

**TIMBER NOTICE OF SALE**

**SALE NAME:** *NEWMAN VRH & VDT*

**AGREEMENT NO:** *30-092229*

**AUCTION:** March 30, 2016 starting at 10:00 a.m., **COUNTY:** Skagit  
Northwest Region Office, Sedro Woolley, WA

**SALE LOCATION:** Sale located approximately 10 miles southeast of Sedro-Woolley

**PRODUCTS SOLD  
AND SALE AREA:**

All timber bounded by white timber sale tags and the MU-ML Road, except forest products marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out by blue special management tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit 1.

All timber bounded by white timber sale tags, except forest products 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, 3, 4, 5, 6, and 7.

All timber bounded by white timber sale tags and property lines, except forest products 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 8.

All timber as described for removal in Schedule B, (beyond blue special management tags up to the white timber sale boundary tags), within the RMZ thinning area in Unit 1.

All timber bounded by orange right of way tags, except that title to the timber within the right of way tags is not conveyed to the Purchaser unless the road segment is actually constructed.

The above described products on part(s) of Sections 22, 23, 26, 27 and 28 all in Township 34 North, Range 5 East, W.M., containing 130 acres, more or less.

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

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Hemlock	12.9	8	3,251						815	1,630	697	109
Silver fir	18.3		661						378	217	38	28
Douglas fir	22.2		443						331	73	16	23
Red cedar	14.4		316							220	96	
Red alder	12.2		215						41	25	104	45
Cottonwood	25		11						9		2	
Sale Total			4,897									

**MINIMUM BID:** \$740,000.00 **BID METHOD:** Sealed Bids

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

**EXPIRATION DATE:** March 31, 2019 **ALLOCATION:** Export Restricted

## TIMBER NOTICE OF SALE

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- BID DEPOSIT:** \$74,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.
- HARVEST METHOD:** Cable; cable or shovel on sustained slopes 35% or less. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.
- ROADS:** 84.66 stations of required construction. 236.56 stations of required reconstruction. 47.85 stations of optional construction. 47.85 stations of road to be abandoned if built.
- Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: MU-43 Pit at station 226+50 of the MU-ML Road.
- Development of an existing rock source will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, shot rock and 3-inch-minus ballast.
- An estimated total quantity of rock needed for this proposal: 2,951 cubic yards of riprap, 12,750 cubic yards of ballast rock and 1,100 cubic yards of shot rock.
- Installation of a 60-foot span, pre-constructed, modular type, painted steel bridge and pre-cast concrete footings.
- Acquisition of approximately 100 cubic yards of 5/8-inch minus rock from a commercial source for bridge deck surfacing and pre-cast concrete footing leveling course.
- Purchaser shall pick up, transport and install a steel gate at station 312+50 on the CM-ML road.
- Road construction, road reconstruction, road abandonment, and the hauling of rock will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation. The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation.

### ACREAGE DETERMINATION

**CRUISE METHOD:** Acres determined by GPS traverse. 138.60 acres gross. 4.0 acres deducted for green tree retention clumps, 4.0 acres deducted for existing road and 0.2 acres deducted for right-of-way within the RMZ area. 130.40 acres net. Cruised using variable plot method. Expansion factors used were 62.5, 40.0, 33.61, and 20.0; 33.61 was used in the ROW area and 20.0 was used in the RMZ thinning areas. Sighting height is 4.5 feet. A total of 101 plots were taken.

Shapefiles of units are available upon request.

- FEES:** \$86,922.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.
- SPECIAL REMARKS:**
1. Trees marked with a red ring and yellow "T" represent the last take tree along property line boundaries.
  2. Outer boundary of harvest area in RMZ thinning areas are demarcated with blue special management tags within the sale area.

## TIMBER NOTICE OF SALE

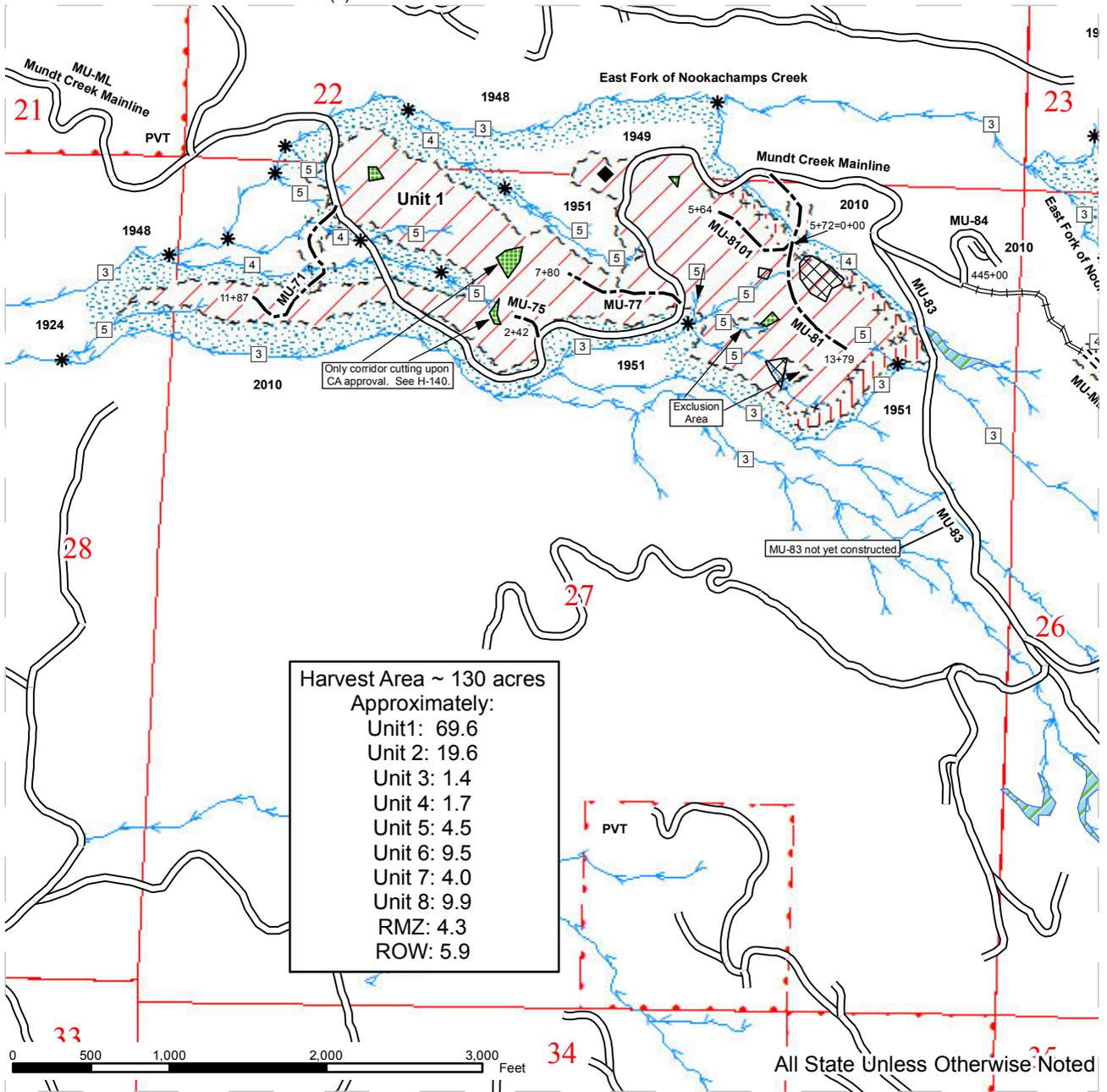
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3. Cedar Poles were noted within the sale area. See cruise for further details (approximately 70 mbf of the above listed RC 3S and 14 mbf of the above noted RC 4S is deemed cedar pole quality by the Department).
4. Marked leave trees may be traded for trees of the same size and species with prior approval from the Contract Administrator. Cut trees must be traded for trees of similar size and same species upon approval by the CA.
5. Purchaser must close and lock the DNR gate at the junction of Janicki Road and the Mundt Creek Mainline at the end of every day.
6. Cutting and yarding in the RMZ thinning area shall not be permitted during the bark slippage season unless authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15 but may vary depending on weather conditions. If permission is granted to operate during the bark slippage season the purchaser shall be required to provide a plan outlining mitigation measure.

# TIMBER SALE MAP

**SALE NAME:** NEWMAN VRH & VDT  
**AGREEMENT#:** 92229  
**TOWNSHIP(S):** T34R05E  
**TRUST(S):** Common School and Indemnity(3), Charitable/Educational/Penal & Reformatory Instit.(6), Capitol Grant(7), Scientific School(10), Forest Board Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** SKAGIT  
**ELEVATION RGE:** 1766-2889



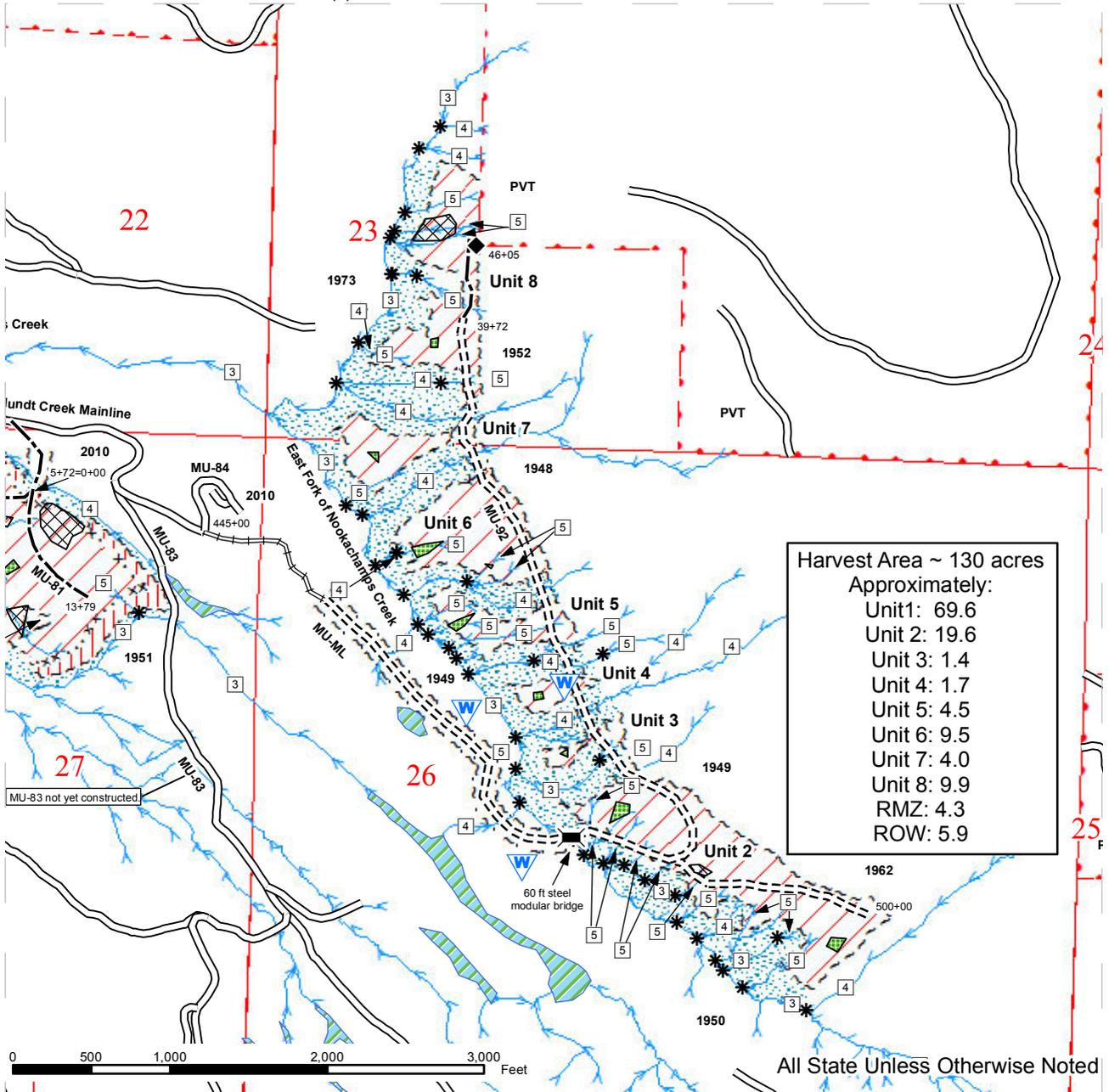
Sale Area	Stream Type	Non-tradable Leave Trees
RMZ Variable Density Thin	Stream Type Break	Tradable Leave Trees
Sale Boundary Tags	Wetlands	Bridge
Special Mgt Area Tags	Roads	Existing Rock Pit
Right of Way Tags	Optional Construction	Waste Area
Streams	Required Construction	DNR Managed Lands
RMZs	Required Reconstruction	
	Survey Corners	



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Harvest Area ~ 130 acres	
Approximately:	
Unit 1:	69.6
Unit 2:	19.6
Unit 3:	1.4
Unit 4:	1.7
Unit 5:	4.5
Unit 6:	9.5
Unit 7:	4.0
Unit 8:	9.9
RMZ:	4.3
ROW:	5.9

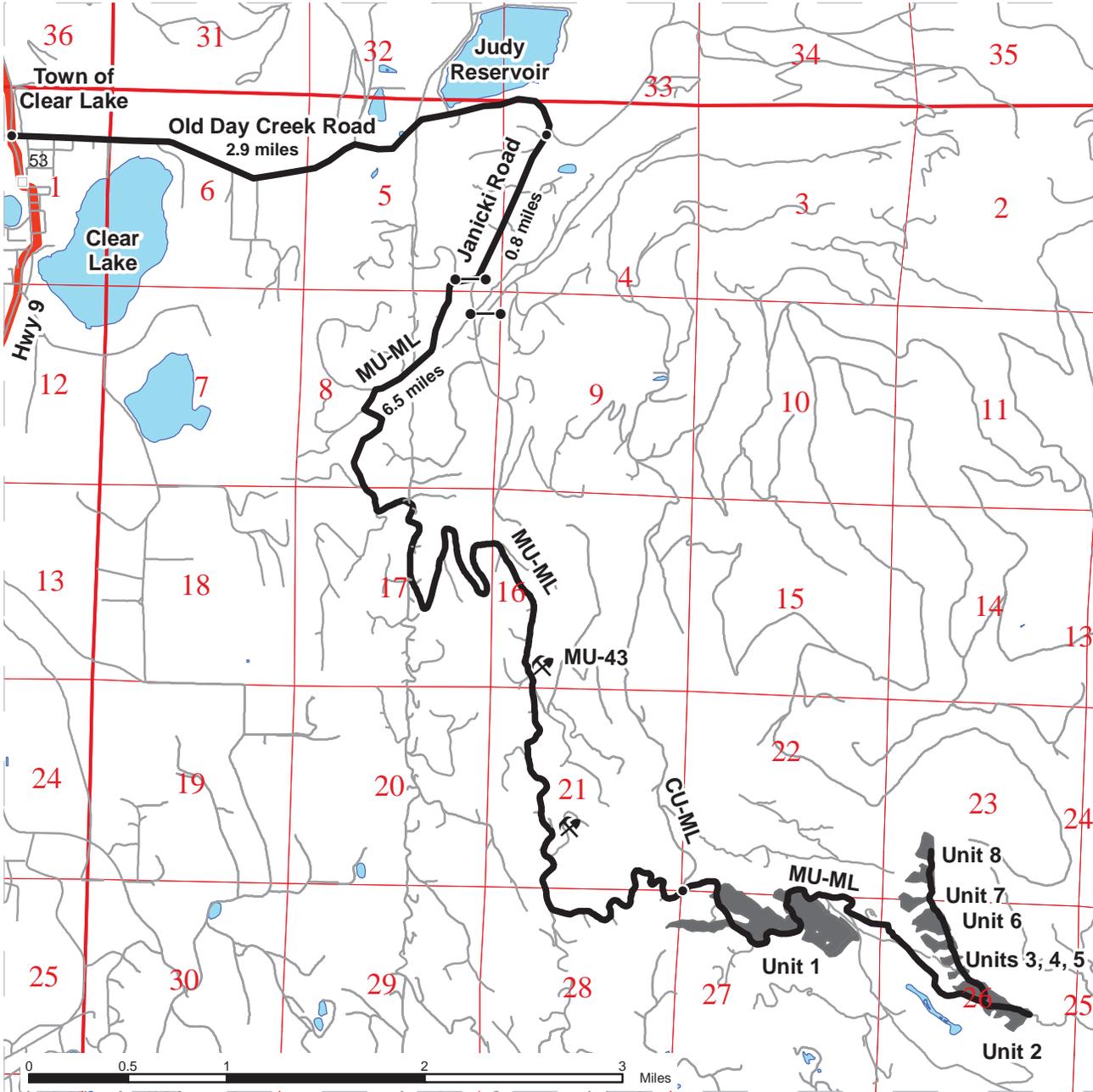
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# DRIVING MAP

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REGION: Northwest Region  
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- Timber Sale Unit
- Highways
- Milepost Markers
- Haul Route
- Other Route
- Distance Indicator
- Gate
- Existing Rock Pit

**DRIVING DIRECTIONS:**

From Clear Lake, Washington, travel north 0.3 miles and turn right onto Old Day Creek Road. Travel 2.9 miles and turn right onto Janicki Road. After 0.8 miles turn right to the gate on the Mundt Creek Mainline (MU-ML); an F1-3 key is required for access. Travel ~6.5 miles on the MU-ML to the MU-ML – Cultus Mountain Mainline intersection. Keep right on the MU-ML, go 0.2 miles across the Nookachamps bridge to the boundary of Unit 1. Travel 1.6 miles uphill to the end of the MU-ML. A trail continues southeast of the MU-ML along the abandoned MU-8002 road; hike along this trail ¼ mile to the East Fork of Nookachamps Creek. Cross the creek and hike east approximately 500 – 600' uphill to the abandoned MU-8002 road. Units 4 through 8 are downhill (southwest) of this grade. To get to units 2 and 3, travel southeast along the MU-8002 grade to the abandoned MU-8002-06 road. Units 2 and 3 are downhill (southwest) of this grade.

See traverse and vicinity maps for more detail.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Lump Sum AGREEMENT NO. 30-092229**

**SALE NAME: NEWMAN VRH & VDT**

**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 March 30, 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 tags and the MU-ML Road, except forest products marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, forest products tagged out by blue special management tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit 1.

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All timber as described for removal in Schedule B, (beyond blue special management tags up to the white timber sale boundary tags), within the RMZ thinning area in Unit 1.

All timber bounded by orange right of way tags, except that title to the timber within the right of way tags is not conveyed to the Purchaser unless the road segment is actually constructed.

The above described products, located on approximately 130 acres on part(s) of Sections 22, 23, 26, 27, and 28 all in Township 34 North, Range 5 East W.M. in Skagit 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)
B	Thinning Prescription
R	Steel Gate Installation Detail

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to March 31, 2019.

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 \$630.00 per acre per annum for the acres on which an operating release has not been issued in the Variable Retention Harvest areas in Units 1-8. Payment of \$89.00 per acre per annum for the acres on which an operating release has not been issued in the Variable Density Thinning areas in Units 1.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

**G-060 Exclusion of Warranties**

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

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

**G-062 Habitat Conservation Plan**

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address

state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the Services' Incidental Take Permit Nos. 812521 and 1168 (collectively referred to as ITP), or as amended hereafter by the Services. The ITP authorizes the incidental take of certain federally listed threatened and endangered species, as specified in the ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

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

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

#### G-063 Incidental Take Permit Notification Requirements

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

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

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

G-101 Forest Products Not Designated

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

determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Cottonwood	\$57.76	0	\$0.00	\$9.00	\$9.00
Douglas fir	\$168.00	0	\$0.00	\$9.00	\$9.00
Hemlock	\$127.26	0	\$0.00	\$9.00	\$9.00
Red alder	\$156.98	0	\$0.00	\$9.00	\$9.00
Red cedar	\$411.89	0	\$0.00	\$9.00	\$9.00
Silver fir	\$132.10	0	\$0.00	\$9.00	\$9.00
Other	\$164.29	0	\$0.00	\$9.00	\$9.00

**G-106 Adding Naturally Damaged Forest Products**

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the State's Contract Administrator. Additions must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. Added forest products become a part of this contract and shall be paid for at the rate set forth in clause G-101, G-102 or G-103.

**G-111 Title and Risk of Loss**

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

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

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

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

**G-120 Responsibility for Work**

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

**G-121 Exceptions**

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

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

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

1. Failure of (a) required improvements or roads designated in clause C-050, or (b) required or optional construction completed to the point that authorization to haul has been issued;
2. Caused by a single event from forces beyond the control of Purchaser, its employees, agents, or invitees, including independent contractors; and
3. Includes, but is not limited to natural disasters such as earthquakes, volcanic eruptions, landslides, and floods.

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

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

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

**G-140 Indemnity**

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless State, agencies of State and all officials, agents and employees of State, from and against all claims arising out of or resulting from the performance of the contract. "Claim" as used in this contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury, sickness, disease or death, or injury to or destruction of tangible property including loss of use resulting therefrom. Purchasers' obligations to indemnify, defend, and hold

harmless includes any claim by Purchasers' agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless State for any claim arising out of or incident to Purchasers' or any subcontractors' performance or failure to perform the contract. Purchasers' obligation to indemnify, defend, and hold harmless State shall not be eliminated or reduced by any actual or alleged concurrent negligence of State or its agents, agencies, employees and officials. Purchaser waives its immunity under Title 51 RCW to the extent it is required to indemnify, defend and hold harmless State and its agencies, officials, agents or employees.

G-150 Insurance

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

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

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

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

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

Purchaser shall include all subcontractors as insured under all required insurance policies, or shall furnish separate certificates of insurance and endorsements for each subcontractor. Subcontractor(s) must comply fully with all insurance requirements

stated herein. Failure of subcontractor(s) to comply with insurance requirements does not limit Purchaser's liability or responsibility.

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

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

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

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

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

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

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

Workers' Compensation Coverage. Purchaser shall comply with all State of Washington workers' compensation statutes and regulations. Workers' compensation coverage shall be provided for all employees of Purchaser and employees of any subcontractor or sub-subcontractor. Coverage shall include bodily injury (including

death) by accident or disease, which exists out of or in connection with the performance of this contract. Except as prohibited by law, Purchaser waives all rights of subrogation against State for recovery of damages to the extent they are covered by workers' compensation, employer's liability, commercial general liability, or commercial umbrella liability insurance.

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

Business Auto Policy (BAP). Purchaser shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit not less than \$1,000,000.00 per accident. Such insurance shall cover liability arising out of "Any Auto". Business auto coverage shall be written on ISO form CA 00 01, or substitute liability form providing equivalent coverage. If necessary the policy shall be endorsed to provide contractual liability coverage and cover a "covered pollution cost or expense" as provided in the 1990 or later editions of CA 00 01. Purchaser waives all rights against State for the recovery of damages to the extent they are covered by business auto liability or commercial umbrella liability insurance.

#### G-160 Agents

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

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

#### G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

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

**G-220 State Suspends Operation**

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

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

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

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

**G-230 Unauthorized Activity**

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

**G-240 Dispute Resolution**

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

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.
- c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.

- d. Unless otherwise agreed, a conference will be held by the Deputy Supervisor - Uplands within 30 calendar days of the receipt of Purchaser's request for review of the Region Manager's written decision. Purchaser and the Region Manager will have an opportunity to present their positions. The Deputy Supervisor - Uplands will issue a decision within a reasonable time of being presented with both Parties' positions.

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; MU-ML, MU-71, MU-75, MU-77, MU-81, MU-8101, and MU-92. 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 MU-ML, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easements with:

Longview Fibre Company; #55-074132; dated January 16, 2004.

G-430 Open Fires

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

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,

For: Road

In Favor of: Longview Fibre Company

Disclosed by Application No.: 50-074105

Granted: 1/16/2004

Expires: Indefinite

Easement, including the terms and provisions thereof,

For: Road  
 In Favor of: Skagit Improvement Company  
 Disclosed by Application No.: 50-082657  
 Granted: 12/22/1915  
 Expires: Indefinite

Easement, including the terms and provisions thereof,  
 For: Pipeline  
 In Favor of: Skagit Improvement Company  
 Disclosed by Application No.: 50-087541  
 Granted: 9/25/1915  
 Expires: Indefinite

No Pending Applications of Record

No Region Encumbrances

No Special Notation

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 \$130,995.00. The total contract price consists of a \$0.00 contract bid price plus \$130,995.00 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

Felling 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-011 Certification of Fallers and Yarder Operators**

All persons engaged in the felling and yarding of timber must receive certification in writing from the Contract Administrator. Certification may be revoked when the Contract Administrator determines that non-compliance of leave tree selection criteria or cut tree selection criteria is occurring, or excessive damage to leave trees or skid trails is occurring.

Excessive damage for leave trees is defined in clause H-012.

Excessive skid trail damage is defined in clause H-015 or H-016.

When leave tree damage exceeds the limits set forth in clause H-012, Purchaser shall be subject to liquidated damages (clause D-040 or D-041).

**H-012 Leave Tree Damage Definition**

Leave trees are trees required for retention within the sale boundary. Purchaser shall protect leave trees from being cut, damaged, or removed during operations.

Leave tree damage exists when more than 5 percent of the leave trees are damaged in a unit and when one or more of the following criteria occur as a result of Purchaser's operation, as determined by the Contract Administrator:

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 100 square inches.
- b. A leave tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave 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 leave tree has been cut or damaged, the Purchaser may be required to pay liquidated damages for Excessive Leave Tree Damage as detailed in clause D-040.

**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-016 Skid Trail Requirements

A skid trail is defined as an area that is used for more than three passes by any equipment.

Purchaser shall comply with the following during the yarding operation:

- a. A skid trail will not exceed 12 feet in width, including rub trees.
- b. Skid trails shall not cover more than 15 percent of the total acreage on one unit.
- c. Location of the skid trails must be marked by Purchaser and approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Purchaser will not have more than two skid trails open to active skidding at any one time. All other skid trails used for skidding timber will be closed.
- h. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- i. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

H-017 Preventing Excessive Soil Disturbance

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

H-035 Fall Trees Into Sale Area

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

H-051 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by chainsaw and yarded by cable; felled by chainsaw or feller-buncher and yarded by cable or shovel on sustained slopes 35% or less, unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-130 Hauling Schedule

The hauling of forest products will not be permitted on any road from November 1 to March 31 unless authorized in writing by the Contract Administrator .

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. An on-site pre-work meeting shall be scheduled with the Contract Administrator, which shall include the operator and fallers, prior to commencement of any activities on site.
- B. A copy of the timber sale map and contract shall be present on site during active operations.
- C. Cutting and yarding in the RMZ thinning area shall not be permitted during the bark slippage season unless authorized in writing by the Contract Administrator. This season is estimated to run from April 1 to July 15 but may vary depending on weather conditions. If permission is granted to operate during the bark slippage season the purchaser shall be required to provide a plan outlining mitigation measure.
- D. Down woody debris shall be left where it lies, where operationally feasible.
- E. Harvesting will be restricted to periods of drier weather conditions and ground-based equipment will be restricted from traveling more than approximately 400-600 feet from an existing road.
- F. Marked leave trees may be traded for trees of the same size and species with prior approval from the Contract Administrator. Cut trees must be traded for trees of similar size and same species upon approval by the Contract Administrator.
- G. Purchaser must close and lock the DNR gate at the junction of Janicki Road and the Mundt Creek Mainline at the end of every day.
- H. Pile slash to create plantable spots on slopes less than or equal to 35%. Pile slash as directed by the Contract Administrator.

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

#### H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. Purchaser shall pick up, transport and install a steel gate at station 312+50 on the CM-ML road. The gate will be available for pick up at the NW Region Headquarters. This gate shall be installed within 30 days of the start of road construction activities. The steel gate installation must be in accordance with the STEEL GATE DETAIL in Schedule R. The gate and lock bell-housing must be installed plumb and aligned to ensure all mating components match with precision. Each post must be set in a minimum of 4 cubic yards of poured-in-place concrete. The Contract Administrator will provide Purchaser with a padlock. If Purchaser wishes to install an alternate design, detailed plans for the construction of the gate must be submitted to the Contract

Administrator. Purchaser shall obtain written approval for the plans from the Contract Administrator or their designee, before gate installation begins.

- B. Falling and yarding will occur away from all typed waters where possible. All type 5 streams will have a 30-foot equipment limitation zone measured from each bank. The limited crossings shall be as close to perpendicular as possible.

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.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 4/20/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on MU-ML (445+00 to 500+00), MU-71, MU-75, MU-77, MU-81, MU-8101, and MU-92. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the MU-ML (226+50 to 445) roads, and reconstruction on the MU-ML (0+00 to 226+50) after the work has been accepted by the state. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

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 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-040 Leave Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the State. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of \$50.00 per tree for all damaged trees in the Variable Density Thinning area.

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 Variable Retention Harvest area.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Jean Fike  
Northwest Region Manager

Date: \_\_\_\_\_  
Address: \_\_\_\_\_

Date: \_\_\_\_\_

CORPORATE ACKNOWLEDGEMENT

STATE OF \_\_\_\_\_ )

\_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_

\_\_\_\_\_ to me known to be the \_\_\_\_\_ of the corporation

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

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

\_\_\_\_\_  
Notary Public in and for the State of

\_\_\_\_\_

My appointment expires \_\_\_\_\_

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

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

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

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

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

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

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

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

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

**FOR ALL YARDING:**

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

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

**WHEN SHOVEL YARDING IS AUTHORIZED:**

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

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

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

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

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

**Schedule B**  
**Thinning Prescription**

Contractor shall leave sufficient trees and basal area per acre in the units to achieve the following:

- Trees per acre of 195-205
- Basal Area per Acre Average of 270

To accomplish this prescription, fallers shall harvest trees starting with smallest diameter trees working up to the largest (thin from below), cutting all:

- 1) red alder, and
- 2) Pacific silver fir, and
- 3) western hemlock up to 11 inches DBH
- 4) western redcedar up to 12 inches DBH

Trees with blue special management area tags are subject to the prescription above.

The fallers shall harvest trees of the first species until the prescription is met. If there are not enough trees in a plot of the first species, then the faller shall harvest from the second species and diameter range and so on until the prescription is met. Fallers can cut from the full diameter range for each species as specified above and shall avoid targeting only one or two diameter ranges for harvest.

Only live trees 8 inches or greater in DBH shall be used to calculate trees per acre and basal area. There shall not be a gap between leave trees greater than 30 feet.

