

TIMBER NOTICE OF SALE

SALE NAME: WEST BEAR TRIPPIN VRH & VDT

AGREEMENT NO: 30-093094

AUCTION: May 25, 2016 starting at 10:00 a.m.,
Northwest Region Office, Sedro Woolley, WA

COUNTY: Skagit

SALE LOCATION: Sale located approximately 15 miles northeast of Arlington, WA.

**PRODUCTS SOLD
AND SALE AREA:**

All timber bounded by white timber sale boundary tags, powerline/pipeline right-of-way, and the SO-ML and LM-07 roads, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #1.

All timber bounded by white timber sale boundary tags, powerline/pipeline right-of-way and orange right-of-way tags, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All timber bounded by white timber sale boundary tags, adjacent young stands, orange right-of-way tags, the SO-ML and SO-11 roads, and abandoned road grade, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

All timber bounded by white timber sale boundary tags, adjacent rock pit, and BR-ML Road, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags, and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #4.

All trees as described for removal in Schedule B, located in the WMZ and RMZ thinning areas (beyond the blue special management tags up to the white timber sale boundary tags) within Units #1, #2, #3, and #4.

The above described products on part(s) of Sections 11, 12, 20, 21 and 29 all in Township 33 North, Range 5 East, W.M., containing 211 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	Total \$/MBF	MBF by Grade								
					1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	15	5	3,540	\$261.00						903	1,930	538	169
Red cedar	16		238	\$935.00							183	55	
Red alder	11		155	\$210.00								134	21
Hemlock	16		153	\$190.00						67	70	11	5
Maple	13		8	\$50.00									8
Cottonwood	20		7	\$50.00						6			1
Sale Total			4,101										

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MINIMUM BID: \$261/MBF (est. value \$1,208,000.00) **BID METHOD:** Sealed Bids

PERFORMANCE

SECURITY: \$100,000.00 **SALE TYPE:** MBF Scale

EXPIRATION DATE: March 31, 2018 **ALLOCATION:** Export Restricted

BIDDABLE SPECIES: Douglas fir

BID DEPOSIT: \$120,800.00 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. Cutting and yarding in the RMZ thinning areas 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 measures.

ROADS: 8.47 stations of required construction. 12.94 stations of optional construction. 12.94 stations of road to be abandoned if built. 316.75 stations of required pre-haul maintenance.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: LM-04 Gravel Rock Pit at station 21+30 of the LM-ML Road. West Bear Pit at Station 9+24 of the BR-3802-05 Road (Existing stock pile of 50 c.y. 1 1/2-inch-minus crushed rock).

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

An estimated total quantity of rock needed for this proposal: 15 cubic yards of riprap, 50 cubic yards of surfacing and 400 cubic yards of ballast rock.

Road construction, 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. 218.1 acres gross. 6.4 acres deducted for green tree retention clumps and 0.3 acres deducted for existing road area. 211.4 acres net. Cruised using variable plot method. Expansion factor used is 40.00 in Units #1, #2, #3, corridors and RMZ and WMZs 1, 2, and 3; 54.45 and 40.0 in Unit #4 and RMZs 4 and 5; ITS in road right-of-ways 1 and 2. Sighting height is 4.5 feet. A total of 121 plots were taken.

Shapefiles of units are available upon request.

FEES: \$72,792.75 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

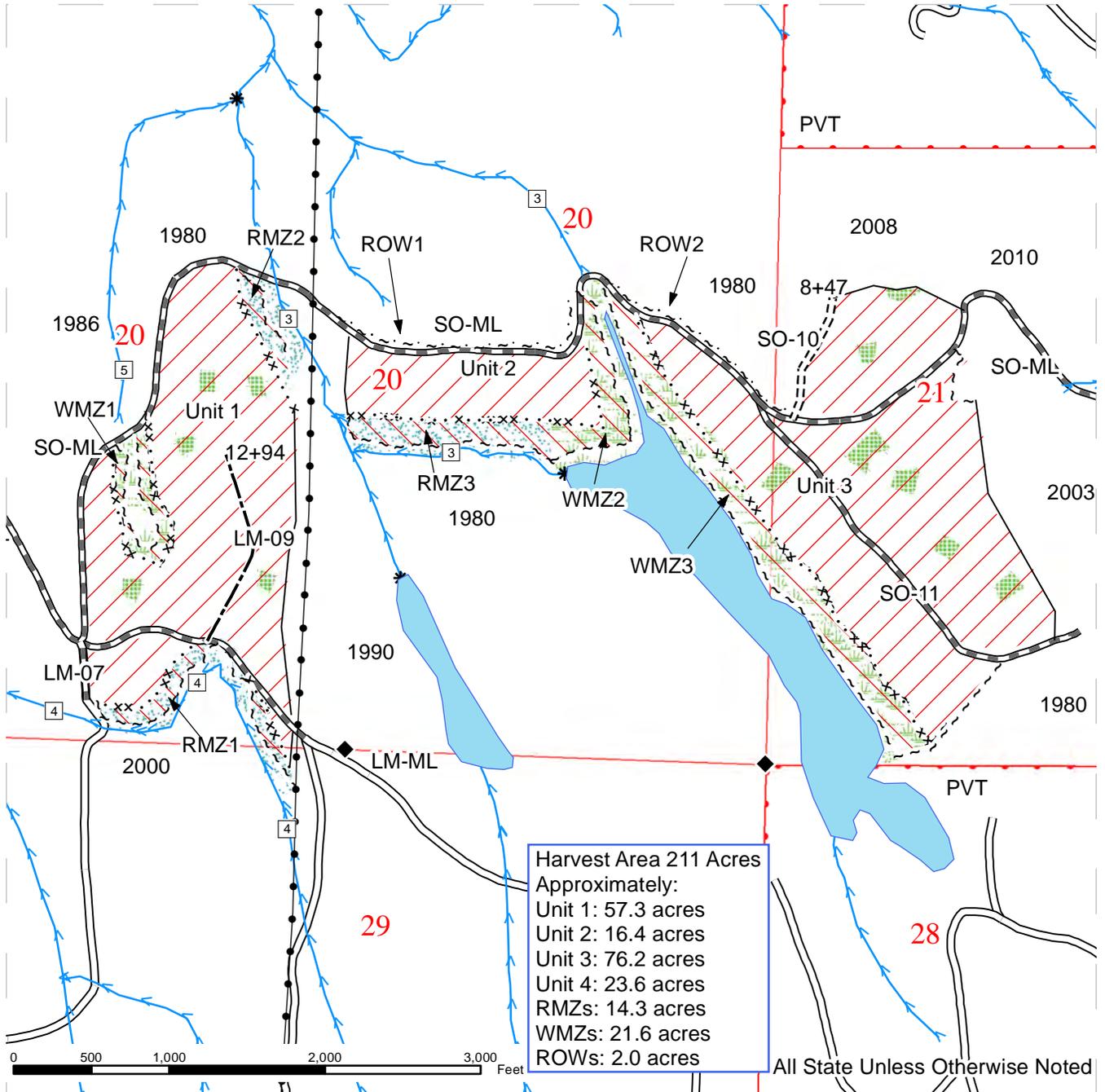
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SPECIAL REMARKS: Outer boundary of harvest area in RMZ and WMZ thinning areas is demarcated with blue special management tags within the sale area.

TIMBER SALE MAP

SALE NAME: WEST BEAR TRIPPIN VRH & VDT
AGREEMENT#: 93094
TOWNSHIP(S): T33R05E
TRUST(S): State Forest Transfer(1)

REGION: Northwest Region
COUNTY(S): SKAGIT
ELEVATION RGE: 547-856



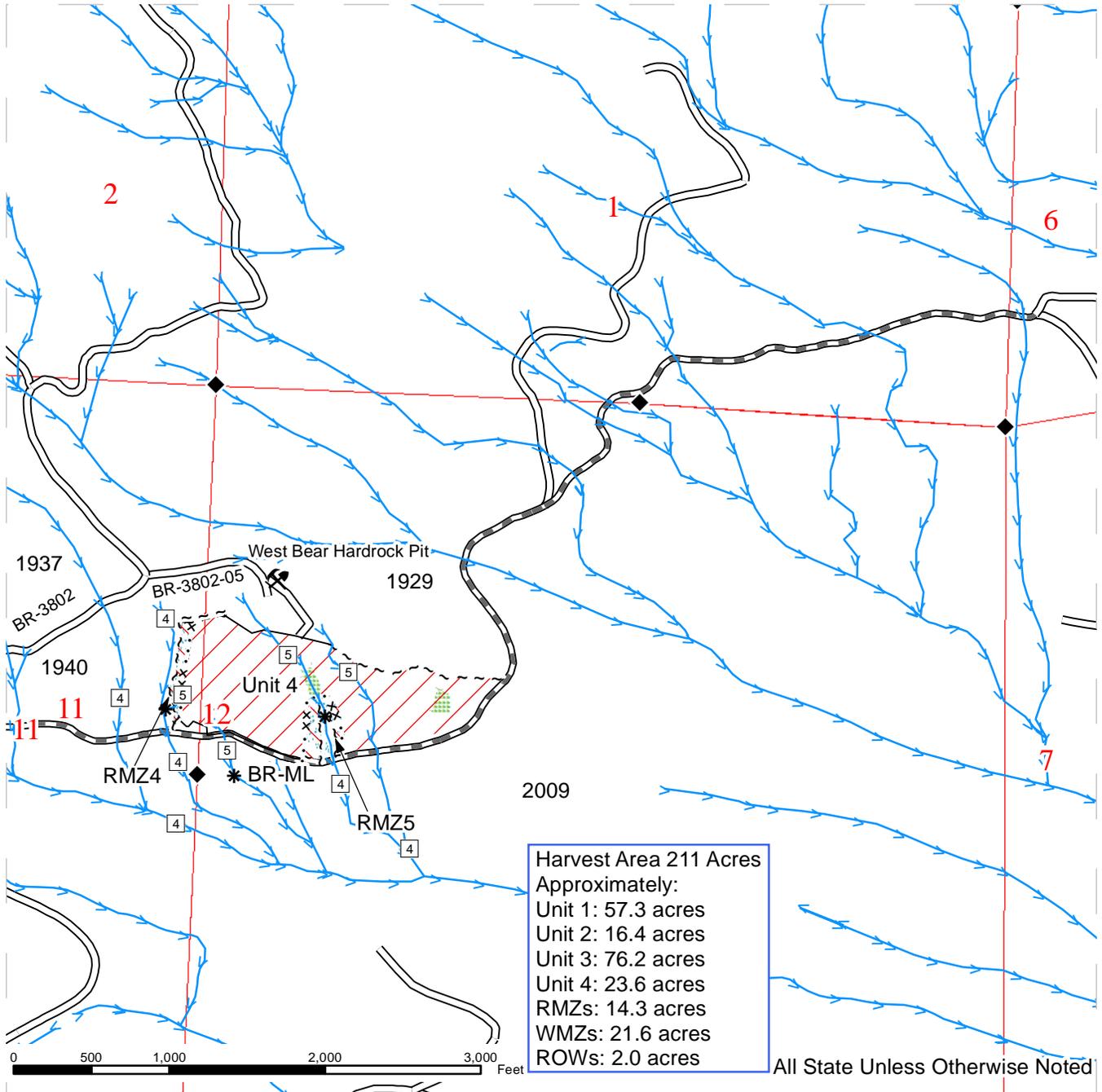
Variable Retention Harvest	Sale Boundary Tags	Streams
Variable Density Thinning	Special Mgt Area Tags	Stream Type
Riparian Mgt Zone	Sale Boundary - No Tags	Stream Type Break
Wetland Mgt Zone	Right of Way Tags	Survey Corners
Leave Tree Area	Optional Construction	Leave Trees
Existing Road	Required Pre-Haul Maintenance	Powerline & Pipeline
Required Construction		



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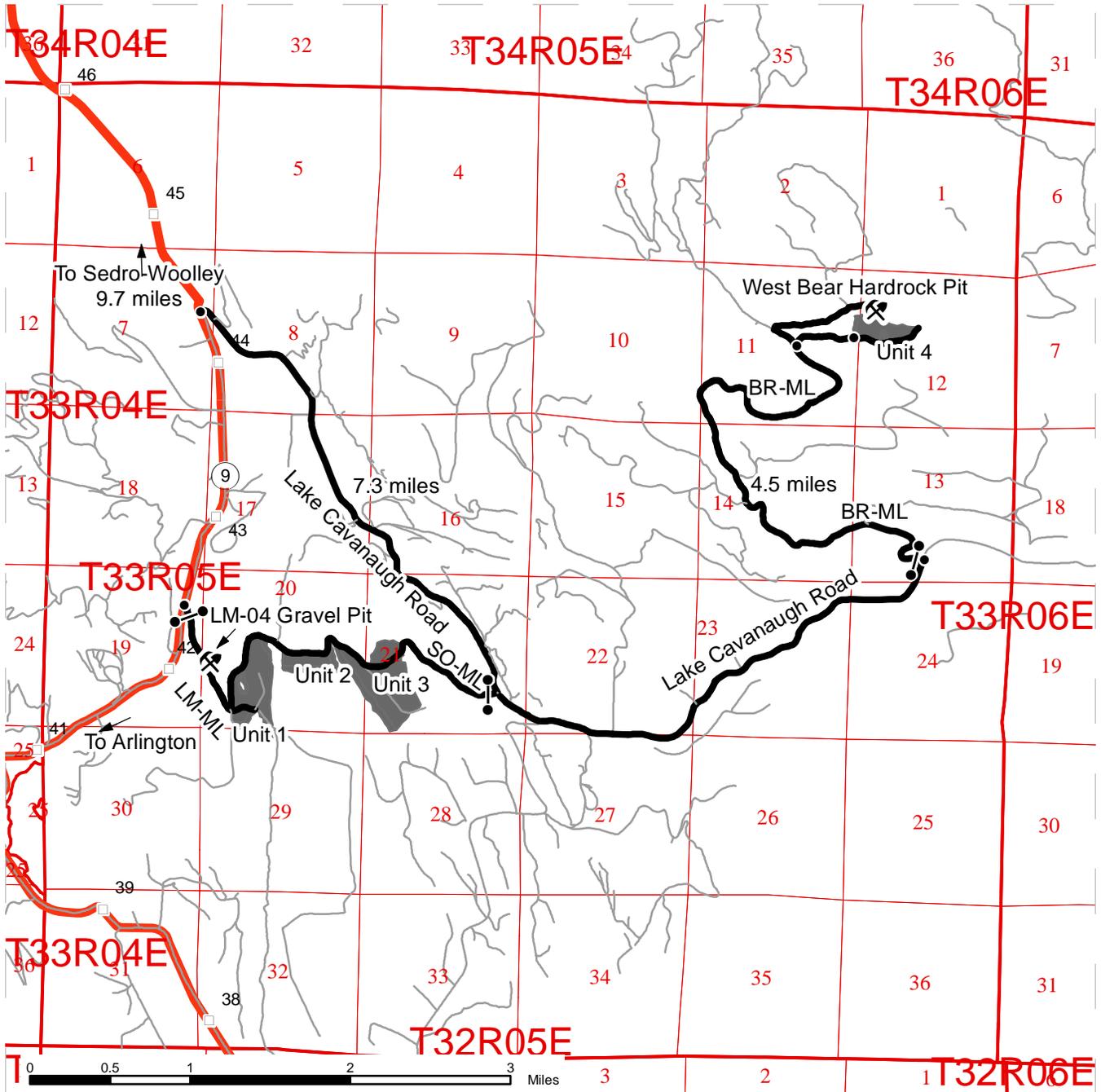
	Variable Retention Harvest		Sale Boundary Tags		Streams
	Variable Density Thinning		Special Mgt Area Tags		Stream Type
	Riparian Mgt Zone		Sale Boundary - No Tags		Stream Type Break
	Wetland Mgt Zone		Right of Way Tags		Survey Corners
	Leave Tree Area		Optional Construction		Leave Trees
	Existing Road		Required Pre-Haul Maintenance		Powerline & Pipeline
	Required Construction				



DRIVING MAP

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

DRIVING DIRECTIONS:
Eastern Units
 From Sedro-Woolley, WA, drive south on State Route 9 to the Lake Cavanaugh road. Proceed east on that road for 7.3 miles until you arrive at a gate on the north side of the road (Bear Creek mainline). Follow the Bear Creek mainline for 4.5 miles. Then head east at the junction proceed to unit (caution: there are other tagged timber sale units in the vicinity that are not part of this sale).
Western Units
 From Sedro-Woolley, WA, drive south on State Route 9 for approximately 12 miles. Take the gate on the east side of SR9, just north of the Lake Creek crossing. Proceed up the mainline to the first four-way junction, you have arrived at unit #1.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted MBF Scale AGREEMENT NO. 30-093094

SALE NAME: WEST BEAR TRIPPIN 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-010 Products Sold and Sale Area

Purchaser was the successful bidder on May 25, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber bounded by white timber sale boundary tags, powerline/pipeline right-of-way, and the SO-ML and LM-07 roads, except forest products tagged out by blue special management tags, trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #1.

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All trees as described for removal in Schedule B, located in the WMZ and RMZ thinning areas (beyond the blue special management tags up to the white timber sale boundary tags) within Units #1, #2, #3, and #4.

The above described products, located on approximately 211 acres on part(s) of Sections 11, 12, 20, 21, and 29 all in Township 33 North, Range 5 East W.M. in Skagit County(s) as shown on the attached timber sale map and as designated on the sale area.

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

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to March 31, 2018.

G-040 Contract Term Adjustment - No Payment

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

- a. Road and bridge failures which deny access.

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

G-050 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 contract value based on the contract payment rate and advertised volume.

For the second extension, not to exceed 1 year, payment of at least 90 percent of the contract value based on the contract payment rate base and advertised volume.

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 timber value of the contract.

To determine the unpaid portion of the contract, multiply the contract payment rate for each item by the remaining volume for each item based on the volumes from the Timber Notice of Sale. In addition, all cash deposits that can be used for timber payments, except the initial deposit, will be deducted from the unpaid portion of the contract.

- e. Payment of \$3.00 per acre per annum for the acres on which an operating release has not been issued in Variable Density Thinning (VDT) areas in RMZ and WMZ areas in Units 1, 2 and 3.. Payment of \$48.00 per acre per annum for the acres on which an operating release has not been issued in Variable Retention Harvest (VRH) areas.
- 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-090 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, added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 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 shall be paid for at the same rate and manner as other forest products under this contract.

G-105 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 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 same rate and manner as other forest products under this contract.

G-110 Title and Risk of Loss

Title to the forest products conveyed passes at confirmation of the sale. Purchaser bears the risk of loss of or damage to and has an insurable interest in the forest products in this contract from the time of confirmation of the sale of forest products. In the event of loss of or damage to the forest products after passage of title, whether the cause is foreseeable or unforeseeable, the forest products shall be paid for by Purchaser. Breach of this contract shall have no effect on this provision. Title to the forest products not removed from the sale area within the period specified in this contract shall revert to the State as provided in RCW 79.15.100.

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; LM-ML (Lake McMurray Mainline), LM-07, LM-09, SO-ML (Summer Lake Mainline), SO-10, SO-11, BR-ML (Bear Creek Mainline), BR-38, BR-3802, BR-3802-05, and BR-50. 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 BR-ML, LM-ML, LM-07, 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:

Natalie McGovern; #55-000220; dated June 16, 1967.

Northern Pacific Railway Company; #55-000636; dated June 14, 1913.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-010 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 the 'Payment for Forest Products' clause, 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-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus \$72,792.75 on day of sale and \$9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

Species that are conveyed but are not listed in the table above shall be paid for at a rate to be determined by the State.

Utility logs, special cull and peelable cull logs of all species, included on loads of logs that are required to be removed and scaled per clause H-150 will be paid for on an adjusted gross scale basis at the rate of \$20.00 per MBF plus fees.

P-027 Payment for Removal of Optional Forest Products

Purchaser agrees to pay the rate of \$2.00 per ton for forest products approved for removal from the sale area under clause H-157.

P-040 Weighing and Scaling Costs

Purchaser agrees to pay for all scaling and weighing costs for logs and other products sold under this contract. Purchaser also agrees to pay for all costs associated with the transmission and reporting of scale or weight data.

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-070 Payment for Products: Damage, Theft, Loss or Mismatch

Forest products included in this agreement which are destroyed, damaged, stolen, lost, or mismatched shall be paid for by Purchaser on demand of the State. The rates contained in clause P-021 shall apply.

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 L: Log Definitions and Accountability

L-010 Forest Products Conveyed

Forest products conveyed are all logs or parts of logs described by the 'Products Sold and Sale Area' (G-010) clause meeting the removal requirements listed in the 'Required Removal of Forest Products' (H-150) clause.

L-020 Short Logs - Peeler Blocks

Logs or parts of logs which are removed from the sale area that fail to meet the minimum gross length requirements shall be scaled and graded as short logs or peeler blocks. Such material shall be paid for at the forest products rates specified in this contract.

L-060 Load Tickets

Purchaser shall complete and use load tickets as directed by the Contract Administrator and, if required, use other identification as directed by the State to ensure accounting of forest products removed from the sale area. A load ticket must be fixed, as designated by the Contract Administrator, to each truck and trailer load prior to leaving the landing.

Purchaser shall account for all load tickets issued by the Contract Administrator. The State may treat load tickets not accounted for as lost forest products. All costs associated with computing the billings for lost loads shall be borne by Purchaser.

L-071 Log and Load Reporting Service

This contract requires the use of a State approved third party Log and Load Reporting Service (LLRS). Purchaser shall ensure log volume measurement data and/or load and weight data is received by the LLRS within of logs being measured or weighed. Purchaser agrees to pay the LLRS for log and load data supplied to the State.

If during the term of this contract, the State discontinues use of the LLRS, the State will notify the Purchaser in writing and the Purchaser will then be responsible to send log scale and/or weight information to the State.

L-080 Scaling Rules

Determination of volume and grade of any forest products shall be conducted by a state approved third party scaling organization and in accordance with the Westside log scaling and grading rules and Scribner Volume Table, revised July 1, 1972, contained in the Northwest Log Rules Eastside and Westside Log Scaling Handbook (developed and produced by the Northwest Log Rules Advisory Group) and in effect on the date of confirmation of this contract.

