

Washington DNR Timber Sales Program

Updated information is being provided for Mizzen timber sale documents as follows:

Documents amended:

Brief Description	DATE
Contract Clause H-140	1/25/16
K. There is a recreational event scheduled for one summer weekend in 2017 in the vicinity of Unit 1. The purchaser shall be notified of the date of this event as soon as it is finalized. If active operations are occurring during this time, safety signs must be hung at the trailhead and near Unit 1, the trail must be cleaned out, and all operations must stop during the duration of the event. A safety plan for this event shall be discussed at the pre-work meeting.	

TIMBER NOTICE OF SALE

SALE NAME: MIZZEN

AGREEMENT NO: 30-092529

AUCTION: February 24, 2016 starting at 10:00 a.m.,
Northwest Region Office, Sedro Woolley, WA

COUNTY: Whatcom

SALE LOCATION: Sale located approximately 19 miles north of Sedro-Woolley, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags, adjacent young stands and the ED-27 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 #1.

All timber bounded by white timber sale boundary tags, adjacent young stands and the ED-36 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.

The above described products on part(s) of Sections 35 and 36 all in Township 37 North, Range 5 East, W.M., containing 87 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
Douglas fir	23	8	2,870			49	337		1,927	486	64	7
Hemlock	14	8	638						182	349	86	21
Red cedar	14		325							249	76	
Maple	15		278						114	58	18	88
Red alder	16		99						46	16	6	31
Birch	17		2									2
Sale Total			4,212									

MINIMUM BID: \$1,316,000.00

BID METHOD: Sealed Bids

PERFORMANCE SECURITY: \$100,000.00

SALE TYPE: Lump Sum

EXPIRATION DATE: March 31, 2018

ALLOCATION: Export Restricted

BID DEPOSIT: \$131,600.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable; cable, forwarder or tracked skidder (on skid trails as approved in writing by Contract Administrator) 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 Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

ROADS: 25.25 stations of required construction. 15.67 stations of optional construction. 15.67 stations of road to be abandoned if built. 305.47 stations of pre-haul maintenance.

TIMBER NOTICE OF SALE

Rock may be obtained from the following source on State land at no charge to the Purchaser: Santa Maria Hard Rock Pit at station 15+00 of the ED-36 Road.

Development of existing rock source will involve drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast.

An estimated total quantity of rock needed for this proposal: 45 cubic yards of riprap and 4,290 cubic yards of ballast rock.

An existing stockpile of 3-inch-minus ballast rock is available for use in the Santa Maria Hard Rock Pit.

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. This shall not be waived. 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. 89.7 acres gross. 3.2 acres deducted for green tree retention clumps. 86.5 acres net. Cruised using variable plot method. Expansion factor used is 40.00, 54.4 and 62.5. Sighting height is 4.5 feet. A total of 82 plots were taken.

Shapefiles of units are available upon request.

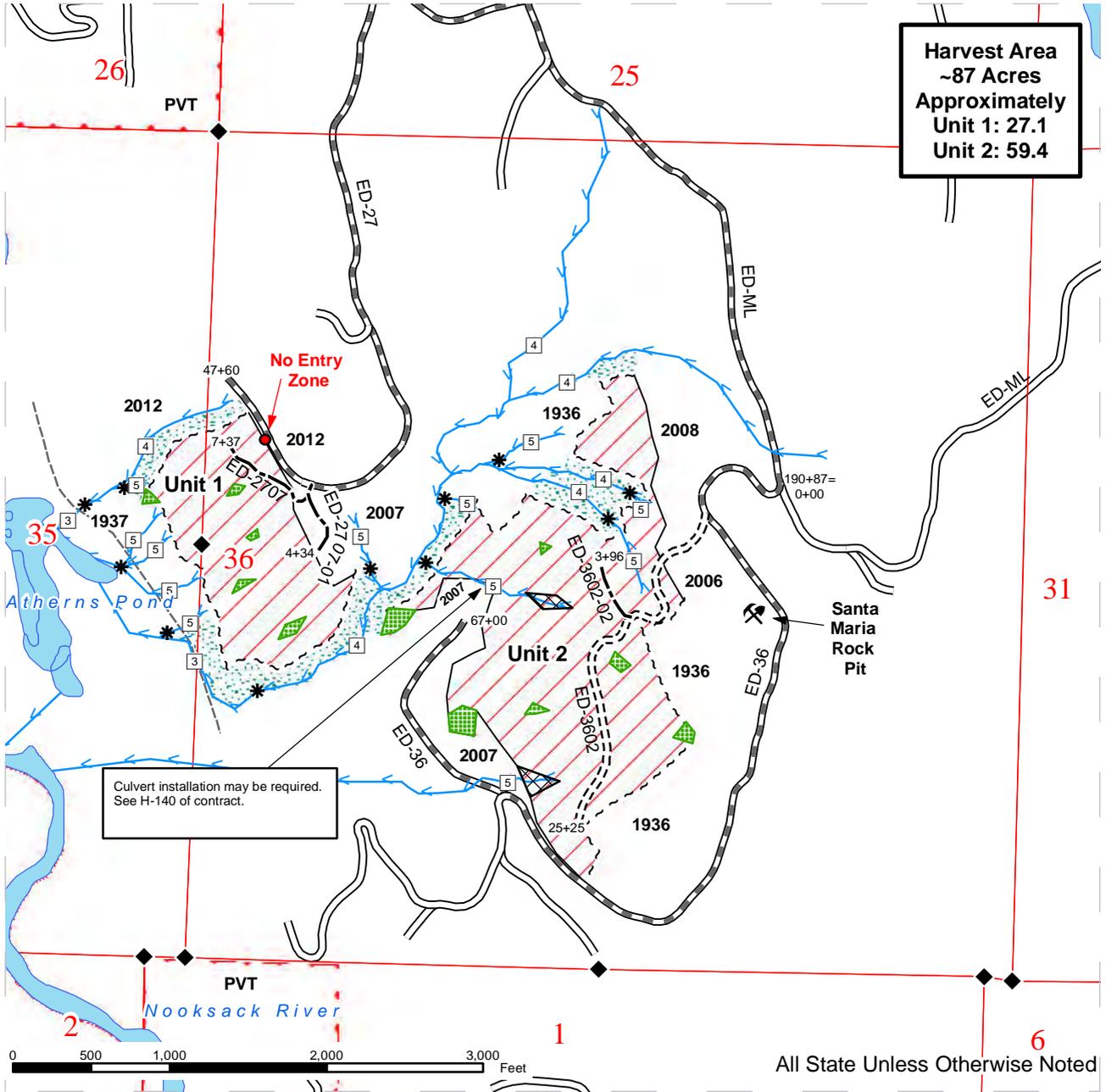
FEES: \$74,763.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

- SPECIAL REMARKS:**
1. No "Closed Season Waiver" will be granted for any road work, rock haul or timber haul. These activities shall only occur between April 1 and October 31.
 2. HQ DF noted within the sale area. See cruise for further details (approximately 183 mbf of the above listed DF 2S is deemed high quality by the Department).
 3. Douglas-fir poles were noted within the sale area.
 4. Northern Goshawks have been known to nest in the vicinity of the proposed timber sale. If any occupied nests are found in trees within the sale boundary, these trees must be left undisturbed. Also, a timing restriction on all harvest activities may be applied to the affected portion of the sale from April 1 to August 31.
 5. There is a "No Entry Zone" located in the northern portion of Unit 1 as shown on the timber sale map. There shall be no equipment use, landing, or yarding in this area.

TIMBER SALE MAP

SALE NAME: Mizzen
 AGREEMENT#: 92529
 TOWNSHIP(S): T37R05E
 TRUST(S): 03, 07

REGION: Northwest
 COUNTY(S): Whatcom
 ELEVATION RGE: 483-1359'



Culvert installation may be required.
 See H-140 of contract.

**Harvest Area
 ~87 Acres
 Approximately
 Unit 1: 27.1
 Unit 2: 59.4**

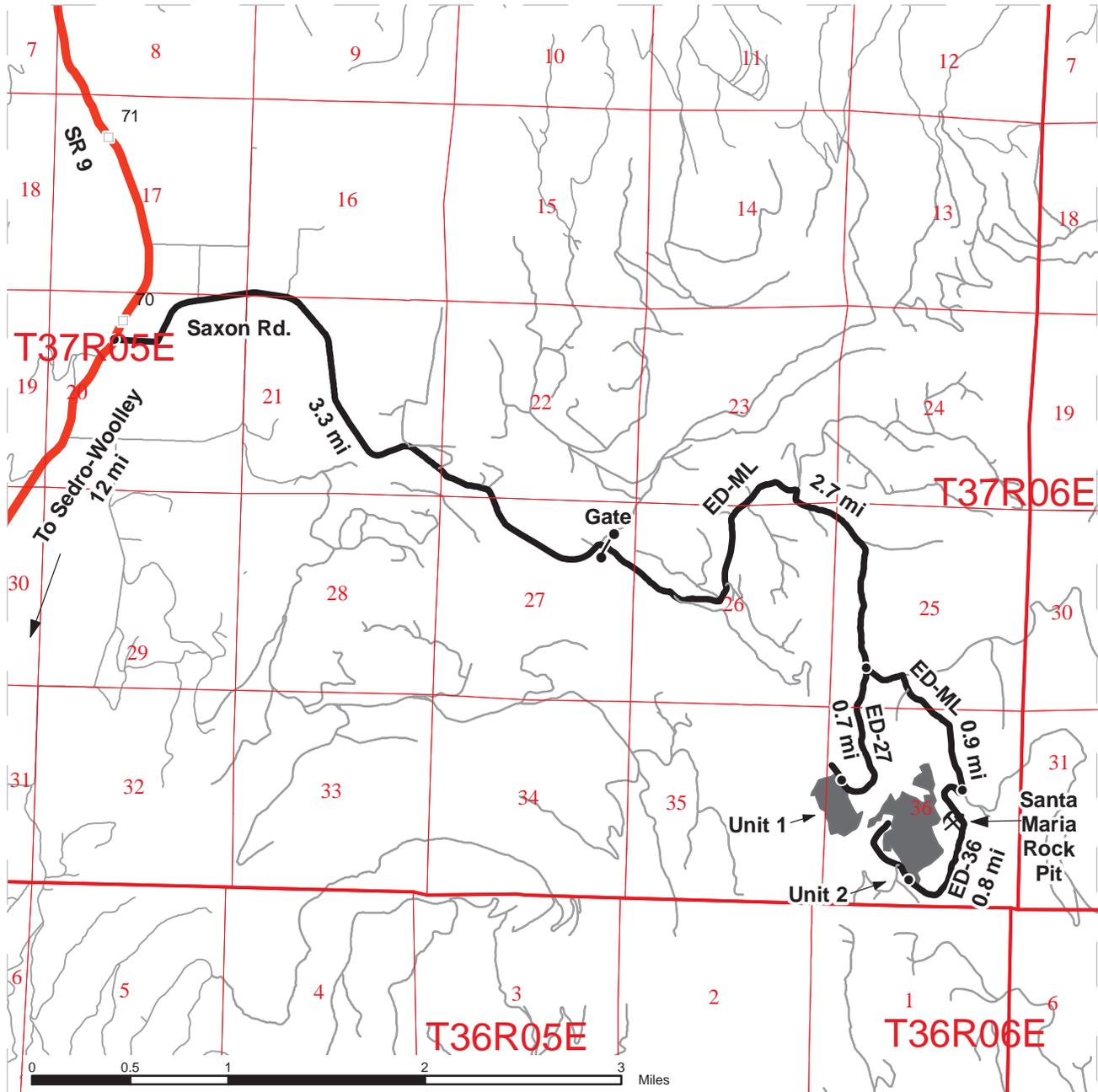
LEGEND

- | | | |
|-------------------------------|-------------------|-------------------------------|
| Sale Area | Stream | Existing Road |
| Sale Boundary Tags | Stream Type | Required Pre-Haul Maintenance |
| Young Stand Edge (No Tags) | Stream Type Break | Required Construction |
| Leave Tree Area | Riparian Mgt Zone | Optional Construction |
| Non-Tradeable Leave Tree Area | Open Water | Old Grades / Trails |
| No Entry Zone | | DNR Managed Lands |
| | | Survey Corner |

DRIVING MAP

SALE NAME: Mizzen
AGREEMENT#: 92529
TOWNSHIP(S): T37R05E
TRUST(S): Common School (03), Capitol Grant (07)

REGION: Northwest
COUNTY(S): Whatcom
ELEVATION RGE: 483-1359'



<ul style="list-style-type: none"> Timber Sale Unit Highways Other Route Haul Route Milepost Markers Distance Indicator Rock Pit 	<p><u>DRIVING DIRECTIONS:</u></p> <p>Head north on Highway 9 from Sedro-Woolley for 12 miles and take a right onto Saxon Road. Drive 3.3 miles to the Edfro Mainline (ED-ML) gate at end of Saxon Road.</p> <p>To reach Unit 1: Travel on ED-ML for 2.7 miles. Take a right onto ED-27 and drive 0.7 miles.</p> <p>To reach Unit 2: Travel on ED-ML for 3.6 miles. Take a right onto ED-36 and drive 0.8 miles.</p>
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**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-092529

SALE NAME: MIZZEN

**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 February 24, 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 bounded by white timber sale boundary tags, adjacent young stands and the ED-27 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 #1.

All timber bounded by white timber sale boundary tags, adjacent young stands and the ED-36 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.

