

TIMBER NOTICE OF SALE

SALE NAME: TOWER FIRE SALVAGE

AGREEMENT NO: 30-093222

AUCTION: February 9, 2016 starting at 10:00 a.m.,
Northeast Region Office, Colville, WA

COUNTY: Pend Oreille

SALE LOCATION: Sale located approximately 17 miles north of Usk, WA

**PRODUCTS SOLD
AND SALE AREA:**

All standing burned timber except those trees described as leave trees in Schedule A in Units 1, 2, 3, 4, 5, 6 and 7 bounded by white timber sale boundary tags; all timber within the designated skid trail bounded by pink flagging on part(s) of Sections 30 all in Township 35 North, Range 45 East, Sections 36 all in Township 35 North, Range 44 East, W.M., containing 456 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 Ring DBH Count	Total MBF	Total Tons	Price \$/Ton	MBF by Grade									
					P	SM	1S	2S	3S	4S	5S	6S	UT	
Douglas fir	15.7	2,350	17,982	\$8.30				615	1,514	221				
Larch	15.6	1,943	11,977	\$8.30				503	1,247	193				
Grand fir	13.8	1,498	9,980	\$8.30				431	934	133				
Red cedar	12.2	1,172	9,640	\$90.00				32	750	390				
Lodgepole	11.3	442	4,505	\$8.30					312	130				
Hemlock	10.9	370	2,909	\$8.30				13	277	80				
White pine	18.2	351	2,042	\$8.30					327	24				
Spruce	15.7	251	1,673	\$8.30				70	162	19				
Ponderosa pine	17.9	107	1,112	\$8.30						38	69			
Sale Total		8,484	61,820											

MINIMUM BID: \$8.3/ton (est. value \$1,308,000.00)

BID METHOD: Sealed Bids

**PERFORMANCE
SECURITY:**

\$100,000.00

SALE TYPE: Tonnage Scale

EXPIRATION DATE: October 31, 2016

ALLOCATION: Export Restricted

BIDDABLE SPECIES: White pine, Spruce, Ponderosa pine, Lodgepole, Larch, Hemlock, Grand fir, Douglas fir combined

BID DEPOSIT: \$130,800.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Forwarder, Track skidder and Rubber tired skidder. Falling and Yarding will not be permitted from February 15 to May 31 unless authorized in writing by the Contract Administrator due to spring breakup.

ROADS: 38.45 stations of required construction. 697.89 stations of required prehaul maintenance. Road construction will not be permitted from November 15 to May 31 unless authorized in writing by the Contract Administrator due to frozen conditions and spring breakup. The hauling of forest products will not be permitted from February 15 to May 31 unless authorized in writing by the Contract Administrator due to spring breakup.

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ACREAGE DETERMINATION

CRUISE METHOD: Acreage determined using GPS methods. Acreage shown above is net harvest acres in harvest units. Ponderosa pine: 8.0 - 17.5 inches dbh has a minimum top of 5.6 inch dib. All other species: 7.0 - 17.5 dbh has minimum top of 5.6 inch dib. All species 17.6 inch and greater dbh measure height to 40% of dob at 16 feet or a 5.6 inch top whichever is greater.

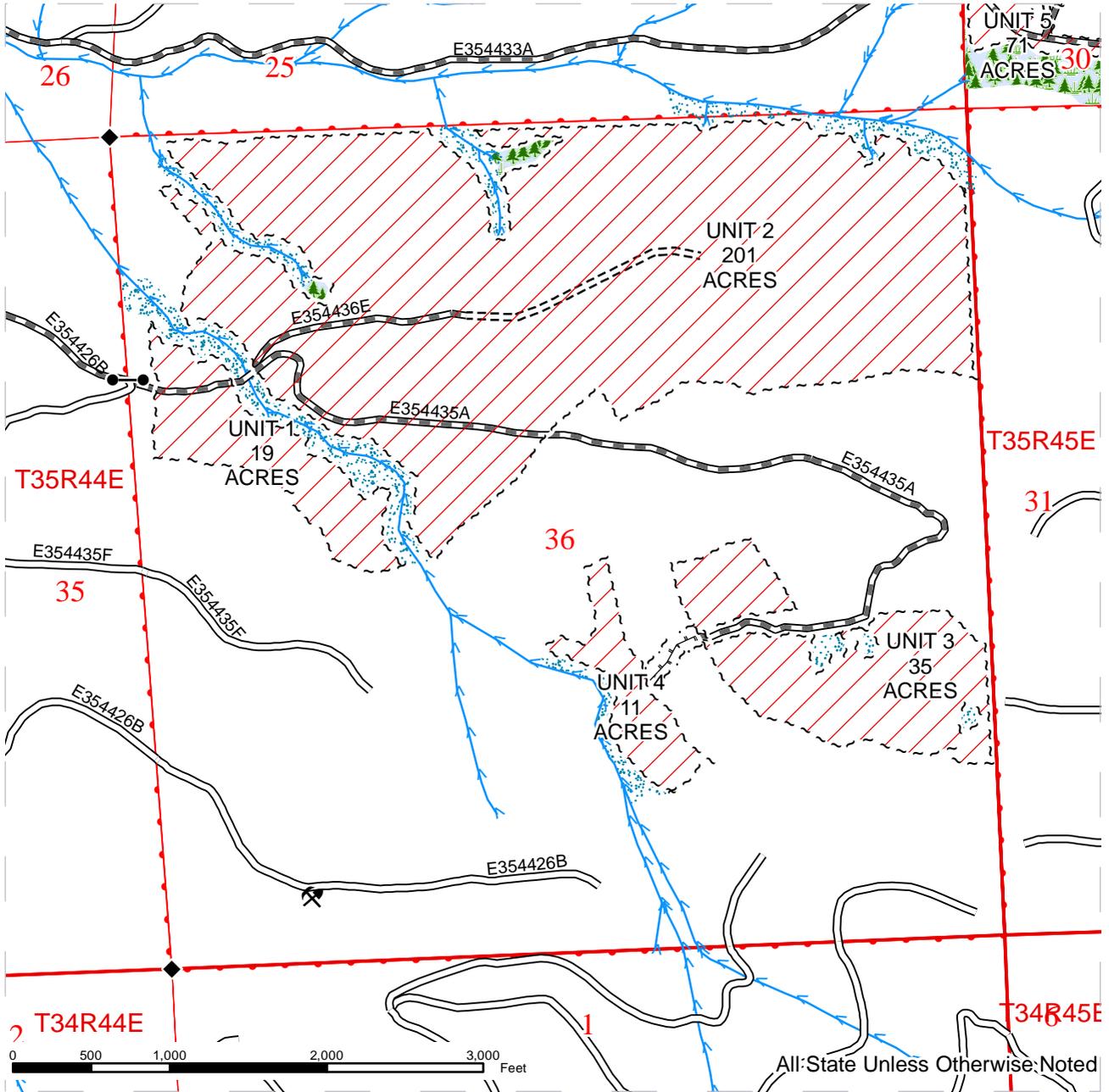
FEES: \$150,591.00 is due on day of sale. \$1.24 per ton is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: Locked gates restrict access to Units 1, 2, 3, 4 and 7. Contract Northeast Region Office at (509) 684-7474 to access. This timber sale requires the use of a third party Log and Load Reporting Service (LLRS) as required in contract clause L-071.

