236	14,210	6.7	89.7	100.0	26.4	71.1
WH	LIVE	LEA	0	ALL	17.2			1,904	1,776	6.7	7.7	12.5	3.0	8.9
ALL	LIVE	CUT	20	ALL	16.0	77	100	41,257	39,939	3.2	175.2	245.5	60.9	199.7
ALL	LIVE	POLE	2	ALL	21.3	98	125	4,472	4,449	0.5	10.1	25.0	5.4	22.2
ALL	LIVE	LEA	0	ALL	17.2			1,904	1,776	6.7	7.7	12.5	3.0	8.9
ALL	ALL	ALL	22	ALL	16.4	78	101	47,633	46,165	3.1	193.0	283.0	69.3	230.8

Cruise Unit Report WEST OLNEY U1B

Unit Sale Notice Volume (MBF): WEST OLNEY U1B

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	15.8			2,322	924	1,191	198	9
DF	17.4			424	176	212	28	9
SF	14.5			288	132	123	33	
RC	15.2			286		235	51	
ALL	15.8			3,320	1,231	1,760	310	18

Unit Cruise Design: WEST OLNEY U1B

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	76.8	77.4	53	27	1

Unit Cruise Summary: WEST OLNEY U1B

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	92	186	3.5	0
DF	19	32	0.6	0
SF	10	26	0.5	0
RC	29	64	1.2	0
ALL	150	308	5.8	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY U1B

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	219.3	53.2	7.3	140.8	21.4	2.2	30,892	57.4	7.6
DF	37.7	206.3	28.3	151.0	28.3	6.5	5,698	208.2	29.1
SF	30.7	158.0	21.7	144.5	31.9	10.1	4,430	161.2	23.9
RC	48.3	121.9	16.7	80.9	24.7	4.6	3,910	124.4	17.4
ALL	336.0	29.6	4.1	133.7	29.8	2.4	44,929	42.0	4.7

Unit Summary: WEST OLNEY U1B

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	15	ALL	17.2	82	104	4,372	4,273	2.3	17.5	28.3	6.8	328.2
DF	LIVE	POLE	4	ALL	18.0	79	100	1,275	1,246	2.3	4.7	8.3	1.9	95.7
DF	LIVE	LEA	0	ALL	19.0			182	178	2.3	0.6	1.2	0.3	13.7
RC	LIVE	CUT	15	ALL	13.1	54	68	2,214	2,016	8.9	26.6	24.9	6.9	154.8
RC	LIVE	POLE	14	ALL	19.2	69	88	1,878	1,711	8.9	10.5	21.1	4.8	131.4
RC	LIVE	LEA	0	ALL	26.7			201	183	8.9	0.6	2.3	0.4	14.1
SF	LIVE	CUT	10	ALL	14.5	68	85	3,845	3,748	2.5	22.6	25.9	6.8	287.9
SF	LIVE	LEA	0	ALL	18.4			699	682	2.5	2.6	4.7	1.1	52.3
WH	LIVE	CUT	92	ALL	15.8	74	93	31,255	30,228	3.3	157.6	214.6	54.0	2,321.5
WH	LIVE	LEA	0	ALL	19.3			687	664	3.3	2.3	4.7	1.1	51.0
ALL	LIVE	CUT	132	ALL	15.5	72	90	41,685	40,265	3.4	224.3	293.8	74.5	3,092.4
ALL	LIVE	LEA	0	ALL	19.8			1,769	1,707	3.5	6.1	12.9	2.9	131.1
ALL	LIVE	POLE	18	ALL	18.8	72	92	3,153	2,957	6.2	15.2	29.4	6.8	227.1
ALL	ALL	ALL	150	ALL	15.8	72	90	46,608	44,929	3.6	245.6	336.0	84.2	3,450.6

Cruise Unit Report WEST OLNEY U1C

Unit Sale Notice Volume (MBF): WEST OLNEY U1C

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	13.2			71	15	43	9	5
SF	17.6			36	18	14	4	
RC	20.0			3		3	1	
ALL	14.5			110	33	59	14	5

Unit Cruise Design: WEST OLNEY U1C

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	4.0	4.1	4	4	0

Unit Cruise Summary: WEST OLNEY U1C

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	9	9	2.3	0
SF	5	5	1.3	0
RC	1	1	0.3	0
ALL	15	15	3.8	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY U1C

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	140.6	116.9	58.4	126.2	24.3	8.1	17,746	119.4	59.0
SF	78.1	151.4	75.7	115.4	16.8	7.5	9,018	152.4	76.1
RC	10.0	200.0	100.0	77.9	0.0	0.0	779	200.0	100.0
ALL	228.8	39.0	19.5	120.4	23.5	6.1	27,544	45.5	20.4

Unit Summary: WEST OLNEY U1C

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RC	LIVE	CUT	1	ALL	20.0	62	78	862	779	9.6	4.6	10.0	2.2	3.1
SF	LIVE	CUT	5	ALL	17.6	71	89	9,994	9,018	9.8	46.2	78.1	18.6	36.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	9	ALL	13.2	66	82	18,039	17,746	1.6	148.0	140.6	38.7	71.0
ALL	LIVE	CUT	15	ALL	14.5	67	83	28,894	27,544	4.7	198.8	228.8	59.6	110.2
ALL	ALL	ALL	15	ALL	14.5	67	83	28,894	27,544	4.7	198.8	228.8	59.6	110.2

Cruise Unit Report WEST OLNEY U2

Unit Sale Notice Volume (MBF): WEST OLNEY U2

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	14.4			1,087	337	600	123	27
DF	20.8			186	136	30	9	11
SF	16.2			125	39	66	20	
RC	14.8			28		17	11	
ALL	14.8			1,426	512	712	163	39

Unit Cruise Design: WEST OLNEY U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	34.1	34.8	25	13	1

Unit Cruise Summary: WEST OLNEY U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	49	98	3.9	0
DF	4	15	0.6	0
SF	5	12	0.5	0
RC	8	8	0.3	0
ALL	66	133	5.3	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY U2

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	245.0	49.4	9.9	137.1	20.5	2.9	33,582	53.4	10.3
DF	37.5	215.2	43.0	145.5	22.0	11.0	5,456	216.3	44.4
SF	30.0	148.8	29.8	122.0	9.8	4.4	3,661	149.1	30.1
RC	12.8	250.7	50.1	64.2	46.2	16.3	822	254.9	52.7
ALL	325.3	35.7	7.1	133.8	27.1	3.3	43,521	44.8	7.9

Unit Summary: WEST OLNEY U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	20.8	81	102	5,698	5,456	4.3	15.9	37.5	8.2	186.0
RC	LIVE	CUT	4	ALL	11.8	43	53	498	411	17.4	8.4	6.4	1.9	14.0
RC	LIVE	POLE	4	ALL	22.5	69	87	498	411	17.4	2.3	6.4	1.3	14.0
SF	LIVE	CUT	5	ALL	16.2	76	96	4,095	3,661	10.6	21.0	30.0	7.5	124.8
WH	LIVE	CUT	49	ALL	14.4	69	86	31,948	31,869	0.2	205.6	232.5	61.3	1,086.7
WH	LIVE	LEA	0	ALL	14.9			1,718	1,713	0.2	10.3	12.5	3.2	58.4
ALL	LIVE	CUT	62	ALL	15.0	70	87	42,239	41,396	2.0	250.9	306.4	78.8	1,411.6
ALL	LIVE	LEA	0	ALL	14.9			1,718	1,713	0.2	10.3	12.5	3.2	58.4
ALL	LIVE	POLE	4	ALL	22.5	69	87	498	411	17.4	2.3	6.4	1.3	14.0
ALL	ALL	ALL	66	ALL	15.0	70	87	44,455	43,521	2.1	263.5	325.3	83.4	1,484.1

Cruise Unit Report WEST OLNEY ROW 1

Unit Sale Notice Volume (MBF): WEST OLNEY ROW 1

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
RC	20.2			5		5	1
DF	28.8			4	4	0	
WH	24.7			3	3	1	
ALL	22.4			13	7	6	1

Unit Cruise Design: WEST OLNEY ROW 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	0.3	0.4	1	1	0

Unit Cruise Summary: WEST OLNEY ROW 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC	4	4	4.0	0
DF	1	1	1.0	0
WH	1	1	1.0	0
ALL	6	6	6.0	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY ROW 1

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RC	160.0	0.0	0.0	105.2	10.0	5.0	16,831	10.0	5.0
DF	62.5	0.0	0.0	230.4	0.0	0.0	14,400	0.0	0.0
WH	62.5	0.0	0.0	181.8	0.0	0.0	11,362	0.0	0.0
ALL	285.0	0.0	0.0	149.4	36.7	15.0	42,593	36.7	15.0

Unit Summary: WEST OLNEY ROW 1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	28.8	110	141	14,400	14,400	0.0	13.8	62.5	11.6	4.3
RC	LIVE	CUT	2	ALL	18.4	68	91	8,679	8,415	3.0	43.3	80.0	18.7	2.5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RC	LIVE	POLE	2	ALL	22.8	73	92	8,679	8,415	3.0	28.2	80.0	16.8	2.5
WH	LIVE	CUT	1	ALL	24.7	90	113	11,362	11,362	0.0	18.8	62.5	12.6	3.4
ALL	LIVE	POLE	2	ALL	22.8	73	92	8,679	8,415	3.0	28.2	80.0	16.8	2.5
ALL	LIVE	CUT	4	ALL	22.3	81	106	34,442	34,178	0.8	75.9	205.0	42.9	10.3
ALL	ALL	ALL	6	ALL	22.4	79	102	43,121	42,593	1.2	104.1	285.0	59.6	12.8

Cruise Unit Report WEST OLNEY ROW 2

Unit Sale Notice Volume (MBF): WEST OLNEY ROW 2

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	17.4			91	44	42	6
SF	14.9			60	11	42	8
DF	19.1			33	18	12	3
RC	16.0			10		10	1
ALL	16.5			195	73	106	17

Unit Cruise Design: WEST OLNEY ROW 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	6.7	8.1	7	7	0

Unit Cruise Summary: WEST OLNEY ROW 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	12	12	1.7	0
SF	9	9	1.3	0
DF	4	4	0.6	0
RC	4	4	0.6	0
ALL	29	29	4.1	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY ROW 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 (%)
WH	93.3	64.9	24.5	146.1	15.7	4.5	13,636	66.8	24.9
SF	70.0	124.7	47.1	128.8	13.2	4.4	9,017	125.4	47.3
DF	31.1	198.4	75.0	158.7	18.5	9.3	4,936	199.3	75.6
RC	22.9	198.4	75.0	66.6	22.7	11.4	1,523	199.7	75.9
ALL	217.3	43.0	16.3	134.0	25.9	4.8	29,112	50.2	17.0

Unit Summary: WEST OLNEY ROW 2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	19.1	90	114	4,936	4,936	0.0	15.6	31.1	7.1	33.1
RC	LIVE	CUT	2	ALL	14.0	53	65	761	761	0.0	10.7	11.4	3.1	5.1
RC	LIVE	POLE	2	ALL	19.3	62	78	761	761	0.0	5.6	11.4	2.6	5.1
SF	LIVE	CUT	9	ALL	14.9	71	89	9,252	9,017	2.5	57.8	70.0	18.1	60.4
WH	LIVE	CUT	12	ALL	17.4	76	95	13,636	13,636	0.0	56.5	93.3	22.4	91.4
ALL	LIVE	CUT	27	ALL	16.4	74	92	28,586	28,351	0.8	140.6	205.9	50.7	190.0
ALL	LIVE	POLE	2	ALL	19.3	62	78	761	761	0.0	5.6	11.4	2.6	5.1
ALL	ALL	ALL	29	ALL	16.5	73	92	29,347	29,112	0.8	146.2	217.3	53.3	195.1

Cruise Unit Report WEST OLNEY ROW 3

Unit Sale Notice Volume (MBF): WEST OLNEY ROW 3

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	13.9			13	4	9	
SF	21.5			4	3		1
ALL	15.0			17	7	9	1

Unit Cruise Design: WEST OLNEY ROW 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	0.6	1.0	1	1	0

Unit Cruise Summary: WEST OLNEY ROW 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	3	3	3.0	0
SF	1	1	1.0	0
ALL	4	4	4.0	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY ROW 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 (%)
WH	163.3	0.0	0.0	134.8	22.6	13.0	22,019	22.6	13.0
SF	54.4	0.0	0.0	113.4	0.0	0.0	6,175	0.0	0.0
ALL	217.8	0.0	0.0	129.5	20.9	10.4	28,194	20.9	10.4

Unit Summary: WEST OLNEY ROW 3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
SF	LIVE	CUT	1	ALL	21.5	82	104	9,046	6,175	31.7	21.6	54.4	11.7	3.7
WH	LIVE	CUT	3	ALL	13.9	65	79	22,019	22,019	0.0	155.0	163.3	43.8	13.2
ALL	LIVE	CUT	4	ALL	15.0	67	82	31,065	28,194	9.2	176.6	217.8	55.5	16.9
ALL	ALL	ALL	4	ALL	15.0	67	82	31,065	28,194	9.2	176.6	217.8	55.5	16.9

Cruise Unit Report WEST OLNEY ROW 4

Unit Sale Notice Volume (MBF): WEST OLNEY ROW 4

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	15.4			14	4	9	1
SF	17.9			6	4	2	1
RA	11.0			1			1
ALL	15.5			21	8	11	2

Unit Cruise Design: WEST OLNEY ROW 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	0.9	1.5	3	3	0