The above described products, located on approximately 87 acres on part(s) of Sections 35, and 36 all in Township 37 North, Range 5 East W.M. in Whatcom County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

Purchaser hereby warrants to the State that they have had an opportunity to fully inspect the sale area and the forest products being sold. Purchaser further warrants to the State that they enter this contract based solely upon their own judgment of the value

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

G-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 \$873.00 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
Birch	\$147.66	0	\$0.00	\$9.00	\$9.00
Douglas fir	\$301.80	0	\$0.00	\$9.00	\$9.00
Hemlock	\$224.45	0	\$0.00	\$9.00	\$9.00
Maple	\$210.83	0	\$0.00	\$9.00	\$9.00
Red alder	\$300.24	0	\$0.00	\$9.00	\$9.00
Red cedar	\$670.83	0	\$0.00	\$9.00	\$9.00
Other	\$292.04	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; ED-ML, ED-27, ED-2707, ED-2707-01, ED-36, ED-3602, ED-3602-02. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

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

G-340 Preservation of Markers

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

G-360 Road Use Reservation

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

G-370 Blocking Roads

Purchaser shall not block the ED-ML Road, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easements with:

John Hancock Life Insurance Company; #55-002606; dated November 20, 1995.

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 \$112,671.00. The total contract price consists of a \$0.00 contract bid price plus \$112,671.00 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-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-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, forwarder or tracked skidder (on skid trails as approved in writing by the Contract Administrator) 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-131 Hauling Schedule

The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the State.

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. Marked leave trees may be traded for trees of the same size and species with prior approval from the Contract Administrator, with the exceptions of the non-tradeable leave tree areas as show on the timber sale map in Unit 2 and any tree marked with a double band of blue paint in Unit 1.
- D. There is a "No Entry Zone" located in the northern portion of Unit 1 as shown on the timber sale map. There shall be no equipment use, landing, or yarding in this area.
- E. Shovel yarding is limited to 400 feet from roads. If ground-based yarding occurs greater than 400 feet from a road, logs must be shovel yarded to skid trails designated by the Contract Administrator and forwarded to roads with a tracked skidder or forwarder. Installation of two temporary 24 inch culverts is required for ground-based equipment to cross the type 5 stream (as indicated on the timber sale map) to access the westernmost portion of Unit 2. Location of the culverts must be marked by the Purchaser, reviewed on site by a Forest Practices forester, and then approved in writing by the Contract Administrator prior to installation.

- F. Streambeds and banks shall be protected by log puncheon or other approved structures at these crossing points and removed upon the completion of yarding activities. Temporary log crossings that protect stream bank integrity are required for Type 5 water crossings and must be approved in writing by the Contract Administrator. Structures shall be limited to crossing points approved in writing by the Contract Administrator.
- G. Fall and yard away from all typed waters where possible. Avoid parallel cable yarding in, across, or adjacent to stream channels. All Type 5 streams shall have a 30-foot equipment exclusion zone measured from each bank. Limited, pre-approved crossings shall be as close to perpendicular as possible.
- H. If necessary, intermediate support and lift trees located in the harvest units must be marked by Purchaser and approved by the Contract Administrator before felling operations begin.
- I. Full suspension is required when yarding over all streams. When not possible, log cribbing or other approved methods shall need to be in place to protect stream channels and banks. The Contract Administrator must approve all crossings prior to yarding over streams.
- J. The Contract Administrator must pre-approve corridors if yarding through Type 4 stream buffers. Corridors shall be no more than 15 feet in width and rub trees shall not be cut. Trees removed for yarding corridors shall be paid for as additional volume as set forth in Clause G-101. Trees felled for corridors within 25 feet of the stream channels shall not be removed.
- K. There is a recreational event scheduled for one summer weekend in 2017 in the vicinity of Unit 1. The purchaser shall be notified of the date of this event as soon as it is finalized. If active operations are occurring during this time, safety signs must be hung at the trailhead and near Unit 1, the trail must be cleaned out, and all operations must stop during the duration of the event. A safety plan for this event shall be discussed at the pre-work meeting.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. Purchaser must comply with all Skookum Creek WAU prescriptions as listed in the Forest Practices permit for this proposal.
- B. Northern Goshawks have been known to nest in the vicinity of the proposed timber sale. If any occupied nests are found in trees within the sale boundary, these trees must be left undisturbed. Also, a timing restriction on all harvest activities may be applied to the affected portion of the sale from April 1 to August 31.

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 8/19/2015 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 ED-ML, ED-27, ED-2707, ED-2707-01, ED-36, ED-3602, ED-3602-02 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-080 Landing Locations Approved Prior to Construction

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

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

Purchaser acknowledges that operations under this Contract may increase the risk of fire. Purchaser shall conduct all operations under this agreement following the

requirements of WAC 332-24-005 and WAC 332-24-405 and further agrees to use the highest degree of care to prevent uncontrolled fires from starting.

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

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

S-030 Landing Debris Clean Up

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

S-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.

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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: Mizzen

Application Number: 30- 092529

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 2,525 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: 30,547 linear feet
Existing road to receive maintenance work (specifically required by the contract) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Optional Construction: 1,567 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: 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: Mizzen	Region: Northwest
Agreement #: 30-092529	District: Baker
Contact Forester: Matthew Grund Phone / Location: 360-856-3500 / Baker WC	County(s): Whatcom
Alternate Contact: Joel Dryden Phone / Location: 360-391-5374 / Baker WC	Other information:

Type of Sale: Lump Sum	Enter % of sale acres
Harvest System: Ground based	25%
Harvest System: Uphill Cable	75%

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description <small>(Enter only one legal for each unit)</small> Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres <small>(No harvest acres)</small>				Net Harvest Acres	Acreage Determination <small>(List method and error of closure if applicable)</small>
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres <small>(describe)</small>		
1	Sec35&36/T37/R5E	03, 07	27.7	0	0.6	0	0	27.1	GPS (Garmin)
2	Sec36/T37/R5E	03	62.0	0	2.6	0	0	59.4	GPS (Garmin)
TOTAL ACRES			89.7	0	3.2	0	0	86.5	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: <small>(Leave, take, paint color, tags, flagging etc.)</small>	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.		225 total leave trees (202 clumped, 23 dispersed) are marked with yellow leave tree area tags and/or blue paint.
2	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.		499 total leave trees (480 clumped, 19 dispersed) are marked with yellow leave tree area tags and/or blue paint.

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, RC / @30mbf/ac ~ 800	Access to units is via ED-ML; F1 key required	Traverse and vicinity maps are attached.
2	DF, WH / @50mbf/ac ~ 3,000		
TOTAL MBF	3,800		

REMARKS:**Driving Directions:**

Head north on Highway 9 from Sedro-Woolley for 12 miles and take a right onto Saxon Road. Drive 3.3 miles to the Edfro Mainline (ED-ML) gate at end of Saxon Road.

To reach Unit 1:

Travel on ED-ML for 2.7 miles. Take a right onto ED-27 and drive 0.7 miles.

To reach Unit 2:

Travel on ED-ML for 3.6 miles. Take a right onto ED-36 and drive 0.8 miles.

Prepared By: Matthew Grund Date: 08/11/15	Title: Natural Resource Specialist 1	CC: Region Timber Sale File
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0 200 400 Feet