Special scaling specifications shall be noted on the State's Brand Designation form which is hereby incorporated to this contract by reference.

L-110 State Approval of Log Scaling and Weighing Locations

Forest Product measurement and weighing facilities required by this contract must be approved by the State. Forest products sold under the contract which require log scaling shall be scaled, measured, or counted by a State approved third party log scaling organization. Forest products sold under the contract which require weighing shall be weighed at a location that meets Washington State Department of Agriculture approval.

Prior to forest products being hauled, the Contract Administrator must authorize in writing the use of State approved measurement and/or weighing facilities that are at or en-route to final destinations. Forest products from this sale shall be measured or weighed at facilities, which are currently approved for use by the State and are currently authorized for this sale. The State reserves the right to verify load volume and weights with State employees or contractors at the State's own expense. The State reserves the right to revoke the authorization of previously approved measurement locations.

L-120 Long Log Taper Distribution

Forest products over 40 feet long plus trim shall be segment scaled and the lower segment diameters shall be determined using actual taper. In order to utilize taper rules for determining segment diameters for poles and pilings greater than 40 feet in length plus trim, Purchaser must request use of a Pole and Piling Scaling Specification Agreement on file in the region office. Approval for usage of a special Pole and Piling Scaling Specification Agreement may be granted at the sole discretion of the State.

Following State approval for usage of the Pole and Piling Scaling Specification Agreement, the Brand Designation form shall be amended to incorporate the long log taper rules. The volume reported by the scaling organization for forest products over 40 feet plus trim will be expanded by 5 percent and the additional 5 percent volume shall be billed to the purchaser at the contract rate.

L-130 Conversion Factors

Forest products removed from the sale area that are not measured in units specified in the 'Payment for Forest Products' clause of this contract shall be converted to board feet using Department of Natural Resources' standard conversion factors.

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

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

H-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 20 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 20 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-030 Timber Falling

Trees shall be felled and logs shall be bucked to obtain the greatest practicable utilization of forest products and other valuable materials conveyed.

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for the sale area. The plan shall address the falling, yarding and hauling of forest products, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-052 Branding and Painting

Forest products shall be branded with a brand furnished by the State prior to removal from the landing. 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-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be 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, and tracked skidder as designated by Contract Administrator in thinning areas, unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

If Purchaser tailholds on State land, methods to minimize damage to live trees outside the sale area shall be employed and must be approved in writing by the Contract Administrator.

H-130 Hauling Schedule

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. An on-site pre-work meeting with the Contract Administrator, which shall include the Purchaser, 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. Snags not buffered by L & I leave tree buffers that are felled for safety concerns do not become part of the products sold and shall be left on site where they fell.
- D. Marked leave trees may be traded for trees of the same size and species with prior approval from the Contract Administrator.
- E. Cutting and yarding in the RMZ thinning areas 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 measures.
- F. Purchaser shall mark 5 trees per acre of RMZ for riparian enhancement. Once approved by the Contract Administrator, the purchaser shall fell 3 trees per acre towards the stream for Large Woody Debris and the remaining two per acre shall be girdled by the purchaser to create snags. Girdling shall expose the cambium the entire circumference of the tree for a width of no less than 3 inches. Snags created by mechanized equipment shall be at least 20 feet tall and tops are to remain on site.
- G. Falling and yarding shall occur away from all typed waters where possible. Avoid parallel cable yarding in, across, or adjacent to stream channels where possible. All type 5 streams will have a 30-foot equipment limitation zone measured from each bank.

H. Ground-based equipment crossings over type 5 streams shall be located by Purchaser and approved by Contract Administrator before use. The Contract Administrator must approve all crossings, prior to cutting adjacent timber, across Type 5 streams. Full suspension is required when ground based logging over type 5 streams.

I. All ground-based and cable corridors shall be located by the purchaser and approved by the Contract Administrator before cutting of timber. Cable corridors shall be no wider than 12 feet, and no closer than 100 feet between corridors, as measured from center of corridors. Ground based corridors shall be no wider than 15 feet, and no closer than 75 feet between corridors, as measured from the center of corridors.

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

H-150 Required Removal of Forest Products

Purchaser shall remove from the sale area and present for scaling or weighing all forest products conveyed in the G-010 clause that meet the following minimum dimensions:

Species	Net bd ft	Log length (ft)	Log dib
All species	10	12	5

The State may treat failure to remove forest products left on the sale area that meet the above specifications as a breach of this contract. At the State's option, forest products that meet the above specifications and are left on the sale area may be scaled for volume or measured and converted to weight by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling, measuring and computing the billing will be borne by the Purchaser.

H-157 Optional Removal of Forest Products Not Designated

If in the course of operations, Purchaser decides to remove forest products that are below the minimum designated removal specifications per the 'Required Removal of Forest Products' (H-150), the payment rates in clause P-027 shall apply.

Forest products designated as optional shall be decked separately from forest products designated as required for removal. Prior to removal from the sale area, optional forest products as described in this clause must be inspected and approved by the Contract Administrator. Optional forest products may not be mixed with forest products that are required for removal by this contract and shall be removed from the sale area in separate truck loads using load tickets specified by the Contract Administrator.

All material removed under this clause is subject to the same log and load accountability rules as defined in the Log Definitions and Accountability section of this

contract. Purchaser shall follow the payment procedures as required in the P-052 clause and will submit a separate summary report for all forest products removed from the sale area under the authority of this clause.

H-160 Mismanufacture

Mismanufacture is defined as forest products remaining on the sale area that would have met the specifications in clause H-150 if bucking lengths had been varied to include such products.

The State may treat mismanufacture as a breach of this contract. At the State's option, forest products that are left on the sale area may be scaled for volume by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling and computing the billing will be borne by Purchaser.

H-180 Removal of Specialized Forest Products or Firewood

Prior to the removal of conveyed specialized forest products or firewood from the sale area, Purchaser and the State shall agree in writing to the method of accounting for/and removal of such products.

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 11/20/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on LM-ML, LM-07, LM-09, SO-ML, SO-10, SO-11, BR-ML (Station 200+64 to 260+98), BR-38, BR-3802, BR-3802-05, and BR-50 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on BR-ML (Station 0+00 to 200+64) roads. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the 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.

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

Slash or debris which enters any type 5 stream as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and

deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

Section D: Damages

D-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State 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.

D-020 Failure to Remove Forest Products

Purchaser's failure to remove all or part of the forest products sold in this agreement prior to the expiration of the contract term results in substantial injury to the State. The value of the forest products sold at the time of breach is not readily ascertainable. Purchaser's failure to perform disrupts the State's management plans, the actual cost of which is difficult to assess. A resale involves additional time and expense and is not an adequate remedy. Therefore, Purchaser agrees to pay the State as liquidated damages a sum calculated using the following formula:

$$LD = .35V-ID-P+C+A$$

Where:

- LD = Liquidated Damage value.
- V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal volume to date from the State's cruise volume multiplied by the contract bid rates.
- ID = Initial Deposit paid at date of contract that has not been applied to timber payments.
- P = Advance payments received but not yet applied to specific contract requirements.
- C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.
- A = Administrative Fee = \$2,500.00.

The above formula reflects the Purchaser's forfeiture of the initial deposit in accordance with clause P-010 by deducting the initial deposit from the amount owed. In no event shall the liquidated damages be less than zero. Interest on the liquidated damage is owed from the date of breach until final payment, calculated using the following formula: $\text{Interest} = r \times \text{LD} \times N$.

Where:

- r = daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.
- LD = Liquidated damage value.
- N = Number of days from date of breach to date payment is received.

D-030 Inadequate Log Accountability

Removal of forest products from the sale area without adequate branding and/or valid load tickets attached to the load and scaling forest products in a location other than the facility approved by the State can result in substantial injury to the State. Failure to properly account for loads and scaling and/or weighing information can result in loss to the State. The potential loss from not having proper branding, ticketing, scaling and/or weighing location and accountability is not readily ascertainable. Purchaser's failure to perform results in a loss of log weight and scale accountability, increases the potential for unauthorized removal of forest products, and increases the State's administration costs, the actual costs of which are difficult to assess.

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore,

Purchaser agrees to pay the State, as liquidated damages, a sum of \$100 each time a load of logs does not have branding as required in the contract, \$250 each time a load of logs does not have a load ticket as required by the contract, \$250 each time a load ticket has not been filled out as required by the plan of operations, \$250 each time a load is weighed or scaled at a location not approved as required under this contract, \$250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, \$250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service within 24 hours of log removal, and \$250 each time a ticket is either lost or otherwise unaccounted for.

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 areas.

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 areas.

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: _____

Date: _____

Address: _____

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

RMZ/WMZ Thinning Prescription

THINNING PRESCRIPTION: UNIT 1, 2, AND 3

- Purchaser shall leave sufficient trees and basal area per acre in the units to achieve the following evenly distributed across each unit:

Trees per Acre Average:	Basal Area per Acre Average:
125 - 135	170-190 Square feet

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

- 1) all hardwoods
- 2) Douglas-fir up to 14” DBH

Where the prescription would leave an opening greater than 30 feet in diameter, the purchaser must leave a conifer take tree from the largest diameter, largest crown class, best form, and undamaged.

THINNING PRESCRIPTION: UNIT 4

- Purchaser shall leave sufficient trees and basal area per acre in the units to achieve the following evenly distributed across each unit:

Trees per Acre Average: 75-85	Basal Area per Acre Average: 220 square feet.
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To accomplish this prescription, fallers shall harvest trees starting with smallest diameter trees working up to the largest (thin from below), cutting up to all following the below order of preference:

- 1) Red alder, and
- 2) Western hemlock up 16” DBH
- 3) Pacific Silver Fir up to 16” DBH

Where the prescription would leave an opening greater than 40 feet in diameter, the purchaser must leave a conifer take tree from the largest diameter, largest crown class, best form, and undamaged.

IMPLEMENTATION AND COMPLIANCE

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 will avoid targeting only one or two diameter ranges for harvest.

Only live trees 8 inches or greater in DBH will be used to calculate trees per acre and basal area. Trees that are less than 8 inches in DBH will be protected during harvest operations where possible. There shall not be a gap between leave trees greater than 30 feet.

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. Western redcedar 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) will 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 will 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 will require recertification of the fallers.



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)

Cruise Narrative

Sale Name: West Bear Trippin	Region: Northwest
App. Number: 30-093094	District: Clear Lake
Lead cruiser: P. Kirner	Completion date: 12/31/15
Other cruisers on sale: KM,DR	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	57.3	Yes	
2	16.4	Yes	
3	76.2	Yes	
4	23.6	Yes	
WMZ's 1,2, 3	19.3	Yes	All WMZ's combined in the sale.
RMZ's 1 thru 5	11.9	Yes	All RMZ's combined in the sale.
R/W 1	1.1	Yes	

R/W 2	.9	Yes	
Corridor	4.7	Yes	
Total	211.4		

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	V.P.	Full 40.00	4.5	280x280	2 tally 1 cruise	33
2	V.P.	Full 40.00	4.5	280x280	2 tally 1 cruise	8
3	V.P.	Full 40.00	4.5	280x280	2 tally 1 cruise	40

4	V.P.	Full 54.45 Full 40.00	4.5	280 x 280	2 tally 1 cruise	15
RMZ 4,5	V.P.	Full 54.45 Full 40.00	4.5	N/A	All cruise	3
R/W 1	I.T.S.	N/A	N/A	N/A	1 in 3	1
RMZ- WMZ 1,2,3	V.P.	Full 40.00	4.5	N/A	All cruise	19
R/W 2	ITS	N/A	N/A	N/A	1 in 3	1
Corridors	V.P.	Full 40.00	4.5	N/A	All Cruise	1
					Total plots	121

Sale/Cruise Description:

Minor species cruise intensity:	The minor species are R. Cedar, R. Alder and B. Maple. A 40 BAF was used to gather a better sample on them.					
Minimum cruise spec:	Minimum DBH 8.0 inches, 10 BF, top DIB 5 inches or 40% of 16 ft form point.					
Avg ring count by sp:	DF =	5	WH =		SS =	
Leave/take tree description:	VRH units are marked in blue, and yellow tagged LTAs. VDT units are RMZ and WMZ units unmarked to be thinned according to the prescription in Schedule A. Species with an "L" status are leave trees.					
Other conditions	RMZ/WMZ units 1, 2, 3 were combined as one unit for the cruise. RMZ units 4 and 5 were combined as one unit for the cruise. There is a different prescription for these units.					

Field observations:

<p>Units 1,2 and 3 are younger stands located just south of the Lake Cavanaugh Road on the LM-ML. Unit 4 is located on the BR-ML. This stand is older with more diverse species. The topography of the sale is gentle to moderately sloped, suitable for ground based operations. Some cable ground exists in unit 4.</p> <p>The timber type is predominantly Douglas fir averaging about 15 inches D.B.H. and 67 feet tall. It make up 70% of the volume in the sale. Red Cedar and Red Alder make up another 9% of the sale, with their averages being 16 inches and 49 feet tall and 11 inches at 50 feet tall respectively. There are trace amounts of W. Hemlock, B. Maple and B. Cottonwood.</p>
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Surface characteristics are primarily knots not exceeding 1.5 inches with little clear wood present. Defect in the DF is 5.4 percent consisting primarily of top and bole damage such as crooks, spikes, forks with minor amounts of butt rot.

Access to the sale is good with drivable road to all units. A key (F1-3) is required to access all units.

GRANTS: 100%

PREPARED BY: P. Kirner / D. Richards

TITLE: Forest Check Cruiser 1 / Forest Checker Cruiser 2

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T33N R05E S12 TyCORR THRU T33N R05E S21 Ty0003				Project: WESTBEAR											Page 1							
				Acres 211.40											Date 1/6/2016							
															Time 10:35:12AM							
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		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
RA	D	3S			.0	1	1	0	100				100				30	11	130	1.03	.0	
RA	D	4S		86	3.3	658	636	134	36	64				3	41	20	36	32	6	47	0.44	13.6
RA	D	UT		14	4.1	103	98	21	100				73	27	0		11	5	10	0.21	9.6	
RA Totals				4	3.4	761	735	155	44	56				13	39	17	31	23	6	32	0.40	23.2
DF	D	2S		25	4.4	4,469	4,273	903			82	18			29	71	37	13	225	1.59	19.0	
DF	D	3S		55	5.8	9,687	9,128	1,930	0	100			1	0	2	97	39	8	94	0.75	97.2	
DF	D	4S		15	4.6	2,667	2,544	538	89	11			10	30	22	38	28	5	30	0.34	83.8	
DF	D	UT		5	4.0	835	802	169	100				32	39	6	23	13	5	13	0.25	60.2	
DF Totals				80	5.2	17,658	16,747	3,540	18	56	21	5	3	7	12	78	30	7	64	0.65	260.2	
DF	L	D	2S	18	11.6	275	243	51			72	28	50			50	20	14	149	1.74	1.6	
DF	L	D	3S	63	7.9	903	831	176		100						100	40	8	90	0.73	9.3	
DF	L	D	4S	16	.2	207	206	44	98	2			15	57	25	3	27	5	28	0.26	7.3	
DF	L	D	UT	3		40	40	8	100				100				19	5	20	0.24	2.0	
DF Totals				6	7.3	1,424	1,320	279	18	63	13	5	15	9	4	73	32	7	65	0.61	20.2	
RC	D	3S		76	5.6	919	868	183		62	32	7	4	1	1	94	35	9	113	1.27	7.7	
RC	D	4S		23	7.6	272	251	53	86	14			10	55		35	25	5	26	0.44	9.7	
RC	D	UT		1		9	9	2	100				100				10	6	10	0.27	.9	
RC Totals				5	6.0	1,199	1,127	238	20	51	24	5	6	13	1	80	28	7	62	0.87	18.2	
RC	L	D	3S	90	12.2	118	104	22		33	49	18				100	38	10	164	1.35	.6	
RC	L	D	4S	10		11	11	2	79	21			19	21	60		26	6	31	0.57	.3	
RC Totals				1	11.1	129	114	24	7	32	44	16	2	2	6	91	34	9	117	1.13	1.0	
WH	D	2S		43	12.8	363	316	67			100					100	40	15	314	1.79	1.0	
WH	D	3S		46		333	333	70		100						100	40	9	126	0.99	2.6	
WH	D	4S		7		51	51	11	77	23			58	42			19	5	23	0.33	2.2	
WH	D	UT		4		25	25	5	100				100				22	5	20	0.17	1.2	
WH Totals				3	6.0	770	724	153	9	48	44		4	6		90	30	8	102	0.90	7.1	
WH	L	D	2S	58	27.1	43	31	7			100					100	40	12	146	1.32	.2	
WH	L	D	4S	42		22	22	5	83	17				17	66	17	34	4	23	0.31	.9	
WH Totals				0	18.0	64	53	11	34	7	59			7	27	66	35	6	46	0.53	1.1	
BM	D	UT		100		40	40	8	100				100				27	5	30	0.53	1.3	
BM Totals				0		40	40	8	100				100					27	5	30	0.53	1.3
CW	D	2S		76	20.0	33	26	6			100					100	40	12	160	1.60	.2	
CW	D	4S		24	16.7	10	8	2		100						100	38	6	50	0.50	.2	
CW Totals				0	19.2	43	35	7	24	76						100	39	9	105	1.06	.3	
Totals					5.4	22,088	20,895	4,417	19	56	21	4	5	8	11	76	29	7	63	0.65	332.7	

Total Take Volume: 4,101

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT WESTBEAR							DATE	1/6/2016	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
33N 33N	05E 05E	12 21	WEST BEAR TP WEST BEAR	CORR 0003	THR	211.40	121	712	S	W	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			121	712	5.9						
CRUISE DBH COUNT REFOREST COUNT BLANKS 100 %			59	335	5.7	38,595	.9				
STAND SUMMARY											
		SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR		236	133.0	14.7	67	41.0	157.4	17,658	16,747	4,976	4,978
DOUG FIR-L		15	17.0	15.5	73	5.7	22.2	1,424	1,320	388	388
WR CEDAR		29	12.1	15.8	49	4.1	16.4	1,199	1,127	449	449
WR CEDAR-L		7	.6	18.9	55	0.3	1.2	129	114	38	37
R ALDER		36	13.5	10.7	50	2.6	8.5	761	735	212	212
WHEMLOCK		6	3.9	16.0	63	1.3	5.4	770	724	195	195
WHEMLOCK-L		3	.9	11.7	74	0.2	.7	64	53	21	21
BL MAPLE		2	1.3	13.0	30	0.3	1.2	40	40	19	19
COTWOOD		1	.2	20.0	80	0.1	.4	43	35	14	14
TOTAL		335	182.6	14.6	65	55.8	213.3	22,088	20,895	6,311	6,313
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	10	15		
DOUG FIR		120.7	7.9	155	168	181					
DOUG FIR-L		132.9	35.5	168	261	353					
WR CEDAR		88.9	16.8	116	139	162					
WR CEDAR-L		102.9	41.9	181	311	442					
R ALDER		56.6	9.4	55	61	67					
WHEMLOCK		75.8	33.8	147	222	297					
WHEMLOCK-L		77.9	53.9	57	123	190					
BL MAPLE		.0	.0	30	30	30					
COTWOOD											
TOTAL		124.2	6.8	150	161	172	616	154	68		
CL	68.1	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		94.4	6.1	46	49	52					
DOUG FIR-L		134.7	36.0	45	70	95					
WR CEDAR		82.5	15.6	51	60	69					
WR CEDAR-L		91.1	37.1	61	97	133					
R ALDER		63.2	10.5	16	18	20					
WHEMLOCK		67.1	29.9	43	61	79					
WHEMLOCK-L		71.1	49.2	25	49	73					
BL MAPLE		.0	.0	14	14	14					
COTWOOD											
TOTAL		102.0	5.6	46	49	51	415	104	46		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR		73.2	6.6	124	133	142					
DOUG FIR-L		218.0	19.8	14	17	20					
WR CEDAR		318.4	28.9	9	12	16					

TC PSTATS		PROJECT STATISTICS							PAGE	2
		PROJECT WESTBEAR							DATE	1/6/2016
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
33N	05E	12	WEST BEAR TP	CORR	THR	211.40	121	712	S	W
33N	05E	21	WEST BEAR	0003						
CL	68.1		COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
WR CEDAR-L			855.3	77.7	0	1	1			
R ALDER			314.7	28.6	10	14	17			
WHEMLOCK			492.9	44.8	2	4	6			
WHEMLOCK-L			864.4	78.5	0	1	2			
BL MAPLE			854.0	77.6	0	1	2			
COTWOOD			1100.0	99.9	0	0	0			
TOTAL			38.9	3.5	176	183	189	60	15	7
CL	68.1		COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR			67.0	6.1	148	157	167			
DOUG FIR-L			214.6	19.5	18	22	27			
WR CEDAR			305.1	27.7	12	16	21			
WR CEDAR-L			716.1	65.0	0	1	2			
R ALDER			307.5	27.9	6	8	11			
WHEMLOCK			496.1	45.1	3	5	8			
WHEMLOCK-L			641.0	58.2	0	1	1			
BL MAPLE			854.0	77.6	0	1	2			
COTWOOD			1100.0	99.9	0	0	1			
TOTAL			32.3	2.9	207	213	220	42	10	5
CL	68.1		COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR			68.3	6.2	15,708	16,747	17,785			
DOUG FIR-L			208.1	18.9	1,071	1,320	1,570			
WR CEDAR			329.3	29.9	790	1,127	1,464			
WR CEDAR-L			683.1	62.0	43	114	185			
R ALDER			306.7	27.9	530	735	940			
WHEMLOCK			514.8	46.8	385	724	1,062			
WHEMLOCK-L			662.9	60.2	21	53	85			
BL MAPLE			854.0	77.6	9	40	70			
COTWOOD			1100.0	99.9	0	35	69			
TOTAL			45.5	4.1	20,032	20,895	21,758	83	21	9
CL	68.1		COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR			67.6	6.1	4,672	4,978	5,283			
DOUG FIR-L			207.3	18.8	315	388	461			
WR CEDAR			309.6	28.1	323	449	576			
WR CEDAR-L			674.4	61.3	15	37	60			
R ALDER			314.4	28.6	151	212	272			
WHEMLOCK			517.0	47.0	103	195	287			
WHEMLOCK-L			632.6	57.5	9	21	33			
BL MAPLE			854.0	77.6	4	19	34			
COTWOOD			1100.0	99.9	0	14	27			
TOTAL			42.3	3.8	6,070	6,313	6,555	72	18	8
CL	68.1		COEFF	V BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR					100	106	113			
DOUG FIR-L			16.4	1.5	48	59	71			
WR CEDAR			233.6	21.2	48	69	89			
WR CEDAR-L			683.1	62.0	35	92	150			
R ALDER			314.1	28.5	63	87	111			
WHEMLOCK			234.6	21.3	72	135	198			
WHEMLOCK-L			638.6	58.0	30	75	121			
BL MAPLE			854.0	77.6	7	33	58			
COTWOOD			1100.0	99.9	0	96	192			
TOTAL			52.2	4.7	94	98	102	109	27	12