TIMBER SALE MAP

SALE NAME: TOWER FIRE SALVAGE
AGREEMENT#: 30-093222
TOWNSHIP(S): T35R44E, T35R45E
TRUST(S): Common School and Indemnity(3)

REGION: Northeast Region
COUNTY(S): PEND OREILLE
ELEVATION RGE: 3115-4004

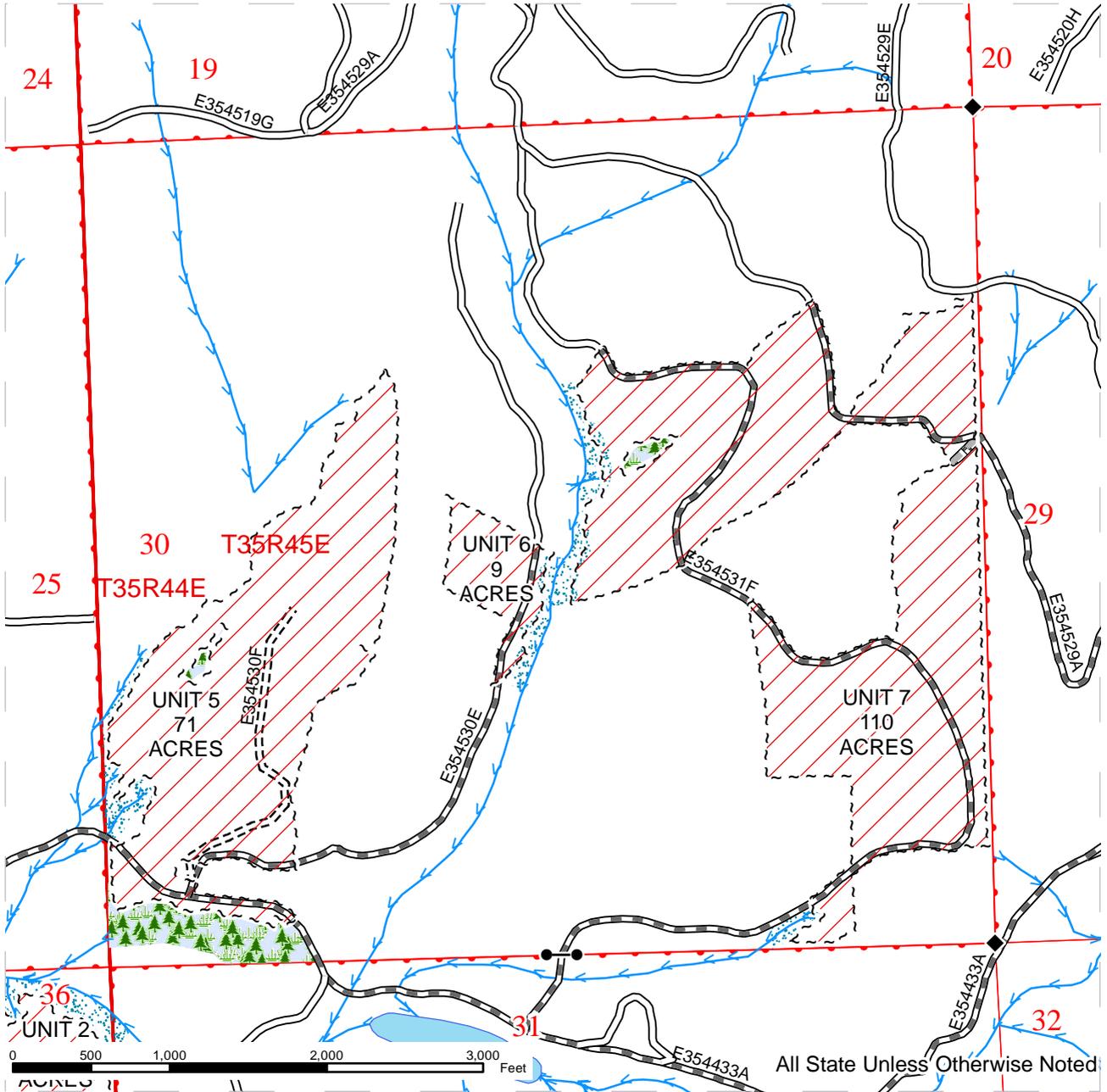


~ ~ ~ Sale Boundary Tags	— Existing Road	Forested Wetlands
Ground Skidding	- - - - - Required Construction	RMZ
ELZ	— PreHaul Maintenance	Streams
- - - - - Right of Way Acres = 0.4	- - - - - Designated Skid Trail	◆ Monumented Corners
	— County Road	Existing Rock Pit
	— Highway	
	● - ● Gate	