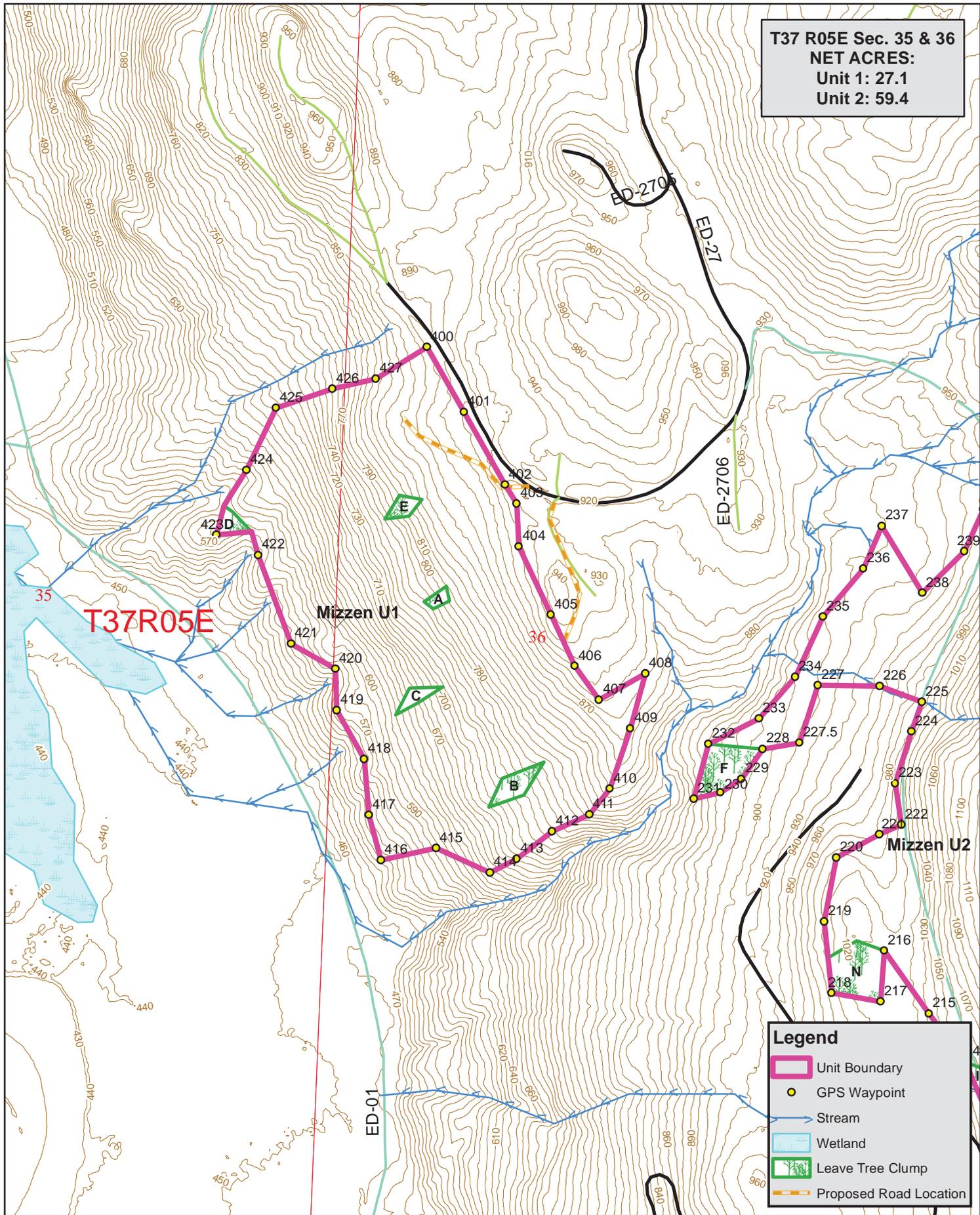


1 inch = 400 feet

Mizzen Timber Sale Traverse Map - Unit 1



T37 R05E Sec. 35 & 36
NET ACRES:
Unit 1: 27.1
Unit 2: 59.4



0 200 400 Feet

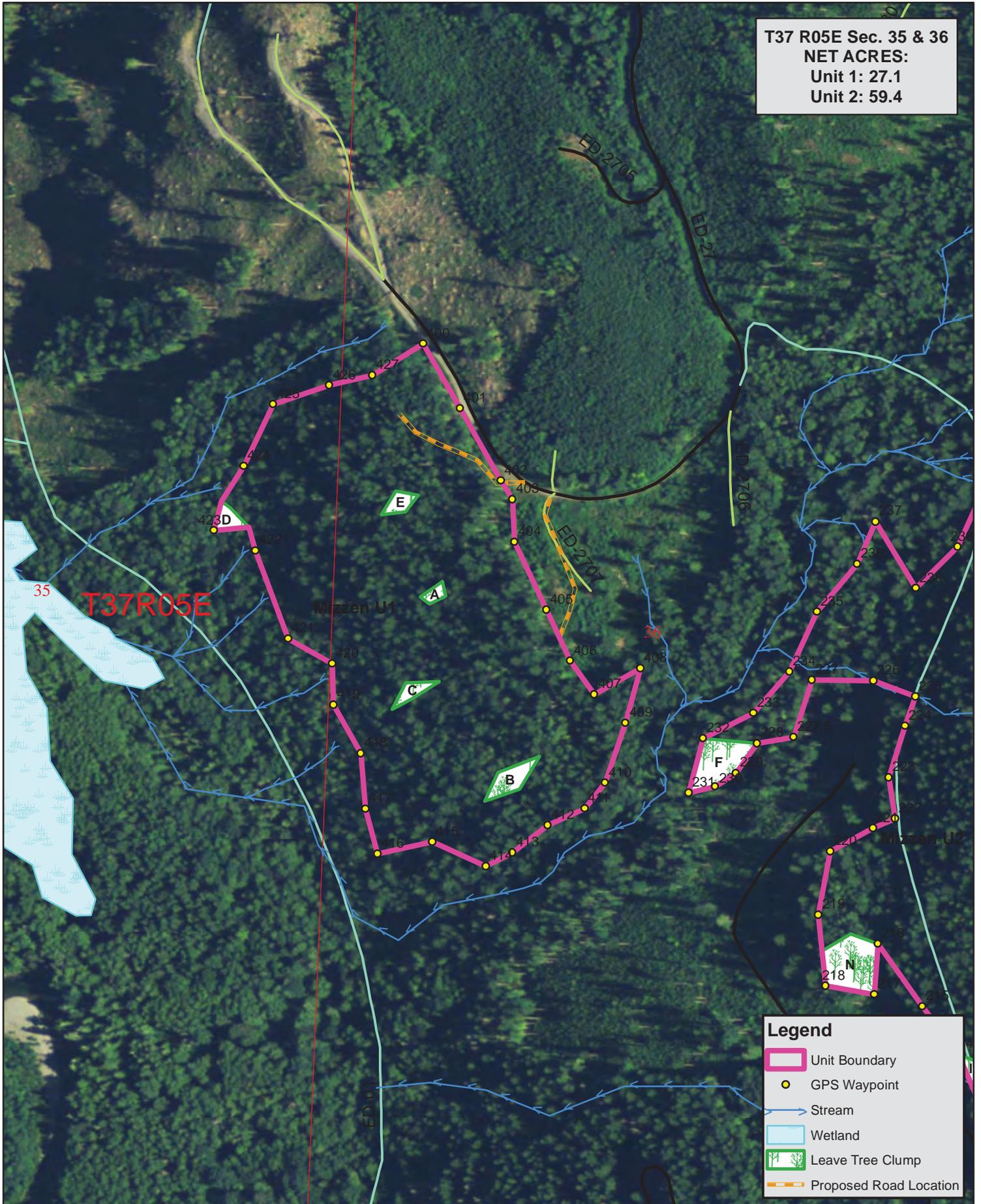


1 inch = 400 feet

Mizzen Timber Sale Traverse Map - Unit 1



T37 R05E Sec. 35 & 36
NET ACRES:
Unit 1: 27.1
Unit 2: 59.4



Legend

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

0 200 400 Feet

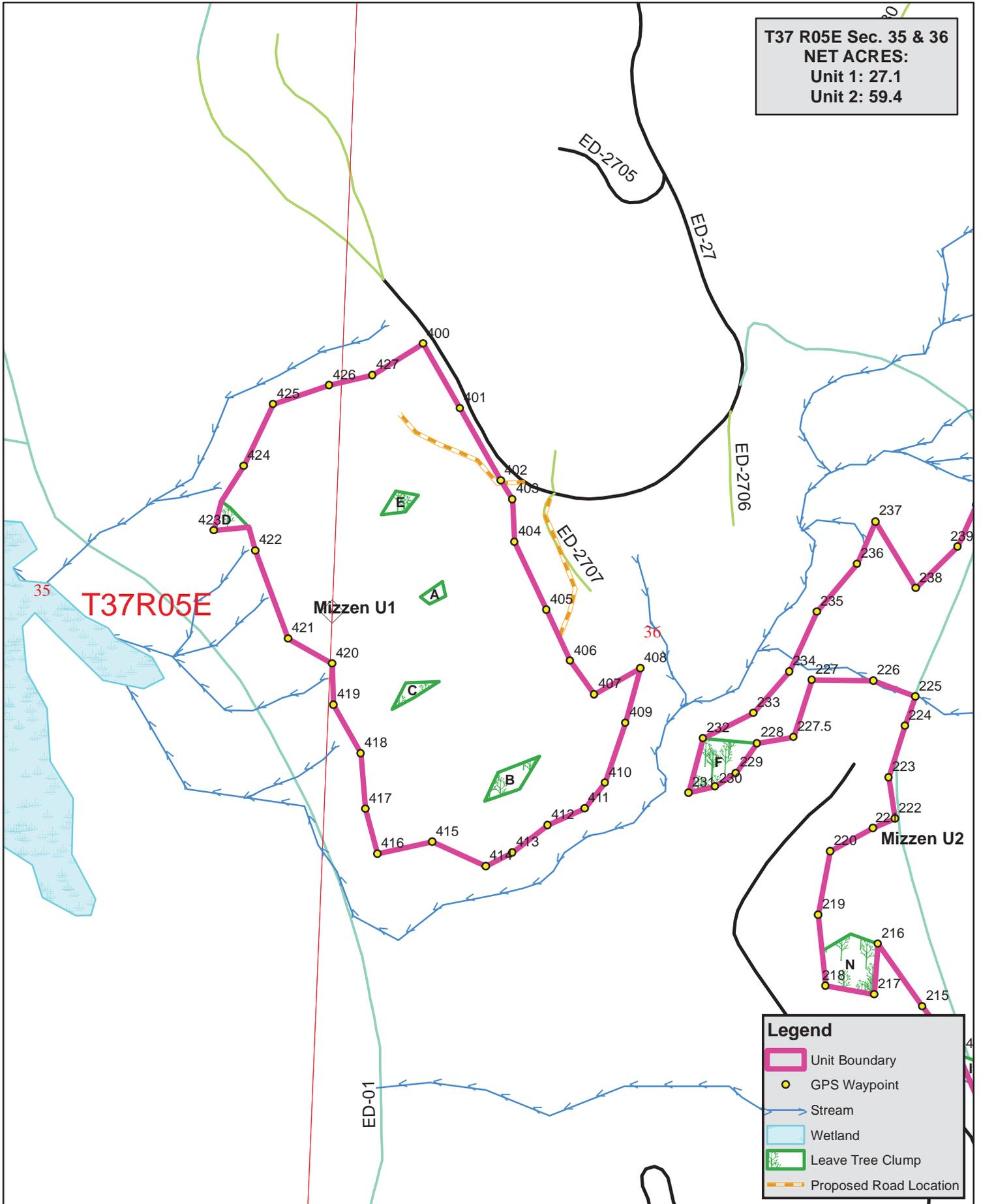


1 inch = 400 feet

Mizzen Timber Sale Traverse Map - Unit 1



T37 R05E Sec. 35 & 36
NET ACRES:
Unit 1: 27.1
Unit 2: 59.4



Legend

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

0 200 400 Feet



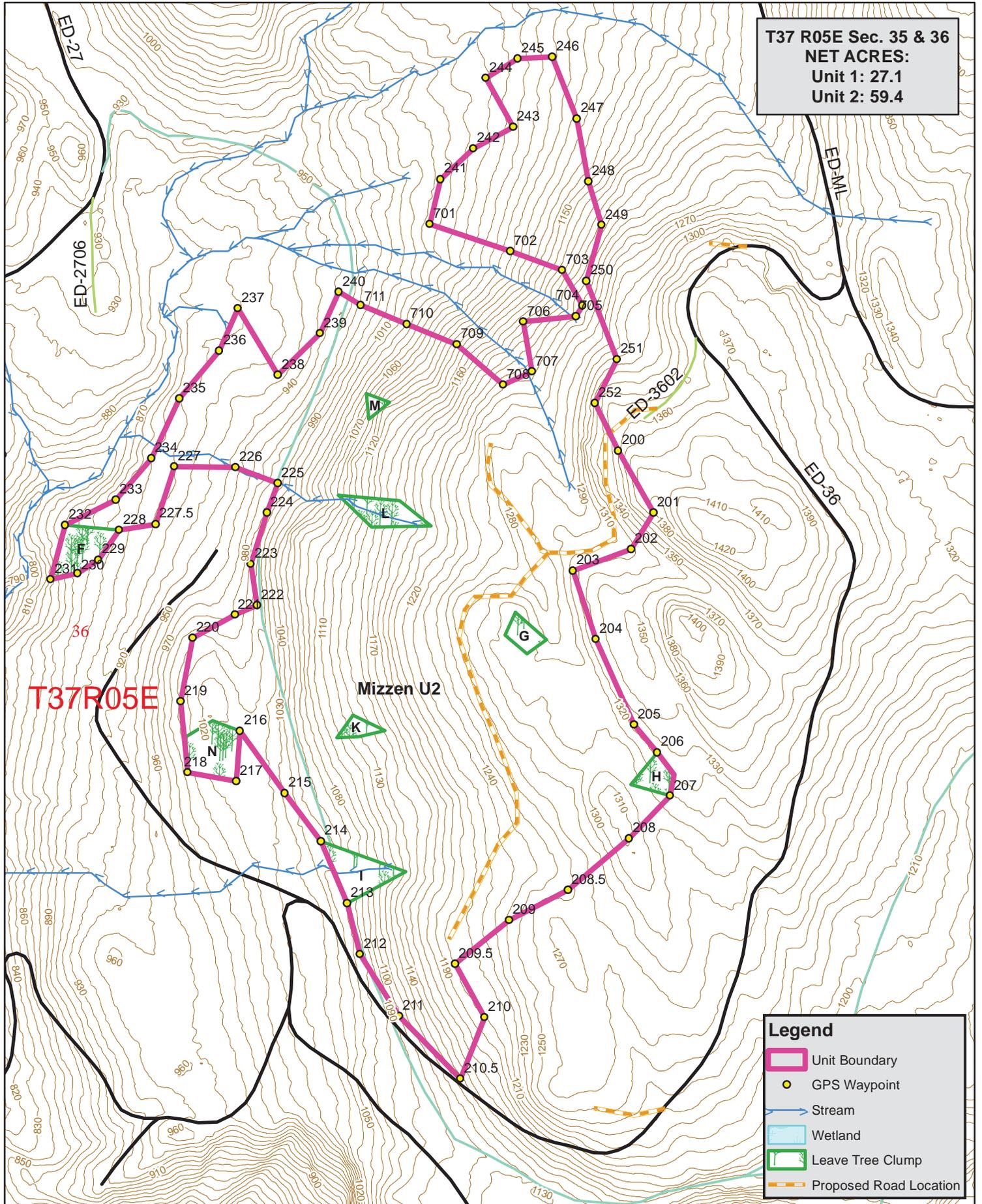
1 inch = 400 feet

Mizzen Timber Sale Traverse Map - Unit 2

N



T37 R05E Sec. 35 & 36
NET ACRES:
Unit 1: 27.1
Unit 2: 59.4



Legend

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

0 200 400 Feet

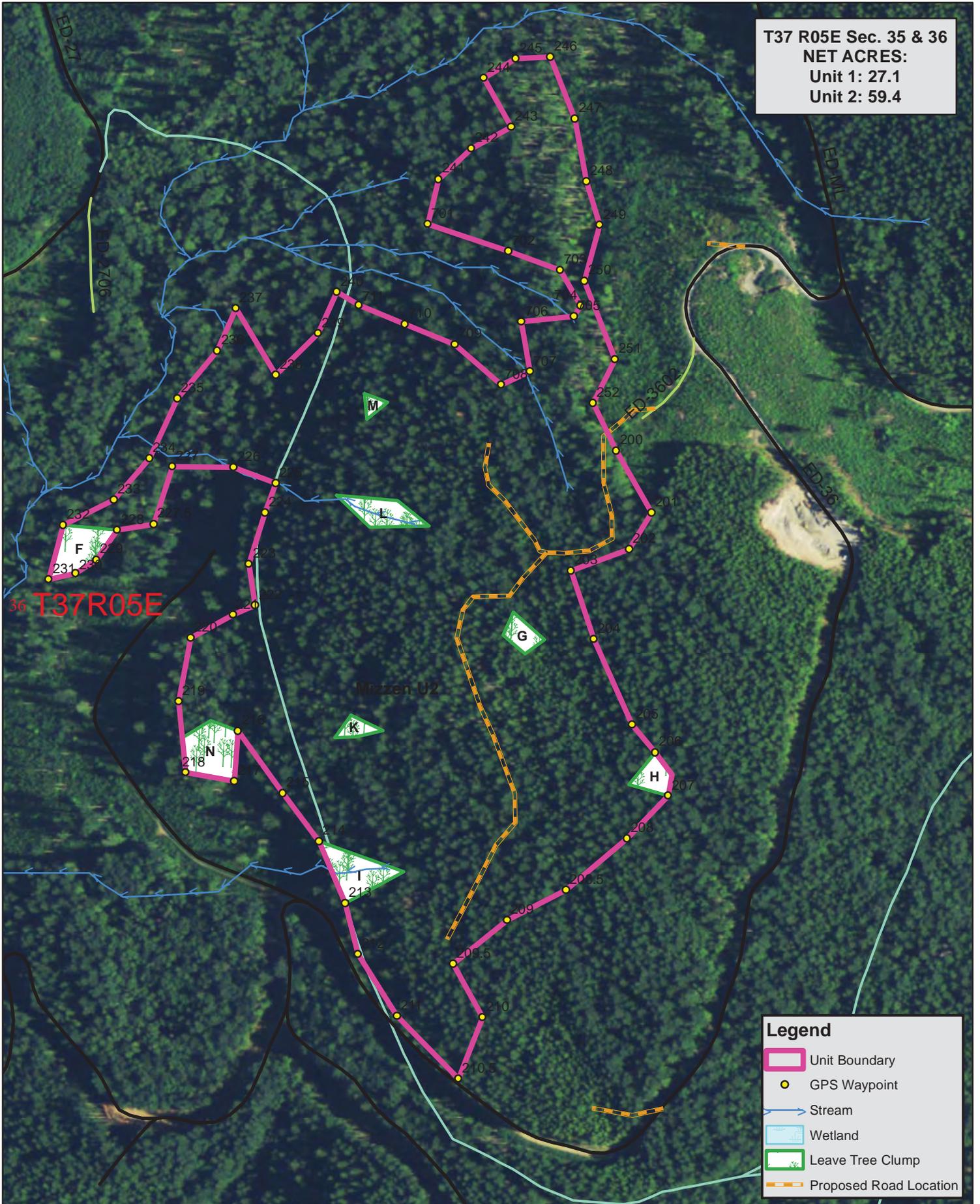


1 inch = 400 feet

Mizzen Timber Sale Traverse Map - Unit 2



T37 R05E Sec. 35 & 36
NET ACRES:
Unit 1: 27.1
Unit 2: 59.4



Legend

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

0 200 400 Feet

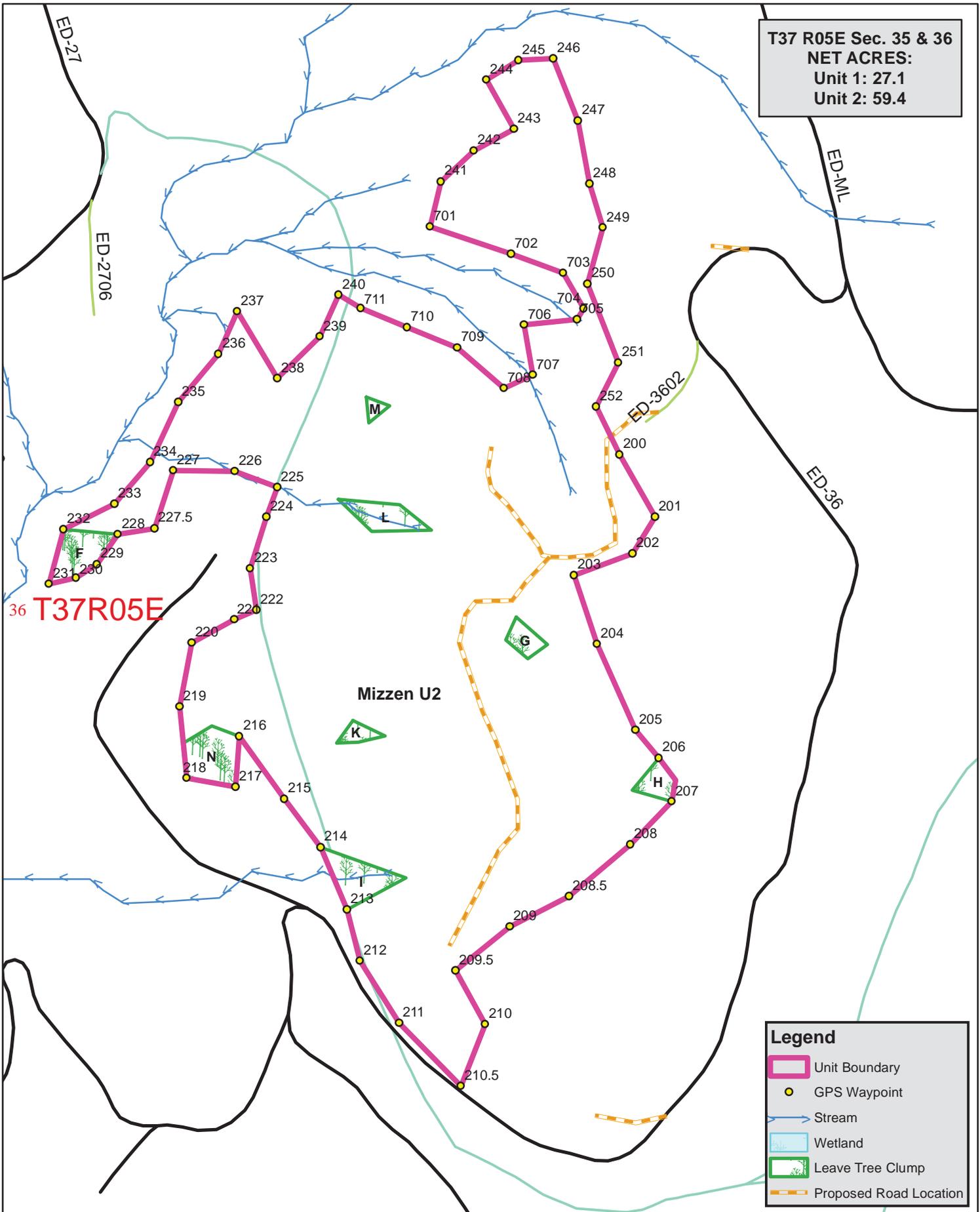


1 inch = 400 feet

Mizzen Timber Sale Traverse Map - Unit 2



T37 R05E Sec. 35 & 36
NET ACRES:
Unit 1: 27.1
Unit 2: 59.4



Legend

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

Cruise Narrative

Sale Name: Mizzen	Region: Northwest
Agree. #: 30-092529	District: Baker
Lead cruiser: Matt Llobet	Completion date: 10-15-15
Other cruisers on sale: Ian M.	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	27.1	Yes	
2	59.4	Yes	
Total	86.5	Yes	

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	V.P.	54.4 BAF 40.0 BAF	4.5'	200' x 200'	Cruise All	28
2	V.P.	62.5 BAF 40.0 BAF	4.5'	225' x 225'	1:1	54

Sale/Cruise Description:

Minor species cruise intensity:	Used a 40 prism in both units to gather a better sample on the RC, RA, BM.						
Minimum cruise spec:	Minimum DBH 8 inches, 10 Net Board feet, Minimum Top Diameter 5 inches or 40% of 16-foot form point						
Avg ring count by sp:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px 5px;">DF =</td> <td style="padding: 2px 5px; text-align: center;">8</td> <td style="border-right: 1px solid black; padding: 2px 5px;">WH =</td> <td style="padding: 2px 5px; text-align: center;">8</td> <td style="border-right: 1px solid black; padding: 2px 5px;">SS =</td> <td style="padding: 2px 5px;"></td> </tr> </table>	DF =	8	WH =	8	SS =	
DF =	8	WH =	8	SS =			
Leave/take tree description:	Unit- 1,2 - Variable Retention Harvest – Dispersed single leave trees marked with blue paint on bole and root collar. Leave tree clumps marked with yellow “Leave Tree Area” Tags.						
Other conditions							

Field observations:

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All timber was graded in variable log lengths with the Scaling Bureaus Westside/ Northwest log rules. The utility wood was given a board ft. volume. Mizzen timber sale was cruised using the variable plot sample method. Mizzen timber sale is 87 acres, with excellent road access. Mizzen timber sale is 25% ground base logging and 74% uphill cable logging. The species composition of the sale is: Western Hemlock, at 15 %, Douglas Fir, at 66%. The Douglas Fir has an average diameter of 23 inches and an average bole height of 106 feet. The Western Hemlock has an average diameter of 14 inches and an average bole height of 77 feet.

General Location- East of Hwy 9, off Saxon Road

Harvest Method- Ground Base/cable

Stand Health- Overall good health

Timber Quality- Observed clean high quality DF throughout sale

3P-49 mbf

SM-337 mbf

HQ 2S-183 mbf

DF Poles -79 mbf (primarily focusing on “naturals”)

DF Poles- Average dbh of 19.5” and an average bole height of 99’

Sample Points Dropped- Sample points were dropped due to sale boundary and leave tree clumps

Elevation- 483’-1359’

Prepared by: Matt Llobet

**Title: Northwest
Region Timber
Cruiser**

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
T37N R05E S36 Ty00U1 27.10 T37N R05E S36 Ty00U2 59.40				Project: MIZZEN Acres 86.50										Page 1 Date 10/21/2015 Time 8:17:55AM									
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			
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99							