Three conifer trees per acre of RMZ, from the largest DBH class, shall be felled towards the stream where feasible to remain as LWD. An additional two conifer trees per acre of RMZ will be girdled or topped to a minimum height of 16 feet where feasible for snag recruitment; if not, these trees need to be felled toward the stream. Trees shall be chosen from within 25 feet of the timber sale boundary in the RMZ.

Additionally, the purchasers shall retain all snags greater than or equal to 20 inches DBH and 20 feet tall, except where it cannot be accomplished safely. Douglas-fir is not to be cut without prior approval of the Contract Administrator (CA). Only trees necessary to facilitate harvest operations or those which pose safety hazards shall be considered for approval.

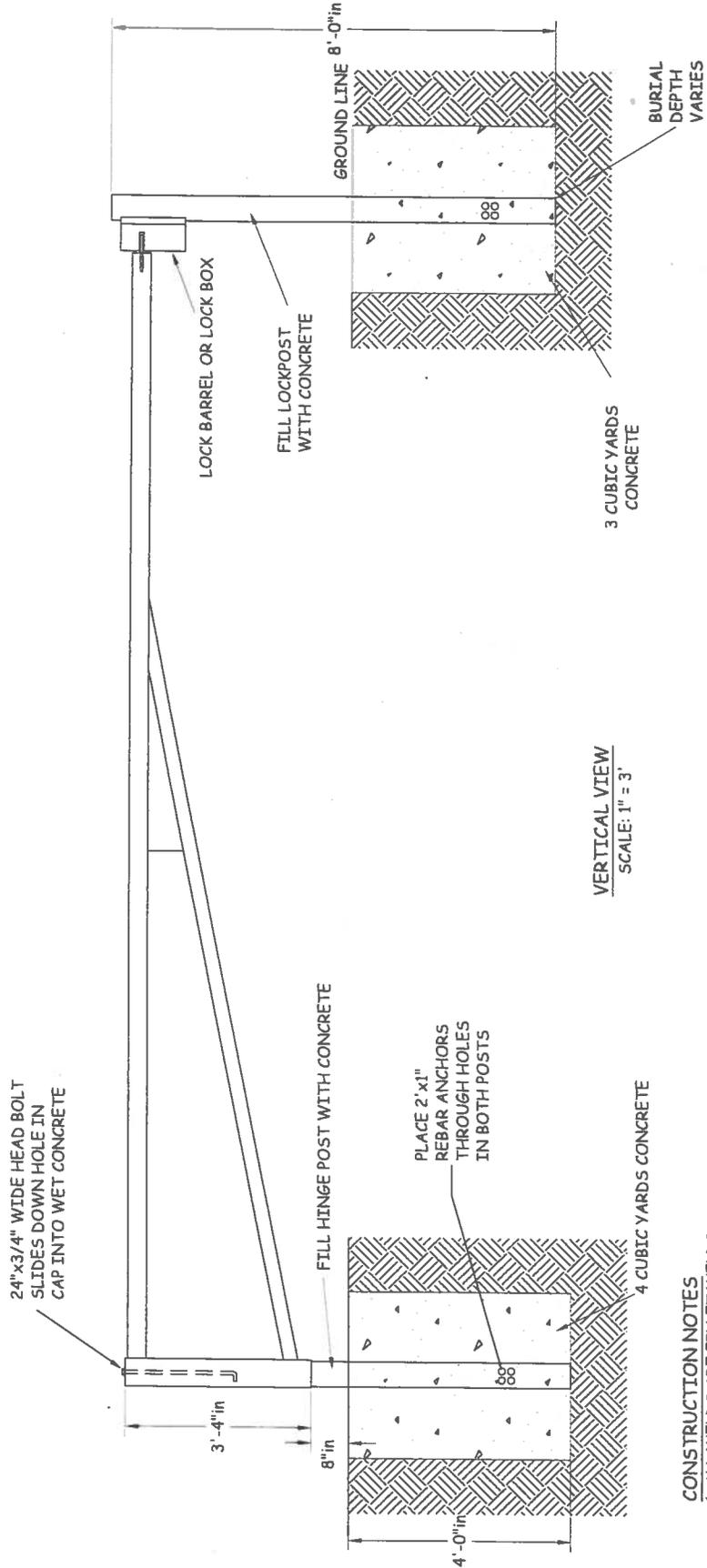
**Certification of Fallers and Yarder Operators**

The Contract Administrator (CA) shall approve and certify in writing all persons engaged in felling of timber prior to any cutting operations, per the H-011 clause of the contract. The Contract Administrator and Faller/Harvester Operator shall jointly review the take tree selection criteria as outlined in Schedule B of the contract.

In conjunction with the Contract Administrator, the Faller/Harvester Operator shall measure sample plots across the landscape concurrently while felling timber in each unit. If a plot indicates that the BA is more than 20 square feet above or below the target, the CA must be notified immediately. The CA shall determine if this deviation shall require recertification of the fallers.

Schedule R - Steel Gate Installation Detail

STEEL GATE INSTALLATION



- CONSTRUCTION NOTES**
1. ALL WELDS ARE FILLET WELDS.
  2. ACTUAL LOCATION SHALL BE DESIGNATED BY THE CONTRACT ADMINISTRATOR.
  3. ALL CONCRETE SHALL MEET MINIMUM REQUIREMENTS FOR CLASS B CONCRETE.



## WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

### FOREST EXCISE TAX ROAD SUMMARY SHEET

**Region:**

**Timber Sale Name:**

**Application Number:**

#### EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

#### EXCISE TAX EXEMPT ACTIVITIES

**Temporary Optional Construction:** **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: <b>Newman</b>	Region: <b>Northwest</b>
Agreement #: <b>30-092229</b>	District: <b>Clear Lake</b>
Contact Forester: Mike Olson Phone / Location: 360-856-3053	County(s): Skagit
Alternate Contact: Jesse Steele Phone / Location: 360-854-8687	Other information:

Type of Sale: Lump Sum	
Harvest System: Ground based <a href="#">Click here to enter text.</a>	65%
Harvest System: Uphill Cable <a href="#">Click here to enter text.</a>	35%
Enter % of sale acres	

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Propo sal Acres	Deductions from Gross Acres (No harvest acres)				Net Harve st Acres	Acreage Determinatio n  (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describ e)		
1	T 34N R 05E Sec. 22, 27, 28	03, 07, 10	74.6	0.0	2.4	2.6	0.0	69.6	GPS (Garmin)
2	T 34N R 05E Sec. 26	06	20.7	0.0	0.5	0.6	0.0	19.6	GPS (Garmin)
3	T 34N R 05E Sec. 26	06	1.4	0.0	0.0	0.0	0.0	1.4	GPS (Garmin)
4	T 34N R 05E Sec. 26	06	1.7	0.0	0.0	0.0	0.0	1.7	GPS (Garmin)
5	T 34N R 05E Sec. 26	06	4.7	0.0	0.1	0.1	0.0	4.5	GPS (Garmin)
6	T 34N R 05E Sec. 26	06	10.0	0.0	0.2	0.3	0.0	9.5	GPS (Garmin)
7	T 34N R 05E Sec. 23, 26	06, 03	4.0	0.0	0.0	0.0	0.0	4.0	GPS (Garmin)
8	T 34N R 05E Sec. 23	03	11.1	0.0	0.8	0.4	0.0	9.9	GPS (Garmin)
RMZ	T 34N R 05E Sec. 27	03	4.5	0.0	0.0	0.0	0.2*	4.3	

ROW	T 34N R 05E Sec. 23, 26, 27		5.9	0.0	0.0	0.0	0.0	5.9	GIS
<b>TOTAL ACRES</b>			138.6	0.0	4.0	4.0	0.2	130.4	

\*Right-of-way within the RMZ.

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way between units 1 and 2 is marked with orange Right-of-Way Boundary tags.	581 Total Leave Trees (493 clumped and 88 single) marked with yellow leave tree area tags and/or blue paint.
2	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way outside unit is marked with orange Right-of-Way Boundary tags.	163 Total Leave Trees (124 clumped and 39 single) marked with yellow leave tree area tags and/or blue paint.
3	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way outside unit is marked with orange Right-of-Way Boundary tags.	13 Total Leave Trees (10 clumped and 3 single) marked with yellow leave tree area tags and/or blue paint.
4	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way outside unit is marked with orange Right-of-Way Boundary tags.	17 Total Leave Trees (17 clumped and 0 single) marked with yellow leave tree area tags and/or blue paint.
5	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way outside unit is marked with orange Right-of-Way Boundary tags.	43 Total Leave Trees (41 clumped and 2 single) marked with yellow leave tree area tags and/or blue paint.
6	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way outside unit is marked with orange Right-of-Way Boundary tags.	80 Total Leave Trees (73 clumped and 7 single) marked with yellow leave tree area tags and/or blue paint.
7	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way outside unit is marked with orange Right-of-Way Boundary tags.	34 Total Leave Trees (33 clumped and 1 single) marked with yellow leave tree area tags and/or blue paint.

8	Variable Retention Harvest. Trees marked with yellow leave tree area tags are designated leave trees. Any blue painted trees not in these areas are designated as leave trees as well.	Right-of-way outside unit is marked with orange Right-of-Way Boundary tags.	90 Total Leave Trees (85 clumped and 5 single) marked with yellow leave tree area tags and/or blue paint.
RMZ	Variable Density Riparian Management Zone Thin (VDT). Trees will be thinned following the prescription listed in Schedule B. All thinning areas are bounded by blue "Special Management Unit Boundary" tags and white "Timber Sale Boundary" tags.	Right-of-way through RMZ thinning is marked with orange Right-of-Way Boundary tags.	VDT: See prescription in Schedule B.
ROW	Right-of-way is marked with orange Right-of-Way Boundary tags.		

**OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	WH-DF-SF / 2,784 MBF	An F1-3 key is required to access all units.	Traverse and vicinity maps are attached.
2	WH-SF-DF / 588 MBF		
3	WH-SF / 42 MBF		
4	WH-SF / 51 MBF		
5	WH-SF / 135 MBF		
6	WH-SF / 285 MBF		
7	WH-SF / 120 MBF		
8	WH-RA-SF / 248 MBF		
RMZ	WH-WR / 26 MBF		
ROW	WH-SF / 177 MBF		
TOTAL MBF	4,456 MBF Click here to enter total mbf.		

**REMARKS:**

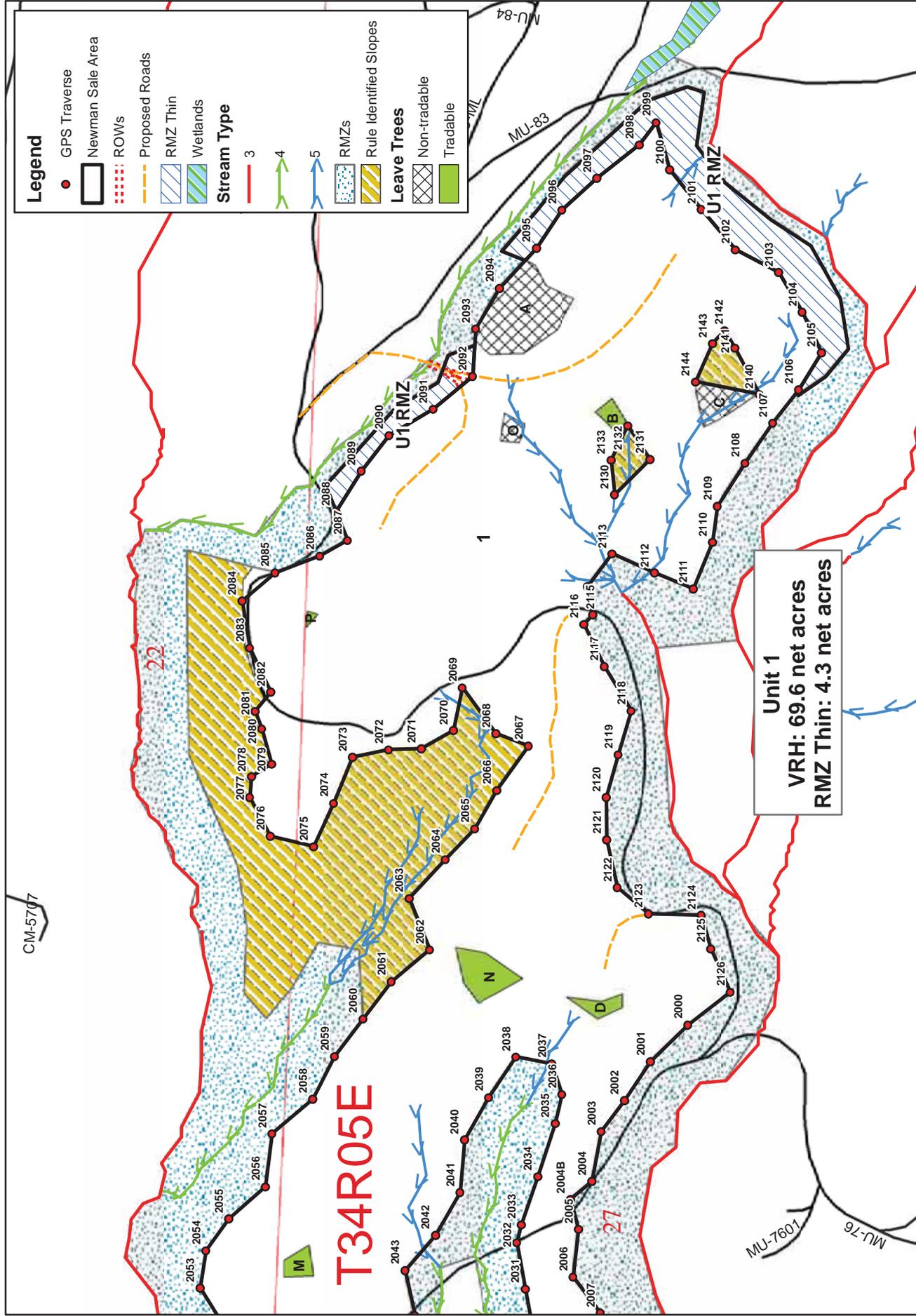
## Directions:

From Clear Lake Washington, travel north 0.3 miles and turn right onto Old Day Creek Road. Travel 2.9 miles and turn right onto Janicki Road. After 0.8 miles turn right to the gate on the Mundt Creek Mainline (MU-ML); an F1-3 key is required for access. Travel ~6.5 miles on the MU-ML to the MU-ML – Cultus Mountain Mainline intersection. Keep right on the MU-ML, go 0.2 miles across the Nookachamps bridge to the boundary of Unit 1. Travel 1.6 miles uphill to the end of the MU-ML. A trail continues southeast of the MU-ML along the abandoned MU-8002 road; hike along this trail ¼ mile to the East Fork of Nookachamps Creek. Cross the creek and hike east approximately 500 – 600' uphill to the abandoned MU-8002 road. Units 4 through 8 are downhill (southwest) of this grade. To get to units 2 and 3, travel southeast along the MU-8002 grade to the abandoned MU-8002-06 road. Units 2 and 3 are downhill (southwest) of this grade.

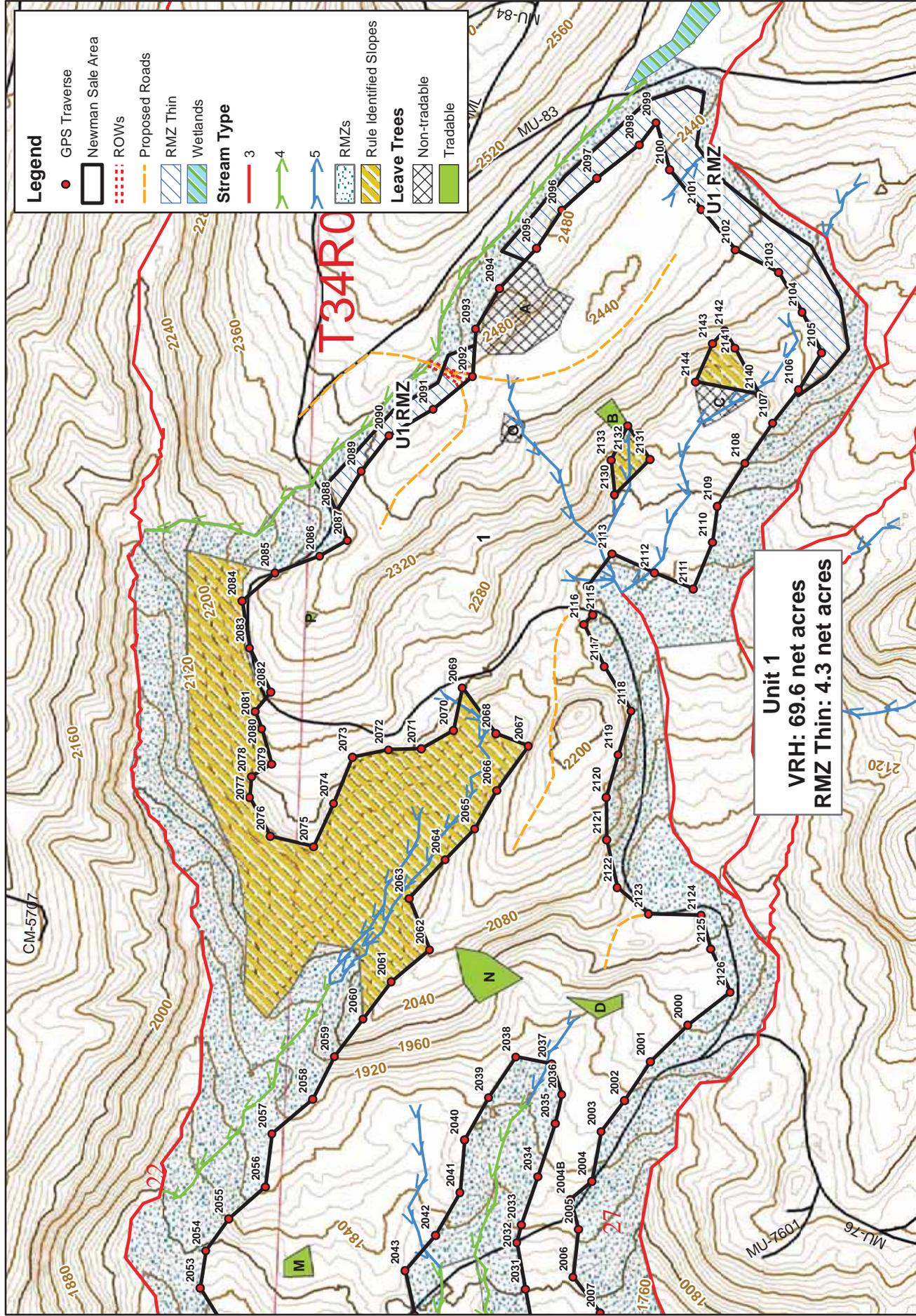
See traverse and vicinity maps for more detail.

Prepared By: Mike Olson Date: 4/20/2015	Title: Natural Resource Specialist 1	CC:
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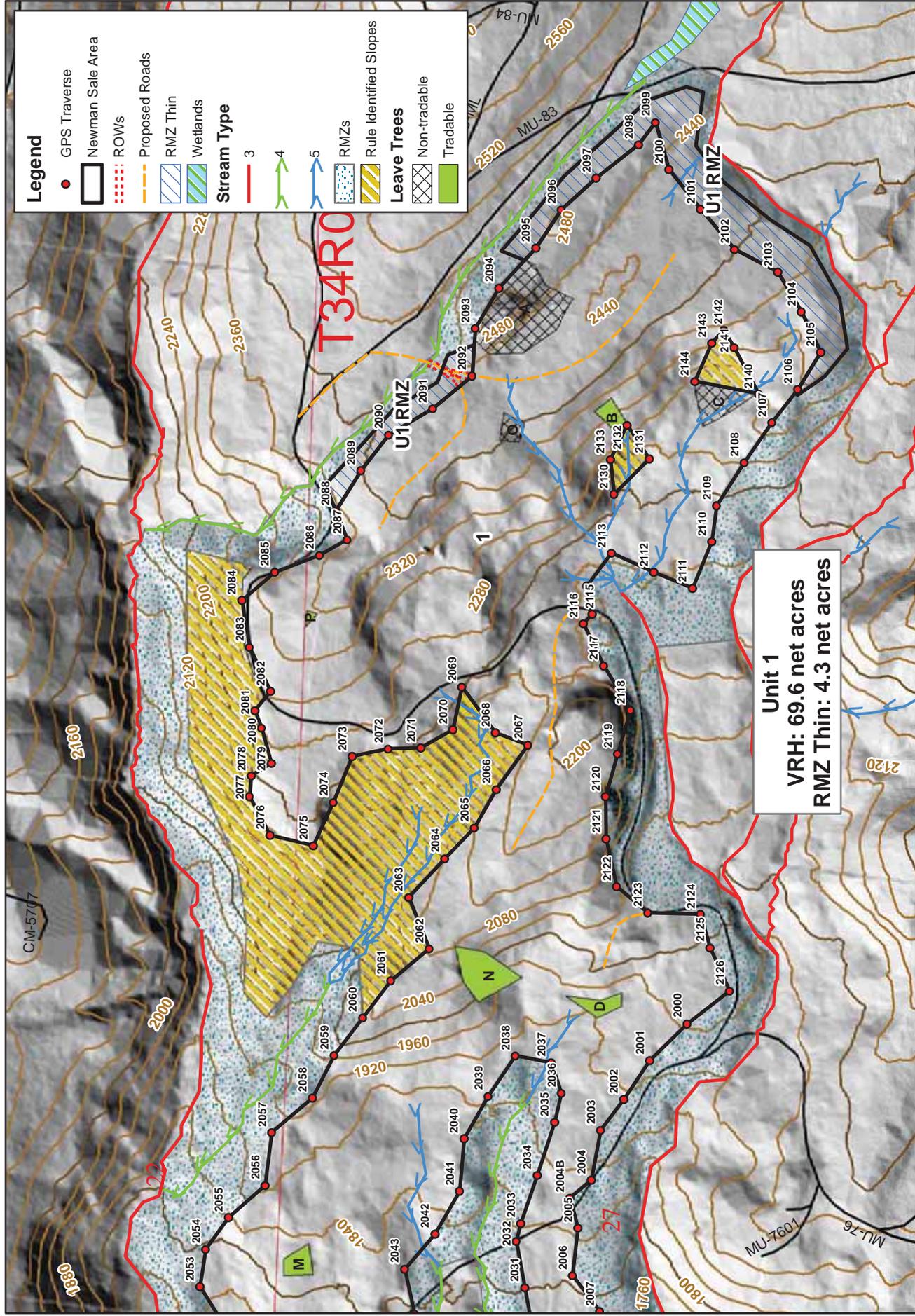
# Newman Timber Sale



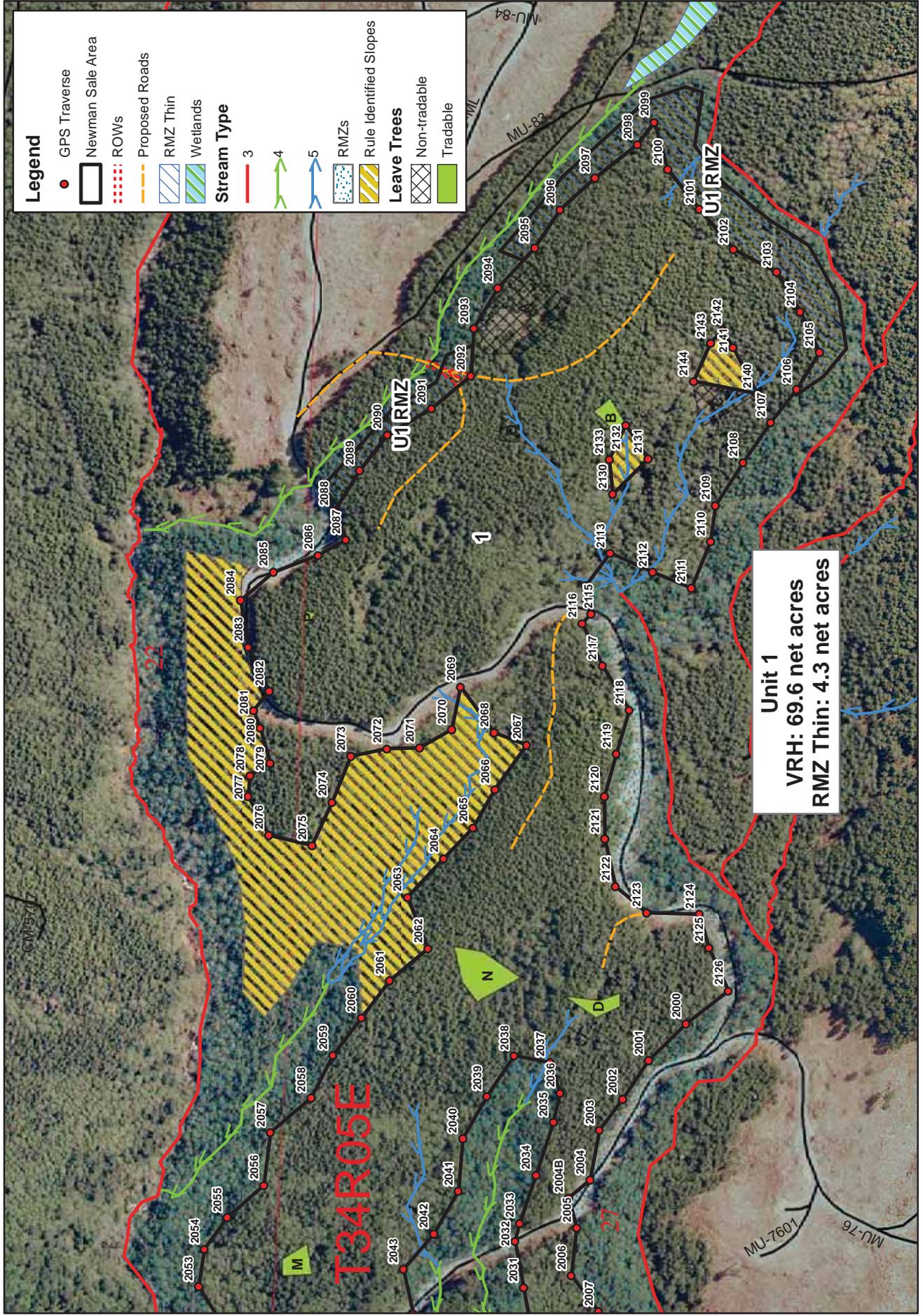
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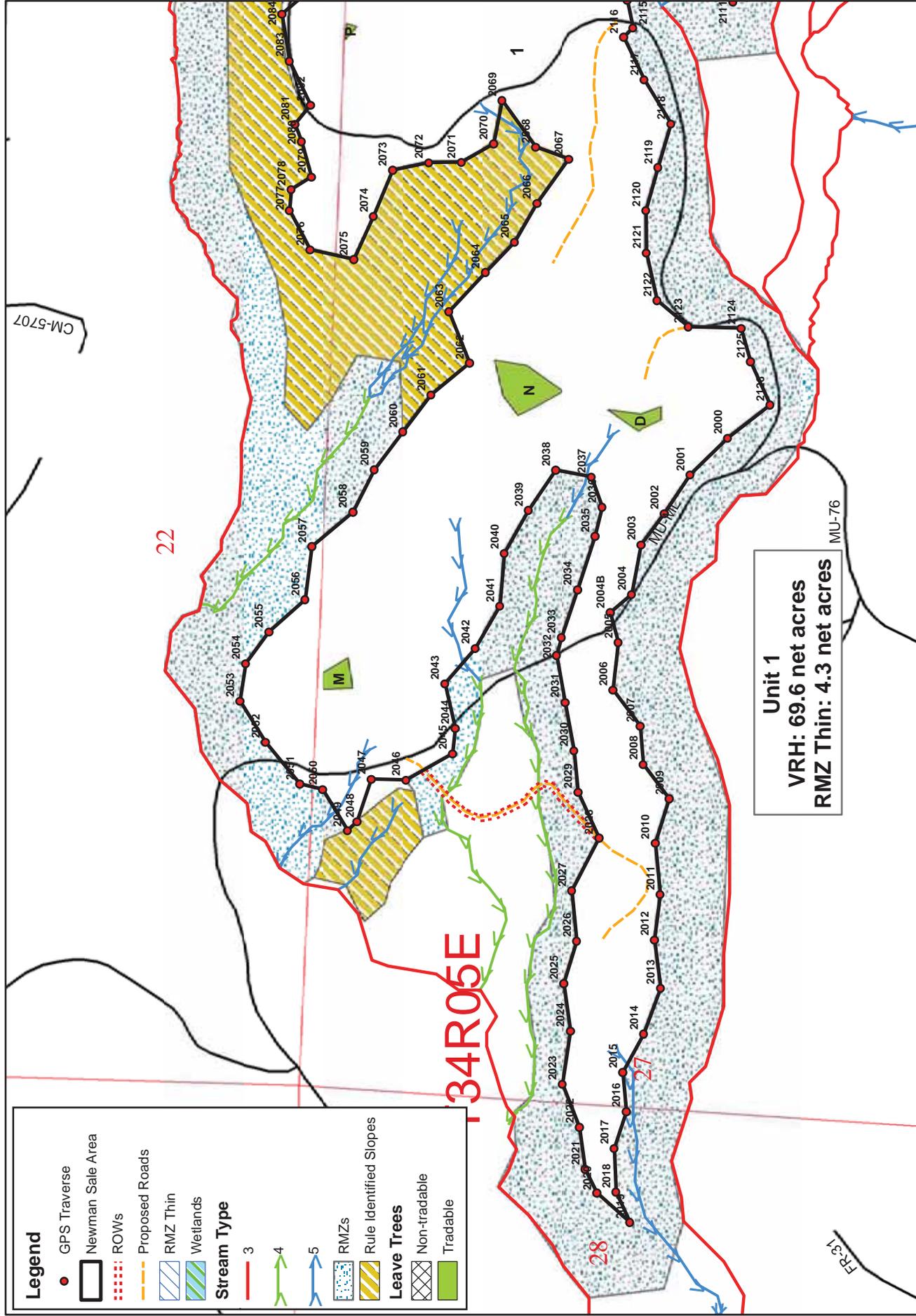
# Newman Timber Sale



# Newman Timber Sale



# Newman Timber Sale



**Legend**

- GPS Traverse
- ▭ Newman Sale Area
- ⋯ ROWs
- Proposed Roads
- ▨ RMZ Thin
- ▨ Wetlands
- Stream Type**
  - 3
  - 4
  - 5
- ▨ RMZs
- ▨ Rule Identified Slopes
- Leave Trees**
  - ▨ Non-tradable
  - ▨ Tradable