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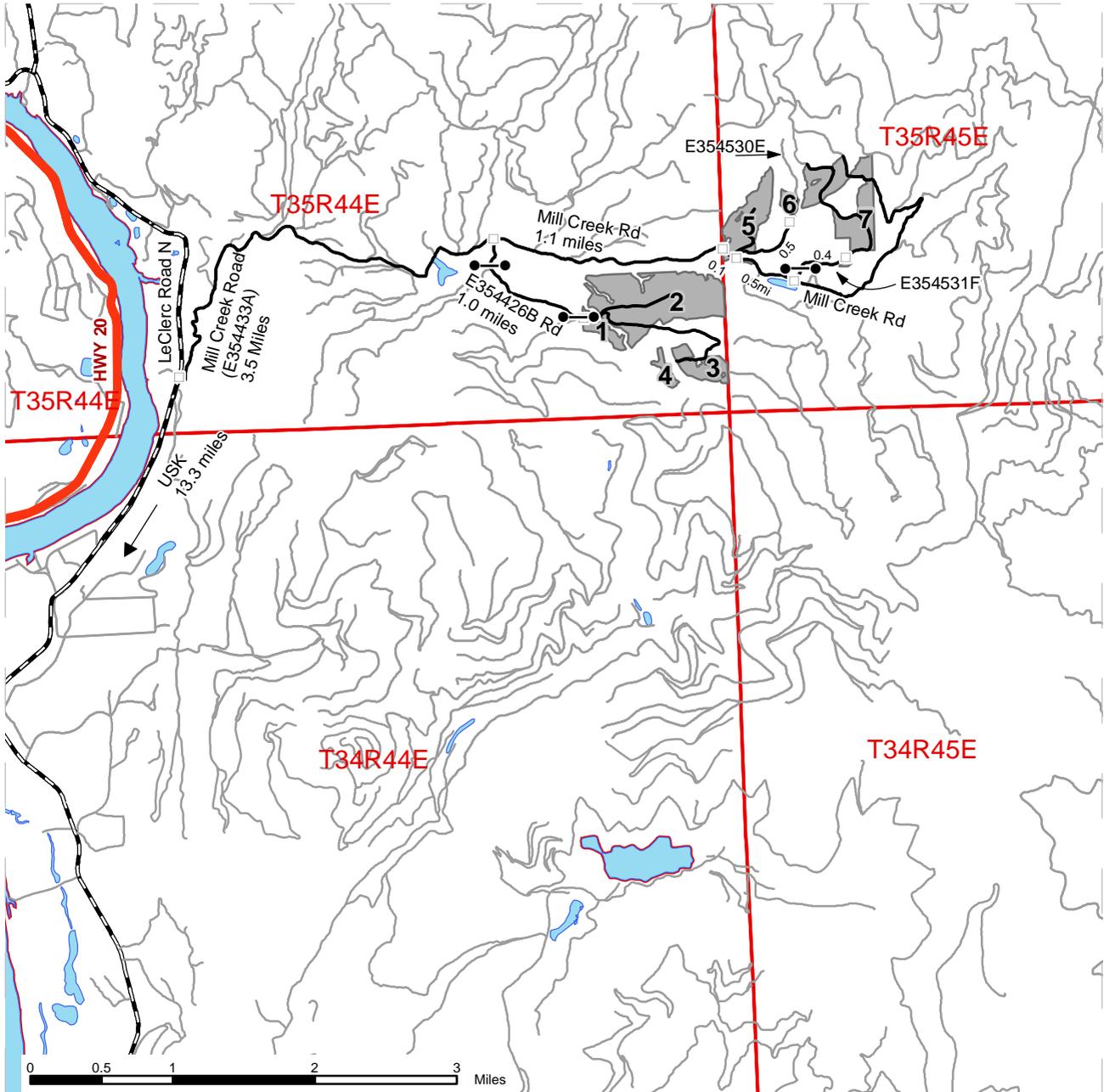


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DRIVING MAP

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	Timber Sale Unit
	Highway
	County Road
	Haul Route
	Other Route
	Gate
	Milepost Marker

DRIVING DIRECTIONS:

Units 1-4: From the intersection of LeClerc Road and Mill Creek Road north of Usk, drive east on Mill Creek Road approximately 3.5 miles to the intersection of the E354426B Road and Mill Creek Road. Turn south onto the E354426B Road and drive for approximately 1.0 miles to Unit 1. Continue on the E354426B Road to Units 2-4.

Units 5-7: From the E354426B Road intersection with Mill Creek Road, continue east on Mill Creek Road for approximately 1.1 miles to Unit 5. Continue eastward approximately 0.1 miles to the E354530E Road and head north on the E354530E Road approximately 0.5 miles to Unit 6. Continue past the Mill Creek Road/E354530E Road intersection approximately 0.5 miles to the E354531F Road. Turn north onto the E354531F Road and drive approximately 0.4 miles to Unit 7.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Tonnage Scale AGREEMENT NO. 30-093222

SALE NAME: TOWER FIRE SALVAGE

**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 February 9, 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 standing burned timber except those trees described as leave trees in Schedule A in Units 1, 2, 3, 4, 5, 6 and 7 bounded by white timber sale boundary tags; all timber within the designated skid trail bounded by pink flagging, located on approximately 456 acres on part(s) of Section 30 in Township 35 North, Range 45 East, Section 36 in Township 35 North, Range 44 East W.M. in Pend Oreille 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	Required Leave Trees

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to October 31, 2016.

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-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-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-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 Colville, 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; E354433A, E354426B, E354436E, E354435A, E354531F, E354530E, E354529A and E354530F. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-320 Erosion Control

Purchaser shall deliver 300 pounds of grass seed to a location designated by the Contract Administrator. Seed provided shall meet the following specifications.

37% Mountain Brome, 18% White Dutch Clover or Alsike Clover, 18% Durar Hard Fescue, 18% Upland Draylar Bluegrass, 9% Birdsfoot Trefoil

Seed shall be certified weed free, premixed and delivered to Deer Park Workcenter in 50 pound bags clearly labeled with the timber sale name on each bag.

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-350 Permanent Plots

There are permanent plot(s) located within the sale area. The aluminum tags at the base of the trees within the plot(s) shall not be removed or destroyed.