WH	D	2S		28	10.1	2,338	2,102	182				89	11			3	97	40	13	208	1.37	10.1	
WH	D	3S		55	3.1	4,162	4,033	349	30	70					7	93	39	8	94	0.62	43.0		
WH	D	4S		13	2.8	1,028	999	86	100					2	31	12	55	32	5	33	0.29	30.2	
WH	D	PU		4		239	239	21	52	31		17		43	26		31	16	6	27	0.39	8.9	
WH Totals				15	5.1	7,766	7,372	638	32	39	25	4		2	5	6	87	35	7	80	0.60	92.2	
DF	D	2S		61	3.7	20,485	19,734	1,707			28	72		0	1	2	97	39	16	422	2.24	46.8	
DF	D	3S		16	4.3	5,424	5,190	449	9	91				0	2	11	87	37	9	111	0.79	46.9	
DF	D	4S		2	4.9	729	694	60	95	5				23	31	25	21	25	6	27	0.32	25.5	
DF	D	PU				73	73	6		46	54			100				14	12	66	1.02	1.1	
DF	HQ	3P		2		561	561	49				100				100		40	25	1150	4.67	.5	
DF	HQ	SM		12	.4	3,914	3,900	337				100				100		40	19	632	3.17	6.2	
DF	HQ	2S		7	.3	2,128	2,121	183			80	20				100		40	14	290	1.74	7.3	
DF Totals				66	3.1	33,315	32,273	2,792	4	15	23	59		1	1	3	94	36	12	240	1.48	134.3	
DF	P	D	2S	47	6.4	459	430	37			100					100		40	13	240	1.65	1.8	
DF	P	D	3S	48		433	433	37	12	88						100		38	9	122	0.77	3.6	
DF	P	D	4S	5	16.5	54	45	4	100					100				18	6	17	0.30	2.7	
DF Totals				2	4.1	946	908	79	11	42	47			5			95	32	9	113	0.92	8.0	
RC	D	3S		76	8.8	3,155	2,876	249	28	36	31	6			0	1	99	36	9	98	0.99	29.5	
RC	D	4S		23	18.0	1,076	882	76	100					20	30	36	14	24	5	22	0.37	40.1	
RC	D	PU		1		3	3	0	100					100				11	5	10	0.29	.3	
RC Totals				8	11.2	4,234	3,762	325	45	27	24	5		5	7	9	79	29	7	54	0.70	69.8	
RA	D	2S		46	16.2	629	527	46			97	3		3	82		15	31	13	152	1.41	3.5	
RA	D	3S		16	15.5	226	191	16		100				29	71			26	10	81	0.88	2.3	
RA	D	4S		7	16.2	83	70	6	58	42					100			30	7	39	0.46	1.8	
RA	D	PU		31		354	354	31	82	18				4	22	12	63	31	6	40	0.49	8.9	
RA Totals				2	11.6	1,292	1,141	99	29	25	45	1		8	62	4	26	30	8	69	0.73	16.5	
BM	D	2S		41	15.0	1,553	1,320	114			85	15		25	75			27	13	144	1.50	9.2	
BM	D	3S		20	20.3	841	670	58		98	2			6	94			29	11	92	0.99	7.2	
BM	D	4S		7	10.8	237	211	18	16	84				23	53	3	20	26	8	46	0.65	4.6	
BM	D	PU		32		1,016	1,016	88	83	17				10	35	16	39	27	5	35	0.48	29.2	
BM Totals				7	11.8	3,646	3,217	278	27	31	35	6		16	65	5	14	27	8	64	0.75	50.3	
BR	D	PU		100		23	23	2		100				100				20	11	80	1.12	.3	
BR Totals				0		23	23	2		100				100					20	11	80	1.12	.3
Totals					4.9	51,222	48,695	4,212	13	21	25	40		3	8	4	85	33	9	131	0.99	371.4	

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT MIZZEN							DATE	10/21/2015	
TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
37N	05E	36	MIZZEN	00U1	86.50	82	488	S	W		
37N	05E	36	MIZZEN	00U2							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			82	488	6.0						
CRUISE			55	333	6.1	16,214	2.1				
DBH COUNT											
REFOREST											
COUNT			27	155	5.7						
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	
DOUG FIR	123	49.7	23.2	106	30.4	146.4	33,315	32,273	7,104	7,104	
DOUG FIR-P	4	2.7	19.5	99	1.3	5.6	946	908	237	237	
WR CEDAR	77	48.2	14.0	51	13.7	51.2	4,234	3,762	1,412	1,412	
BL MAPLE	64	30.7	15.2	50	10.0	38.9	3,646	3,217	1,041	1,042	
WHEMLOCK	43	47.0	13.9	77	13.3	49.7	7,766	7,372	1,924	1,924	
R ALDER	21	8.9	15.7	61	3.0	12.0	1,292	1,141	361	361	
BIRCH	1	.3	17.0	45	0.1	.4	23	23	6	6	
TOTAL	333	187.4	17.2	73	73.2	304.2	51,222	48,695	12,087	12,087	
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		
DOUG FIR		59.5	5.4	908	960	1,012					
DOUG FIR-P		22.5	12.9	305	350	395					
WR CEDAR		90.7	10.3	112	125	138					
BL MAPLE		63.8	8.1	136	148	160					
WHEMLOCK		75.8	11.6	192	217	242					
R ALDER		50.1	11.2	137	155	172					
BIRCH											
TOTAL		116.4	6.4	425	455	484	541	276	135		
CL	68.1	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		105.7	11.7	44	50	55					
DOUG FIR-P		428.2	47.2	1	3	4					
WR CEDAR		86.6	9.6	44	48	53					
BL MAPLE		153.9	17.0	25	31	36					
WHEMLOCK		157.4	17.4	39	47	55					
R ALDER		242.6	26.8	7	9	11					
BIRCH		905.5	99.9	0	0	1					
TOTAL		45.1	5.0	178	187	197	81	41	20		
CL	68.1	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		89.1	9.8	132	146	161					
DOUG FIR-P		419.8	46.3	3	6	8					
WR CEDAR		87.5	9.7	46	51	56					
BL MAPLE		140.0	15.5	33	39	45					
WHEMLOCK		166.9	18.4	41	50	59					
R ALDER		227.6	25.1	9	12	15					
BIRCH		905.5	99.9	0	0	1					
TOTAL		36.3	4.0	292	304	316	53	27	13		

PROJECT STATISTICS
PROJECT MIZZEN

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
37N	05E	36	MIZZEN	00U1	86.50	82	488	S	W
37N	05E	36	MIZZEN	00U2					

