

TIMBER NOTICE OF SALE

SALE NAME: *URSA MAJOR*

AGREEMENT NO: *30-093095*

AUCTION: April 27, 2016 starting at 10:00 a.m.,
Northwest Region Office, Sedro Woolley, WA

COUNTY: Snohomish

SALE LOCATION: Sale located approximately 10 miles east of Arlington, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber (including cedar salvage) bounded by white timber sale boundary tags, adjacent young stands and JC-45 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and those remnant cedar snags, dead and down cedar trees marked with blue paint in Unit #1.

All timber bounded by white timber sale boundary tags, trees marked with red paint and a yellow "T" and the JC-2237 road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All timber bounded by white timber sale boundary tags, adjacent young stands and the JC-2237 road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

The above described products on part(s) of Sections 1, 14 and 23 all in Township 31 North, Range 6 East, W.M., containing 50 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BV-SFIS-US09000572)

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Hemlock	17	11	1,989				73		1,075	559	215	67
Douglas fir	34	8	455				110		329	8	8	
Red cedar	19		205							154	51	
Cottonwood	26		113						113			
Maple	18		31						13	4	14	
Red alder	21		10						7		3	
Silver fir	22		9						6	3		
Sale Total			2,812									

MINIMUM BID: \$719,000.00

BID METHOD: Sealed Bids

**PERFORMANCE
SECURITY:**

\$100,000.00

SALE TYPE: Lump Sum

EXPIRATION DATE: March 31, 2018

ALLOCATION: Export Restricted

BID DEPOSIT: \$71,900.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; cable or shovel on sustained slopes 35% or less. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract

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Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

Additional restrictions apply, see Remarks section below.

ROADS:

18.47 stations of optional construction. 18.47 stations of road to be abandoned if built. 565.71 feet of pre-haul maintenance.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: JC-4403 Hardrock Pit at station 12+20 of the JC-44 Road. JC-2228-06 Hardrock Pit at station 34+35 of the JC-2228 Road. JC-2211 Hardrock Pit at station 57+23 of the JC-22 Road.

NOTE: The JC-2211 Hardrock Pit to be used only as approved in writing by the Contract Administrator as a limited capping or for maintenance. Riprap may be used as needed.

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

There are existing stockpiles of 3-inch-minus ballast rock and riprap available for use in the JC-4403 Hardrock Pit and the JC-2211 Hardrock Pit.

An estimated total quantity of rock needed for this proposal: 40 cubic yards of riprap, 1,760 cubic yards of shot ballast and 347 cubic yards of 3-inch-minus ballast rock.

Additional restrictions apply, see Remarks section below.

Road construction, pre-haul maintenance, road abandonment, 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. 52.3 acres gross. 1.9 acres deducted for green tree retention clumps. 50.4 acres net. Cruised using variable plot method. Expansion factor used is 54.4 and 62.5. Sighting height is 4.5 feet. A total of 56 plots were taken.

Shapefiles of units are available upon request.

FEES:

\$49,913.00 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. Wildlife timing restrictions are: no falling, bucking, yarding or operation of heavy equipment April 1 to August 31 from one hour before official sunrise to two hours after official sunrise and one before and after official sunset. Timing restrictions will be applied to Unit #3.

2. The DNR's standard conversion factor is 600 board feet per cord (cord = 128 cubic feet). Forest products has been converted to MBF for payment purposes. Approximately 30 cords scattered throughout the Unit #1 (% shingle material & % shake material estimates were not made). This volume equates to approximately 18 mbf of cedar which was added to the 4S in the sale volume above.

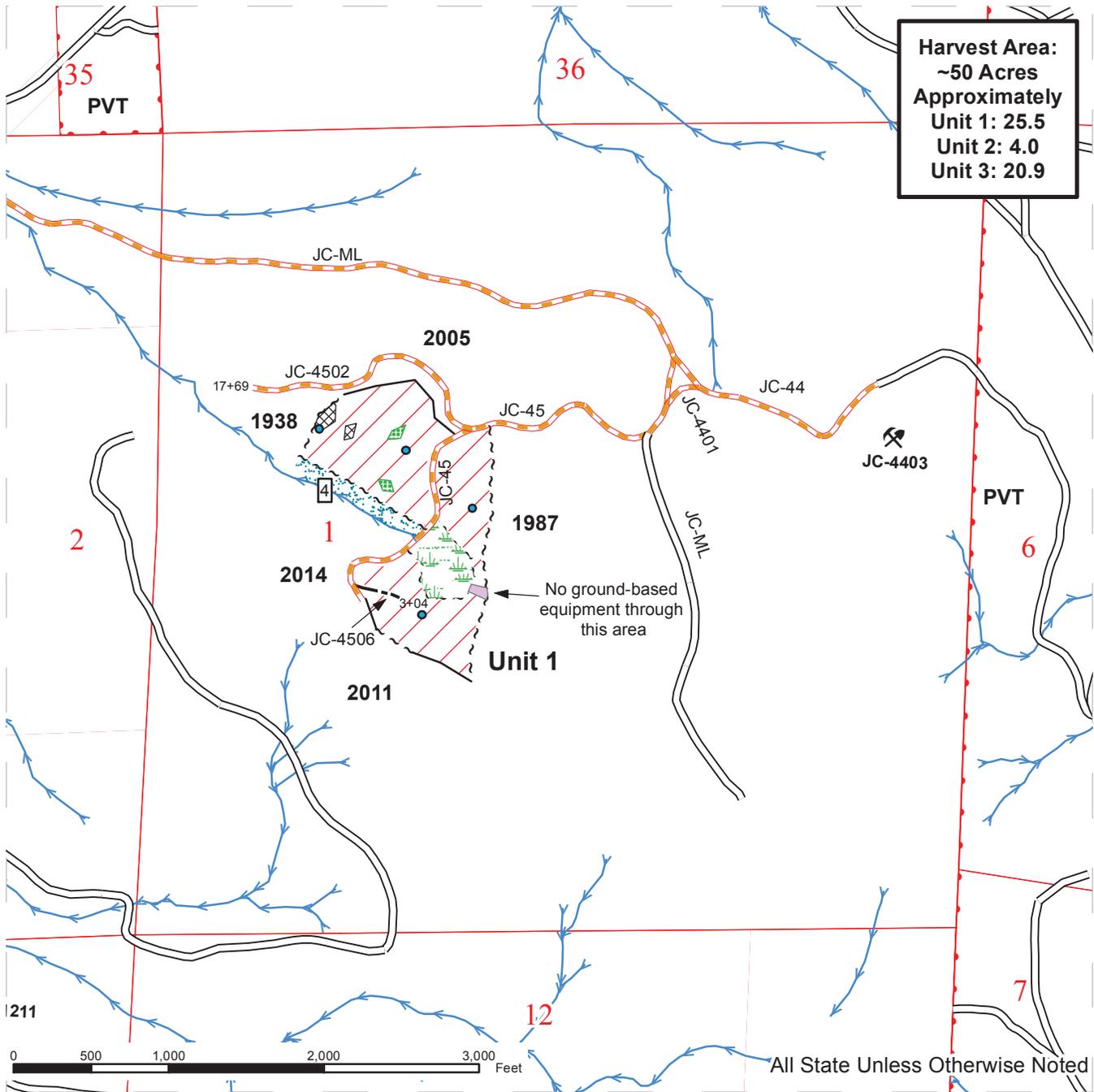
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3. HQ DF noted within the sale area. See cruise for further details (approximately 42 mbf of the above listed DF 2S is deemed high quality by the Department).

TIMBER SALE MAP

SALE NAME: Ursa Major
 AGREEMENT#: 93095
 TOWNSHIP(S): T31R06E
 TRUST(S): 01

REGION: Northwest
 COUNTY(S): Snohomish
 ELEVATION RGE: 1200-1681'



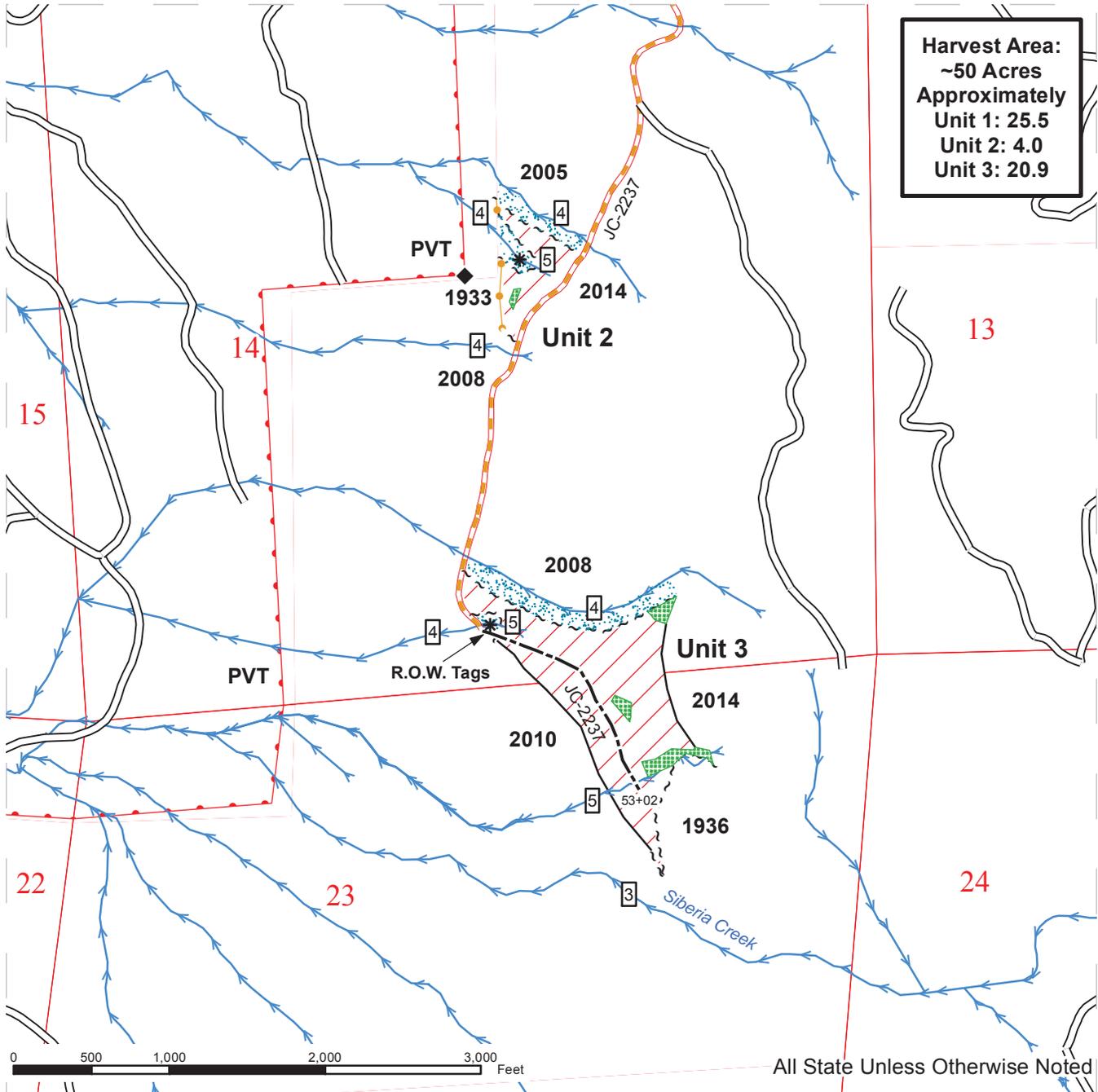
**Harvest Area:
 ~50 Acres
 Approximately
 Unit 1: 25.5
 Unit 2: 4.0
 Unit 3: 20.9**



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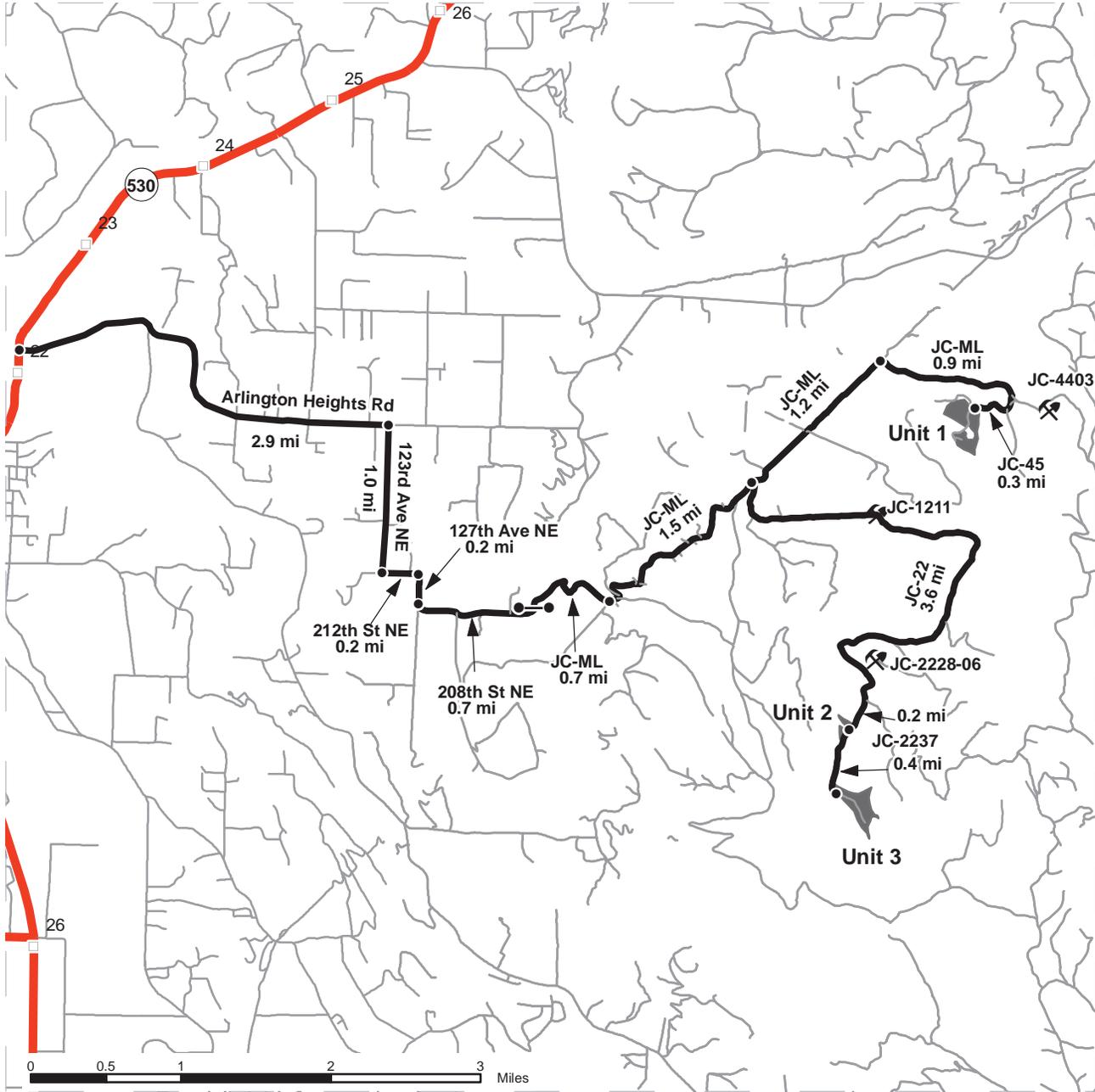
**Harvest Area:
 ~50 Acres
 Approximately
 Unit 1: 25.5
 Unit 2: 4.0
 Unit 3: 20.9**

Sale Area	Streams	Existing Road
Sale Boundary Tags	Stream Type	Pre-Haul Maintenance
Sale Boundary (No Tags)	Stream Type Break	Optional Construction
Painted Take Trees	Riparian Mgt Zone	No Equipment Zone
Leave LWD	Wetland Mgt Zone	DNR Managed Lands
	Leave Tree Area	Rock Pit
	Nontradeable Leave Tree Area	Survey Corner

DRIVING MAP

SALE NAME: URSA MAJOR
 AGREEMENT#: 93095
 TOWNSHIP(S): T31R06E
 TRUST(S): State Forest Transfer(1)

REGION: Northwest Region
 COUNTY(S): SNOHOMISH
 ELEVATION RGE: 1200-1681'



	Timber Sale Unit
	Highways
	Other Route
	Haul Route
	Milepost Markers
	Gate
	Rock Pit
	Distance Indicator

DRIVING DIRECTIONS:

From Arlington, travel east on SR-530. Turn right on Arlington Heights Road 0.1 miles after milepost 22 and travel for 2.9 miles. Turn right onto 123rd Avenue NE and travel for 1 mile. Turn left onto 212th Street NE and travel for 0.2 miles. Turn right onto 127th Avenue NE and travel for 0.2 miles. Veer left onto 208th Street NE and travel 0.7 miles to the gate at the end of the county road (JC-ML). From the gate:

To reach Unit 1:
 Follow the JC-ML for 0.7 mile until reaching the power lines. Turn left on the Powerline Rd. (JC-ML) and continue for 2.7 miles to a junction. Turn right and continue on the JC-ML for 0.9 miles to JC-45. Turn right and travel 0.3 miles to the unit.

To reach Units 2 and 3:
 Follow the JC-ML for 0.7 mile until reaching the power lines. Turn left on the Powerline Rd. (JC-ML) and continue for 1.5 miles to JC-22. Turn right onto JC-22 and travel for 3.6 miles. Veer left onto JC-2237. Continue on JC-2237 for 0.2 miles to reach Unit 2, and for 0.6 miles to reach Unit 3.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-093095

SALE NAME: URSA MAJOR

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on April 27, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber (including cedar salvage) bounded by white timber sale boundary tags, adjacent young stands and JC-45 Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and those remnant cedar snags, dead and down cedar trees marked with blue paint in Unit #1.