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 E354433A road, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

- Easement 1275 with USFS dated March 24, 1975
- Easement 1275 supplement 8 with USFS dated April 18, 1979
- Easement 2357 with Riley Creek Lumber Co. dated June 20, 2003
- Easement 82272 with BNSF dated December 4, 1985
- Easement 82273 with USFS dated January 27, 1993
- Easement 82274 with BNSF dated April 17, 1979

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-024 Payment for Forest Products

Purchaser agrees to pay the following rate per ton for forest products conveyed plus \$150,591.00 on day of sale and \$1.24 per ton 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.

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-052 Payment Procedure

If a third party Log and Load Reporting Service (LLRS) is required by this contract the State will compute and forward to the Purchaser statements of charges provided for in the contract. Purchaser shall deliver payment to the Northeast region office on or before the date shown on the billing statement.

If a third party LLRS is not required by this contract, Purchaser shall pay for forest products removed on a monthly basis. Payments will be submitted to the Northeast region office on or before the fourteenth of the month following the month in which the timber was removed or, according to an alternate payment schedule as approved by the

State with at least one payment each month for timber removed. The alternate payment schedule, once approved by the State, shall become part of this contract and may be changed only with written approval of the State.

Payment will be based on the contract rate multiplied by the tons (tonnage contracts) or volume (mbf contracts) removed during the month or payment period. Included with the payment will be a summary report along with all related load tickets and the corresponding certified weight tickets for the payment period. The summary report will be generated using a computer spreadsheet and list the load tickets in ascending numerical order with the corresponding ticket number and weight or volume for each load.

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-024 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-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 2 business day 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-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.

Section H: Harvesting Operations**H-010 Cutting and Yarding Schedule**

Falling and Yarding will not be permitted from February 15 to May 31 in Units 1, 2, 3, 4, 5, 6 and 7 unless authorized in writing by the Contract Administrator.

H-011 Certification of Fallers and Yarder Operators

All persons engaged in the felling and yarding of timber must receive certification in writing from the Contract Administrator. Certification may be revoked when the

Contract Administrator determines that non-compliance of leave tree selection criteria or cut tree selection criteria is occurring, or excessive damage to leave trees or skid trails is occurring.

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

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

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

H-012 Leave Tree Damage Definition

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

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

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 144 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-015 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. Skid trails will not exceed 15 feet in width, including rub trees.
- b. Skid trails shall not cover more than 10 percent of the total acreage on one unit.
- c. Skid trail location will be pre-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. 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 6 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-025 Timing Requirements for Timber Removal

All forest products must be removed within 7 days of being felled.

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-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for Units 1, 2, 3, 4, 5, 6 and 7. The plan shall address the harvest operations and be incorporated at the prework conference, 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-050 Rub Trees

Trees designated for cutting along skid trails and cable corridors shall be left standing as rub trees until all timber that is tributary to the skid trail or cable corridor has been removed.

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 hand or mechanical means and yarded by ground base equipment unless authority to use other equipment is granted in writing by the State.

H-130 Hauling Schedule

The hauling of forest products will not be permitted on E354433A, E354426B, E354436E, E354435A, E354531F, E354530E, E354529A and E354530F roads from February 15 to May 31 unless authorized in writing by the Contract Administrator .

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. A minimum of 75% of landing slash will be hauled back and scattered in the units.

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	10	12	5.6

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.

H-230 Tops and Limbs Outside the Sale Boundary

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

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

Road construction and associated work provisions of the Road Plan for this sale, dated 10/29/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on E354433A, E354426B, E354436E, E354435A, E354531F, E354530E, E354529A and E354530F roads. All work shall be completed to the specifications detailed in the Road Plan.

C-080 Landing Locations Approved Prior to Construction

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

C-130 Dust Abatement

Purchaser shall abate dust on the E354433A, E354435A, E354529A, E354530E and E354531F roads used for hauling from June 15 to October 31.

C-140 Water Bars

Purchaser shall, as directed by the Contract Administrator, construct water bars across haul roads, skid trails and fire trails as necessary to control soil erosion and water pollution.

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-040 Noxious Weed Control

Purchaser shall notify the Contract Administrator in advance of moving equipment onto State lands. Purchaser shall thoroughly clean all off road equipment prior to entry onto State land to remove contaminated soils and noxious weed seed. If equipment is moved from one DNR project area to another, the Contract Administrator reserves the right to require the cleaning of equipment. Equipment shall be cleaned at a location approved by the Contract Administrator.

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

Slash or debris which enters any stream or Riparian Management Zone 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-110 Resource Protection

No harvesting equipment may operate within the Riparian Management Zone unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any stream and Riparian Management Zone.

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-021 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 tonnage to date from the cruised tonnage 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 \$500.00 per tree for all damaged trees in Units 1, 2, 3, 4, 5, 6 and 7..

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Loren D. Torgerson
Northeast Region Manager

Date: _____
Address: _____

Date: _____

CORPORATE ACKNOWLEDGEMENT

STATE OF _____)

COUNTY OF _____)

On this _____ day of _____, 20____, before me personally appeared _____

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

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

Notary Public in and for the State of

My appointment expires _____

Schedule A
Required Leave Trees

- A. Leave all ponderosa pine, Douglas-fir and western larch greater than twenty four inches (24") dbh.
- B. Leave all ponderosa pine greater than twenty inches (20") dbh with at least 30% live crown.
- C. Leave all Douglas-fir greater than twenty inches (20") with at least 50% live crown.
- D. If the above criteria does not yield at least six (6) leave tree per acre THEN
- E. A minimum of six (6) trees per acre are required to be left in each unit in a scattered arrangement.
 - 1. All leave trees must be at least ten inches (10") in diameter at breast height (dbh). However, leave trees shall be chosen from the larger dominant/co-dominant diameter classes where they are available.
 - 2. For scattered trees, an average spacing of eight-five (85') feet will be maintained.
 - 3. Preferred species for retention: 1) ponderosa pine 2) Douglas-fir 3) western larch



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 4/09)

PRE-CRUISE NARRATIVE

Sale Name: Tower Fire Salvage	Region: Northeast
Agreement #: 30-093222	District: Arcadia
Contact Forester:Randy Burke Phone / Location: (509) 998-2810, DPWC	County(s): Pend Oreille,
Alternate Contact:Clay Chambers Phone / Location: (509) 844-7224, DPWC	Other information: Click here to enter text.