CL	68.1	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		89.8	9.9	29,076	32,273	35,470			
DOUG FIR-P		424.1	46.8	483	908	1,332			
WR CEDAR		109.6	12.1	3,307	3,762	4,216			
BL MAPLE		146.3	16.1	2,698	3,217	3,736			
WHEMLOCK		172.9	19.1	5,966	7,372	8,779			
R ALDER		240.4	26.5	839	1,141	1,444			
BIRCH		905.5	99.9	0	23	45			
TOTAL		<i>56.1</i>	<i>6.2</i>	<i>45,682</i>	<i>48,695</i>	<i>51,709</i>	<i>126</i>	<i>64</i>	<i>31</i>

CL	68.1	COEFF	V BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		32.1	3.5	199	220	242			
DOUG FIR-P		308.5	34.0	87	163	239			
WR CEDAR		74.1	8.2	65	74	82			
BL MAPLE		105.9	11.7	69	83	96			
WHEMLOCK		124.8	13.8	120	148	177			
R ALDER		200.8	22.2	70	95	121			
BIRCH		905.5	99.9	0	51	101			
TOTAL		<i>48.1</i>	<i>5.3</i>	<i>150</i>	<i>160</i>	<i>170</i>	<i>92</i>	<i>47</i>	<i>23</i>

T37N R05E S36 T00U1	T37N R05E S36 T00U1
Twp 37N Rge 05E Sec 36 Tract MIZZEN Type 00U1 Acres 27.10 Plots 28 Sample Trees 173 CuFt S	BdFt W

Spp	S T	So rt	Gr 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 Ft	Dia In	Bd Ft		CF/ Lf
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
DF	D	2S		72	3.6	14,079	13,570	368			20	80	0	1	2	97	39	17	485	2.57	28.0
DF	D	3S		13	7.0	2,535	2,357	64	4	96				7	39	54	34	10	110	0.87	21.5
DF	D	4S		3	9.6	590	533	14	90	10			12	41	12	35	27	6	32	0.39	16.7
DF	D	PU			.0	126	126	3		100			100				12	14	102	1.46	1.2
DF	HQ	SM		4		779	779	21		100					100		40	17	499	2.71	1.6
DF	HQ	2S		8	1.7	1,339	1,317	36		100					100		40	13	252	1.60	5.2
DF	Totals			55	3.9	19,447	18,682	506	3	12	22	62	1	3	6	89	35	12	252	1.62	74.2
BM	D	2S		39	18.3	2,830	2,314	63		73	27		45	55			25	14	149	1.75	15.6
BM	D	3S		18	20.7	1,389	1,102	30		96	4		13	87			28	11	92	1.06	12.0
BM	D	4S		7	18.2	448	366	10	30	70			42	14	6	37	25	7	36	0.59	10.3
BM	D	PU		36		2,120	2,120	57	74	26			12	41	11	36	26	6	36	0.51	58.1
BM	Totals			18	13.0	6,787	5,901	160	29	31	30	10	27	54	4	15	26	8	62	0.78	95.9
RC	D	3S		79	9.7	3,485	3,147	85	15	44	33	8		1	1	99	36	9	111	1.14	28.2
RC	D	4S		20	38.8	1,299	795	22	100				22	61	8	9	23	5	16	0.42	48.8
RC	D	PU		1		9	9	0	100				100				11	5	10	0.29	.9
RC	Totals			12	17.6	4,793	3,951	107	32	35	26	6	5	13	2	80	27	7	51	0.76	77.9
WH	D	2S		42	8.4	1,678	1,536	42		52	48				14	86	38	15	287	1.87	5.4
WH	D	3S		30	1.5	1,087	1,071	29	50	50					21	79	37	7	78	0.55	13.7
WH	D	4S		10	.0	357	357	10	100				13	14	55	18	30	5	34	0.36	10.6
WH	D	PU		18		627	627	17	41	38		21	30	32		38	22	6	42	0.46	15.0
WH	Totals			11	4.2	3,749	3,592	97	32	21	22	24	7	7	18	69	30	7	81	0.68	44.6
RA	D	2S		37	20.3	691	551	15		90	10		10	44		46	32	14	178	1.67	3.1
RA	D	3S		16	9.1	256	233	6		100				100			30	10	100	0.89	2.3
RA	D	4S		6		94	94	3		100				100			30	9	70	0.76	1.3
RA	D	PU		41		594	594	16	66	34				20	22	58	33	6	48	0.56	12.4
RA	Totals			4	10.0	1,634	1,471	40	27	36	34	4	4	47	9	41	32	8	77	0.79	19.2
BR	D	PU		100		73	73	2		100			100				20	11	80	1.12	.9
BR	Totals			0		73	73	2		100			100				20	11	80	1.12	.9
Type Totals					7.7	36,483	33,669	912	15	21	24	40	7	15	7	71	29	8	108	1.00	312.7

T37N R05E S36 T00U2 **T37N R05E S36 T00U2**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 37N 05E 36 MIZZEN 00U2 59.40 54 160 S W

Spp	S	So	Gr	% 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 Ft	Dia In	Bd Ft		CF/ Lf
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
DF	D	2S		58	3.7	23,408	22,546	1,339		31	69		1	2	97	39	16	407	2.16	55.4	
DF	D	3S		17	3.9	6,742	6,482	385	10	90		0	1	6	93	38	9	111	0.78	58.5	
DF	D	4S		2	3.2	793	767	46	96	4		26	28	29	17	25	5	26	0.30	29.6	
DF	D	PU				49	49	3		100		100				15	10	47	0.81	1.0	
DF	HQ	3P		2		817	817	49			100					40	25	1150	4.67	.7	
DF	HQ	SM		14	.4	5,345	5,323	316			100					40	19	644	3.21	8.3	
DF	HQ	2S		7		2,488	2,488	148		75	25					40	14	301	1.78	8.3	
DF	Totals			69	2.9	39,642	38,473	2,285	4	15	23	58	1	1	3	95	36	12	238	1.45	161.8
DF	P	D	2S	47	6.4	669	626	37			100					40	13	240	1.65	2.6	
DF	P	D	3S	48		630	630	37	12	88						38	9	122	0.77	5.2	
DF	P	D	4S	5	16.5	78	65	4	100			100				18	6	17	0.30	3.9	
DF	P	Totals		2	4.1	1,377	1,322	79	11	42	47		5		95	32	9	113	0.92	11.7	
WH	D	2S		25	10.6	2,640	2,361	140			100					40	12	193	1.28	12.3	
WH	D	3S		60	3.2	5,564	5,384	320	28	72				5	95	39	8	95	0.63	56.4	
WH	D	4S		14	3.2	1,334	1,291	77	100			1	33	6	60	32	5	33	0.28	39.2	
WH	D	PU		1		61	61	4	100			100				9	5	10	0.19	6.1	
WH	Totals			16	5.2	9,599	9,097	540	31	43	26		1	5	4	91	35	7	80	0.59	114.0
RC	D	3S		74	8.4	3,005	2,753	164	34	31	30	5			1	99	36	8	92	0.93	30.0
RC	D	4S		26	5.3	975	922	55	100				20	18	47	15	25	5	26	0.35	36.1
RC	Totals			7	7.6	3,980	3,675	218	51	23	22	4	5	4	12	78	30	7	56	0.67	66.1
BM	D	2S		43	10.6	970	867	51			100					30	12	139	1.26	6.2	
BM	D	3S		24	19.8	590	473	28			100					30	10	93	0.92	5.1	
BM	D	4S		7		141	141	8			100					30	9	70	0.76	2.0	
BM	D	PU		26		512	512	30	100				8	24	25	44	29	5	32	0.42	16.1
BM	Totals			4	10.0	2,213	1,992	118	26	31	44		2	80	6	11	29	8	68	0.72	29.4
RA	D	2S		52	14.0	601	517	31			100					30	12	142	1.31	3.6	
RA	D	3S		17	19.1	212	172	10			100		47	53		24	10	73	0.87	2.4	
RA	D	4S		6	25.0	78	59	3	100							30	6	30	0.37	2.0	
RA	D	PU		25		244	244	14	100				8	23	69	29	5	33	0.42	7.3	
RA	Totals			2	12.7	1,135	991	59	31	17	52		10	73	17	28	8	65	0.70	15.2	
Type	Totals				4.1	57,946	55,551	3,300	13	22	25	40	1	6	4	89	34	9	139	0.99	398.2

TC TSTATS		STATISTICS								PAGE	1
		PROJECT MIZZEN								DATE	10/21/2015
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
37N	05E	36	MIZZEN	00U1	27.10	28	173	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		28	173	6.2							
CRUISE		28	173	6.2	5,324	3.2					
DBH COUNT											
REFOREST											
COUNT											
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	
DOUG FIR	46	27.5	24.4	100	18.1	89.4	19,447	18,682	4,157	4,157	
BL MAPLE	54	62.8	15.0	47	19.9	77.1	6,787	5,901	1,962	1,965	
WR CEDAR	45	59.9	14.0	43	17.2	64.3	4,793	3,951	1,613	1,612	
WHEMLOCK	15	33.0	12.7	54	8.2	29.1	3,749	3,592	925	925	
R ALDER	12	12.4	15.9	56	4.3	17.1	1,634	1,471	489	489	
BIRCH	1	.9	17.0	45	0.3	1.4	73	73	20	20	
TOTAL	173	196.5	16.1	55	69.4	278.5	36,483	33,669	9,167	9,169	
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		
DOUG FIR		59.7	8.8	880	965	1,050					
BL MAPLE		66.9	9.3	136	150	164					
WR CEDAR		93.8	14.0	103	120	137					
WHEMLOCK		100.9	26.9	184	252	320					
R ALDER		58.9	17.7	124	151	178					
BIRCH											
TOTAL		130.3	10.0	333	370	407	678	346	170		
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		155.3	29.9	19	28	36					
BL MAPLE		102.6	19.7	50	63	75					
WR CEDAR		65.5	12.6	52	60	67					
WHEMLOCK		193.5	37.2	21	33	45					
R ALDER		175.5	33.8	8	12	17					
BIRCH		529.2	101.8		1	2					
TOTAL		54.2	10.4	176	196	217	122	62	30		
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		117.4	22.6	69	89	110					
BL MAPLE		83.4	16.0	65	77	90					
WR CEDAR		66.3	12.8	56	64	72					
WHEMLOCK		193.3	37.2	18	29	40					
R ALDER		148.0	28.5	12	17	22					
BIRCH		529.2	101.8		1	3					
TOTAL		34.6	6.7	260	279	297	50	25	12		
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		112.7	21.7	14,632	18,682	22,731					
BL MAPLE		90.3	17.4	4,877	5,901	6,926					
WR CEDAR		93.7	18.0	3,239	3,951	4,663					

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	MIZZEN		DATE	10/21/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
37N	05E	36	MIZZEN	00U1	27.10	28	173	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	
WHEMLOCK		224.6	43.2	2,040	3,592	5,143				
R ALDER		150.6	29.0	1,045	1,471	1,897				
BIRCH		529.2	101.8		73	146				
TOTAL		<i>57.6</i>	<i>11.1</i>	<i>29,941</i>	<i>33,669</i>	<i>37,396</i>	<i>137</i>	<i>70</i>	<i>34</i>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		112.7	21.7	164	209	254				
BL MAPLE		90.3	17.4	63	77	90				
WR CEDAR		93.7	18.0	50	61	73				
WHEMLOCK		224.6	43.2	70	123	176				
R ALDER		150.6	29.0	61	86	111				
BIRCH		529.2	101.8		51	102				
TOTAL		<i>49.3</i>	<i>9.5</i>	<i>108</i>	<i>121</i>	<i>134</i>	<i>101</i>	<i>51</i>	<i>25</i>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				MIZZEN				DATE	10/21/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
37N	05E	36	MIZZEN	00U2	59.40	54	315	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL	54	315	5.8							
CRUISE	27	160	5.9	10,890			1.5			
DBH COUNT										
REFOREST										
COUNT	27	155	5.7							
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
DOUG FIR	77	59.8	23.0	107	36.0	172.5	39,642	38,473	8,449	8,449
DOUG FIR-P	4	3.9	19.5	99	1.8	8.1	1,377	1,322	345	345
WHEMLOCK	28	53.4	14.2	84	15.6	59.0	9,599	9,097	2,379	2,380
WR CEDAR	32	42.9	13.9	57	12.1	45.2	3,980	3,675	1,321	1,320
BL MAPLE	10	16.1	15.7	57	5.4	21.5	2,213	1,992	621	621
R ALDER	9	7.3	15.6	66	2.4	9.6	1,135	991	303	303
TOTAL	<i>160</i>	<i>183.3</i>	<i>17.8</i>	<i>82</i>	<i>74.9</i>	<i>315.9</i>	<i>57,946</i>	<i>55,551</i>	<i>13,419</i>	<i>13,418</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	
DOUG FIR	59.7	6.8		891	957	1,022				
DOUG FIR-P	22.5	12.9		305	350	395				
WHEMLOCK	43.9	8.4		181	198	215				
WR CEDAR	87.8	15.5		112	133	153				
BL MAPLE	42.3	14.1		119	139	159				
R ALDER	40.0	14.1		137	160	183				
TOTAL	<i>103.1</i>	<i>8.2</i>		<i>501</i>	<i>545</i>	<i>590</i>	<i>425</i>	<i>217</i>	<i>106</i>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	87.1	11.8		53	60	67				
DOUG FIR-P	343.6	46.7		2	4	6				
WHEMLOCK	143.7	19.5		43	53	64				
WR CEDAR	99.2	13.5		37	43	49				
BL MAPLE	193.9	26.4		12	16	20				
R ALDER	295.1	40.1		4	7	10				
TOTAL	<i>40.6</i>	<i>5.5</i>		<i>173</i>	<i>183</i>	<i>193</i>	<i>66</i>	<i>34</i>	<i>16</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	
DOUG FIR	74.5	10.1		155	172	190				
DOUG FIR-P	336.6	45.8		4	8	12				
WHEMLOCK	151.7	20.6		47	59	71				
WR CEDAR	100.3	13.6		39	45	51				
BL MAPLE	197.2	26.8		16	21	27				
R ALDER	290.2	39.5		6	10	13				
TOTAL	<i>34.3</i>	<i>4.7</i>		<i>301</i>	<i>316</i>	<i>331</i>	<i>47</i>	<i>24</i>	<i>12</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	
DOUG FIR	75.2	10.2		34,542	38,474	42,405				
DOUG FIR-P	340.2	46.3		710	1,322	1,933				
WHEMLOCK	151.7	20.6		7,221	9,097	10,974				
WR CEDAR	117.0	15.9		3,091	3,675	4,260				
BL MAPLE	203.0	27.6		1,442	1,992	2,542				