Unit Cruise Summary: WEST OLNEY ROW 4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	7	7	2.3	0
SF	3	3	1.0	0
RA	1	1	0.3	0
ALL	11	11	3.7	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY ROW 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	127.0	24.7	14.3	123.6	26.7	10.1	15,699	36.4	17.5
SF	54.4	0.0	0.0	129.7	23.2	13.4	7,061	23.2	13.4
RA	13.3	173.2	100.0	45.5	0.0	0.0	606	173.2	100.0
ALL	194.8	14.5	8.4	120.0	31.4	9.5	23,366	34.6	12.6

Unit Summary: WEST OLNEY ROW 4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	1	ALL	11.0	45	54	667	606	9.1	20.2	13.3	4.0	0.5
SF	LIVE	CUT	3	ALL	17.9	71	89	7,824	7,061	9.7	31.2	54.4	12.9	6.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	7	ALL	15.4	67	84	15,699	15,699	0.0	98.2	127.0	32.4	14.1
ALL	LIVE	CUT	11	ALL	15.5	65	81	24,190	23,366	3.4	149.6	194.8	49.3	21.0
ALL	ALL	ALL	11	ALL	15.5	65	81	24,190	23,366	3.4	149.6	194.8	49.3	21.0

Cruise Unit Report WEST OLNEY ROW 5

Unit Sale Notice Volume (MBF): WEST OLNEY ROW 5

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	13.9			1	1	0
RC	17.0			0	0	
ALL	14.6			2	1	0

Unit Cruise Design: WEST OLNEY ROW 5

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: WEST OLNEY ROW 5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	2	2	2.0	0
RC	1	1	1.0	0
ALL	3	3	3.0	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY ROW 5

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	108.9	0.0	0.0	116.4	3.1	2.2	12,678	3.1	2.2
RC	40.0	0.0	0.0	45.7	0.0	0.0	1,827	0.0	0.0
ALL	148.9	0.0	0.0	97.4	42.0	24.3	14,505	42.0	24.3

Unit Summary: WEST OLNEY ROW 5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RC	LIVE	CUT	1	ALL	17.0	65	82	3,325	1,827	45.0	25.4	40.0	9.7	0.2
WH	LIVE	CUT	2	ALL	13.9	70	87	12,678	12,678	0.0	103.3	108.9	29.2	1.3
ALL	LIVE	CUT	3	ALL	14.6	69	86	16,003	14,505	9.4	128.7	148.9	38.9	1.5
ALL	ALL	ALL	3	ALL	14.6	69	86	16,003	14,505	9.4	128.7	148.9	38.9	1.5

Cruise Unit Report WEST OLNEY ROW 6

Unit Sale Notice Volume (MBF): WEST OLNEY ROW 6

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	15.5			62	28	29	5	
RA	12.5			16	4	2	8	2
DF	18.1			16	7	8	1	
SF	17.8			9	4	5	1	
RC	14.1			3		1	1	
ALL	15.0			105	43	44	17	2

Unit Cruise Design: WEST OLNEY ROW 6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2: VR, 2 BAF (62.5, 40 for some species) Measure All, Sighting Ht = 4.5 ft	4.4	5.3	8	8	0

Unit Cruise Summary: WEST OLNEY ROW 6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	14	14	1.8	0
RA	9	9	1.1	0
DF	3	4	0.5	0
SF	2	2	0.3	0
RC	3	3	0.4	0
ALL	31	32	4.0	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY ROW 6

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	109.4	90.4	31.9	129.0	23.1	6.2	14,107	93.3	32.5
RA	45.0	153.5	54.3	80.0	33.7	11.2	3,600	157.2	55.4
DF	31.3	213.8	75.6	112.6	9.0	5.2	3,518	214.0	75.8
SF	15.6	185.2	65.5	134.2	9.4	6.7	2,097	185.4	65.8
RC	15.0	198.4	70.1	42.1	45.3	26.1	632	203.5	74.9
ALL	216.3	50.8	18.0	110.8	35.3	6.3	23,954	61.8	19.0

Unit Summary: WEST OLNEY ROW 6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	2	ALL	19.3	68	85	2,639	2,639	0.0	11.5	23.4	5.3	11.6
DF	LIVE	POLE	1	ALL	15.5	65	81	880	880	0.0	6.0	7.8	2.0	3.9
RA	LIVE	CUT	9	ALL	12.5	55	66	3,626	3,600	0.7	52.8	45.0	12.7	15.8
RC	LIVE	CUT	3	ALL	14.1	48	59	834	632	24.2	13.8	15.0	4.0	2.8
SF	LIVE	CUT	2	ALL	17.8	78	100	2,097	2,097	0.0	9.0	15.6	3.7	9.2
WH	LIVE	CUT	14	ALL	15.5	66	82	14,212	14,107	0.7	83.5	109.4	27.8	62.1
ALL	LIVE	CUT	30	ALL	15.0	62	76	23,407	23,074	1.4	170.6	208.4	53.5	101.5
ALL	LIVE	POLE	1	ALL	15.5	65	81	880	880	0.0	6.0	7.8	2.0	3.9
ALL	ALL	ALL	31	ALL	15.0	62	76	24,287	23,954	1.4	176.6	216.3	55.5	105.4

Cruise Unit Report WEST OLNEY ROW 7

Unit Sale Notice Volume (MBF): WEST OLNEY ROW 7

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
RA	17.0			3	2	1
SF	18.0			3	3	
ALL	17.4			6	5	1

Unit Cruise Design: WEST OLNEY ROW 7

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	0.4	0.6	1	1	0

Unit Cruise Summary: WEST OLNEY ROW 7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RA	1	2	2.0	0
SF	1	1	1.0	0
ALL	2	3	3.0	0

Unit Cruise Statistics (Cut + Leave Trees): WEST OLNEY ROW 7

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 (%)
RA	80.0	0.0	0.0	90.7	0.0	0.0	7,259	0.0	0.0
SF	54.4	0.0	0.0	130.2	0.0	0.0	7,086	0.0	0.0
ALL	134.4	0.0	0.0	106.7	26.1	18.5	14,345	26.1	18.5

Unit Summary: WEST OLNEY ROW 7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	1	ALL	17.0	70	87	7,259	7,259	0.0	50.8	80.0	19.4	2.9
SF	LIVE	CUT	1	ALL	18.0	80	102	7,086	7,086	0.0	30.8	54.4	12.8	2.8
ALL	LIVE	CUT	2	ALL	17.4	74	93	14,345	14,345	0.0	81.6	134.4	32.2	5.7
ALL	ALL	ALL	2	ALL	17.4	74	93	14,345	14,345	0.0	81.6	134.4	32.2	5.7

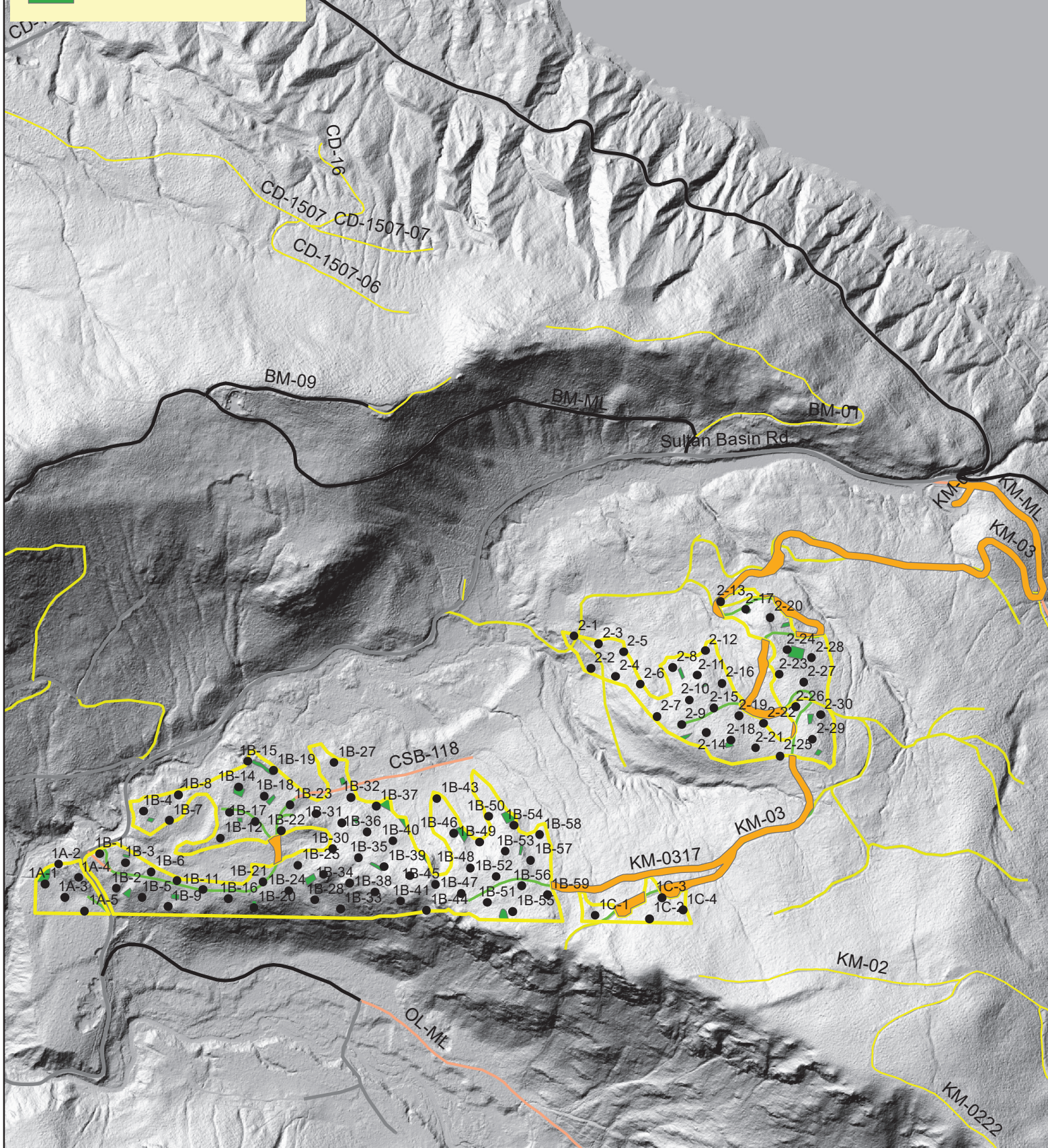
West Olney - Cruise Map

WestOlney_Units

WO_RW

- West_Olney_pts

 LTA's





Forest Practices Application/Notification Notice of Decision

FPA/N No: 2818868

Effective Date: 2/3/2023

Expiration Date: 2/3/2026

Shut Down Zone: 658

EARR Tax Credit: ☒ Eligible ☐ Non-eligible

Reference: West Olney

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

No additional conditions.

FOR YOUR INFORMATION: Please notify DNR Northwest Region Office (360-856-3500) 48 business hours before commencing timber harvest operations. Please provide the application number and legal description for your operation.

Issued By: Steven Huang

Region: Northwest Region

Title: Resource Protection Forester

Date: 2/3/2023

Copies to: ☐ Landowner, Timber Owner and Operator

Issued in person: ☒ LO ☒ TO ☒ OP By:  Date: 2/3/2023

Appeal Information

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

You must file your appeal at all three addresses below:

Pollution Control Hearings Board	Office of the Attorney General Natural Resources Division	Department Of Natural Resources Northwest Region
<u>Physical Address</u> 1111 Israel Road SW Suite 301 Tumwater, WA 98501	<u>Physical Address</u> 1125 Washington Street, SE Olympia, WA 98504	<u>Physical Address</u> 919 North Township Street Sedro-Woolley, WA 98284
<u>Mailing address</u> Post Office Box 40903 Olympia, WA 98504-0903	<u>Mailing Address</u> Post Office Box 40100 Olympia, WA 98504-0100	<u>Mailing Address</u> 919 North Township Street Sedro-Woolley, WA 98284

Information regarding the Pollution Control Hearings Board can be found at: <https://elaho.wa.gov/content/11>

Other Applicable Laws

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

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

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices website <https://www.dnr.wa.gov/programs-and-services/forest-practices/review-applications-fpars/forest-practices-forms-and>. Notify DNR of new Operators within 48 hours.

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

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

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

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

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

DNR Declaration of Mailing

I Choose an item, caused the Notice of Decision for FPA/N No. _____ To be placed in the United States mail at Sedro-Woolley, WA; postage paid. I declare under penalty of perjury of the laws of the State of Washington, that the foregoing is true and correct.