PROJECT STATISTICS
PROJECT WESTBEAR

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
33N	05E	12	WEST BEAR TP	CORR THR	211.40	121	712	S	W
33N	05E	21	WEST BEAR	0003					

T33N R05E S20 T0001										T33N R05E S20 T0001				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	05E	20	WEST BEAR TP	0001	57.30	33	57	S	W					

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF		DM	2S	26	3.6	6,115	5,894	338	100						44	56	36	12	186	1.40	31.7
DF		DM	3S	58	6.8	14,315	13,344	765	0	100			1	0	1	98	39	8	101	0.81	131.8
DF		DM	4S	11	5.5	2,536	2,398	137	88	12			4	35	28	33	30	5	33	0.38	73.3
DF		DM	UT	5	2.9	1,048	1,018	58	100				22	39		38	15	5	16	0.24	65.3
DF	Totals			98	5.7	24,014	22,654	1,298	14	60	26		2	6	15	77	31	7	75	0.72	302.0
RA		DM	4S	83		219	219	13	50	50				50	50		32	6	44	0.34	4.9
RA		DM	UT	17		44	44	2	100					100			22	5	20	0.20	2.2
RA	Totals			1		262	262	15	58	42				58	42		29	6	37	0.31	7.1
BM		DM	UT	100		39	39	2	100					100			27	5	30	0.53	1.3
BM	Totals			0		39	39	2	100					100			27	5	30	0.53	1.3
WH		DM	UT	100		91	91	5	100					100			22	5	20	0.17	4.5
WH	Totals			0		91	91	5	100					100			22	5	20	0.17	4.5
Type Totals					5.6	24,407	23,046	1,321	15	59	26		2	7	15	76	31	7	73	0.71	315.0

T33N R05E S20 T0002										T33N R05E S20 T0002				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	05E	20	WEST BEAR TP	0002	16.40	8	29	S	W					

S Spp	So T	Gr rt ad	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		Lf
DF	DM	2S	18	3.7	4,483	4,319	71	100				31	69	37	12	179	1.29	24.2		
DF	DM	3S	55	3.4	13,479	13,026	214	1	99	2	1	3	94	38	8	90	0.70	144.8		
DF	DM	4S	20	7.9	4,952	4,560	75	91	9	13	28	44	15	28	5	28	0.29	161.8		
DF	DM	UT	7		1,582	1,582	26	100		75	9	16		13	5	14	0.20	115.7		
DF	Totals		100	4.1	24,496	23,487	385	25	57	18	9	6	17	68	28	6	53	0.53	446.4	
Type Totals				4.1	24,496	23,487	385	25	57	18	9	6	17	68	28	6	53	0.53	446.4	

T33N R05E S21 T0003										T33N R05E S21 T0003				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	05E	21	WEST BEAR	0003	76.20	40	64	S	W					

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
									Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		Lf		
DF		DM	2S	14	2.1	2,500	2,448	187	100						52	48	35	12	184	1.40	13.3		
DF		DM	3S	60	6.0	11,109	10,446	796	100						1	99	40	8	91	0.72	115.0		
DF		DM	4S	20	1.9	3,398	3,334	254	92	8			11	25	11	54	28	5	31	0.35	107.5		
DF		DM	UT	6	6.4	1,100	1,030	78	100						23	49	8	20	13	5	12	0.27	83.0
DF	Totals			98	4.7	18,107	17,258	1,315	24	62	14		3	8	10	79	29	6	54	0.58	318.7		
RC		DM	3S	86	9.2	257	233	18	100							100	36	8	76	1.42	3.1		
RC		DM	4S	5		12	12	1	100						100		19	5	20	0.26	.6		
RC		DM	UT	9		24	24	2	100						100		10	6	10	0.27	2.5		
RC	Totals			2	8.1	293	270	21	13	87			13		87	24	7	44	1.14	6.2			
CW		DM	2S	76	20.0	92	73	6	100							100	40	12	160	1.60	.5		
CW		DM	4S	24	16.7	28	23	2	100							100	38	6	50	0.50	.5		
CW	Totals			1	19.2	119	96	7	24	76					100	39	9	105	1.06	.9			
Type Totals					4.8	18,519	17,624	1,343	24	62	14		4	8	10	79	29	6	54	0.59	325.8		

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
Project: WESTBEAR												Date 1/6/2016										
												Time 10:35:11AM										
T33N R05E S12 T0004										T33N R05E S12 T0004												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
33N	05E	12	WEST BEAR TR	0004	23.60	15	51	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	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
RC	DM	3S		76	5.2	7,401	7,019			58	35	7	5	1	2	93	35	9	119	1.24	58.9	
RC	DM	4S		24	7.7	2,392	2,209		86	14			8	56	36	25	5	26	0.45	84.5		
RC	Totals			28	5.8	9,793	9,227		21	47	27	6	6	14	1	79	29	7	64	0.84	143.4	
DF	DM	2S		85	6.9	13,130	12,225				42	58			100	40	16	409	2.42	29.9		
DF	DM	3S		9	.7	1,407	1,397			100				5	95	39	9	102	0.68	13.8		
DF	DM	4S		6	6.5	783	732		69	31			35	16	48	24	6	27	0.41	26.7		
DF	DM	UT															5		0.00	8.9		
DF	Totals			43	6.3	15,320	14,355		4	11	36	49	2	1	97	30	10	181	1.49	79.2		
WH	DM	2S		46	12.8	3,249	2,834				100				100	40	15	314	1.79	9.0		
WH	DM	3S		46		2,826	2,826			100					100	40	9	126	0.99	22.4		
WH	DM	4S		8		427	427		75	25			61	39		19	5	23	0.34	18.6		
WH	Totals			18	6.4	6,502	6,087		5	48	47		4	3	93	32	9	122	1.03	50.0		
RA	DM	4S		80	4.5	2,854	2,727		64	13	87		6	28	66	34	7	55	0.54	49.8		
RA	DM	UT		20	5.5	678	641		15	100			88	12		14	5	14	0.21	44.4		
RA	Totals			10	4.7	3,532	3,367		79	30	70		21	25	54	25	6	36	0.45	94.2		
Type Totals					6.0	35,147	33,036		780	11	34	32	23	5	8	0	87	28	8	90	0.93	366.8

T33N R05E S20 TR123									T33N R05E S20 TR123					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	05E	20	WBEARTRIP	R123	28.40	19	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				
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf			
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99								
DF	L	DM	2S	10	10.0	1,002	902	26	100				100				16	13	90	1.25	10.0			
DF	L	DM	3S	69	8.0	6,406	5,893	167	100				100				40	8	88	0.72	66.9			
DF	L	DM	4S	17		1,463	1,463	42	100		14	60	26						27	5	28	0.26	52.1	
DF	L	DM	UT	4		295	295	8	100		100								19	5	20	0.24	14.8	
DF	L	Totals		63	6.7	9,166	8,554	243	21	69	11			16	10	5	69	31	7	59	0.57	143.8		
DF		DM	3S	55	5.8	2,273	2,140	61	100					7	13	80			36	7	64	0.49	33.6	
DF		DM	4S	39	11.1	1,684	1,497	43	74	26				7	58	35			26	5	28	0.27	54.2	
DF		DM	UT	6		224	224	6	100				66	34					14	5	12	0.17	18.6	
DF	L	Totals		28	7.6	4,181	3,862	110	34	66			7	28	21	44	27	6	36	0.35	106.4			
RA		DM	4S	90	5.4	1,009	954	27	41	59				67	13	20			29	6	41	0.40	23.4	
RA		DM	UT	10		104	104	3	100				57	43					8	5	7	0.22	14.6	
RA	L	Totals		8	4.9	1,112	1,058	30	47	53			6	65	12	18	21	6	28	0.37	38.0			
WH	L	DM	4S	100		107	107	3	100				100				34	4	20	0.26				5.3
WH	L	Totals		1		107	107	3	100				100				34	4	20	0.26				5.3
Type Totals					6.8	14,566	13,580	386	27	66	7			13	20	10	57	29	6	46	0.47	293.5		

T33N R05E S12 TRZ45	T33N R05E S12 TRZ45
Twp 33N Rge 05E Sec 12 Tract WEST BEAR TP Type RZ45 Acres 2.80 Plots 3 Sample Trees 19 CuFt S	BdFt W

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre						
								Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf	
													4-5	6-11	12-16	17+	12-20	21-30		31-35					36-99
RC	L	DM	3S	90	12.2	8,902	7,820	22	33	49	18				100	38	10	164	1.35	47.6					
RC	L	DM	4S	10		809	809	2	79	21				19	21	60	26	6	31	0.57	25.9				
RC	L	Totals		28	11.1	9,712	8,629	24	7	32	44	16		2	2	6	91	34	9	117	1.13	73.4			
DF	L	DM	2S	71	13.2	10,590	9,194	26		43	57				100	40	17	424	2.66	21.7					
DF	L	DM	3S	23	6.0	3,186	2,996	8		100					100	39	10	139	0.92	21.5					
DF	L	DM	4S	6	4.8	764	727	2	55	45			45		55	26	6	32	0.39	22.5					
DF	L	Totals		42	11.2	14,541	12,917	36	3	26	31	40		3		97	35	11	197	1.44	65.7				
RA		DM	4S	100		4,692	4,692	13	41	59				8	92		27	6	40	0.43	117.2				
RA	Totals			15		4,692	4,692	13	41	59				8	92		27	6	40	0.43	117.2				
WH	L	DM	2S	80	27.1	3,227	2,351	7		100					100	40	12	146	1.32	16.1					
WH	L	DM	4S	20		553	553	2	50	50			50		50	32	6	34	0.48	16.1					
WH	L	Totals		9	23.2	3,780	2,904	8	10	10	81		10		90	36	9	90	0.94	32.3					
WH		DM	3S	85		1,287	1,287	4		100					100	40	9	120	0.83	10.7					
WH		DM	4S	15		214	214	1	100				100			21	5	20	0.29	10.7					
WH	Totals			5		1,501	1,501	4	14	86			14		86	31	7	70	0.65	21.4					
Type Totals					10.5	34,226	30,643	86	11	34	33	21		3	16	2	79	31	8	99	0.93	310.1			

T33N R05E S12 TCORR										T33N R05E S12 TCORR			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
33N	05E	12	WEST BEAR TP	CORR	4.70	1	6	S	W				

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
									Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		Lf		
DF		DM	2S	23	3,637	3,637	17	100				100				40	13	240	1.78	15.2			
DF		DM	3S	65	10,198	10,198	48	100				100				40	8	111	0.94	91.8			
DF		DM	4S	12	1,732	1,732	8	100					15	33	52				22	5	23	0.32	76.7
DF	Totals			76	15,566	15,566	73	11	66	23			2	4	6	89	33	7	85	0.85	183.6		
RA		DM	4S	100	3,622	3,622	17	100				100				34	5	40	0.29	90.5			
RA		DM	UT																0.00	90.5			
RA	Totals			18	3,622	3,622	17	100				100				17	5	20	0.29	181.1			
BM		DM	UT	100	1,302	1,302	6	100				100				27	5	30	0.53	43.4			
BM	Totals			6	1,302	1,302	6	100				100				27	5	30	0.53	43.4			
Type Totals					20,490	20,490	96	32	50	18			1	9	22	68	25	6	50	0.64	408.1		

T33N R05E S20 TRW1									T33N R05E S20 TRW1				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
33N	05E	20	WEST BEAR TP	RW1	1.10	1	51	S	W				

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
DF		DM	2S	20	21.2	3,102	2,443	3	100				100				40	13	178	1.62	13.7	
DF		DM	3S	61	3.5	7,770	7,495	8	100				4 96				39	8	94	0.78	79.6	
DF		DM	4S	16	11.4	2,169	1,922	2	84	16	14 34		13	39	26	5	26	0.36	74.1			
DF		DM	UT	3	329		329	0	100				50	50			12	5	12	0.24	27.5	
DF	Totals			95	8.8	13,370	12,190	13	16	64	20	4	7	4	85	31	7	63	0.69	194.9		
RA		DM	3S	18	.0	118	118	0	100				100				30	11	130	1.03	.9	
RA		DM	4S	45	3.1	291	282	0	100				100				30	7	52	0.55	5.5	
RA		DM	UT	37	3.8	236	227	0	100				28	56	16			19	5	19	0.22	11.8
RA	Totals			5	2.8	645	627	1	36	64	10		84	6			23	6	35	0.41	18.2	
Type Totals					8.6	14,016	12,817	14	17	64	19	4	11	4	81	30	7	60	0.67	213.1		

T33N R05E S20 TRW2										T33N R05E S20 TRW2				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
33N	05E	20	WEST BEAR TP	RW2	.90	1	23	S	W					

Spp	S T	So rt	Gr ad	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre					
									Net BdFt	Def%	Gross	Net	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
													4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
DF		DM	3S	78	4.3	6,350	6,080	5	100				100				40	8	100	0.93	60.8				
DF		DM	4S	22	2.0	1,655	1,621	1	100				31	15	29	25	22	5	22	0.33	74.3				
DF		DM	UT														4		0.00	10.1					
DF	Totals			100	3.8	8,005	7,701	7	21	79					7	3	6	84	28	6	53	0.69	145.2		
Type Totals					3.8	8,005	7,701	7	21	79					7	3	6	84	28	6	53	0.69	145.2		

TC TSTATS			STATISTICS				PAGE	2		
			PROJECT WESTBEAR				DATE	1/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	20	WEST BEAR TP	0001	57.30	33	180	S	W	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		24.4	4.2	6,565	6,856	7,147				
R ALDER		404.4	70.3	19	63	108				
BL MAPLE		574.5	99.9	0	19	38				
WHEMLOCK		574.5	99.9	0	17	33				
TOTAL		24.0	4.2	6,664	6,955	7,245	23	6	3	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				102	106	111				
R ALDER		405.4	70.5	32	108	184				
BL MAPLE		574.5	99.9	0	33	65				
WHEMLOCK		574.5	99.9	0	75	150				
TOTAL		317.9	55.3	101	106	110	4,035	1,009	448	

TC TSTATS		STATISTICS							PAGE	1
		PROJECT WESTBEAR							DATE	1/6/2016
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	12	WEST BEAR TP	CORR	4.70	1	6	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	6	6.0						
CRUISE		1	6	6.0	1,061		.6			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	4	91.8	17.9	69	37.8	160.0	15,566	15,566	5,072	5,072
R ALDER	1	90.5	9.0	48	13.3	40.0	3,622	3,622	890	890
BL MAPLE	1	43.4	13.0	30	11.1	40.0	1,302	1,302	620	620
TOTAL	6	225.7	14.0	53	64.2	240.0	20,490	20,490	6,582	6,582
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	10	15		
DOUG FIR	51.8	29.6	130	185	240					
R ALDER										
BL MAPLE										
TOTAL	79.5	35.4	87	135	183	301	75	33		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	40.0	22.8	46	60	73					
R ALDER										
BL MAPLE										
TOTAL	70.3	31.3	30	44	57	235	59	26		

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT WESTBEAR			DATE	1/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	12	WEST BEAR TP	RZ45	2.80	3	19	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR-L		46.6	32.2	8,754	12,917	17,080				
R ALDER		65.2	45.1	2,577	4,692	6,807				
WHEMLOCK		173.2	119.8		1,501	3,300				
WHEMLOCK-L		100.0	69.2	895	2,904	4,913				
TOTAL		<i>10.9</i>	<i>7.5</i>	<i>28,332</i>	<i>30,643</i>	<i>32,954</i>	<i>7</i>	<i>2</i>	<i>1</i>	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-L		46.4	32.1	1,921	2,829	3,736				
DOUG FIR-L		41.4	28.7	2,369	3,321	4,274				
R ALDER		65.8	45.5	725	1,331	1,936				
WHEMLOCK		173.2	119.8		423	930				
WHEMLOCK-L		87.6	60.6	433	1,101	1,768				
TOTAL		<i>9.8</i>	<i>6.8</i>	<i>8,395</i>	<i>9,004</i>	<i>9,614</i>	<i>5</i>	<i>1</i>	<i>1</i>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-L		50.8	35.2	60	92	125				
DOUG FIR-L		66.2	45.8	115	169	224				
R ALDER		65.2	45.1	48	88	128				
WHEMLOCK		173.2	119.8		113	247				
WHEMLOCK-L		91.2	63.1	28	92	156				
TOTAL		<i>15.0</i>	<i>10.3</i>	<i>106</i>	<i>114</i>	<i>123</i>	<i>13</i>	<i>3</i>	<i>1</i>	

TC TSTATS			STATISTICS				PAGE	2		
			PROJECT WESTBEAR				DATE	1/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	12	WEST BEAR TR	0004	23.60	15	97	S	W	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR		75.9	20.3	2,778	3,484	4,191				
DOUG FIR		125.1	33.4	2,339	3,513	4,687				
WHEMLOCK		172.3	46.0	894	1,656	2,418				
R ALDER		146.0	39.0	637	1,044	1,451				
TOTAL		<i>31.4</i>	<i>8.4</i>	<i>8,883</i>	<i>9,697</i>	<i>10,512</i>	<i>42</i>	<i>11</i>	<i>5</i>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR				56	73	89				
DOUG FIR		34.9	9.3	115	172	229				
WHEMLOCK				75	140	204				
R ALDER		93.1	24.9	52	84	117				
TOTAL		<i>188.5</i>	<i>50.4</i>	<i>99</i>	<i>112</i>	<i>126</i>	<i>1,522</i>	<i>380</i>	<i>169</i>	

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT WESTBEAR			DATE	1/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	20	WBEARTRIP	R123	28.40	19	103	S	W	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		99.1	23.4	787	1,027	1,267				
DOUG FIR-L				2,558	2,558	2,558				
R ALDER		260.8	61.5	114	297	480				
WHEMLOCK-L		435.9	102.7		48	97				
TOTAL				3,930	3,930	3,930				
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		97.9	23.1	78	102	125				
DOUG FIR-L				54	54	54				
R ALDER		256.2	60.4	33	84	134				
WHEMLOCK-L		435.9	102.7		51	103				
TOTAL		148.1	34.9	65	65	65	926	231	103	

TC TSTATS		STATISTICS					PAGE	1		
		PROJECT WESTBEAR					DATE	1/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	12	WEST BEAR TP	RZ45	2.80	3	19	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		3	19	6.3						
CRUISE		3	19	6.3	477	4.0				
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
WR CEDAR-L	7	48.1	18.9	55	21.5	93.3	9,712	8,629	2,840	2,829
DOUG FIR-L	5	25.2	23.6	96	15.7	76.3	14,541	12,917	3,322	3,321
R ALDER	4	70.1	11.8	52	15.5	53.3	4,692	4,692	1,335	1,331
WHEMLOCK	1	10.7	15.1	65	3.4	13.3	1,501	1,501	423	423
WHEMLOCK-L	2	16.1	18.9	74	7.2	31.5	3,780	2,904	1,099	1,101
TOTAL	19	170.3	17.0	62	65.0	267.8	34,226	30,643	9,019	9,004
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	10	15	
WR CEDAR-L	102.9	41.9		181	311	442				
DOUG FIR-L	54.2	26.9		475	650	825				
R ALDER	42.7	24.4		55	73	90				
WHEMLOCK										
WHEMLOCK-L	28.3	26.5		129	175	221				
TOTAL	101.5	23.9		249	327	405	435	109	48	
CL:	68.1 %	COEFF	SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-L	91.1	37.1		61	97	133				
DOUG FIR-L	61.7	30.6		118	170	222				
R ALDER	42.7	24.4		16	21	26				
WHEMLOCK										
WHEMLOCK-L	7.7	7.2		64	69	74				
TOTAL	95.7	22.5		73	94	115	386	97	43	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-L	111.1	76.9		11	48	85				
DOUG FIR-L	107.2	74.2		7	25	44				
R ALDER	20.3	14.0		60	70	80				
WHEMLOCK	173.2	119.8			11	24				
WHEMLOCK-L	89.2	61.7		6	16	26				
TOTAL	28.4	19.7		137	170	204	46	12	5	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-L	65.5	45.3		51	93	136				
DOUG FIR-L	49.6	34.3		50	76	102				
R ALDER	43.3	30.0		37	53	69				
WHEMLOCK	173.2	119.8			13	29				
WHEMLOCK-L	89.6	62.0		12	31	51				
TOTAL	18.1	12.5		234	268	301	19	5	2	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WR CEDAR-L	50.8	35.2		5,596	8,629	11,662				