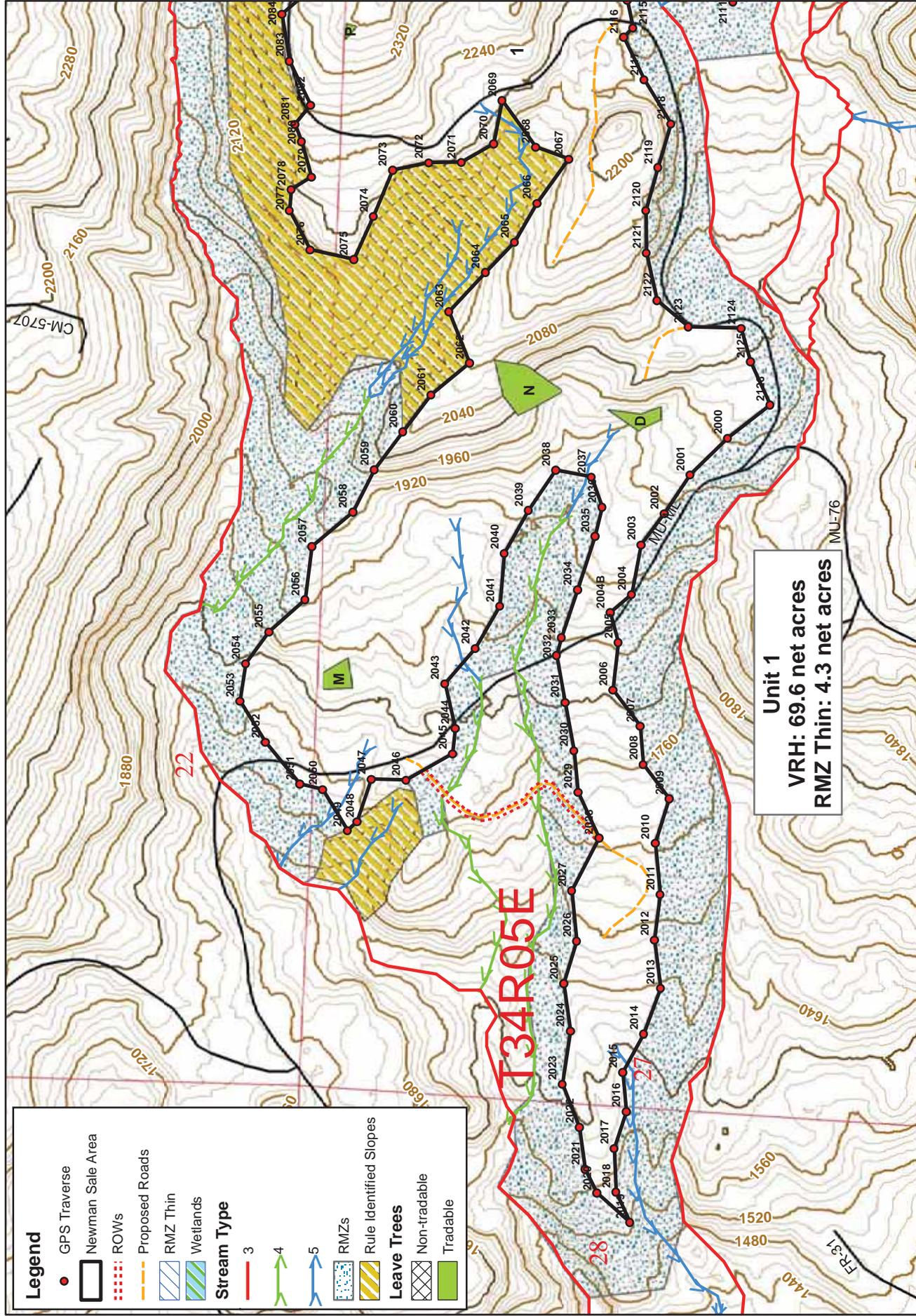
**Unit 1**  
**VRH: 69.6 net acres**  
**RMZ Thin: 4.3 net acres**



4/13/2015

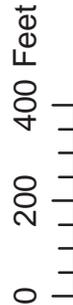
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# Newman Timber Sale



**Unit 1**  
**VRH: 69.6 net acres**  
**RMZ Thin: 4.3 net acres**

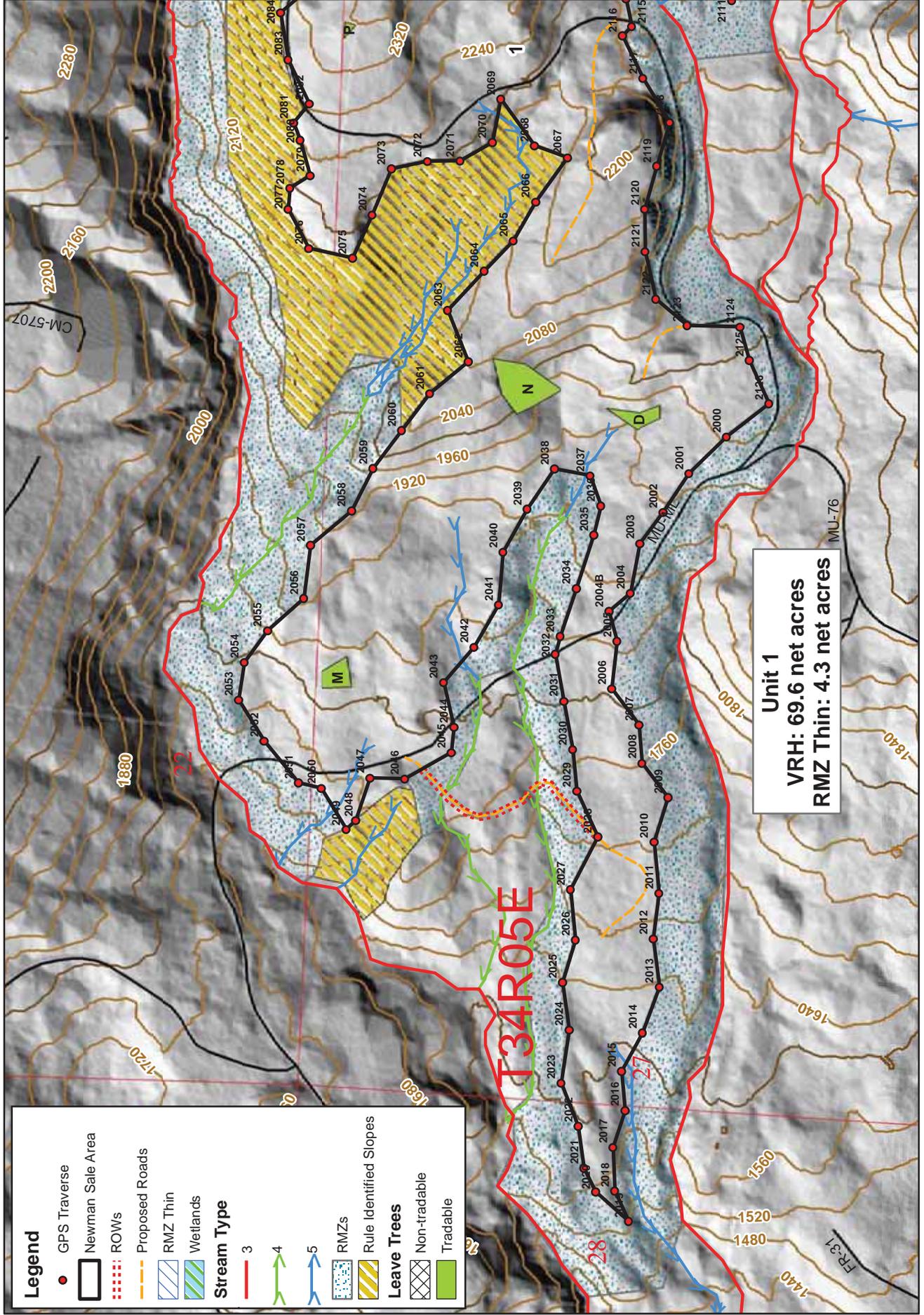
Legend	
●	GPS Traverse
□	Newman Sale Area
⋯	ROWs
—	Proposed Roads
▨	RMZ Thin
▨	Wetlands
Stream Type	
—	3
—	4
—	5
▨	RMZs
▨	Rule Identified Slopes
Leave Trees	
▨	Non-tradable
▨	Tradable



4/13/2015

1:4,800

# Newman Timber Sale



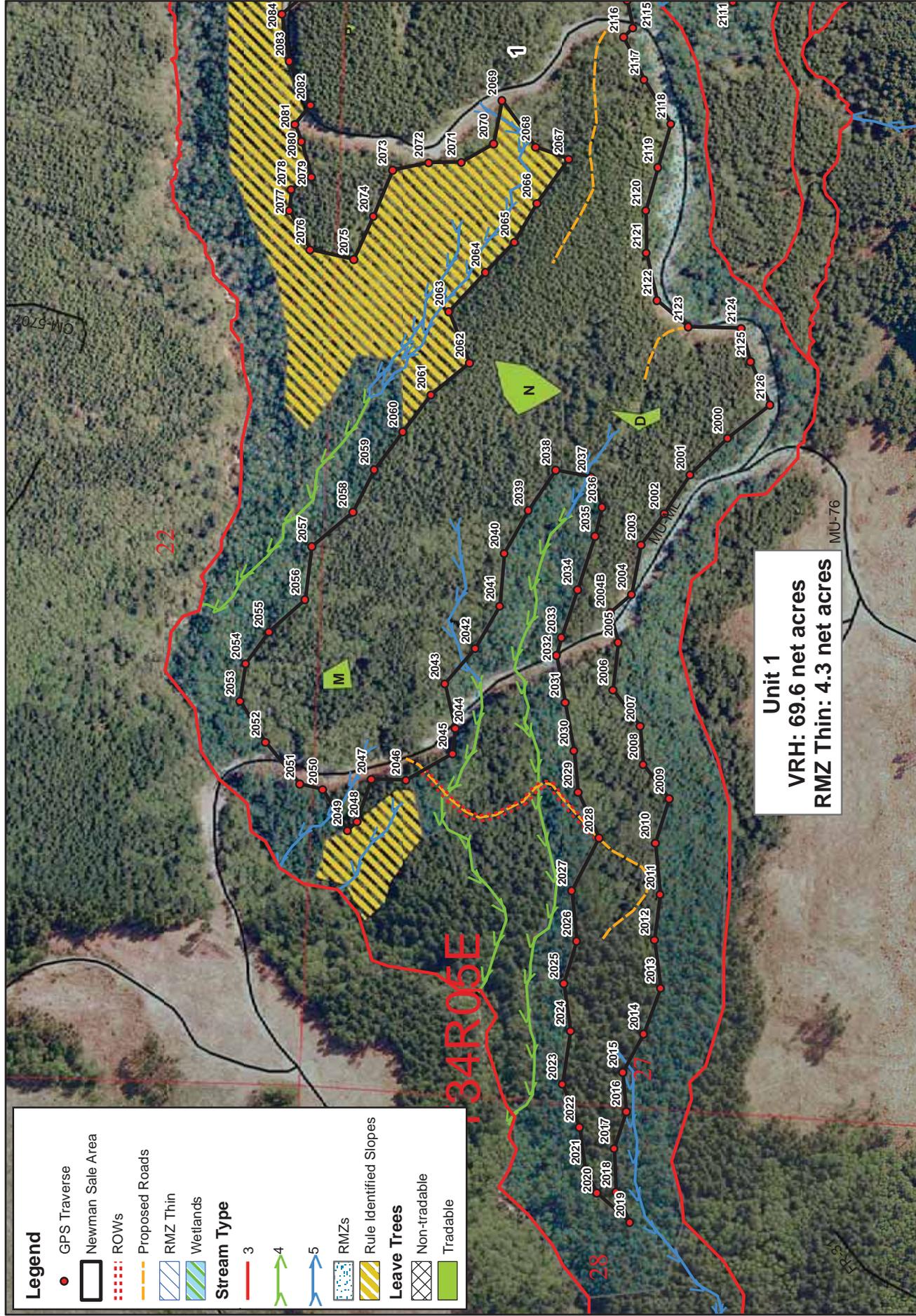
Legend	
●	GPS Traverse
□	Newman Sale Area
⋯	ROWs
—	Proposed Roads
▨	RMZ Thin
▨	Wetlands
Stream Type	
—	3
—	4
—	5
▨	RMZs
▨	Rule Identified Slopes
Leave Trees	
▨	Non-tradable
▨	Tradable



4/13/2015

1:4,800

# Newman Timber Sale



**Legend**

- GPS Traverse
- Newman Sale Area
- ⋯ ROWs
- Proposed Roads
- ▨ RMZ Thin
- ▨ Wetlands

**Stream Type**

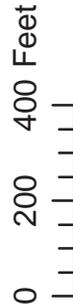
- 3
- 4
- 5

**RMZs**

- ▨ Rule Identified Slopes

**Leave Trees**

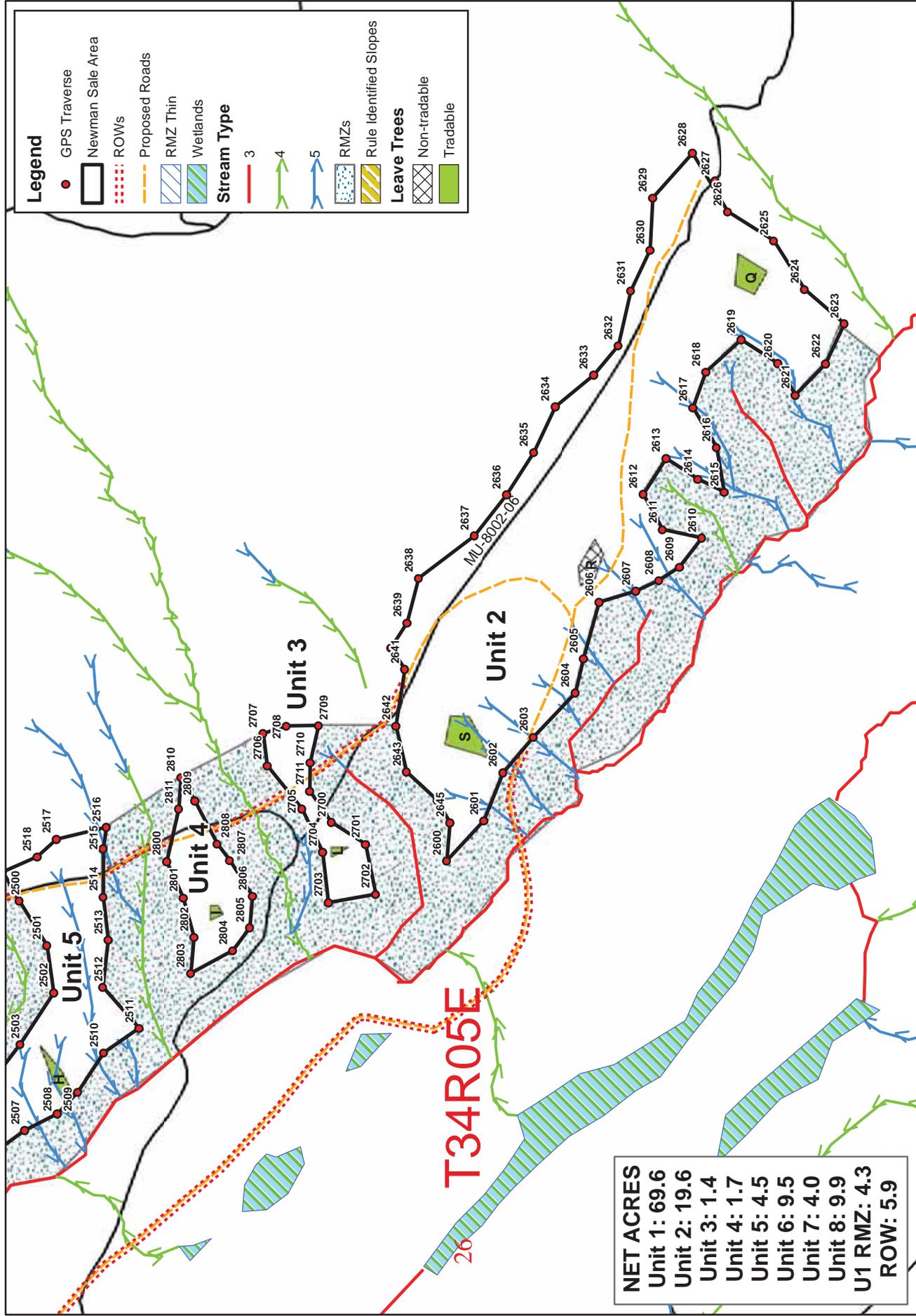
- ▨ Non-tradable
- ▨ Tradable



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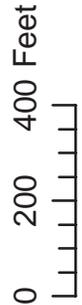
# Newman Timber Sale



**Legend**

- GPS Traverse
- Newman Sale Area
- ROWs
- Proposed Roads
- RMZ Thin
- Wetlands
- Stream Type
- 3
- 4
- 5
- RMZs
- Rule Identified Slopes
- Leave Trees
- Non-tradable
- Tradable

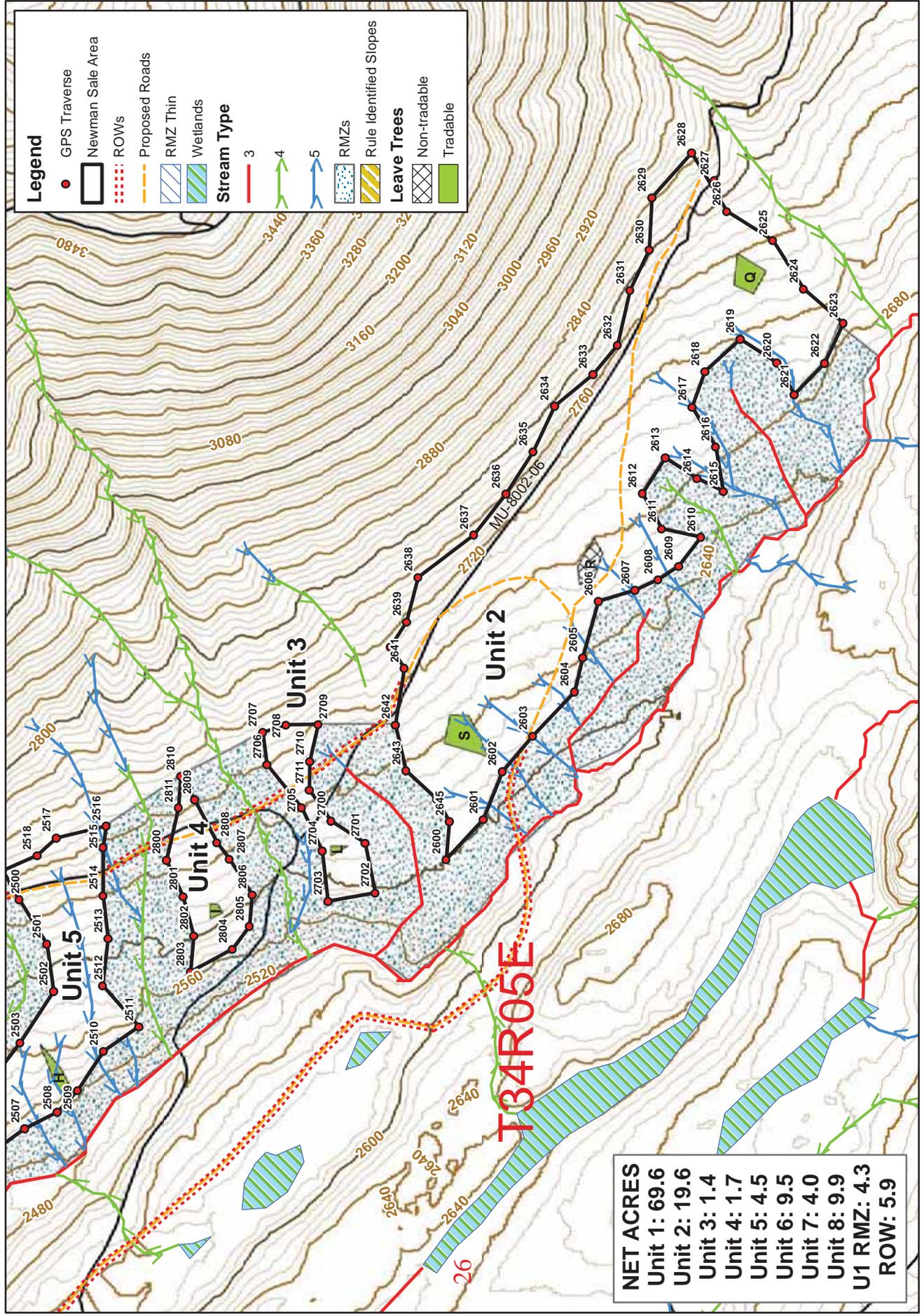
<b>NET ACRES</b>
Unit 1: 69.6
Unit 2: 19.6
Unit 3: 1.4
Unit 4: 1.7
Unit 5: 4.5
Unit 6: 9.5
Unit 7: 4.0
Unit 8: 9.9
U1 RMZ: 4.3
ROW: 5.9



4/13/2015

1:4,800

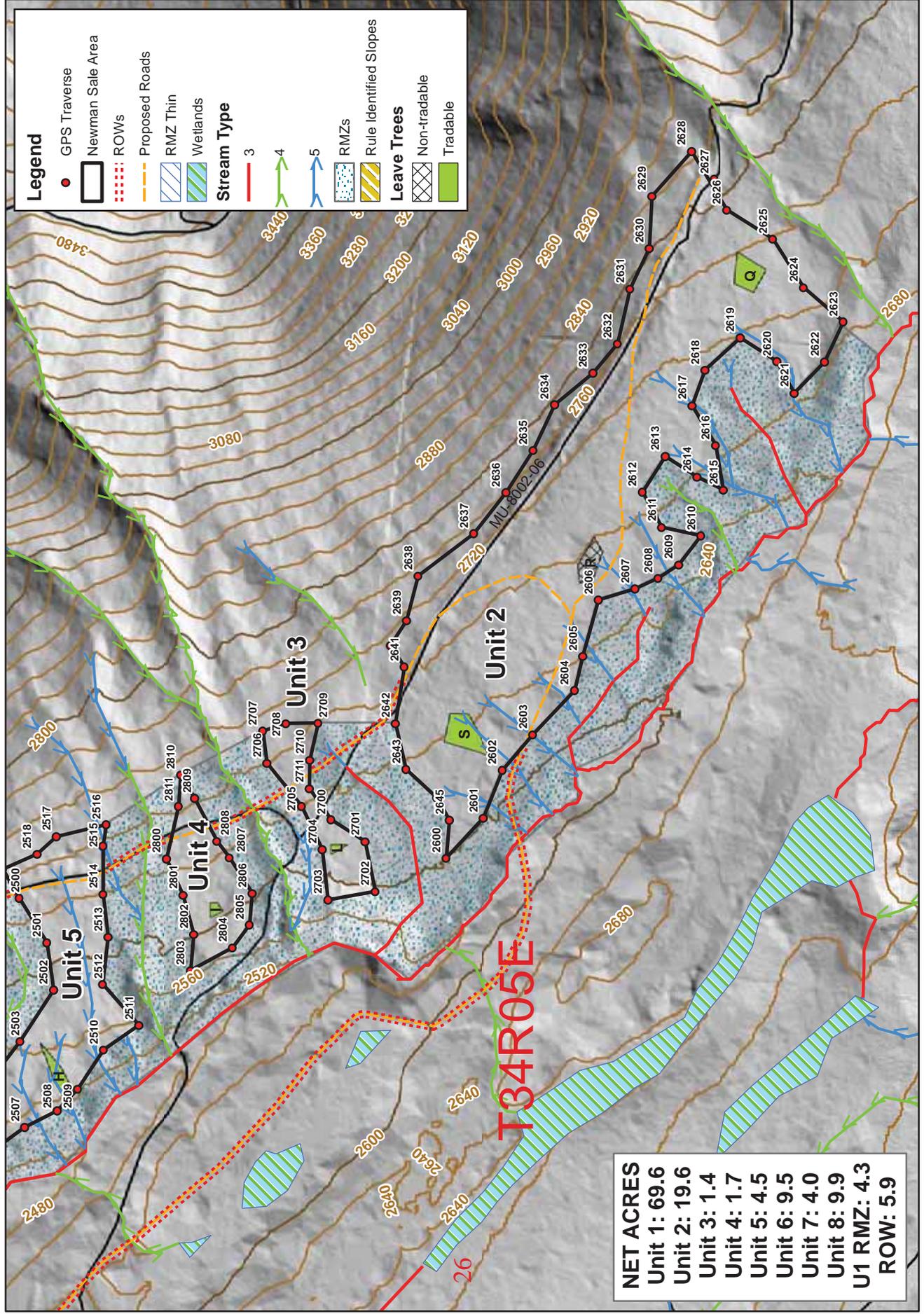
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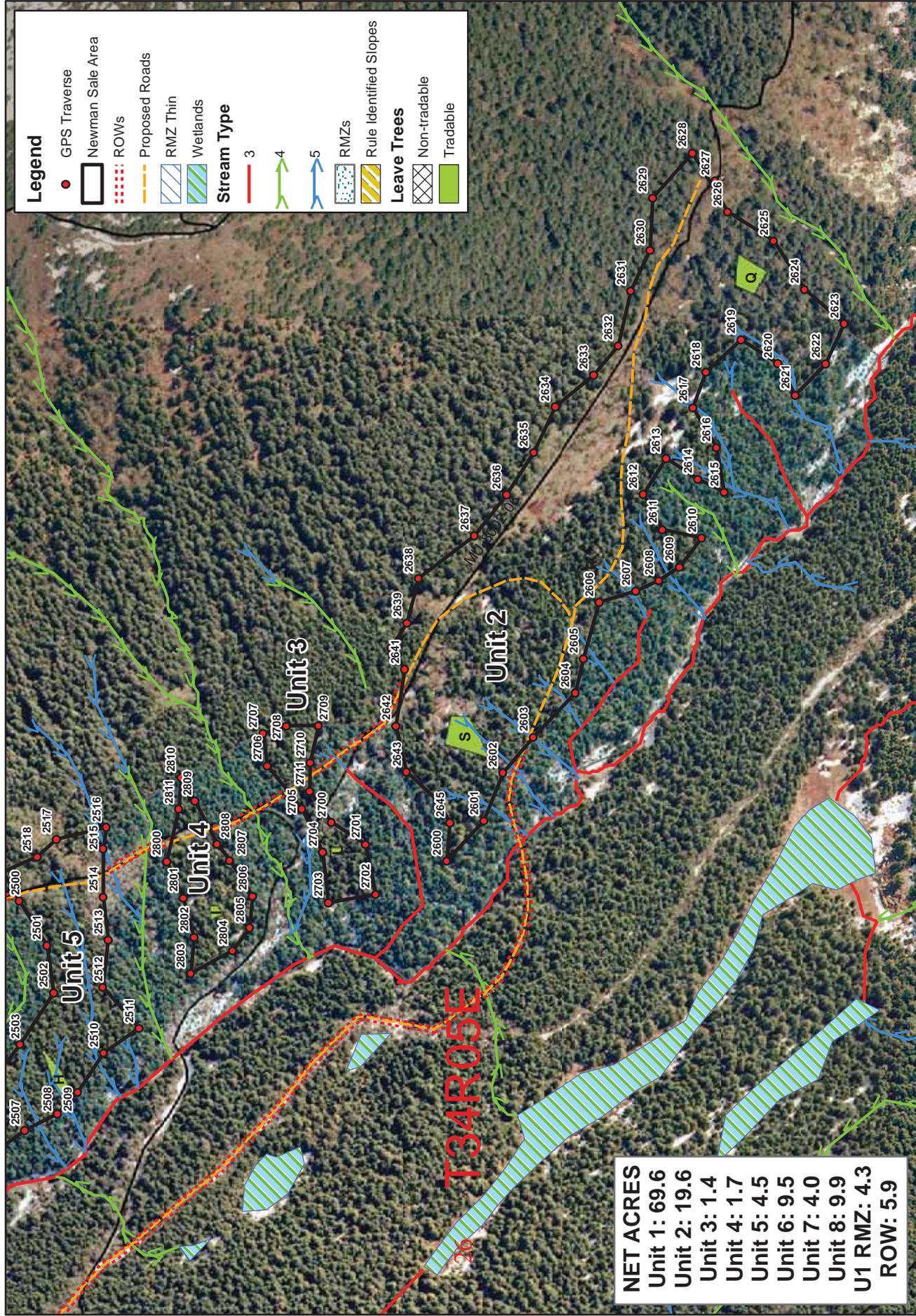
# Newman Timber Sale



4/13/2015

1:4,800

# Newman Timber Sale



**Legend**

- GPS Traverse
- Newman Sale Area
- ⋯ ROWs
- - - Proposed Roads
- ▨ RMZ Thin
- ▨ Wetlands