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The above described products, located on approximately 50 acres on part(s) of Sections 1, 14, and 23 all in Township 31 North, Range 6 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-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	NW Ground-Based Equip Specifications (Rev11/05/14)

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-051 Contract Term Extension - Payment

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

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

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

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

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

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

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

- e. Payment of \$665.00 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-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. 812521 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, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

Purchaser is responsible for obtaining any permits not already obtained by the State that relate to Purchaser's operation. Forest Practice Application / Hydraulic Project

Approval permits obtained by the State shall be transferred to Purchaser. Purchaser is responsible for all permits, amendments and renewals.

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to Purchaser will be limited to a return of the initial deposit,

unapplied payments, and credit for unamortized improvements made by Purchaser. The State shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

Any forest products not designated for removal, which must be removed in the course of operations authorized by the State, shall be approved and designated by the Contract Administrator. Added forest products become a part of this contract and the Scribner log scale volume, as defined by the Northwest Log Rules Advisory Group, shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Cottonwood	\$98.82	0	\$0.00	\$9.00	\$9.00
Douglas fir	\$287.96	0	\$0.00	\$9.00	\$9.00
Hemlock	\$215.04	0	\$0.00	\$9.00	\$9.00
Maple	\$191.66	0	\$0.00	\$9.00	\$9.00
Red alder	\$302.63	0	\$0.00	\$9.00	\$9.00
Red cedar	\$673.84	0	\$0.00	\$9.00	\$9.00
Silver fir	\$220.86	0	\$0.00	\$9.00	\$9.00
Other	\$268.29	0	\$0.00	\$9.00	\$9.00

G-106 Adding Naturally Damaged Forest Products

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the State's Contract Administrator. Additions

must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. Added forest products become a part of this contract and shall be paid for at the rate set forth in clause G-101, G-102 or G-103.

G-111 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

1. Failure of (a) required improvements or roads designated in clause C-050, or (b) required or optional construction completed to the point that authorization to haul has been issued;
2. Caused by a single event from forces beyond the control of Purchaser, its employees, agents, or invitees, including independent contractors; and

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

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

All insurance and surety bonds should be issued by companies admitted to do business within the State of Washington and have a rating of A-, Class VII or better in the most

recently published edition of Best's Reports. If an insurer is not admitted, all insurance policies and procedures for issuing the insurance policies must comply with Chapter 48.15 RCW and 284-15 WAC.

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

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

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

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

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

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

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

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

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

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

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

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

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

Business Auto Policy (BAP). Purchaser shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit not less than \$1,000,000.00 per accident. Such insurance shall cover liability arising out of "Any Auto". Business auto coverage shall be written on ISO form CA 00 01, or substitute liability form providing equivalent coverage. If necessary the policy shall be endorsed

to provide contractual liability coverage and cover a "covered pollution cost or expense" as provided in the 1990 or later editions of CA 00 01. Purchaser waives all rights against State for the recovery of damages to the extent they are covered by business auto liability or commercial umbrella liability insurance.

G-160 Agents

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.
- c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.
- d. Unless otherwise agreed, a conference will be held by the Deputy Supervisor - Uplands within 30 calendar days of the receipt of Purchaser's request for review of the Region Manager's written decision. Purchaser and the Region Manager will have an opportunity to present their positions. The Deputy Supervisor - Uplands will issue a decision within a reasonable time of being presented with both Parties' positions.

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

damages to or loss of the equipment or damage caused by the moving, storing or disposal of the equipment.

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; JC-ML (Jim Creek Mainline), JC-22, JC-2228, JC-2229, JC-2237, JC-44, JC-4401, JC-45, JC-4502, and JC-4506. 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-380 Road Easement and Road Use Permit Requirements

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

Easements with:

John R. Bruckart, Jr., Steven Richard Sprague, Delbert R. Taylor, Mae Taylor, Ralph Lee Taylor, Patricia Ann Taylor, Mary Ellen Hogle, Nancy Mae Taylor and Judith Lynne Taylor; #55-001243; dated May 1, 1975.

Steven Richard Sprague, Ralph Lee Taylor, Patricia Ann Taylor, Mary Ellen Hogle, Nancy Mae Mason and Judith Lynne Taylor; #55-001243 Supplement; dated November 12, 1980.

Jim Creek Properties; #55-002705; dated November 18, 1998.

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 \$75,221.00. The total contract price consists of a \$0.00 contract bid price plus \$75,221.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

THE PURCHASE PRICE SHALL NOT BE AFFECTED BY ANY FACTORS, INCLUDING: the amount of forest products actually present within the contract area, the actual acreage covered by the contract area, the amount or volume of forest products actually cut or removed by purchaser, whether it becomes physically impossible or uneconomic to remove the forest products, and whether the subject forest products have been lost or damaged by fire or any other cause. The only situations

Purchaser may not be liable for the full purchase price are governed by clause G-066, concerning governmental regulatory actions taken during the term of the contract.

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-001 Operations Outside the Sale Boundaries

No operations shall occur outside the sale boundaries, as described within the contract, unless approved in writing by the State.

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

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 4 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for the sale area. The plan shall address the falling, yarding and hauling of forest products, which are part(s) of this contract. The harvest plan shall be approved by the Contract

Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-051 Branding and Painting

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

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

H-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-120 Harvesting Equipment

Forest products sold under this contract shall be felled by chainsaw and yarded by cable; felled by chainsaw or feller-buncher and yarded by cable or shovel on sustained slopes 35% or less, unless authority to use other equipment is granted 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 on any road 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. An on-site pre-work meeting shall be scheduled with the Contract Administrator, which shall include the operator and fallers, prior to commencement of any activities on site.
- B. A copy of the timber sale map and contract shall be present on site during active operations.

- C. Trees must be felled away from all stream channels and any standing water or wet swales when feasible, particularly the area of Unit 1 depicted on the timber sale prospectus map.
- D. All Type 5 streams shall have a 30-foot equipment limitation zone measured from each bank. All Type 5 crossings shall be as close to perpendicular as possible and be preapproved by the Contract Administrator.
- E. Temporary log crossings that protect stream bank integrity are required for Type 5 water crossings during yarding operations and must be approved in writing by the Contract Administrator. Structures shall be limited to crossing points approved in writing by the Contract Administrator. Streambeds and banks shall be protected by the use of log puncheon or other approved structures at these crossing points and removed upon the completion of yarding activities.
- F. Trees shall be felled into Unit 2, away from the private timber boundary west of the unit.
- G. Purchaser must close and lock the DNR gate at the junction of 208th Street NE and JC-ML Road at the end of every day.

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. Cedar salvage is permitted in Unit 1 only. All LWD painted blue or within a RMZ, WMZ, or leave tree clump must be left undisturbed. Trees shall be felled away from blue painted LWD. Salvage is not permitted in Units 2 or 3.
- B. Wildlife timing restrictions are: no falling, bucking, yarding or operation of heavy equipment April 1 to August 31 from one hour before official sunrise to two hours after official sunrise and one before and after official sunset. Timing restrictions will be applied to Unit #3.
- C. Marked leave trees may be traded for trees of the same size and species, with the exception of two non-tradable leave tree areas in Unit #1 (depicted on the timber sale map).

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 11/3/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the JC-ML (Jim Creek Mainline), JC-22, JC-2228, JC-2229, JC-2237, JC-44, JC-4401, JC-45, JC-4502, and JC-4506 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-050 Cessation of Operations for Low Humidity

During the "closed season", 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 type 5 stream as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

S-130 Hazardous Materials**a. Hazardous Materials and Waste - Regulatory Compliance**

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

b. Hazardous Materials Spill Prevention

All operations shall be conducted in a manner that avoids the release of hazardous materials, including petroleum products, into the environment (water, air or land).

c. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Purchaser shall take immediate action to contain and control all hazardous material spills. Purchaser shall ensure that enough quick response spill kits capable of absorbing 4 to 6 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. If large quantities of bulk fuel/other hazardous materials are stored on site, Purchaser must be able to effectively control a container leak and contain & recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

(Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties)

ECY - Southwest Region:

1-360-407-6300

(Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)

ECY - Central Region:

1-509-575-2490

(Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)

ECY - Eastern Region:

1-509-329-3400

(Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

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

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

D-041 Reserve Tree Excessive Damage

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

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Jean Fike
Northwest Region Manager

Date: _____
Address: _____

Date: _____

CORPORATE ACKNOWLEDGEMENT

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 _____

Schedule A
NW Ground-Based Equip Specifications (Rev11/05/14)

The following types of equipment are considered ground-based equipment: feller-buncher, processor, forwarder, skidder and shovel.

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

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

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

FORWARDER is defined as a track or rubber tire machine used for transporting logs to a landing by use of a bunk with self loading boom in which logs are carried free of the ground.

RUBBER-TIRED SKIDDER is defined as a skidder mounted on rubber tires used to drag logs to a landing. Logs are generally pulled in groups of six or less, with one end on the ground.

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

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

FOR ALL YARDING:

Equipment will remain at least 30 feet from all water courses or areas of wet/soft soils, except as necessary to cross at approved locations. Water course crossing structures must be approved by a HPA or by the Contract Administrator.

Logging debris created by the operation will be removed from water courses concurrently with yarding.

WHEN SHOVEL YARDING IS AUTHORIZED:

S1. When yarding and loading operations are occurring simultaneously, an additional shovel will be required for loading to avoid extra trips to the landing.

S2. Shovel yarding will not be allowed to create ruts or soil puddling. Shovel routes should be dispersed to prevent creation of definable trails.

S3. Within shovel logged areas, to facilitate proper reforestation, logging debris will be dispersed as necessary to create clear, plantable spots at approximately a 11 foot x 11 foot spacing. Planting spots will be created concurrently with yarding.

LOG PROCESSORS will be allowed within the sale area only under one of the following conditions:

1. No tops or limbs will be allowed to accumulate on any landings, and all tops and limbs will be re-distributed into the unit, to the satisfaction of the Contract Administrator, and will provide for plantable spots every 11 feet by 11 feet.
2. Harvester must provide a written slash treatment plan, acceptable to the Contract Administrator, to address the additional slash accumulation. The Slash Treatment Plan will be a part of the Plan of Operations.



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: Northwest

Timber Sale Name: URSA MAJOR

Application Number: 30- 093095

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

Pre-Haul Maintenance: 56571 linear feet
Existing road to receive maintenance work (specifically required by the contract) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Optional Construction: 1847 linear feet
Optional roads to be constructed and then abandoned

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

New Abandonment: 1847 linear feet
Abandonment of roads constructed or reconstructed under the contract

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale 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 6/13)

PRE-CRUISE NARRATIVE

Sale Name: Ursa Major	Region: Northwest
Agreement #: 30-093095	District: Cascade
Contact Forester: Matt Grund Phone / Location: 360-856-3500 / Baker WC	County(s): Snohomish
Alternate Contact: Greg Anderson Phone / Location: 360-333-7983 /Granite Falls WC	Other information:

Type of Sale: Lump Sum	
Harvest System: Ground based	100%

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec1/T31/R6E	01	26.1		0.6			25.5	GPS (Garmin)
2	Sec14/T31/R6E	01	4.1		0.1			4.0	GPS (Garmin)
3	Sec14&23/T31/R6E	01	22.1		1.2			20.9	GPS (Garmin)
TOTAL ACRES			52.3		1.9			50.4	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest (VRH). Dispersed single leave trees marked with blue paint on bole and root collar. Leave tree clumps marked with yellow "Leave Tree Area" Tags.	Approximately 25-30 cords of cedar will be salvaged from Unit 1.	209 total leave trees (170 clumped, 39 dispersed) are marked with "Leave Tree Area" tags and/or blue paint.
2	Variable Retention Harvest (VRH). Leave tree clumps marked with yellow "Leave Tree Area" Tags.		34 total leave trees (all clumped) are marked with yellow "Leave Tree Area" tags.

3	Variable Retention Harvest (VRH). Dispersed single leave trees marked with blue paint on bole and root collar. Leave tree clumps marked with yellow "Leave Tree Area" Tags.		181 total leave trees (173 clumped, 8 dispersed) are marked with yellow "Leave Tree Area" tags and/or blue paint.
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OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	WH,RC,DF @50mbf/ac ~ 1,275	Access to units is via JC-ML; F1 key required	Traverse and vicinity maps are attached.
2	WH,RC,DF @50mbf/ac ~ 200		
3	WH,RC,DF @50mbf/ac ~ 1,050		
TOTAL MBF	2,525		

REMARKS:

-Cedar salvage will occur in Unit 1 only. Estimated cedar removal volume: ~30 cords

Driving Directions:

From Arlington, travel east on SR-530. Turn right onto Arlington Heights Road 0.1 miles after milepost 22 and travel for 2.9 miles. Turn right onto 123rd Avenue NE and travel for 1 mile. Turn left onto 212th Street NE and travel for 0.2 miles. Turn right onto 127th Avenue NE and travel for 0.2 miles. Veer left onto 208th Street NE and travel 0.7 miles to the gate at the end of the county road (JC-ML). From the gate:

To reach Unit 1:

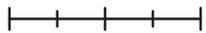
Follow the JC-ML for 0.7 mile until reaching the power lines. Turn left on the Powerline Rd. (JC-ML) and continue for 2.7 miles to a junction. Turn right and continue on the JC-ML for 0.9 miles to JC-45. Turn right and travel 0.3 miles to the unit.

To reach Units 2 and 3:

Follow the JC-ML for 0.7 mile until reaching the power lines. Turn left on the Powerline Rd. (JC-ML) and continue for 1.5 miles to JC-22. Turn right onto JC-22 and travel for 3.6 miles. Veer left onto JC-2237. Continue on JC-2237 for 0.2 miles to reach Unit 2, and for 0.6 miles to reach Unit 3.

Prepared By: Matthew Grund Date: 10/30/15	Title: Natural Resource Specialist 1	CC: Region Timber Sale File
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0 150 300 Feet

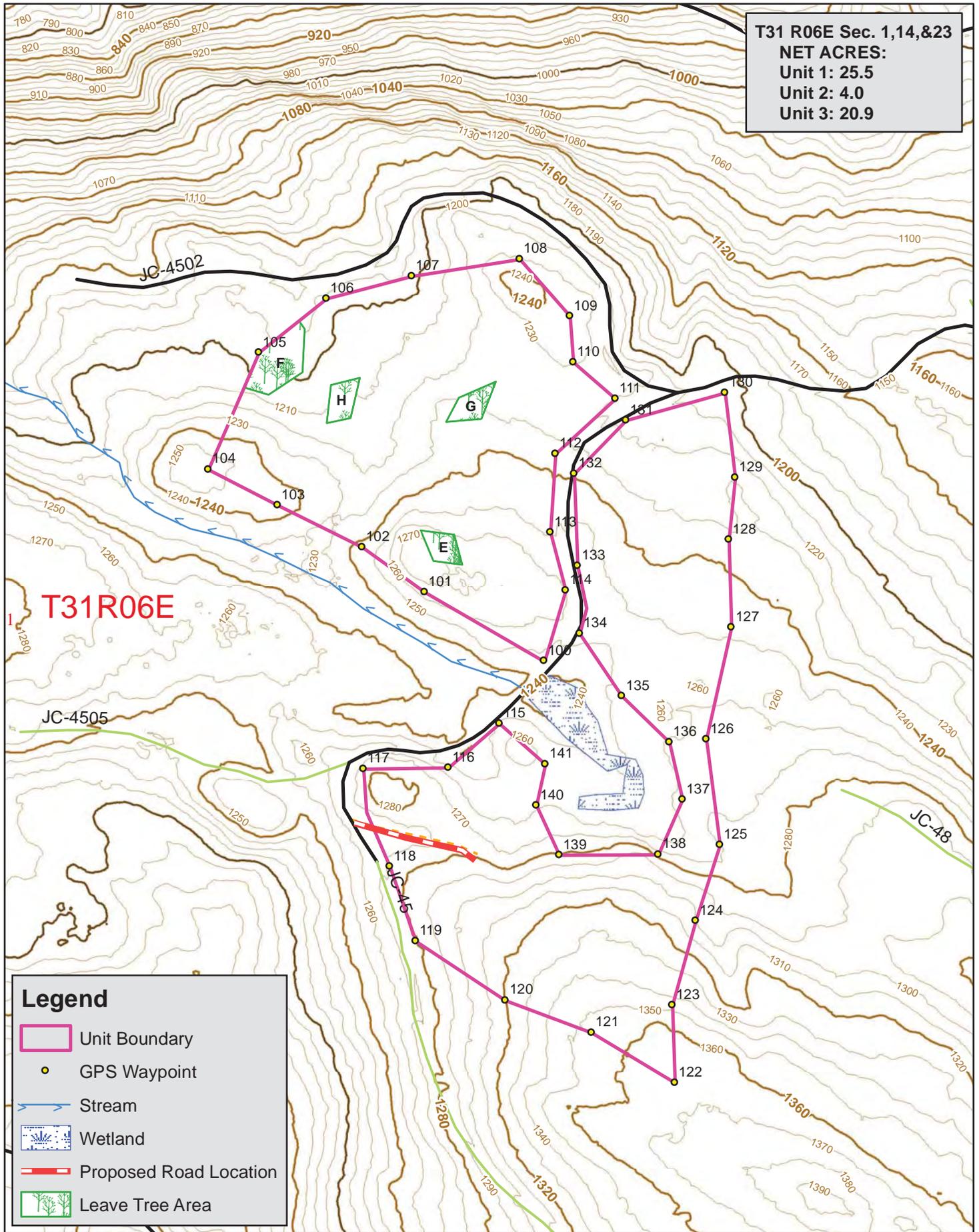


1 inch = 300 feet

Ursa Major Timber Sale Traverse Map - Unit 1



T31 R06E Sec. 1,14,&23
NET ACRES:
 Unit 1: 25.5
 Unit 2: 4.0
 Unit 3: 20.9



Legend

-  Unit Boundary
-  GPS Waypoint
-  Stream
-  Wetland
-  Proposed Road Location
-  Leave Tree Area