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	MIZZEN		DATE	10/21/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
37N	05E	36	MIZZEN	00U2	59.40	54	315	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	
R ALDER		296.2	40.3	592	991	1,390				
TOTAL		46.5	6.3	52,040	55,551	59,061	86	44	22	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				200	223	246				
DOUG FIR-P		244.1	33.2	88	163	239				
WHEMLOCK		98.4	13.4	122	154	186				
WR CEDAR		63.8	8.7	68	81	94				
BL MAPLE		62.7	8.5	67	93	118				
R ALDER		234.9	31.9	61	103	144				
TOTAL		184.9	25.1	165	176	187	1,365	697	341	

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

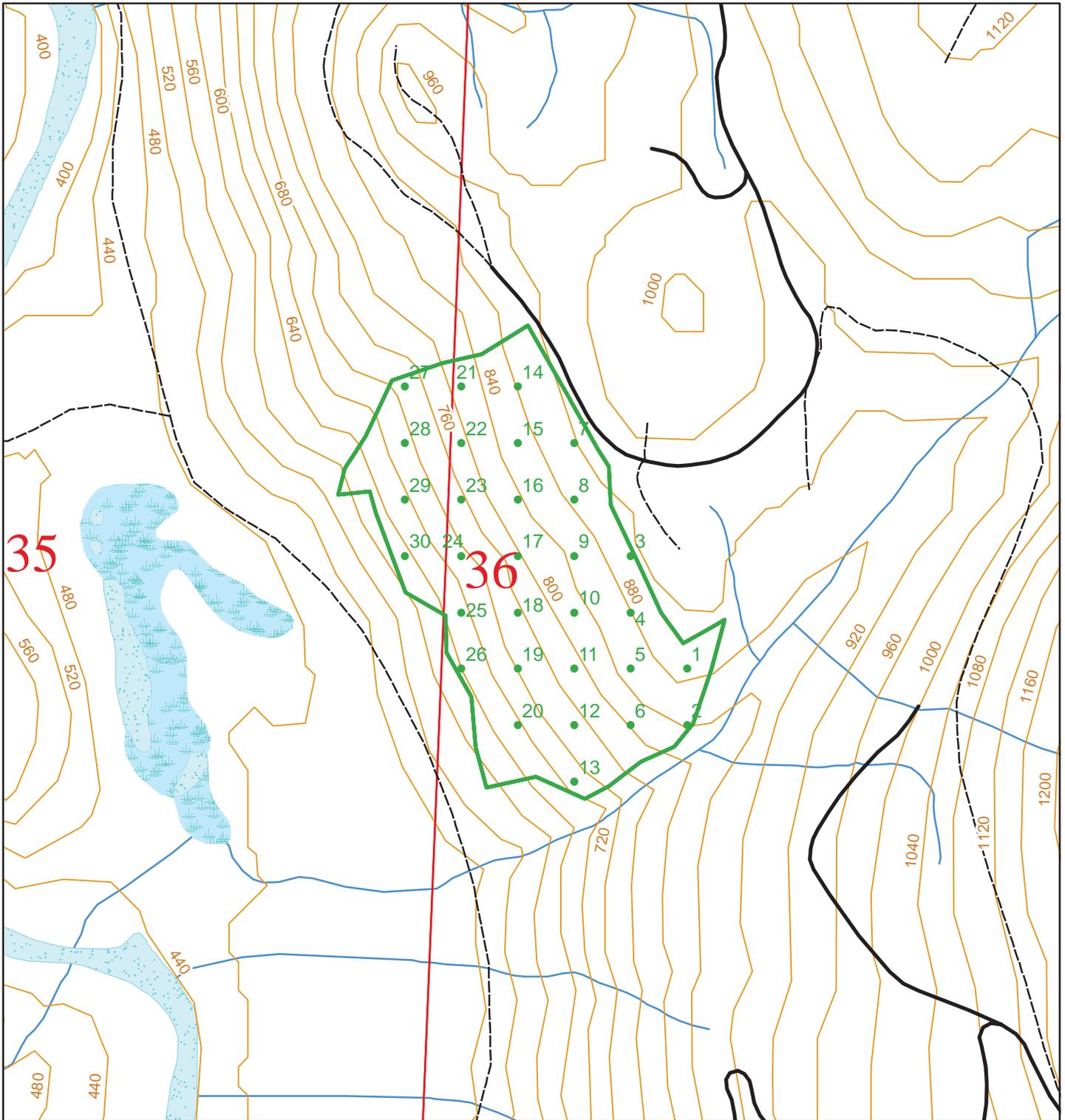
T37N R05E S36 Ty00U1	27.1
T37N R05E S36 Ty00U2	59.4

Project MIZZEN
Acres 86.50

Page No 1
Date: 10/21/2015
Time 8:17:56AM

Species	S T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		4,298	11,620	17,514	143.00	52.89	1.46	6,145	6,145	2,882	2,792
WHEMLOCK		4,065	7,979	5,325	40.94	20.86	0.61	1,664	1,664	672	638
WR CEDAR		4,170	6,038	2,871	29.28	20.22	0.71	1,222	1,221	366	325
BL MAPLE		2,656	4,348	2,387	33.94	20.74	0.78	901	902	315	278
R ALDER		769	1,425	859	40.61	21.91	0.73	312	312	112	99
DOUG FIR	P	232	695	585	88.62	29.54	0.92	205	205	82	79
BIRCH		25	25	15	22.36	22.36	1.12	5	5	2	2
Totals		16,214	32,129	29,556	64.48	32.54	1.00	10,455	10,455	4,431	4,212

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	12,764	26,332	26,295	72.36	35.07	1.04	9,236	9,236	4,002	3,833	
H	3,450	5,797	3,261	35.34	21.03	0.77	1,219	1,219	429	379	
Totals		16,214	32,129	29,556	64.48	32.54	1.00	10,455	10,455	4,431	4,212



FMU POLYGON AND SAMPLE POINT INFORMATION

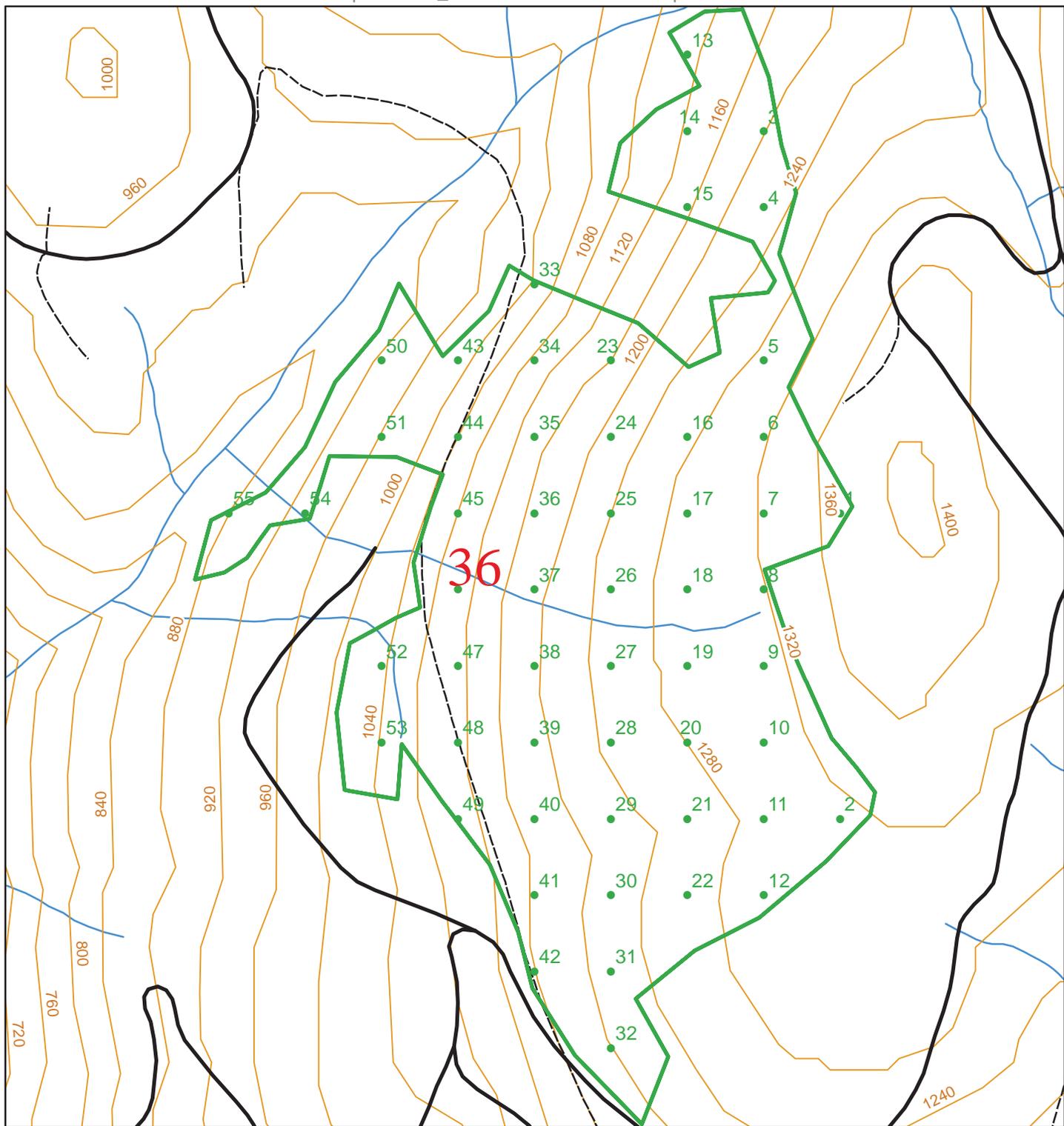
FMU_NM:	MIZZEN 1	Township:	T37R05E
FMU_ID:	67016	DNR Region:	NORTHWEST
Acres:	28	Total Sample Points:	30
County:	SKAGIT	Spacing Between Points:	200
		Point Rotation Degrees:	0



Scale 1:6,000

Legend

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



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	MIZZEN 2	Township:	T37R05E
FMU_ID:	78354	DNR Region:	NORTHWEST
Acres:	62	Total Sample Points:	55
County:	SKAGIT	Spacing Between Points:	225
		Point Rotation Degrees:	0



Legend

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



WASHINGTON STATE DEPARTMENT OF
Natural Resources
 Peter Goldmark - Commissioner of Public Lands

FPA/N No: 2814903

Effective Date: 12/2/2015

Expiration Date: 12/2/2018

Shut Down Zone: 656

EARR Tax Credit: Eligible Non-eligible

Reference: Mizzen

**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

Issued By: Megan Penney *MA*

Region: Northwest

Title: Nooksack Forest Practice Forester

Date: 12/2/2015

Copies to: Landowner, Timber Owner and Operator

Issued in Person: Landowner, Timber Owner Operator By: *[Signature]*

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:

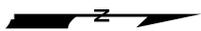
On this day _____, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA #_2814903_____

Braelyn Hamilton
(Printed name)

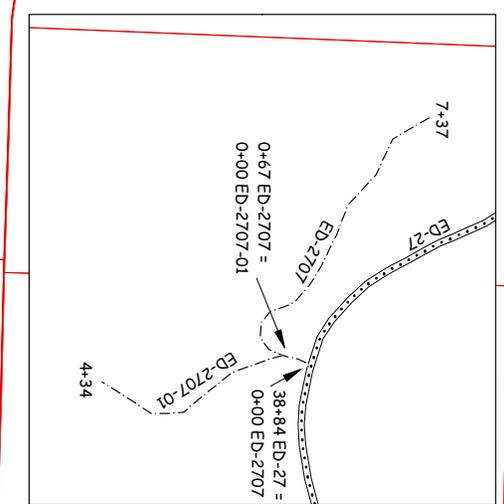
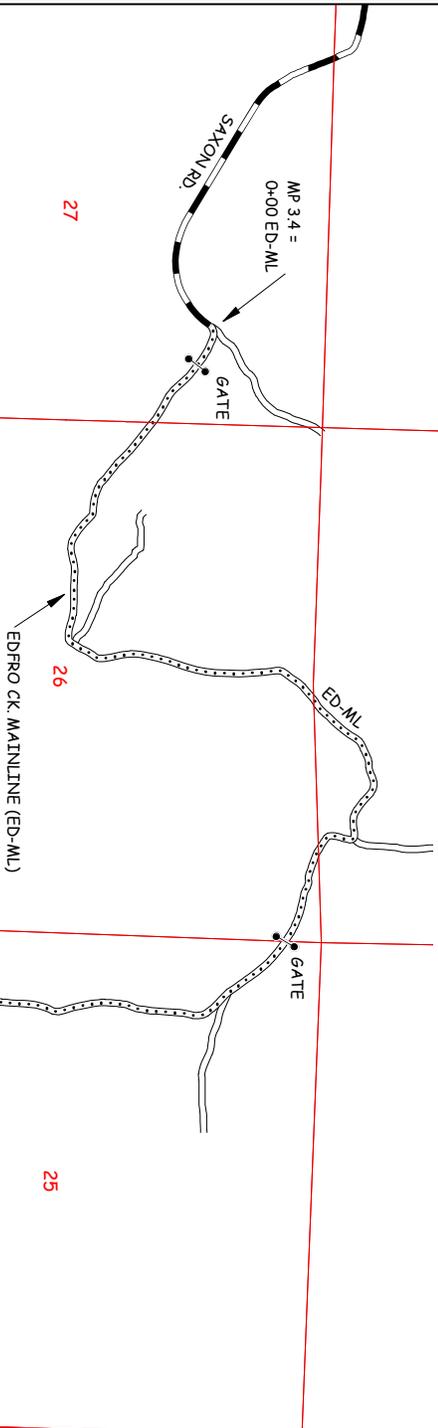
(Signature)