**Stream Type**

- 3
- 4
- 5

**RMZs**

- ▨ Rule Identified Slopes
- ▨ Leave Trees
- ▨ Non-tradable
- ▨ Tradable

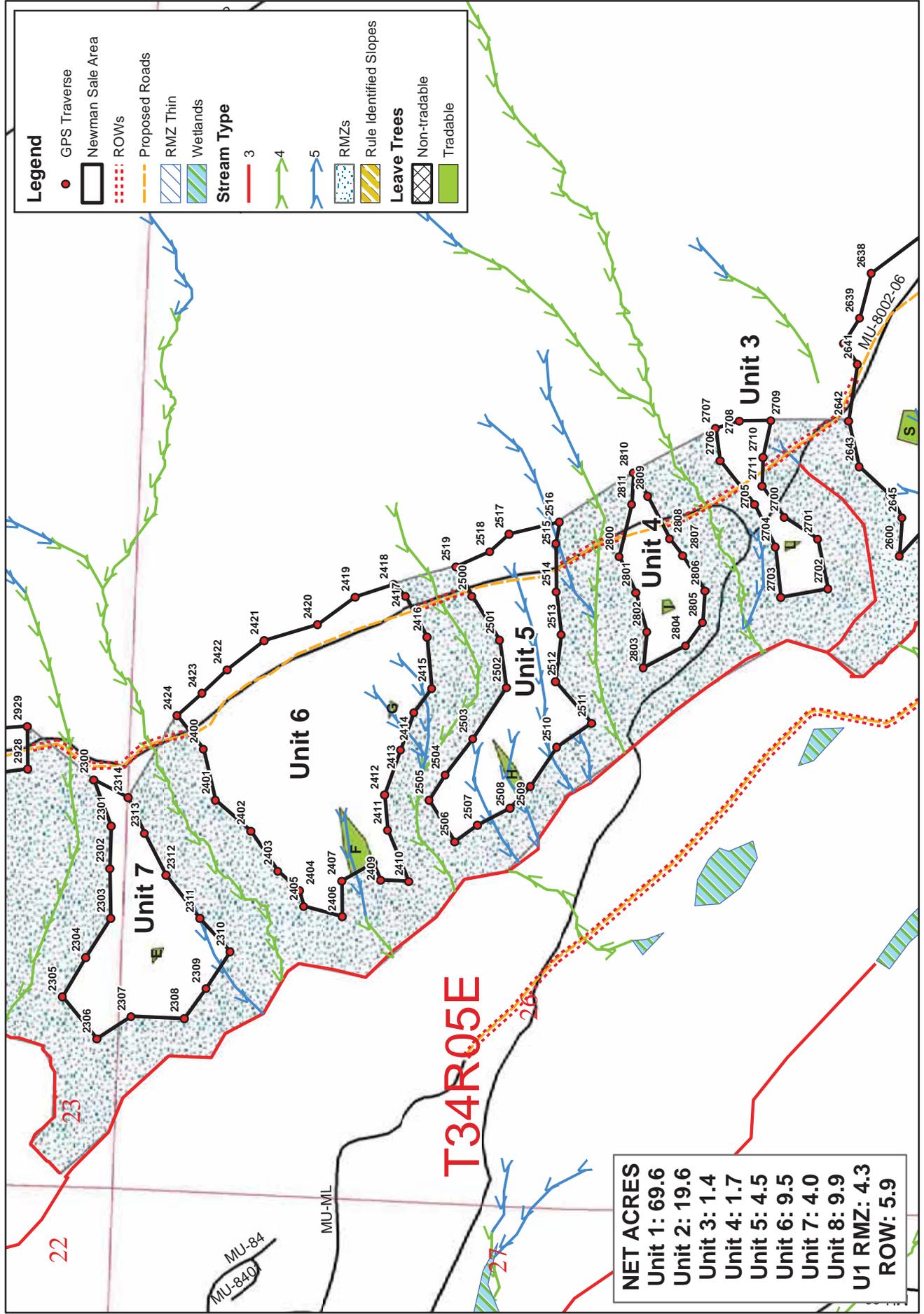
<b>NET ACRES</b>
Unit 1: 69.6
Unit 2: 19.6
Unit 3: 1.4
Unit 4: 1.7
Unit 5: 4.5
Unit 6: 9.5
Unit 7: 4.0
Unit 8: 9.9
U1 RMZ: 4.3
ROW: 5.9



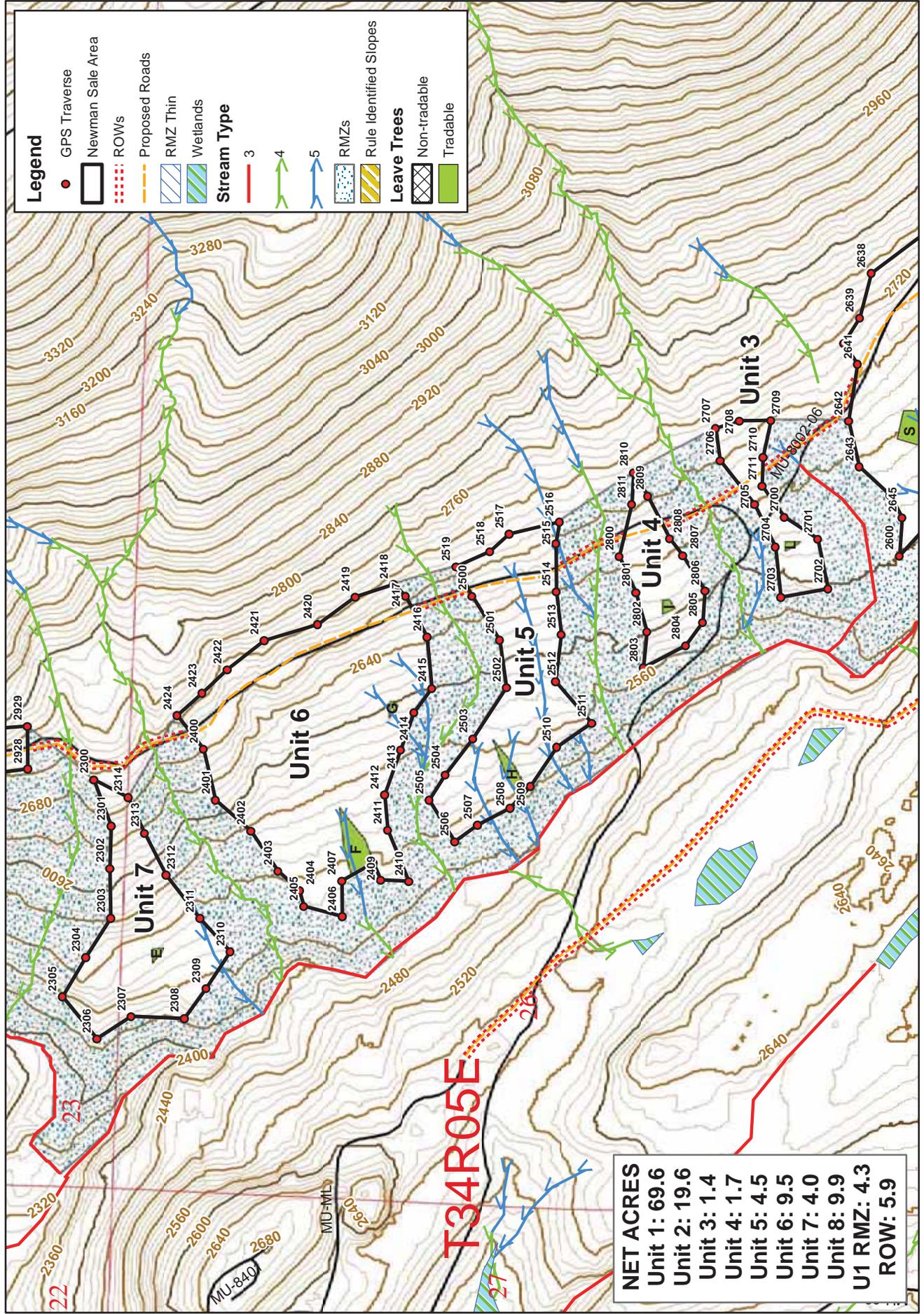
4/13/2015

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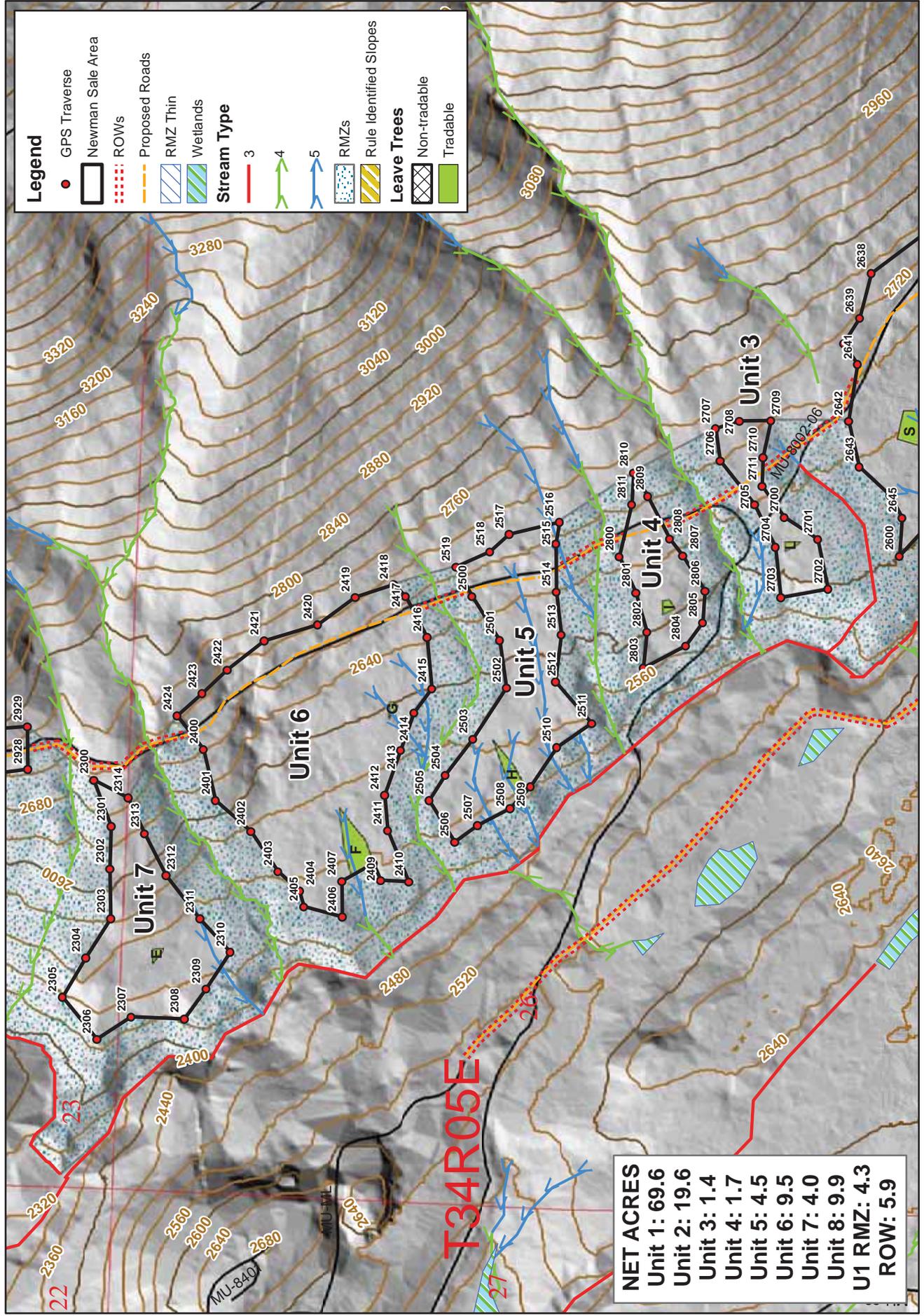
# Newman Timber Sale



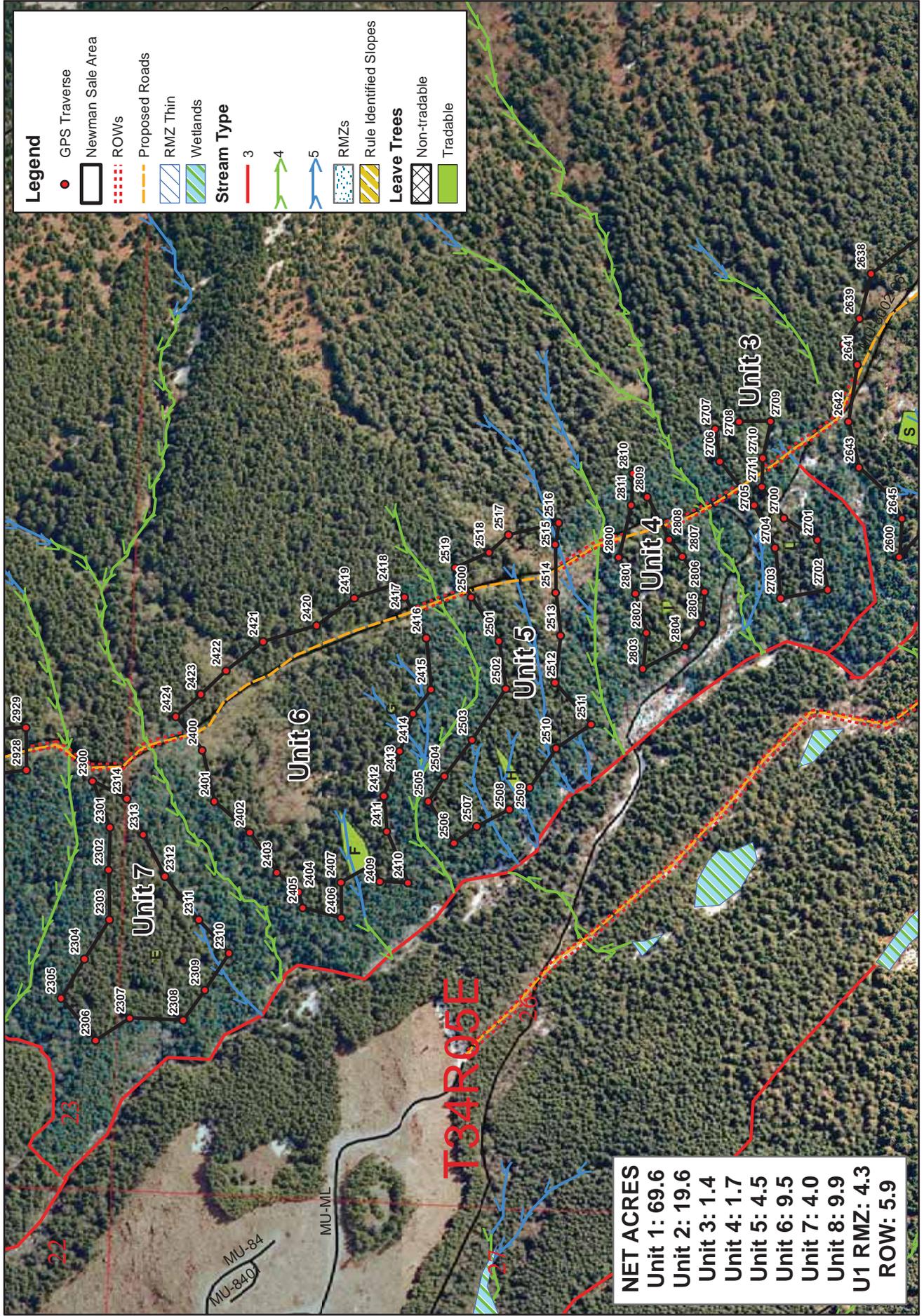
# Newman Timber Sale



# Newman Timber Sale



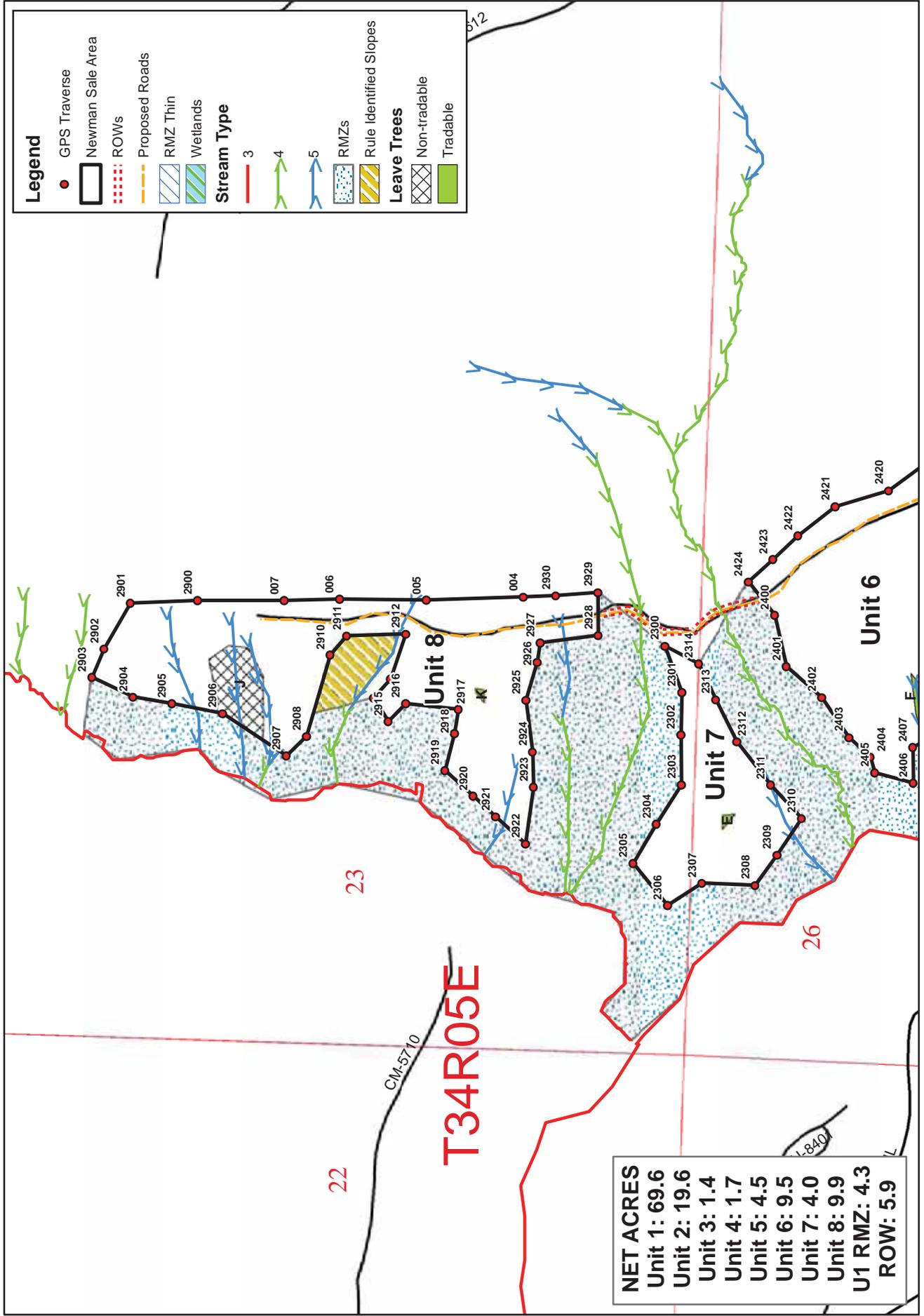
# Newman Timber Sale



4/13/2015

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# Newman Timber Sale



- Legend**
- GPS Traverse
  - Newman Sale Area
  - ⋯ ROWs
  - Proposed Roads
  - ▨ RMZ Thin
  - ▨ Wetlands
  - Stream Type**
  - 3
  - 4
  - 5
  - ▨ RMZs
  - ▨ Rule Identified Slopes
  - Leave Trees**
  - ▨ Non-tradable
  - ▨ Tradable

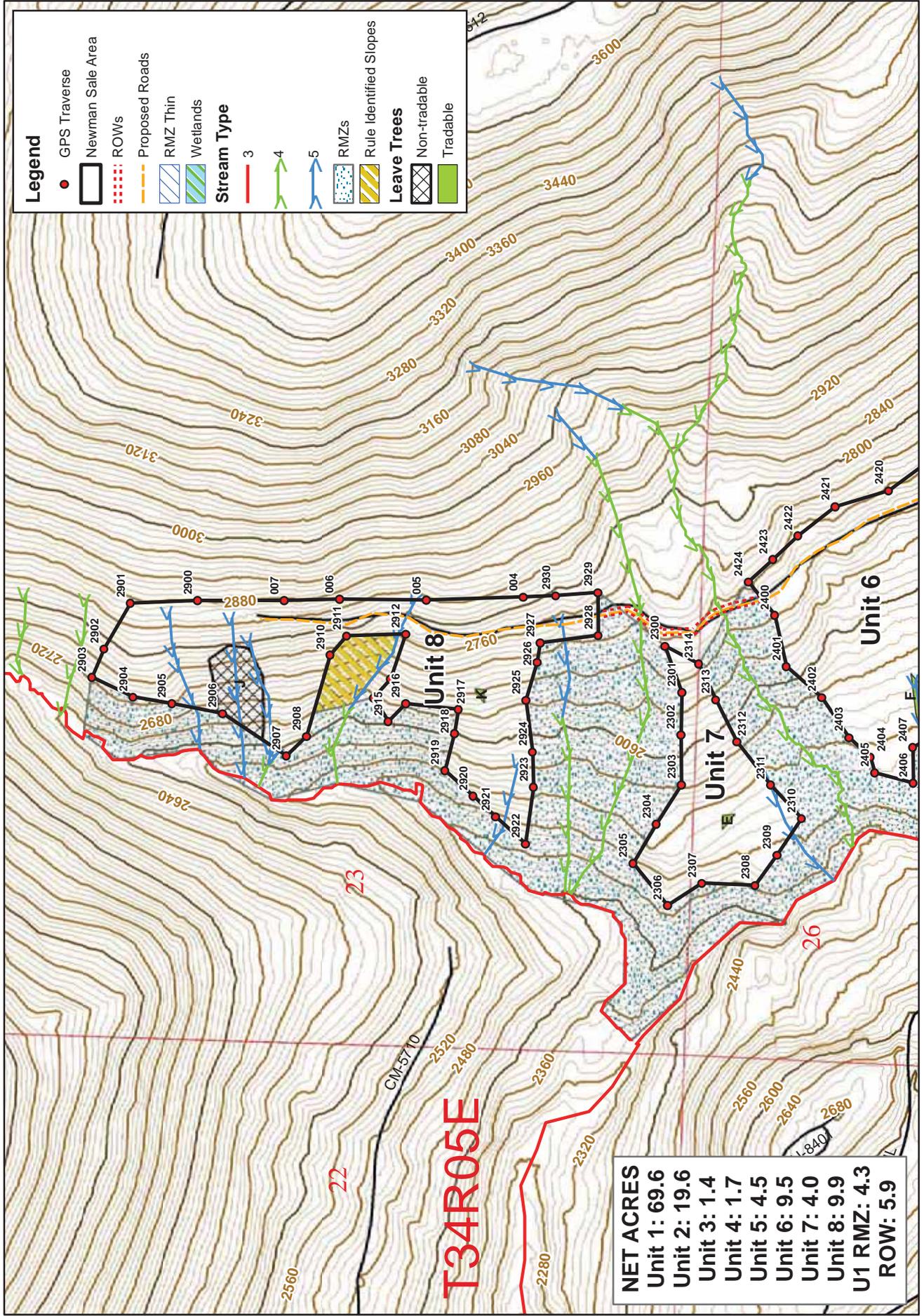
<b>NET ACRES</b>
Unit 1: 69.6
Unit 2: 19.6
Unit 3: 1.4
Unit 4: 1.7
Unit 5: 4.5
Unit 6: 9.5
Unit 7: 4.0
Unit 8: 9.9
U1 RMZ: 4.3
ROW: 5.9



4/13/2015

1:4,800

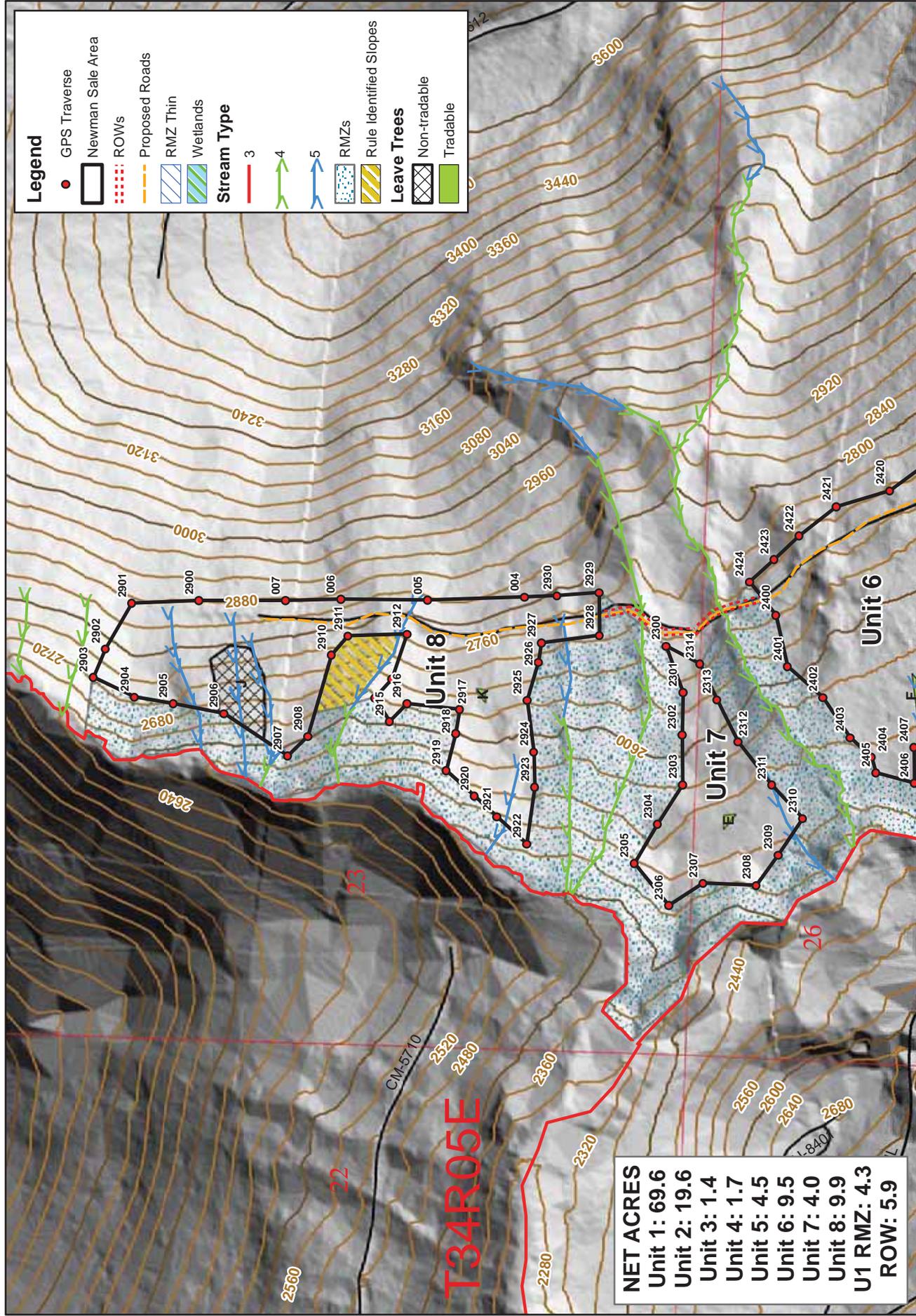
# Newman Timber Sale



4/13/2015

1:4,800

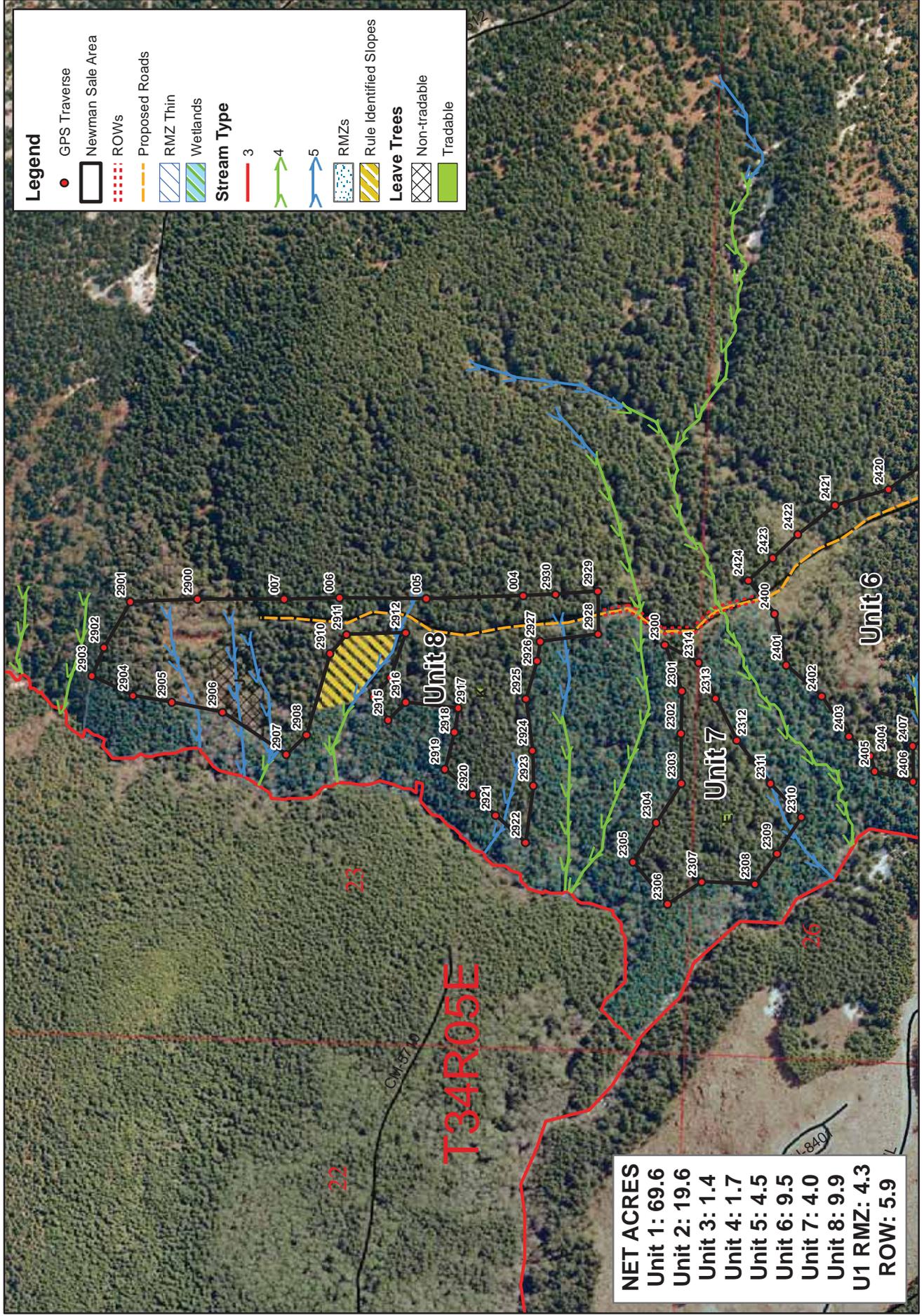
# Newman Timber Sale



4/13/2015

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# Newman Timber Sale



## Cruise Narrative

<b>Sale Name:</b> Newman	<b>Region:</b> Northwest
<b>Agree. #:</b> 30-092229	<b>District:</b> Clear Lake
<b>Lead cruiser:</b> Matt Llobet	<b>Completion date:</b> 7-16-15
<b>Other cruisers on sale:</b> N/A	

### Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	69.6	Yes	
2	50.6	NO	Combined units 2-8
ROW	5.9	Yes	
RMZ	4.3	Yes	
Total	130.4	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.	62.5 BAF 40.0 BAF	4.5'	225' x 225'	1:1	57
2	V.P.	62.5 BAF 40.0 BAF	4.5'	225' x 225'	1:1	38
ROW	V.P.	33.61 BAF	4.5'	1plot/ac	Cruise All	5
RMZ	V.P.	20.0 BAF	4.5'	1plot/ac	Cruise All	4

### Sale/Cruise Description:

<b>Minor species cruise intensity:</b>	Used a 40 prism to capture minors species in unit 1,2					
<b>Minimum cruise spec:</b>	Minimum DBH 8 inches, 10 Net Board feet, Minimum Top Diameter 5 inches or 40% of 16-foot form point					
<b>Avg ring count by sp:</b>	<b>DF =</b>		<b>WH =</b>	8	<b>SS =</b>	
<b>Leave/take tree description:</b>	<b>Unit 1-2 Variable Retention Harvest-</b> Harvest all timber bound by white timber sale boundary tags, roads, and young stands, except trees marked with blue paint or bound out with yellow leave tree tags. <b>ROW-</b> Harvest all timber bound by orange right of way boundary tags.					