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				WESTBEAR				DATE	1/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	12	WEST BEAR TR	0004	23.60	15	97	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL	15	97	6.5							
CRUISE	8	51	6.4	4,898		1.0				
DBH COUNT										
REFOREST										
COUNT	7	46	6.6							
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
WR CEDAR	25	98.3	15.4	49	32.4	127.3	9,793	9,227	3,484	3,484
DOUG FIR	12	29.7	22.7	86	17.5	83.5	15,320	14,355	3,511	3,513
WHEMLOCK	4	22.4	18.9	75	10.0	43.6	6,502	6,087	1,657	1,656
R ALDER	10	57.1	11.3	49	11.9	40.0	3,532	3,367	1,042	1,044
TOTAL	51	207.5	16.1	57	73.3	294.3	35,147	33,036	9,694	9,697
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	10	15		
WR CEDAR	89.5	18.2	120	147	174					
DOUG FIR	65.4	19.7	655	816	977					
WHEMLOCK	53.6	30.7	203	293	382					
R ALDER	42.2	14.1	61	71	81					
TOTAL	132.4	18.5	245	301	357	700	175	78		
CL: 68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR	87.8	17.9	50	61	71					
DOUG FIR	57.4	17.3	160	194	228					
WHEMLOCK	39.6	22.6	62	81	99					
R ALDER	50.0	16.6	19	23	27					
TOTAL	104.3	14.6	74	86	99	435	109	48		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR	78.6	21.0	78	98	119					
DOUG FIR	167.0	44.6	16	30	43					
WHEMLOCK	172.6	46.1	12	22	33					
R ALDER	142.5	38.1	35	57	79					
TOTAL	29.9	8.0	191	208	224	38	10	4		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR	72.5	19.4	103	127	152					
DOUG FIR	127.8	34.1	55	83	112					
WHEMLOCK	171.7	45.8	24	44	64					
R ALDER	141.4	37.8	25	40	55					
TOTAL	21.1	5.6	278	294	311	19	5	2		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WR CEDAR	84.8	22.6	7,138	9,227	11,317					
DOUG FIR	124.5	33.3	9,581	14,355	19,128					
WHEMLOCK	173.4	46.3	3,268	6,087	8,906					
R ALDER	144.2	38.5	2,070	3,367	4,664					
TOTAL	45.5	12.1	29,023	33,036	37,048	89	22	10		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT WESTBEAR				DATE	1/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	20	WBEARTRIP	R123	28.40	19	103	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	19	103	5.4	6,046		.6				
CRUISE	15	35	2.3							
DBH COUNT										
REFOREST										
COUNT	4	14	3.5							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	18	62.1	10.6	72	11.7	37.9	4,181	3,862	1,027	1,027
DOUG FIR-L	10	124.3	15.3	73	40.4	157.9	9,166	8,554	2,558	2,558
R ALDER	6	21.1	10.5	50	3.9	12.6	1,112	1,058	297	297
WHEMLOCK-L	1	5.3	8.5	74	0.7	2.1	107	107	48	48
TOTAL	35	212.9	13.5	70	57.4	210.5	14,566	13,580	3,930	3,930
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	10	15		
DOUG FIR	40.1	9.7	65	72	79					
DOUG FIR-L	111.4	37.1	42	66	90					
R ALDER	42.6	19.0	47	58	69					
WHEMLOCK-L										
TOTAL	67.9	11.5	59	66	74	184	46	20		
CL: 68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	44.6	10.8	17	19	21					
DOUG FIR-L	108.1	36.0	13	20	27					
R ALDER	49.8	22.2	13	17	21					
WHEMLOCK-L										
TOTAL	69.6	11.8	17	19	21	193	48	21		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	101.3	23.9	47	62	77					
DOUG FIR-L			124	124	124					
R ALDER	268.6	63.3	8	21	34					
WHEMLOCK-L	435.9	102.7	5		11					
TOTAL			213	213	213					
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	96.2	22.7	29	38	46					
DOUG FIR-L			158	158	158					
R ALDER	259.7	61.2	5	13	20					
WHEMLOCK-L	435.9	102.7	2		4					
TOTAL			211	211	211					
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	97.9	23.1	2,971	3,862	4,753					
DOUG FIR-L			8,554	8,554	8,554					
R ALDER	256.2	60.4	419	1,058	1,696					
WHEMLOCK-L	435.9	102.7	107		217					
TOTAL			13,580	13,580	13,580					

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT WESTBEAR				DATE	1/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	20	WEST BEAR TP	0001	57.30	33	180	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	33	180	5.5							
CRUISE	11	57	5.2	9,166			.6			
DBH COUNT										
REFOREST										
COUNT	22	123	5.6							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	53	149.2	16.2	70	53.0	213.3	24,014	22,654	6,857	6,856
R ALDER	2	4.9	9.5	56	0.8	2.4	262	262	63	63
BL MAPLE	1	1.3	13.0	30	0.3	1.2	39	39	19	19
WHEMLOCK	1	4.5	7.0	40	0.5	1.2	91	91	17	17
TOTAL	57	160.0	15.8	68	54.9	218.2	24,407	23,046	6,955	6,955
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	10	15		
DOUG FIR	39.4	5.4	166	175	185					
R ALDER	38.6	36.1	35	55	75					
BL MAPLE										
WHEMLOCK										
TOTAL	45.4	6.0	156	166	176	82	21	9		
CL: 68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	36.9	5.1	51	53	56					
R ALDER	36.4	34.0	9	13	18					
BL MAPLE										
WHEMLOCK										
TOTAL	43.5	5.8	47	50	53	76	19	8		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	27.8	4.8	142	149	156					
R ALDER	402.6	70.0	1	5	8					
BL MAPLE	574.5	99.9	0	1	3					
WHEMLOCK	574.5	99.9	0	5	9					
TOTAL	29.9	5.2	152	160	168	36	9	4		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	24.2	4.2	204	213	222					
R ALDER	399.8	69.5	1	2	4					
BL MAPLE	574.5	99.9	0	1	2					
WHEMLOCK	574.5	99.9	0	1	2					
TOTAL	23.4	4.1	209	218	227	22	5	2		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	25.0	4.3	21,670	22,654	23,637					
R ALDER	405.4	70.5	77	262	447					
BL MAPLE	574.5	99.9	0	39	79					
WHEMLOCK	574.5	99.9	0	91	181					
TOTAL	24.5	4.3	22,064	23,046	24,027	24	6	3		

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT WESTBEAR						DATE	1/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	20	WEST BEAR TP	0002	16.40	8	44	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		8	44	5.5						
CRUISE		5	29	5.8	3,970	.7				
DBH COUNT										
REFOREST										
COUNT		3	15	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	29	242.1	12.9	63	61.2	220.0	24,496	23,487	6,679	6,694
TOTAL	29	242.1	12.9	63	61.2	220.0	24,496	23,487	6,679	6,694
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	10	15	
DOUG FIR	52.4	9.9		125	138	152				
TOTAL	52.4	9.9		125	138	152	113	28	13	
CL:	68.1 %	COEFF	SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	53.4	10.1		36	40	44				
TOTAL	53.4	10.1		36	40	44	118	29	13	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	49.1	18.5		197	242	287				
TOTAL	49.1	18.5		197	242	287	109	27	12	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	43.5	16.4		184	220	256				
TOTAL	43.5	16.4		184	220	256	86	21	10	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	44.4	16.7		19,558	23,487	27,416				
TOTAL	44.4	16.7		19,558	23,487	27,416	90	22	10	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	43.9	16.6		5,586	6,694	7,802				
TOTAL	43.9	16.6		5,586	6,694	7,802	88	22	10	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR				89	107	125				
TOTAL	139.3	52.5		89	107	125	883	221	98	

TC TSTATS		STATISTICS					PAGE 1			
		PROJECT WESTBEAR					DATE 1/6/2016			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	20	WEST BEAR TP	RW1	1.10	1	51	S	W	
				TREES	ESTIMATED		PERCENT			
		PLOTS	TREES	PER PLOT	TOTAL		SAMPLE			
					TREES		TREES			
TOTAL		1	51	51.0						
CRUISE		1	51	51.0	128		39.9			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	38	104.3	15.3	63	33.9	132.5	13,370	12,190	4,095	4,097
R ALDER	13	11.8	10.4	46	2.2	7.0	645	627	168	168
TOTAL	<i>51</i>	<i>116.1</i>	<i>14.8</i>	<i>61</i>	<i>36.2</i>	<i>139.4</i>	<i>14,016</i>	<i>12,817</i>	<i>4,263</i>	<i>4,265</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	10	15
DOUG FIR	64.5	10.5	105	117	129					
R ALDER	84.4	24.3	40	53	66					
TOTAL	<i>73.5</i>	<i>10.3</i>	<i>90</i>	<i>101</i>	<i>111</i>			<i>216</i>	<i>54</i>	<i>24</i>
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH			5	10	15
DOUG FIR	62.1	10.1	35	39	43					
R ALDER	90.1	26.0	11	14	18					
TOTAL	<i>74.6</i>	<i>10.4</i>	<i>29</i>	<i>33</i>	<i>36</i>			<i>222</i>	<i>56</i>	<i>25</i>

TC TSTATS		STATISTICS					PAGE	1		
		PROJECT WESTBEAR					DATE	1/6/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	20	WEST BEAR TP	RW2	0.90	1	23	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		1	23	23.0						
CRUISE		1	23	23.0	70	32.9				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	23	77.7	15.4	58	25.6	100.6	8,005	7,701	2,803	2,802
TOTAL	23	77.7	15.4	58	25.6	100.6	8,005	7,701	2,803	2,802
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	10	15		
DOUG FIR	54.1	11.5	88	99	111					
TOTAL	54.1	11.5	88	99	111	122	31	14		
CL: 68.1 %	COEFF	SAMPLE TREES - CF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	48.0	10.2	32	36	40					
TOTAL	48.0	10.2	32	36	40	96	24	11		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT WESTBEAR				DATE	1/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
33N	05E	21	WEST BEAR	0003	76.20	40	189	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	40	189	4.7							
CRUISE	14	64	4.6	12,779			.5			
DBH COUNT										
REFOREST										
COUNT	26	125	4.8							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	59	164.2	14.0	64	47.0	176.0	18,107	17,258	5,337	5,337
WR CEDAR	4	3.1	18.9	52	1.4	6.0	293	270	168	167
COTWOOD	1	.5	20.0	80	0.2	1.0	119	96	38	38
TOTAL	64	167.7	14.1	64	48.7	183.0	18,519	17,624	5,543	5,543
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	10	15		
DOUG FIR	51.7	6.7	122	131	140					
WR CEDAR	31.4	18.0	74	90	106					
COTWOOD										
TOTAL	51.5	6.4	121	130	138	106	26	12		
CL: 68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	48.3	6.3	38	41	43					
WR CEDAR	22.9	13.1	49	56	63					
COTWOOD										
TOTAL	47.6	5.9	40	42	45	90	23	10		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	42.1	6.7	153	164	175					
WR CEDAR	466.5	73.7	1	3	5					
COTWOOD	632.5	99.9	0	0	1					
TOTAL	40.5	6.4	157	168	178	65	16	7		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	39.5	6.2	165	176	187					
WR CEDAR	466.5	73.7	2	6	10					
COTWOOD	632.5	99.9	0	1	2					
TOTAL	37.3	5.9	172	183	194	56	14	6		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	40.2	6.4	16,162	17,258	18,355					
WR CEDAR	466.5	73.7	71	270	468					
COTWOOD	632.5	99.9	0	96	192					
TOTAL	37.7	6.0	16,574	17,624	18,674	57	14	6		
CL: 68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
DOUG FIR	40.0	6.3	5,000	5,337	5,675					
WR CEDAR	466.5	73.7	44	167	291					
COTWOOD	632.5	99.9	0	38	76					
TOTAL	37.0	5.8	5,219	5,543	5,867	55	14	6		

TC TSTATS				STATISTICS			PAGE	2	
PROJECT				WESTBEAR			DATE	1/6/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
33N	05E	21	WEST BEAR	0003	76.20	40	189	S	W
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR				92	98	104			
WR CEDAR		414.8	65.5	12	45	78			
COTWOOD		632.5	99.9	0	96	192			
TOTAL		297.5	47.0	91	96	102	3,533	883	393

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

T33N R05E S12 Ty0004	23.6
T33N R05E S12 TyRZ45	2.8
T33N R05E S21 Ty0003	76.2

Project WESTBEAR
Acres 211.40

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Time 10:35:10AM

Species	S T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		28,110	55,016	29,983	37.43	19.13	0.64	10,520	10,523	3,733	3,540
DOUG FIR	L	3,602	4,268	2,336	22.75	19.20	0.62	820	820	301	279
WR CEDAR		2,556	3,854	2,233	37.16	24.64	0.87	950	950	253	238
R ALDER		2,864	4,908	1,231	15.64	9.12	0.41	447	448	161	155
WHEMLOCK		817	1,499	1,320	50.42	27.50	0.89	412	412	163	153
WR CEDAR	L	135	206	187	58.77	38.51	1.13	80	79	27	24
WHEMLOCK	L	197	242	142	22.58	18.37	0.53	44	44	14	11
BL MAPLE		279	279	106	14.28	14.28	0.53	40	40	8	8
COTWOOD		35	70	71	83.00	41.50	1.06	29	29	9	7
Totals		38,595	70,341	37,606	34.58	18.97	0.65	13,342	13,345	4,669	4,417

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF		
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net	
C	35,416	65,084	36,200	36.22	19.71	0.66	12,826	12,828	4,491	4,246	
H	3,178	5,257	1,407	16.26	9.83	0.43	516	517	178	171	
Totals		38,595	70,341	37,606	34.58	18.97	0.65	13,342	13,345	4,669	4,417

PRE-CRUISE NARRATIVE

Sale Name: West Bear Trippin	Region: Northwest
Agreement #: 30-093094	District: Clear Lake
Contact Forester: Mark Arneson Phone / Location: 360-770-4570	County(s): Skagit, Skagit
Alternate Contact: Phone / Location:	Other information:

Type of Sale: MBF Scale	
Harvest System: Ground based	80
Harvest System: Uphill Cable	20

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1A	Sec20/T33/R5		54.2	0	2.4	0	0	51.8 ✓	GPS (Garmin)
1B	Sec20/T33/R5		4.8	0	0	0	0	4.8 ✓	GPS (Garmin)
1C	Sec20/T33/R5		0.7	0	0	0	0	0.7 ✓	GPS (Garmin)
2	Sec20/T33/R5		16.4	0	0	0	0	16.4 ✓	GPS (Garmin)
3B	Sec20&21/T33/R5		31.1	0	0.5	0	0	30.6 ✓	GPS (Garmin)
3C	Sec21/T33/R5		13.4	0	0.6	0.1	0	12.7 ✓	GPS (Garmin)
3D	Sec21/T33/R5		35.0	0	2.1	0	0	32.9 ✓	GPS (Garmin)
4	Sec12/T33/R5		24.4	0	0.8	0	0	23.6 ✓	GPS (Garmin)
WMZ 1	Sec20/T33/R5		3.3	0	0	0	0	3.3 ✓	GPS (Garmin)
WMZ 2	Sec20/T33/R5		4.9	0	0	0	0	4.9 ✓	GPS (Garmin)
WMZ 3	Sec20&21/T33/R5		13.4	0	0	0	0	13.4 ✓	GPS (Garmin)
RMZ 1	Sec20/T33/R5		4.3	0	0	0.2	0	4.1 ✓	GPS (Garmin)
RMZ 2	Sec20/T33/R5		1.9	0	0	0	0	1.9 ✓	GPS (Garmin)
RMZ 3	Sec20/T33/R5		5.5	0	0	0	0	5.5 ✓	GPS (Garmin)
RMZ 4	Sec11/T33/R5		1.2	0	0	0	0	1.2 ✓	GPS (Garmin)
RMZ 5	Sec12/T33/R5		1.6	0	0	0	0	1.6 ✓	GPS (Garmin)
ROW 1	Sec20/T33/R5		1.1	0	0	0	0	1.1 ✓	L * W
ROW 2	Sec20/T33/R5		0.9	0	0	0	0	0.9 ✓	L * W
TOTAL ACRES			218.1	0	6.4	0.3		211.4	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
Unit 1	VRH, leave trees in blue and yellow tagged clumps	WMZ/RMZ thinning	478 total leave trees – 5 clumps, and scattered
Unit 2	VRH, leave trees in blue	WMZRMZ thinning	131 total leave trees – all scattered
Unit 3	VRH, leave trees in blue and yellow tagged clumps	WMZ/RMZ thinning	635 total leave trees – 7 clumps, and scattered
Unit 4	VRH, leave trees in blue	RMZ thinning	195 total leave trees – 2 clumps, and scattered
WMZ 1	Variable density thin-see attached prescriptions		
WMZ 2	Variable density thin-see attached prescriptions		
RMZ 1	Variable density thin-see attached prescriptions		
RMZ 2	Variable density thin-see attached prescriptions		
RMZ 3	Variable density thin-see attached prescriptions		
RMZ 4	Variable density thin-see attached prescriptions		
RMZ 5	Variable density thin-see attached prescriptions		

OTHER PRE-CRUISE INFORMATION:

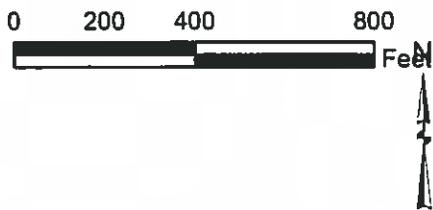
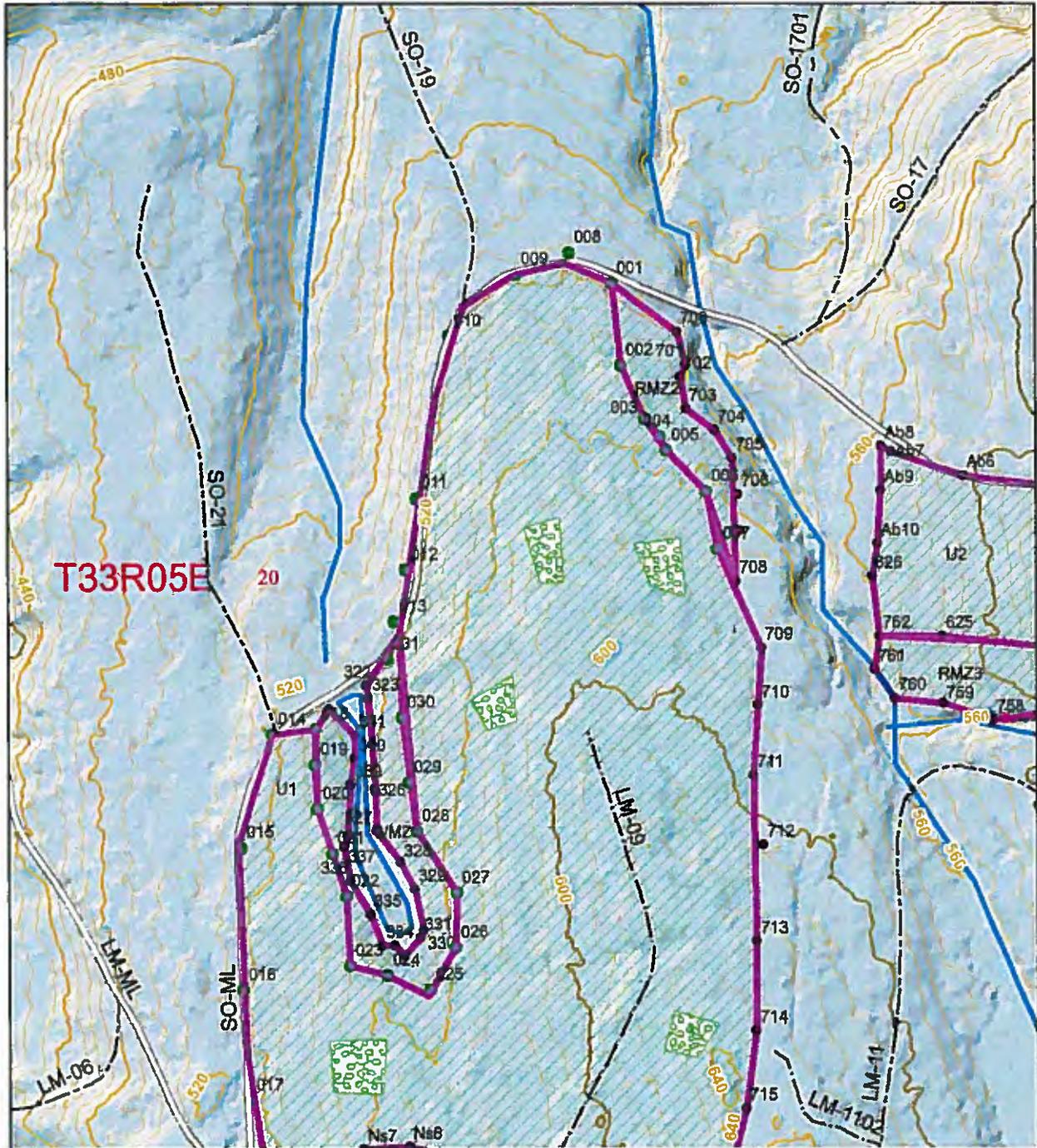
Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
Unit 1	DF / 1317 mbf	Coyote Ridge mainline, F1-3 lock	See attached
Unit 2	DF / 374 mbf	Coyote Ridge mainline, F1-3 lock	See attached
Unit 3	DF / 1300 mbf	Coyote Ridge mainline, F1-3 lock	See attached
Unit 4	DF / 914 mbf	Bear Creek mainline, F1-3 lock	See attached
Corridors	DF / 103 mbf	Estimated 4.7 acres of corridors needed for type 3 RMZ thinning and site class WMZ thinning areas	
ROW 1	DF / 24 mbf	One sided ROW to daylight existing road	
ROW 2	DF / 14 mbf	One sided ROW to daylight existing road	
TOTAL MBF	4046 mbf	-----	-----

REMARKS:

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Prepared By: Mark Arneson Date: 11/10/2015	Title: Clear Lake District Manager	CC:
---	---	------------