Click or tap to enter
a date

(Date)

Sedro-Woolley, WA

(City & State where signed)

(Signature)



ROAD PLAN AND SPECIFICATIONS #30-102969 WEST OLNEY TIMBER SALE

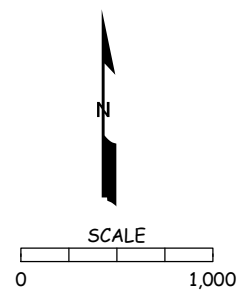
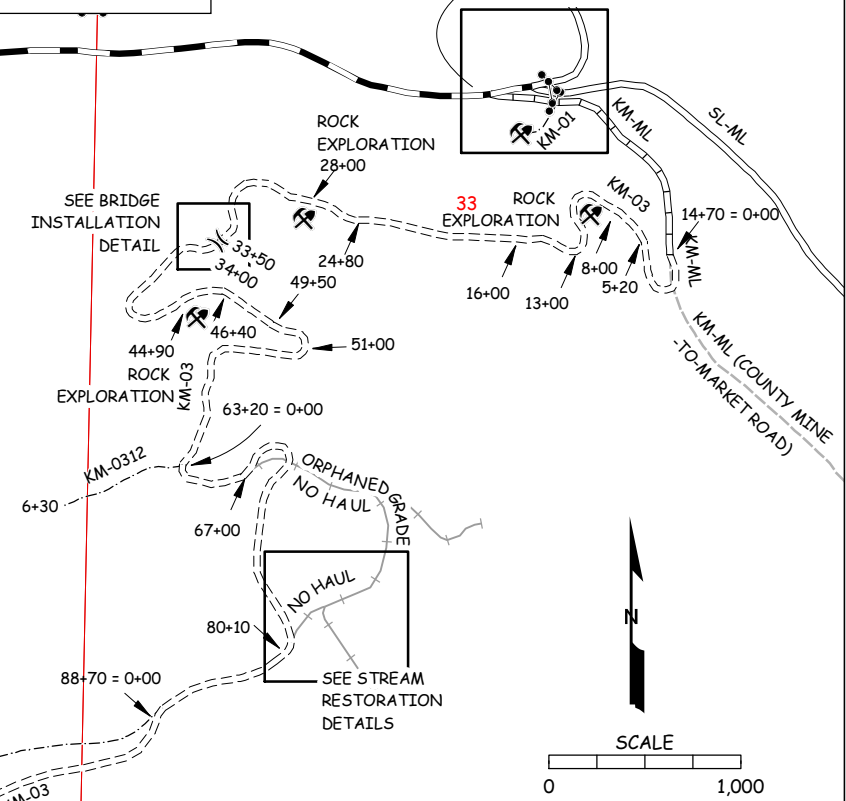
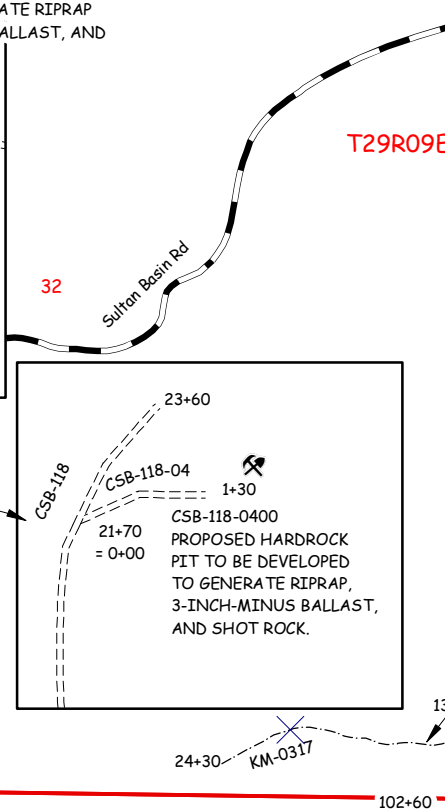
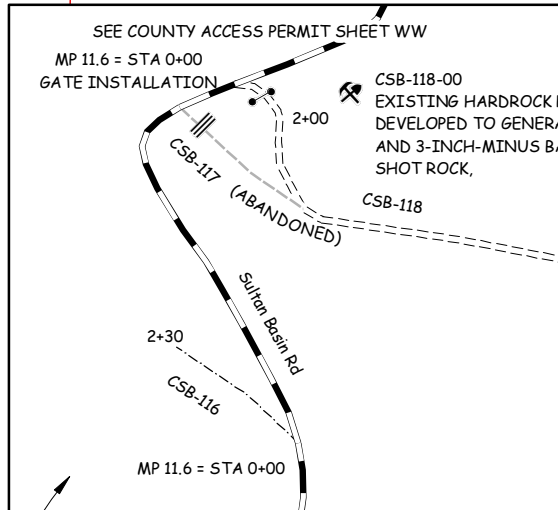
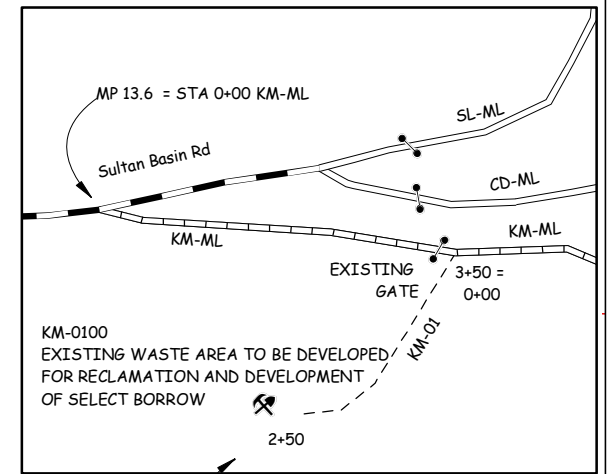
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LEGEND

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

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6

5

T28R09E

DESIGNED BY A. HALGREN	REVIEWED BY ZYLSTRA 9/23/2022	APPROVED BY ZYLSTRA 9/23/2022	PLAN DATE 7/20/2022	SHEET 1 OF 54
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STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

WEST OLNEY TIMBER SALE ROAD PLAN
SNOHOMISH COUNTY
CASCADE DISTRICT
NORTHWEST REGION

AGREEMENT NO.: 30-102969

STAFF ENGINEER: A. HALGREN

DATE: JULY 18, 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>
CSB-118	23+60	CONSTRUCTION
CSB-118-04	1+30	CONSTRUCTION
KM-ML	14+70	RECONSTRUCTION
KM-03	102+60	CONSTRUCTION

0-3 OPTIONAL ROADS

The specified work on the following roads is not required. Any optional roads built by the Purchaser must meet all the specifications in the road plan.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
CSB-116	2+30	CONSTRUCTION
CSB-118-03	6+20	CONSTRUCTION
KM-01	2+50	CONSTRUCTION
KM-0312	6+30	CONSTRUCTION
KM-0317	24+30	CONSTRUCTION

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to sub-grade, full bench sidecast, full bench end-haul, landing and turnout construction, culvert installation, geotextile installation, steel modular bridge installation, drill and shoot, gate installation, application of 3-inch-minus ballast rock, and application of Select Borrow or Shot Rock.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to blading, shaping, and ditching the road surface, brushing, clearing, grubbing, culvert installation, application of 3-inch-minus ballast rock, and application of Select Borrow or Shot Rock.

0-7 POST-HAUL MAINTENANCE

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

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

Purchaser may develop new rock sources. Rock source development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, 3-inch-minus ballast or surfacing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STRUCTURES

Contractor shall provide and install a bridge with minimum dimensions of 50 foot span and 14 foot width. Requirements for this structure are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan.

1-4 ROAD TOLERANCES

Contractor 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
Bridge Elevation (feet)	±0.25		

1-5 DESIGN DATA

Switchback design data is available upon request at the Department of Natural Resources Northwest Region Office in Sedro Woolley, WA.

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-16 CONSTRUCTION STAKES SET BY STATE

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
KM-03	33+50 to 34+00	BRIDGE

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.

1-22 WORK NOTIFICATIONS

On the following road(s), Purchaser shall notify the Contract Administrator a minimum of 7 calendar days BUT NOT MORE THAN 30 DAYS before work begins.

<u>Road</u>	<u>Stations</u>
KM-03	33+50 to 35+00

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
ALL		Rock hauling, construction, reconstruction, or abandonment	November 1 to March 31
KM-0317	13+30 To 24+30	ALL	March 15 to August 31*
	18+60 to 24+30	ALL	March 15 to August 31*

*This road segment is in proximity to a protected habitat feature.

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.

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

On the following road(s), any blasting associated with road construction or rock pit development is not allowed from one hour before to two hours after official sunrise, and one hour before to one hour after official sunset from April 1 through August 31.

<u>Road</u>	<u>Stations</u>
KM-ML	0+00 to 14+70
KM-01	0+00 to 2+50
KM-03	0+00 to 24+80

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- Wheel track rutting exceeds 4 inches on crushed rock 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.

1-43 ROAD WORK AROUND UTILITIES

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

<u>Road</u>	<u>Stations</u>	<u>Utility</u>
Sultan Basin Rd	All	Buried power and phone to Culmback Dam

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.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following road(s), 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>
KM-ML	0+00 to 14+70

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 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 40%.
- Against standing trees.

3-10 GRUBBING

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

3-13 STUMPS FOR PUNCHEON MATERIAL

On the following road(s), stumps from within the grubbing limits may be overturned and driven flush with the ground surface for use as subgrade puncheon material.

Road	Stations
KM-03	80+70 to 102+60

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 at areas approved in writing by the Contract Administrator.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 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.

SECTION 4 – EXCAVATION

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:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

Grade limitations and alignment are modified as follows:

<u>Road</u>	<u>Stations</u>	<u>Minimum Curve Radius (ft)</u>	<u>Maximum Grade (%)</u>		<u>Comment</u>
			<u>Favorable</u>	<u>Adverse</u>	
KM-03	0+00 TO 4+20	65	12	-	Switchback
KM-03	8+00 TO 10+90	65	6	6	Switchback
KM-03	10+90 TO 13+50	65	6	6	Switchback
KM-03	32+50 TO 36+50	80	-	-	Bridge approaches
KM-03	38+90 TO 43+40	65	12	-	Switchback
KM-03	49+60 TO 53+70	65	14	-	Switchback
KM-03	67+00 TO 73+00	65	12	-	Switchback

4-4 SWITCHBACK STANDARDS

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

Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 6%.
- Maximum favorable grades for switchbacks is 14% except as otherwise specified in clause 4-3 ROAD GRADE AND ALIGNMENT STANDARDS.
- Maximum transition grades entering and leaving switchbacks is a 6% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	$\frac{3}{4}$:1	133
Common Earth (on slopes over 70%)	$\frac{1}{2}$:1	200
Fractured or loose rock	$\frac{1}{2}$:1	200
Hardpan or solid rock	$\frac{1}{4}$:1	400

4-6 EMBANKMENT SLOPE RATIO

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

<u>Material Type</u>	<u>Embankment Slope Ratio</u>	<u>Embankment Slope Percent</u>
Sandy Soils	2:1	50
Common Earth and Rounded Gravel	$1\frac{1}{2}$:1	67
Angular Rock	$1\frac{1}{4}$: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.

4-10 WIDEN THE EXISTING SUBGRADE

On the following road(s), Purchaser shall widen the subgrade and fill slopes to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Purchaser shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches.

<u>Road</u>	<u>Stations</u>
KM-ML	0+00 to 14+70

4-12 FULL BENCH CONSTRUCTION

On the following road(s), and where side slopes exceed 50% Purchaser shall use full bench construction for the entire subgrade width. If designated, Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Full Bench Location</u>	<u>Comments</u>
KM-03	73+00 to 75+80	Steep ground through RMZ, full bench also required to meet grade exiting switchback.

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.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified on the MATERIALS LIST and as needed or as directed or approved 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. Locations may not be changed without written approval from the Contract Administrator.

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 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, 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 area(s). Additional waste areas may also be identified or approved by the Contract Administrator. The amount of material allowed in a waste area is at the discretion of the Contract Administrator unless listed below.

<u>Road</u>	<u>Waste Area Location</u>	<u>Volume (CY)</u>
KM-03	70+10 to 70+70	500

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

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

4-45 SELECT BORROW

Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume. Select borrow material must be free of rocks greater than 6 inches in any dimension.

4-49 BORROW SOURCE

Purchaser shall obtain borrow material from the listed borrow source(s). Development of the borrow source must be in accordance with a written BORROW SOURCE DEVELOPMENT PLAN to be submitted by the Purchaser and approved in writing by the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Type</u>
KM-0100	STA 2+50 of the KM-01 road	Select Borrow

4-50 BORROW APPLICATION

Purchaser shall apply borrow in accordance with quantities shown on the TYPICAL SECTION OR MATERIALS LIST. Unless Select Borrow meets the requirements of clause 6-22 FRACTURE REQUIREMENT FOR ROCK, Select Borrow may be applied ONLY to road segments with a grade of 5% or less OR on temporary roads with written approval from the Contract Administrator. Borrow must be spread, shaped, and compacted full width concurrent with hauling operations.

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

4-70 SUBGRADE REINFORCEMENT

On the following road(s), Purchaser shall provide and install geotextile fabric. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered with a minimum of 12 inches of compacted 3-inch-minus ballast rock or Select Borrow. Purchaser shall apply rock in one-foot lift(s) over the geotextile in accordance with the manufacturer's specifications. Geotextile fabric must meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION.

<u>Road</u>	<u>Stations</u>
KM-03	38+10 to 38+90
KM-03	41+30 to 44+30
KM-03	80+70 to 102+00

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 the MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts may be new or used material and must meet the specifications in Clauses 10-15 through 10-24.

5-7 USED CULVERT MATERIAL

Purchaser may install used culverts. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts 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.

5-13 CONTINGENCY CULVERTS

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator.

<u>Road</u>	<u>Size</u>	<u>Quantity</u>
On any portion of road used for timber or rock haul.	18" culvert band	5
	18" x 32' culvert	2
	18" x 36' culvert	2
	18" x 40' culvert	1
	24" culvert band	2
	24" x 36' culvert	2

5-15 CULVERT INSTALLATION

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

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 36 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover 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. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

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. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At STREAM culverts (indicated in the REMARKS of the MATERIALS LIST), Purchaser shall place rip rap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the MATERIALS LIST and CULVERT AND DRAINAGE SPECIFICATIONS or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rip rap must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP and 6-50 HEAVY LOOSE RIP RAP

5-31 ROLLING DIP CONSTRUCTION

Purchaser shall construct rolling dips in accordance with the ROLLING DIP DETAIL and as specified on the MATERIALS LIST. Rolling dips must be installed concurrently with construction of the subgrade and must be maintained in an operable condition.