	<b>RMZ Thinning-</b> See schedule B
<b>Other conditions</b>	

**Field observations:**

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. Newman timber sale was cruised using the variable plot sample method. Newman timber sale is 130 acres. Newman timber sale is 65% ground base and 35% cable logging. The species composition of the sale is: Western Hemlock, at 66 %, Silver Fir, at 13%.

**General Location-** Up Mundt Creek Mainline (off Old Day Creek Road Rd)

**Harvest Method-** Cable/Ground Base

**Timber Quality-** Good

**Cedar Poles-** 84 MBF of Cedar Poles were cruised in Unit 1. (Focusing primarily on "Naturals")

**Stand Health-** Overall good health

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

**Prepared by:** Matt Llobet

**Title:** Northwest  
**Region:** Timber  
**Cruiser:**

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T34N R05E S26 Ty00U2 THRU T34N R05E S27 Ty0ROW				Project: <b>NEWMANTS</b>										Page <b>1</b>								
				Acres <b>130.40</b>										Date <b>7/17/2015</b>								
														Time <b>7:03:10AM</b>								
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						
SF	D	2S		57	6.4	3,101	2,901	378				73	27				100	39	14	274	1.73	10.6
SF	D	3S		33	3.4	1,719	1,661	217	30	70						3	97	38	8	90	0.77	18.5
SF	D	4S		5	5.0	311	295	38	96	4				11	34	19	36	27	5	29	0.34	10.3
SF	D	PU		5		208	208	27	5	4		90		100				13	11	79	1.16	2.6
<b>SF Totals</b>				13	5.1	5,339	5,066	661	16	23	42	19		5	2	2	91	34	9	121	0.98	42.0
WH	D	2S		25	4.7	6,559	6,250	815				86	14			100	39	13	239	1.53	26.1	
WH	D	3S		50	2.2	12,781	12,498	1,630	30	70					1	1	99	37	8	90	0.66	138.8
WH	D	4S		21	2.0	5,458	5,346	697	100					11	35	18	36	29	5	31	0.30	172.8
WH	D	PU		4		838	838	109	51	15	16	18		63	25		13	16	6	25	0.40	33.8
<b>WH Totals</b>				66	2.7	25,636	24,932	3,251	38	36	22	4		4	9	4	83	32	7	67	0.57	371.6
RC	D	3S		64	5.8	1,221	1,150	150	23	41	36				1	3	97	36	9	108	1.06	10.7
RC	D	4S		35	9.0	686	625	81	100					9	57	5	29	26	5	26	0.37	23.8
RC	D	PU		1		2	2	0	100					100				11	5	10	0.20	.2
<b>RC Totals</b>				5	7.0	1,910	1,777	232	50	27	23			3	21	3	73	29	6	51	0.63	34.7
RC	P	D	3S	83	1.7	548	539	70	9	81	10					100	36	9	109	0.94	5.0	
RC	P	D	4S	17		108	108	14	100						64	23	12	28	5	29	0.32	3.7
<b>RC Totals</b>				2	1.5	656	647	84	24	68	8				11	4	85	33	7	74	0.71	8.7
RA	D	2S		19	11.2	358	318	41				42	58	23	42		35	29	14	205	1.72	1.6
RA	D	3S		11	16.6	226	188	25		100					100			30	11	106	1.07	1.8
RA	D	4S		48	9.1	876	796	104	61	39				3	55	3	39	32	6	43	0.48	18.6
RA	D	PU		22		349	349	45	80	3	18			57	43			18	5	25	0.34	14.1
<b>RA Totals</b>				4	8.7	1,809	1,652	215	46	31	12	11		18	55	2	26	26	6	46	0.53	36.1
DF	D	2S		74	3.8	2,636	2,536	331				58	42			100	40	15	333	1.84	7.6	
DF	D	3S		17	1.7	569	560	73	11	89						100	37	9	98	0.75	5.7	
DF	D	4S		3	13.0	142	124	16	52	48				11	86	3		23	6	27	0.42	4.7
DF	D	PU		6		180	180	24	5			95		100			12	13	96	1.88	1.9	
<b>DF Totals</b>				9	3.6	3,528	3,400	443	4	16	43	37		6	3	0	91	32	11	171	1.25	19.9
CW	D	2S		85		69	69	9				100				100	30	18	400	2.45	.2	
CW	D	4S		15		12	12	2		100						100	34	8	70	1.06	.2	
<b>CW Totals</b>				0		81	81	11		15		85			85	15		32	13	235	1.71	.3
<b>Totals</b>					3.6	38,958	37,555	4,897	33	32	26	9		5	10	3	82	31	7	73	0.64	513.3

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT NEWMANT							DATE	7/17/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
34N	05E	26	NEWMANTS	00U2	THR	130.40	104	587	S	W	
34N	05E	27	NEWMANTS	0ROW							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			104	587	5.6						
CRUISE			59	325	5.5	40,931		.8			
DBH COUNT											
REFOREST											
COUNT			45	262	5.8						
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WHEMLOCK	195	229.1	12.9	63	57.8	207.5	25,636	24,932	6,706	6,706	
R ALDER	33	24.4	12.2	49	5.6	19.7	1,809	1,652	506	506	
PS FIR	38	20.8	18.3	75	8.9	37.9	5,339	5,066	1,389	1,389	
WR CEDAR	35	27.5	13.0	46	7.1	25.5	1,910	1,777	633	632	
WR CEDAR-P	11	4.7	15.8	66	1.6	6.4	656	647	201	201	
DOUG FIR	12	7.3	22.2	93	4.2	19.8	3,528	3,400	806	806	
COTWOOD	1	.2	25.0	66	0.1	.6	81	81	19	19	
<b>TOTAL</b>	<b>325</b>	<b>313.9</b>	<b>13.6</b>	<b>62</b>	<b>86.0</b>	<b>317.2</b>	<b>38,958</b>	<b>37,555</b>	<b>10,258</b>	<b>10,258</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		75.2	5.4	157	166	175					
R ALDER		124.2	21.6	77	98	119					
PS FIR		58.4	9.5	284	313	343					
WR CEDAR		83.7	14.1	96	111	127					
WR CEDAR-P		33.6	10.6	133	149	165					
DOUG FIR		58.2	17.5	430	521	612					
COTWOOD											
<b>TOTAL</b>		<b>88.8</b>	<b>4.9</b>	<b>175</b>	<b>184</b>	<b>193</b>	<b>315</b>	<b>161</b>	<b>79</b>		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		82.3	8.1	211	229	248					
R ALDER		280.6	27.5	18	24	31					
PS FIR		229.0	22.4	16	21	25					
WR CEDAR		186.6	18.3	22	27	32					
WR CEDAR-P		285.9	28.0	3	5	6					
DOUG FIR		332.9	32.6	5	7	10					
COTWOOD		1019.8	99.9	0	0	0					
<b>TOTAL</b>		<b>53.3</b>	<b>5.2</b>	<b>297</b>	<b>314</b>	<b>330</b>	<b>113</b>	<b>58</b>	<b>28</b>		
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		71.1	7.0	193	207	222					
R ALDER		240.0	23.5	15	20	24					
PS FIR		224.1	22.0	30	38	46					
WR CEDAR		174.1	17.1	21	25	30					
WR CEDAR-P		284.2	27.8	5	6	8					
DOUG FIR		324.5	31.8	13	20	26					
COTWOOD		1019.8	99.9	0	1	1					
<b>TOTAL</b>		<b>40.5</b>	<b>4.0</b>	<b>305</b>	<b>317</b>	<b>330</b>	<b>65</b>	<b>33</b>	<b>16</b>		

**PROJECT STATISTICS**  
**PROJECT NEWMANT**

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
34N	05E	26	NEWMANTS	00U2	THR	130.40	104	587	S	W
34N	05E	27	NEWMANTS	0ROW						

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		72.7	7.1	23,156	24,932	26,709			
R ALDER		241.5	23.7	1,261	1,652	2,043			
PS FIR		230.2	22.6	3,924	5,066	6,208			
WR CEDAR		184.0	18.0	1,457	1,777	2,097			
WR CEDAR-P		289.5	28.4	463	647	830			
DOUG FIR		334.9	32.8	2,285	3,400	4,516			
COTWOOD		1019.8	99.9	0	81	161			
<b>TOTAL</b>		<b>46.3</b>	<b>4.5</b>	<b>35,849</b>	<b>37,555</b>	<b>39,260</b>	<b>86</b>	<b>44</b>	<b>21</b>

CL	68.1	COEFF		V BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK				112	120	129			
R ALDER		157.6	15.4	64	84	104			
PS FIR		167.8	16.4	104	134	164			
WR CEDAR		117.1	11.5	57	70	82			
WR CEDAR-P		249.0	24.4	73	102	130			
DOUG FIR		122.4	12.0	116	172	229			
COTWOOD		1019.8	99.9	0	138	276			
<b>TOTAL</b>		<b>40.2</b>	<b>3.9</b>	<b>113</b>	<b>118</b>	<b>124</b>	<b>65</b>	<b>33</b>	<b>16</b>

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1												
		Project: NEWMANTS								Date 7/17/2015												
										Time 7:03:10AM												
T34N R05E S26 T00U2										T34N R05E S26 T00U2												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
34N	05E	26	NEWMANTS	00U2	50.60	38	103	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		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
WH	D	2S		29	4.7	7,176	6,839			94	6				100	39	13	233	1.53	29.4		
WH	D	3S		46	2.7	10,934	10,635		25	75				2	98	37	8	95	0.72	112.5		
WH	D	4S		20	3.1	4,624	4,479		100			8	40	24	28	29	5	31	0.30	143.6		
WH	D	PU		5		1,108	1,108		56	28	12	32	29		72	28			0.64	23.7		
<b>WH</b>	<b>Totals</b>			60	3.3	23,842	23,062		1,167	32	35	29	3	5	9	5	81			309.2		
SF	D	2S		57	6.4	7,783	7,282				74	26			100	39	14	274	1.72	26.6		
SF	D	3S		33	3.4	4,282	4,138		209	31	69				3	97	38	8	89	0.77	46.5	
SF	D	4S		6	4.9	747	710		36	95	5		12	35	15	39	27	5	28	0.33	25.3	
SF	D	PU		4		503	503		25		4	96	100			12	16	138	2.10	3.7		
<b>SF</b>	<b>Totals</b>			33	5.1	13,316	12,634		639	15	23	43	19	5	2	2	92	34	9	124	0.98	102.0
RC	D	3S		24	4.5	188	180		9			100			100	36	13	210	2.92	.9		
RC	D	4S		76	5.1	574	544		28	100					100	25	5	26	0.41	20.8		
<b>RC</b>	<b>Totals</b>			2	5.0	762	724		37	75	25			75	25	25	5	33	0.55	21.6		
DF	D	2S		53	2.0	1,017	997		50			100			100	40	13	235	1.39	4.2		
DF	D	3S		39		729	729		37	19	81				100	37	8	87	0.68	8.3		
DF	D	4S		6		123	123		6	100				100		28	5	30	0.29	4.1		
DF	D	PU		2		22	22		1	100			100			11	6	10	0.27	2.2		
<b>DF</b>	<b>Totals</b>			5	1.1	1,892	1,872		95	15	31	53		1	7	92	33	8	99	0.79	18.9	
RA	D	2S		31	6.7	156	146		7			100			100	30	12	140	1.28	1.0		
RA	D	3S		25	15.4	136	115		6		100			100		30	11	110	1.21	1.0		
RA	D	4S		41	9.8	212	191		10	84	16		27		37	29	6	31	0.52	6.2		
RA	D	PU		3		10	10		1	100			100			12	5	10	0.29	1.0		
<b>RA</b>	<b>Totals</b>			1	10.1	515	462		23	37	32	32		14	56	15	15	28	7	50	0.69	9.3
<b>Type Totals</b>					3.9	40,326	38,754		1,961	27	30	35	8	5	8	4	83	32	8	84	0.72	461.1

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
	Project: NEWMANTS										Date 7/17/2015										
											Time 7:03:10AM										
T34N R05E S27 T00U1										T34N R05E S27 T00U1											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
34N	05E	27	NEWMANTS	00U1	69.60	57	185	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	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
WH	D	2S		22	4.7	6,982	6,650			81	19				100	40	13	245	1.53	27.1	
WH	D	3S		53	1.9	15,739	15,432	1,074	32	68			1	0	99	37	8	89	0.64	174.3	
WH	D	4S		22	1.4	6,683	6,591	459	100			11	34	15	40	29	5	31	0.30	213.0	
WH	D	PU		3		714	714	50	81	19		57	16		28	15	5	16	0.28	45.9	
<b>WH</b>	<b>Totals</b>			73	2.4	30,118	29,387	2,045	41	36	18	4	4	8	4	84	31	7	64	0.54	460.4
RC	D	3S		71	6.1	2,095	1,968	137	23	45	32		1	3	96	36	9	107	1.00	18.5	
RC	D	4S		29	10.8	869	775	54	100			13	36	7	44	26	5	26	0.35	29.5	
<b>RC</b>	<b>Totals</b>			7	7.5	2,964	2,743	191	44	32	23		4	11	4	82	30	7	57	0.65	48.0
RC	P	D	3S	83	1.7	1,028	1,010	70	9	81	10				100	36	9	109	0.94	9.3	
RC	P	D	4S	17		202	202	14	100			64	23	12		28	5	29	0.32	7.0	
<b>RC</b>	<b>P Totals</b>			3	1.5	1,229	1,211	84	24	68	8		11	4	85	33	7	74	0.71	16.3	
DF	D	2S		81	4.0	4,147	3,980	277		49	51				100	40	15	363	1.97	11.0	
DF	D	3S		9	3.2	481	466	32		100					100	37	9	110	0.80	4.2	
DF	D	4S		3	20.3	170	135	9	19	81		19	81			19	7	25	0.52	5.5	
DF	D	PU		7		321	321	22			100	100				12	19	170	3.15	1.9	
<b>DF</b>	<b>Totals</b>			12	4.2	5,119	4,902	341	1	12	40	48	7	2	91	32	12	217	1.54	22.6	
RA	D	2S		23	12.1	557	490	34		29	71	28	29		43	29	15	227	1.88	2.2	
RA	D	3S		8	19.3	213	172	12		100					100	30	11	105	1.10	1.6	
RA	D	4S		46	8.8	1,042	951	66	41	59				50	50	34	7	53	0.55	17.8	
RA	D	PU		23		475	475	33	76	24		57	43			18	5	27	0.38	17.5	
<b>RA</b>	<b>Totals</b>			5	8.7	2,288	2,088	145	36	35	12	17	20	48	33	26	7	53	0.60	39.1	
CW	D	2S		85		129	129	9			100				100	30	18	400	2.45	.3	
CW	D	4S		15		23	23	2		100				100		34	8	70	1.06	.3	
<b>CW</b>	<b>Totals</b>			0		151	151	11		15	85		85	15		32	13	235	1.71	.6	
<b>Type Totals</b>					3.3	41,870	40,482	2,818	36	34	21	10	5	10	3	82	31	7	69	0.60	587.0





TC TSTATS		<b>STATISTICS</b>							PAGE	1	
		<b>PROJECT NEWMANT</b>							DATE	7/17/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
34N	05E	26	NEWMANTS	00U2	50.60	38	205	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		38	205	5.4							
CRUISE		20	103	5.2	13,584	.8					
DBH COUNT REFOREST COUNT		18	102	5.7							
BLANKS 100 %											
<b>STAND SUMMARY</b>											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WHEMLOCK	58	184.0	13.9	64	52.0	194.1	23,842	23,062	6,325	6,325	
PS FIR	33	49.2	18.7	78	21.7	93.8	13,316	12,634	3,461	3,460	
WR CEDAR	5	20.8	11.8	35	4.6	15.8	762	724	303	303	
DOUG FIR	3	8.3	17.0	79	3.2	13.2	1,892	1,872	486	486	
R ALDER	4	6.2	14.8	45	1.9	7.4	515	462	176	176	
<b>TOTAL</b>	<i>103</i>	<i>268.5</i>	<i>14.9</i>	<i>64</i>	<i>84.0</i>	<i>324.1</i>	<i>40,326</i>	<i>38,754</i>	<i>10,751</i>	<i>10,750</i>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	60.1	7.9		171	186	200					
PS FIR	53.0	9.2		291	321	350					
WR CEDAR	143.9	71.5		20	70	120					
DOUG FIR	42.6	29.5		179	253	328					
R ALDER	76.1	43.5		54	95	136					
<b>TOTAL</b>	<i>67.7</i>	<i>6.7</i>		<i>207</i>	<i>222</i>	<i>237</i>	<i>183</i>	<i>93</i>	<i>46</i>		
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	84.3	13.7		159	184	209					
PS FIR	126.1	20.4		39	49	59					
WR CEDAR	239.6	38.8		13	21	29					
DOUG FIR	352.0	57.0		4	8	13					
R ALDER	352.8	57.2		3	6	10					
<b>TOTAL</b>	<i>49.8</i>	<i>8.1</i>		<i>247</i>	<i>268</i>	<i>290</i>	<i>99</i>	<i>51</i>	<i>25</i>		
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	74.0	12.0		171	194	217					
PS FIR	117.8	19.1		76	94	112					
WR CEDAR	216.7	35.1		10	16	21					
DOUG FIR	352.0	57.0		6	13	21					
R ALDER	330.5	53.6		3	7	11					
<b>TOTAL</b>	<i>37.8</i>	<i>6.1</i>		<i>304</i>	<i>324</i>	<i>344</i>	<i>57</i>	<i>29</i>	<i>14</i>		
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	77.7	12.6		20,158	23,062	25,965					
PS FIR	120.9	19.6		10,159	12,634	15,109					
WR CEDAR	206.8	33.5		481	724	967					
DOUG FIR	352.0	57.0		804	1,872	2,939					
R ALDER	323.9	52.5		220	462	705					
<b>TOTAL</b>	<i>43.9</i>	<i>7.1</i>		<i>35,996</i>	<i>38,754</i>	<i>41,511</i>	<i>77</i>	<i>39</i>	<i>19</i>		

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	NEWMANT		DATE	7/17/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
34N	05E	26	NEWMANTS	00U2	50.60	38	205	S	W	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				104	119	134				
PS FIR	72.4	11.7		108	135	161				
WR CEDAR	122.6	19.9		30	46	61				
DOUG FIR	211.2	34.2		61	142	223				
R ALDER	182.2	29.5		30	63	96				
<b>TOTAL</b>	<b>189.8</b>	<b>30.8</b>		<b>111</b>	<b>120</b>	<b>128</b>	<b>1,439</b>	<b>734</b>	<b>360</b>	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				NEWMANT				DATE	7/17/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
34N	05E	27	NEWMANTS	00U1	69.60	57	345	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	57	345	6.1							
CRUISE	30	185	6.2	25,348			.7			
DBH COUNT										
REFOREST										
COUNT	27	160	5.9							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	125	288.7	12.4	63	68.8	242.3	30,118	29,387	7,814	7,814
WR CEDAR	28	35.4	13.5	50	9.6	35.1	2,964	2,743	935	934
WR CEDAR-P	11	8.7	15.8	66	3.0	11.9	1,229	1,211	376	376
DOUG FIR	7	7.2	25.9	106	5.2	26.3	5,119	4,902	1,117	1,117
R ALDER	13	23.8	13.1	51	6.2	22.5	2,288	2,088	621	621
COTWOOD	1	.3	25.0	66	0.2	1.1	151	151	35	35
<b>TOTAL</b>	<i>185</i>	<i>364.2</i>	<i>13.1</i>	<i>62</i>	<i>93.8</i>	<i>339.2</i>	<i>41,870</i>	<i>40,482</i>	<i>10,899</i>	<i>10,898</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	80.1	7.2	150	162	174					
WR CEDAR	77.0	14.8	104	122	140					
WR CEDAR-P	33.6	10.6	133	149	165					
DOUG FIR	33.6	13.7	618	716	814					
R ALDER	106.6	30.7	111	160	209					
COTWOOD										
<b>TOTAL</b>	<i>95.5</i>	<i>7.0</i>	<i>165</i>	<i>178</i>	<i>190</i>			<i>364</i>	<i>186</i>	<i>91</i>
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	69.4	9.2	262	289	315					
WR CEDAR	153.3	20.3	28	35	43					
WR CEDAR-P	201.4	26.7	6	9	11					
DOUG FIR	297.8	39.4	4	7	10					
R ALDER	232.0	30.7	16	24	31					
COTWOOD	755.0	99.9	0	0	1					
<b>TOTAL</b>	<i>48.0</i>	<i>6.4</i>	<i>341</i>	<i>364</i>	<i>387</i>			<i>92</i>	<i>47</i>	<i>23</i>
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	58.1	7.7	224	242	261					
WR CEDAR	146.2	19.4	28	35	42					
WR CEDAR-P	200.0	26.5	9	12	15					
DOUG FIR	297.5	39.4	16	26	37					
R ALDER	220.8	29.2	16	22	29					
COTWOOD	755.0	99.9	0	1	2					
<b>TOTAL</b>	<i>31.1</i>	<i>4.1</i>	<i>325</i>	<i>339</i>	<i>353</i>			<i>39</i>	<i>20</i>	<i>10</i>
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	58.0	7.7	27,130	29,387	31,645					
WR CEDAR	149.7	19.8	2,199	2,743	3,286					
WR CEDAR-P	204.2	27.0	884	1,211	1,539					
DOUG FIR	297.0	39.3	2,975	4,902	6,829					
R ALDER	221.0	29.2	1,477	2,088	2,698					

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT			NEWMAINT			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
34N	05E	27	NEWMANTS	00U1	69.60	57	345	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	
COTWOOD		755.0	99.9	0	151	302				
<b>TOTAL</b>		36.0	4.8	38,552	40,482	42,413	52	26	13	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				112	121	131				
WR CEDAR		86.9	11.5	63	78	94				
WR CEDAR-P		172.2	22.8	74	102	129				
DOUG FIR		81.6	10.8	113	186	260				
R ALDER		79.6	10.5	66	93	120				
COTWOOD		755.0	99.9	0	138	276				
<b>TOTAL</b>		173.2	22.9	114	119	125	1,198	611	300	

TC TSTATS		STATISTICS					PAGE	1			
		PROJECT					DATE	7/17/2015			
		NEWMAINT									
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
34N	05E	27	NEWMANTS	ORMZ	4.30	4	6	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		4	6	1.5							
CRUISE		4	6	1.5	246	2.4					
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	
WHEMLOCK	6	57.2	9.8	69	9.6	30.0	3,646	3,646	873	873	
<b>TOTAL</b>	<b>6</b>	<b>57.2</b>	<b>9.8</b>	<b>69</b>	<b>9.6</b>	<b>30.0</b>	<b>3,646</b>	<b>3,646</b>	<b>873</b>	<b>873</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK	32.4	14.4	57	67	76						
<b>TOTAL</b>	<b>32.4</b>	<b>14.4</b>	<b>57</b>	<b>67</b>	<b>76</b>	<b>50</b>	<b>25</b>	<b>12</b>			
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK	55.3	31.6	39	57	75						
<b>TOTAL</b>	<b>55.3</b>	<b>31.6</b>	<b>39</b>	<b>57</b>	<b>75</b>	<b>160</b>	<b>82</b>	<b>40</b>			
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK	66.7	38.1	19	30	41						
<b>TOTAL</b>	<b>66.7</b>	<b>38.1</b>	<b>19</b>	<b>30</b>	<b>41</b>	<b>232</b>	<b>118</b>	<b>58</b>			
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	84.5	48.3	1,886	3,646	5,406						
<b>TOTAL</b>	<b>84.5</b>	<b>48.3</b>	<b>1,886</b>	<b>3,646</b>	<b>5,406</b>	<b>373</b>	<b>190</b>	<b>93</b>			
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK	84.5	48.3	63	122	180						
<b>TOTAL</b>	<b>84.5</b>	<b>48.3</b>	<b>63</b>	<b>122</b>	<b>180</b>	<b>373</b>	<b>190</b>	<b>93</b>			

TC TSTATS		STATISTICS					PAGE	1		
		PROJECT NEWMANT					DATE	7/17/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
34N	05E	27	NEWMANTS	ORO	5.90	5	31	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		5	31	6.2						
CRUISE		5	31	6.2	1,753	1.8				
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
R ALDER	16	204.6	9.8	48	34.3	107.6	8,580	7,913	2,334	2,334
WHEMLOCK	6	37.5	14.0	59	10.8	40.3	4,174	3,938	1,152	1,152
PS FIR	5	38.6	12.6	45	9.5	33.6	3,799	3,613	1,017	1,017
WR CEDAR	2	11.0	15.0	53	3.5	13.4	712	712	358	358
DOUG FIR	2	5.3	21.5	78	2.9	13.4	1,351	1,272	458	458
<b>TOTAL</b>	<i>31</i>	<i>297.1</i>	<i>11.3</i>	<i>50</i>	<i>61.9</i>	<i>208.4</i>	<i>18,617</i>	<i>17,448</i>	<i>5,320</i>	<i>5,320</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	
R ALDER	78.5	20.3		39	49	59				
WHEMLOCK	103.5	46.1		91	168	246				
PS FIR	103.7	51.5		128	264	400				
WR CEDAR	10.9	10.2		58	65	72				
DOUG FIR	23.6	22.1		187	240	293				
<b>TOTAL</b>	<i>128.3</i>	<i>23.0</i>		<i>92</i>	<i>120</i>	<i>148</i>	<i>657</i>	<i>335</i>	<i>164</i>	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER	98.2	48.8		105	205	305				
WHEMLOCK	98.3	48.8		19	38	56				
PS FIR	128.7	64.0		14	39	63				
WR CEDAR	223.6	111.1			11	23				
DOUG FIR	223.6	111.1			5	11				
<b>TOTAL</b>	<i>55.9</i>	<i>27.8</i>		<i>215</i>	<i>297</i>	<i>380</i>	<i>154</i>	<i>79</i>	<i>39</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	
R ALDER	92.2	45.8		58	108	157				
WHEMLOCK	108.7	54.0		19	40	62				
PS FIR	70.7	35.1		22	34	45				
WR CEDAR	223.6	111.1			13	28				
DOUG FIR	223.6	111.1			13	28				
<b>TOTAL</b>	<i>43.3</i>	<i>21.5</i>		<i>164</i>	<i>208</i>	<i>253</i>	<i>93</i>	<i>47</i>	<i>23</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	
R ALDER	89.4	44.4		4,399	7,913	11,426				
WHEMLOCK	113.6	56.4		1,715	3,938	6,161				
PS FIR	96.7	48.1		1,877	3,613	5,350				
WR CEDAR	223.6	111.1			712	1,503				
DOUG FIR	223.6	111.1			1,272	2,685				
<b>TOTAL</b>	<i>35.7</i>	<i>17.7</i>		<i>14,352</i>	<i>17,448</i>	<i>20,544</i>	<i>63</i>	<i>32</i>	<i>16</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	
R ALDER	89.4	44.4		41	74	106				

TC TSTATS				<b>STATISTICS</b>				PAGE	2		
				PROJECT				NEWMANT			
								DATE	7/17/2015		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>		
<b>34N</b>	<b>05E</b>	<b>27</b>	<b>NEWMANTS</b>	<b>ORO</b>	5.90	5	31	S	W		
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		113.6	56.4	43	98	153					
PS FIR		96.7	48.1	56	108	159					
WR CEDAR		223.6	111.1		53	112					
DOUG FIR		223.6	111.1		95	200					
<b>TOTAL</b>		<b>35.7</b>	<b>17.7</b>	<b>69</b>	<b>84</b>	<b>99</b>	<b>63</b>	<b>32</b>	<b>16</b>		

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

T34N R05E S26 Ty00U2	50.6
T34N R05E S27 Ty00U1	69.6
T34N R05E S27 Ty0RO	5.9

**Project NEWMANT**  
**Acres 130.40**

**Page No 1**  
**Date: 7/17/2015**  
**Time 7:03:11AM**

Species	S T	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
WHEMLOCK		29,874	48,451	27,981	29.27	18.05	0.58	8,744	8,744	3,343	3,251
PS FIR		2,716	5,478	5,189	66.68	33.06	0.94	1,811	1,811	696	661
DOUG FIR		956	2,592	2,994	109.92	40.53	1.25	1,050	1,050	460	443
WR CEDAR		3,580	4,530	1,939	23.03	18.20	0.63	825	824	249	232
R ALDER		3,176	4,706	1,813	20.76	14.01	0.53	659	659	236	215
WR CEDAR	P	608	1,134	616	43.10	23.11	0.72	262	262	86	84
COTWOOD		22	45	60	109.61	54.80	1.71	25	25	11	11
<b>Totals</b>		40,931	66,935	40,592	32.68	19.98	0.64	13,377	13,376	5,080	4,897

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
C	37,733	62,184	38,719	33.64	20.41	0.65	12,693	12,692	4,834	4,671
H	3,198	4,751	1,873	21.38	14.39	0.55	684	684	246	226
<b>Totals</b>	40,931	66,935	40,592	32.68	19.98	0.64	13,377	13,376	5,080	4,897



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

FPA/N No: 2814713  
 Effective Date: 8/20/2015  
 Expiration Date: 8/20/2018

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

Shut Down Zone: 656/658  
 EARR Tax Credit:  Eligible  Non-eligible  
 Reference: Newman

**DECISION:**

- NOTIFICATION Operations shall not begin before the effective date.
- APPROVED This Forest Practices Application is subject to the conditions listed below.
- DISAPPROVED This Forest Practices Application is disapproved for the reasons listed below.
- CLOSED Applicant has withdrawn FPA/N.