0 150 300 Feet



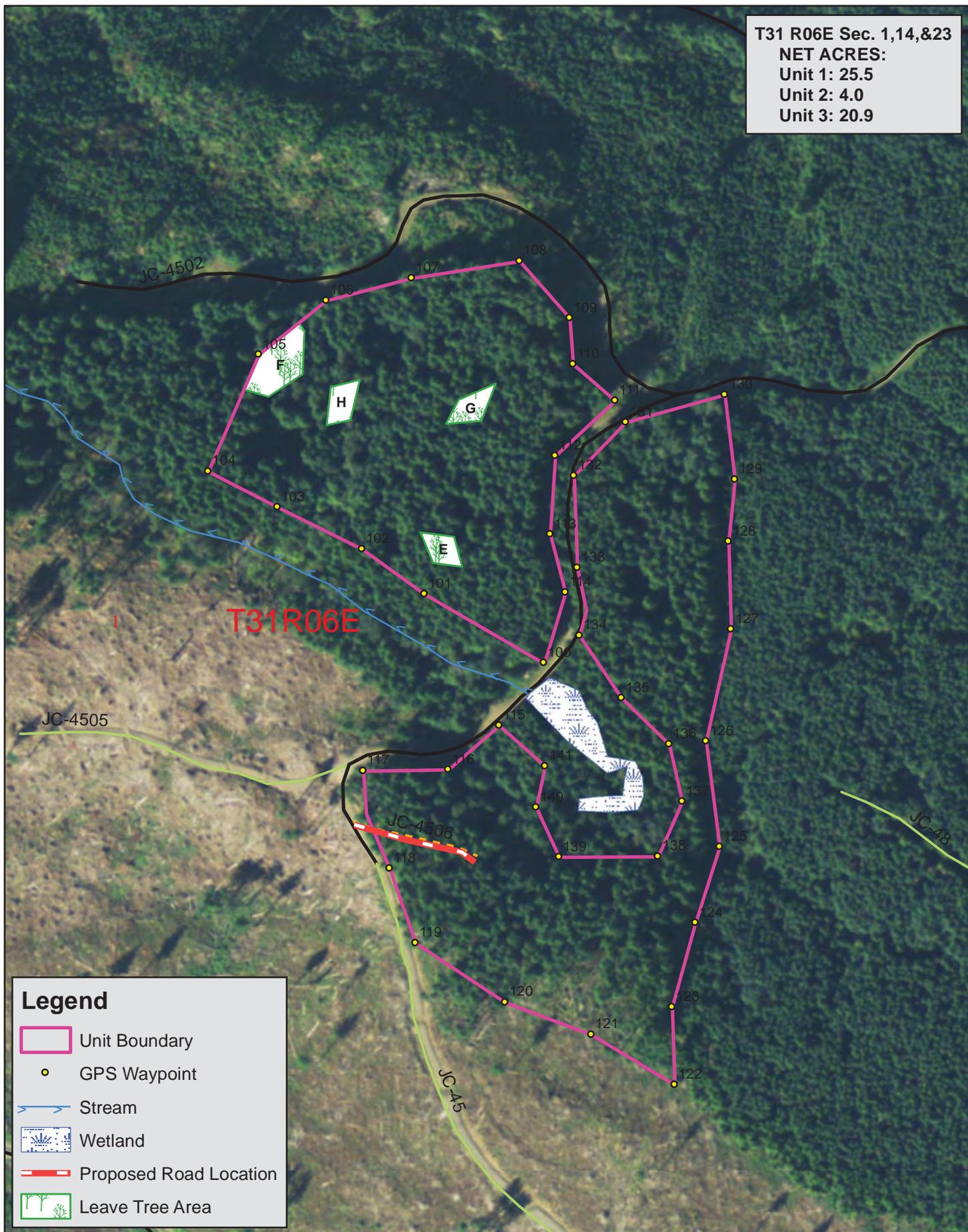
1 inch = 300 feet

Ursa Major Timber Sale Traverse Map - Unit 1

N



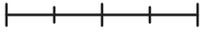
T31 R06E Sec. 1,14,&23
NET ACRES:
 Unit 1: 25.5
 Unit 2: 4.0
 Unit 3: 20.9



Legend

-  Unit Boundary
-  GPS Waypoint
-  Stream
-  Wetland
-  Proposed Road Location
-  Leave Tree Area

0 150 300 Feet

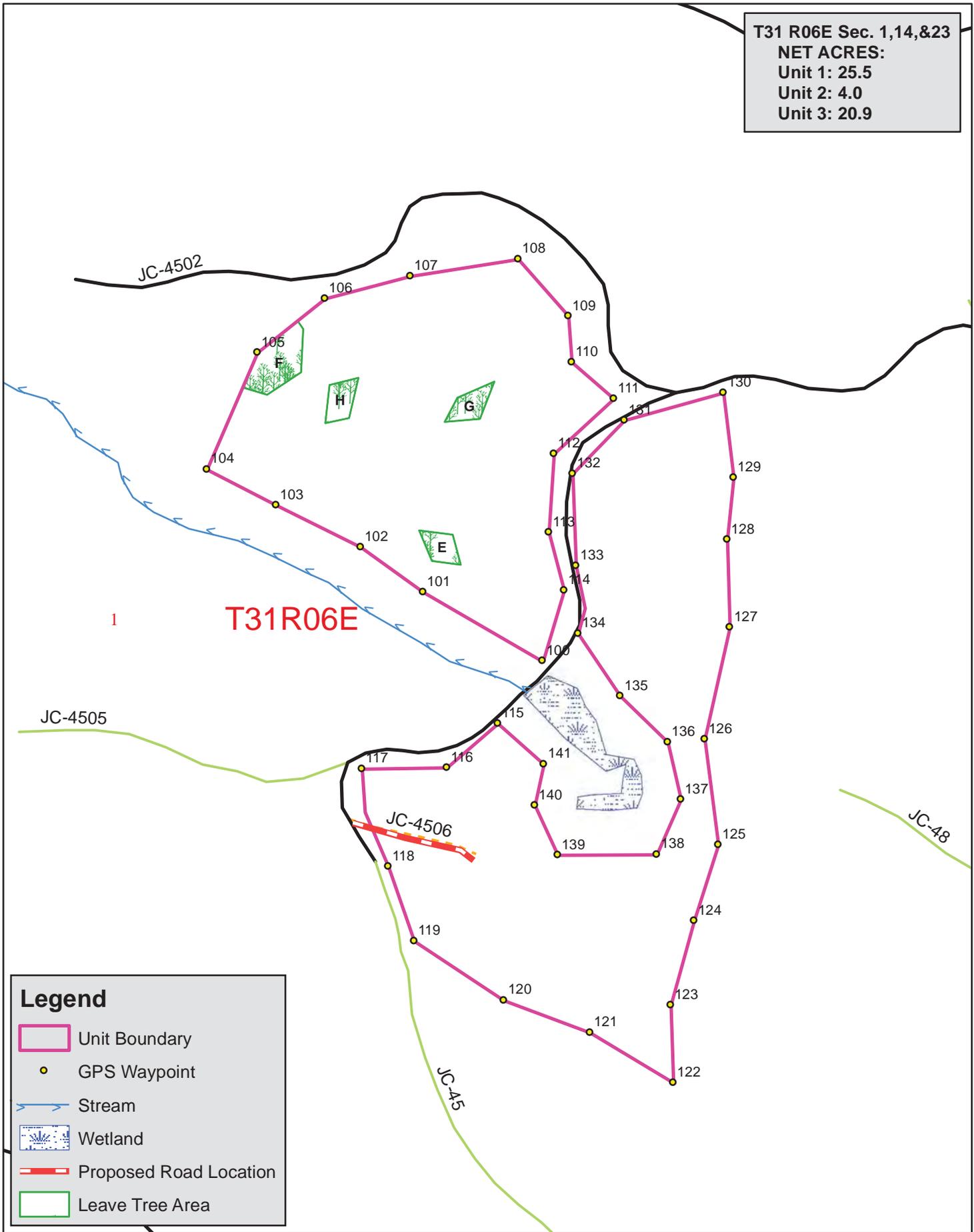


1 inch = 300 feet

Ursa Major Timber Sale Traverse Map - Unit 1



T31 R06E Sec. 1,14,&23	
NET ACRES:	
Unit 1:	25.5
Unit 2:	4.0
Unit 3:	20.9



Legend

-  Unit Boundary
-  GPS Waypoint
-  Stream
-  Wetland
-  Proposed Road Location
-  Leave Tree Area

0 100 200 Feet

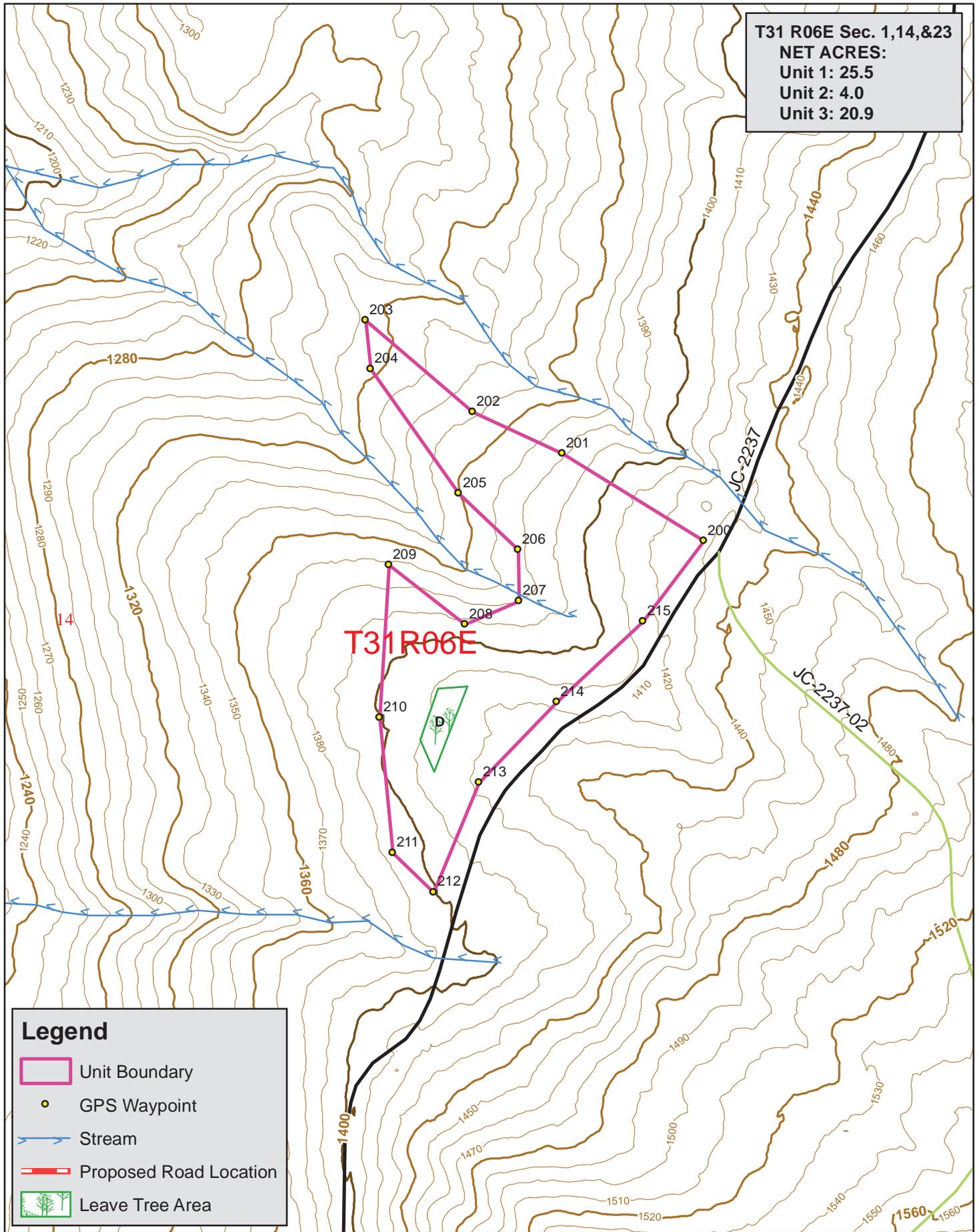


1 inch = 200 feet

Ursa Major Timber Sale Traverse Map - Unit 2



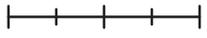
T31 R06E Sec. 1,14,&23
NET ACRES:
 Unit 1: 25.5
 Unit 2: 4.0
 Unit 3: 20.9



Legend

-  Unit Boundary
-  GPS Waypoint
-  Stream
-  Proposed Road Location
-  Leave Tree Area

0 100 200 Feet

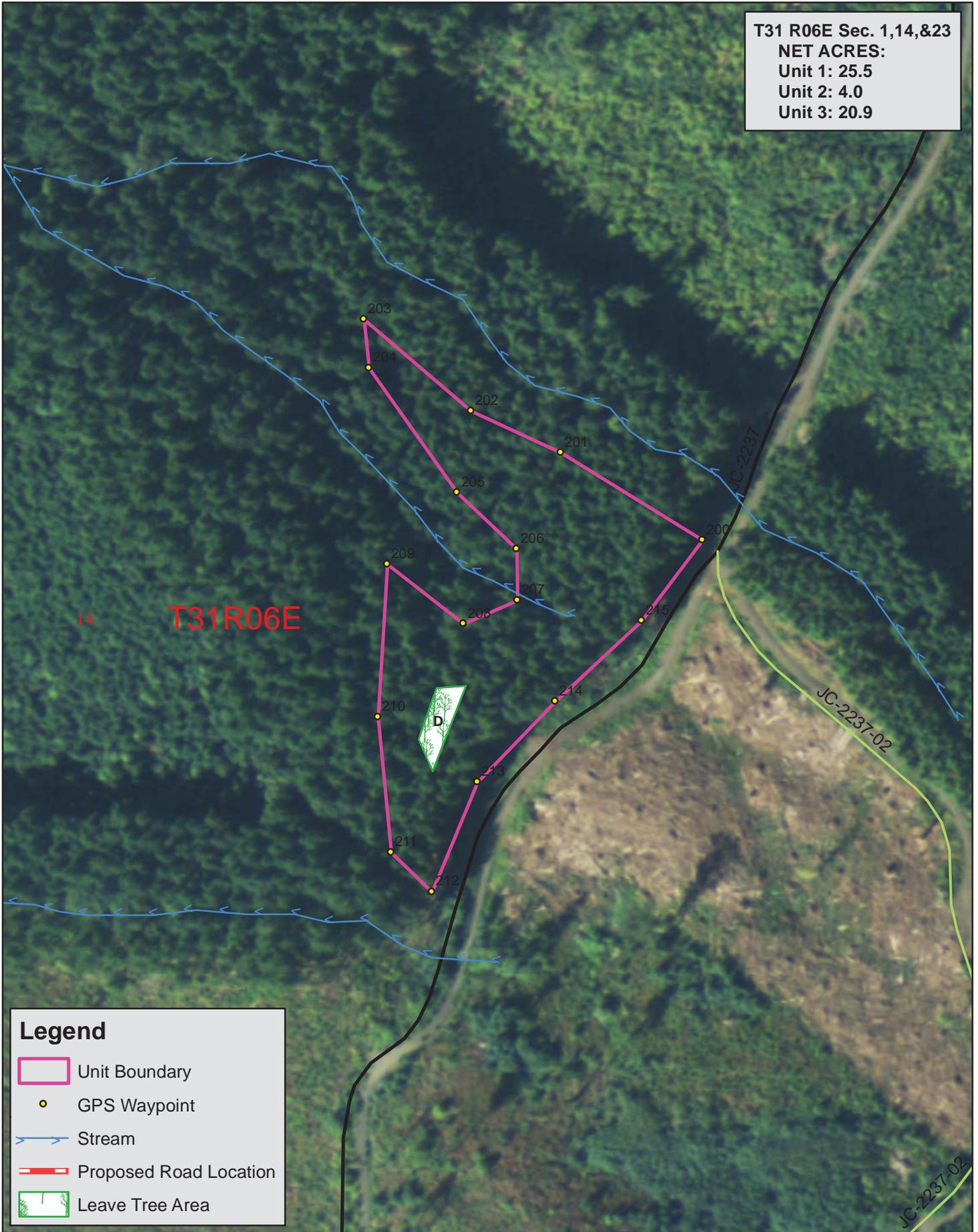


1 inch = 200 feet

Ursa Major Timber Sale Traverse Map - Unit 2



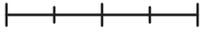
T31 R06E Sec. 1,14,&23
NET ACRES:
Unit 1: 25.5
Unit 2: 4.0
Unit 3: 20.9



Legend

-  Unit Boundary
-  GPS Waypoint
-  Stream
-  Proposed Road Location
-  Leave Tree Area