Type of Sale: Weight Scale	
Harvest System: Ground based	100
Harvest System: Click here to enter text.	Click here to enter percent sale acres.
Enter % of sale acres	

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit #	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trus t	Gross Propo sal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determinat ion (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describ e)		
1	S36, T35N, R44E	03	19.81			0.34		19.47	GPS (Garmin)
2	S36, T35N, R44E	03	203.66			2.25		201.41	GPS (Garmin)
3	S36, T35N, R45E	03	35.12			0		35.12	GPS (Garmin)
4	S36, T35N, R44E	03	10.96			0		10.96	GPS (Garmin)
5	S30, T35N, R45E	03	71.12			0.59		70.53	GPS (Garmin)
6	S30, T35N, R45E	03	9.08			0.52		8.56	GPS (Garmin)
7	S30, T35N, R45E	03	111.98			2.18		109.80	GPS (Garmin)
8 R/W	S36, T35N, R44E	03	0.4			0		0.4	Combination
TOTAL ACRE S			462.13			5.88		456.25	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Even-aged salvage harvest. Schedule A prescription.		
2	Even-aged salvage harvest. Schedule A prescription.		
3	Even-aged salvage harvest. Schedule A prescription.		
4	Even-aged salvage harvest. L Schedule A prescription.		
5	Even-aged salvage harvest. L Schedule A prescription.		
6	Even-aged salvage harvest. L Schedule A prescription.		
7	Even-aged salvage harvest. L Schedule A prescription.		
8 R/W	ROW removal for designated skid trail through Lynx travel corridor.		

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, WRC 350 MBF	Gate (786 key) on E354426B on Riley Creek land	
2	WL, WRC 4,431 MBF	Gate (786 key) on E354426B on Riley Creek land	
3	WRC, WL 878 MBF	Gate (786 key) on E354426B on Riley Creek land	
4	DF, WH 219 MBF	Gate (786 key) on E354426B on Riley Creek land	
5	WL, WRC 1,763 MBF	Right off Mill Creek Road and E354530E road	
6	DF, WL 167 MBF	Right off Mill Creek Road and E354530E road	
7	DF, WL 2,223 MBF	Gate (786 key) on E354531F on DNR line	
8	WL, GF 4 MBF	Gate (786 key) on E354426B on Riley Creek land	
TOTAL MBF	10,036		

REMARKS:

We are working on the Schedule A prescriptions and will get those to you ASAP.
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Prepared By: Randy Burke Date: 10/14/2015	Title: Forester	CC:
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R2301295

Cruise Narrative

Sale Name: Tower Fire Salvage	Region: Northeast
Agreement Number: 30-093222	District: Arcadia
Lead Cruiser: Dan Griggs	Completion Date: 11/13/2015
Other Cruisers on sale: Jim Putnam and Nathan Simpkins	Legal: Section 36, T 35 N, R 44 E; Section 30, T 35 N, R 45 E WM.

Unit Acreage Specifications:

Unit #	Gross Acres	Net Acres	Total Deletions	Existing Roads	Leave Tree Acres	Power Line	Other
1	19.81	19.47	0.34	0.34			
2	203.66	201.41	2.25	2.25			
3	35.12	35.12	0.00				
4	10.96	10.96	0.00				
5	71.12	70.53	0.59	0.59			
6	9.08	8.56	0.52	0.52			
7	111.98	109.80	2.18	2.18			
RW08	0.40	0.40	0.00				
Total	462.13	456.25	5.88	5.88	0.00	0.00	0.00

Cruise Sample Design:

This timber sale was cruised using the **variable plot** sampling method. The double basal area system was employed; a small BAF to determine Basal Area (count trees) and a large BAF to determine the Volume-Basal Area Ratio (cruise trees). Each plot was a full plot. Plot locations were created using a computer generated grid, and found using a hand held GPS unit.

Unit #	Small BAF (count)	Large BAF (cruise)	Sighting height	Grid size (plot spacing in feet)	% Cruise to count Target	% Cruise to count Actual	Total number of Plots
1	40.00	80.28	D4H	310 X 310	50%	75%	11
2	40.00	160.00	D4H	310 X 310	25%	24.3%	90
3	40.00	134.44	D4H	200 X 200	30%	30.7%	36
4	40.00	134.44	D4H	200 X 200	30%	23.2%	13
5	40.00	160.00	D4H	310 X 310	25%	20.4%	27
6	40.00	40.00	D4H	310 X 310	100%	100.0%	5
7	40.00	160.00	D4H	310 X 310	25%	23.3%	49
RWU8	100%						2
Total						27.0%	233

Cruise Specifications:

Minor species cruise intensity:	We grade the first tree of all minor species encountered with the smaller BAF; then followed through with the small BAF to large BAF ratio.
Minimum top dib:	<p>All species:</p> <p>Trees less than 17.5" DBH have a minimum top of 5.6" dib.</p> <p>Trees 17.6" and greater DBH have a minimum top dib of 40% of DOB at 16' or a 5.6" top whichever is greater.</p>
Minimum dbh:	<p>Ponderosa pine: 8.0 inches DBH</p> <p>All other species: 7.0 inches DBH</p>
Log lengths:	Saw logs: 32 feet where possible, minimum of 12 feet
Take / Leave tree description:	<p>A. Leave all ponderosa pine, Douglas-fir and western larch greater than twenty four inches (24") DBH.</p> <p>B. Leave all ponderosa pine greater than twenty inches (20") DBH with at least 30% live crown.</p> <p>C. Leave all Douglas-fir greater than twenty inches (20") DBH with at least 50% live crown.</p> <p>D. If the above criteria does not yield at least six (6) leave trees per acre THEN</p> <p>E. A minimum of six (6) trees per acre are required to be left in each unit in a scattered arrangement.</p> <p>See Schedule A</p>
Commercial species observed in sale area, but not in cruise:	Alpine fir
Utility wood:	None.
Status codes used:	
Sort codes used	D – saw log
Species table used:	NE 2 inch
Grade table used:	Eastgrad
Other tables used (cruise adjustment):	<p>Cruise adjustment table - TOWER</p> <p>The sale's volume was reduced by 17.1% to account for the leave trees, hidden cull and further wood quality degradation.</p>