**FPA/N CLASSIFICATION**

**Number of Years Granted on Multi-Year Request**

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

**Conditions on Approval / Reasons for Disapproval**

Conditions:

- 48 hour notice is required prior to the installation of the bridge at Station 478+92 on the MU-ML. Leave notice for the forest practices forester by contacting the Northwest Region forest practices staff at (360) 856-3500.
- All instream work associated with the bridge installation at station 478+92 on the MU-ML road shall be conducted between July 1<sup>st</sup> and October 1<sup>st</sup> of any given year.
- 48 hour notice is required prior to the commencement of road abandonment. Leave notice for the forest practices forester by contacting the Northwest Region forest practices staff at (360) 856-3500.

Issued By: Kevin Jones *L. U.*

Region: Northwest

Title: Samish Forest Practice Forester

Date: 8/20/2015

Copies to:  Landowner, Timber Owner and Operator

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

**Appeal Information**

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

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

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

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

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

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

And

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

**Other Applicable Laws**

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

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

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

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

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

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices Division website: <http://www.dnr.wa.gov/businesspermits/forestpractices>. Notify DNR of new Operators within 48 hours.

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

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

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

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

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

**DNR affidavit of mailing:**

On this day \_\_\_\_\_, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA #\_2814\_\_\_\_\_

\_\_\_\_L Utgard\_\_\_\_\_

(Printed name)

\_\_\_\_\_

(Signature)



WASHINGTON STATE  
DEPT. OF NATURAL RESOURCES  
NORTHWEST REGION

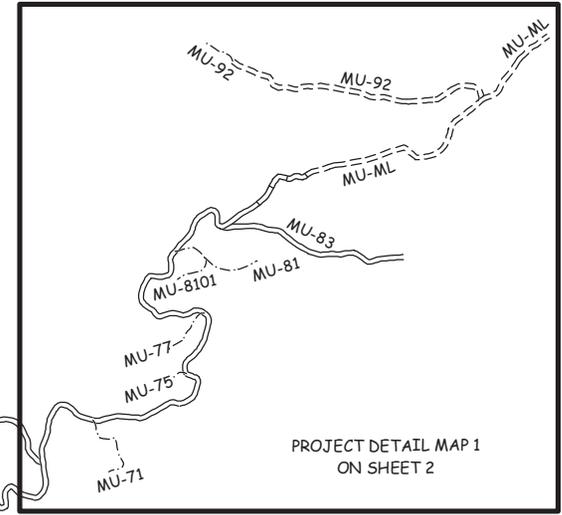
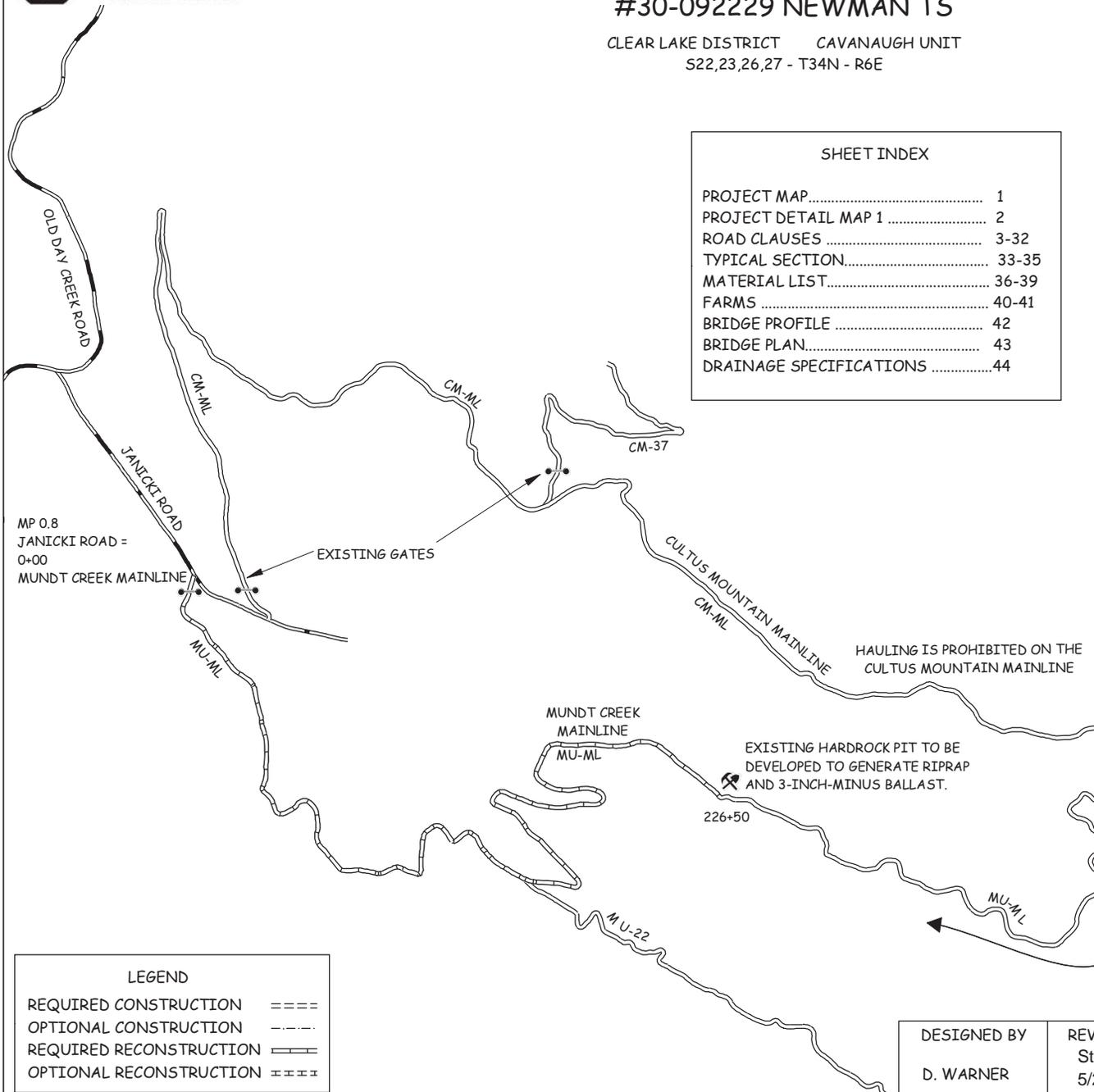
# ROAD PLAN AND SPECIFICATIONS #30-092229 NEWMAN TS

CLEAR LAKE DISTRICT CAVANAUGH UNIT  
S22,23,26,27 - T34N - R6E



SCALE  
0 1,000

SHEET INDEX	
PROJECT MAP.....	1
PROJECT DETAIL MAP 1 .....	2
ROAD CLAUSES .....	3-32
TYPICAL SECTION.....	33-35
MATERIAL LIST.....	36-39
FARMS .....	40-41
BRIDGE PROFILE .....	42
BRIDGE PLAN.....	43
DRAINAGE SPECIFICATIONS .....	44



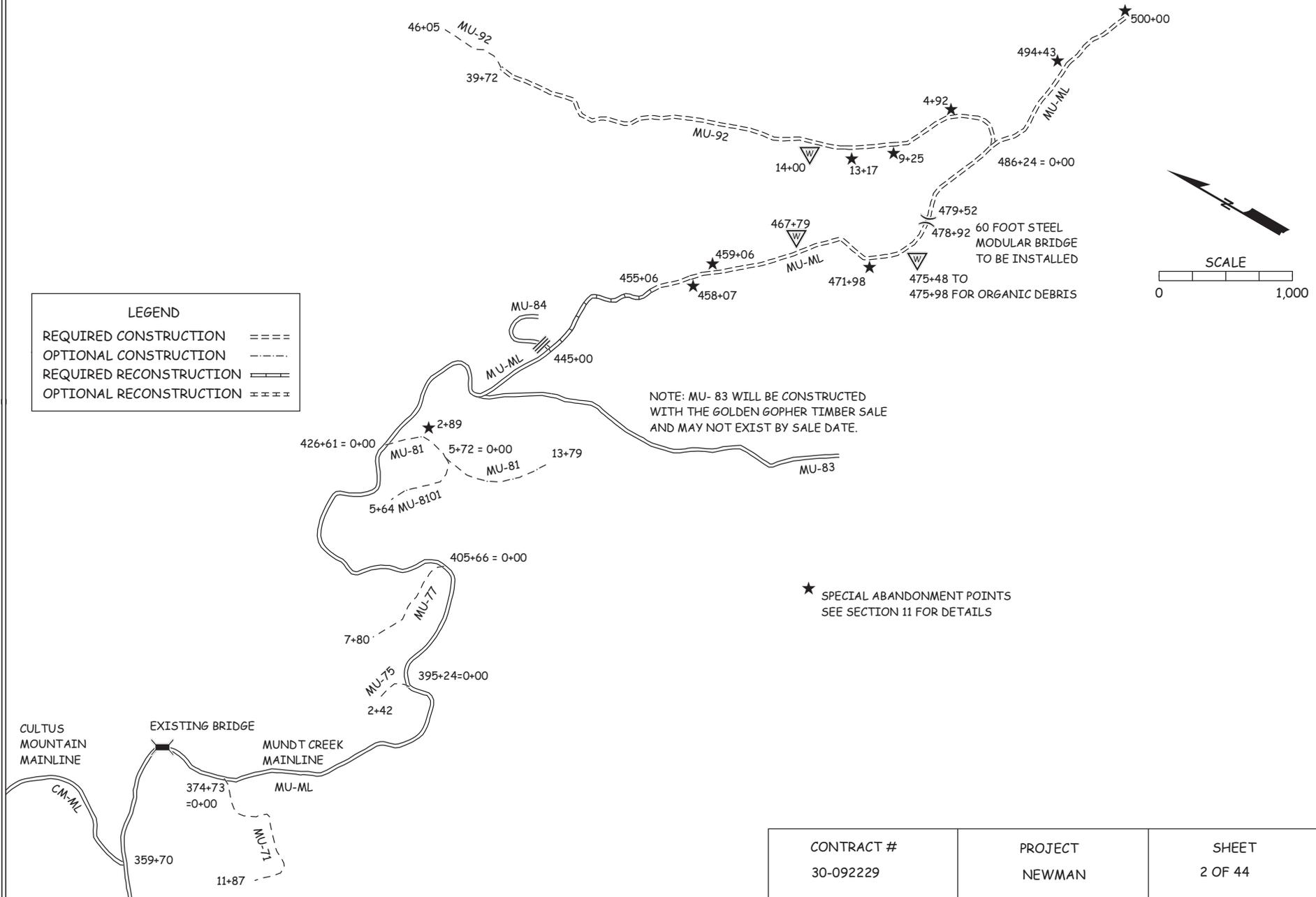
LEGEND	
REQUIRED CONSTRUCTION	=====
OPTIONAL CONSTRUCTION	- - - - -
REQUIRED RECONSTRUCTION	===== =====
OPTIONAL RECONSTRUCTION	- - - - - =====

ALL HAULING SHALL BE ON  
MUNDT CREEK MAINLINE

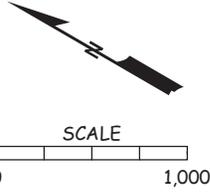
DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
D. WARNER	Stuart 5/28/2015	Fike 5/28/2015	4/20/15	1 OF 44



# NEWMAN PROJECT DETAIL MAP 1



LEGEND	
REQUIRED CONSTRUCTION	====
OPTIONAL CONSTRUCTION	- - - -
REQUIRED RECONSTRUCTION	====
OPTIONAL RECONSTRUCTION	====



CONTRACT # 30-092229	PROJECT NEWMAN	SHEET 2 OF 44
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STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
NEWMAN TIMBER SALE ROAD PLAN  
SKAGIT COUNTY  
CAVANAUGH UNIT CLEAR LAKE DISTRICT

AGREEMENT NO.: 30-092229

STAFF ENGINEER: WARNER

DATE: 4/20/2015

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.

Road	Stations	Type
MU-ML	0+00 to 226+50	RECONSTRUCTION
MU-ML	445+00 to 455+06	RECONSTRUCTION
MU-ML	455+06 to 500+00	CONSTRUCTION
MU-92	0+00 to 39+72	CONSTRUCTION

**0-3 OPTIONAL ROADS**

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

Road	Stations	Type
MU-71	0+00 to11+87	CONSTRUCTION
MU-75	0+00 to 2+42	CONSTRUCTION
MU-77	0+00 to 7+80	CONSTRUCTION
MU-81	0+00 to 13+79	CONSTRUCTION
MU-8101	0+00 to 5+64	CONSTRUCTION
MU-92	39+72 to 46+05	CONSTRUCTION**

Construction and abandonment of this section of the MU-92 will all be done during one operational season. See Section 11 for details.

**0-4 CONSTRUCTION**

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

**0-5 RECONSTRUCTION**

Reconstruction includes, but is not limited to blading, shaping, and ditching the road surface, existing culvert clean out, and application of 3-inch-minus ballast rock.

**0-10 ABANDONMENT**

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT and Clause 11-3 SPECIAL ABANDONMENT POINTS.

**0-12 DEVELOP ROCK SOURCE**

The Purchaser shall develop an existing rock source. Development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

**0-13 STRUCTURES**

The Purchaser shall acquire and install one 60 foot long steel modular bridge. Requirements for this structure are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

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

**1-4 ROAD TOLERANCES**

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

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

**1-5 DESIGN DATA**

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

**1-6 ORDER OF PRECEDENCE**

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

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

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

**1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS**

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

**1-9 DAMAGED METALLIC COATING**

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

**1-18 REFERENCE POINT DAMAGE**

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

**1-21 HAUL APPROVAL**

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

**1-25 ACTIVITY TIMING RESTRICTION**

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

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

**1-26 OPERATING DURING CLOSURE PERIOD**

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

**1-29 SEDIMENT RESTRICTION**

Silt-bearing runoff shall not be permitted to go into streams.

**1-33 SNOW PLOWING RESTRICTION**

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

SECTION 2 – MAINTENANCE

**2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE**

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

**2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER**

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

**2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS**

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

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

**3-5 CLEARING**

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

**3-6 CLEARING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING**

A log, length equal to two (2) times the width of the ordinary high water, from the largest diameter class conifer tree cut from within the Inner Zone (25 feet either side of the stream) shall be used for in-stream placement in accordance with the PLAN.

**3-10 GRUBBING**

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

**3-11 GRUBBING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING**

Within the Inner Zone (25 feet either side of the stream) all grubbed stumps (root wads) shall be retained for placement in accordance with the PLAN. Three root wads shall be placed in or adjacent to the stream channel. The remaining stumps grubbed from the Inner Zone shall be placed at least 50 feet from the roadway in the Middle (25 feet to 100 feet from the stream) or the Outer Zones (remaining portion of RMZ) in accordance with the PLAN.

**3-20 ORGANIC DEBRIS DEFINITION**

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

**3-21 DISPOSAL COMPLETION**

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

**3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS**

Waste areas for organic debris shall be located as listed below:

<u>Road</u>	<u>Disposal Location</u>
MU-ML	STA 475+48 to 475+98

**3-23 PROHIBITED DISPOSAL AREAS**

Organic debris shall not be deposited in the following areas:

- Within 30 feet of a cross drain culvert.
- Within 30 feet of a live stream, or wetland, unless used to comply with the specifications detailed in the Riparian Strategy, Clause 3-6 CLEARING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING, and Clause 3-11 GRUBBING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING.
- On embankments.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

**3-24 BURVING ORGANIC DEBRIS RESTRICTED**

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

**3-25 SCATTERING ORGANIC DEBRIS**

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

### 3-32 END HAULING ORGANIC DEBRIS

On the following road organic debris shall be end hauled to the designated waste area specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS.

<u>Road</u>	<u>Stations</u>
MU-ML	STA 476+77 to 478+42

## SECTION 4 – EXCAVATION

### 4-2 PIONEERING

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

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

### 4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed:

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

Grade limitations are modified as follows:

<u>Road</u>	<u>Stations</u>	<u>Maximum Grade (%)</u>	
		<u>Favorable</u>	<u>Adverse</u>
MU-ML	475+98 to 478+42	--	10
MU-ML	478+42 to 478+92	--	5
MU-ML	STEEL BRIDGE	0	0
MU-ML	479+52 to 480+02	5	--
MU-ML	480+02 to 480+73	10	--

**4-5 CUT SLOPE RATIO**

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

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

**4-6 EMBANKMENT SLOPE RATIO**

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

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

**4-7 SHAPING CUT AND FILL SLOPE**

Excavation and embankment slopes shall be constructed to a uniform line and left rough for easier revegetation.

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

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

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

**4-12 FULL BENCH CONSTRUCTION**

On the following roads and where side slopes exceed 50% full bench construction shall be utilized for the entire subgrade width except as construction staked or designed. If designated, waste material shall be end hauled to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Full Bench Location</u>	<u>Comments</u>
MU-ML	STA 476+77 to 478+42	Bridge Approach
MU-92	STA 39+72 to 46+05	Single season road construction and abandonment. See Section 11 for details.

**4-21 TURNOUTS**

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

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

**4-28 DITCH DRAINAGE**

Ditches shall drain to cross-drain culverts and ditches.

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

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

**4-37 WASTE AREA LOCATION**

Waste material shall be deposited in the listed designated areas:

<u>Road</u>	<u>Waste Area Location</u>
MU-ML	467+79
MU-92	14+00

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

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

- Within 30 feet of a cross drain culvert.
- Within 30 feet of a live stream or wetland.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

**4-55 ROAD SHAPING**

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

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

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

**4-70 SUBGRADE REINFORCEMENT**

On the following roads, the Purchaser shall provide and install geotextile fabric. Subgrade reinforcement shall be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric shall be overlapped by a minimum of 2 feet at all joints. The geotextile fabric will then be covered with a minimum of 12 inches of compacted 3-inch-minus ballast rock as specified in Clause 6-34 3-INCH-MINUS BALLAST ROCK. Geotextile fabric shall meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION.

<u>Road</u>	<u>Stations</u>
MU-ML	471+98 to 478+92
MU-ML	479+52 to 500+00
MU-71	0+00 to 11+87
MU-92	15+08 to 31+93

## SECTION 5 – DRAINAGE

### **5-5 CULVERTS**

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

### **5-11 UNUSED MATERIALS STATE PROPERTY**

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

### **5-15 CULVERT INSTALLATION**

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

### **5-16 APPROVAL FOR LARGER CULVERT INSTALLATION**

Installation of culverts 36 inches in diameter and over shall be subject to written approval by the Contract Administrator before making backfill.

### **5-17 CROSS DRAIN SKEW AND SLOPE**

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

### **5-25 CATCH BASINS**

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

### **5-26 HEADWALLS FOR CROSS DRAIN CULVERTS**

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

SECTION 6 – ROCK AND SURFACING

**6-2 ROCK SOURCE ON STATE LAND**

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
MU-43 Pit	STA 226+50 of the MU-ML	3-inch-minus ballast, shot rock, and riprap

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

**6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER**

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

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

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

**6-23 ROCK GRADATION TYPES**

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

**6-26 5/8-INCH MINUS CRUSHED ROCK**

% Passing 5/8" square sieve	100%
% Passing 3/8" square sieve	55 - 75%
% Passing U.S. #4 sieve	40 - 60%

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

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

**6-34 3-INCH MINUS BALLAST ROCK**

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

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

**6-42 SHOT ROCK**

No more than 20 percent of the rock by weight may exceed 12 inches in any dimension and no rock may be larger than 18 inches in any dimension. Shot rock may not contain more than 5 percent by weight of organic debris.

**6-50 LIGHT LOOSE RIP RAP**

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

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

**6-51 HEAVY LOOSE RIP RAP**

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

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

**6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH**

Measurement of specified rock depths, are defined as the compacted 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**

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

**6-71 ROCK APPLICATION**

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

**6-73 ROCK FOR WIDENED PORTIONS**

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

SECTION 7 – STRUCTURES

**7-8 BRIDGE LOCATION AND GENERAL REQUIREMENTS**

On the following road(s) the Purchaser shall design, fabricate, deliver and install each bridge, listed below, in accordance with this road plan.

Road	Station	Length <sup>1</sup> (ft.)	W.B.S.R. <sup>2</sup> (ft.)	Loading/ Deflection Ratio	Type
MU-ML	478+92 to 479+52	60	14	HS 30-44	Modular Steel Bridge: Shop assembled, steel, two- piece, portable, modular bridge superstructure complete with a curb or rail system and precast concrete footings. Design must include a full width, continuous deck with no gaps that allow water and sediment to drain from the bridge to the stream. See installation details on sheets 42 and 43.

<sup>1</sup>The length of the superstructure shall be measured from out to out.

<sup>2</sup>W.B.S.R. = Width between shear rails.

**7-9 REFERENCED SPECIFICATIONS AND STANDARDS**

The materials and workmanship shall be of the highest grade throughout and in accordance with the best standard practices of modern bridge fabrication. All material used in the fabrication of the superstructure shall conform to the applicable specification. Copies of any referenced specification, standards, and codes may be procured by the purchaser, at their expense, from the following:

AASHTO	American Assoc. of State Highway and Transportation Officials 444 North Capital Street, N.W. Washington, D.C. 20001 <a href="http://www.aashto.org">www.aashto.org</a>
ASTM	American Society for Testing & Materials 100 Barr Harbor Drive West Conshohocken, PA 19428 <a href="http://www.astm.org">www.astm.org</a>
AWS	American Welding Society 550 North LeJune Road Miami, FL 33126 <a href="http://www.amweld.org">www.amweld.org</a>
SSPC	Structural Steel Painting Council 40 24th Street Pittsburgh, PA 15222-4643 <a href="http://www.sspc.org">www.sspc.org</a>

**7-10 BRIDGE TECHNICAL SPECIFICATIONS**

*Design:* The bridge superstructure shall be designed in accordance with AASHTO Standard Specifications for Highway Bridges, latest edition and any subsequent interim specifications.

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

*Live Load:* HS 30-44, deflection ratio shall not exceed L/500 of bridge length.

*Structural Steel:* All structural steel shall be of domestic (USA) manufacture and shall conform to the requirements of ASTM Specification A-572 or A-36.

*Hardware:* Manufacturer recommended bearing plates, elastomeric bearing pads and assembly bolts shall be included.

*Decking:* The steel bridge decking shall be 4 1/4" deep 7 gauge galvanized corrugated steel and shall be placed perpendicular to the direction of traffic. The deck shall have a positive connection joining the deck panels of the modular bridge sections. A galvanized 7 gauge side dam shall be furnished and shall extend 4 inches above the top of the corrugated steel deck. After installation of the bridge, the purchaser shall furnish and place compacted ¾-inch-minus crushed rock evenly over the bridge to a depth of 4 inches above the top of the corrugated steel deck.

*Guard Rail:* Guard rail shall be 12 gauge galvanized guide rail with standard flared metal end terminals unless approach guide rail is specified. The top of guard rail shall be no less than 15 inches above the top of the side dam.

*Bulkheads:* Manufacturer shall furnish an acceptable bulkhead for each end of the bridge to support the roadway at the end of the bridge. The bulkhead shall be galvanized steel with a minimum thickness of 7 gauge and shall extend from the top of the bridge footing to the top of the bridge stringers.

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

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

*Precast Concrete Footings:* Footings shall be constructed as per manufacturer's details and drawings with minimum dimensions of 18" deep, 30" wide and 18' long. All concrete shall be precast off site and shall be Class 4000 (design strength of 4000 PSI in 28 days). All reinforcing steel shall conform to ASTM A706 and shall be No. 6 minimum. Bars shall be lapped at least 24 diameters at all splices and shall be placed 2" clear of the nearest face of concrete. Spacing on reinforcing steel shall be a maximum of 12". Footings shall be delivered on site ready for installation.

*Crushed Rock Leveling Course:* Precast concrete footings shall be placed on a leveling course of ¾-inch-minus crushed rock.

**7-15 DRAWING AND CALCULATION REVIEW FOR ACCEPTANCE**

The Purchaser shall prepare and submit three sets of complete modular bridge design drawings and calculations for the superstructure and substructure. All drawings and calculations shall be prepared, stamped, and signed by a Registered Professional Engineer. The superstructure shall be designed by a Professional Engineer licensed in the state of manufacture. Drawings can be in either electronic or hard copy form and shall be no smaller than 11" X 17" sheets.

Submittals shall be sent to:

Department of Natural Resources  
Attn.: NW Region Engineer  
919 N. Township St. Sedro-Woolley, WA 98284  
360-854-2807

Reports and plans will be accepted or rejected within 30 working days of receipt. Delays in work because of the possibility of rejection, revision, and resubmittal of documents are deemed a risk of the Purchaser and shall not be the basis for claims of additional compensation. Within 15 working days of final acceptance, Purchaser shall submit two complete sets of finalized plans to the Region Engineer and one to the Contract Administrator. Any omissions to the plans shall be the responsibility of the Purchaser to correct and resubmit a finalized set of plans.

**7-16 STRUCTURE ACCEPTANCE**

The Region Engineer, or designee, will inspect the structure after it has been fabricated and delivered in accordance with the specifications contained herein and after all required certifications have been furnished. One gallon of touch-up paint matching the final coat shall be furnished with the bridge at time of delivery.

**7-20 PRECAUTIONS AND RECOMMENDATIONS**

Precautions will be taken to avoid damage to the structure or footings during delivery or installation. Precast concrete footings shall be handled in such a way that no concrete will be damaged or chipped. Structural members of the bridge shall not be bent or damaged in any way. Debris of any kind will not be allowed to build up on I-Beam flanges. The bridge shall be delivered and installed in such a way that the paint will not be scratched.

By recommendation only, the State suggests that crane type equipment be utilized to install the bridge on site.

### **7-37 BRIDGE PREPARATION FOR REPAINTING**

Before blast cleaning, visible deposits of oil or grease must be removed by the methods specified in the Society of Protective Coatings Surface Preparation Specification SSPC-SP1 (solvent cleaning), or other agreed methods.

All previously painted metal surfaces to be primed must be abrasive blast cleaned in accordance with SSPC-SP6 (commercial blast), and the appearance of the blast cleaned surfaces must be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining must be limited to no more than 33% of each square inch of surface area and may consist of light shadows, slight streaks or minor discoloration caused by stains of rust, stains of mill scale or stains of previously applied paint.

Before being primed, all previously painted metal surfaces must be free of all cleaning residue, supplemented with brushing if necessary. Particular attention must be given to edges, crevices, nuts, bolts, and rivets. All bare metal surfaces must be primed on the same day as cleaning. Any cleaned surface that rusts before the application of the prime coat must be re-cleaned.

The Purchaser shall ensure that no paint or debris enters the stream.

### **7-38 APPLICATION OF BRIDGE PAINT**

All painting to be performed under this contract shall be performed in conformance with the best practices of the trade, in conformance with recommendations of the coating manufacturer, and in conformance with applicable portions of the Steel Painting Council Specification SSPC-PA 1, when those specifications are not in conflict with these special project specifications.

All surfaces cleaned to bare metal shall be coated with the primer the same working day. Any cleaned surface which rusts before the application of the prime coat shall be re-cleaned.

After the surface has been prepared and primed as specified, one coat of intermediate black coal-tar polyurethane shall be applied. After the intermediate coat has cured, all metal surfaces shall receive one final topcoat of bronze coal-tar polyurethane.

Paint film thickness measurements will be made after the application of prime and top coats. A visual inspection for complete coverage will be made after the intermediate coat. One hundred percent of all thickness measurements shall be within the specified minimum dry film thickness. Where thickness measurements fall below the specified minimum, additional applications of paint shall be made as necessary to meet the thickness required.

Sufficient time shall elapse between successive coats to permit them to dry properly for recoating. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause such film irregularities as lifting or loss of adhesion to the undercoat. It is recommended that a minimum of 6 hours drying time shall be allowed between each application. Consult with coating manufacturer regarding specific recoat information.

The surface of the paint being covered shall be thoroughly dry and free of moisture, dust, grease, or any other substance which would prevent the bond of succeeding applications. Abrasive blast cleaning will not be permitted in areas adjacent to areas that are in the process of being painted. Freshly painted surfaces shall be protected by the Purchaser from contamination by dust or foreign materials from any source. Contaminated surfaces shall be cleaned to the satisfaction of the Contract Administrator before any succeeding application of paint is made.

#### **7-39 SCOPE OF PAINTING**

Painting work will consist of the following:

- Cleaning: All metal surfaces shall be prepared in accordance with SSPC-SP6 (commercial blast).
- Painting: All metal surfaces shall be coated with a three coat micaceous iron oxide, moisture-cure urethane system that will consist of a prime coat, intermediate and topcoat.

#### **7-40 CLEANING**

Before blast cleaning, visible deposits of oil or grease shall be removed by the methods specified in SSPC-SP1 Solvent Cleaning, or other agreed methods in accordance with section 6 of SSPC-SP6 (commercial blast).

*Abrasive Blast Cleaning:* All metal surfaces to be painted shall be abrasive blast cleaned in accordance with SSPC-SP6 (commercial blast), and the appearance of the blast cleaned surfaces shall approximate Visual Standard SP6 of SSPC VIS 1-89. Blast cleaning shall be performed using abrasive of a size which will produce a surface profile height of 1½ to 2 mils.

Prior to painting, all metal surfaces shall be free of all cleaning residue, supplemented with brushing if necessary.

Particular attention shall be given to edges, crevices, nuts, bolts, and rivets.

All bare metal surfaces shall be primed on the same day as cleaning.

**7-47 PURCHASER SUPPLIED ABUTMENTS**

Purchaser shall provide abutment designs. Bridge abutments must be designed by an engineer licensed in the state of manufacture. The abutment design includes, but is not limited to wing walls, steel reinforced concrete sills, and permanent, functional provisions for lifting.