ROAD PLAN AND SPECIFICATIONS
#30-092529 WIZZEN TIMBER SALE



SCALE
0 1,000



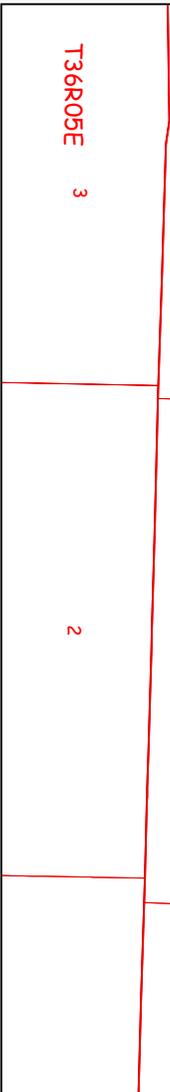
LEGEND

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

SHEET INDEX

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EXISTING HARDROCK PIT TO BE DEVELOPED TO GENERATE RIPRAP, AND 3-INCH-MINUS BALLAST.
EXISTING STOCKPILES OF 3-INCH MINUS BALLAST.



DESIGNED BY CARLSON	REVIEWED BY Zyistra 10/13/15	APPROVED BY Zyistra 10/13/15	PLAN DATE 8/19/2015	SHEET 1 OF 26
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T36R05E 3

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T37R05E

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STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

MIZZEN TIMBER SALE ROAD PLAN
WHATCOM COUNTY
HAMILTON UNIT BAKER DISTRICT

AGREEMENT NO.: 30-092529

STAFF ENGINEER: CARLSON

DATE: 8/19/2015

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>
ED-ML	0+00 to 190+87	PRE-HAUL MAINTENANCE
ED-27	0+00 to 47+60	PRE-HAUL MAINTENANCE
ED-36	0+00 to 67+00	PRE-HAUL MAINTENANCE
ED-3602	0+00 to 25+25	CONSTRUCTION

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
ED-2707	0+00 to 7+37	CONSTRUCTION
ED-2707-01	0+00 to 4+34	CONSTRUCTION
ED-3602-02	0+00 to 3+96	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, and application of 3-inch-minus ballast rock.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
ED-ML	0+00 to 190+87	GRADING
ED-ML	98+31 to 190+87	BRUSHING
ED-27	0+00 to 47+82	BRUSHING, GRADING
ED-36	0+00 to 67+65	BRUSHING, GRADING

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop an existing rock source. Rock source development will involve drilling, shooting, and processing rock to generate riprap and 3-inch-minus 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 must be submitted in writing to the Contract Administrator for consideration. Before work begins, Purchaser shall obtain approval from the State for the submitted plan.

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

Purchaser shall repair or replace all materials, roadway infrastructure, and road components damaged during road work or operation activities. The Contract Administrator will direct repairs and replacements. Repairs to structural materials must be made in accordance with the manufacturer's recommendation.

1-9 DAMAGED METALLIC COATING

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

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-25 ACTIVITY TIMING RESTRICTION

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

<u>Activity</u>	<u>Closure Period</u>
All Activities	November 1 to March 31*

* This requirement shall not be waived

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

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

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

1-33 SNOW PLOWING RESTRICTION

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

Purchaser shall use a grader to shape the existing surface before any haul. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

Purchaser shall clean ditches, headwalls, and catchbasins. Work must 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>
ED-ML	98+31 to 190+87
ED-27	0+00 to 47+82
ED-36	0+00 to 67+65

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-8 PROHIBITED DECKING AREAS

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

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

3-10 GRUBBING

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 50 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

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

4-55 ROAD SHAPING

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

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

SECTION 5 – DRAINAGE

5-5 CULVERTS

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

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

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

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

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

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Santa Maria Hardrock Pit	STA 15+00 of the ED-36 road	3-inch minus ballast and rip rap

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 stockpiles on state land at no charge to the Purchaser. Purchaser may remove all available 3-inch minus ballast rock. Other stockpiles may not be used.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>
Santa Maria Hardrock Pit	STA 15+00 of the ED-36 road	3-inch minus ballast	All Available

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

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

<u>Source</u>
Santa Maria Pit

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

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following:

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

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

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

6-20 ROCK GRADATION TYPES

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

6-34 3-INCH MINUS BALLAST ROCK

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

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

6-50 LIGHT LOOSE RIP RAP

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

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

6-51 HEAVY LOOSE RIP RAP

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

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

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 8 – EROSION CONTROL

8-15 REVEGETATION

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

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the required grass seed and fertilizer.

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

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

8-19 ASSURANCE FOR SEEDED AREA

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

8-26 GRASS SEED: ELK FORAGE MIX

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

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

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>
Orchard Grass	25
Perennial Rye Grass	25
Annual Rye Grass	15
Red Clover	15
White Clover	10
Birdsfoot Trefoil	10
Inert and Other Crop	0.5

8-27 FERTILIZER

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

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

SECTION 9 – POST-HAUL ROAD WORK

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-12 LANDING EMBANKMENT REMOVAL

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

9-21 ROAD ABANDONMENT

Purchaser shall abandon the following roads before the termination of this contract.

<u>Road</u>	<u>Stations</u>
ED-2707	0+00 to 7+37
ED-2707-01	0+00 to 4+34
ED-3602-02	0+00 to 3+96

9-22 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1:1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Purchaser.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.

- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL

SECTION 10 MATERIALS

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

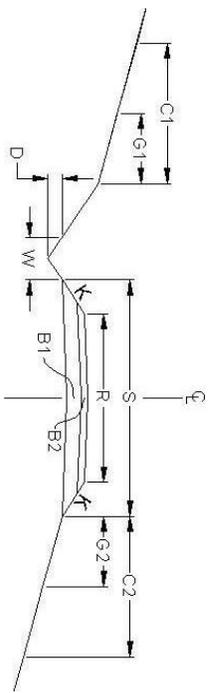
10-24 GAGE AND CORRUGATION

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

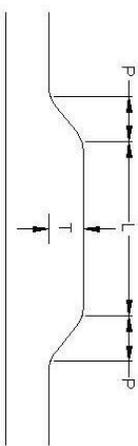
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1/2"
24" to 48"	14 (0.079")	2 ² / ₃ " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #	ED-ML	ED-ML	ED-27	ED-2707
REQUIRED / OPTIONAL	REQUIRED	REQUIRED	REQUIRED	OPTIONAL
CONSTRUCT / RECONSTRUCT	PRE-HAUL	PRE-HAUL	PRE-HAUL	CONSTRUCT
TOLERANCE CLASS (A/B/C)	--	--	--	C
STATION / MP TO	0+00	98+31	0+00	0+00
STATION / MP	98+31	190+87	47+82	7+37
ROAD WIDTH	12	12	12	12
CROWN (INCHES @ C/L)	3	3	3	3
DITCH WIDTH	3	3	3	2
DITCH DEPTH	1	1	1	1
TURNOUT LENGTH	L	--	--	25
TURNOUT WIDTH	T	--	--	10
TURNOUT TAPER	P	--	--	25
GRUBBING	G1	--	--	5
	G2	--	--	5
CLEARING	C1	--	--	10
	C2	--	--	10
ROCK FILL SLOPE	K:1	--	--	1½
❖ BALLAST DEPTH	B1	--	--	18
CUBIC YARDS / STATION	--	--	--	114
➤ TOTAL CY BALLAST	--	--	--	840
❖ SURFACING DEPTH	B2	--	--	--
CUBIC YARDS / STATION	--	--	--	--
➤ TOTAL CY SURFACING	--	--	--	--
➤ TOTAL CUBIC YARDS	--	--	--	840
SUBGRADE WIDTH	S	--	--	16.5
BRUSH CUT (Y/N)	N	Y	Y	N
BLADE, SHAPE, & DITCH (Y/N)	Y	Y	Y	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.

TOTAL BALLAST = 4290 CY
TOTAL RIPRAP = 45 CY

ROAD #	ED-2707-01	ED-36	ED-3602	ED-3602	ED-3602-02	
REQUIRED / OPTIONAL	OPTIONAL	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	
CONSTRUCT / RECONSTRUCT	CONSTRUCT	PRE-HAUL	CONSTRUCT	CONSTRUCT	CONSTRUCT	
TOLERANCE CLASS (A/B/C)	C	--	C	C	C	
STATION / MP TO	0+00	0+00	0+00	2+62	0+00	
STATION / MP	4+34	67+65	2+62	25+25	3+96	
ROAD WIDTH	R	12	12	12	12	
CROWN (INCHES @ C/L)		3	3	3	3	
DITCH WIDTH	W	2	3	3	3	2
DITCH DEPTH	D	1	1	1	1	1
TURNOUT LENGTH	L	25	--	50	50	25
TURNOUT WIDTH	T	10	--	10	10	10
TURNOUT TAPER	P	25	--	25	25	25
GRUBBING	G1	5	--	5	5	5
	G2	5	--	5	5	5
CLEARING	C1	10	--	10	10	10
	C2	10	--	10	10	10
ROCK FILLSLOPE	K:1	1½	--	1½	1½	1½
❖ BALLAST DEPTH	B1	18	--	6	18	12
CUBIC YARDS / STATION		114	--	34	114	72
➤ TOTAL CY BALLAST		495	--	90	2580	285
❖ SURFACING DEPTH	B2	--	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--	--
➤ TOTAL CUBIC YARDS		495	--	90	2580	285
SUBGRADE WIDTH	S	16.5	--	13.5	16.5	15.0
BRUSHCUT (Y/N)		N	Y	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		N	Y	N	N	N

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

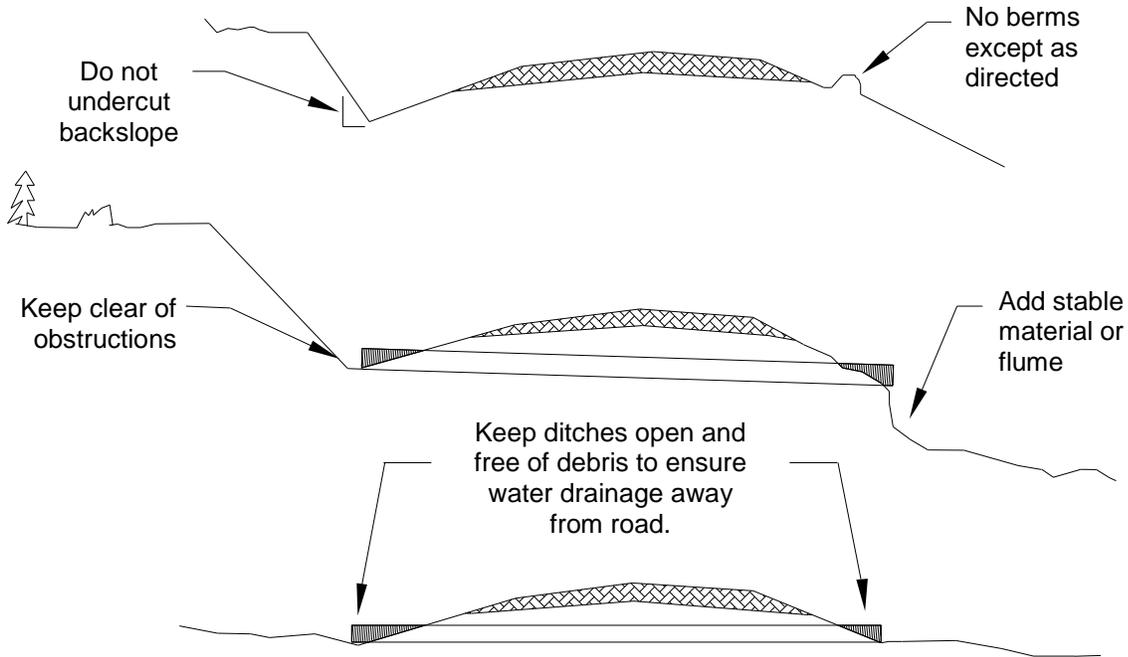
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