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 may be obtained from the following source(s) on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
CSB-118-00 Hard Rock Pit	STA 2+00 of the CSB-118 road	Hard Rock
CSB-118-0400 (PROPOSED) Hard Rock Pit	STA 1+30 of the CSB-118-04 road	Hard Rock
KM-0100 Waste Area	STA 2+50 of the KM-01 road	Borrow
KM-0302 (ROCK EXPLORATION)	STA 8+00 to 13+00 of the KM-03 road	Hard Rock
KM-0305 (ROCK EXPLORATION)	STA 28+00 of the KM-03 road	Hard Rock
KM-0309 (ROCK EXPLORATION)	STA 44+90 of the KM-03 road	Hard Rock

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
KM-0100 WASTE AREA	STA 2+50 of the KM-01 road	Select Borrow* (MAY REQUIRE PROCESSING)

*Unless Select Borrow can meet the requirements of 6-22 FRACTURE REQUIREMENT FOR ROCK, this source may ONLY be used on road segments with a grade of 5% or less OR on temporary roads with written approval from the Contract Administrator.

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

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

<u>Source</u>	<u>Rock Type</u>
CSB-118-00 Hard Rock Pit	Riprap, 3-inch minus ballast, shot rock.
CSB-118-0400 (PROPOSED) Hard Rock Pit	Riprap, 3-inch minus ballast, shot rock.
KM-0100 WASTE AREA	Select Borrow
KM-03 STA 8+00 to 13+00 (ROCK EXPLORATION)	Riprap, 3-inch minus ballast, shot rock.
KM-03 STA 28+00 (ROCK EXPLORATION)	Riprap, 3-inch minus ballast, shot rock.
KM-03 STA 44+90 (ROCK EXPLORATION)	Riprap, 3-inch minus ballast, shot rock.

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

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

- 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.

6-13 ROCK EXPLORATION

Purchaser shall provide an excavator with operator for exploration of rock at the following site(s).

<u>Site</u>	<u>Location</u>
KM-03 ROAD	STA 8+00 to 13+00
	STA 28+00
	STA 44+90

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments too large to be converted by the Purchaser to a size that will meet specifications used for the roads in this sale.
- Oversized rock that exceeds the maximum allowable amount must be left in a stable condition in full contact with the ground so that it does not present a fall hazard.
- Purchaser shall notify the Contract Administrator 7-21 working days before blasting operations.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads and trails before blasting operations.

6-21 IN-PLACE PROCESSING

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

6-22 FRACTURE REQUIREMENT FOR ROCK

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

6-23 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.

6-28 1 ¼-INCH MINUS CRUSHED ROCK

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

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

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

6-34 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.

6-38 4-INCH IN-PLACE ROCK

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

In-place rock may not contain organic debris and trash. No more than 50 percent of rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension.

6-42 CLEAN ROCK, SHOT OR RIPPABLE BALLAST

No more than 50 percent of the rock by visual inspection may exceed 6 inches in any dimension and no rock may be larger than 8 inches in any dimension. Shot **or** Ripable Ballast rock may not contain more than 5 percent by weight of organic debris, dirt, and trash.

6-50 LIGHT LOOSE RIP RAP

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

<u>Quantity</u>	<u>Approximate Size Range</u>
20% to 90%	500 lbs. to 1 ton (18"- 28")
15% to 80%	50 lbs. to 500 lbs. (8"- 18")
10% to 20%	3 inch to 50 lbs. (3"- 8")

6-51 HEAVY LOOSE RIP RAP

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

<u>Quantity</u>	<u>Size Range</u>
30% to 90%	1 ton to 2 ton (28" - 36")
30% to 70%	500 lbs. to 1 ton (18" - 28")
20% to 50%	50 lbs. to 500 lbs. (8" - 18")
10% to 20%	3 inch to 50 lbs. (3" - 8")

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth(s) using the compaction methods required in this road plan. Estimated quantities specified in the 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, and headwall reconstruction 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. The Contract Administrator will direct locations for rock that is to be applied as spot patching. 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 7 – STRUCTURES

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, and the bridge installation details.

7-15 DRAWING AND CALCULATION REVIEW FOR ACCEPTANCE

Contractor shall prepare and submit three sets of complete design drawings and calculations for the superstructure and substructure, including footings, foundation and bank protection. All drawings and calculations must be prepared, stamped, and signed by a Registered Professional Engineer. Drawings can be in either electronic or hard copy form and must be no smaller than 11" X 17" sheets.

Send submittals to:

Department of Natural Resources
Attn.: Tamra Zylstra
919 N. Township St.
Sedro Woolley, WA 98284
(360)856-3500
tamra.zylstra@dnr.wa.gov

Reports and plans will be accepted or rejected within 30 working days of receipt. Delays in work because of the possibility of rejection, revision, and resubmittal of documents are deemed a risk of the Contractor and may not be the basis for claims of additional compensation.

7-16 STRUCTURE ACCEPTANCE

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

7-17 STRUCTURE ACCEPTANCE

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

7-18 INSTALLATION PRODUCTION SCHEDULE

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

- excavation
- placement of sills/abutments/footings/structure
- backfill compaction, rock application and compaction

7-19 INSTALLATION STAGE ACCEPTANCE

Purchaser shall ensure that all materials and procedures used during construction comply with the design. Purchaser shall obtain written approval from the Contract Administrator or their designee, after verification by the Region Engineer or designee for each stage of construction, listed in Clause 7-18 INSTALLATION PRODUCTION SCHEDULE, before starting construction on the next stage. Purchaser shall notify the Contract Administrator in writing when each construction stage is complete.

7-20 INSTALLATION FINAL ACCEPTANCE

Purchaser shall notify the Contract Administrator in writing when each structure is complete. Within 15 working days of final construction acceptance, Purchaser shall submit three complete sets of finalized plans. Any omissions to the plans are the responsibility of the Purchaser to correct and include in the finalized set of plans. Submit finalized plans to the same location stated in Clause 7-16 DRAWING AND CALCULATION REVIEW FOR ACCEPTANCE.

7-45 PURCHASER SUPPLIED BRIDGE

Purchaser shall provide, and construct each bridge listed below. Refer to BRIDGE INSTALLATION DETAIL.

Road	Station	Length (ft.)	Vert. Clear ² (ft.)	W.B.S.R. ¹ (ft.)	Loading/ Deflection Ratio	Type	Running Surface
KM-01	33+50 to 34+00	50	9'	14'	HL-93	Modular Steel	Crushed Rock, Ballast, or Concrete

¹W.B.S.R. = Width between shear rails.

²Vertical clearance shall be measured from 100 year flood level.

7-47 PURCHASER SUPPLIED ABUTMENTS

PURCHASER shall provide abutment designs. Bridge abutments must be designed by an engineer licensed in the state or province of manufacture. The abutment design includes, but is not limited to endwalls, precast concrete spread footing, and steel tower assembly.

7-52 TECHNICAL SPECIFICATIONS

Design: The bridge superstructure must be designed in accordance with AASHTO LRFD Bridge Design Specifications, latest edition and any subsequent interim specifications. Design details not covered by the AASHTO specifications must be in accordance with other normally accepted structural design standards.

Fabrication: The structural steel fabricating plant of origin must be certified under the AISC Quality Certification Program. Certification categories must include Simple and Major Steel Bridges.

Certification of Materials: Mill test certificates must be provided for the steel stringers and the bridge deck. Certified mill test reports for steel bridge stringers with specified values must include, in addition to other tests, the results of Charpy V-notch impact tests.

Welding: All welding must be completed by welders certified in accordance with the requirements and qualification tests of the American Welding Society.

7-53 BRIDGE INSTALLATION

Purchaser shall install bridges ensuring there is a full width, continuous deck with no gaps that allow water and sediment to drain from the bridge to the stream.

7-76 GATE INSTALLATION

Purchaser shall install the listed gate(s). Gate installations must be completed within 30 days of road construction or reconstruction.

<u>Road</u>	<u>Station</u>	<u>Type*</u>	<u>Provided by</u>
CSB-118	0+00	Tubular Steel gate	State

*Steel gate installation(s) must be in accordance with the STEEL GATE DETAIL.

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

7-77 GATE SUPPLIED BY STATE

A gate with lock box is located at Northwest Region Office. After arranging with the Contract Administrator, Purchaser shall transport the gate, tie-back post, and lock box to the installation site.

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 at culvert installations. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-5 CHECK DAM

On the following road(s), Purchaser shall construct rock check dams every 4 vertical feet in the ditch. Check dams must be built with 3-inch minus ballast rock to a depth of 8 inches and a length of 4 feet.

<u>Road</u>	<u>Stations</u>	<u>Minimum Count</u>
CSB-118	18+90 TO 19+60	2
KM-03	13+00 to 13+80	5
KM-03	24+80 to 25+70	3
KM-03	37+20 to 38+90	2
KM-03	58+40 to 63+90 (LEFT)	16
KM-03	63+90 to 67+00 (RIGHT)	12
KM-0312	0+30 to 1+80	3

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 grass seed and fertilizer as directed in clauses 8-25 GRASS SEED and 8-27 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 unless a comparable mix is approved in writing by the Contract Administrator.

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

Do not use seed sources that have the label "other seeds"- these can contain invasive species.

Mulch with straw to achieve no more than 70% cover, evenly distributed, at a rate of 1.5 to 2 tons per acre.

8-27 FERTILIZER

Except as specified in 8-28 FERTILIZER: WATERSHED MIX, 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

8-28 FERTILIZER: WATERSHED MIX

On the following roads, Purchaser shall use a special Watershed Mix fertilizer:

<u>Road</u>	<u>Stations</u>
KM-ML	0+00 to 14+70
KM-01	0+00 to 2+50
KM-03	0+00 to 16+00

Purchaser shall evenly spread fertilizer on all exposed soil inside the grubbing limits at a rate of 200 pounds per acre of exposed soil. Fertilizer mix is a special phosphorous free “Watcom Waters” mix that may be used within the Spada Lake watershed. This fertilizer is available at Whatcom Farmers’ Cooperative in Lynden (360-354-2418) and must meet the following specifications:

<u>Chemical Component</u>	<u>% by Weight</u>
Nitrogen*	16
Phosphorous	0
Potassium	8
Sulphur	8
Inerts	68

* 4.67% Ammonical Nitrogen + 11.33% Urea Nitrogen

SECTION 9 – POST-HAUL ROAD WORK**9-3 CULVERT MATERIAL REMOVED FROM STATE LAND**

Culverts removed from roads become the property of the Purchaser and must be removed from state land.

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-21 ROAD ABANDONMENT

Purchaser shall abandon the following before the termination of this contract:

<u>Road</u>	<u>Stations</u>	<u>Type</u>
CSB-116	0+00 to 2+30	ABANDONMENT
CSB-118-03	0+00 to 6+20	ABANDONMENT
KM-01	0+00 to 2+50	ABANDONMENT
KM-0312	0+00 to 6+30	ABANDONMENT
KM-0317	0+00 to 24+30	ABANDONMENT

9-22 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1.5:1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Purchaser.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.

SECTION 10 MATERIALS

10-3 GEOTEXTILE FOR STABILIZATION

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

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

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).

10-16 CORRUGATED ALUMINUM CULVERT

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

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.

10-24 GAUGE AND CORRUGATION

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

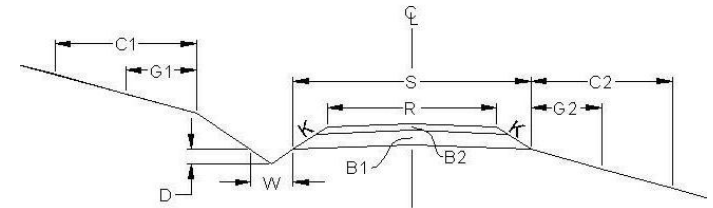
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1 ¹ / ₂ "
24" to 48"	14 (0.079")	2 ² / ₃ " X 1 ¹ / ₂ "
54" to 96"	14 (0.079")	3" X 1"

SECTION 11 SPECIAL NOTES**11-1 STREAM RESTORATION**

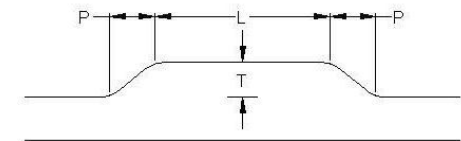
Purchaser shall complete the work described in the STREAM RESTORATION DETAIL.

ROAD #		CSB-116	CSB-118	CSB-118	CSB-118
REQUIRED / OPTIONAL		OPTIONAL	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		CONSTRUCT	CONSRTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	0+00	2+90	12+30
STATION / MP		2+30	2+90	12+30	14+80
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	2	3	3	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	25	50	50	50
TURNOUT WIDTH	T	10	10	10	10
TURNOUT TAPER	P	25	25	25	25
GRUBBING	G1	5	5	5	5
	G2	5	5	5	5
CLEARING	C1	10	10	10	10
	C2	10	10	10	10
ROCK FILLSLOPE	K:1	1 1/2	1 1/2	1 1/2	1 1/2
❖ BALLAST DEPTH	B1	18	18	6	12
CUBIC YARDS / STATION		114	114	34	72
➤ TOTAL CY BALLAST		270	340	320	180
❖ SURFACING DEPTH	B2				
CUBIC YARDS / STATION					
➤ TOTAL CY SURFACING					
➤ TOTAL CUBIC YARDS		270	340	320	180
SUBGRADE WIDTH	S	16.5	16.5	13.5	15.0
BRUSHCUT (Y/N)		N/A	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N/A	N/A

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



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.