**7-52 TECHNICAL SPECIFICATIONS**

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

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

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

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

SECTION 8 – EROSION CONTROL

**8-10 STABILIZE SLOPES – ROCK APPLICATION**

On the following roads, Purchaser shall stabilize excavation and embankment slopes by applying rock as specified below. Rock shall be applied in quantities specified in the MATERIALS LIST to exposed soil on the excavated slopes and the entire embankment to a minimum depth of 24 inches. Rock shall be set in place by machine. Placement shall be by zero-drop-height method only. No placement by end dumping or dropping of rock shall be allowed. Light loose riprap and heavy loose riprap shall meet the specifications in Clause: 6-50 LIGHT LOOSE RIP RAP, 6-51 HEAVY LOOSE RIP RAP.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>
MU-ML	476+77 to 480+73	Light Loose Riprap and Heavy Loose Riprap

**8-15 REVEGETATION**

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

**8-17 REVEGETATION TIMING**

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

**8-18 PROTECTION FOR SEED**

Purchaser shall provide a protective cover for seed if revegetation occurs between July 1 and March 31. The protective cover shall consist of, but not be limited to dispersed straw, jute matting, or clear plastic sheets as approved by the Contract Administrator. The protective cover requirement may be waived by the Contract Administrator, in writing, if the Purchaser is able to demonstrate a revegetation plan that will result in the establishment of a uniform dense crop (at least 50% coverage) of 3-inch tall grass by October 31.

**8-19 ASSURANCE FOR SEEDED AREA**

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

**8-25 GRASS SEED**

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

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

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

**8-27 FERTILIZER**

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

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

SECTION 9 – POST-HAUL ROAD WORK

**9-3 REMOVAL OF CULVERT MATERIAL FROM STATE LAND**

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

**9-10 LANDING DRAINAGE**

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

**9-12 LANDING EMBANKMENT REMOVAL**

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

**9-21 ROAD ABANDONMENT**

The following roads shall be abandoned by the Purchaser before the termination of this contract.

<u>Road</u>	<u>Stations</u>
MU-71	0+00 to 11+87
MU-75	0+00 to 2+42
MU-77	0+00 to 7+80
MU-81	0+00 to 13+79
MU-8101	0+00 to 5+64
MU-92	39+72 to 46+05
See Section 11 for more details on timing restrictions.	

## 9-22 ABANDONMENT

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

SECTION 10 MATERIALS

**10-3 GEOTEXTILE FOR STABILIZATION**

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

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

**10-15 CORRUGATED STEEL CULVERT**

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

**10-16 CORRUGATED ALUMINUM CULVERT**

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

**10-17 CORRUGATED PLASTIC CULVERT**

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

**10-21 METAL BAND**

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

**10-22 PLASTIC BAND**

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

### 10-23 GAGE AND CORRUGATION

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

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

### 10-40 BRIDGE PAINT

All steel coating products furnished for each project shall be manufactured by the same manufacturer and shall be compatible with one another.

All the protective coatings in this specification will require certification from the manufacturer that the coating can be applied at relative humidity up to 85%, temperatures down to 20 degrees F, and there is no restriction on dew point temperature differential if the surface is visibly dry and free from condensation.

All paint shall be prepared at the factory ready for application. The addition of thinner or other material to the paint after the paint has been shipped shall not be permitted, except as recommended by the manufacturer.

All containers shall be labeled showing the exact title of the paint, the manufacturer's name, date of manufacture, the manufacturer's batch number and the specification number and lot number if appropriate. Precautions concerning the handling and application of paint shall be shown on the label of paint and solvent containers.

#### 1. Primer

Generic Type: Zinc filled, single component, moisture-cured polyurethane  
Vehicle Type: Moisture-cured polyurethane  
Volume Solids: 60% minimum  
Pigment Type: Zinc dust  
Coverage: 3 Mills dry film thickness (DFT) minimum  
VOC: Not to exceed 2.8 lbs./gal

2. Intermediate Coat

Generic Type: Refined coal tar/micaceous iron oxide-filled, single component, moisture-cured polyurethane  
Vehicle Type: Moisture-cured polyurethane  
Volume Solids: 60% minimum  
Pigment Type: 4.0 lbs./gal of micaceous iron oxide minimum  
Color: Black  
Coverage: 4 mils DFT minimum  
VOC: Not to exceed 2.8 lbs./gal

3. Shield (Top) Coat

Generic Type: Refined coal tar/micaceous iron oxide-filled, single component, moisture-cured polyurethane  
Vehicle Type: Moisture-cured polyurethane  
Volume Solids: 60% minimum  
Pigment Type: 3.0 lbs./gal of micaceous iron oxide minimum  
Color: Bronze  
Coverage: 4 mils DFT minimum  
VOC: Not to exceed 2.8 lbs./gal

**10-41 BRIDGE PAINT PERFORMANCE PROPERTIES**

Bridge paint systems shall meet or exceed the following test requirements (all proposed equivalents must certify compliance to same requirements):

*Corrosion Resistance, ASTM B117, Salt Spray Test:* Must pass 4000 hours minimum with less than 2mm creep from scribe. Panels must be 1/8-inch cold-rolled steel minimum, having SSPC-SP10 Near White Blast with 2-3 mils angular profile.

*Accelerated Weathering, ASTM G53:* Must pass 3000 hours QUV B bulb with no chalking, cracking, or gloss loss greater than 20 percent.

#### 10-45 BRIDGE MATERIAL

All materials necessary for assembly shall be included with the structure and meet the following requirements:

- a. All structural steel shall be of domestic (USA) manufacture.
- b. All galvanizing shall be done after fabrication and shall be in accordance with AASHTO Designation M111-09 (ASTM Designation: A123) and/or AASHTO Designation M232-10 centrifuged to remove excess (ASTM Designation A153) and/or AASHTO M298-10 mechanical galvanization (ASTM B695-04).
- c. Flanges used for connecting the stringer units together shall be designed to facilitate field assembly.
- d. All bolts used to facilitate field assembly will be A325 Type 1 or 2 galvanized. All materials necessary for assembly shall be included with the structure. All hardware connections and fasteners shall be in accordance with AASHTO Designation ASTM Designation A325 Type 3 weathering steel.
- e. Elastomeric bearing pads shall conform to the requirements of AASHTO M251-06.
- f. All concrete and asphalt used shall conform to AASHTO specifications.
- g. The superstructure shall have permanent, functional provisions for lifting.

#### SECTION 11 SPECIAL NOTES

#### 11-1 RECONSTRUCTION DETAILS

Purchaser shall accomplish the following reconstruction items.

<u>Road</u>	<u>Stations</u>	<u>Reconstruction Items</u>
MU-ML	0+00 to 226+50 and 445+00 to 455+06	- Blade, Shape, and ditch road surface. - Clean out catch basins and outlets of all existing pipes.
MU-ML	0+00 to 226+50	Spot patch existing road surface with 1000 cubic yards of shot rock as directed by the contract administrator.
MU-ML	445+00 to 455+06	Spot patch existing road surface with 100 cubic yards of shot rock as directed by the contract administrator.

**11-2 ONE SEASON ROAD**

Purchaser shall construct and complete abandonment on the following road segment during one operational season. To meet the operational closed season deadline of November 1<sup>st</sup>, abandonment activities shall commence no later than October 1<sup>st</sup> of any given year.

<u>Road #</u>	<u>Segment</u>	<u>Comment</u>
MU-92	39+72 to 46+05	Abandonment includes removal of silver fills.

**11-3 SPECIAL ABANDONMENT POINTS**

At the following station points road construction is either entering or leaving old abandoned road grades. To maintain previous abandonment work and discourage prohibited off road vehicle use, Purchaser shall block the intersecting old road grade, by constructing an aggressive barrier of dense interlocked large woody debris (logs, rocks, 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 cut/slope to toe of fill/slope. Long term effectiveness is the primary objective.

<u>Road #</u>	<u>Station</u>	<u>Comment</u>
MU-ML	458+07	Block intersecting old road grade.
	459+06	
MU-ML	471+98	Block intersecting old road grade and remove fill. See clause 11-4 for additional fill removal details.
	494+43	
	500+00	
	2+89	
MU-81	4+92	Block intersecting old road grade.
MU-92	9+25	
	13+17	

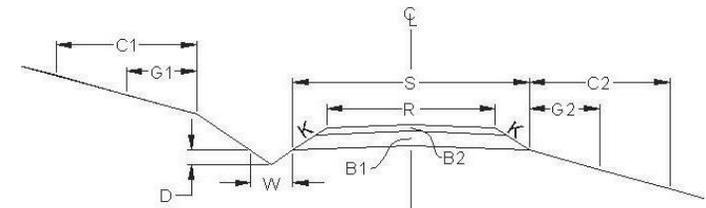
**11-4 FILL REMOVAL**

At the following road station point Purchaser shall remove an old road fill to facilitate the reestablishment of the original stream course. The old fill is located on the old road grade approximately 180 feet from where road construction leaves the road grade. Access to the old fill will be on the existing old grade. Installation of the 48 X 44 culvert at station 473+78 shall be completed prior to fill removal. The 48 X 44 culvert at station 473+78 is down stream of the fill to be removed. Debris generated from the fill removal shall be end hauled to the waste site at 467+79 or used for blocking the old road grade and accomplishing requirements of Clause 11-3.

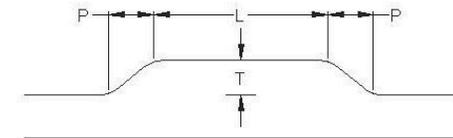
<u>Road #</u>	<u>Station</u>	<u>Comment</u>
MU-ML	471+98	Remove fill upstream of station 473+78

ROAD #		MU-ML	MU-ML	MU-ML**	MU-ML
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		RECONSTRUCT	RECONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	445+00	455+06	471+98
STATION / MP		226+50	455+06	471+98	478+92
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	3	3	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	50	50	50	50
TURNOUT WIDTH	T	10	10	10	10
TURNOUT TAPER	P	25	25	25	25
GRUBBING	G1	--	--	5	5
	G2	--	--	5	5
CLEARING	C1	--	--	10	10
	C2	--	--	10	10
ROCK FILLSLOPE	K:1	1½	1½	1½	1½
❖ BALLAST DEPTH	B1	--	--	12	18
CUBIC YARDS / STATION		--	--	72	114
➤ TOTAL CY BALLAST		1000 <sup>^^</sup>	100 <sup>^^</sup>	1220	800
❖ SURFACING DEPTH	B2	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--
➤ TOTAL CUBIC YARDS		1000 <sup>^^</sup>	100 <sup>^^</sup>	1220	800
SUBGRADE WIDTH	S	--	--	15	16.5
BRUSHCUT (Y/N)		--	--	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	N/A	N/A

### TYPICAL SECTION



### TURNOUT DETAIL (PLAN VIEW)



### SYMBOL NOTES

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
- Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.
- ^^ Shot rock quantity required to spot patch road surface as directed by the contract administrator.
- \*\* Road construction on old road grade that may have been previously abandoned.
- ## 5/8-inch-minus crushed rock from commercial source for bridge deck surfacing and pre-cast concrete footing leveling course.

ROAD #		MU-ML	MU-ML	MU-ML**		MU-71	MU-75	MU-77
REQUIRED / OPTIONAL		REQUIRED	REQUIRED	REQUIRED		OPTIONAL	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		CONSTRUCT	CONSTRUCT	CONSTRUCT		CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		A	C	C		C	C	C
STATION / MP TO		478+92	479+52	494+43		0+00	0+00	0+00
STATION / MP		479+52	494+43	500+00		11+87	2+42	7+80
ROAD WIDTH	R	14	12	12		12	12	12
CROWN (INCHES @ C/L)		60 FOOT SPAN, PRE- CONSTRUCTED, MODULAR TYPE, PAINTED STEEL BRIDGE AND PRE- CAST CONCRETE FOOTINGS	3	3		3	3	3
DITCH WIDTH	W		3	3		2	2	2
DITCH DEPTH	D		1	1		1	1	1
TURNOUT LENGTH	L		50	50		25	25	25
TURNOUT WIDTH	T		10	10		10	10	10
TURNOUT TAPER	P		25	25		25	25	25
GRUBBING	G1		5	5		5	5	5
	G2		5	5	<<<>>>	5	5	5
CLEARING	C1		10	10	Intentionally	10	10	10
	C2		10	10	Left	10	10	10
ROCK FILL SLOPE	K:1	1½	1½	blank	1½	1½	1½	
❖ BALLAST DEPTH	B1	--	18	12	<<<>>>	18	18	12
CUBIC YARDS / STATION		--	114	72		114	114	72
➤ TOTAL CY BALLAST		--	1700	410		1360	280	570
❖ SURFACING DEPTH	B2	--	--	--		--	--	--
CUBIC YARDS / STATION		--	--	--		--	--	--
➤ TOTAL CY SURFACING		100 <sup>#</sup>	--	--		--	--	--
➤ TOTAL CUBIC YARDS		100 <sup>#</sup>	1700	410		1360	280	570
SUBGRADE WIDTH	S	14	16.5	16.5		16.5	16.5	15
BRUSHCUT (Y/N)		N/A	N/A	N/A		N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N/A		N/A	N/A	N/A

ROAD #		MU-81**	MU-81	MU-8101	MU-92	MU-92**	MU-92	MU-92**	MU-92**
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	OPTIONAL	REQUIRED	REQUIRED	REQUIRED	REQUIRED	OPTIONAL
CONSTRUCT / RECONSTRUCT		CONSTRUCT							
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C	C
STATION / MP TO		0+00	2+89	0+00	0+00	4+92	9+25	13+17	39+72
STATION / MP		2+89	13+79	5+64	4+92	9+25	13+17	39+72	46+05
ROAD WIDTH	R	12	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3	3
DITCH WIDTH	W	2	2	2	3	3	3	3	2
DITCH DEPTH	D	1	1	1	1	1	1	1	1
TURNOUT LENGTH	L	25	25	25	50	50	50	50	25
TURNOUT WIDTH	T	10	10	10	10	10	10	10	10
TURNOUT TAPER	P	25	25	25	25	25	25	25	25
GRUBBING	G1	5	5	5	5	5	5	5	5
	G2	5	5	5	5	5	5	5	5
CLEARING	C1	10	10	10	10	10	10	10	10
	C2	10	10	10	10	10	10	10	10
ROCK FILL SLOPE	K:1	1½	1½	1½	1½	1½	1½	1½	1½
❖ BALLAST DEPTH	B1	12	12	12	18	18	18	18	12
CUBIC YARDS / STATION		72	72	72	114	114	114	114	72
➤ TOTAL CY BALLAST		210	790	410	560	500	450	3030	460
❖ SURFACING DEPTH	B2	--	--	--	--	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--	--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--	--	--	--	--
➤ TOTAL CUBIC YARDS		210	790	410	560	500	450	3030	460
SUBGRADE WIDTH	S	15	15	15	16.5	16.5	16.5	16.5	15
BRUSHCUT (Y/N)		N/A							
BLADE, SHAPE, & DITCH (Y/N)		N/A							

## MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS					
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			<u>Note:</u> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:					
												Diameter	Gage	Corrugation			
												18"      16      2 2/3" x 1/2"					
												24" – 48"      14      2 2/3" x 1/2"					
												54" – 96"      14      3" x 1"					
MU-ML	458+07	--	--	--	--	--	--	--	--	--	--	Special abandonment, see clause 11-3					
	459+06	18	36	XX	--	--	2	4	L	NT	C	Special abandonment, see clause 11-3					
	460+21	36	44	GM	--	--	20	40	H/L	NT	C						
	471+98	--	--	--	--	--	--	--	--	--	--	Special abandonment, see clause 11-3. Begin Geotextile.					
	473+78	48	44	GM	--	--	10	40	H/L	NT	C	Up-stream fill removal, see clause 11-4.					
	474+92	18	30	XX	--	--	3	5	L	NT	C						
	476+77	--	--	--	--	--	900		H/L	NT	C	900 cubic yards total riprap on approach side of bridge. <<>> From 476+77 to 480+73 all excavation and embankment slopes will be stabilized with riprap as stated in clause 8-10. Including but not limited to full bench areas, bridge abutment fills, culvert headwalls and energy dissipaters. All fill supporting pre-cast concrete footings will be shot rock as specified in clause 6.42 and detailed in bridge profile view drawing on sheet #42 <<>> 500 cubic yards total riprap on departure side of bridge.					
	477+95	18	30	XX	--	--							>>		H/L	SR	A
	478+64	18	40	XX	--	--											
	478+92 to 479+52	<b>60 FOOT SPAN, PRE-CONSTRUCTED, MODULAR TYPE, PAINTED STEEL BRIDGE AND PRE-CAST CONCRETE FOOTINGS</b>					500		H/L	NT	C						
	479+63	24	50	XX	--	--											
	480+73	--	--	--	--	--											
	482+12	24	30	XX	--	--	5	10	H/L	NT	C						
	483+50	30	30	GM	--	--	5	10	H/L	NT	C						
	485+73	24	30	XX	--	--	5	10	H/L	NT	C						
	487+21	24	30	XX	--	--	5	10	H/L	NT	C						
	487+80	24	30	XX	--	--	5	10	H/L	NT	C						

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

## MATERIALS LIST

LOCATION		CULVERT			DWNST		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			<u>Note:</u> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
		18"										16	2 2/3" x 1/2"	
		24" – 48"										14	2 2/3" x 1/2"	
		54" – 96"										14	3" x 1"	
MU-ML (cont.)	489+04	24	30	XX	--	--	4	6	H/L	NT	C			
	491+02	18	30	XX	--	--	4	6	L	NT	C			
	493+54	24	30	XX	--	--	5	8	H/L	NT	C			
	494+43	--	--	--	--	--	--	--	--	--	--		Special abandonment, see clause 11-3	
	495+84	24	36	XX	--	--	6	20	H/L	NT	C			
	497+90	18	40	XX	--	--	3	15	L	NT	C			
	500+00	--	--	--	--	--	--	--	--	--	--		Special abandonment, see clause 11-3	
MU-71	1+85	36	30	GM	--	--	10	15	H/L	NT	C			
	4+27	18	36	XX	--	--	10	20	H/L	NT	C			
	5+11	48	50	GM	--	--	40	100	H/L	NT	C			
	7+53	24	30	GM	--	--	5	5	H/L	NT	C			
MU-75	0+39	18	50	XX	--	--	2	5	L	NT	C			
MU-77	1+01	24	30	XX	--	--	3	3	H/L	NT	C			
MU-81	2+89	--	--	--	--	--	--	--	--	--	--		Special abandonment, see clause 11-3	
	4+87	48	40	GM	--	--	20	30	H/L	NT	C			
	7+35	30	40	GM	--	--	10	15	H/L	NT	C			
	11+42	18	30	XX	--	--	3	5	L	NT	C			

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

## MATERIALS LIST

LOCATION		CULVERT			DWNSTPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			<u>Note:</u> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
MU-92	1+50	24	30	XX	--	--	5	8	H/L	NT	C			
	3+46	18	36	XX	--	--	5	8	L	NT	C			
	4+92	18	36	XX	--	--	5	8	L	NT	C	Special abandonment, see clause 11-3		
	7+12	18	36	XX	--	--	5	8	L	NT	C			
	8+43	18	32	XX	--	--	5	8	L	NT	C			
	9+25	30	30	GM	--	--	15	30	H/L	NT	C	Special abandonment, see clause 11-3		
	10+73	30	30	GM	--	--	15	30	H/L	NT	C			
	12+86	18	36	XX	--	--	5	8	L	NT	C			
	13+17	--	--	--	--	--	--	--	--	--	--	Special abandonment, see clause 11-3		
	13+50	48	50	GM	--	--	30	60	H/L	NT	C			
	15+08	24	36	XX	--	--	10	20	H/L	NT	C			
	16+59	36	40	GM	--	--	30	50	H/L	NT	C			
	17+99	24	40	XX	--	--	10	20	H/L	NT	C			
	19+49	24	30	XX	--	--	5	20	H/L	NT	C			
	21+76	36	40	GM	--	--	5	20	H/L	NT	C			
	22+74	18	30	XX	--	--	2	10	L	NT	C			
	25+23	30	40	GM	--	--	20	40	H/L	NT	C			
	27+97	36	44	GM	--	--	20	40	H/L	NT	C			
	28+84	18	30	XX	--	--	10	15	L	NT	C			

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



## **FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS**

### **Cuts and Fills**

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

### **Surface**

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

### **Drainage**

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

### **Preventative Maintenance**

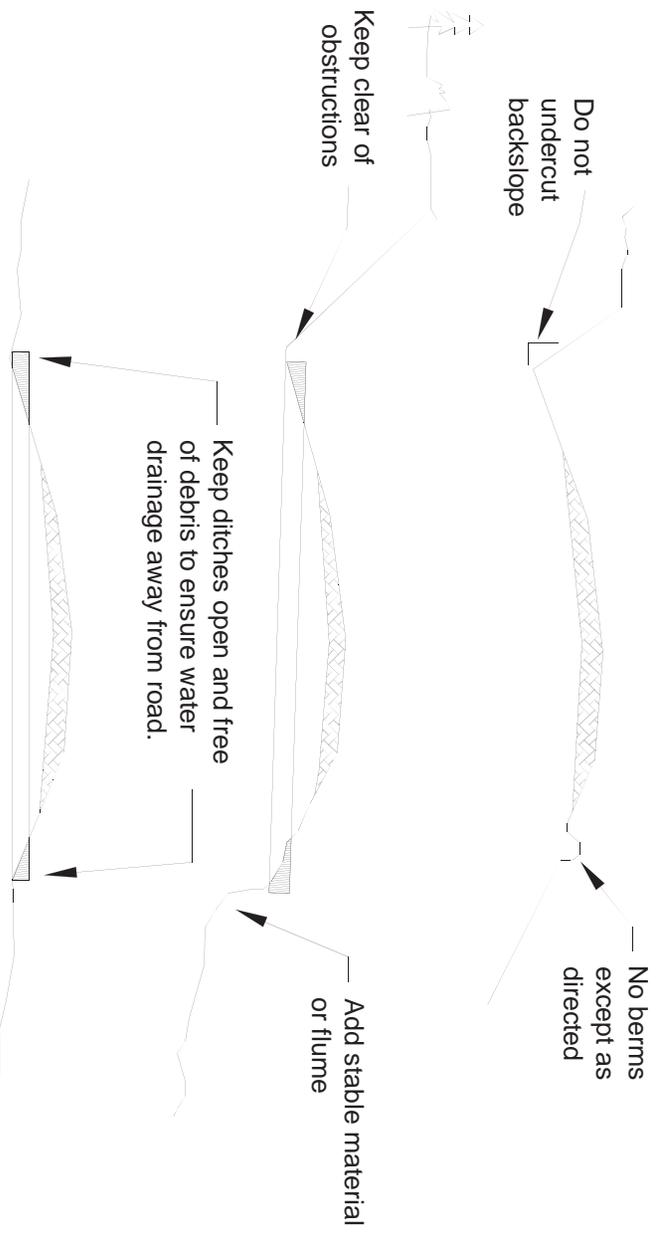
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

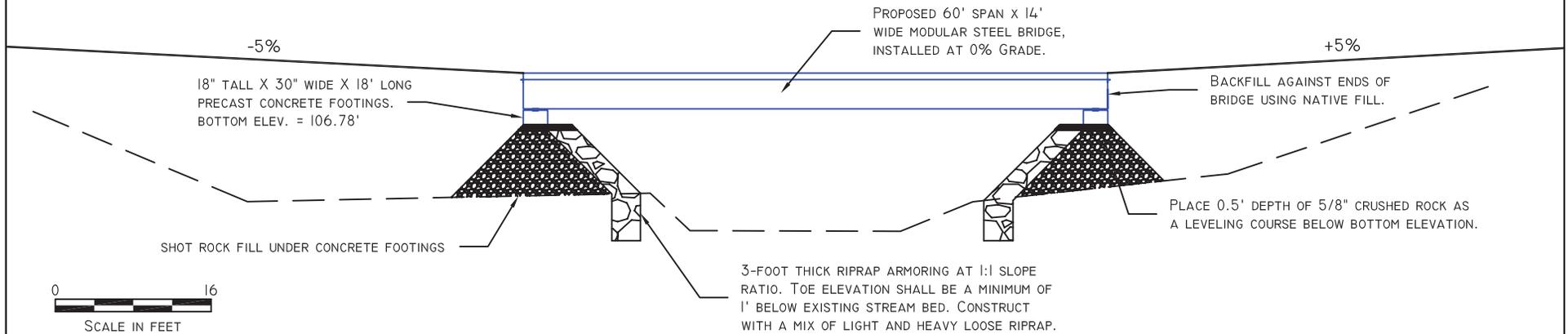
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

### Debris

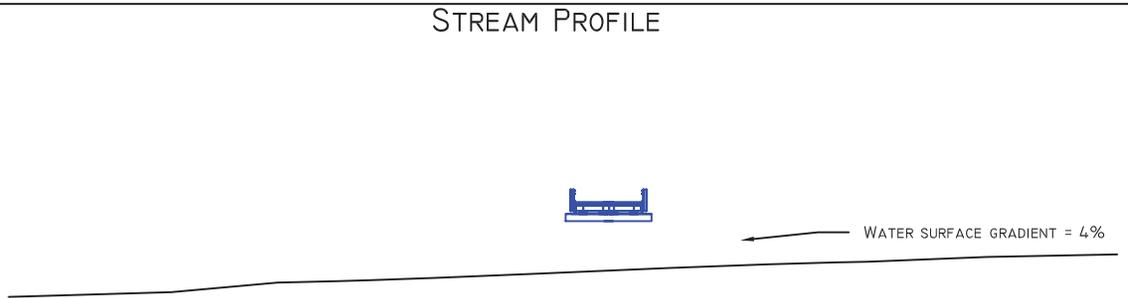
- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.



# 60' MODULAR STEEL BRIDGE INSTALLATION MU-ML ROAD STATION 478+92 TO 479+52 BRIDGE PROFILE- LOOKING DOWNSTREAM



## STREAM PROFILE



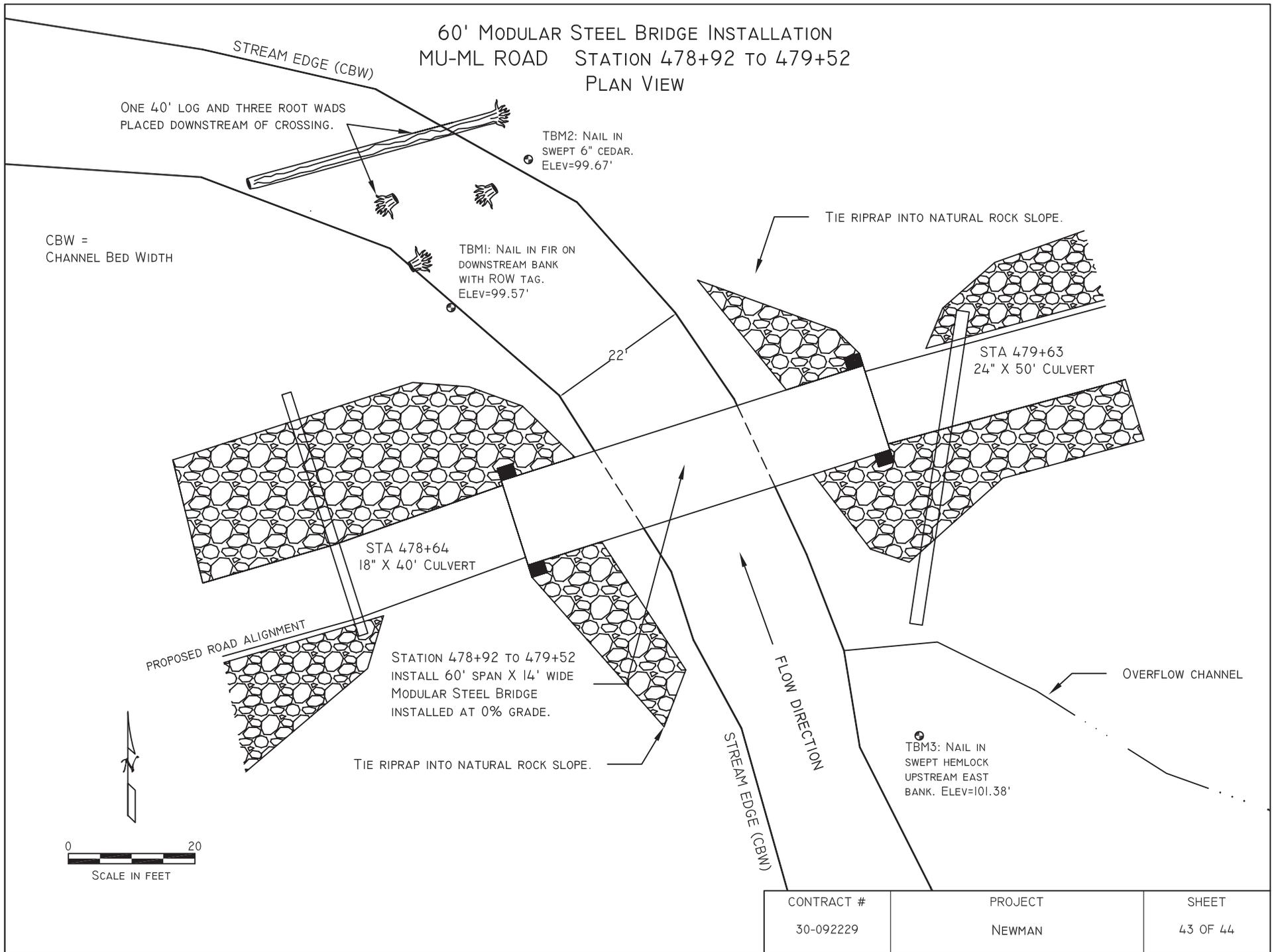
THIS PROFILE WAS GENERATED FROM WATER SURFACE MEASUREMENTS, NOT STREAMBED ELEVATION.

**FPA NOTES:**

1. AVG. BANKFUL WIDTH = 22'. BASED ON A TOTAL OF 12 MEASUREMENTS UPSTREAM AND DOWNSTREAM OF BRIDGE CROSSING.
2. THE DESIGN PROVIDES 12.5' OF CLEARANCE ABOVE EXISTING STREAMBED.

CONTRACT #	PROJECT	SHEET
30-092229	NEWMAN	42 OF 44

60' MODULAR STEEL BRIDGE INSTALLATION  
 MU-ML ROAD STATION 478+92 TO 479+52  
 PLAN VIEW



ONE 40' LOG AND THREE ROOT WADS  
 PLACED DOWNSTREAM OF CROSSING.

TBM2: NAIL IN  
 SWEPT 6" CEDAR.  
 ELEV=99.67'

CBW =  
 CHANNEL BED WIDTH

TBM1: NAIL IN FIR ON  
 DOWNSTREAM BANK  
 WITH ROW TAG.  
 ELEV=99.57'

TIE RIPRAP INTO NATURAL ROCK SLOPE.

STA 479+63  
 24" X 50' CULVERT

STA 478+64  
 18" X 40' CULVERT

PROPOSED ROAD ALIGNMENT

STATION 478+92 TO 479+52  
 INSTALL 60' SPAN X 14' WIDE  
 MODULAR STEEL BRIDGE  
 INSTALLED AT 0% GRADE.