0 100 200 Feet

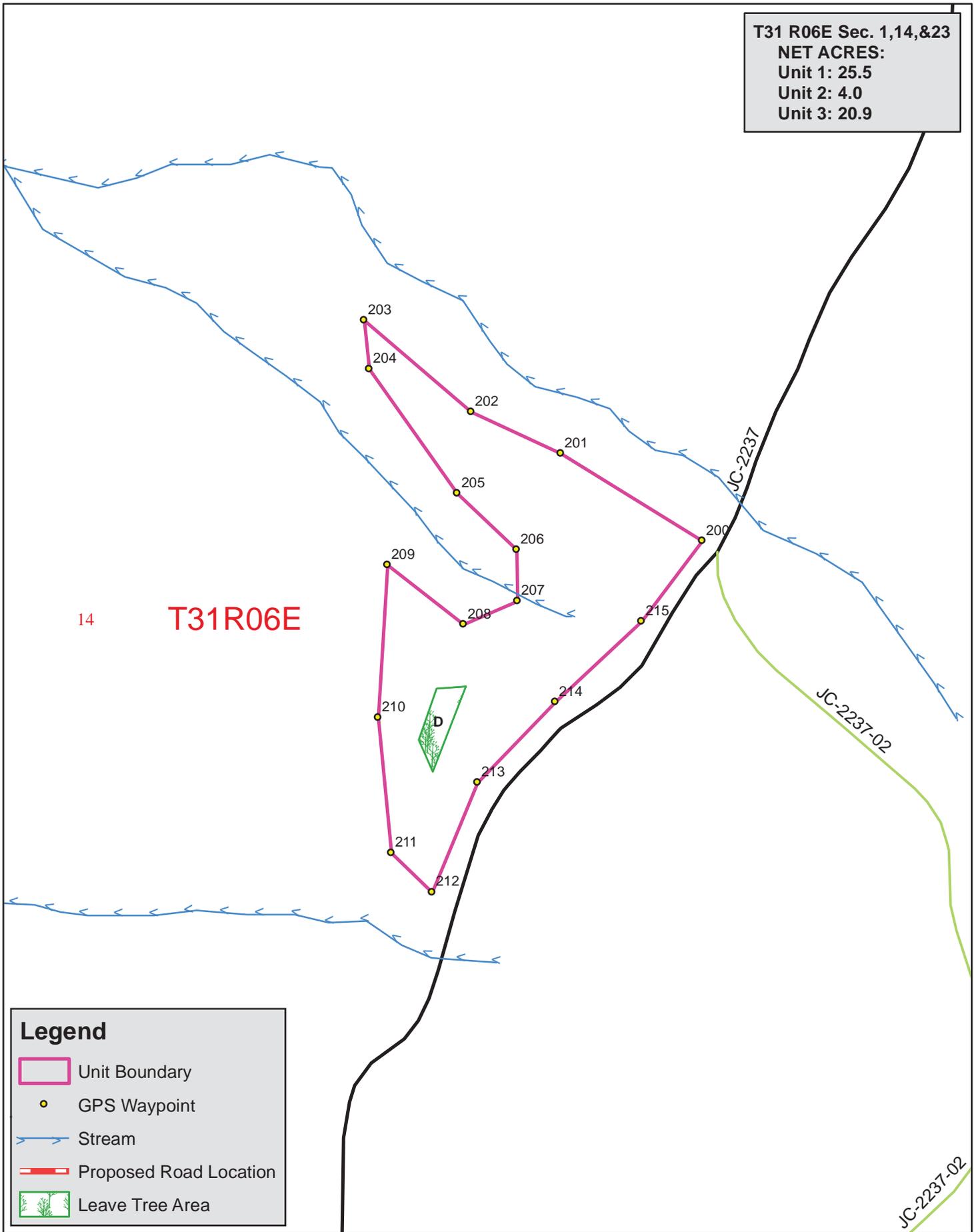


1 inch = 200 feet

Ursa Major Timber Sale Traverse Map - Unit 2



T31 R06E Sec. 1,14,&23
NET ACRES:
Unit 1: 25.5
Unit 2: 4.0
Unit 3: 20.9



14

T31R06E

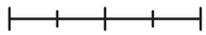


Legend

-  Unit Boundary
-  GPS Waypoint
-  Stream
-  Proposed Road Location
-  Leave Tree Area

JC-2237-02

0 150 300 Feet

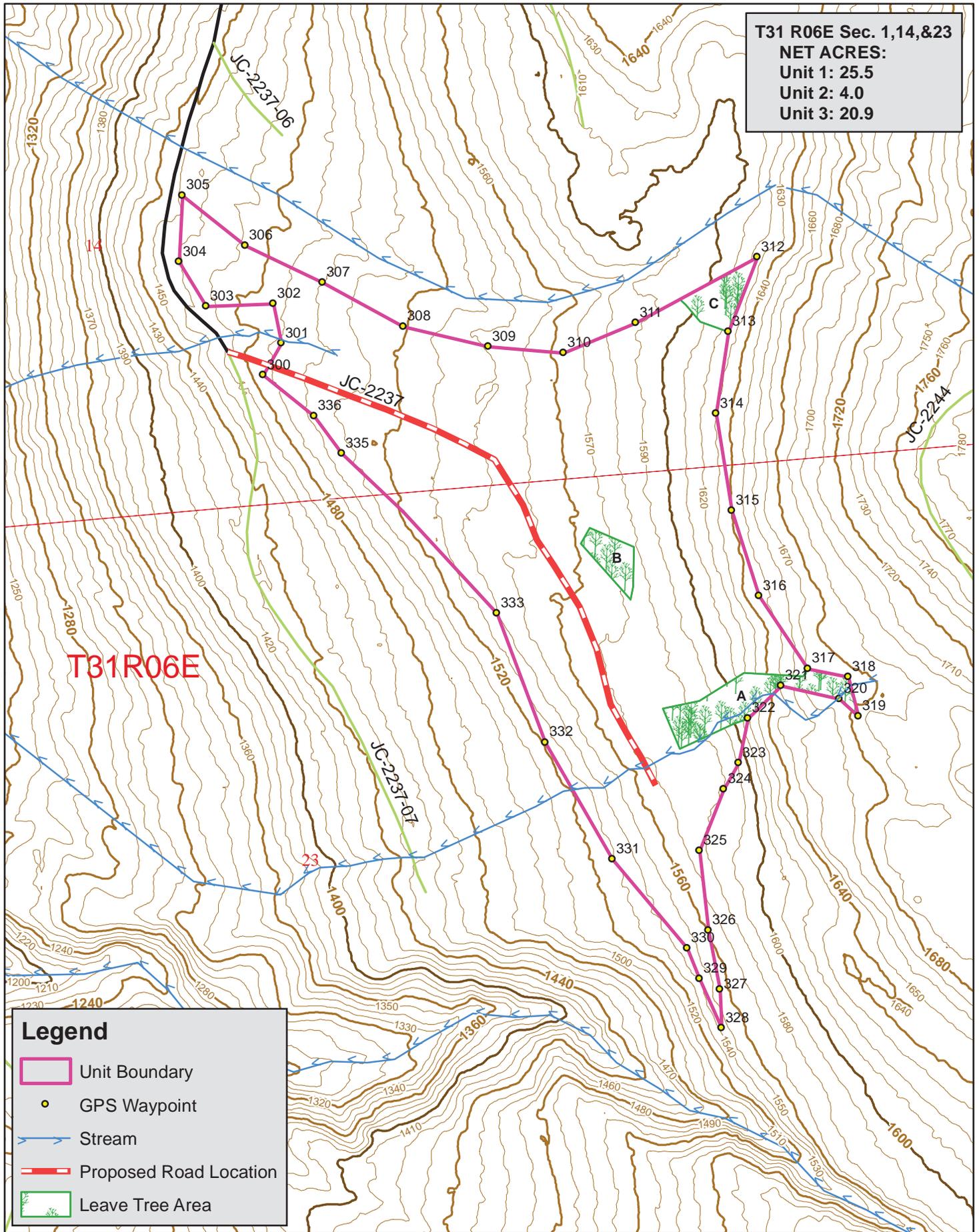


1 inch = 300 feet

Ursa Major Timber Sale Traverse Map - Unit 3



T31 R06E Sec. 1,14,&23
NET ACRES:
Unit 1: 25.5
Unit 2: 4.0
Unit 3: 20.9



Legend

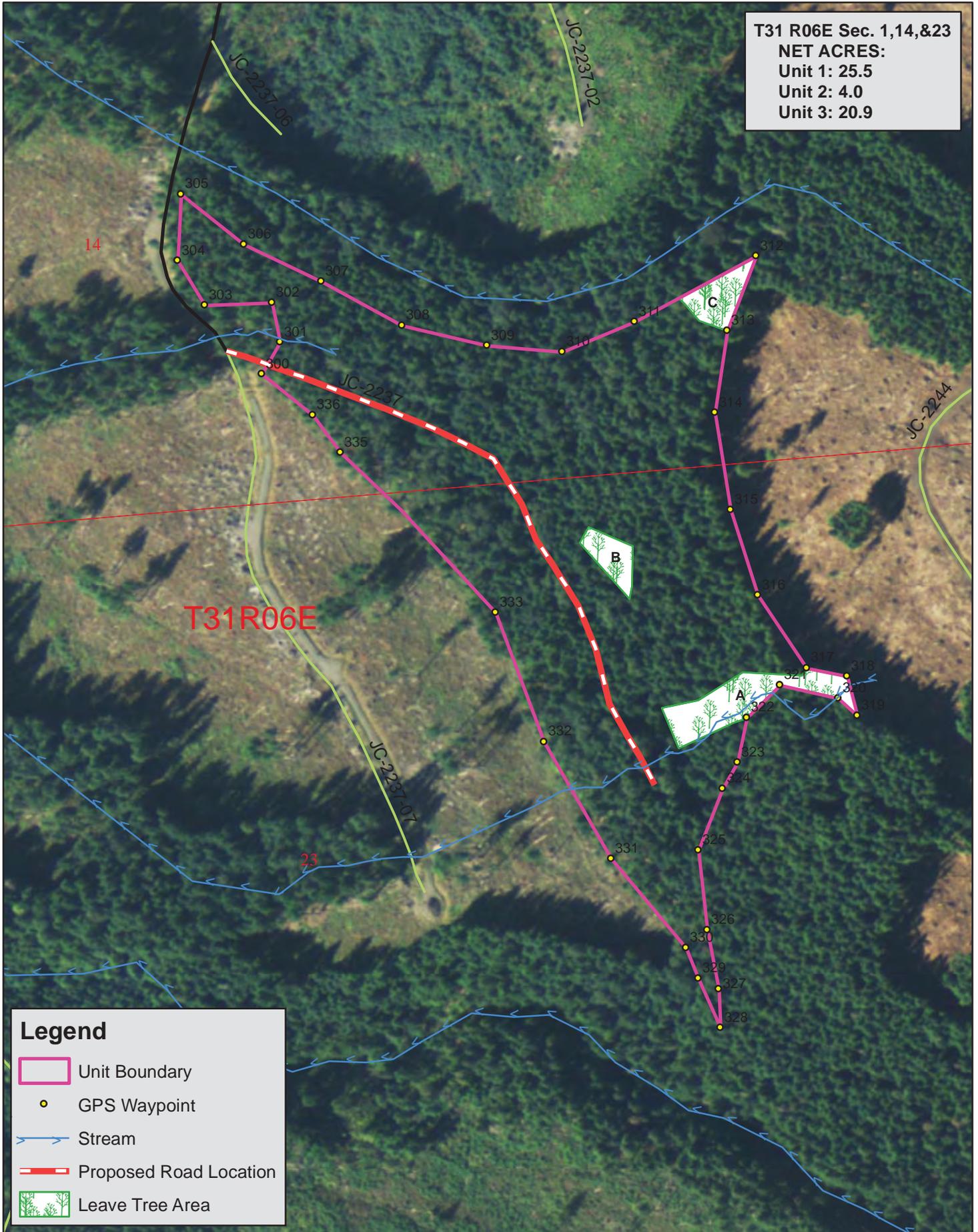
- Unit Boundary
- GPS Waypoint
- Stream
- Proposed Road Location
- Leave Tree Area

0 150 300 Feet
1 inch = 300 feet

Ursa Major Timber Sale Traverse Map - Unit 3



T31 R06E Sec. 1,14,&23
NET ACRES:
Unit 1: 25.5
Unit 2: 4.0
Unit 3: 20.9



Legend

- Unit Boundary
- GPS Waypoint
- Stream
- Proposed Road Location
- Leave Tree Area

0 150 300 Feet

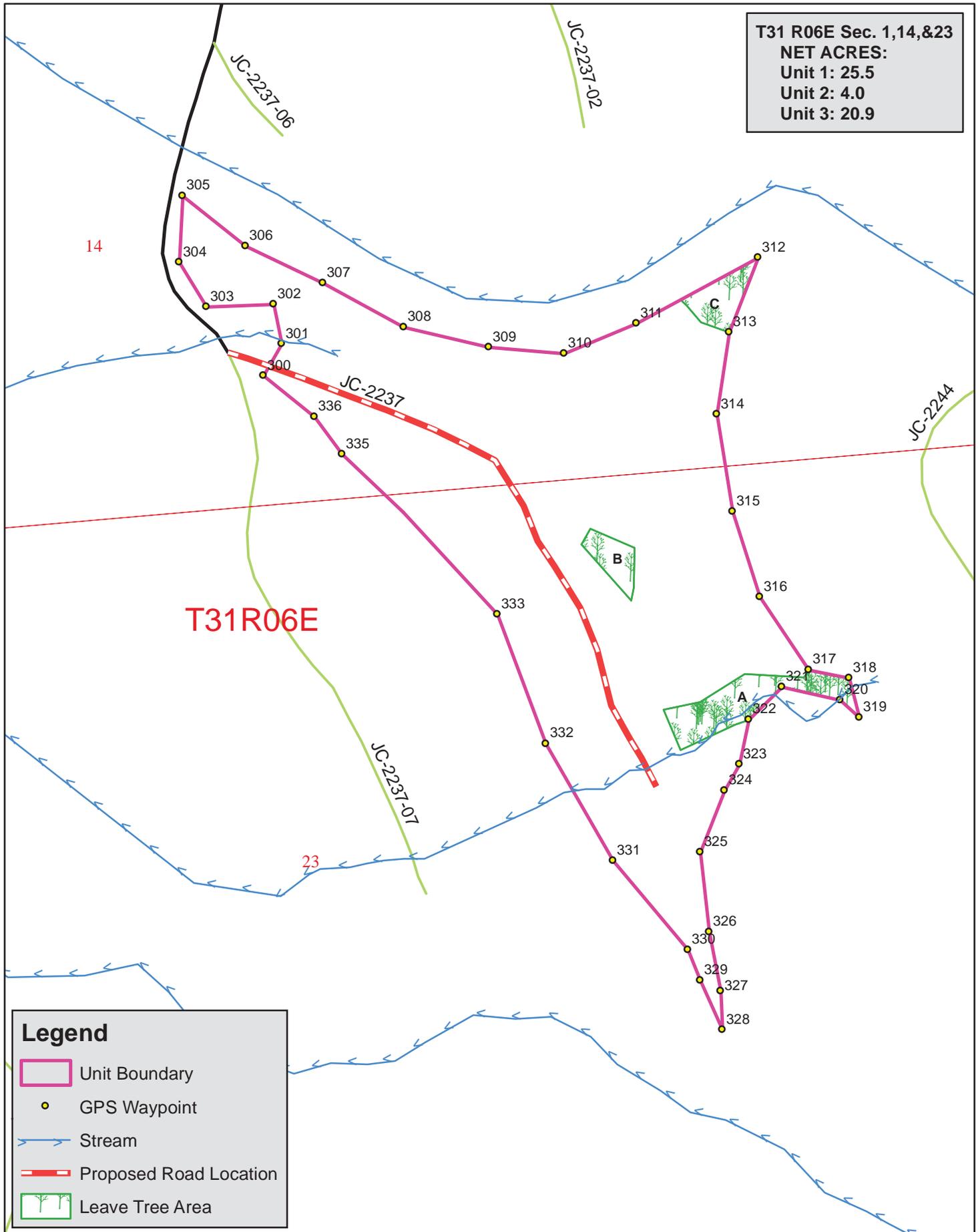


1 inch = 300 feet

Ursa Major Timber Sale Traverse Map - Unit 3



T31 R06E Sec. 1,14,&23
NET ACRES:
 Unit 1: 25.5
 Unit 2: 4.0
 Unit 3: 20.9



Legend

-  Unit Boundary
-  GPS Waypoint
-  Stream
-  Proposed Road Location
-  Leave Tree Area

Cruise Narrative

Sale Name: Ursa Major	Region: Northwest
Agree. #: 30-093095	District: Cascade
Lead cruiser: John Piety	Completion date: 11-24-2015
Other cruisers on sale: none	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	25.5	Yes	
2	4.0	Yes	
3	20.9	Yes	
Total	50.4		

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	VP	62.5 BAF	4.5	190' X 190'	1:1	30
2	VP	54.4 BAF	4.5	150' X 150'	1:1	5
3	VP	62.5 BAF	4.5	190' X 190'	1:1	21

Sale/Cruise Description:

Minor species cruise intensity:	100% up to 5 trees per species
Minimum cruise spec:	<p>HA - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators 1/2" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27")</p> <p>HB - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (Intermediate sort. Grades 2S, 3S. . Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27").</p>

	<p>D - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 2in.)</p> <p>O- Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +)</p> <p>R - Logs meeting the following criteria: Surface characteristics for a rough log sort will not meet the requirements for a domestic 2S, but still be in limitations for a domestic 3S. Meaning logs will contain excessive knots in excess of 2 1/2" and not exceeding 3" with a recovery of less than 65% of the net scale and greater than 33% of the gross scale. (Rough oversize sort. Grade 3S. Lengths 16ft-40ft, 2ft multiples TDIB 12"+)</p>			
Avg ring count by sp:	DF =	8	WH =	11
Leave/take tree description:	Leave trees are banded with blue paint and tagged out with yellow leave tree tags.			
Other conditions	There is a component of down recoverable OG RC. This is in unit #1. The north part of the unit has stumps that have a few bolts in them, most do not, with a minor amount of slab wood on the ground. The southern part has some stumps with recovery and a larger percentage of down logs/slab wood. I tried to do fixed plots (37.2) with my cruise plots, but feel this overstates the volume out here (90 cords). My visual estimate says there is between 15-30 cords.			