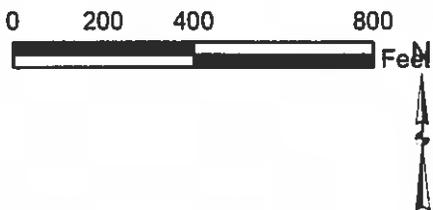
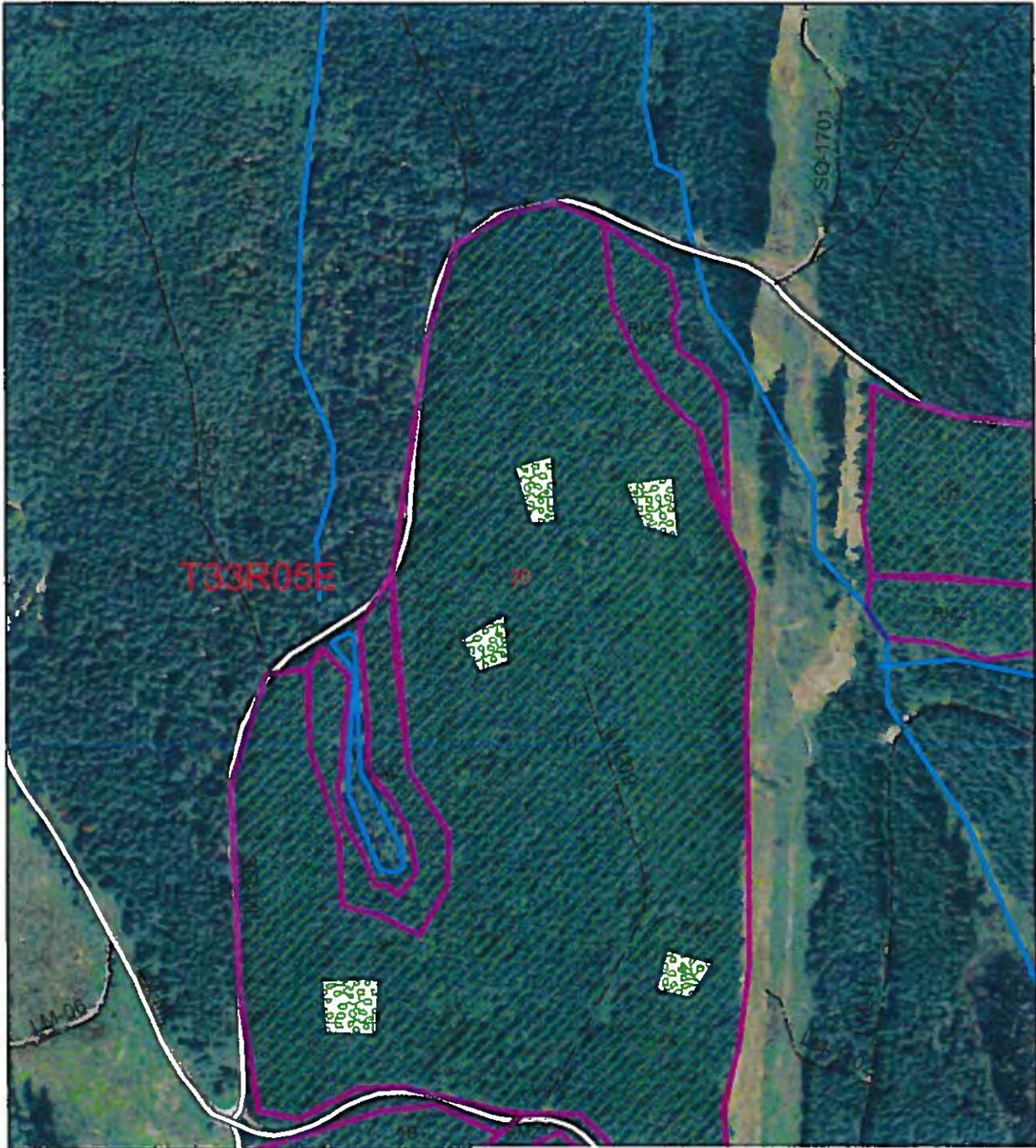
West Bear Trippin Precruise Map



Legend

-  West Bear Trippin Precruise Polygons
-  : Active
-  : Optional Construction
-  Streams Clip
-  Public Land Survey Townships
-  Public Land Survey Sections
-  Leave Tree Areas

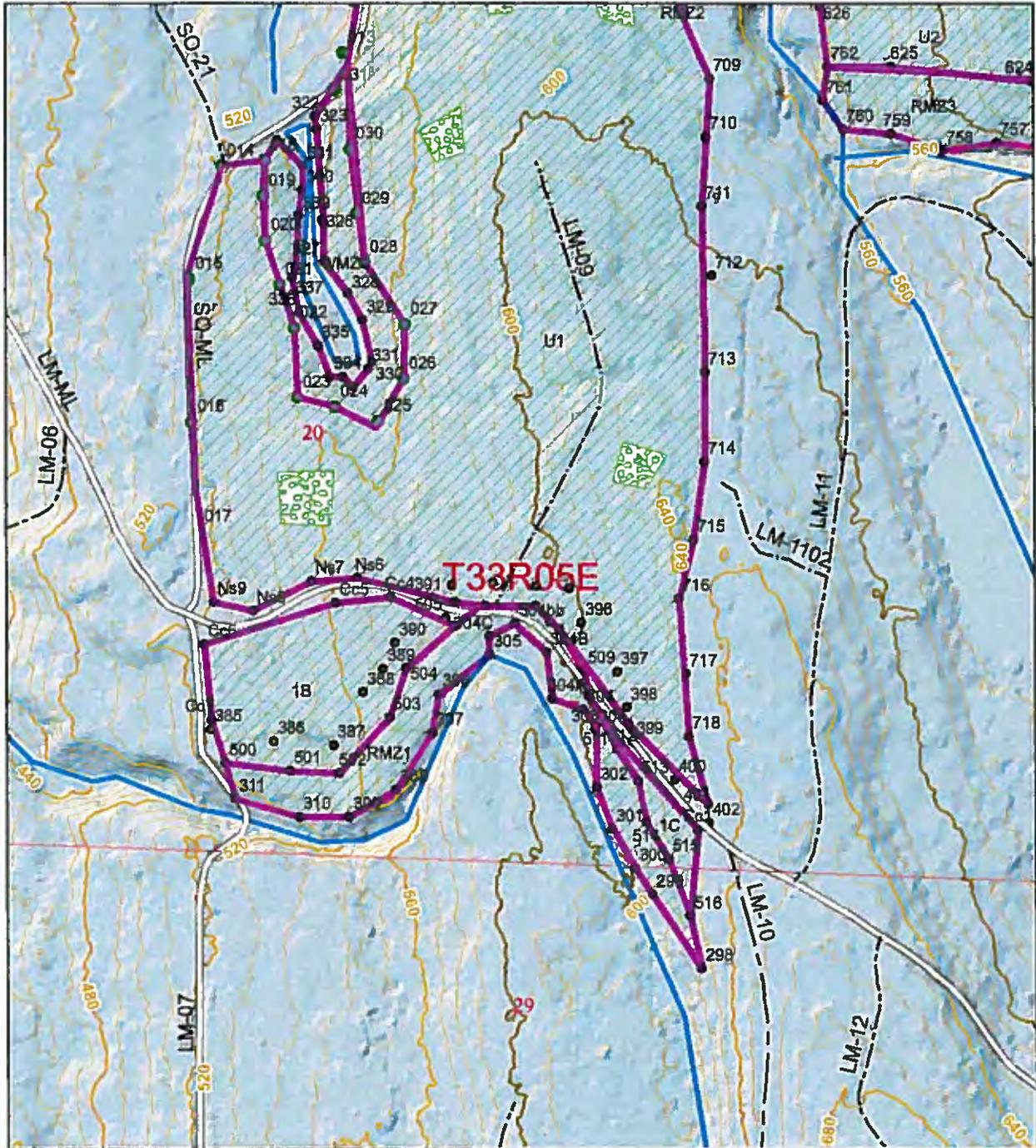
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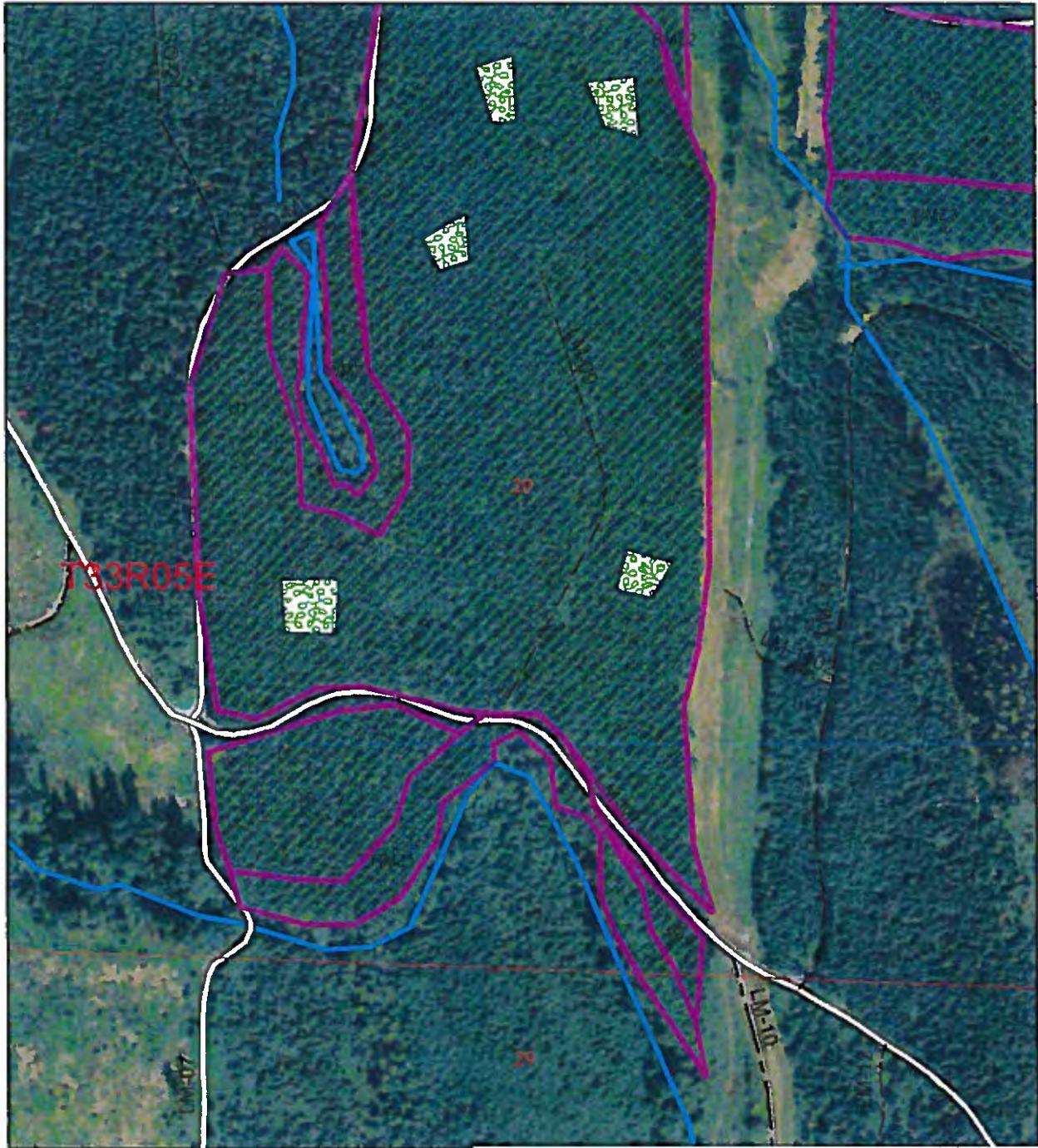


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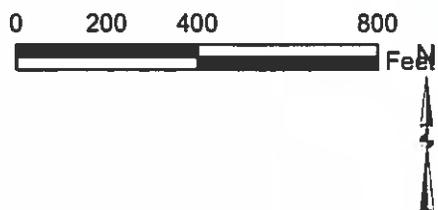


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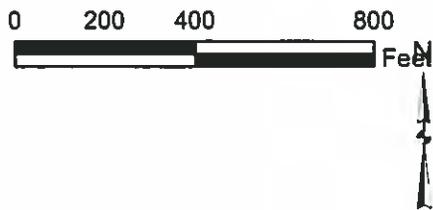
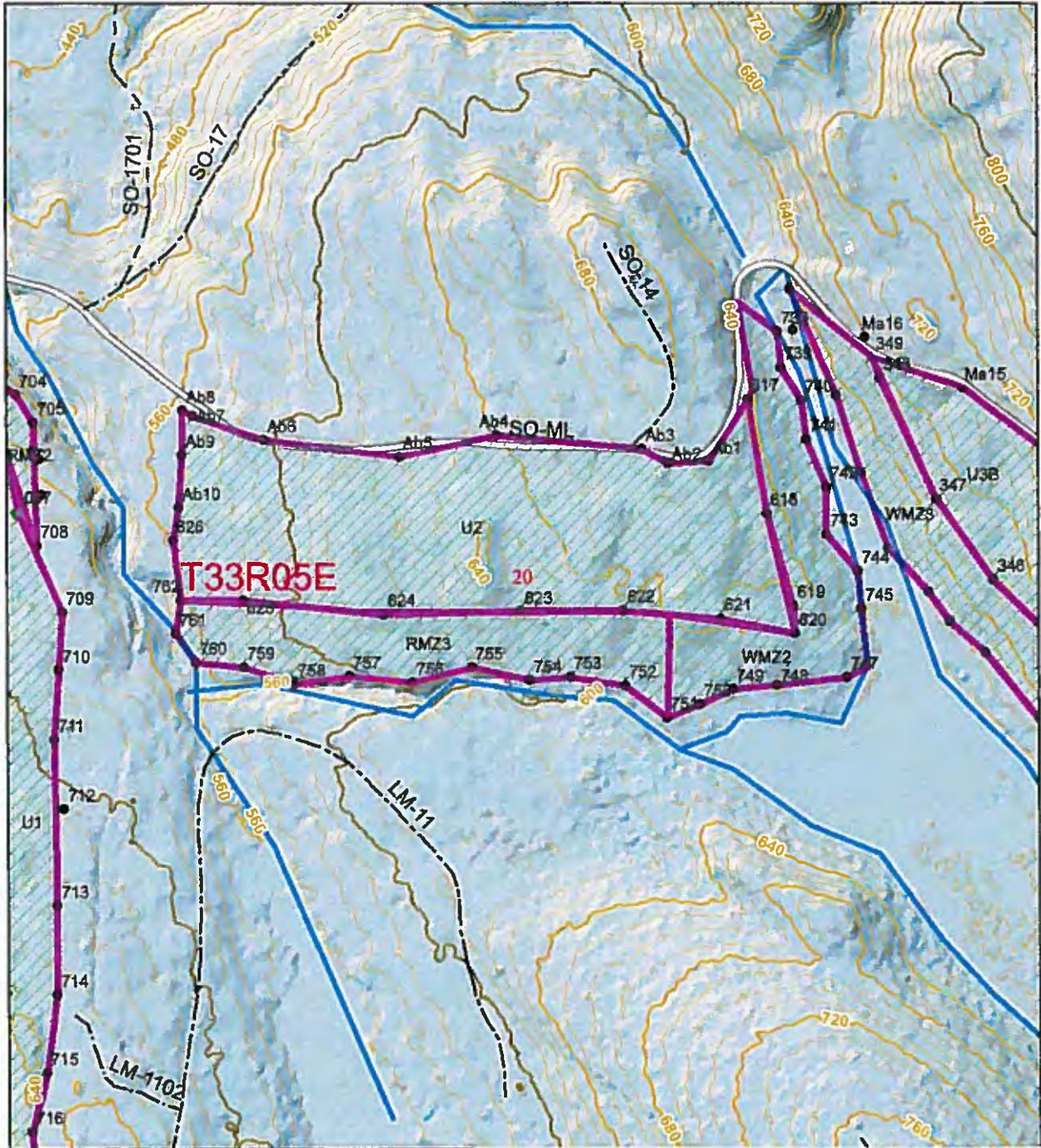