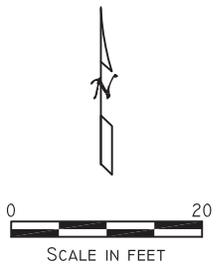
TIE RIPRAP INTO NATURAL ROCK SLOPE.

OVERFLOW CHANNEL

TBM3: NAIL IN  
 SWEPT HEMLOCK  
 UPSTREAM EAST  
 BANK. ELEV=101.38'

FLOW DIRECTION

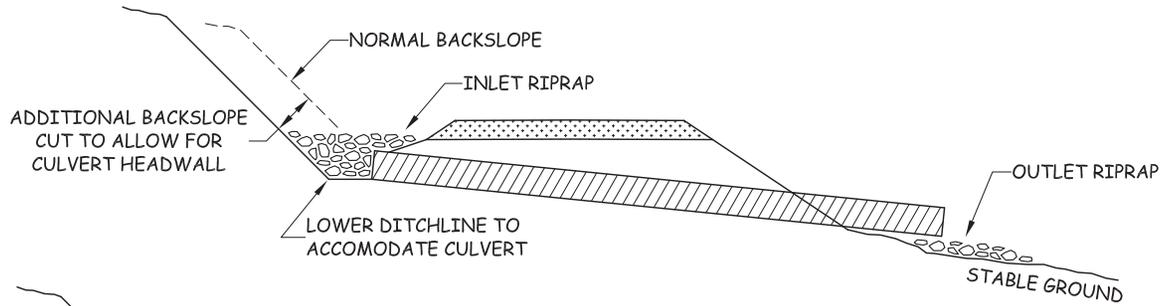
STREAM EDGE (CBW)



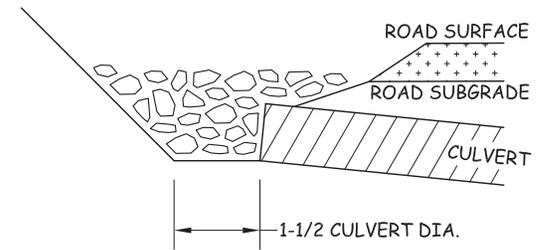
CONTRACT #	PROJECT	SHEET
30-092229	NEWMAN	43 OF 44

# CULVERT AND DRAINAGE SPECIFICATIONS

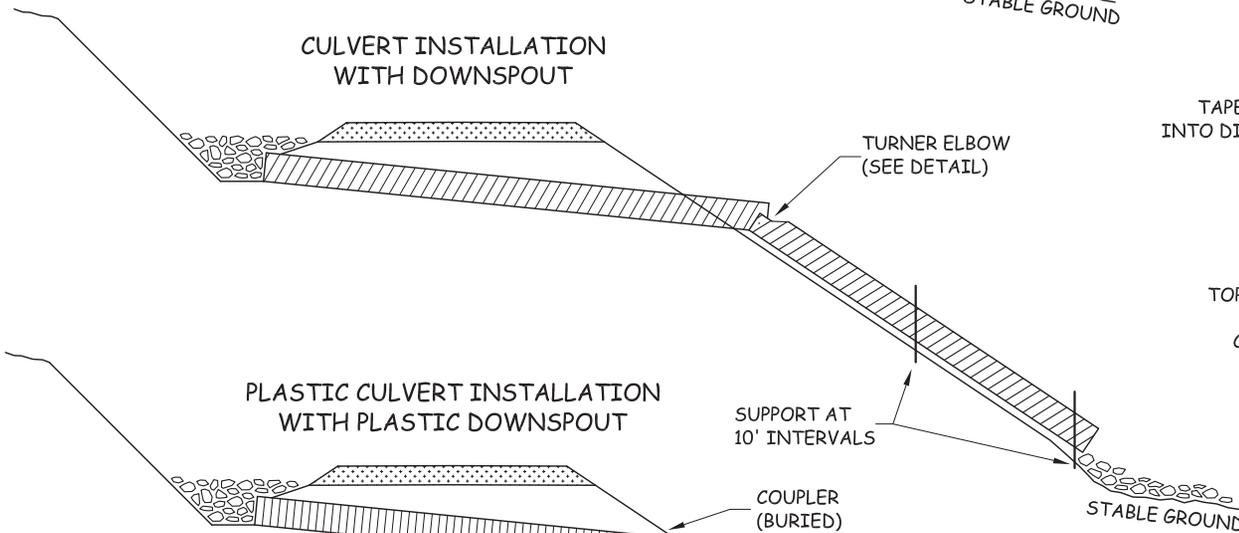
CULVERT INSTALLATION (TYPICAL)



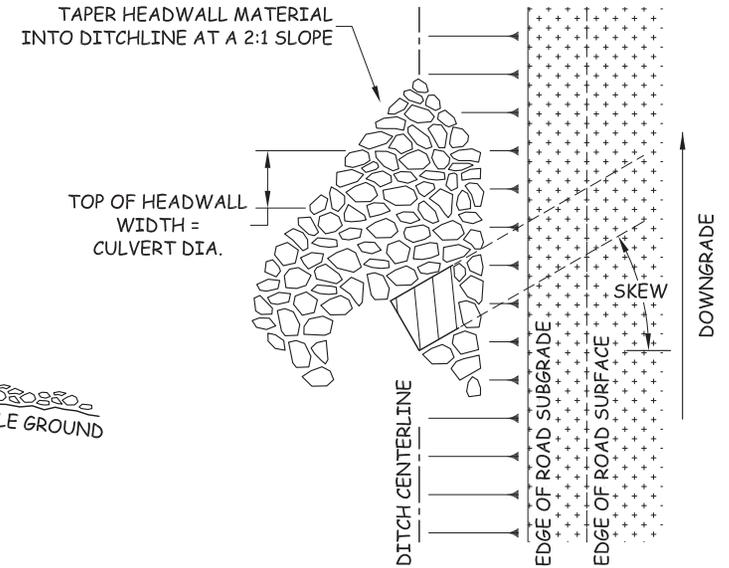
CULVERT HEADWALL - SECTION VIEW



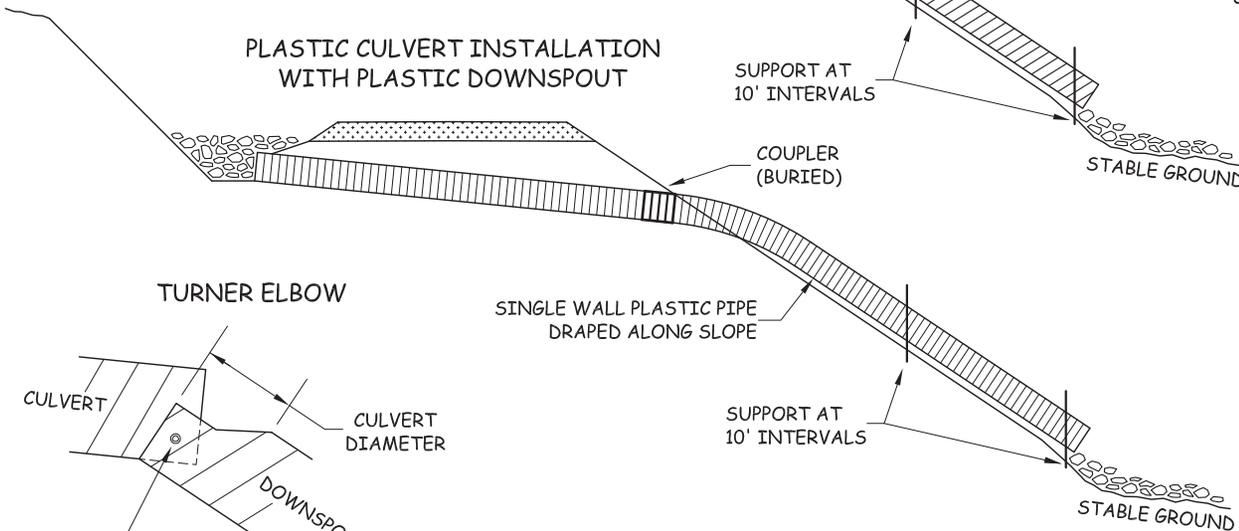
CULVERT INSTALLATION WITH DOWNSPOUT



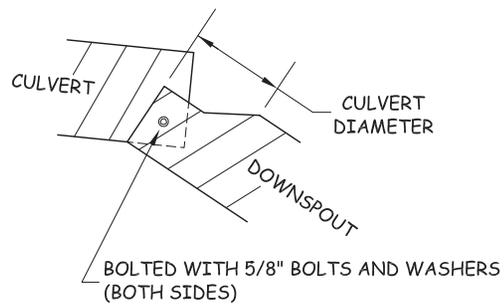
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



TURNER ELBOW



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

CONTRACT # 30-092229	PROJECT NEWMAN	SHEET 44 OF 44
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## SUMMARY - Road Development Costs

REGION: NW  
DISTRICT: Cascade

SALE/PROJECT NAME: NEWMAN

CONTRACT #: 30-092229

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ROAD NUMBERS:	MU-ML, MU-71, MU-75, MU-77, MU-81, MU-81, MU-8101, and MU-92	MU-ML	-
ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	132.53	236.56	0
CLEARING & GRUBBING:	\$54,356	\$0	
EXCAVATION AND FILL:	\$47,961	\$0	-
MISC. MAINTENANCE:	\$3,197	\$14,194	-
ROAD ROCK:	\$79,935	\$33,118	-
ROCK STOCKPILE PROD:	\$0	\$0	-
CULVERTS AND FLUMES:	\$35,172	\$0	-
STRUCTURES:	\$89,527	\$0	-
MOBILIZATION:	\$9,592	\$0	-
TOTAL COSTS:	\$319,741	\$47,312	\$0
COST PER STATION:	\$2,413	\$200	#DIV/0!
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$1,350	
		<b>TOTAL (All Roads) =</b>	<b>\$368,403</b>
		<b>SALE VOLUME MBF =</b>	<b>8,000</b>
		<b>TOTAL \$/MBF =</b>	<b>\$46</b>

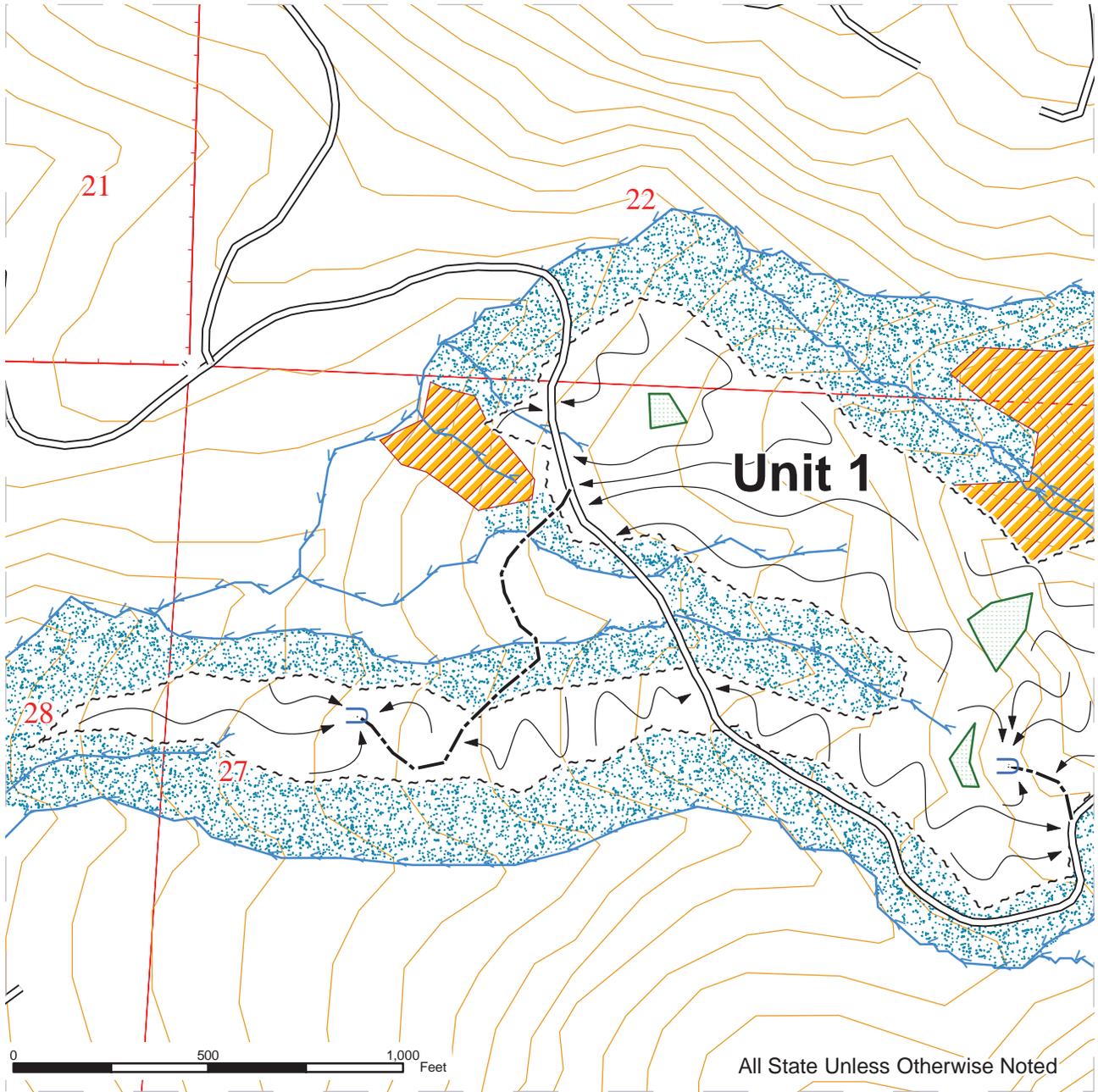
Compiled by: Warner

Date: 04/29/15

# LOGGING PLAN MAP

SALE NAME: NEWMAN  
 AGREEMENT#: 92229  
 TOWNSHIP(S): T34R05E  
 TRUST(S): Common School and Indemnity(3), Charitable/Educational/Penal & Reformatory Instit.(6), Capitol Grant(7)

REGION: Northwest Region  
 COUNTY(S): SKAGIT  
 ELEVATION RGE: 1766-2889

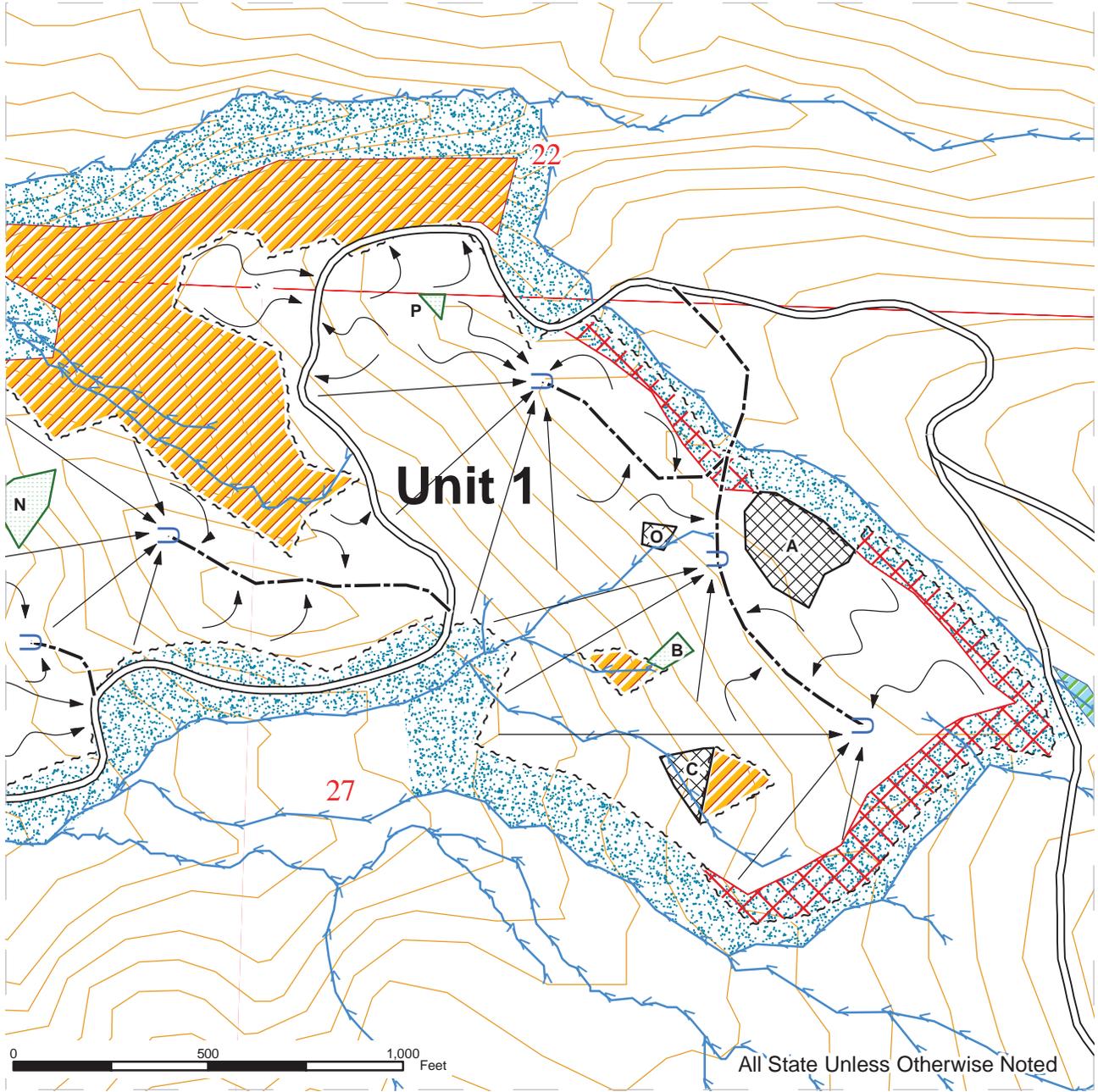


~ ~ Sale Boundary Tags	Streams	◊ Monumented Corners
▣ Riparian Restoration	RMZs	⊠ Non-tradable Leave Trees
== Existing Roads	Wetlands	▣ Tradable Leave Trees
== Required Construction	Rule-identified Slopes	▣ DNR Managed Lands
— Optional Construction	Proposed Landing	▣ Public Land Survey Sections
	Ground	
	Cable	

# LOGGING PLAN MAP

SALE NAME: NEWMAN VRH & VDT  
 AGREEMENT#: 92229  
 TOWNSHIP(S): T34R05E  
 TRUST(S): Common School and Indemnity(3), Charitable/Educational/Penal & Reformatory Instit.(6), Capitol Grant(7)

REGION: Northwest Region  
 COUNTY(S): SKAGIT  
 ELEVATION RGE: 1766-2889

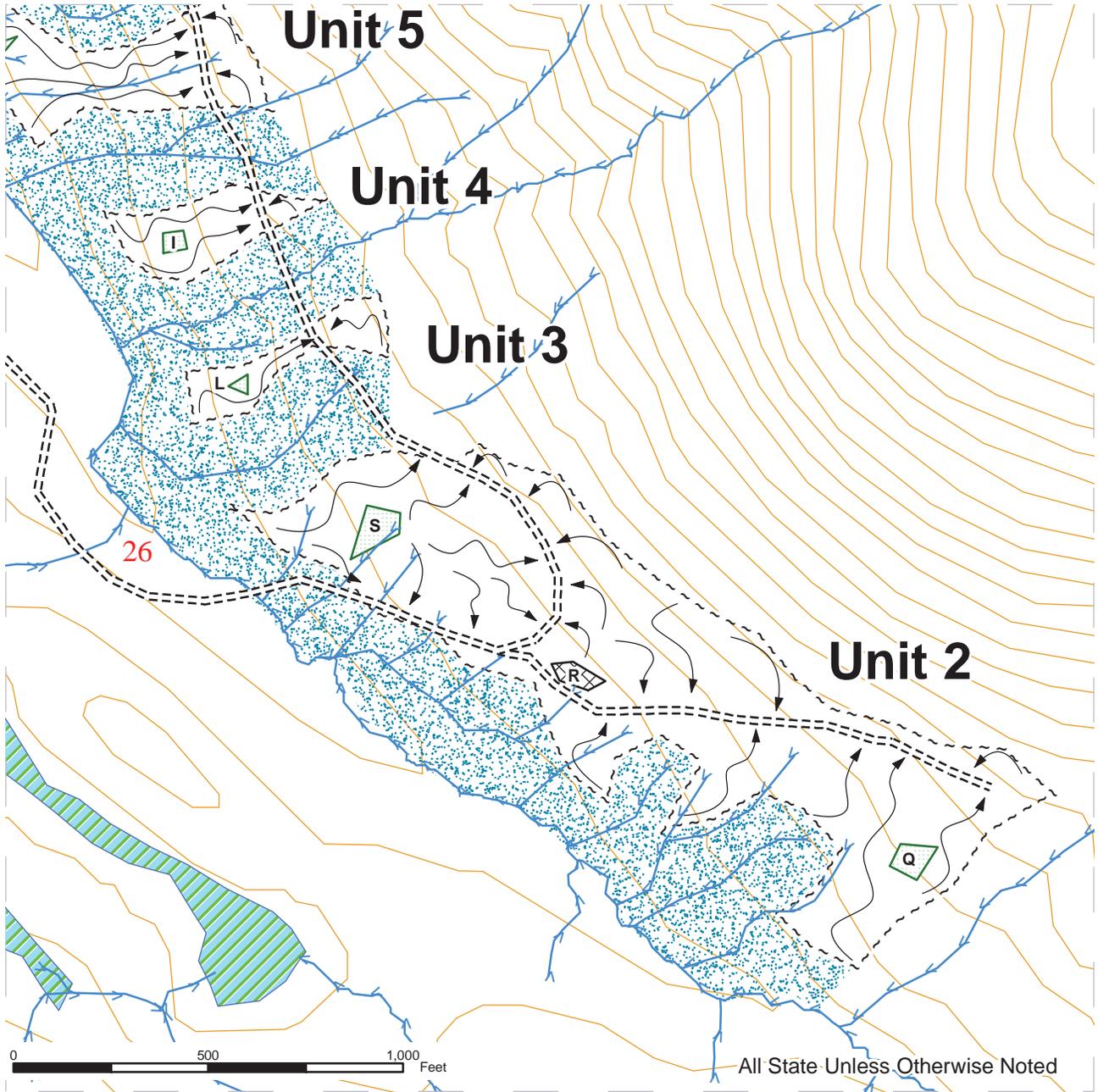


~ ~ Sale Boundary Tags	Streams	Monumented Corners
Riparian Restoration	RMZs	Non-tradable Leave Trees
Existing Roads	Wetlands	Tradable Leave Trees
Required Construction	Rule-identified Slopes	DNR Managed Lands
Optional Construction	Proposed Landing	Public Land Survey Sections
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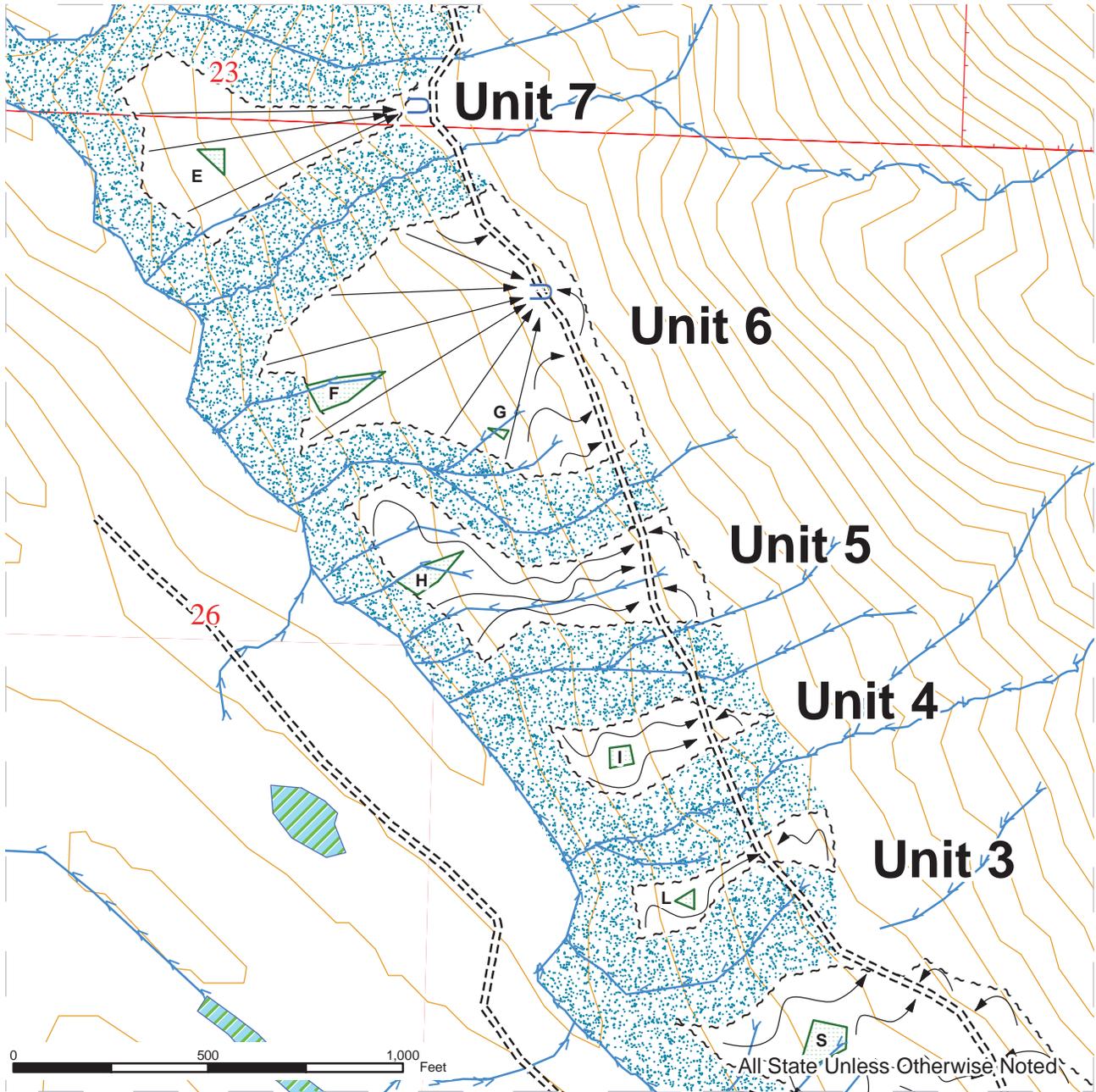


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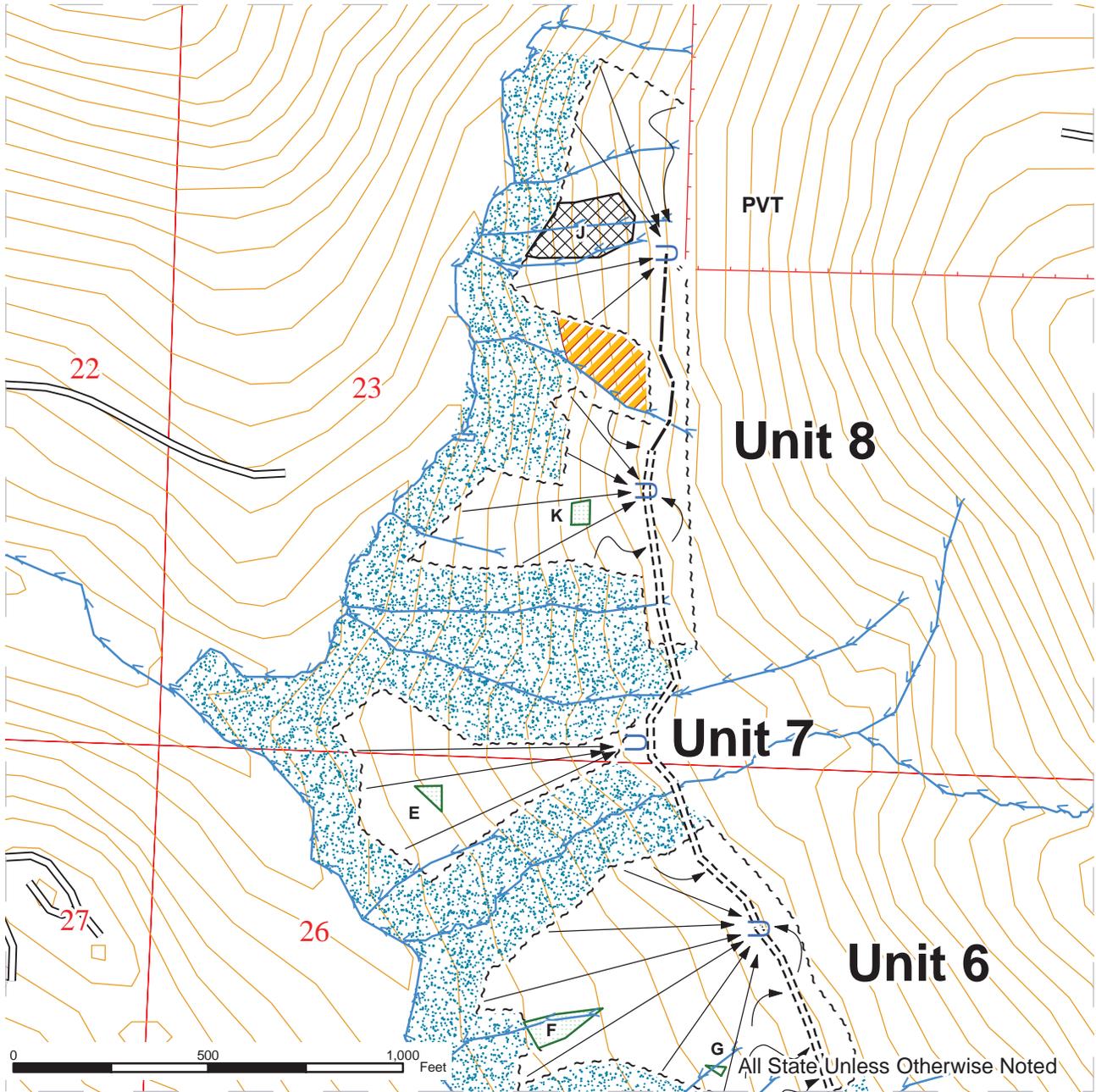


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