	<p>Volume Reduction by species:</p> <p>Douglas-fir – 15%</p> <p>Western larch – 15%</p> <p>Grand fir – 10%</p> <p>Red cedar – 20%</p> <p>Lodgepole pine – 35%</p> <p>Western hemlock – 15%</p> <p>White pine – 15%</p> <p>Engelmann – 20%</p> <p>Ponderosa pine – 50%</p>
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Field Observations:

Location:	Eastern Pend Oreille County, 20 miles northeast of Usk, Washington.
Aspect:	North, East, South and West
Elevation:	3100 to 4200
Slope:	<p>Unit 1 – 0% to 25%, Average 20%</p> <p>Unit 2 – 0% to 35%, Average 20%</p> <p>Unit 3 – 0% to 30%, Average 20%</p> <p>Unit 4 – 0% to 30%, Average 22%</p> <p>Unit 5 – 0% to 40%, Average 30%</p> <p>Unit 6 – 0% to 35%, Average 20%</p> <p>Unit 7 – 0% to 40%, Average 30%</p>
Harvest Methods:	100% Ground base yarding with the longest skidding of 1200 feet.
Stand Composition:	The stands are fire killed, second growth Douglas-fir, western larch and grand fir with larger residual trees. There is a minor component of red cedar, lodgepole pine, western hemlock, white pine, engelmann spruce and ponderosa pine.
Stand Health:	<p>The trees in this sale have been killed by the Tower fire which burned in August 2015.</p> <p>Much of this stand did not burn as hot as some of the other fire salvage sales. There was less damage to the timber because many of the trees were killed by the burning of the deep duff layer which burned hot and killed the tree roots and stump area with less damage to the upper bole of the tree.</p> <p>Bark beetles are active and the woodpeckers are working on those trees.</p>
Timber Quality:	The timber is a mix of poor quality Douglas-fir (28%), western larch (23%), grand fir (18%), red cedar (14%), lodgepole pine (5%), western hemlock (4%), white pine (4%), engelmann spruce (3%) and ponderosa pine (1%).
Non-board Foot Volume:	None
Other Considerations:	This sale will be sold on the tons of logs removed from the sale area.

Trust and Counties: Trust - 03 County - Pend Oreille County

Prepared by: Dan Griggs

Title: Forest Check Cruiser 1

CC: Timber Sales Document Center & File # 30-093222

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T35N R44E S36 Ty00U1 THRU T35N R45E S30 Ty00U7				Project: TOWERFS				Page 1													
				Acres 456.25				Date 11/13/2015				Time 11:19:39AM									
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	21-32	33-55	56-99					
WH	D	2		3	25.6	39	29	13	100				100				32	13	179	1.06	.2
WH	D	3		75	21.8	775	606	277	87	13	100				32	8	73	0.46	8.3		
WH	D	4		22	15.1	207	176	80	100				31	69	21	6	23	0.26	7.6		
WH Totals				4	20.6	1,022	811	370	87	13	7	93	27	7	50	0.39	16.1				
WL	D	2		25	19.0	1,362	1,102	503	100				100				32	13	181	1.26	6.1
WL	D	3		65	17.2	3,300	2,734	1,247	96	4	100				32	8	81	0.55	33.8		
WL	D	4		10	15.1	499	424	193	100				41	59	21	6	24	0.24	17.6		
WL Totals				23	17.5	5,161	4,260	1,944	71	29	4	96	29	8	74	0.56	57.5				
GF	D	2		28	17.7	1,147	944	430	87 13				100				32	14	226	1.37	4.2
GF	D	3		63	20.4	2,572	2,047	934	81	18	1	100				32	9	86	0.56	23.9	
GF	D	4		9	22.3	376	292	133	94	6				48	52	21	6	22	0.27	13.0	
GF Totals				18	19.8	4,095	3,283	1,498	59	37	5	4	96	28	8	80	0.59	41.1			
WP	D	3		93	23.9	941	716	327	28	51	21	100				31	12	158	1.02	4.5	
WP	D	4		7	18.4	64	53	24	100				39	61	22	7	28	0.33	1.9		
WP Totals				4	23.5	1,005	769	351	33	47	20	3	97	29	10	120	0.87	6.4			
DF	D	2		26	18.4	1,651	1,347	614	92 8				100				32	14	214	1.46	6.3
DF	D	3		64	17.1	4,002	3,319	1,514	93	7	0 100				32	9	89	0.64	37.3		
DF	D	4		10	17.1	584	484	221	100				39	61	23	6	27	0.30	18.1		
DF Totals				28	17.4	6,237	5,150	2,350	69	29	2	4	96	29	8	83	0.66	61.7			
RC	D	2		2	32.8	104	70	32	41 59				100				32	16	252	1.87	.3
RC	D	3		64	30.9	2,378	1,644	750	84	15	1	100				32	9	76	0.64	21.6	
RC	D	4		34	33.6	1,287	855	390	95	5				30	70	22	6	25	0.34	33.7	
RC Totals				14	31.9	3,770	2,568	1,172	85	11	4	10	90	26	7	46	0.49	55.7			
ES	D	2		27	28.8	216	154	70	59 41				100				32	14	194	1.18	.8
ES	D	3		65	26.8	486	356	162	44	39	17	100				32	10	109	0.71	3.3	
ES	D	4		8	20.0	52	41	19	100				57	43	19	6	21	0.25	2.0		
ES Totals				3	26.9	754	551	251	36	42	22	4	96	28	9	91	0.67	6.1			
LP	D	3		70	47.5	1,306	685	313	94	6	100				32	8	50	0.36	13.6		
LP	D	4		30	65.8	830	284	130	100				14	86	28	7	18	0.17	15.8		
LP Totals				5	54.6	2,136	969	442	96	4	4	96	30	7	33	0.26	29.4				
PP	D	4		34	54.4	179	82	37	100				100				32	12	96	0.74	.9
PP	D	5		66	50.6	308	152	69	100				1	99	30	8	48	0.32	3.2		
PP Totals				1	52.0	487	234	107	65	35	1	99	30	9	58	0.41	4.0				
Totals					24.6	24,668	18,596	8,484	70	27	3	5	95	28	8	67	0.54	278.0			