Field observations:

These are WH stands with DF/RC and minor amount of CW, RA, and BLM. Older well stocked stand. Unit 1 has an area with wind thrown trees along the southwest edge. There is no recovery with the exception of the recent wind throw 11/17/15, and some RC. The rest has been down too long. Unit 2 has areas of water that may hamper winter harvest. The WH in these units is of good to high quality logs. There was very little defect, some bole and butt rot, a couple trees with conks and mistletoe.

Grants: 01- 100%

Prepared by:

John Piety

Title:

Cruiser

CC:

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
T31N R03E S14 Ty0002 4.00 T31N R06E S01 Ty0001 25.50 T31N R06E S23 Ty0003 20.90				Project: URSAMAJO Acres 50.40										Page 1 Date 11/24/2015 Time 2:44:44PM									
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
									2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99							
WH	HASM			1		723	723	36										40	18	497	2.41	1.5	
WH	HA2S			9	.7	3,502	3,475	175										40	13	248	1.36	14.0	
WH	HA3S			4		1,582	1,582	80				100						40	10	157	0.83	10.1	
WH	HB2S			8	.8	2,941	2,917	147										40	15	336	1.76	8.7	
WH	HB3S			3		1,284	1,284	65				100						40	9	132	0.76	9.7	
WH	D 2S			28	8.9	12,134	11,053	557						3	2	95		39	14	288	1.73	38.4	
WH	D 3S			21	2.5	8,431	8,220	414				100		5	7	88		38	9	113	0.76	73.0	
WH	D 4S			10		4,256	4,256	215						12	24	9	55		30	6	40	0.37	105.7
WH	D UT			4	5.9	1,399	1,316	66			5	35	8	51				27	3	22	0.28	58.6	
WH	OS SM			2		731	731	37										40	21	799	3.63	.9	
WH	OS 2S			9	14.4	4,274	3,658	184								7	93		39	22	707	3.87	5.2
WH	RO2S			1		247	247	12										40	16	401	2.25	.6	
WH Totals				71	4.9	41,503	39,463	1,989			0	11	29	59	2	5	4	90	34	8	121	0.86	326.3
RC	D 3S			43	.7	1,611	1,599	81										35	12	190	1.54	8.4	
RC	D 4S			18		670	670	34				100						35	6	46	0.45	14.7	
RC	OS 2S			5	10.5	212	190	10										40	21	680	5.57	.3	
RC	OS 3S			34	13.7	1,444	1,245	63										35	21	570	5.07	2.2	
RC Totals				7	5.9	3,936	3,704	187			18	9	73		26	21	53		35	9	145	1.25	25.6
CW	D 2S			47	3.1	1,085	1,051	53				9						40	12	219	1.34	4.8	
CW	D UT																	22	2		0.14	1.4	
CW	OS 2S			53	12.3	1,350	1,184	60										40	23	821	4.23	1.4	
CW Totals				4	8.2	2,435	2,235	113			4		96						37	12	293	1.81	7.6
DF	HB2S			9	.6	832	827	42										40	19	630	2.50	1.3	
DF	D 2S			22	1.5	2,073	2,042	103										40	15	371	1.91	5.5	
DF	D 3S			2		156	156	8				100						37	9	115	0.95	1.4	
DF	D 4S			2		178	178	9						13		87		31	10	114	0.95	1.6	
DF	OS SM			24	.5	2,183	2,173	110										40	24	1077	4.81	2.0	
DF	OS 2S			40	2.3	3,695	3,612	182										40	26	1172	5.17	3.1	
DF	RO2S			1		45	45	2										40	13	240	1.90	.2	
DF Totals				16	1.4	9,163	9,032	455			0	2	98		1	0	98		39	18	601	2.89	15.0
BM	D 2S			28		179	179	9										25	17	285	2.59	.6	
BM	D 3S			12	9.1	82	75	4										26	11	100	1.03	.7	
BM	D 4S			46	3.7	295	284	14										34	9	87	0.83	3.3	
BM	OS 2S			14		86	86	4										20	20	350	3.38	.2	
BM Totals				1	2.9	642	624	31			14	24	62		23	52	25		31	11	127	1.12	4.9
RA	D 2S			72	3.7	144	139	7										30	15	260	1.82	.5	
RA	D 4S			28		53	53	3										36	9	100	0.83	.5	
RA Totals				0	2.7	197	192	10											33	12	180	1.28	1.1
SF	D 2S			64	33.3	175	116	6										40	15	240	1.83	.5	
SF	D 3S			30	8.3	58	53	3										40	9	110	0.83	.5	
SF	D 4S			6		10	10	0										16	5	20	0.29	.5	

Species, Sort Grade - Board Foot Volumes (Project)

T31N R03E S14 Ty0002 4.00 T31N R06E S01 Ty0001 25.50 T31N R06E S23 Ty0003 20.90	Project: URSAMAJO Acres 50.40	Page 2 Date 11/24/2015 Time 2:44:44PM
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S Spp	So T	Gr rt	ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99					
SF Totals				0	26.0	243	179	9	5	30	65	5			95	32	10	123	1.16	1.5	
Totals					4.6	58,120	55,430	2,794	0	9	22	68	2	6	4	88	34	9	145	1.00	382.0

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT							DATE	11/24/2015	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
31N	03E	14	URSA MAJOR	0002	50.40	56	273	S	W		
31N	06E	01	URSA MAJOR	0001							
31N	06E	23	URSA MAJOR	0003							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			56	273	4.9						
CRUISE			31	147	4.7	8,545	1.7				
DBH COUNT											
REFOREST											
COUNT			25	117	4.7						
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WHEMLOCK	100	138.9	16.9	79	52.4	215.2	41,503	39,463	9,436	9,436	
DOUG FIR	16	4.7	34.1	133	5.2	30.1	9,163	9,032	1,684	1,684	
WR CEDAR	16	17.0	18.5	56	7.4	31.6	3,936	3,704	1,131	1,131	
COTWOOD	5	3.2	25.6	99	2.3	11.6	2,435	2,235	506	506	
BL MAPLE	8	4.7	18.2	59	2.0	8.4	642	624	171	171	
R ALDER	1	.5	20.6	85	0.3	1.2	197	192	45	45	
PS FIR	1	.5	21.6	98	0.3	1.2	243	179	54	54	
TOTAL	<i>147</i>	<i>169.5</i>	<i>18.0</i>	<i>78</i>	<i>70.6</i>	<i>299.5</i>	<i>58,120</i>	<i>55,430</i>	<i>13,027</i>	<i>13,027</i>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		75.0	7.5	440	476	512					
DOUG FIR		37.9	9.8	1,994	2,211	2,427					
WR CEDAR		91.7	23.6	467	612	757					
COTWOOD		80.2	39.9	607	1,010	1,413					
BL MAPLE		66.1	24.9	137	183	228					
R ALDER											
PS FIR											
TOTAL		<i>105.4</i>	<i>8.7</i>	<i>621</i>	<i>680</i>	<i>739</i>	<i>444</i>	<i>226</i>	<i>111</i>		
CL	68.1	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		71.2	9.5	126	139	152					
DOUG FIR		250.5	33.4	3	5	6					
WR CEDAR		183.4	24.5	13	17	21					
COTWOOD		283.6	37.9	2	3	4					
BL MAPLE		701.7	93.7	0	5	9					
R ALDER		748.3	99.9	0	1	1					
PS FIR		748.3	99.9	0	0	1					
TOTAL		<i>58.8</i>	<i>7.8</i>	<i>156</i>	<i>170</i>	<i>183</i>	<i>138</i>	<i>70</i>	<i>34</i>		
CL	68.1	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		54.0	7.2	200	215	231					
DOUG FIR		225.7	30.1	21	30	39					
WR CEDAR		179.8	24.0	24	32	39					
COTWOOD		263.5	35.2	8	12	16					
BL MAPLE		659.8	88.1	1	8	16					
R ALDER		748.3	99.9	0	1	2					
PS FIR		748.3	99.9	0	1	2					
TOTAL		<i>38.1</i>	<i>5.1</i>	<i>284</i>	<i>300</i>	<i>315</i>	<i>58</i>	<i>30</i>	<i>15</i>		

PROJECT STATISTICS
PROJECT URSAMAJO

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
31N	03E	14	URSA MAJOR	0002	50.40	56	273	S	W
31N	06E	01	URSA MAJOR	0001					
31N	06E	23	URSA MAJOR	0003					

CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK		55.7	7.4	36,529	39,463	42,396			
DOUG FIR		213.0	28.4	6,464	9,032	11,601			
WR CEDAR		191.9	25.6	2,755	3,704	4,653			
COTWOOD		265.2	35.4	1,444	2,235	3,026			
BL MAPLE		652.0	87.1	81	624	1,167			
R ALDER		748.3	99.9	0	192	384			
PS FIR		748.3	99.9	0	179	359			
TOTAL		<i>41.8</i>	<i>5.6</i>	<i>52,333</i>	<i>55,430</i>	<i>58,526</i>	<i>70</i>	<i>36</i>	<i>17</i>

T31N R06E S01 T0001										T31N R06E S01 T0001					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt			BdFt				
31N	06E	01	URSA MAJOR	0001	25.50	30	75	S			W				

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre						
								Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf	
													2-4	5-7	8-11	12+	12-20	21-30		31-35					36-99
WH	HA	SM	1		628	628	16											100	100	40	17	460	2.36	1.4	
WH	HA	2S	10	.5	4,113	4,094	104											100	100	40	13	261	1.41	15.7	
WH	HA	3S	4		1,729	1,729	44				100							100	100	40	10	155	0.84	11.1	
WH	HB	2S	6		2,281	2,281	58											100	100	40	16	388	1.97	5.9	
WH	HB	3S	3		1,410	1,410	36					100						100	100	40	10	140	0.80	10.1	
WH	DM	2S	28	9.0	12,218	11,124	284							5	4	90			39	14	274	1.68	40.6		
WH	DM	3S	21	2.5	8,854	8,636	220								4	8	87			38	9	119	0.79	72.6	
WH	DM	4S	9		3,508	3,508	89			97	3			13	33	7	47			28	6	38	0.37	92.9	
WH	DM	UT	4	8.7	1,882	1,718	44		3	27	12	59		5	22		73			26	3	23	0.29	75.9	
WH	OS	SM	3		1,445	1,445	37											100	100	40	21	799	3.63	1.8	
WH	OS	2S	10	5.6	3,978	3,754	96									14	86			39	22	759	3.93	4.9	
WH	RO	2S	1		327	327	8											100	100	40	19	600	2.97	.5	
WH	Totals		77	4.1	42,373	40,653	1,037		0	9	30	61		1	6	5	88			33	8	122	0.88	333.5	
RC	DM	3S	44		2,781	2,781	71				24	76			17	44	40			35	12	193	1.53	14.4	
RC	DM	4S	10		593	593	15				100				21		79			37	6	51	0.48	11.7	
RC	OS	2S	6	10.5	419	375	10											100	100	40	21	680	5.57	.6	
RC	OS	3S	40	13.7	2,853	2,461	63								42	13	45			35	21	570	5.07	4.3	
RC	Totals		12	6.6	6,647	6,211	158		10	11	80			26	25	49			36	11	201	1.68	31.0		
BM	DM	2S	28		355	355	9											100	100	25	17	285	2.59	1.2	
BM	DM	3S	12	9.1	162	147	4				100							100	100	26	11	100	1.03	1.5	
BM	DM	4S	46	3.7	582	561	14			30	27	43		21	26		54			34	9	87	0.83	6.5	
BM	OS	2S	14		171	171	4											100	100	20	20	350	3.38	.5	
BM	Totals		2	2.9	1,270	1,233	31		14	24	62			23	52		25			31	11	127	1.12	9.7	
DF	HB	2S	32		1,113	1,113	28											100	100	40	20	700	2.53	1.6	
DF	DM	2S	18		636	636	16											100	100	40	16	400	1.79	1.6	
DF	DM	4S	6		207	207	5								100			100	100	22	13	130	1.16	1.6	
DF	OS	SM	44		1,495	1,495	38											100	100	40	23	940	4.06	1.6	
DF	Totals		6		3,450	3,450	88							6			94			36	18	542	2.54	6.4	
CW	DM	2S	15	6.9	263	245	6											100	100	40	14	270	1.63	.9	
CW	OS	2S	85	1.4	1,318	1,300	33											100	100	40	20	690	3.30	1.9	
CW	Totals		3	2.3	1,581	1,545	39											100	100	40	18	554	2.76	2.8	
Type Totals				4.0	55,321	53,093	1,354		0	9	25	67		2	9	7	82			33	9	139	1.00	383.3	

TC TSTATS		STATISTICS					PAGE	1		
		PROJECT URSAMAJO					DATE	11/24/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
31N	06E	01	URSA MAJOR	0001	25.50	30	144	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		30	144	4.8						
CRUISE		17	75	4.4	4,354	1.7				
DBH COUNT										
REFOREST										
COUNT		13	60	4.6						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	51	141.9	16.8	77	53.3	218.7	42,373	40,653	9,623	9,623
WR CEDAR	13	16.2	23.3	72	9.9	47.9	6,647	6,211	1,856	1,857
BL MAPLE	8	9.2	18.2	59	3.9	16.7	1,270	1,233	338	338
COTWOOD	2	1.9	28.5	102	1.6	8.3	1,581	1,545	308	308
DOUG FIR	1	1.6	31.0	168	1.5	8.3	3,450	3,450	574	574
TOTAL	75	170.8	17.9	77	70.8	300.0	55,321	53,093	12,698	12,699
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		72.6	10.2	453	504	555				
WR CEDAR		76.4	22.0	569	730	891				
BL MAPLE		66.1	24.9	137	183	228				
COTWOOD		21.4	20.1	659	825	991				
DOUG FIR										
TOTAL		83.3	9.6	488	539	591	277	141	69	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		87.0	16.2	119	142	165				
WR CEDAR		161.0	29.9	11	16	21				
BL MAPLE		513.0	95.2	0	9	18				
COTWOOD		325.7	60.5	1	2	3				
DOUG FIR		259.3	48.1	1	2	2				
TOTAL		67.6	12.5	149	171	192	189	96	47	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		64.0	11.9	193	219	245				
WR CEDAR		155.8	28.9	34	48	62				
BL MAPLE		481.8	89.4	2	17	32				
COTWOOD		325.6	60.5	3	8	13				
DOUG FIR		259.3	48.1	4	8	12				
TOTAL		41.1	7.6	277	300	323	70	36	17	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		65.4	12.1	35,716	40,653	45,591				
WR CEDAR		153.3	28.5	4,443	6,211	7,979				
BL MAPLE		476.0	88.4	143	1,233	2,323				
COTWOOD		326.4	60.6	609	1,545	2,481				
DOUG FIR		259.3	48.1	1,789	3,450	5,111				
TOTAL		42.3	7.8	48,928	53,092	57,257	74	38	18	

T31N R03E S14 T0002										T31N R03E S14 T0002				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
31N	03E	14	URSA MAJOR	0002	4.00	5	13	S	W					

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/	
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99	Ft	In	Ft		Lf	
WH	HA	2S	4	2,034	2,034	8			100								40	13	240	1.45	8.5
WH	HA	3S	11	4,654	4,654	19			100								40	10	144	0.74	32.4
WH	HB	2S	24	9,685	9,685	39			100								40	14	309	1.66	31.4
WH	DM	2S	13	5,538	5,538	22			100								39	13	254	1.48	21.8
WH	DM	3S	27	2.3	11,504	11,239	45		100								39	8	97	0.63	116.0
WH	DM	4S	14		5,926	5,926	24	98	2		5	18	16	60			33	6	44	0.33	134.7
WH	DM	UT															26	2		0.14	63.4
WH	OS	2S	7		2,817	2,817	11		100								40	22	840	3.94	3.4
WH	Totals		100	.6	42,157	41,892	168	14	38	48	1	3	2	94			35	7	102	0.68	411.5
Type Totals				.6	42,157	41,892	168	14	38	48	1	3	2	94			35	7	102	0.68	411.5

TC TSTATS		STATISTICS						PAGE 1		
		PROJECT URSAMAJO						DATE 11/24/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
31N	03E	14	URSA MAJOR	0002	4.00	5	23	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		5	23	4.6						
CRUISE		3	13	4.3	644	2.0				
DBH COUNT										
REFOREST										
COUNT		2	10	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	13	161.1	16.1	86	56.9	228.5	42,157	41,892	9,871	9,871
TOTAL	<i>13</i>	<i>161.1</i>	<i>16.1</i>	<i>86</i>	<i>56.9</i>	<i>228.5</i>	<i>42,157</i>	<i>41,892</i>	<i>9,871</i>	<i>9,871</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	81.0	23.3	288	375	463					
TOTAL	<i>81.0</i>	<i>23.3</i>	<i>288</i>	<i>375</i>	<i>463</i>	<i>283</i>	<i>144</i>	<i>71</i>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	66.4	33.0	108	161	214					
TOTAL	<i>66.4</i>	<i>33.0</i>	<i>108</i>	<i>161</i>	<i>214</i>	<i>218</i>	<i>111</i>	<i>54</i>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	39.1	19.4	184	228	273					
TOTAL	<i>39.1</i>	<i>19.4</i>	<i>184</i>	<i>228</i>	<i>273</i>	<i>76</i>	<i>39</i>	<i>19</i>		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	32.1	16.0	35,203	41,892	48,581					
TOTAL	<i>32.1</i>	<i>16.0</i>	<i>35,203</i>	<i>41,892</i>	<i>48,581</i>	<i>51</i>	<i>26</i>	<i>13</i>		

T31N R06E S23 T0003 T31N R06E S23 T0003
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 31N 06E 23 URSA MAJOR 0003 20.90 21 59 S W