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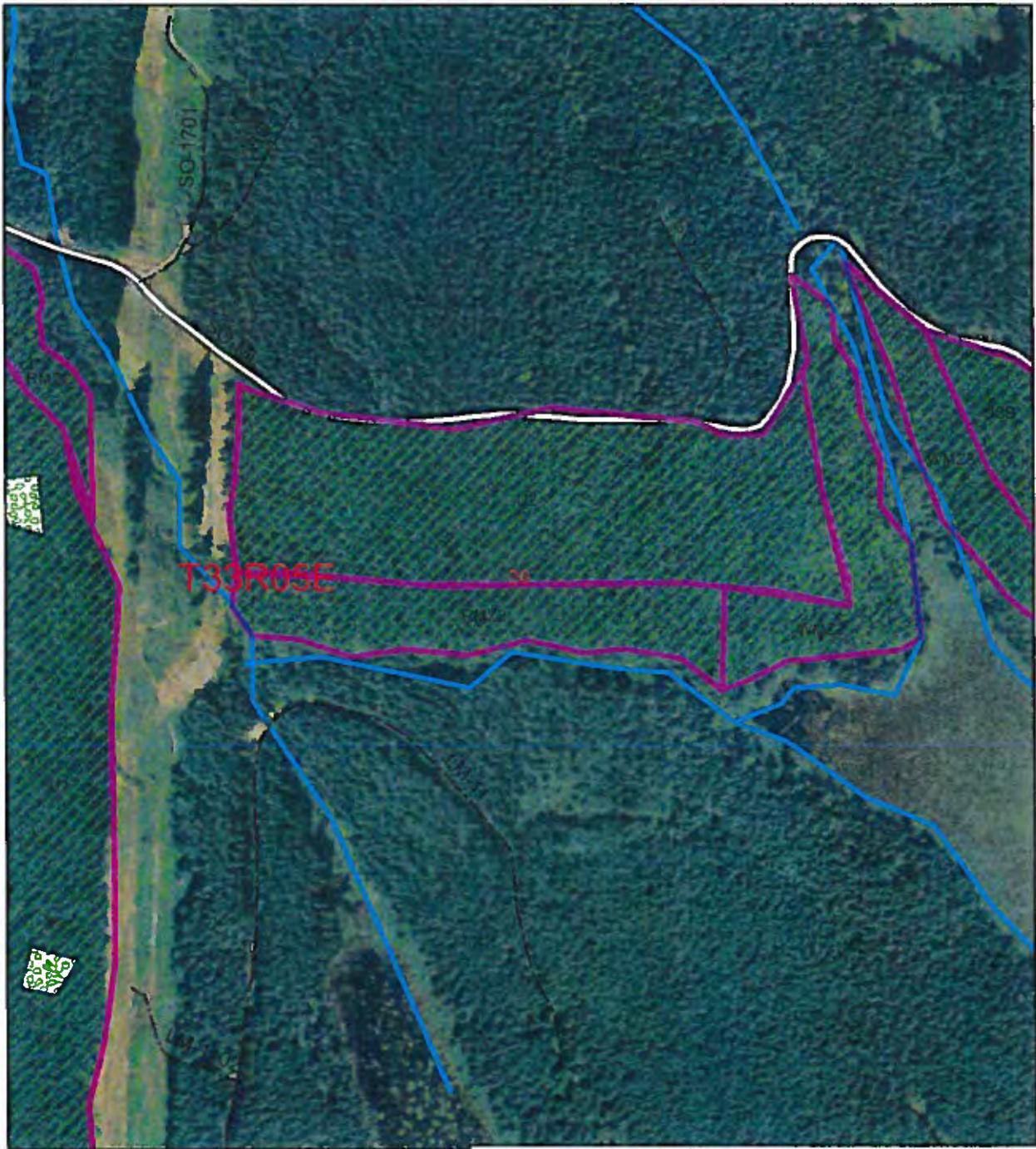
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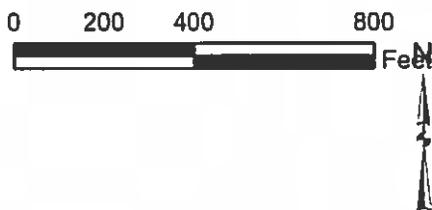
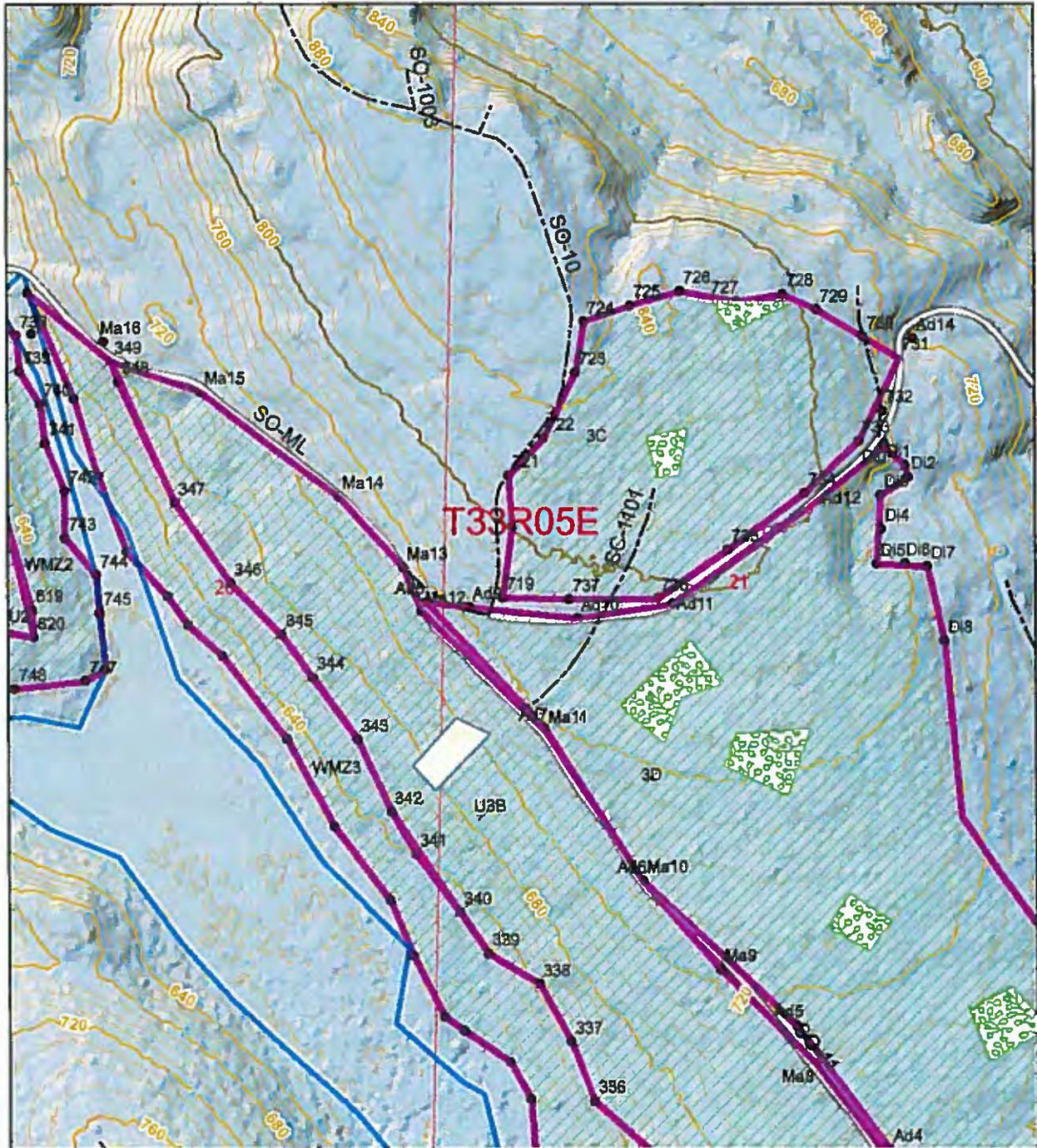
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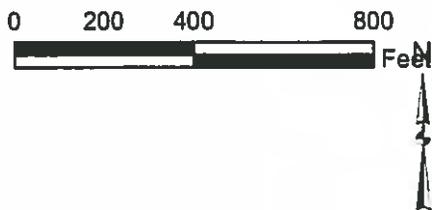
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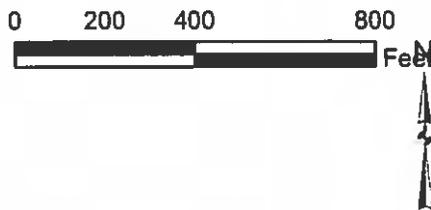
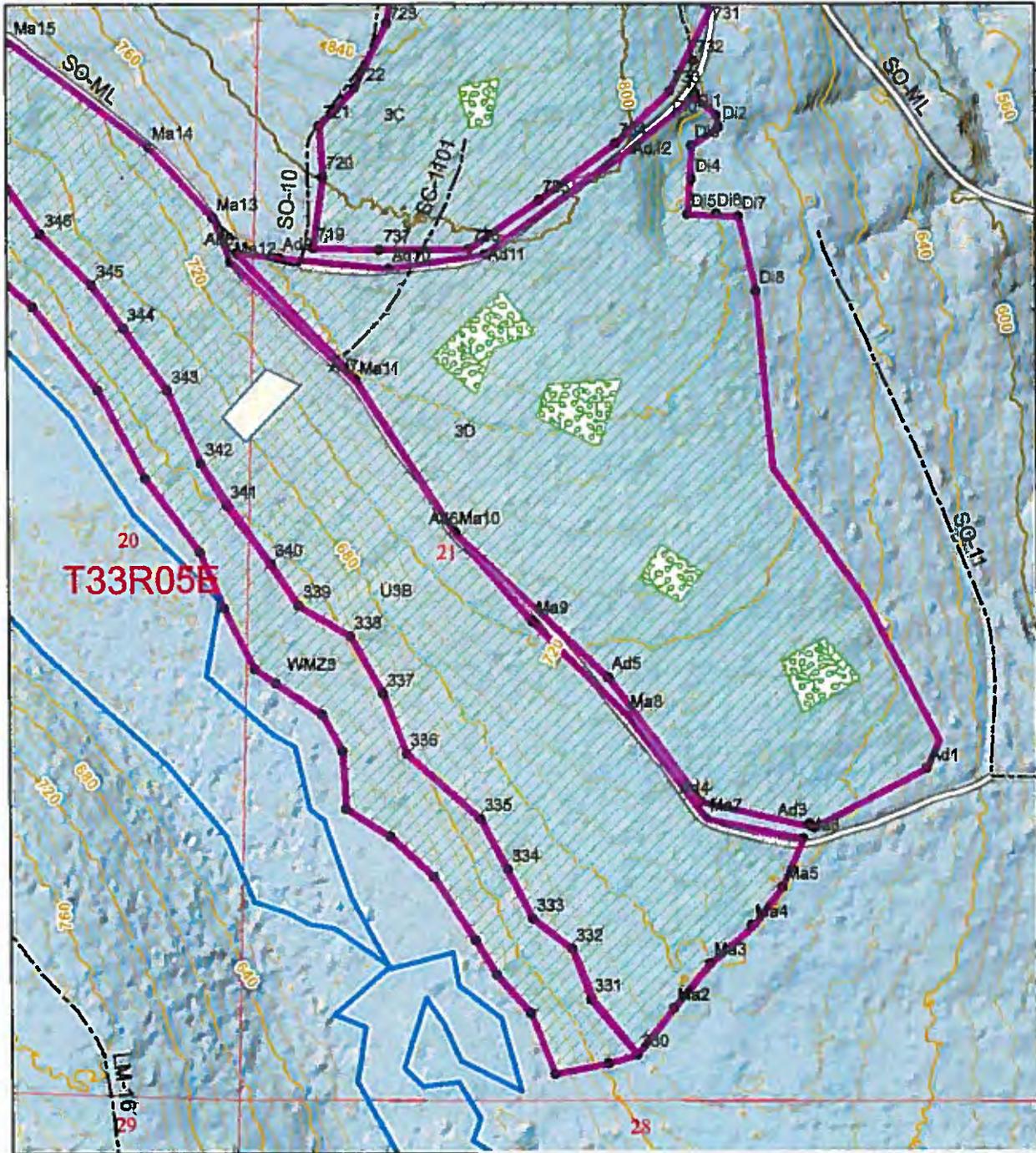
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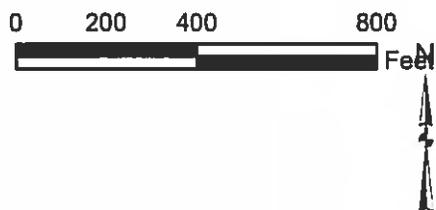
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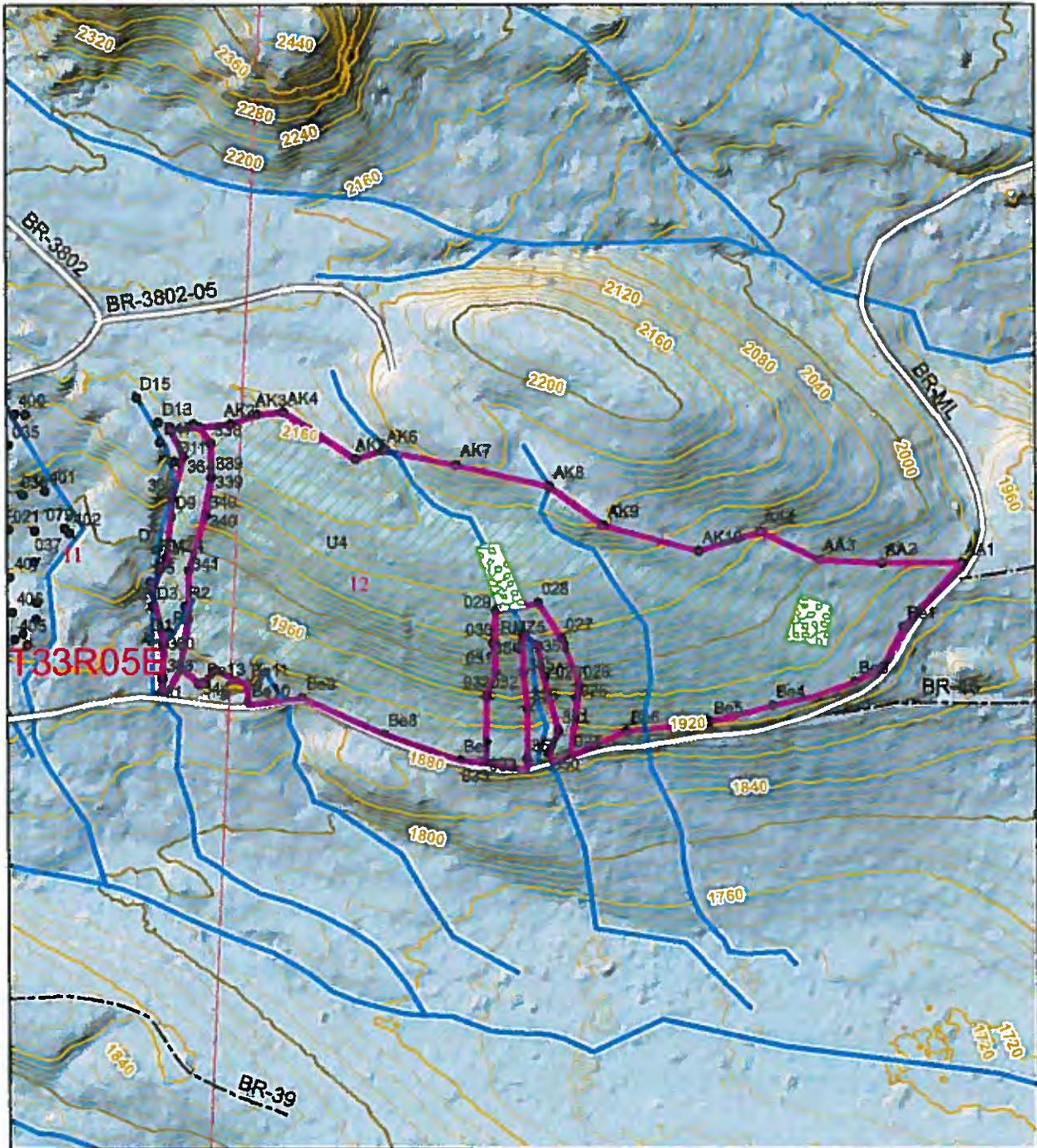
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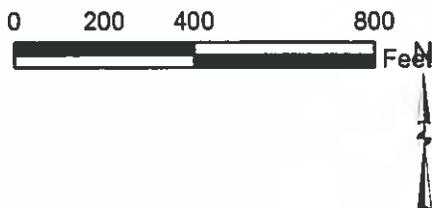
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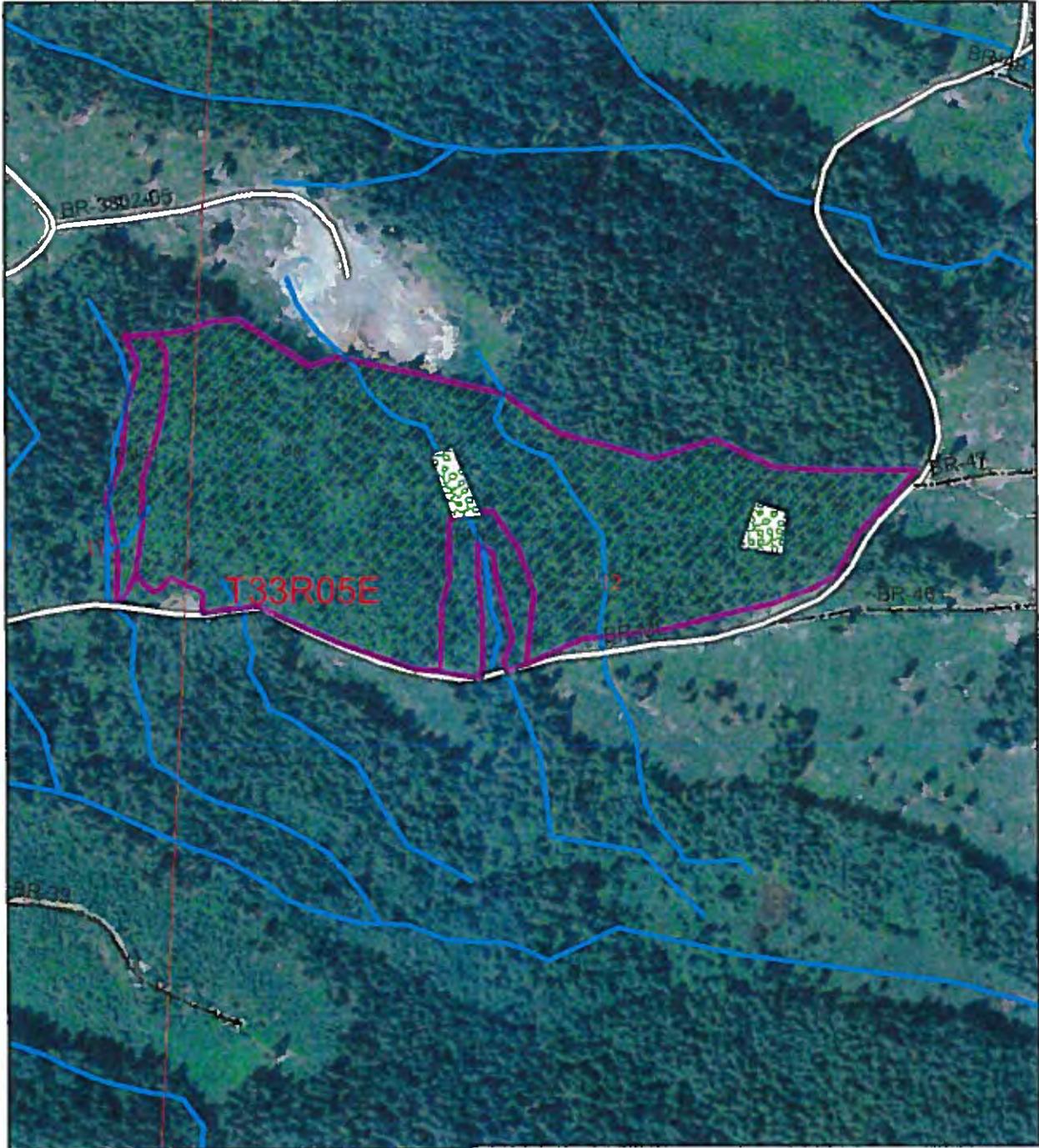


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WASHINGTON STATE DEPARTMENT OF
Natural Resources
 Peter Goldmark - Commissioner of Public Lands

FPA/N No: 2814991

Effective Date: 2/26/2016

Expiration Date: 2/26/2019

Shut Down Zone: 658

EARR Tax Credit: Eligible Non-eligible

Reference: **West Bear Trippin**

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

DECISION:

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

FPA/N CLASSIFICATION

Number of Years Granted on Multi-Year Request

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

Conditions on Approval / Reasons for Disapproval

- 48 hour notice is required prior to any activities associated with this permit. Leave notice for the forest practices forester by contacting the Northwest Region forest practices staff (at 360) 856-3500.
- Temporary equipment crossings over typed water shall protect streambed and bank integrity. Streambeds and banks shall be protected by the use of log puncheon, slash mats, and/or temporary culverts. These shall be removed upon the completion of yarding activities.
- Erosion control methods shall be used on disturbed soils where the potential exists for sediment to be delivered to typed waters. This includes, but is not limited to ditch clean out, abandonment/installation of crossings, and/or other activities that have potential of transporting sediment to typed waters. Examples of erosion control methods may include, but are not limited to, straw/straw bales, filter fabric, temporary sediment ponds, check dams of pea gravel-filled burlap bags or other material, grass seeding, and/or mulching of exposed areas.

Issued By: Kevin Jones *[Signature]*

Region: Northwest

Title: Samish Forest Practice Forester

Date: 2/26/2016

Copies to: Landowner, Timber Owner and Operator

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

Appeal Information

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

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

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

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

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

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

And

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

Other Applicable Laws

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

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

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

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

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

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

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

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

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

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

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

DNR affidavit of mailing:

On this day _____, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA #_2814_____

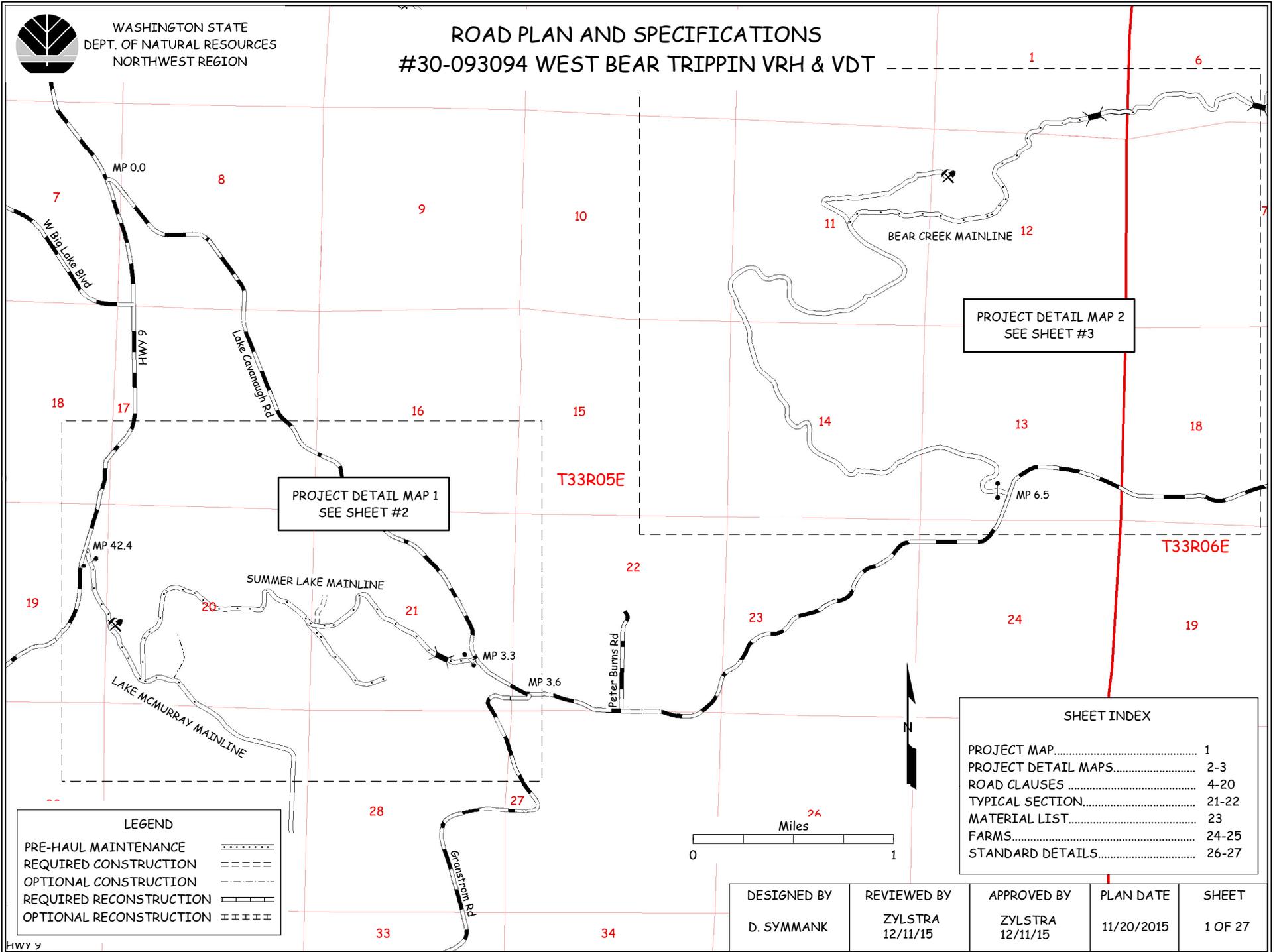
____ Braelyn Hamilton _____
(Printed name)

(Signature)



ROAD PLAN AND SPECIFICATIONS

#30-093094 WEST BEAR TRIPPIN VRH & VDT



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

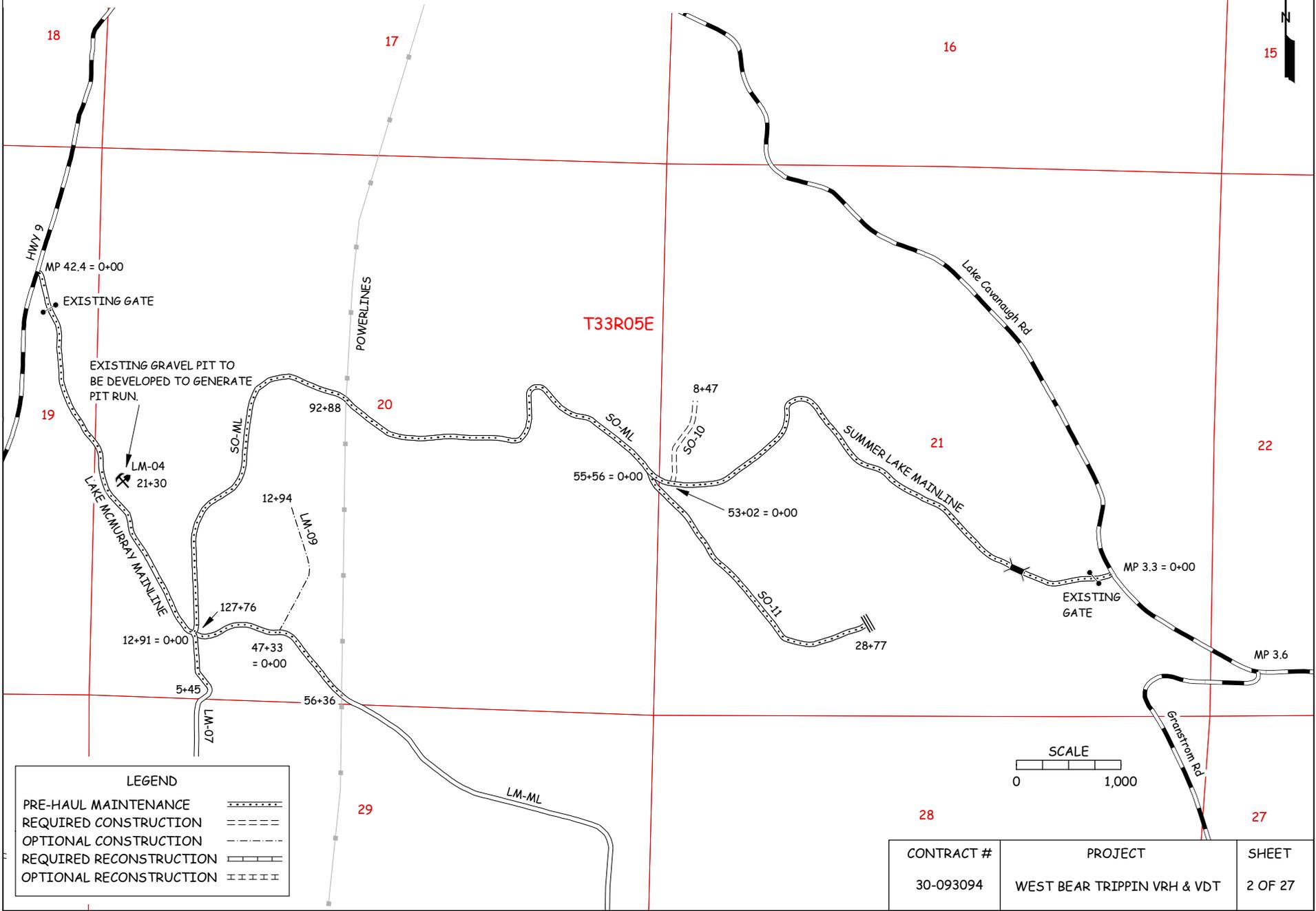
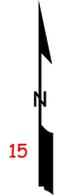