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT TOWERFS							DATE	11/13/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
35N 35N	44E 45E	36 30	TOWER FIRE TOWER FIRE	00U1 00U7	THR	455.85	231	874	S	E	
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			231	874	3.8						
CRUISE DBH COUNT REFOREST COUNT BLANKS 100 %			144	236	1.6	65,529	.4				
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		42	29.8	15.7	84	10.1	40.1	6,240	5,152	1,384	1,176
WR CEDAR		61	39.7	12.2	65	9.2	32.1	3,771	2,569	899	713
W LARCH		43	22.5	15.6	102	7.6	29.9	5,160	4,260	1,094	929
GR FIR		30	19.1	13.8	89	5.3	19.8	4,095	3,283	763	682
LP PINE		20	15.9	11.3	74	3.3	11.1	2,138	970	412	230
WHEMLOCK		13	10.1	10.9	71	2.0	6.6	1,022	812	199	169
W PINE		11	2.4	18.2	92	1.0	4.4	1,006	769	187	159
P PINE		7	1.8	17.9	83	0.7	3.1	486	234	101	51
E SPRUCE		9	2.5	15.7	88	0.8	3.3	755	552	141	113
TOTAL		236	143.8	13.9	80	40.4	150.5	24,673	18,599	5,180	4,223
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		57.2	8.8	209	229	249					
WR CEDAR		93.8	12.1	96	109	123					
W LARCH		42.1	6.4	215	230	245					
GR FIR		86.7	16.1	245	293	340					
LP PINE		75.8	17.4	66	80	93					
WHEMLOCK		77.7	22.4	93	120	146					
W PINE		65.8	20.8	297	375	453					
P PINE		25.7	10.5	121	135	149					
E SPRUCE		67.8	25.6	288	387	486					
TOTAL		85.9	5.6	186	197	208	295	151	74		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		131.3	8.6	27	30	32					
WR CEDAR		107.2	7.1	37	40	42					
W LARCH		156.0	10.3	20	23	25					
GR FIR		161.5	10.6	17	19	21					
LP PINE		268.2	17.6	13	16	19					
WHEMLOCK		351.0	23.1	8	10	12					
W PINE		294.0	19.3	2	2	3					
P PINE		441.3	29.0	1	2	2					
E SPRUCE		418.8	27.6	2	2	3					
TOTAL		23.3	1.5	142	144	146	22	11	5		
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		126.5	8.3	37	40	43					
WR CEDAR		105.2	6.9	30	32	34					
W LARCH		145.9	9.6	27	30	33					

TC PSTATS		PROJECT STATISTICS						PAGE 2		
		PROJECT			TOWERFS			DATE 11/13/2015		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
35N	44E	36	TOWER FIRE	00U1	THR	455.85	231	874	S	E
35N	45E	30	TOWER FIRE	00U7						
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
GR FIR		157.5	10.4	18	20	22				
LP PINE		251.3	16.5	9	11	13				
WHEMLOCK		296.8	19.5	5	7	8				
W PINE		303.2	19.9	4	4	5				
P PINE		435.1	28.6	2	3	4				
E SPRUCE		389.5	25.6	2	3	4				
TOTAL		<i>18.5</i>	<i>1.2</i>	<i>149</i>	<i>150</i>	<i>152</i>	<i>14</i>	<i>7</i>	<i>3</i>	
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		125.9	8.3	4,725	5,152	5,578				
WR CEDAR		108.6	7.1	2,385	2,569	2,753				
W LARCH		148.3	9.8	3,844	4,260	4,676				
GR FIR		164.0	10.8	2,928	3,283	3,637				
LP PINE		254.8	16.8	807	970	1,132				
WHEMLOCK		285.3	18.8	659	812	964				
W PINE		312.3	20.5	611	769	928				
P PINE		450.6	29.6	164	234	303				
E SPRUCE		382.7	25.2	413	552	690				
TOTAL		<i>27.9</i>	<i>1.8</i>	<i>18,257</i>	<i>18,599</i>	<i>18,941</i>	<i>31</i>	<i>16</i>	<i>8</i>	
CL	68.1	COEFF		V BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				118	128	139				
WR CEDAR				74	80	86				
W LARCH				129	143	157				
GR FIR				148	166	184				
LP PINE		88.3	5.8	73	87	102				
WHEMLOCK		101.1	6.6	100	123	147				
W PINE		185.0	12.2	140	176	212				
P PINE		285.9	18.8	52	74	96				
E SPRUCE		280.8	18.5	124	166	208				
TOTAL		<i>27.9</i>	<i>1.8</i>	<i>121</i>	<i>124</i>	<i>126</i>	<i>31</i>	<i>16</i>	<i>8</i>	

T35N R44E S36 T00U1		T35N R44E S36 T00U1
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
35N 44E 36 TOWER FIRE 00U1 19.47 11 18 S		E