S Sp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf		
								2-4	5-7	8-11	12+	12-20	21-30	31-35	36-99							
WH	HA	SM	2		976	976	20											40	18	530	2.45	1.8
WH	HA	2S	8	1.3	3,037	2,997	63											40	13	231	1.29	13.0
WH	HA	3S	2		816	816	17			100								40	11	180	0.94	4.5
WH	HB	2S	7	2.4	2,454	2,396	50			100								40	14	309	1.64	7.8
WH	HB	3S	3		1,377	1,377	29			100								40	9	124	0.71	11.1
WH	DM	2S	32	9.6	13,293	12,021	251			100								40	15	310	1.82	38.8
WH	DM	3S	19	2.6	7,327	7,135	149			100				7	7	86		37	9	109	0.77	65.3
WH	DM	4S	13		4,851	4,851	101		82	18				13	16	9	62	31	6	42	0.37	115.7
WH	DM	UT	3		1,077	1,077	23	10	53		37			37			63	30	4	29	0.32	36.6
WH	OS	2S	10	24.7	4,914	3,702	77			100								40	22	638	3.80	5.8
WH	RO	2S	1		196	196	4			100								40	13	240	1.66	.8
WH	Totals		62	6.9	40,318	37,545	785	0	12	27	60			3	4	2	91	35	9	125	0.88	301.2
DF	HB	2S	3	1.9	648	636	13			100								40	18	520	2.45	1.2
DF	DM	2S	24	1.8	4,224	4,148	87			100								40	15	366	1.93	11.3
DF	DM	3S	2		377	377	8			100					21	79		37	9	115	0.95	3.3
DF	DM	4S	1		177	177	4		32	68								40	7	96	0.83	1.8
DF	OS	SM	19	.7	3,440	3,416	71			100								40	25	1168	5.31	2.9
DF	OS	2S	50	2.3	8,912	8,709	182			100								40	26	1172	5.17	7.4
DF	RO	2S	1		109	109	2			100								40	13	240	1.90	.5
DF	Totals		29	1.8	17,886	17,572	367	0	2	98				0	100			40	18	617	2.98	28.5
RC	DM	3S	34	5.6	491	464	10			100								36	12	170	1.60	2.7
RC	DM	4S	66		891	891	19			100					37	63		34	5	42	0.42	21.2
RC	Totals		2	2.0	1,382	1,355	28		66	34				24	76			35	6	57	0.56	23.9
CW	DM	2S	63	2.6	2,296	2,236	47		10	90								40	12	213	1.31	10.5
CW	DM	UT																22	2		0.14	3.3
CW	OS	2S	37	22.9	1,647	1,269	27			100								40	28	1075	6.05	1.2
CW	Totals		6	11.1	3,943	3,505	73		7	93								36	11	234	1.57	15.0
RA	DM	2S	72	3.7	347	334	7			100					100			30	15	260	1.82	1.3
RA	DM	4S	28		129	129	3			100								36	9	100	0.83	1.3
RA	Totals		1	2.7	476	463	10			28	72				72	28		33	12	180	1.28	2.6
SF	DM	2S	64	33.3	421	281	6			100								40	15	240	1.83	1.2
SF	DM	3S	30	8.3	140	129	3			100								40	9	110	0.83	1.2
SF	DM	4S	6		23	23	0		100					100				16	5	20	0.29	1.2
SF	Totals		1	26.0	585	433	9		5	30	65			5		95		32	10	123	1.16	3.5
Type Totals				5.8	64,590	60,872	1,272	0	9	18	73			2	3	2	93	35	9	162	1.07	374.7

TC TSTATS		STATISTICS							PAGE	1	
		PROJECT URSAMAJO							DATE	11/24/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
31N	06E	23	URSA MAJOR	0003	20.90	21	106	S	W		
				TREES	ESTIMATED		PERCENT				
				PER PLOT	TOTAL		SAMPLE				
		PLOTS	TREES		TREES		TREES				
TOTAL		21	106	5.0							
CRUISE		11	59	5.4	3,547		1.7				
DBH COUNT											
REFOREST											
COUNT		10	47	4.7							
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
WHEMLOCK	36	131.0	17.1	81	50.4	208.3	40,318	37,545	9,125	9,125	
DOUG FIR	15	9.5	34.7	126	10.6	62.5	17,886	17,572	3,362	3,362	
WR CEDAR	3	21.2	12.4	41	5.1	17.9	1,382	1,355	462	462	
COTWOOD	3	5.5	24.3	98	3.6	17.9	3,943	3,505	844	844	
R ALDER	1	1.3	20.6	85	0.7	3.0	476	463	109	109	
PS FIR	1	1.2	21.6	98	0.6	3.0	585	433	129	130	
TOTAL	59	169.7	18.4	79	72.9	312.5	64,590	60,872	14,031	14,032	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		77.0	12.8	412	473	534					
DOUG FIR		39.2	10.5	1,981	2,213	2,445					
WR CEDAR		96.4	66.7	33	100	167					
COTWOOD		98.2	68.0	363	1,133	1,904					
R ALDER											
PS FIR											
TOTAL		102.9	13.4	802	926	1,050	423	216	106		
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		50.3	11.2	116	131	146					
DOUG FIR		167.6	37.5	6	9	13					
WR CEDAR		174.3	39.0	13	21	29					
COTWOOD		213.1	47.6	3	6	8					
R ALDER		458.3	102.4		1	3					
PS FIR		458.3	102.4		1	2					
TOTAL		46.7	10.4	152	170	187	91	47	23		
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		43.8	9.8	188	208	229					
DOUG FIR		141.4	31.6	43	63	82					
WR CEDAR		162.0	36.2	11	18	24					
COTWOOD		196.2	43.9	10	18	26					
R ALDER		458.3	102.4		3	6					
PS FIR		458.3	102.4		3	6					
TOTAL		29.0	6.5	292	313	333	35	18	9		
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		46.7	10.4	33,623	37,545	41,467					
DOUG FIR		139.1	31.1	12,110	17,572	23,033					
WR CEDAR		164.8	36.8	856	1,355	1,854					
COTWOOD		197.7	44.2	1,956	3,505	5,054					
R ALDER		458.3	102.4		463	937					

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT				DATE	11/24/2015	
				URSAMAJO						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
31N	06E	23	URSA MAJOR	0003	20.90	21	106	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	7	10	
PS FIR		458.3	102.4		433	876				
TOTAL		<i>34.1</i>	<i>7.6</i>	<i>56,235</i>	<i>60,872</i>	<i>65,509</i>	<i>49</i>	<i>25</i>	<i>12</i>	

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

T31N R03E S14 Ty0002	4.0
T31N R06E S01 Ty0001	25.5
T31N R06E S23 Ty0003	20.9

Project URSAMAJO
Acres 50.40

Page No 1
Date: 11/24/2015
Time 2:44:46PM

Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
WHEMLOCK	6,999	16,445	15,218	67.95	28.92	0.86	4,756	4,756	2,092	1,989
DOUG FIR	239	758	2,419	355.13	112.04	2.86	849	849	462	455
WR CEDAR	858	1,290	1,340	66.47	44.19	1.28	570	570	198	187
COTWOOD	164	385	624	155.69	66.28	1.85	255	255	123	113
BL MAPLE	235	247	228	36.71	34.86	1.12	86	86	32	31
R ALDER	27	54	62	84.53	42.26	1.28	23	23	10	10
PS FIR	24	73	77	111.00	37.00	1.16	27	27	12	9
Totals	8,545	19,252	19,970	76.83	34.10	1.01	6,565	6,566	2,929	2,794

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	8,120	18,566	19,055	76.38	33.40	0.99	6,202	6,202	2,764	2,640
H	425	685	915	85.55	53.08	1.56	364	364	165	154
Totals	8,545	19,252	19,970	76.83	34.10	1.01	6,565	6,566	2,929	2,794



FPA/N No: 2814948
 Effective Date: 1/20/2016
 Expiration Date: 1/20/2019
 Shut Down Zone: 653
 EARR Tax Credit: Eligible Non-eligible
 Reference: **Ursa Major**

**Forest Practices Application/Notification
 Notice of Decision**

DECISION:

- NOTIFICATION 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.
- CLOSED Applicant has withdrawn FPA/N.

FPA/N CLASSIFICATION

Number of Years Granted on Multi-Year Request

Class II Class III Class IVG Class IVS 4yrs 5 yrs

Conditions on Approval / Reasons for Disapproval

Conditions:

An on-site meeting between the landowner representative, operator, and DNR Forest Practice Forester will need to be conducted prior to beginning any operations to discuss the permitted plan. Contact the Forest Practice Forester at the Northwest Region office at 360-856-3500, or directly by cellular telephone, to arrange a meeting.

A temporary crossing structure will be utilized for the type Ns stream crossing. Crossing the type Ns stream with ground based harvest equipment will be designed to minimize sediment delivery to the stream channel. An appropriate crossing structure will be utilized. See WAC 222-30-070 (1) (b-e) for ground based logging systems/typed waters.

The location of the temporary crossing across the Ns stream will be clearly marked and easily identifiable on site.

Comments:

Road construction, road maintenance, log yarding, and hauling activities shall not result in sediment delivery to any typed water.

Where feasible, fell and yard timber away from all wetlands and buffers.

Water bar all skid trails upon completion of use.

Operate ground-based equipment during periods of stable soil conditions. If excessive rutting or soil displacement occurs, stop yarding until acceptably dry conditions prevail, in consultation with the Forest Practice Forester.

Do not track logging debris onto county or other off-site roads. Avoid tracking mud onto county or other off-site roads. All county or other off-site roads will be kept clear of tracked mud and logging debris.

This permit, its attached conditions, and any related official enforcement notices must be available on the work site while the operation is active. Landowner and Operator are responsible for informing their workers of these permit requirements.

Issued By: Bud Westcott *B.W.*

Region: Northwest

Title: Islands Forest Practice Forester

Date: 10/20/2016

Copies to: Landowner, Timber Owner and Operator

Issued in Person: Landowner, Timber Owner Operator By: *J. Utter*

Appeal Information

You have thirty (30) days to appeal this Decision and any related State Environmental Policy Act determinations to the Pollution Control Hearings Board in writing at the following addresses:

Physical address: 1111 Israel Rd. SW, Ste 301, Tumwater, WA 98501

Mailing address: P.O. BOX 40903, OLYMPIA, WA 98504-0903

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

At the same time you file an appeal with the Pollution Control Hearings Board, also send a copy of the appeal to the Department of Natural Resources' region office and the Office of the Attorney General at the following addresses:

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

And

Department Of Natural Resources
Northwest Region
919 N Township Street
Sedro-Woolley, WA 98284

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.

Hydraulic Project Approval (HPA) (Chapter 77.55RCW and WAC 222-50-020(2))

The Department of Fish and Wildlife (WDFW), as the jurisdictional agency issuing HPAs, has final authority for approving water crossing structures in Type S and F waters. WDFW continues to have authority on Type N waters and may exercise that authority on some Type N waters.

Notice: The HPA water crossing requirements supersede what is indicated on the FPA. Landowners are required by law to follow the provisions as directed on the HPA.

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 Division website: <http://www.dnr.wa.gov/businesspermits/forestpractices>. Notify DNR of new Operators within 48 hours.

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

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

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

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

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

DNR affidavit of mailing:

On this day _____, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA #__2814__

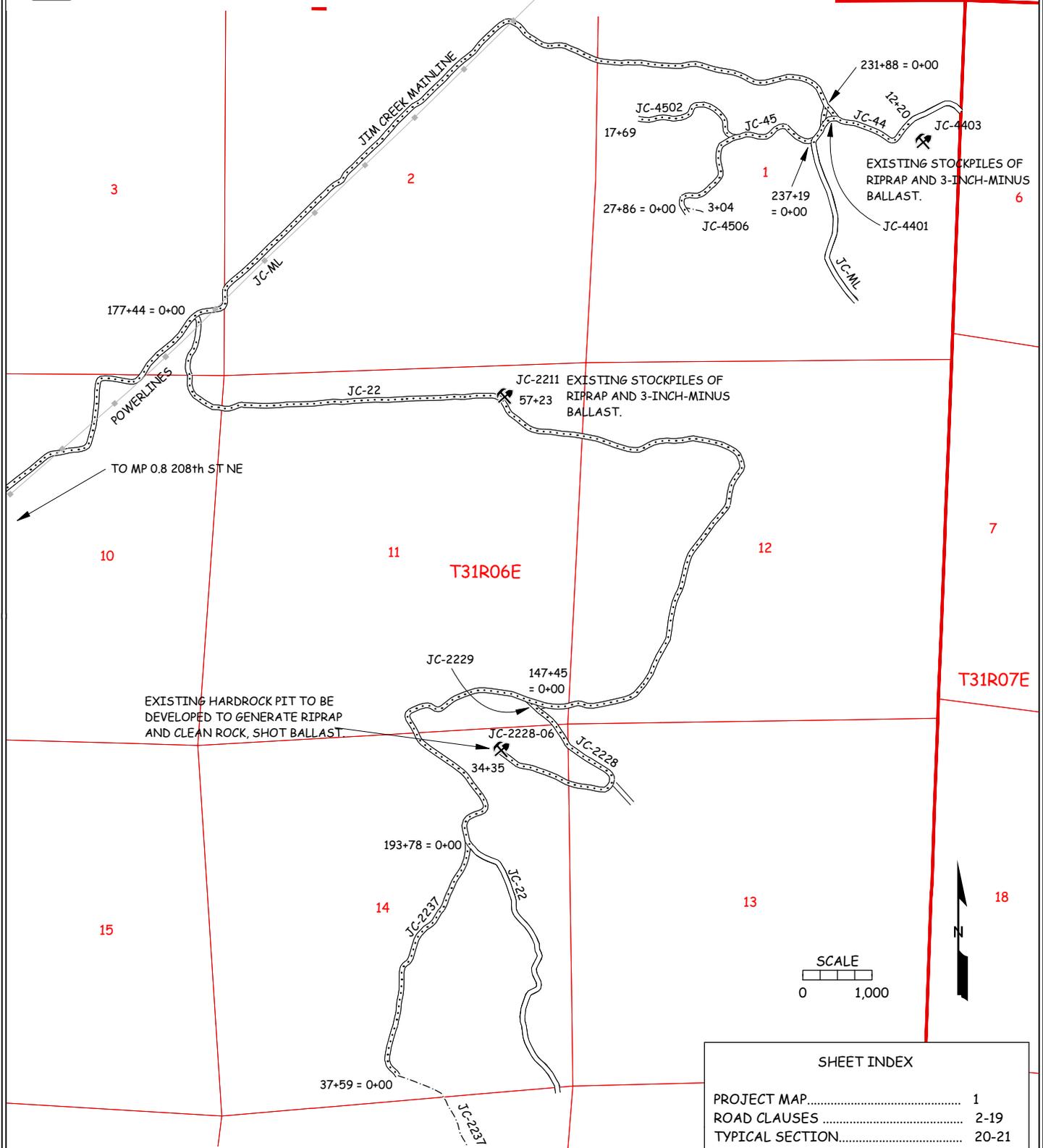
_____ L Utgard _____
(Printed name)

(Signature)

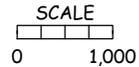


ROAD PLAN AND SPECIFICATIONS

#30-093095 URSA MAJOR TIMBER SALE



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



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MATERIAL LIST.....	22
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STANDARD DETAILS.....	25-26

DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
D. SYMMANK	ZYLSTRA 12/14/15	ZYLSTRA 12/14/15	11/03/2015	1 OF 26

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

URSA MAJOR TIMBER SALE ROAD PLAN
SKAGIT COUNTY
STARBIRD UNIT CASCADE DISTRICT

AGREEMENT NO.: 30-093095

STAFF ENGINEER: SYMMANK

DATE: NOVEMBER 3, 2015

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>
JC-ML	0+00 to 237+19	PRE-HAUL MAINTENANCE
JC-22	0+00 to 193+78	PRE-HAUL MAINTENANCE
JC-2228	0+00 to 34+35	PRE-HAUL MAINTENANCE
JC-2229	0+00 to 2+38	PRE-HAUL MAINTENANCE
JC-2237	0+00 to 37+59	PRE-HAUL MAINTENANCE
JC-44	0+00 to 12+20	PRE-HAUL MAINTENANCE
JC-4401	0+00 to 2+67	PRE-HAUL MAINTENANCE
JC-45	0+00 to 27+86	PRE-HAUL MAINTENANCE
JC-4502	0+00 to 17+69	PRE-HAUL MAINTENANCE

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
JC-2237	37+59 to 53+02	CONSTRUCTION
JC-4506	0+00 to 3+04	CONSTRUCTION

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to sub-grade, landing and turnout construction, culvert installation, application of 3-inch-minus ballast rock, and clean rock, shot ballast.

0-6 PRE-HAUL MAINTENANCE

Pre-haul maintenance includes, but is not limited to road brushing.

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

The Purchaser shall develop an existing rock source. Development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap and clean rock, shot ballast. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

Unless controlled by construction stakes, road work shall be performed in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan.

1-4 ROAD TOLERANCES

Road work shall be performed within the tolerance listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET.

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

1-6 ORDER OF PRECEDENCE

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

1. Addenda.
2. Road Plan Clauses.
3. Typical Section Sheet.
4. Standard Lists.
5. Standard Details.

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

The Purchaser is responsible for the repair or replacement of all materials, roadway infrastructure, and road components damaged during road work or operation activities. Repairs and replacements shall be directed by the Contract Administrator. Repairs to structural materials will be made according to the manufacturer’s recommendation.

1-9 DAMAGED METALLIC COATING

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

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-25 ACTIVITY TIMING RESTRICTION

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

<u>Activity</u>	<u>Closure Period</u>
Rock hauling, construction, or abandonment	November 1 to March 31

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION the Purchaser shall provide a maintenance plan to include further protection of state resources. The Contract Administrator must approve the maintenance plan in writing, and preventative measures shall be put in place, before operation in the closure period. The Purchaser shall be 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 shall be developed. All parties shall follow this plan.