Rock Totals Summary

Type	Quantity (Cubic Yards)
Ballast	15930
Rip Rap	915
Surfacing	10

ROAD #		CSB-118	CSB-118-03	CSB-118-04	KM-ML	KM-01	KM-03	KM-03	KM-03	KM-03
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	REQUIRED	REQUIRED	OPTIONAL	REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		CONSTRUCT	CONSTRUCT	CONSTRUCT	RECONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C	C	C
STATION / MP TO		14+80	0+00	0+00	0+00	0+00	0+00	5+20	16+00	28+00
STATION / MP		23+60	6+20	1+30	14+70	2+50	5+20	16+00	28+00	33+50
ROAD WIDTH	R	12	12	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3	3	3
DITCH WIDTH	W	3	2	3	3	2	3	3	3	3
DITCH DEPTH	D	1	1	1	1	1	1	1	1	1
TURNOUT LENGTH	L	50	25	50	50	25	50	50	50	50
TURNOUT WIDTH	T	10	10	10	10	10	10	10	10	10
TURNOUT TAPER	P	25	25	25	25	25	25	25	25	25
GRUBBING	G1	5	5	5	5	5	5	5	5	5
	G2	5	5	5	5	5	5	5	5	5
CLEARING	C1	10	10	10	10	10	10	10	10	10
	C2	10	10	10	10	10	10	10	10	10
ROCK FILL SLOPE	K:1	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	6	18	18	12	12	18	12	18	12
CUBIC YARDS / STATION		34	114	114	72	72	114	72	114	72
➤ TOTAL CY BALLAST		310	710	150	1060	180	560	780	1370	400
❖ SURFACING DEPTH	B2									
CUBIC YARDS / STATION										
➤ TOTAL CY SURFACING										
➤ TOTAL CUBIC YARDS		310	710	150	1060	180	560	780	1370	400
SUBGRADE WIDTH	S	13.5	16.5	16.5	15.0	15.0	16.5	15.0	16.5	15.0
BRUSHCUT (Y/N)		N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N/A	Y	N/A	N/A	N/A	N/A	N/A

ROAD #		KM-03	KM-03	KM-03	KM-03	KM-03	KM-03	KM-0312	KM-0317	KM-0317
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		A	C		C	C	C	C	C	C
STATION / MP TO		33+50	34+00	46+40	49+50	51+00	80+10	0+00	0+00	13+30
STATION / MP		34+00	46+40	49+50	51+00	80+10	102+60	6+30	13+30	24+30
ROAD WIDTH	R	14	12	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		50FT SPAN, GRAVEL DECK, PRE-CONSTRUCTED MODULAR TYPE, PAINTED STEEL BRIDGE WITH TOWER ASSEMBLY AND PRE-CAST CONCRETE SPREAD FOODINGS	3	3	3	3	3	3	3	3
DITCH WIDTH	W		3	3	3	3	3	2	2	2
DITCH DEPTH	D		1	1	1	1	1	1	1	1
TURNOUT LENGTH	L		50	50	50	50	50	25	25	25
TURNOUT WIDTH	T		10	10	10	10	10	10	10	10
TURNOUT TAPER	P		25	25	25	25	25	25	25	25
GRUBBING	G1		5	5	5	5	5	5	5	5
	G2		5	5	5	5	5	5	5	5
CLEARING	C1		10	10	10	10	10	10	10	10
	C2		10	10	10	10	10	10	10	10
ROCK FILL SLOPE	K:1		1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	18	12	18	12	18	12	18	12
CUBIC YARDS / STATION		-	114	72	114	72	114	72	114	72
➤ TOTAL CY BALLAST		20	1420	230	180	2100	2570	460	1520	800
❖ SURFACING DEPTH	B2									
CUBIC YARDS / STATION										
➤ TOTAL CY SURFACING										
➤ TOTAL CUBIC YARDS		20	1420	230	180	2100	2570	460	1520	800
SUBGRADE WIDTH	S	-	16.5	15.0	16.5	15.0	16.5	15.0	16.5	15.0
BRUSHCUT (Y/N)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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” 24” – 48” 54” – 96”	16 14 14	2 2/3" x 1/2" 2 2/3" x 1/2" 3" x 1"
CSB-118	0+00	-	-	-	-	-	-	-	-	-	-	Refer to county road access permit for culvert and road access requirements.		
	0+30	-	-	-	-	-	-	-	-	-	-	Install gate and 20 ecology blocks (to block access around the gate) in accordance with clause 7-76.		
	1+00	18	32	XX	-	-	2	3	L	NT	C			
	4+00	-	-	-	-	-	-	-	-	-	-	Ditchout		
	6+50	-	-	-	-	-	-	-	-	-	-	Ditchout		
	16+60	18	32	XX	-	-	2	3	L	NT	C			
	17+90	18	32	XX	-	-	2	3	L	NT	C			
	18+90	30	36	XX	-	-	3	5	L/H	NT	C	T4 STREAM, start check dams (2). See clause 8-5.		
	19+60	-	-	-	-	-	-	-	-	-	-	End check dams.		
	21+70	18	36	XX	-	-	2	3	L	NT	C			
	23+70	-	-	-	-	-	-	-	-	-	-	Ditchout		
CSB-118-03	2+00	18	36	XX	-	-	2	3	L	NT	C			
KM-01	1+40	24	32	XX	-	-	3	5	L/H	NT	C			
	2+00	24	32	XX	-	-	3	5	L/H	NT	C			
KM-ML	4+80	18	36	XX	-	-	2	3	L	NT	C			
	7+20	18	36	XX	-	-	2	3	L	NT	C			
	9+30	24	36	XX	-	-	3	5	L/H	NT	C			
	11+50	18	36	XX	-	-	2	3	L	NT	C			
	12+30	18	36	XX	-	-	2	3	L	NT	C			
	14+60	30	36	XX	-	-	5	7	L/H	NT	C	T4 STREAM		

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

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” 24” – 48” 54” – 96”	16 14 14	2 2/3" x 1/2" 2 2/3" x 1/2" 3" x 1"
KM-03	3+60	24	32	XX	-	-	3	5	L/H	NT	C			
	4+20	30	32	XX	-	-	3	5	L/H	NT	C			
	4+50	18	32	XX			2	3	L	NT	C			
	7+00	18	36	XX			2	3	L	NT	C			
	8+00 to 11+50	-	-	-	-	-	-	-	-	-	-	Rock exploration, see clause 6-13		
	12+40	24	36	XX	-	-	3	5	L/H	NT	C			
	13+00	-	-	-	-	-	-	-	-	-	-	Start check dams (5), see clause 8-5 CHECK DAM.		
	13+80	48	40	GM	-	-	6	10	L/H	NT	C	End check dams.		
	15+00	-	-	-	-	-	-	-	-	-	-	Start rolling dip, see clause 5-31 and ROLLING DIP DETAIL		
	15+20	48	32	GM	-	-	6	10	L/H	NT	C			
	15+70	-	-	-	-	-	-	-	-	-	-	End rolling dip		
	16+40	24	40	XX	-	-	3	5	L/H	NT	C	Start geotextile, see clause 4-70		
	17+60	24	32	XX	-	-	3	5	L/H	NT	C			
	19+40	18	32	XX			2	3	L	NT	C			
	21+00	30	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	21+50	18	36	XX			2	3	L	NT	C			
	22+30	24	32	XX	-	-	3	5	L/H	NT	C			
	22+80	36	36	GM	-	-	5	7	L/H	NT	C	T4 STREAM		
	23+20	18	32	XX			2	3	L	NT	C	End geotextile.		
	24+80	-	-	-	-	-	-	-	-	-	-	Start check dams (3), see clause 8-5 CHECK DAM		
	25+70	24	32	XX	-	-	3	5	L/H	NT	C	End checkdams.		
	27+20	18	32	XX			2	3	L	NT	C			

GM – Galvanized Metal

XX – PD or GM

H – Heavy Loose Riprap

L – Light Loose Riprap

SR – Shot Rock

NT – Native (Bank Run)

MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			<u>Note:</u> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:
												<u>Diameter</u> 18" 24" – 48" 54" – 96"
KM-03 (CONT'D)	28+00	-	-	-	-	-	-	-	-	-	-	Rock exploration, see clause 6-13
	28+50	18	36	XX	-	-	2	3	L	NT	C	
	32+90	18	40	XX	-	-	2	3	L	NT	C	
	33+50 TO 34+00	50 FOOT SPAN, PER-CONSTRUCTED MODULAR TYPE, PAINTED STEEL BRIDGE AND PRE-CAST CONCRETE FOOTINGS					14*	-	L/H	NT	A	See BRIDGE INSTALLATION DETAILS.
							-	16*				*Plus 10CY 1 ½-INCH-MINUS crushed rock as a leveling course.
	35+60	24	32	XX	-	-	3	5	L/H	NT	C	
	37+20	-	-	-	-	-	-	-	-	-	-	Start check dams (4), see clause 8-5 CHECK DAM.
	38+10	24	32	XX	-	-	3	5	L/H	NT	C	T5 STREAM, start geotextile, see clause 4-70
	38+90	-	-	-	-	-	-	-	-	-	-	End check dams, end geotextile.
	41+30	-	-	-	-	-	-	-	-	-	-	Ditchout, start geotextile, see clause 4-70
	43+40	24	36	XX	-	-	3	5	L/H	NT	C	Seep
	44+30	24	30	XX	-	-	3	5	L/H	NT	C	End geotextile.
	44+90	-	-	-	-	-	-	-	-	-	-	Rock exploration, see clause 6-13
	46+20	18	40	XX	-	-	2	3	L	NT	C	Start grade limitation.
	48+00	-	-	-	-	-	-	-	-	-	-	End grade limitation.
	49+60	24	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	52+00	-	-	-	-	-	-	-	-	-	-	Ditchout
	53+70	24	32	XX	-	-	3	5	L/H	NT	C	
	55+20	18	32	XX	-	-	2	3	L	NT	C	
	58+40	24	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM, start check dams (16), see clause 8-5 CHECK DAM

GM – Galvanized Metal

XX – PD or GM

H – Heavy Loose Riprap

L – Light Loose Riprap

SR – Shot Rock

NT – Native (Bank Run)

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
												18” 24” – 48” 54” – 96”	16 14 14	2 2/3" x 1/2" 2 2/3" x 1/2" 3" x 1"
KM-03 (CONT'D)	59+00	18	36	XX	-	-	2	3	L	NT	C			
	60+40	24	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	61+40	24	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	62+20	24	40	XX	-	-	3	5	L/H	NT	C			
	63+90	-	-	-	-	-	-	-	-	-	-	End check dams left, begin on right (12).		
	65+80	24	36	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	67+00	18	32	XX	-	-	2	3	L	NT	C	Intercept ditch from orphaned grade. End check dams.		
	70+10	-	-	-	-	-	-	-	-	-	-	Ditchout		
	73+00	18	40	XX	-	-	2	3	L	NT	C	Start full bench		
	75+80	24	36	XX	-	-	3	5	L/H	NT	C	End full bench		
	76+80	48	32	GM	-	-	6	10		SR				
	78+30	24	36	XX	-	-	3	5	L/H	NT	C			
	79+60	24	36	XX	-	-	3	5	L/H	NT	C			
	80+40	60	40	GM	-	-	12	10	L/H	SR	C	T4 STREAM		
	80+70	-	-	-	-	-	-	-	-	-	-	Intersect orphaned grade: start optional puncheon and geotextile, see clauses 3-13 and 4-70		
	81+10	30	36	XX	-	-	3	5	L/H	NT	C	Intercept runoff from skid trail above orphaned grade.		
	81+90	30	32	XX	-	-	3	5	L/H	NT	C	Seep		
	82+90	30	40	XX	-	-	3	5	L/H	NT	C	Seep		
	83+50	36	40	GM	-	-	5	7	L/H	NT	C	T4 STREAM		
	83+90	30	36	XX	-	-	3	5	L/H	NT	C	Seep		
	85+00	30	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	85+40	24	40	XX	-	-	3	5	L/H	NT	C			

GM – Galvanized Metal XX – PD or GM

H – Heavy Loose Riprap L – Light Loose Riprap

SR – Shot Rock

NT – Native (Bank Run)

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
												18” 16 2 2/3" x 1/2"
												24” – 48” 14 2 2/3" x 1/2"
												54” – 96” 14 3" x 1"
KM-03 (cont’d)	86+20	30	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	87+40	30	36	XX	-	-	3	5	L/H	NT	C	
	87+70	24	40	XX	-	-	3	5	L/H	NT	C	
	88+60	30	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	89+30	24	32	XX	-	-	3	5	L/H	NT	C	
	90+20	24	32	XX	-	-	3	5	L/H	NT	C	
	90+70	30	32	XX	-	-	3	5	L/H	NT	C	
	91+60	36	36	GM	-	-	5	7	L/H	NT	C	T4 STREAM
	91+80	30	36	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	92+10	30	36	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	93+20	30	32	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	94+00	24	32	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	94+80	24	32	XX	-	-	3	5	L/H	NT	C	T4 SEEP?
	96+00	30	40	XX	-	-	3	5	L/H	NT	C	T4 STREAM
	96+70	24	32	XX	-	-	3	5	L/H	NT	C	Seep
	97+30	24	32	XX	-	-	3	5	L/H	NT	C	T5 STREAM
	98+00	24	32	XX	-	-	3	5	L/H	NT	C	Seep
	99+00	30	32	XX	-	-	3	5	L/H	NT	C	Above T4
	99+80	24	36	XX	-	-	3	5	L/H	NT	C	Seep
	100+60	30	32	XX	-	-	3	7	L/H	NT	C	Needs outlet energy dissipation, above T5 stream
	101+10	24	32	XX	-	-	3	5	L/H	NT	C	
	102+00	32	32	XX	-	-	3	10*	L/H	NT	C	*Includes 5CY for energy dissipation, end geotextile.