SHEET INDEX	
PROJECT MAP.....	1
PROJECT DETAIL MAPS.....	2-3
ROAD CLAUSES	4-20
TYPICAL SECTION.....	21-22
MATERIAL LIST.....	23
FARMS.....	24-25
STANDARD DETAILS.....	26-27

DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
D. SYMMANK	ZYLSTRA 12/11/15	ZYLSTRA 12/11/15	11/20/2015	1 OF 27

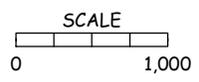


WEST BEAR TRIPPIN VRH & VDT PROJECT DETAIL MAP 1



T33R05E

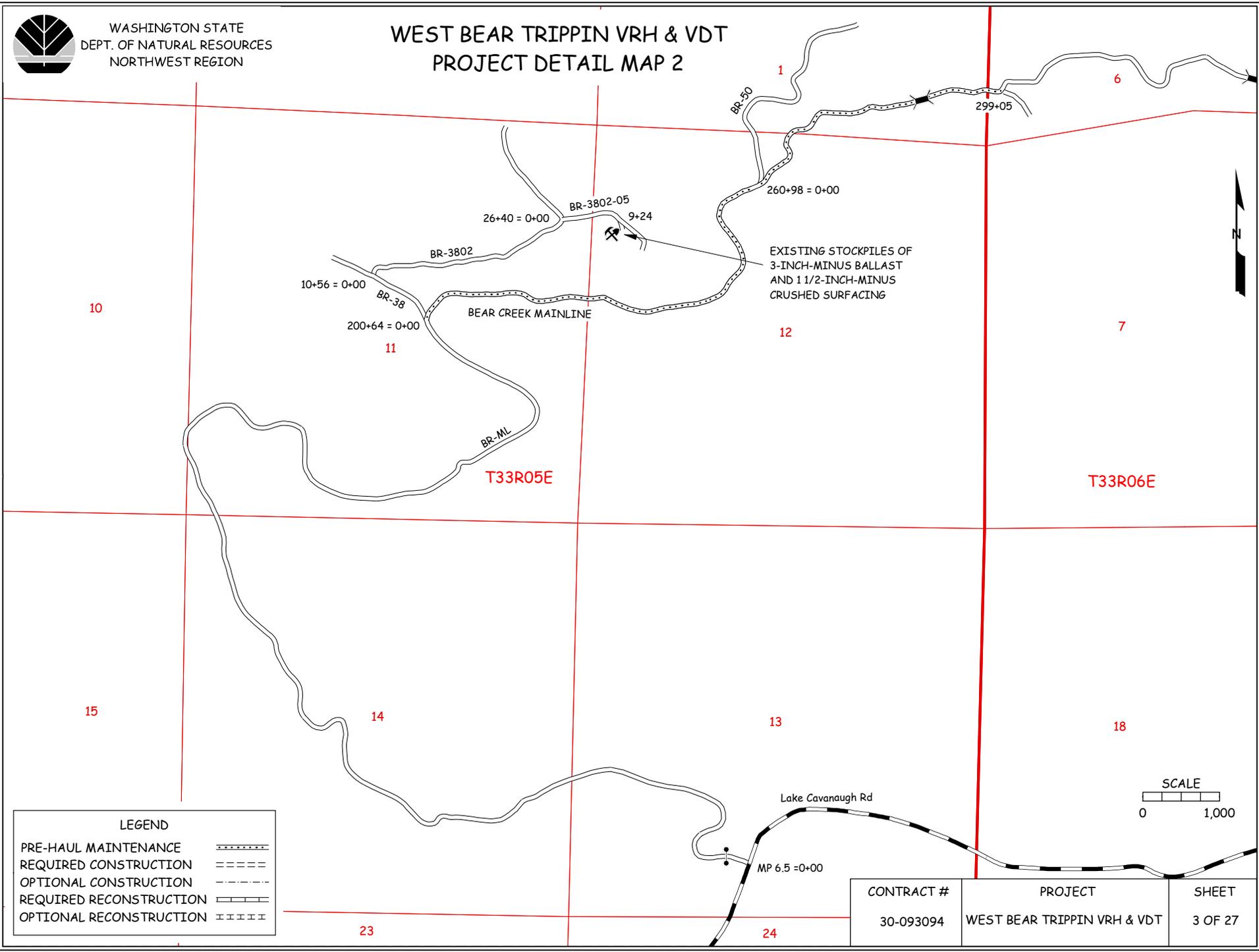
LEGEND	
PRE-HAUL MAINTENANCE	
REQUIRED CONSTRUCTION	
OPTIONAL CONSTRUCTION	
REQUIRED RECONSTRUCTION	
OPTIONAL RECONSTRUCTION	



CONTRACT #	PROJECT	SHEET
30-093094	WEST BEAR TRIPPIN VRH & VDT	2 OF 27



WEST BEAR TRIPPIN VRH & VDT PROJECT DETAIL MAP 2

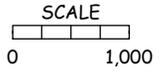


EXISTING STOCKPILES OF
3-INCH-MINUS BALLAST
AND 1 1/2-INCH-MINUS
CRUSHED SURFACING

T33R05E

T33R06E

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



CONTRACT #	PROJECT	SHEET
30-093094	WEST BEAR TRIPPIN VRH & VDT	3 OF 27

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

WEST BEAR TRIPPIN VRH & VDT TIMBER SALE ROAD PLAN
SKAGIT COUNTY
CAVANAUGH UNIT CLEAR LAKE DISTRICT

AGREEMENT NO.: 30-093094

STAFF ENGINEER: SYMMANK

DATE: NOVEMBER 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.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
LM-ML	0+00 to 56+36	PRE-HAUL MAINTENANCE
LM-07	0+00 to 5+45	PRE-HAUL MAINTENANCE
SO-ML	0+00 to 127+76	PRE-HAUL MAINTENANCE
SO-10	0+00 to 8+47	CONSTRUCTION
SO-11	0+00 to 28+77	PRE-HAUL MAINTENANCE
BR-ML	200+64 to 299+05	PRE-HAUL MAINTENANCE

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
LM-09	0+00 to 12+94	CONSTRUCTION

0-4 CONSTRUCTION

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to sub-grade, landing and turnout construction, culvert installation, application of pit run.

0-6 PRE-HAUL MAINTENANCE

Pre-haul maintenance includes, but is not limited to road brushing, grading, and spot application of crushed surfacing.

0-7 POST-HAUL MAINTENANCE

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

0-10 ABANDONMENT

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

0-12 DEVELOP ROCK SOURCE

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

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-25 ACTIVITY TIMING RESTRICTION

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

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

1-26 OPERATING DURING CLOSURE PERIOD

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

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

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

<u>Road</u>	<u>Stations</u>
BR-ML	200+64 to 260+98

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

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

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

1-33 SNOW PLOWING RESTRICTION

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

1-43 ROAD WORK AROUND UTILITIES

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

<u>Road</u>	<u>Location</u>	<u>Utility</u>
SO-ML	Station 92+88	BPA, Olympic Pipeline
LM-ML	Station 56+36	BPA, Olympic Pipeline

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.

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following roads, Purchaser shall use a grader to shape the existing surface before hauling.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
LM-ML	0+00 to 56+36	After brushing, before hauling
LM-07	0+00 to 5+45	After brushing, before hauling
SO-ML	0+00 to 127+76	After brushing, before hauling
SO-11	0+00 to 28+77	After brushing, before hauling
BR-ML	200+64 to 299+05	After spot rock, Before hauling

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

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

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following roads, Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

<u>Road</u>	<u>Stations</u>
LM-ML	0+00 to 56+36
LM-07	0+00 to 5+45
SO-ML	0+00 to 127+76
SO-11	0+00 to 28+77

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.

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 70%.
- Against standing trees unless approved by the Contract Administrator.

3-10 GRUBBING

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

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed:

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

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-21 TURNOUTS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches shall drain to cross-drain culverts and ditchouts.

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

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

4-55 ROAD SHAPING

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

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

SECTION 5 – DRAINAGE

5-5 CULVERTS

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

5-11 UNUSED MATERIALS STATE PROPERTY

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

5-15 CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

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

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

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

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
LM-04 Gravel Pit	21+30 of the LM-ML road	Pit Run
West Bear Pit	9+24 of the BR-3802-05 rd	1½-inch-minus crushed rock

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall remove no more than 50 cubic yards of 1½-inch-minus crushed rock. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator. Stockpiles not listed shall not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>
West Bear Pit	9+24 of the BR-3802-05 rd	1½-inch-minus crushed rock	50 CY

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

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

<u>Source</u>
LM-04 Gravel Pit

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

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications:

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.

- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.

6-20 ROCK GRADATION TYPES

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

6-41 PIT RUN ROCK

Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash.

6-50 LIGHT LOOSE RIP RAP

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

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

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 8 – EROSION CONTROL

8-15 REVEGETATION

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

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed and fertilizer.

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

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

8-19 ASSURANCE FOR SEEDED AREA

The Purchaser shall be responsible to ensure a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. The Purchaser shall reapply the 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.

9-5 POST-HAUL MAINTENANCE

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

9-10 LANDING DRAINAGE

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

9-12 LANDING EMBANKMENT REMOVAL

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

9-21 ROAD ABANDONMENT

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

<u>Road</u>	<u>Stations</u>
LM-09	0+00 to 12+94

9-22 ABANDONMENT

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

- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.

SECTION 10 MATERIALS

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

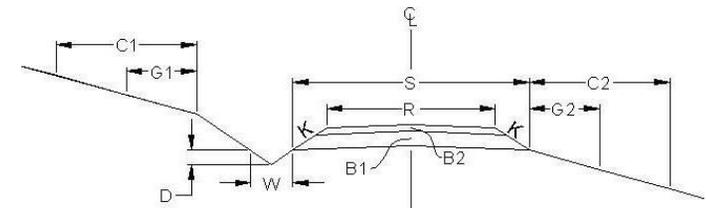
10-23 GAGE AND CORRUGATION

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

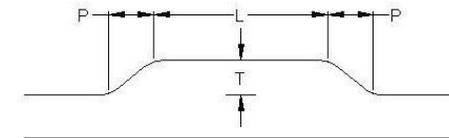
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1/2"
24" to 48"	14 (0.079")	2 ² / ₃ " X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #		LM-ML	LM-07	LM-09 ¹	SO-ML
REQUIRED / OPTIONAL		Required	Required	Optional	Required
CONSTRUCT / RECONSTRUCT / PRE-HAUL MAINTENANCE		Pre-Haul	Pre-Haul	Construction	Pre-Haul
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00
STATION / MP		56+36	5+45	12+94	127+76
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	3	2	3
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	50	50	25	50
TURNOUT WIDTH	T	10	10	10	10
TURNOUT TAPER	P	25	25	25	25
GRUBBING	G1	--	--	5	--
	G2	--	--	5	--
CLEARING	C1	--	--	10	--
	C2	--	--	10	--
ROCK FILLSLOPE	K:1	1½	1½	1½	1½
❖ BALLAST DEPTH	B1	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY BALLAST		--	--	300 ¹	--
❖ SURFACING DEPTH	B2	--	--	--	--
CUBIC YARDS / STATION		--	--	--	--
➤ TOTAL CY SURFACING		--	--	--	--
➤ TOTAL CUBIC YARDS		--	--	300 ¹	--
SUBGRADE WIDTH	S	--	--	--	--
BRUSHCUT (Y/N)		Y	Y	N/A	Y
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	N/A	Y

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



SYMBOL NOTES

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
 - Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.
- ¹ Previously abandoned road grade. Pit run is for spot supplement and culvert installation.
- ² Spot application of crushed surfacing to fill potholes and as directed by the contract administrator, prior to grading.

Rock Totals
Pit Run – 400 cy
Surfacing – 50 cy
Riprap - 15 cy

ROAD #		SO-10 ¹	SO-11	BR-ML ²			
REQUIRED / OPTIONAL		Required	Required	Required			
CONSTRUCT / RECONSTRUCT		Construction	Pre-Haul	Pre-Haul			
TOLERANCE CLASS (A/B/C)		C	C	C			
STATION / MP TO		0+00	0+00	200+64			
STATION / MP		8+47	28+77	299+05			
ROAD WIDTH	R	12	12	12			
CROWN (INCHES @ C/L)		3	3	3			
DITCH WIDTH	W	3	3	3			
DITCH DEPTH	D	1	1	1			
TURNOUT LENGTH	L	50	50	50			
TURNOUT WIDTH	T	10	10	10			
TURNOUT TAPER	P	25	25	25			
GRUBBING	G1	5	--	--			
	G2	5	--	--			
CLEARING	C1	10	--	--			
	C2	10	--	--			
ROCK FILL SLOPE	K:1	1½	1½	1½			
❖ BALLAST DEPTH	B1	--	--	--			
CUBIC YARDS / STATION		--	--	--			
➤ TOTAL CY BALLAST		100 ¹	--	--			
❖ SURFACING DEPTH	B2	--	--	--			
CUBIC YARDS / STATION		--	--	--			
➤ TOTAL CY SURFACING		--	--	50 ²			
➤ TOTAL CUBIC YARDS		100 ¹	--	50 ²			
SUBGRADE WIDTH	S	--	--	--			
BRUSHCUT (Y/N)		N/A	Y	N			
BLADE, SHAPE, & DITCH (Y/N)		N/A	Y	Y			

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

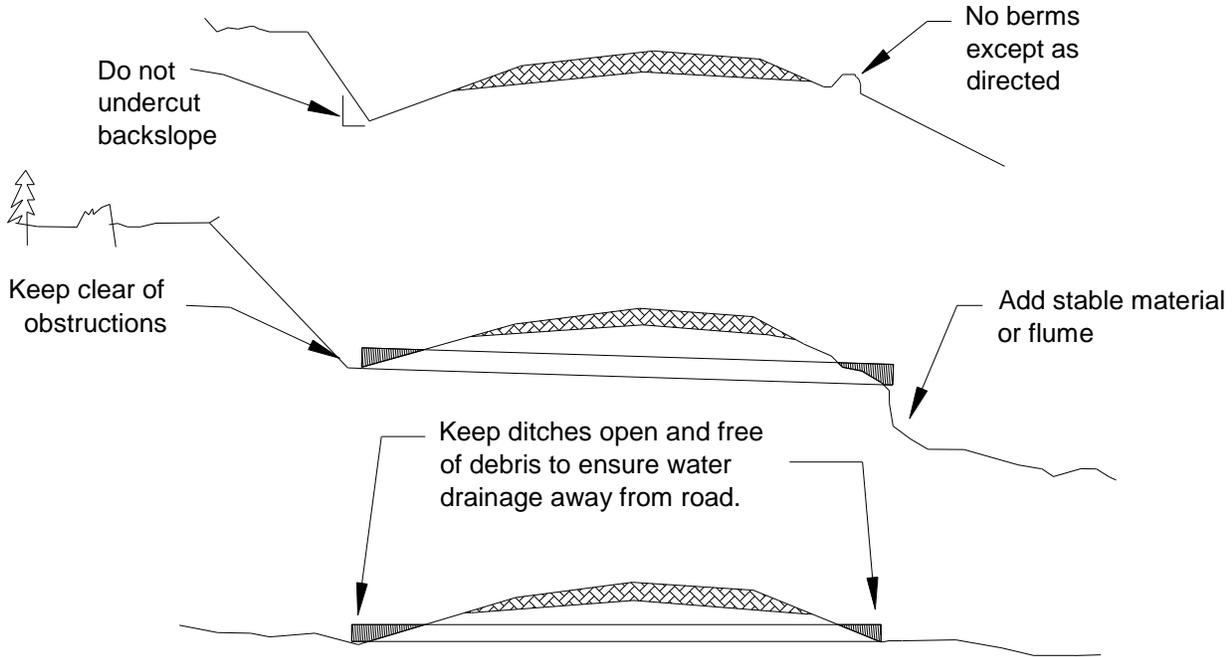
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

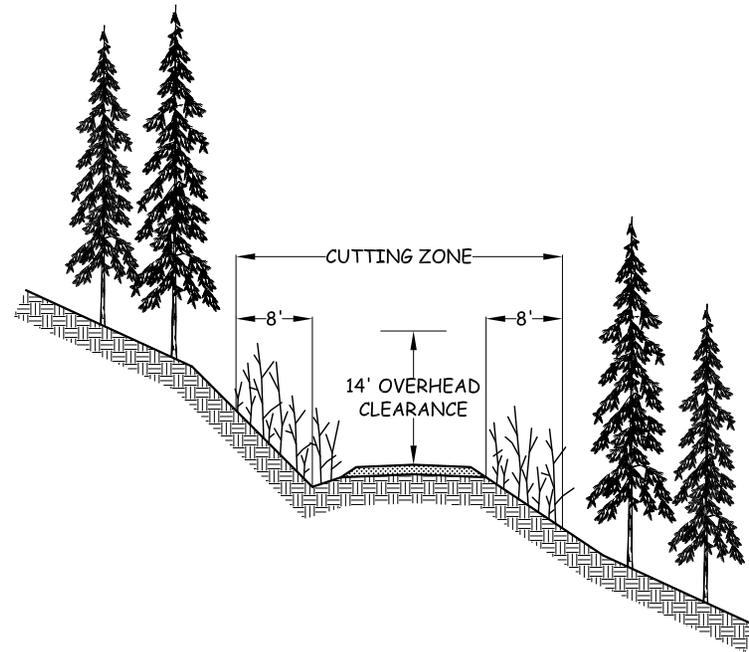
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



ROAD BRUSHING DETAILS



SPECIFICATIONS

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

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

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

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

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

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

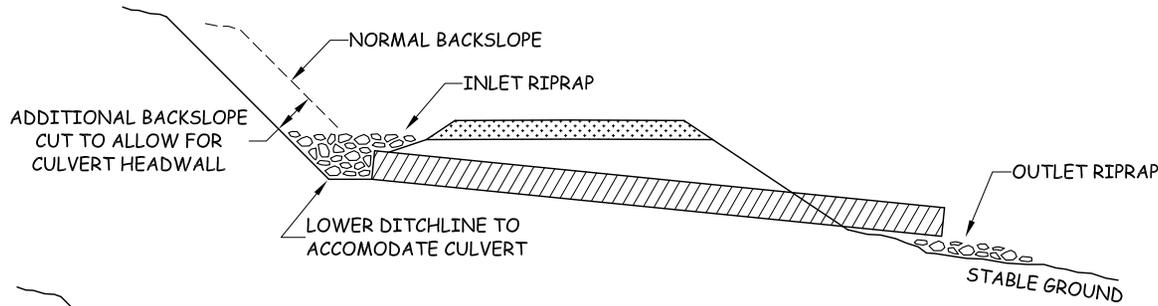
DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

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

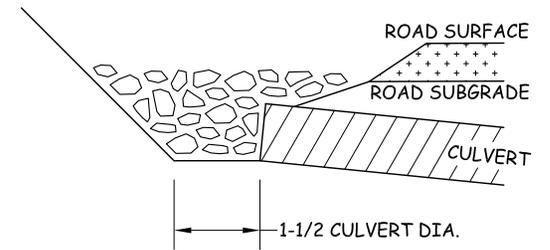
CONTRACT #	PROJECT	SHEET
30-093094	WEST BEAR TRIPPING VRH & VDT	26 OF 27

CULVERT AND DRAINAGE SPECIFICATIONS

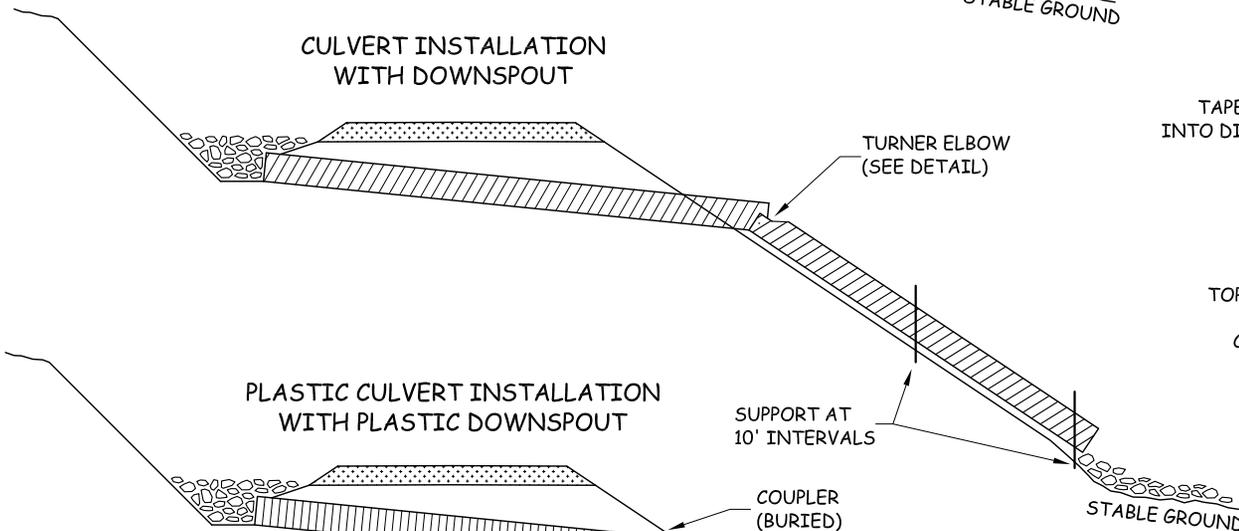
CULVERT INSTALLATION (TYPICAL)