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

On the following road, any road work, right-of-way timber falling and yarding, rock pit operation, or heavy equipment operation is not allowed from one hour before official sunrise to two hours after official sunrise, and from one hour before official sunset to one hour after official sunset from April 1 through August 31. This restriction does not apply to hauling timber, rock, or equipment.

<u>Road</u>	<u>Stations</u>
JC-2237	37+59 to 53+02

1-29 SEDIMENT RESTRICTION

Silt-bearing runoff shall not be permitted to go into 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:

- 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 shall be permitted only after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact Administrator upon request.

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.

<u>Road</u>	<u>Location</u>	<u>Utility</u>
JC-ML	MP 0.0 to MP 0.9	Sno. PUD
JC-ML	MP 0.7 to MP 4.1	Seattle City Light
JC-22	At Jct w/JC-ML	Seattle City Light

SECTION 2 – MAINTENANCE

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

Purchaser shall clean the ditchlines, culvert headwalls, and catch basins. Work shall be completed before application of rock and shall be done in accordance with the TYPICAL SECTION.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following roads, Purchaser shall cut vegetative material up to 3 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>
JC-ML	0+00 to 237+19
JC-22	0+00 to 193+78
JC-2228	0+00 to 34+35
JC-2229	0+00 to 2+38
JC-2237	0+00 to 37+59
JC-44	0+00 to 12+20
JC-4401	0+00 to 2+67
JC-45	0+00 to 27+86
JC-4502	0+00 to 17+69

3-5 CLEARING

Fell 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 shall 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 70%.
- Against standing trees unless approved by the Contract Administrator.

3-10 GRUBBING

Remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Those stumps outside the grubbing limits but with undercut roots shall also be removed. Grubbing shall be completed before starting excavation and embankment.

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

All disposal of organic debris shall be completed before the application of rock.

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On embankments.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

Organic debris shall not be buried unless otherwise stated in this plan.

3-25 SCATTERING ORGANIC DEBRIS

Organic debris shall be scattered outside of the clearing limits in natural openings unless otherwise detailed in this road plan.

SECTION 4 – EXCAVATION

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed:

- Grade and alignment shall have smooth continuity, without abrupt changes in direction.
- Maximum grade shall not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 50 feet at centerline.
- Sag vertical curves shall not have a grade change greater than 5% in 100 feet.
- Crest vertical curves shall not have a grade change greater than 4% in 100 feet.

4-5 CUT SLOPE RATIO

Excavation slopes shall be constructed no steeper than shown on the following table:

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

4-6 EMBANKMENT SLOPE RATIO

Unless construction staked or designed embankment slopes shall be constructed no steeper than shown on the following table:

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

4-7 SHAPING CUT AND FILL SLOPE

Excavation and embankment slopes shall be constructed 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.

Embankment widening shall be applied equally to both sides of the road to achieve the required width.

4-21 TURNOUTS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

The Purchaser shall construct or reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Excavated slopes shall be consistent with Clause 4-5 CUT SLOPE RATIO. Ditches shall be constructed concurrently with construction of the subgrade.

4-28 DITCH DRAINAGE

Ditches shall drain to cross-drain culverts and ditchouts.

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

Waste material may be sidecast on side slopes up to 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, all excavation shall be end hauled or pushed to designated embankment sites and waste areas.

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas, except as otherwise specified in this plan:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

4-55 ROAD SHAPING

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

4-60 FILL COMPACTION

All embankment and waste material shall be compacted by routing equipment over the entire width of each lift.

4-61 SUBGRADE COMPACTION

Constructed subgrades shall be compacted by routing equipment over the entire width.

SECTION 5 – DRAINAGE

5-5 CULVERTS

Culverts shall be installed as part of this contract. Culverts shall be installed concurrently with subgrade work and shall be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on MATERIALS LIST. Culvert, downspout, and flume lengths shall be adjusted to fit as-built conditions and shall not terminate directly on unprotected soil. Culverts shall be new or used and meet the material specifications in Clauses 10-15 through 10-23. The quality of used culverts must be approved by the Contract Administrator before installation.

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than > 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.

5-17 CROSS DRAIN SKEW AND SLOPE

Cross drains, on road grades in excess of 3%, shall 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 shall not be skewed. Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3% or more than 10%.

5-25 CATCH BASINS

Catch basins shall be constructed to resist erosion in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long with backslopes consistent with Clause 4-5 CUT SLOPE RATIO.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

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

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
JC-4403 Hardrock Pit	12+20 of the JC-44 road	3-inch-minus ballast, riprap
JC-2228-06 Hardrock Pit	34+35 of the JC-2228 rd	Clean rock, shot ballast
JC-2211 Hardrock Pit*	57+23 of the JC-22 road	3-inch-minus ballast, riprap

* To be used only as approved in writing by the Contract Administrator as a limited capping or for maintenance. Riprap maybe used as needed.

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. Purchaser shall remove no more than 347 cubic yards of rock. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator. Stockpiles not listed shall not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>
JC-4403 Pit	12+20 of the JC-44 road	3-inch-minus, riprap	347 CY
JC-2211 Hardrock Pit*	57+23 of the JC-22 road	3-inch-minus, riprap	*

* To be used only as approved in writing by the Contract Administrator as a limited capping or for maintenance. Riprap maybe used as needed.

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 will be subject to written approval by the Contract Administrator before their use.

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

All rock source development and use at the following sources, shall be 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 development or use. Upon completion of operations, the rock source shall be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator.

<u>Source</u>
JC-2228-06 Hardrock Pit

Rock source development plans prepared by the Purchaser shall 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.

6-20 ROCK GRADATION TYPES

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

6-34 3-INCH MINUS BALLAST ROCK

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

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

6-42 CLEAN ROCK, SHOT BALLAST

No more than 10 percent of the rock by weight may exceed 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Shot Ballast rock may not contain organic debris, dirt, and trash.

6-50 LIGHT LOOSE RIP RAP

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

<u>At Least/Not More Than</u>	<u>Weight Range</u>
20% / 90%	300 lbs. to 1 ton
80% / --	50 lbs. to ½ ton
10% / 20%	50 lbs. max

6-51 HEAVY LOOSE RIP RAP

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

<u>At Least/Not More Than</u>	<u>Weight Range</u>	<u>Size Range</u>
30% / 90%	1 ton to 3 ton	36" - 54"
70% / 90%	500 lbs. to 1 ½ ton	24" - 42"
10% / 30%	50 lbs. max	3" - 8"

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths, are defined as the compacted depth(s) using the compaction methods required in this road plan. Estimated quantities specified in the 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

Subgrade drainage installation including culvert installation, ditch construction, ditch reconstruction, headwall construction, and headwall reconstruction, shall be completed and approved in writing by the Contract Administrator, before rock application.

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

Turnarounds, turnouts, and areas with curve widening shall have rock applied to the same depth and specifications as the traveled way.

SECTION 8 – EROSION CONTROL

8-15 REVEGETATION

Purchaser shall spread seed and fertilizer on all exposed soils within the grubbing limits resulting from road work activities. Covering of all exposed soils shall be accomplished by 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 seed and fertilizer.

8-17 REVEGETATION TIMING

The Purchaser shall perform revegetation during the first available opportunity after road work is completed. Soils shall 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 shall consist of, but not be limited to dispersed straw, jute matting, or clear plastic sheets as approved by the Contract Administrator. The protective cover requirement may be waived by the Contract Administrator, in writing, if the 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

The Purchaser shall be responsible to ensure a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. The Purchaser shall reapply the <insert type> in areas that have failed to germinate or have been damaged through any cause, before approval from the Contract Administrator. The Purchaser shall 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 shall meet the following specifications:

1. Weed seed shall not exceed 0.5% by weight.
2. All seed species shall have a minimum 90% germination rate, unless otherwise specified.
3. Seed shall be certified.
4. Seed shall be furnished in standard containers the show 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 shall conform to the following mixture.

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

8-27 FERTILIZER

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

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

SECTION 9 – POST-HAUL ROAD WORK

9-3 REMOVAL OF CULVERT MATERIAL FROM STATE LAND

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

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

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

9-12 LANDING EMBANKMENT REMOVAL

The Purchaser shall reduce or relocate landing embankment, in a manner approved, in writing, by the Contract Administrator. Excavated material shall be placed in a waste area designated by the Contract Administrator.

9-21 ROAD ABANDONMENT

The following road(s) shall be abandoned by the Purchaser before the termination of this contract.

<u>Road</u>	<u>Stations</u>
JC-2237	37+59 to 53+02
JC-4506	0+00 to 3+04

9-22 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes shall be 1:1 or flatter. The removed fill material shall be placed and compacted 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 shall be 1:1 or flatter. Strive for matching the existing native stream bank gradient. The natural streambed width shall be re-established. The removed fill material shall be placed and compacted 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 shall become 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 shall be outsloped to provide positive drainage. Outlets shall 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. Removed material shall be placed and compacted 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

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-21 METAL BAND

Metal coupling and end bands shall meet the AASHTO specification designated for the culvert and shall have matching corrugations. On culverts 24 inches and smaller, bands shall have a minimum width of 12 inches. On culverts over 24 inches, bands shall have a minimum width of 24 inches.

10-22 PLASTIC BAND

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

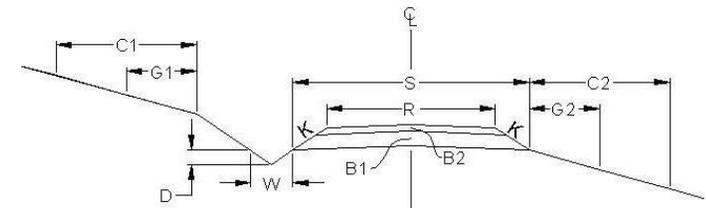
10-23 GAGE AND CORRUGATION

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

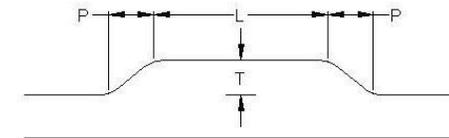
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1/2"
24" to 48"	14 (0.079")	2 ² / ₃ " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #		JC-ML	JC-22	JC-2228	JC-2229
REQUIRED / OPTIONAL		Required	Required	Required	Required
CONSTRUCT / RECONSTRUCT / PRE-HAUL MAINTENANCE		Pre-Haul	Pre-Haul	Pre-Haul	Pre-Haul
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00
STATION / MP		237+19	193+78	34+35	2+38
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	3	3	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	50	50	50	50
TURNOUT WIDTH	T	10	10	10	10
TURNOUT TAPER	P	25	25	25	25
GRUBBING	G1	--	--	--	--
	G2	--	--	--	--
CLEARING	C1	--	--	--	--
	C2	--	--	--	--
ROCK FILLSLOPE	K:1	1½	1½	1½	1½
❖ BALLAST DEPTH	B1	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY BALLAST		--	--	--	--
❖ SURFACING DEPTH	B2	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--
➤ TOTAL CUBIC YARDS		--	--	--	--
SUBGRADE WIDTH	S	--	--	--	--
BRUSHCUT (Y/N)		Y	Y	Y	Y
BLADE, SHAPE, & DITCH (Y/N)		N	N	N	N

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.

1 Clean rock, shot ballast

Rock Totals
3-inch-minus ballast – 347 cy
Shot ballast – 1,760 cy
Riprap - 40 cy

ROAD #		JC-2237	JC-2237	JC-44	JC-4401	JC-45	JC-4502	JC-4506
REQUIRED / OPTIONAL		Required	Optional	Required	Required	Required	Required	Optional
CONSTRUCT / RECONSTRUCT		Pre-Haul	Construction	Pre-Haul	Pre-Haul	Pre-Haul	Pre-Haul	Construction
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C
STATION / MP TO		0+00	37+59	0+00	0+00	0+00	0+00	0+00
STATION / MP		37+59	53+02	12+20	2+67	27+86	17+69	3+04
ROAD WIDTH	R	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3
DITCH WIDTH	W	3	2	3	3	3	3	2
DITCH DEPTH	D	1	1	1	1	1	1	1
TURNOUT LENGTH	L	50	25	50	50	50	50	25
TURNOUT WIDTH	T	10	10	10	10	10	10	10
TURNOUT TAPER	P	25	25	25	25	25	25	25
GRUBBING	G1	--	5	--	--	--	--	5
	G2	--	5	--	--	--	--	5
CLEARING	C1	--	10	--	--	--	--	10
	C2	--	10	--	--	--	--	10
ROCK FILL SLOPE	K:1	1½	1½	1½	1½	1½	1½	1½
❖ BALLAST DEPTH	B1	--	18	--	--	--	--	18
CUBIC YARDS / STATION		--	114	--	--	--	--	114
➤ TOTAL CY BALLAST		--	1,760 ¹	--	--	--	--	347
❖ SURFACING DEPTH	B2	--	--	--	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--	--	--	--
➤ TOTAL CUBIC YARDS		--	1,760 ¹	--	--	--	--	347
SUBGRADE WIDTH	S	--	16.5	--	--	--	--	16.5
BRUSHCUT (Y/N)		Y	N/A	Y	Y	Y	Y	N/A
BLADE, SHAPE, & DITCH (Y/N)		N	N/A	N	N	N	N	N/A

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:		
												Diameter	Gage	Corrugation
JC-2237	38+09	18	30	XX	--	--	2	3	L	NT	C			
	41+59	24	30	XX	--	--	4	6	H/L	NT	C			
	46+84	24	30	XX	--	--	4	6	H/L	NT	C			
	52+28	24	30	XX	--	--	4	6	H/L	NT	C			
JC-4506	0+59	18	30	XX	--	--	2	3	L	NT	C			

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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

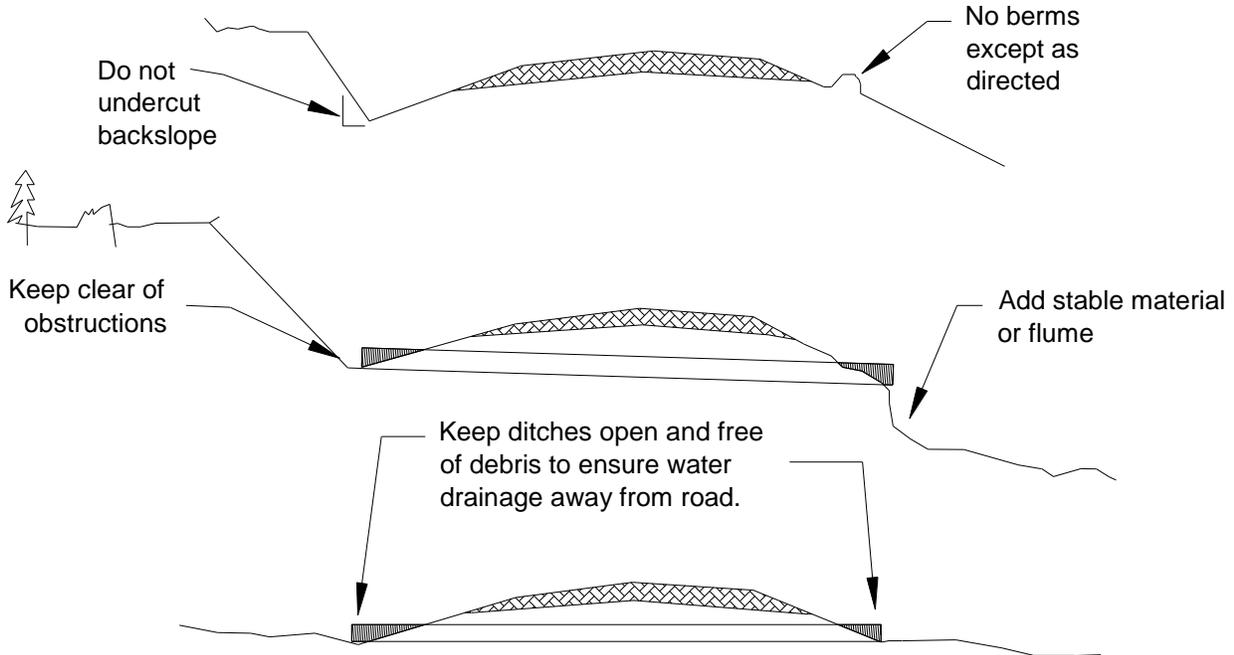
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

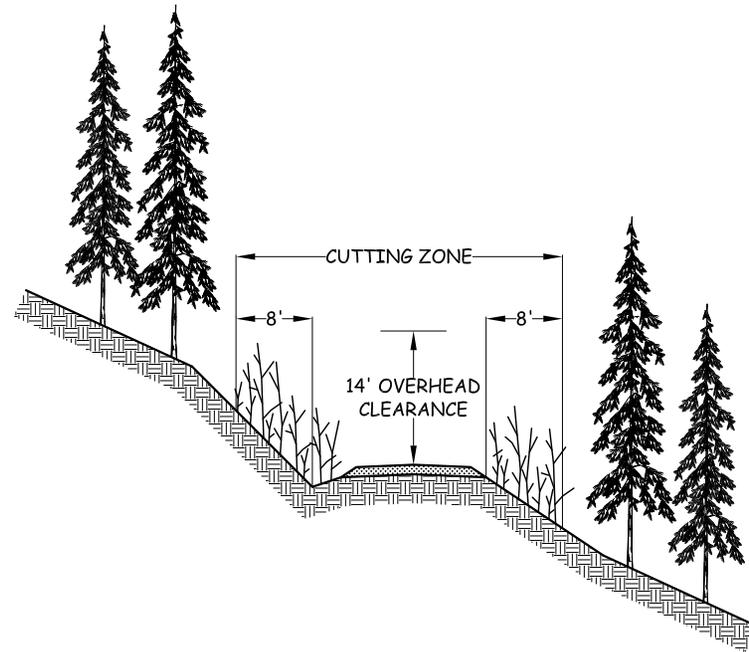
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