GM – Galvanized Metal

XX – PD or GM

H – Heavy Loose Riprap

L – Light Loose Riprap

SR – Shot Rock

NT – Native (Bank Run)

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
												18” 24” – 48” 54” – 96”	16 14 14	2 2/3" x 1/2" 2 2/3" x 1/2" 3" x 1"
KM-0312	0+30	24	36	XX	-	-	3	5	L/H	NT	C	Start check dams, see clause 8-5 CHECK DAM		
	1+80	36	36	GM	-	-	5	7	L/H	NT	C	End check dams.		
	4+60	18	32	XX	-	-	2	3	L	NT	C			
KM-0317	1+30	24	32	XX	-	-	3	5	L/H	NT	C	Intercept outflow from culvert at 89+30 of the KM-03 road.		
	1+80	36	36	GM	-	-	5	7	L/H	NT	C	T4 STREAM		
	2+40	42	32	GM	-	-	6	12	L/H	NT	C	T4 STREAM		
	3+10	42	32	GM	-	-	6	12	L/H	NT	C	T4 STREAM		
	3+80	36	32	GM	-	-	5	7	L/H	NT	C	T4 STREAM		
	4+40	30	32	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	5+50	30	32	XX	-	-	3	5	L/H	NT	C			
	6+30	24	36	XX	-	-	3	5	L/H	NT	C			
	7+00	36	36	GM	-	-	5	7	L/H	NT	C	T4 STREAM		
	8+30	30	36	XX	-	-	3	5	L/H	NT	C	T5 STREAM		
	9+10	18	36	XX	-	-	2	3	L	NT	C			
	9+60	30	32	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	10+50	24	36	XX	-	-	3	5	L/H	NT	C			
	11+60	36	36	GM	-	-	5	7	L/H	NT	C	T4 STREAM		
	12+40	18	32	XX	-	-	2	3	L	NT	C			
	12+70	36	32	GM	-	-	5	7	L/H	NT	C	T4 STREAM		
	13+30	30	32	XX	-	-	3	5	L/H	NT	C	T4 STREAM		
	14+50	24	36	XX	-	-	3	5	L/H	NT	C			

GM – Galvanized Metal

XX – PD or GM

H – Heavy Loose Riprap

L – Light Loose Riprap

SR – Shot Rock

NT – Native (Bank Run)

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

GM – Galvanized Metal

XX – PD or GM

H – Heavy Loose Riprap

L – Light Loose Riprap

SR – Shot Rock

NT – Native (Bank Run)

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

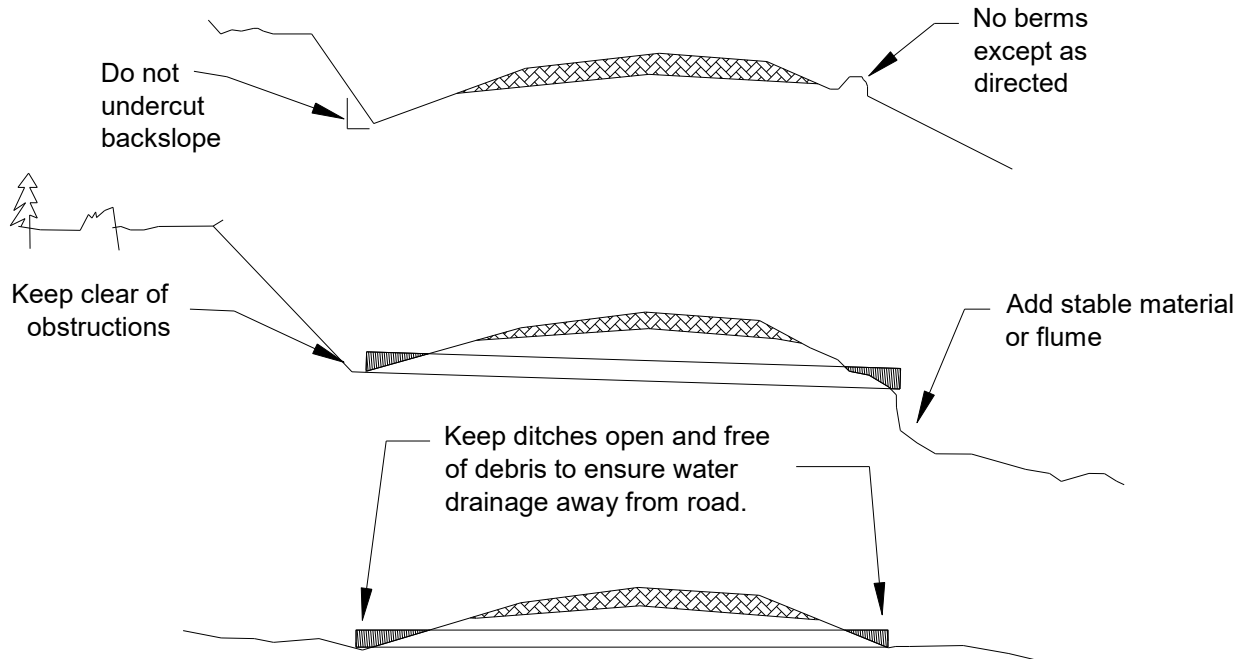
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

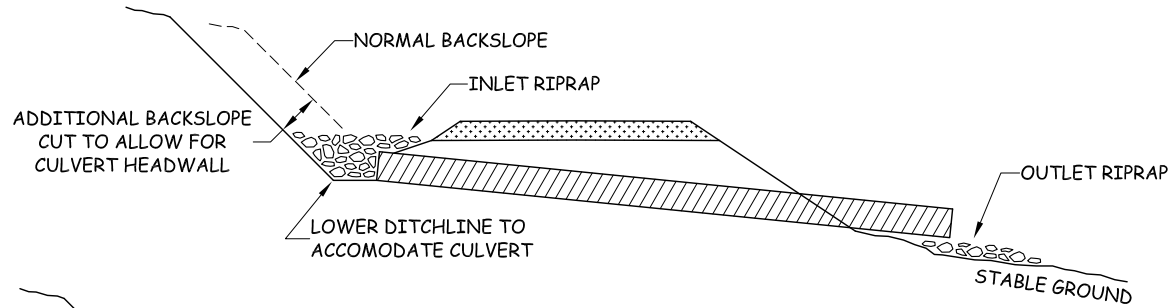
Debris

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

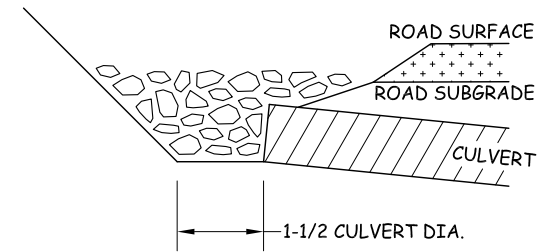


CULVERT AND DRAINAGE SPECIFICATIONS

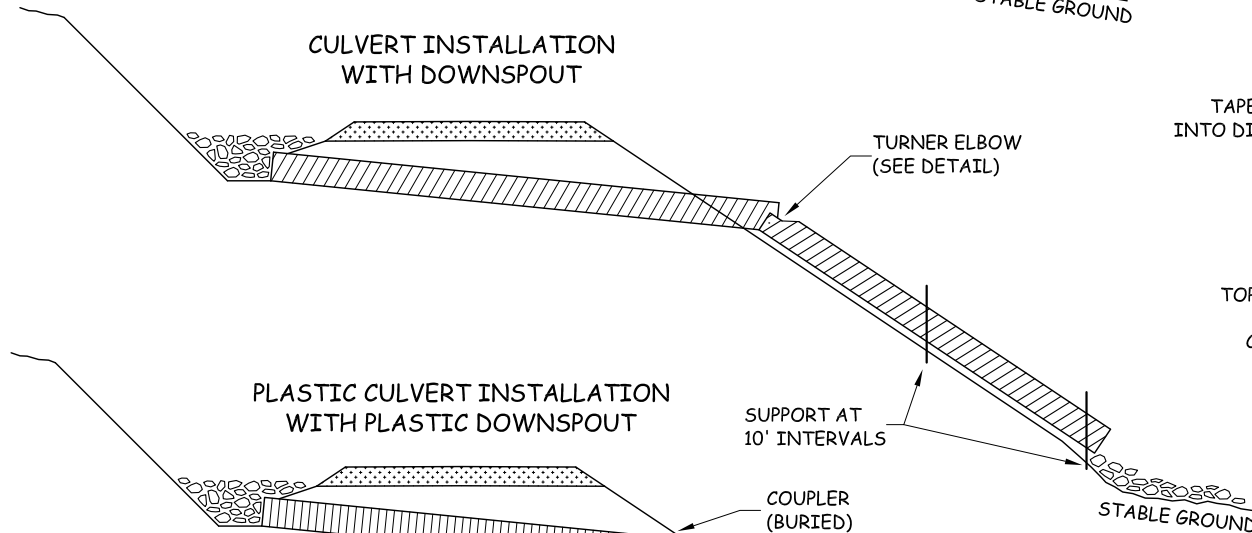
CULVERT INSTALLATION (TYPICAL)



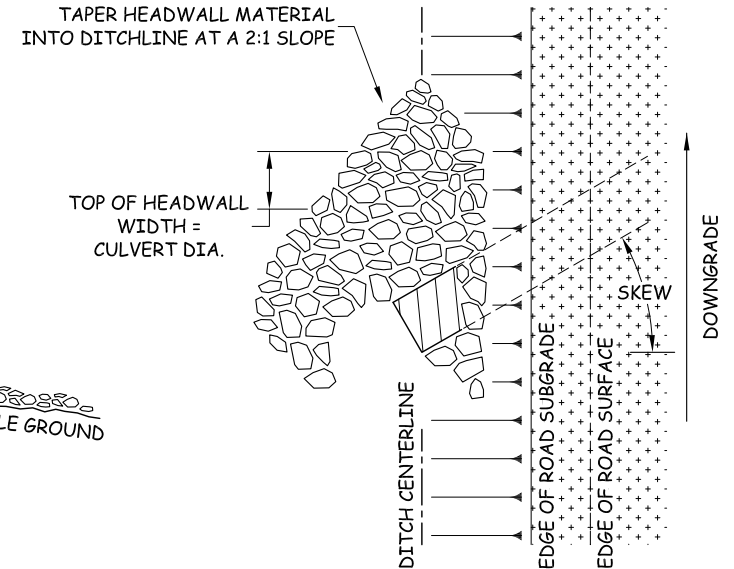
CULVERT HEADWALL - SECTION VIEW



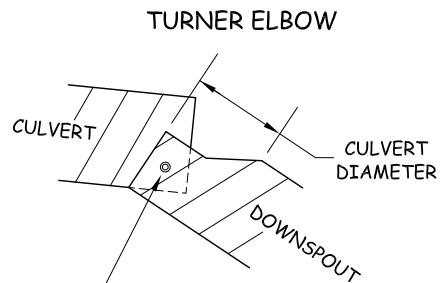
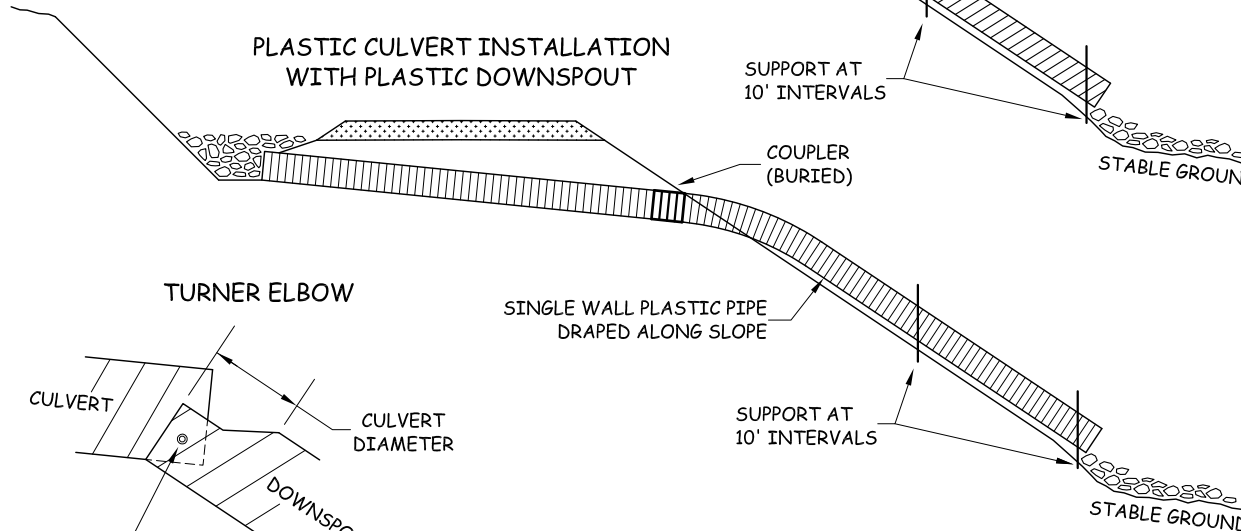
CULVERT INSTALLATION WITH DOWNSPOUT



CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



HEADWALL NOTE:

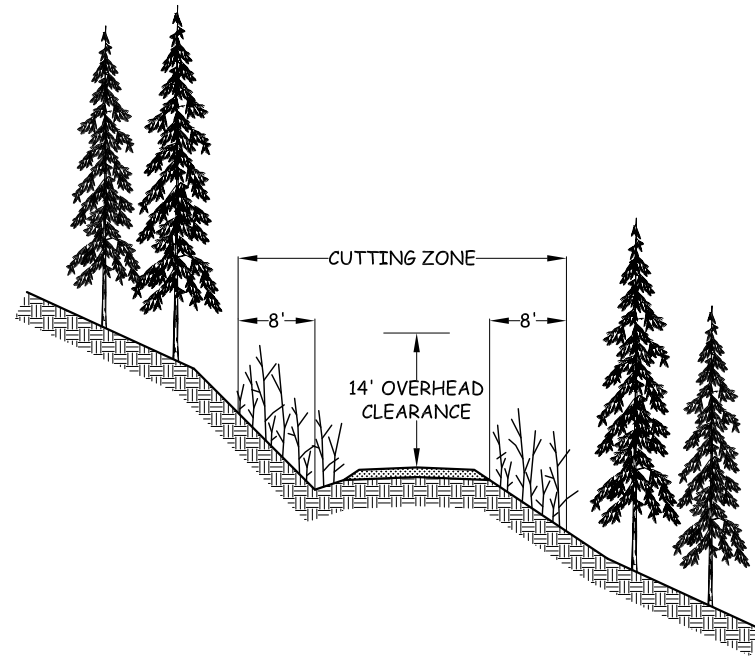
HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

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WEST OLNEY

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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.