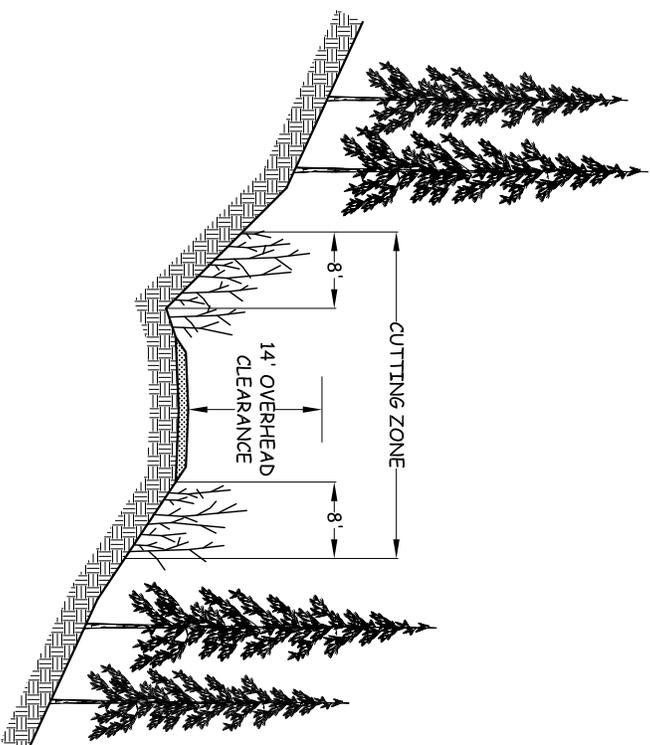
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



ROAD BRUSHING DETAILS



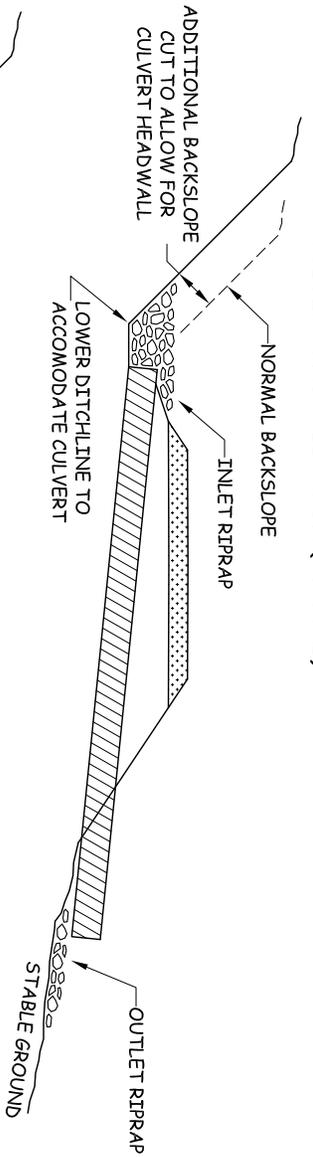
SPECIFICATIONS

- 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.

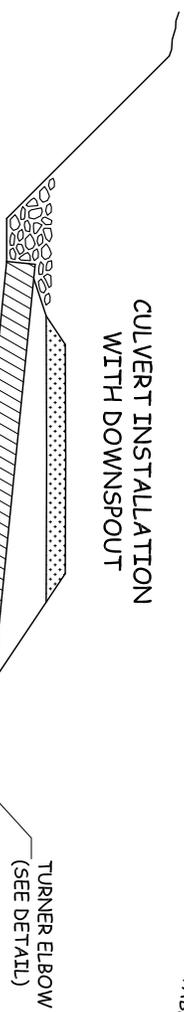
CONTRACT #	PROJECT	SHEET
30-092529	WIZZEN	25 OF 26

CULVERT AND DRAINAGE SPECIFICATIONS

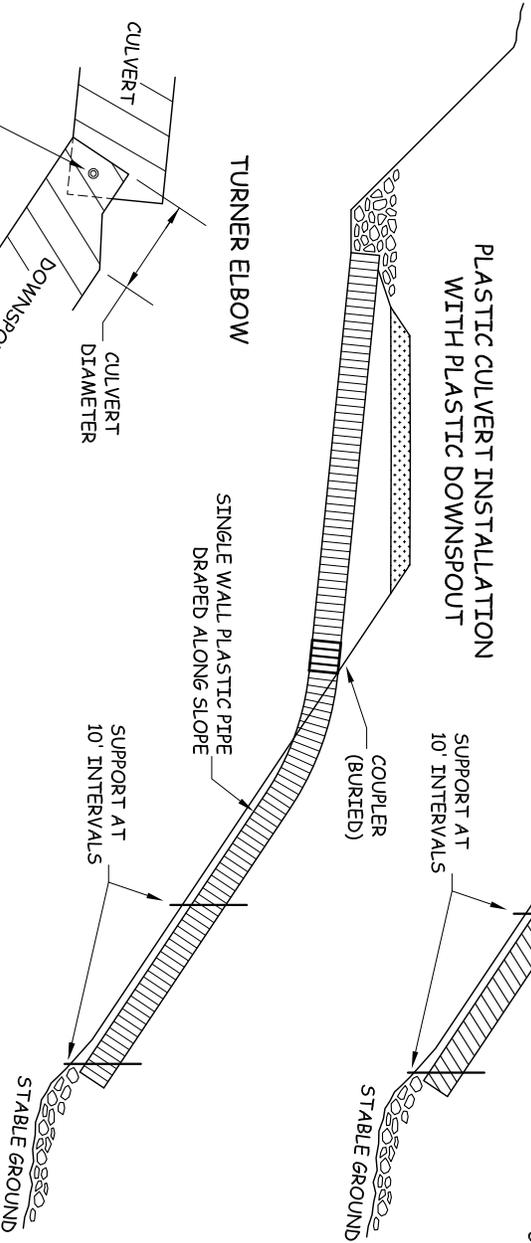
CULVERT INSTALLATION (TYPICAL)



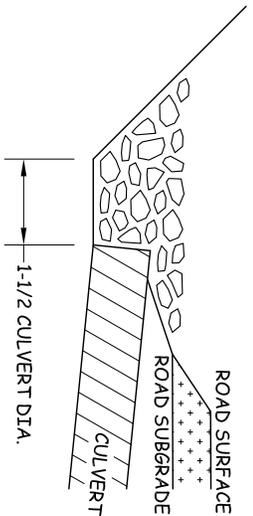
CULVERT INSTALLATION WITH DOWNSPOUT



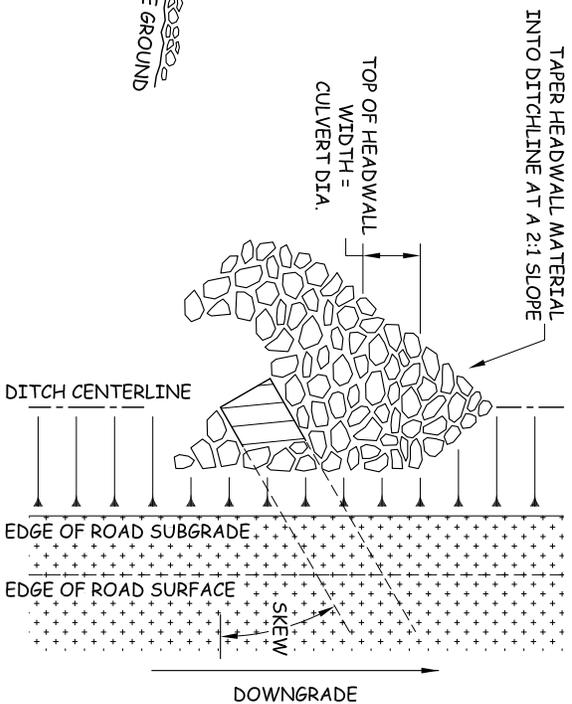
PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



CULVERT HEADWALL - SECTION VIEW



CULVERT HEADWALL - PLAN VIEW



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

CULVERT
CULVERT DIAMETER
DOWNSPOUT
BOLTED WITH 5/8" BOLTS AND WASHERS (BOTH SIDES)

CONTRACT #
30-092529

PROJECT
WIZZEN

SHEET
26 OF 26

SUMMARY - Road Development Costs

REGION: NW
DISTRICT: Baker

SALE/PROJECT NAME: Mizzen

CONTRACT #: 92529

ROAD NUMBERS: ED-2707, ED-2707-01, ED-36, ED-ML, ED-27, ED-36 -
ED-3602, ED-3602-02

ROAD STANDARD:	Construction	Pre-Haul Maintenance	
NUMBER OF STATIONS:	40.92	305.47	
CLEARING & GRUBBING:	-	-	
EXCAVATION AND FILL:	\$23,890	\$0	All other costs
MISC. MAINTENANCE:		\$9,987	
ROAD ROCK:	\$44,122	\$0	
ROCK STOCKPILE PROD:	-	-	
CULVERTS AND FLUMES:	\$3,477	\$0	
STRUCTURES:	-	-	
MOBILIZATION:	-	-	Amortized into other c
TOTAL COSTS:	\$71,488	\$9,987	
COST PER STATION:	\$1,747	\$33	
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$1,166	

TOTAL (All Roads) = \$82,641
SALE VOLUME MBF = 3800
TOTAL \$/MBF = \$22

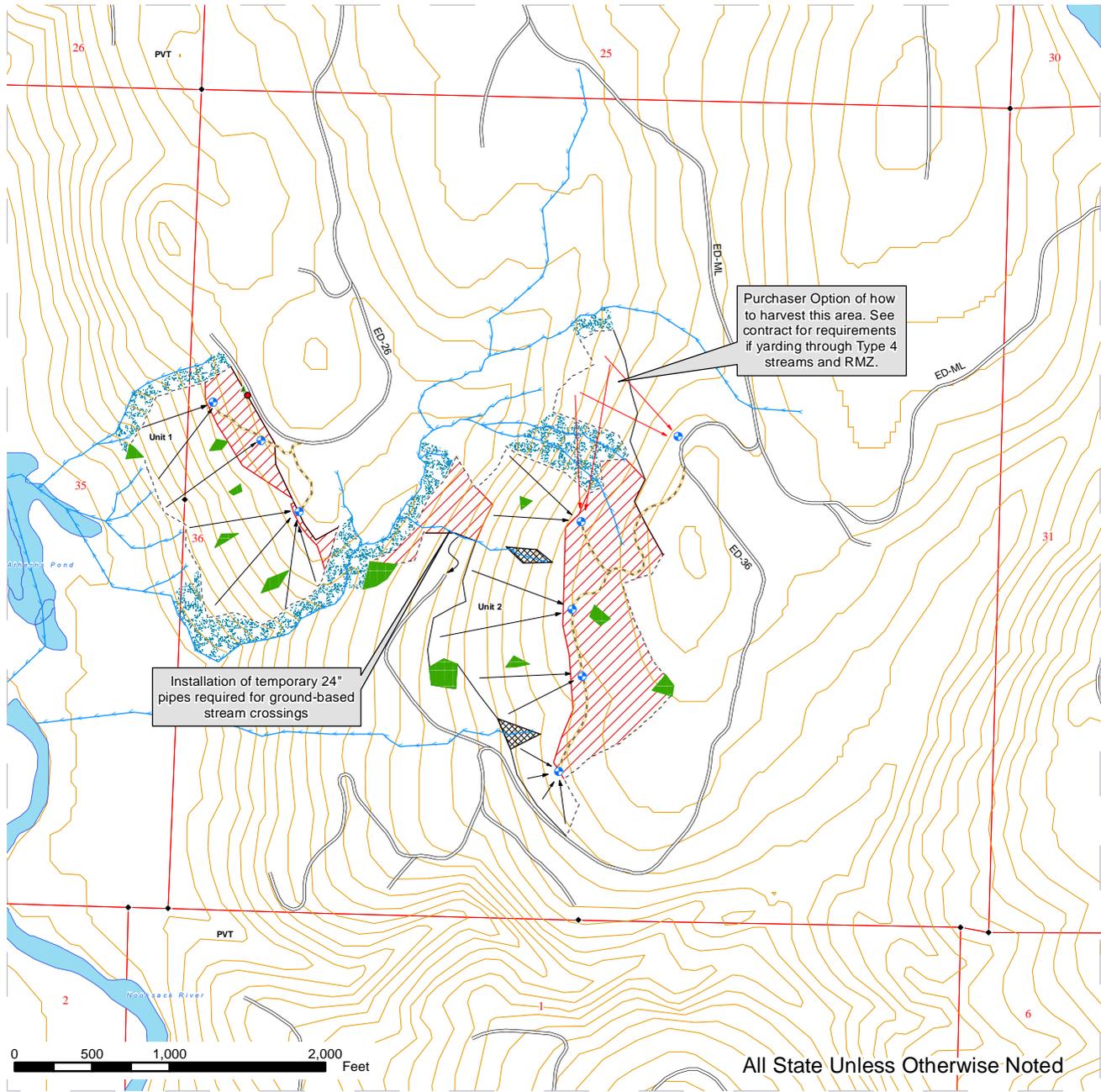
Compiled by: Carlson

Date: 9/28/15

LOGGING PLAN MAP

SALE NAME: Mizzen
AGREEMENT#: 30-092529
TOWNSHIP(S): T37R05E
TRUST(S): 03, 07

REGION: Northwest
COUNTY(S): Whatcom
ELEVATION RGE: 483-1359'



All State Unless Otherwise Noted

LEGEND			
~ ~ ~	Sale Boundary Tags		Ground-based
—	Young Stand Edge		Cable Yarding
	Leave Tree Area		Undefined Construction
	Non-Tradeable Leave Tree Area		Proposed Road Location
	No Entry Zone		Stream
	Non-Tradeable Painted Leave Trees		Riparian Mgt Zone
			Survey Corner