ROAD BRUSHING DETAILS



SPECIFICATIONS

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

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

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

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

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

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

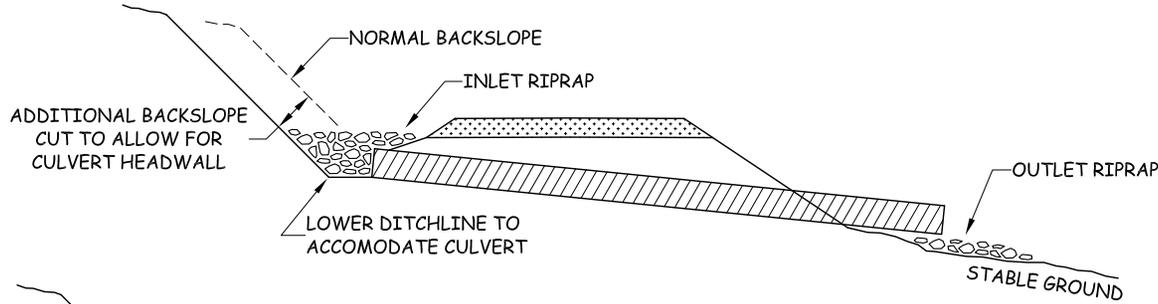
DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

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

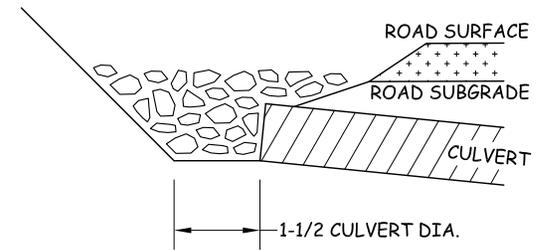
CONTRACT #	PROJECT	SHEET
30-093095	URSA MAJOR	25 OF 26

CULVERT AND DRAINAGE SPECIFICATIONS

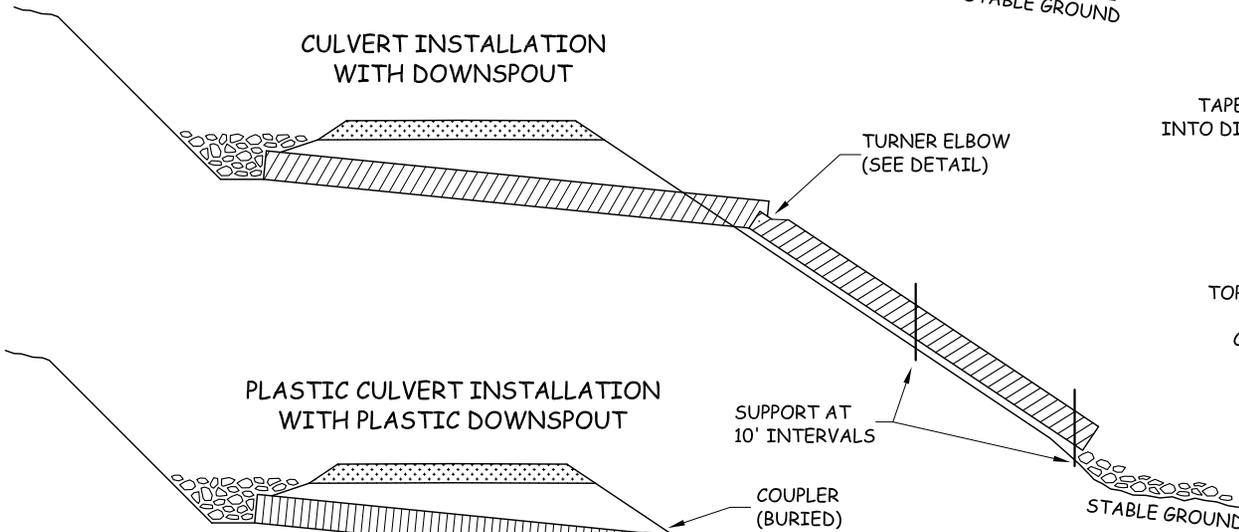
CULVERT INSTALLATION (TYPICAL)



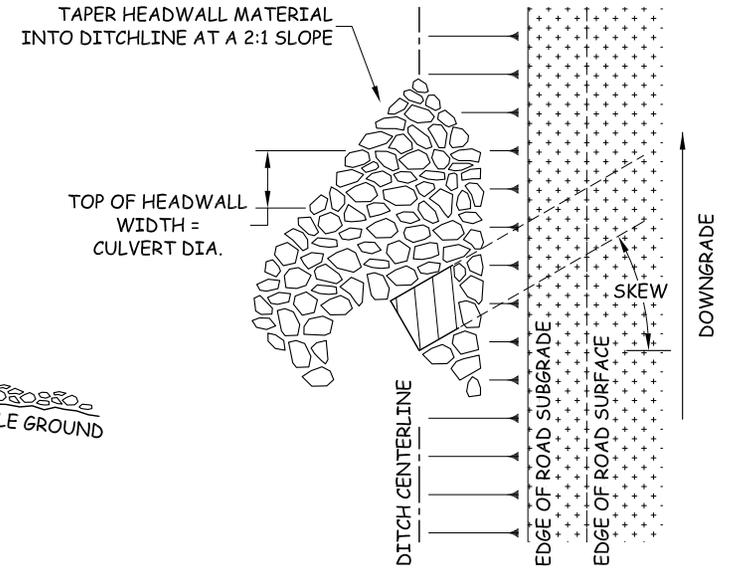
CULVERT HEADWALL - SECTION VIEW



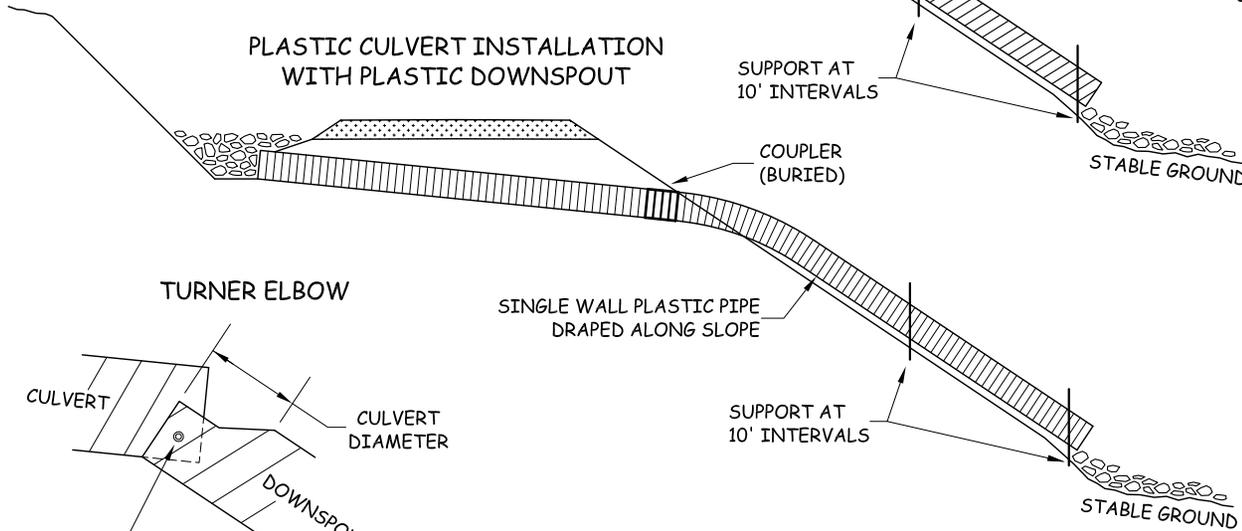
CULVERT INSTALLATION WITH DOWNSPOUT



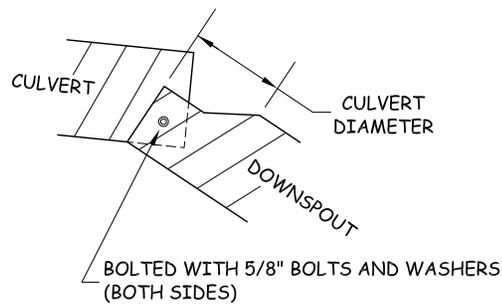
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



TURNER ELBOW



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

CONTRACT #	PROJECT	SHEET
30-093095	URSA MAJOR	26 OF 26

SUMMARY - Road Development Costs

REGION: NW
DISTRICT: Cascade

SALE/PROJECT NAME: Ursa Major

CONTRACT #: 30-093095

ROAD NUMBERS: JC-2237 and JC-4506 JC-ML, JC-22, JC-2228, JC-2229, JC-2237, JC-44, JC-4401, JC-45, JC-4502

ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	18+47	0+00	565+71
CLEARING & GRUBBING:	\$2,565	\$0	
EXCAVATION AND FILL:	\$4,396	\$0	-
MISC. MAINTENANCE:	\$0	\$0	\$10,714
ROAD ROCK:	\$21,709	\$0	-
ROCK STOCKPILE PROD:	\$0	\$0	-
CULVERTS AND FLUMES:	\$4,633	\$0	-
STRUCTURES:	\$0	\$0	-
MOBILIZATION:	\$3,334	\$0	-
TOTAL COSTS:	\$36,636	\$0	\$10,714
COST PER STATION:	\$1,984	\$0	\$19
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$554	

	TOTAL (All Roads)	=	\$47,905
Est.	SALE VOLUME MBF	=	2,800
	TOTAL \$/MBF	=	\$17

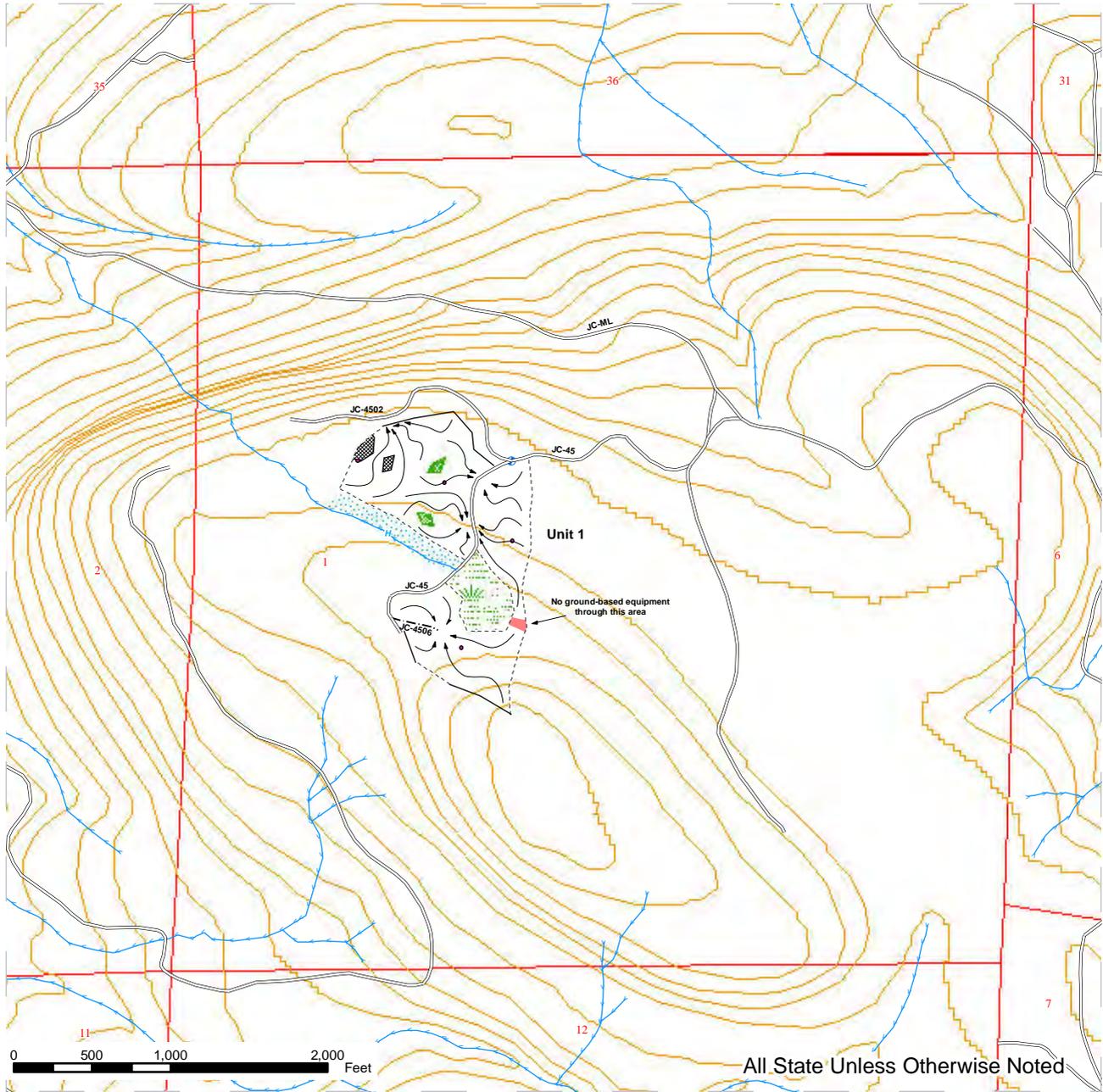
Compiled by: Symmank

Date: 12/11/15

LOGGING PLAN MAP

SALE NAME: Ursa Major
 AGREEMENT#: 93095
 TOWNSHIP(S): T31R06E
 TRUST(S): 01

REGION: Northwest
 COUNTY(S): Snohomish
 ELEVATION RGE: 1200-1681'



LEGEND

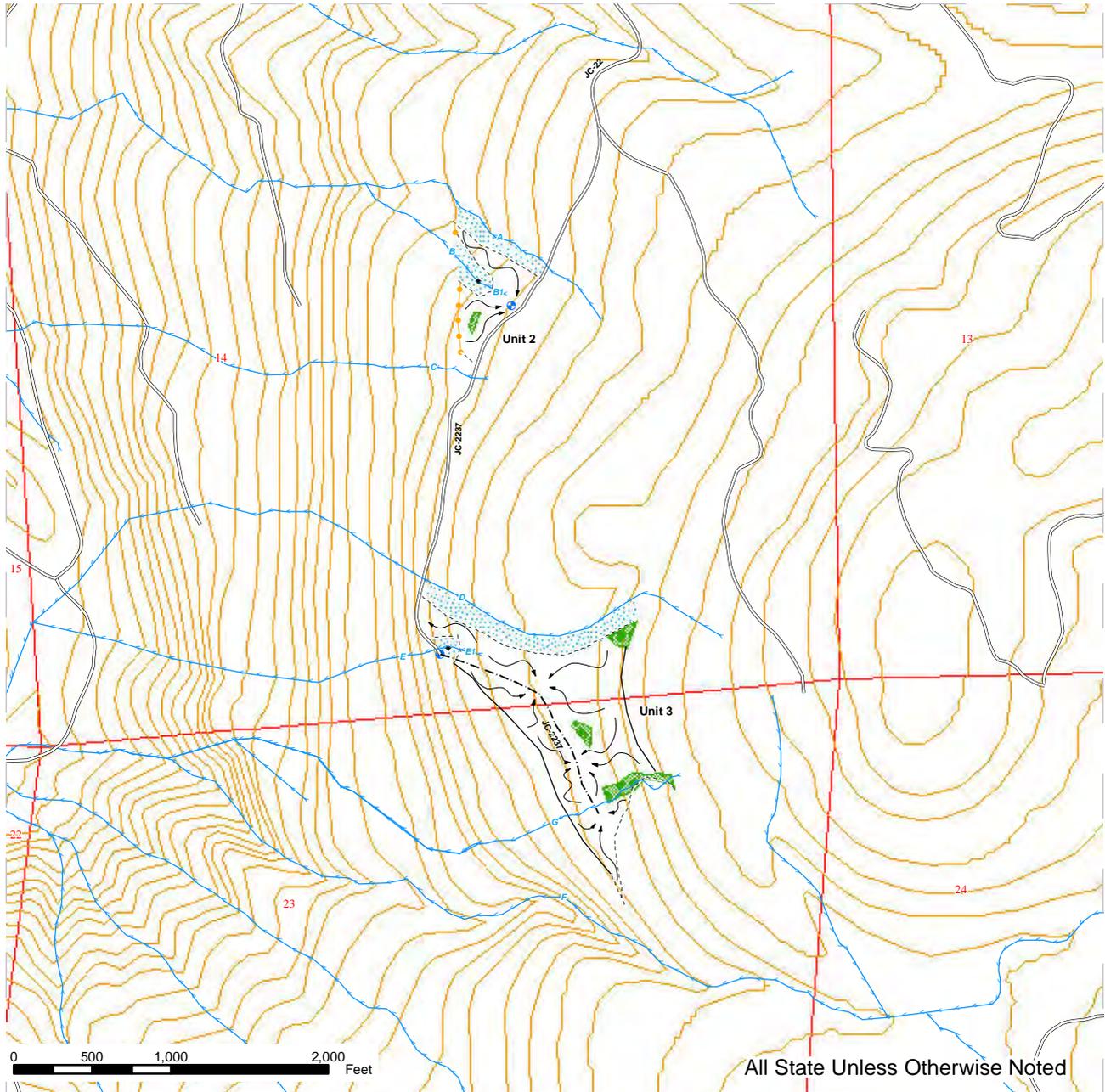
- | | | |
|------------------------------|-------------------------|-------------------|
| Wetland Mgt Zone | Sale Boundary Tags | Stream |
| Riparian Mgt Zone | Sale Boundary (No Tags) | Stream Type |
| Leave Tree Area | Painted Take Trees | Stream Type Break |
| Nontradeable Leave Tree Area | Existing Road | Proposed Landing |
| Leave LWD | Optional Construction | |
| No Equipment Zone | | |



LOGGING PLAN MAP

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