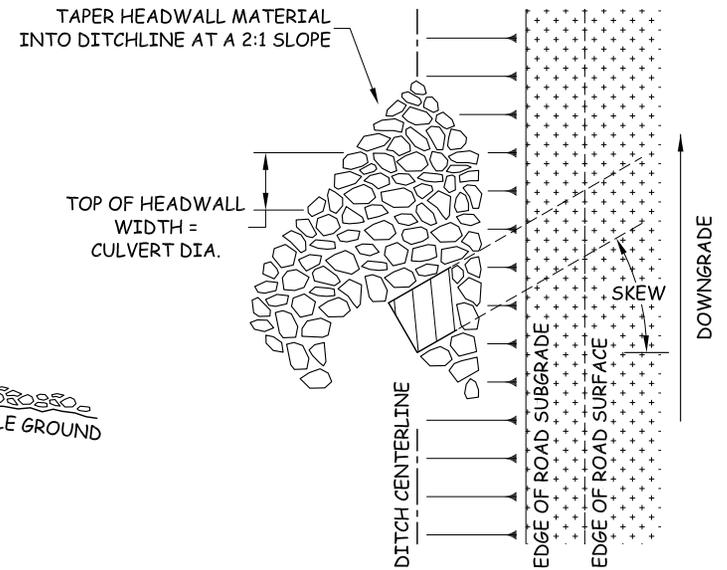
CULVERT HEADWALL - SECTION VIEW



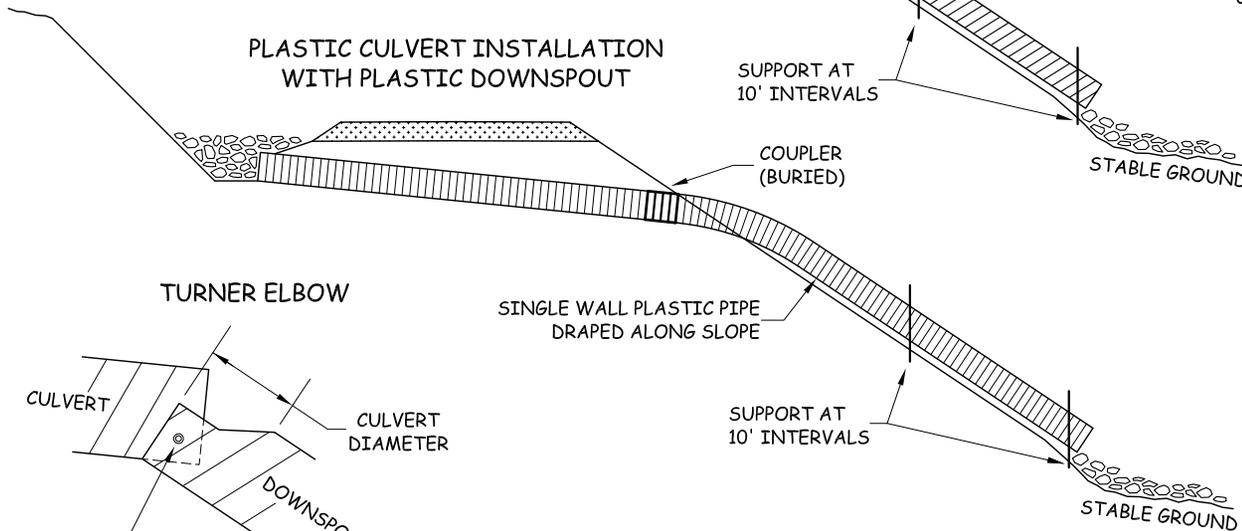
CULVERT INSTALLATION WITH DOWNSPOUT



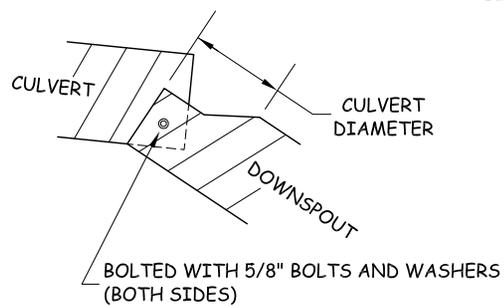
CULVERT HEADWALL - PLAN VIEW



PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT



TURNER ELBOW



HEADWALL NOTE:

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

CONTRACT #	PROJECT	SHEET
30-093094	WEST BEAR TRIPPING VRH & VDT	27 OF 27

SUMMARY - Road Development Costs

REGION: NW
DISTRICT: Clear Lake

SALE/PROJECT NAME: West Bear Trippin VRH & VDT

CONTRACT #: 30-093094

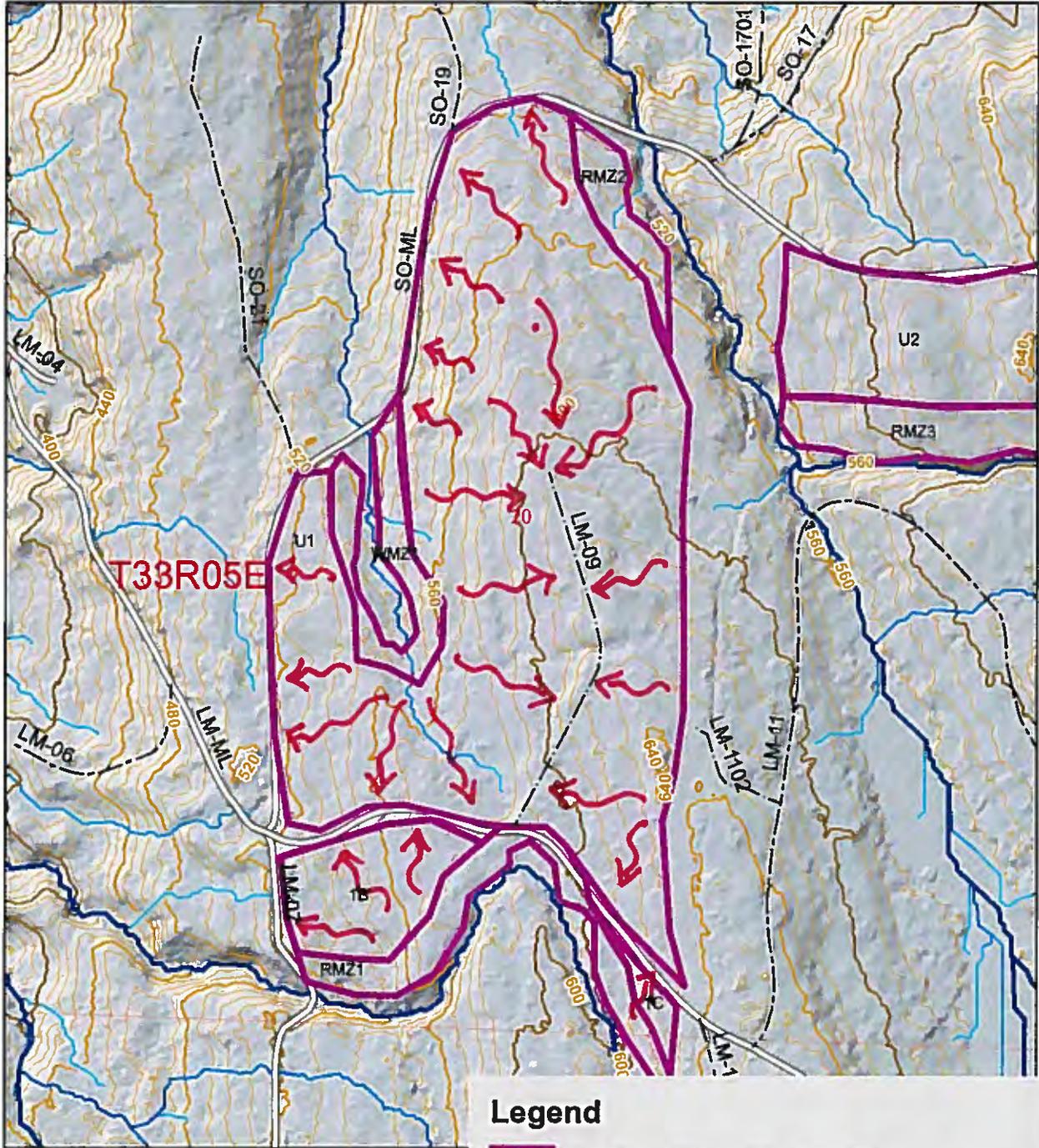
ROAD NUMBERS:	EB-1108, EB-2110, EB-2111, B-2114, EB-2114-02, EB-2114-03, EB-2115, EB-2116, EB-2901-04, EB-2911, EB-ML, EB-42, EB-4207, EB-43, EB-48, EB-53	EB-1108	EB-21
ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	21+41	0+00	278+68
CLEARING & GRUBBING:	\$1,199	\$0	
EXCAVATION AND FILL:	\$2,736	\$0	-
MISC. MAINTENANCE:	\$0	\$0	\$7,278
ROAD ROCK:	\$2,790	\$0	-
ROCK STOCKPILE PROD:	\$0	\$0	-
CULVERTS AND FLUMES:	\$2,370	\$0	-
STRUCTURES:	\$0	\$0	-
MOBILIZATION:	\$8,033	\$0	-
 TOTAL COSTS:	 \$17,128	 \$0	 \$7,278
COST PER STATION:	\$800	\$0	\$26
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$388	

	TOTAL (All Roads) =	\$24,795
Est.	SALE VOLUME MBF =	4,600
	TOTAL \$/MBF =	\$5

Compiled by: Symmank

Date: 12/11/15

West Bear Trippin Logging Plan Map

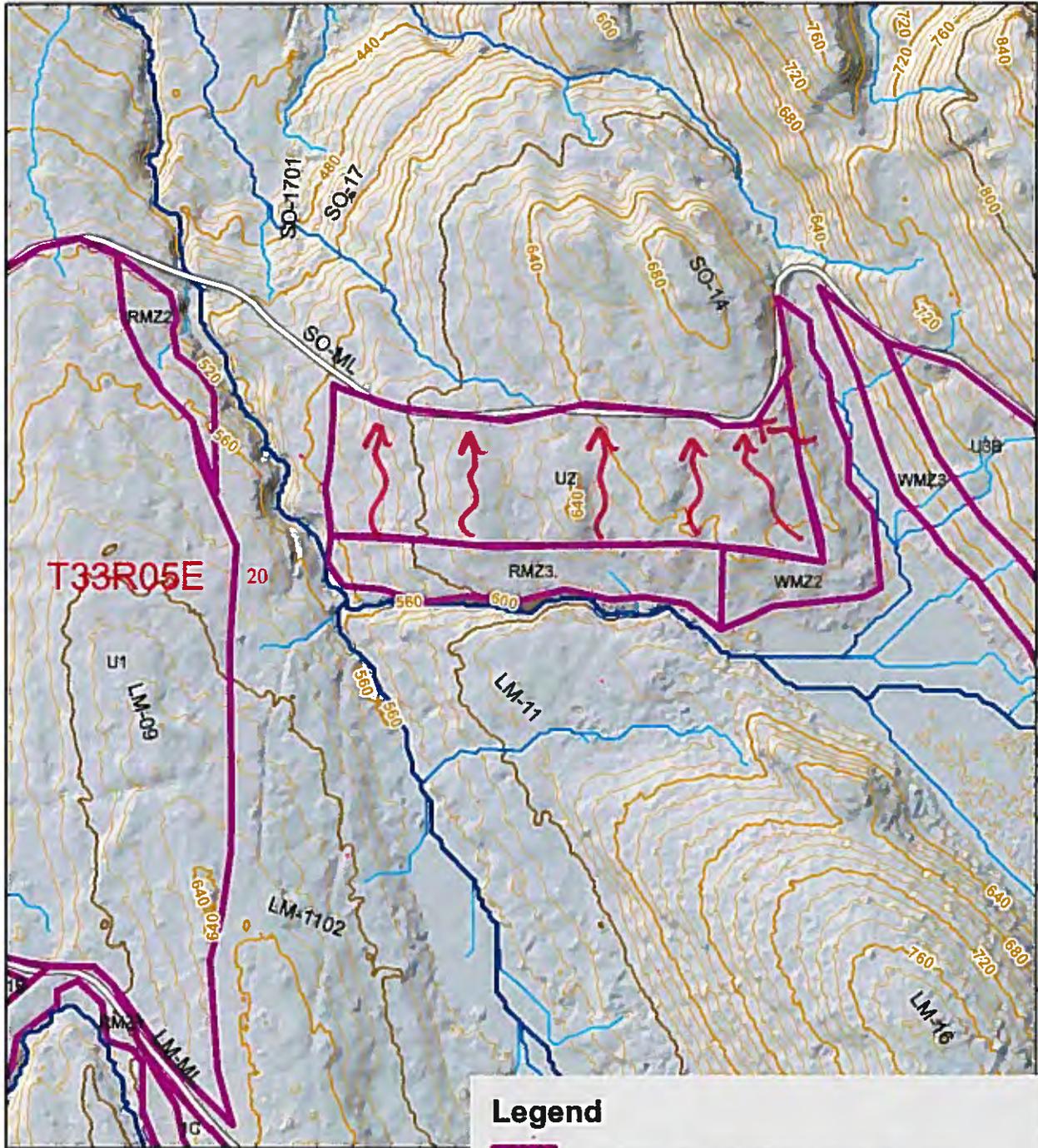


→ = GROUND BASED

Legend

-  West Bear Trippin Precruise Polygons
-  : Active
-  : Optional Construction
-  Streams Clip
-  Public Land Survey Townships
-  Public Land Survey Sections

West Bear Trippin Logging Plan Map

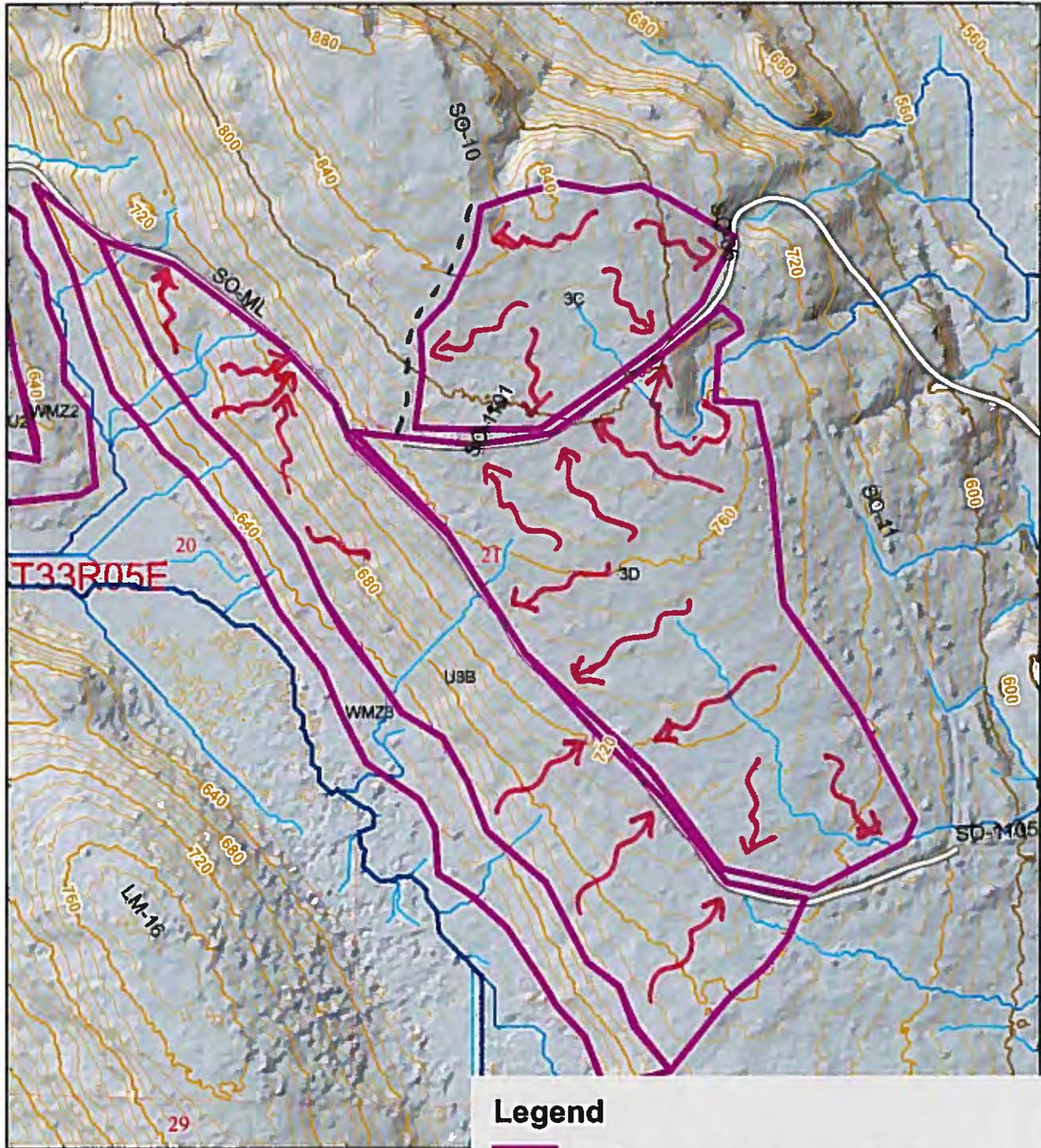


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West Bear Trippin Logging Plan Map



Legend

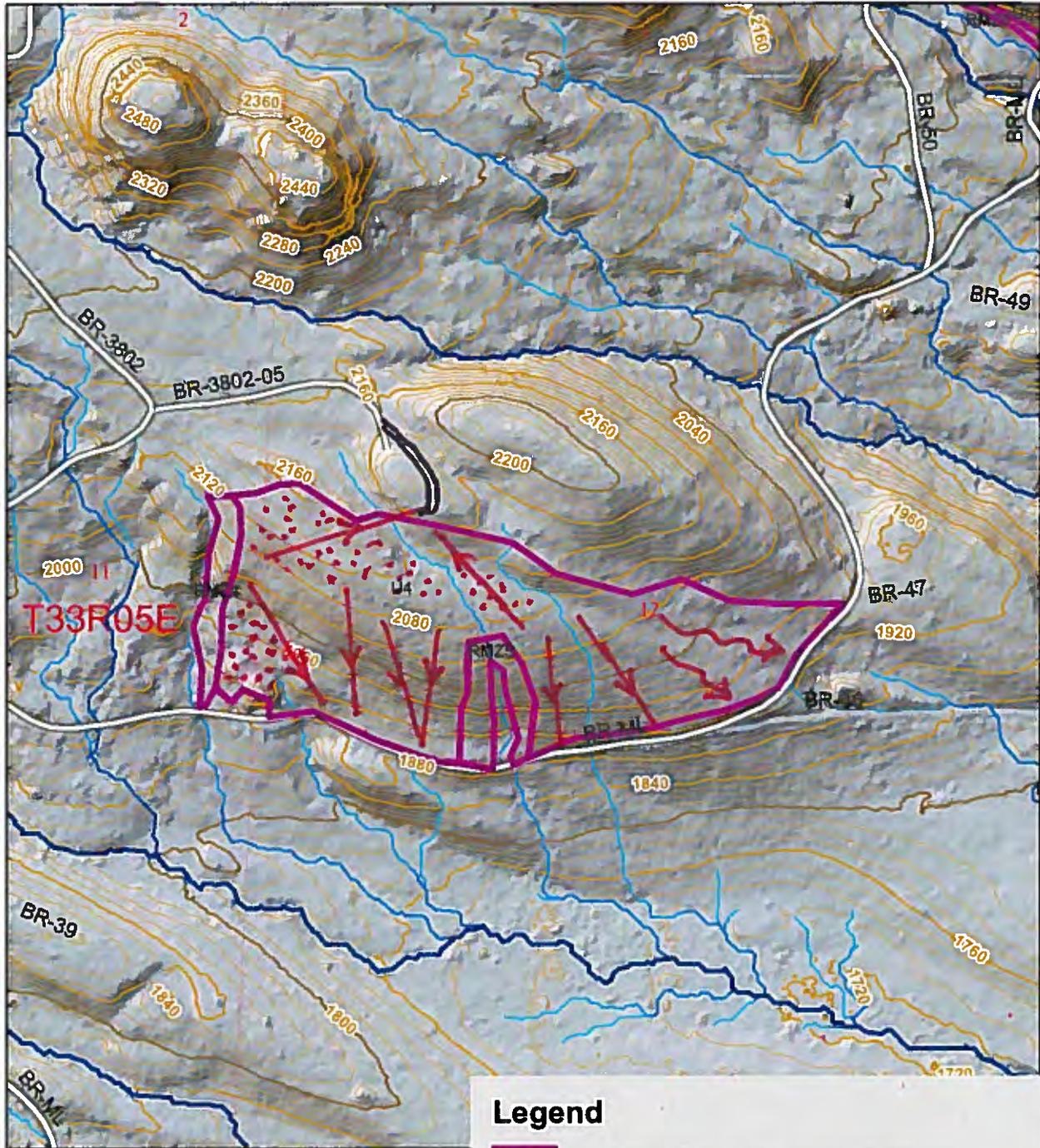
-  West Bear Trippin Precruise Polygons
-  : Active
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-  Public Land Survey Sections

0 200 400 800
Feet



 = GROUND BASED

West Bear Trippin Logging Plan Map



Legend

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0 200 400 800 Feet

N

 = CABLE

 = GROUNDS BASED

 = POSSIBLE PRE-BUNCH