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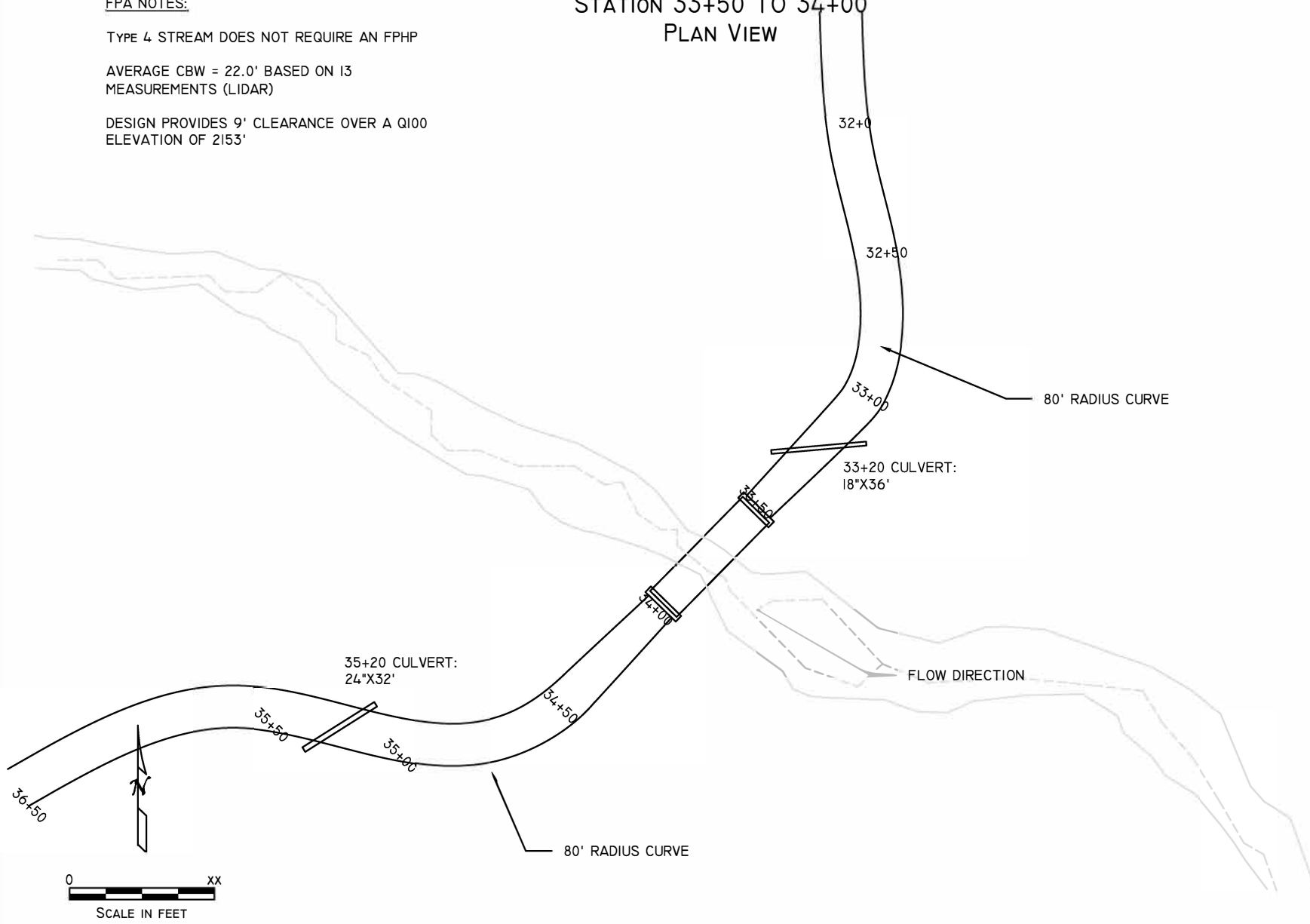
KM-03 BRIDGE INSTALLATION
STATION 33+50 TO 34+00
PLAN VIEW

FPA NOTES:

TYPE 4 STREAM DOES NOT REQUIRE AN FPHP

AVERAGE CBW = 22.0' BASED ON 13
MEASUREMENTS (LIDAR)

DESIGN PROVIDES 9' CLEARANCE OVER A Q100
ELEVATION OF 2153'



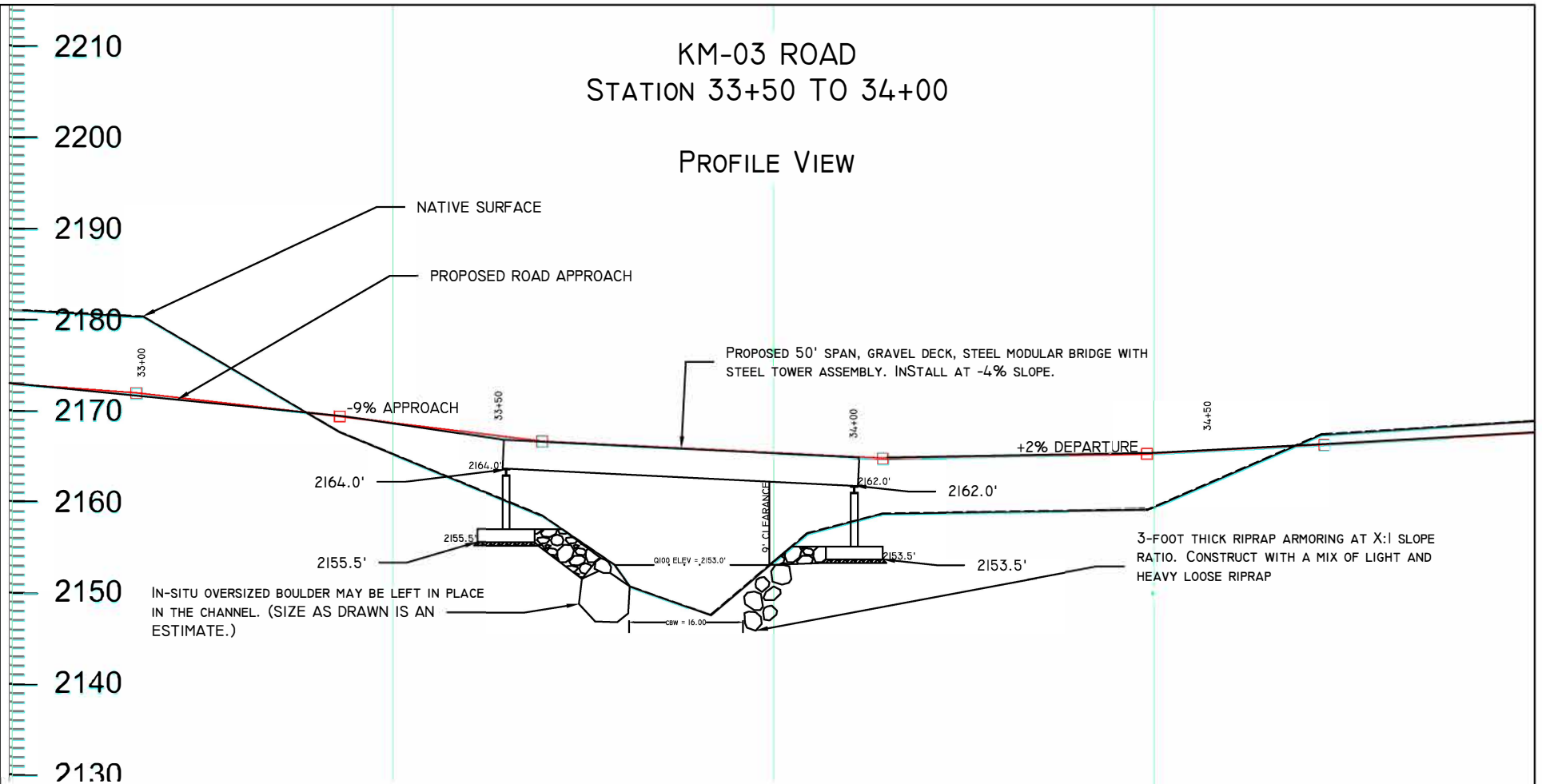
CONTRACT #
30-1554011

PROJECT
WEST OLNEY

SHEET
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KM-03 ROAD STATION 33+50 TO 34+00

PROFILE VIEW



CONSTRUCTION NOTES:

1. 3-FOOT THICK RIPRAP ARMORING AT $1\frac{1}{2}$:1 SLOPE. COUNTERSINK TOE 2' BELOW CHANNEL BOTTOM. CONSTRUCT WITH A MIX OF LIGHT AND HEAVY LOOSE RIPRAP. (APPROXIMATELY XXXCY REQUIRED)
2. PRECAST CONCRETE FOOTING WITH STEEL TOWER ASSEMBLY. OVEREXCAVATE 0.5' AND PLACE COMPACTED LAYER OF $1\frac{1}{2}$ " MINUS CRUSHED ROCK AS LEVELING COURSE.
3. NO CHANGE TO STREAMBED PROPOSED.
4. EXCAVATED NATIVE MATERIAL MAY BE COMPACTED IN 6" LIFTS AND USED FOR FILL IN ROAD APPROACHES.

DESIGN ELEVATIONS MAY BE ALTERED WITH ENGINEER APPROVAL.



CONTRACT #	PROJECT	SHEET
30-5540	WEST OLNEY	50 OF 54

Technical Bridge Specifications

PART B.1 – MATERIALS

B.1.1 STRUCTURAL STEEL – WITH PAINT SYSTEM

Structural Steel shall be ASTM A992. Structural Steel used as main load-carrying tension members or as tension components of flexural members shall be impact tested and shall have a minimum average Charpy V-notch (CVN) toughness of 25 ft-lb at 40°F.

Welded splices are prohibited in main load carrying members.

Mill Test Certificates shall be furnished for all structural steel members used in the fabrication of the bridge. Certified mill test reports for steel members with specified values shall include, in addition to other test results, the results of Charpy V-notch impact tests.

B.1.2 BRIDGE PAINT SYSTEM

All paint coating components of the selected protective coating system shall be produced by the same manufacturer and shall be compatible with one another. The protective coating system shall be a North East Protective Coating Committee (NEPCOAT) Qualified Product from List A or List B or protective coating system approved by the State that meets or exceeds the protection of the pre-approved systems.

Each of the three coats (primer, intermediate, top) shall be of contrasting color to the previously applied full coat. The color of the top coat shall be as specified in the Plans or as selected by the State from a palette of choices provided by the Contractor. Paint systems shall be applied in accordance with manufacturer recommendations.

The minimum dry film thickness of each coat (primer, intermediate, and top coats) shall be as recommended by the manufacturer. Additionally, the minimum dry film thickness of each coat shall be a minimum of 3.0 mils in thickness.

Prior to work the Contractor shall provide a submittal for each paint system used that includes the protective coating system used, on what elements the paint system will be applied, color of each coat, and the manufacturers recommendations for application.

B.1.3 ELASTOMERIC BEARING PADS

Elastomeric bearing pads shall conform to the requirements of AASHTO M251.

PART B.2 – CONSTRUCTION REQUIREMENTS

B.2.1 STEEL BRIDGE FABRICATOR QUALIFICATIONS

Steel bridge fabricator shall be certified under the AISC Quality Certification Program, Certified Bridge Fabricator - Simple (SBR). When fracture critical members are included in the bridge, bridge fabricators shall also have a Fracture Critical Endorsement (FC), under the AISC Quality Certification Program.

B.2.2 STEEL WELDING AND INSPECTION

Welding and weld qualification tests shall conform to the provisions of the current edition of the AASHTO/AWS D1.5 Bridge Welding Code. No welding, including tack and temporary welds, shall be done in the shop or field unless location of the welds are shown on the approved shop drawings or otherwise approved by the State in writing. Contractor shall provide State proof of welder certification prior to any field welding.

The Contractor is responsible for non-destructive testing and welding inspection in accordance with, and as required by, AASHTO/AWS D1.5 Bridge Welding Code and as otherwise detailed in the Technical Specifications and Plans. Testing and inspection shall apply to welding performed both in the field and in the shop. After the contractors welding testing and inspection is complete, they shall provide copies of procedures, acceptance criteria, results, and inspector qualifications to the State within 48 hours of request.

B.2.3 STEEL SURFACE CLEANING AND PREPARATION

All surfaces of structural steel shall be blast cleaned in accordance with the Steel Structures Painting Council (SSPC), Surface Preparation Specification No. 6, latest edition, (SSPC-SP6), Commercial Blast.

B.2.4 STEEL PAINTING

All exposed steel components shall be painted in accordance with Technical Specification B.1.2 unless otherwise specified as galvanized.

B.2.5 STEEL GALVANIZING

All galvanizing must be done after fabrication and must be in accordance with AASHTO Designation M111-09 (ASTM Designation: A123) and/or AASHTO Designation M232-10 centrifuged to remove excess (ASTM Designation A153) and/or AASHTO M298-10 mechanical galvanization (ASTM B695-04). All bolts used to facilitate field assembly will be A325 Type 1 or 2 galvanized.

B.2.6 PRECAST CONCRETE FABRICATOR QUALIFICATIONS

Precast concrete footing fabricator shall be certified under the Precast/Prestressed Concrete Institute's (PCI) Plant Certification Program at a level equivalent or higher than B1 – Precast Bridge Products (No Prestressed Reinforcement).

PART B.3 – STRUCTURE DESIGN**B.3.1 CONTRACTOR'S DESIGN ENGINEER**

All design work shall be completed by (or under the direct supervision of) a Professional Engineer, licensed in the State of Washington, in the branch of Civil or Structural Engineering.

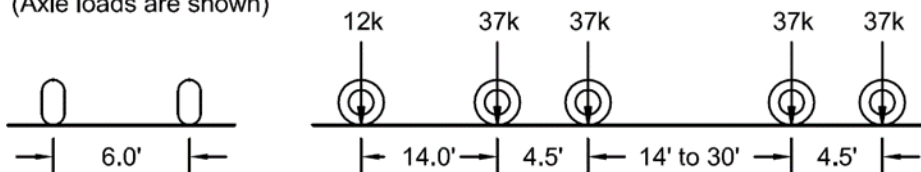
B.3.2 DESIGN METHOD

All design work shall be in conformance with the current edition of the AASHTO LRFD Bridge Design Specifications and all subsequent interim specifications. Design details not covered by the AASHTO Specifications shall be in accordance with normally accepted structural design standards.

B.3.3 DESIGN LOADING

Bridge and foundation shall be designed to the HL-93 loading and U-80 special design vehicle with full impact (IM=33%).

U80 TRUCK LOADING - GVW = 80 TONS
(Axle loads are shown)

**B.3.4 BRIDGE DESIGN – GENERAL**

A. The bridge must include integral rails on each side. Bridge Rails shall be thrie-beam or W-Beam with steel posts and shall be designed for TL-1 force requirements in accordance with AASHTO LRFD Appendix A13.2. Bridge Rails are not required to be crash tested. All steel components shall be galvanized. End sections shall conform to WSDOT Standard Plan C-7 (or C-7a), Design C. All rail elements shall be formed with minimum 12-gauge steel.

B. Top of rail shall be a minimum of 18" above the top of the wearing surface.

C. Bridge components shall include functional lifting points to facilitate unloading and placement.

B.3.5 BRIDGE DESIGN – SUPERSTRUCTURE

Bridge superstructure members shall meet or exceed the following parameters:

- A. The superstructure shall be a modular design consisting of steel girders with one of the following deck options:
 - Option 1: Corrugated galvanized steel, with a 4 inch side dam to contain gravel surfacing
 - Option 2: Non-composite precast concrete panels, with 4 inch curbs and 2% crowned surface
- B. Bridge deck shall be continuous full width, with no gaps that allow water and sediment to drain through the bridge deck.
- C. Vehicle load deflection limit of $L/500$ calculated in accordance with AASHTO LRFD Section 3.6.1.3.2.
- D. Bridge shall include endwalls that extend at least 6 feet beyond edges of bridge. Endwalls may be either precast concrete or galvanized steel.
- E. Concrete components shall be constructed of reinforced concrete with a minimum 28-day compressive strength of 4,000 psi.
- F. Concrete design shall include specifications for:
 - i. Required concrete strength at release and at 28 days.
 - ii. Maximum slump of concrete.
 - iii. Air content of concrete.
 - iv. Reinforcing steel size, grade, and coating if applicable.

B.3.6 BRIDGE FOUNDATION DESIGN – TOWER AND PAD

The foundation shall meet or exceed the parameters outlined below.

- A. Foundation shall be consist of pre-cast concrete spread footings with steel tower assembly extending to bridge elevation.
- B. All non-galvanized steel members that may come into contact with soil shall be painted with an anti-corrosion coating.
- C. The abutment connections shall be per the bridge manufacturer's written instructions or as designed by the Contractor's engineer.
- D. Nominal bearing resistance of the soil is assumed to be 4,000 pounds per square foot.
- E. Design of pre-cast components provided by Contractor's Engineer shall include specifications for:
 - i. Required concrete strength at release.
 - ii. Required concrete strength for transport.
 - iii. Required concrete strength for exposure to construction loads.
 - iv. Required concrete strength at 28 days.
 - v. Reinforcing steel configuration, size, grade, and coating if applicable.



WASHINGTON STATE
DEPT. OF NATURAL RESOURCES
NORTHWEST REGION

WEST OLNEY
STREAM RESTORATION DETAIL
PLAN VIEW

EXCAVATE

EXCAVATE

EXCAVATE

T29R09E

ORPHANED ROAD GRADE KM-0315

ORPHANED SKID TRAIL

78+30

79+60

80+40

80+70 = 0+00

81+10

81+90

2680

2690

2705

0+60

2+10

3+40

A

A'

SCALE

0

100

PROFILE

A

A'

EXISTING ORPHANED ROAD GRADE

PROPOSED EXCAVATION

2:1

5'

CURRENT CONDITIONS:
A POORLY LOCATED ORPHANED GRADE HAS INTERCEPTED SEVERAL STREAMS WHICH ARE POOLING ON THE ROAD SURFACE AND SCOURING A CHANNEL.

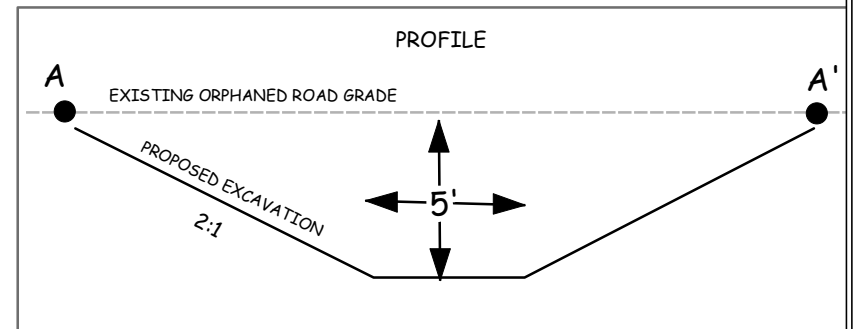
PURCHASER SHALL RESTORE THESE STREAMS TO THEIR ORIGINAL CHANNELS.

STREAM CHANNEL RESTORATION NOTES:

1. EXCAVATE CHANNELS ACROSS THE ORPHANED KM-0315 GRADE AT THREE STREAM CROSSING LOCATIONS INDICATED.
2. EACH EXCAVATED CHANNEL SHALL PROVIDE POSITIVE DRAINAGE ACROSS THE GRADE.
3. EXCAVATE TO A WIDTH OF FIVE FEET AND A DEPTH OF FIVE FEET BELOW EXISTING GRADE. LAY BACK EXCAVATION SLOPES AT NO STEEPER THAN 2:1.
4. EXCAVATED MATERIAL MAY BE PLACED BETWEEN STREAMS TO REESTABLISH THE TOPOGRAPHY THE EXISTED PRIOR TO CONSTRUCTION OF THE ORPHANED GRADE.

SHEET 54 OF 54

4. EXCAVATED MATERIAL MAY BE PLACED BETWEEN STREAMS TO REESTABLISH THE TOPOGRAPHY THE EXISTED PRIOR TO CONSTRUCTION OF THE ORPHANED GRADE.



SUMMARY - Road Development Costs

REGION Northwest

DISTRICT Cascade

SALE/PROJECT NAME:

WEST OLNEY

CONTRACT #: 30-102969

ROAD NUMBERS:

CSB-119, CSB-228-04,
KM-03, CSB-116, CSB-
119-03, KM-01, KM-
0312, KM-0317

KM-ML

ROAD STANDARD:

Construction

Reconstruction

Maintenance

NUMBER OF STATIONS:

169.60

14.70

0.00

CLEARING & GRUBBING:

\$15,965

\$1,411

\$0

EXCAVATION AND FILL:

\$111,382

\$2,646

\$0

MISC. MAINTENANCE:

\$2,510

\$491

ROAD ROCK:

\$206,848

\$15,631

\$0

ROCK STOCKPILE PROD:

-

-

-

CULVERTS AND FLUMES:

\$125,031

\$0

\$0

STRUCTURES:

\$95,000

\$0

\$0

MOBILIZATION:

\$7,110

\$1,080

\$0

TOTAL COSTS:

\$563,846

\$21,260

\$0

COST PER STATION:

\$3,325

\$1,446

N/A

ROAD DEACTIVATION & ABANDONMENT COSTS:

\$2,719

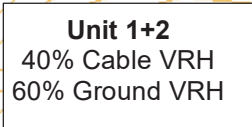
TOTAL (All Roads) = \$587,824

















SALE VOLUME MBF = 3500

TOTAL \$/MBF = \$168

Compiled by: A. HALGREN Date: 9/23/2022

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 1760-2440

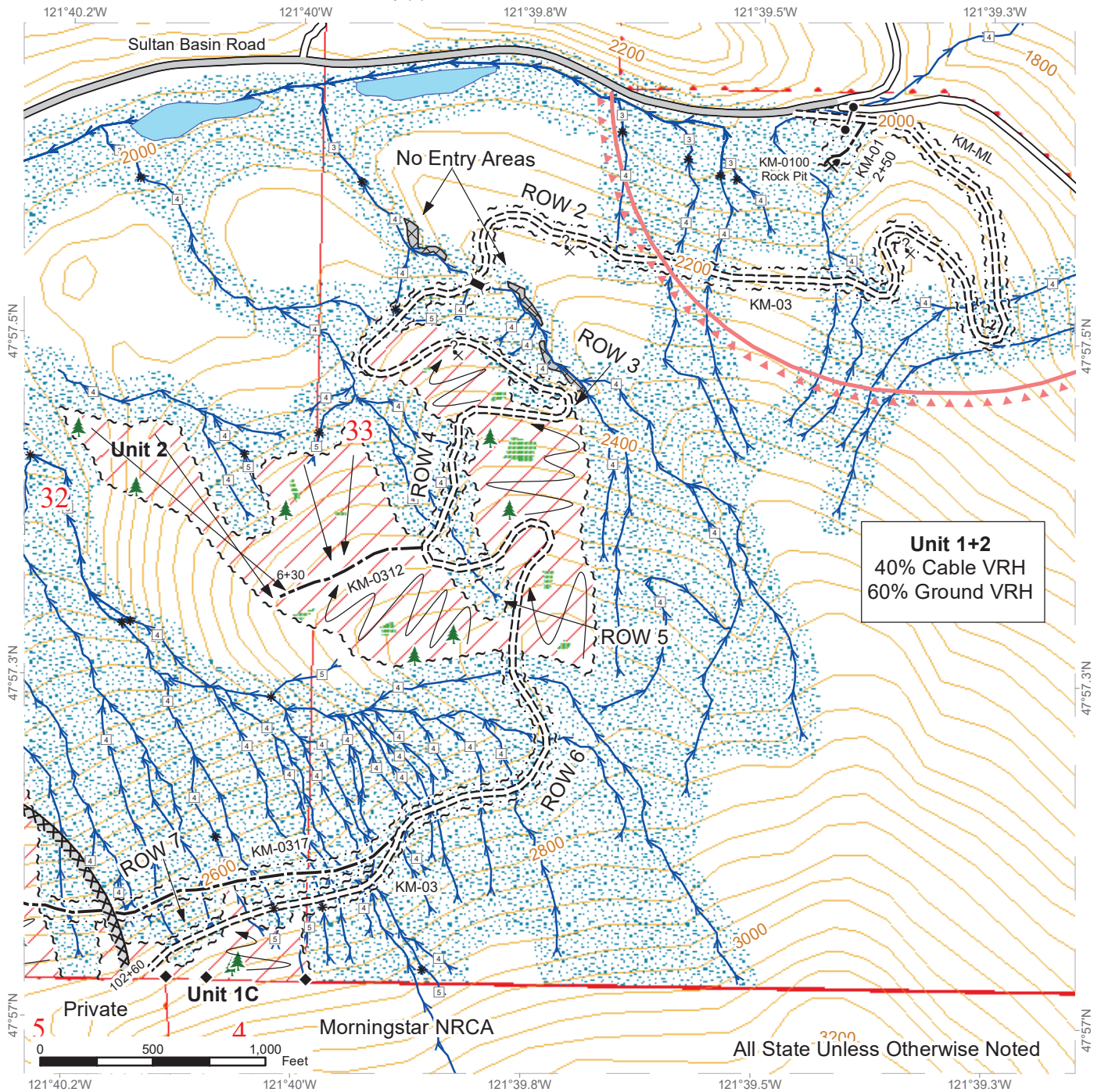


- | | | |
|---|---|--|
| ~ ~ ~ Sale Boundary Tags |  Timing Restriction 2 |  Leave Tree Area |
| ~ ~ ~ Right of Way Tags |  Survey Monument |  Riparian Mgt Zone |
|  Property Line |  Bridge |  Forested Wetland |
|  County Road |  Gate Installation |  Wetland Mgt Zone |
|  Existing Roads |  Leave Tree Area <1/4-acre |  Variable Retention Harvest |
|  Required Construction |  Rock Pit | |
|  Optional Construction |  Streams | |
|  Timing Restriction 1 | | |

LOGGING PLAN MAP

SALE NAME: WEST OLNEY
AGREEMENT#: 30-102969
TOWNSHIP(S): T29R9E
TRUST(S): Common School and Indemnity (3)

REGION: Northwest Region
COUNTY(S): Snohomish
ELEVATION RGE: 1760-2440



~ ~ ~ Sale Boundary Tags	V V V Timing Restriction 2	Leave Tree Area
~ ~ ~ Right of Way Tags	Survey Monument	Riparian Mgt Zone
Property Line	Bridge	Variable Retention Harvest
County Road	Gate (F1-3)	No Entry Areas
Existing Roads	Leave Tree Area <1/4-acre	
Required Construction	Potential Rock Source	
Optional Construction	Rock Pit	
XXXX Timing Restriction 1	Streams	