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	21-32	33-55	56-99					
GF	D	2		32	19.4	1,318	1,062	21		18	82		100				32	16	336	1.80	3.2
GF	D	3		39	34.0	1,934	1,277	25	50	21	29		100				32	9	103	0.86	12.4
GF	D	4		29	49.0	1,828	933	18	57		43		100				32	10	84	0.86	11.1
GF	Totals			28	35.6	5,080	3,271	64	36	14	50		100				32	10	122	0.97	26.7
RC	D	3		76	41.2	1,615	949	18	100				100				32	9	61	0.75	15.5
RC	D	4		24	20.0	365	292	6	100			79	21				17	6	19	0.25	15.5
RC	Totals			11	37.3	1,980	1,241	24	100			19	81				24	7	40	0.58	30.9
WL	D	3		90	17.0	3,049	2,531	49	59	41			100				32	10	110	0.74	23.0
WL	D	4		10	15.0	309	263	5	100			23	77				21	6	23	0.25	11.5
WL	Totals			24	16.8	3,358	2,793	54	62	38		2	98				28	9	81	0.62	34.5
WP	D	3		93	23.9	2,639	2,007	39	14	40	45		100				32	14	223	1.35	9.0
WP	D	4		7	15.0	165	141	3	100				100				24	7	46	0.43	3.0
WP	Totals			19	23.4	2,805	2,148	42	20	38	42		100				30	12	178	1.16	12.1
DF	D	3		91	31.3	1,843	1,265	25	100				100				32	10	89	0.73	14.2
DF	D	4		9	15.0	142	120	2	100			100					14	6	17	0.23	7.1
DF	Totals			12	30.2	1,984	1,385	27	100			9	91				26	8	65	0.64	21.3
WH	D	3		67	39.1	812	494	10	100				100				32	8	60	0.59	8.2
WH	D	4		33	15.0	275	234	5	100			33	67				22	6	29	0.26	8.2
WH	Totals			6	33.0	1,087	728	14	100			10	90				27	7	44	0.45	16.4
Type Totals					29.0	16,293	11,567	225	58	20	22	4	96				28	9	82	0.72	141.8

T35N R44E S36 T00U2 T35N R44E S36 T00U2
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 35N 44E 36 TOWER FIRE 00U2 201.41 90 86 S E

S Sp	So T	Gr rt	%	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	21-32	33-55	56-99					
RC	D	3	63	30.9	2,965	2,050	413	100				100				32	8	65	0.54	31.4	
RC	D	4	37	32.8	1,752	1,178	237	91	9	33	67					22	6	27	0.33	43.6	
RC	Totals		16	31.6	4,718	3,228	650	97	3	12	88					26	7	43	0.44	74.9	
WL	D	2	33	19.6	2,217	1,782	359	100				100				32	13	184	1.28	9.7	
WL	D	3	61	16.8	3,932	3,273	659	95	5	100				32	9	91	0.58	36.0			
WL	D	4	6	15.0	356	302	61	100				64	36	19	6	21	0.27	14.6			
WL	Totals		26	17.6	6,505	5,357	1,079	64	36	4	96					29	9	89	0.65	60.3	
DF	D	2	26	17.7	1,217	1,001	202	100				100				32	13	203	1.45	4.9	
DF	D	3	59	16.1	2,576	2,161	435	100				100				31	9	89	0.63	24.4	
DF	D	4	15	15.0	653	555	112	100				9	91	28	6	35	0.31	15.7			
DF	Totals		18	16.4	4,446	3,717	749	73	27	1	99					30	8	83	0.62	45.0	
GF	D	2	42	17.6	2,415	1,990	401	91	9	100				32	14	221	1.34	9.0			
GF	D	3	48	20.3	2,818	2,245	452	88	12	100				32	8	81	0.54	27.6			
GF	D	4	10	10.0	478	430	87	100				54	46	21	6	22	0.25	19.6			
GF	Totals		23	18.3	5,711	4,665	940	51	45	4	95					28	8	83	0.61	56.2	
WH	D	3	57	26.9	583	426	86	100				100				32	7	51	0.33	8.3	
WH	D	4	43	15.0	377	321	65	100				22	78	22	6	25	0.25	12.9			
WH	Totals		4	22.2	960	747	150	100				9	91	26	6	35	0.29	21.2			
WP	D	3	94	24.2	1,553	1,178	237	29	57	14	100				31	12	152	1.01	7.7		
WP	D	4	6	15.0	83	71	14	100				52	48	20	7	27	0.35	2.6			
WP	Totals		6	23.7	1,636	1,248	251	33	54	14	97					28	10	121	0.90	10.3	
ES	D	2	32	29.5	454	320	64	64	36	100				32	14	185	1.15	1.7			
ES	D	3	59	29.2	816	578	116	42	34	24	100				32	10	113	0.74	5.1		
ES	D	4	9	20.0	102	81	16	100				50	50	20	6	21	0.25	3.8			
ES	Totals		5	28.6	1,372	979	197	33	41	26	96					28	9	92	0.69	10.6	
LP	D	3	80	50.8	707	348	70	73	27	100				32	10	65	0.43	5.4			
LP	D	4	20	35.0	129	84	17	100				21	79	24	6	21	0.20	4.0			
LP	Totals		2	48.3	836	432	87	78	22	4	96					29	8	46	0.35	9.4	
PP	D	5	100	53.6	110	51	10	100				100				29	8	33	0.28	1.6	
PP	Totals		0	53.6	110	51	10	100				100				29	8	33	0.28	1.6	
Type Totals				22.3	26,294	20,426	4,114	66	30	3	95					28	8	71	0.56	289.5	

T35N R44E S36 T00U3		T35N R44E S36 T00U3
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
35N 44E 36 TOWER FIRE S 00U3 35.12 36 50 S		E

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	21-32	33-55	56-99					
RC	D	3		70	27.8	5,140	3,711	130	65	30	6		100				32	9	92	0.70	40.4
RC	D	4		30	34.6	2,326	1,521	53	100				30	70			19	6	17	0.22	90.0
RC	Totals			24	29.9	7,466	5,233	184	75	21	4		9	91			23	7	40	0.42	130.4
WL	D	2		23	16.2	2,284	1,913	67		100			100				32	12	160	1.11	12.0
WL	D	3		69	18.7	6,883	5,598	197	100				100				32	8	76	0.51	73.6
WL	D	4		8	15.0	757	644	23	100			100					19	6	18	0.25	36.6
WL	Totals			38	17.8	9,924	8,155	286	77	23			8	92			28	8	67	0.53	122.2
DF	D	2		57	18.4	3,738	3,051	107		100			100				32	13	200	1.41	15.2
DF	D	3		39	15.0	2,421	2,058	72	100				100				32	9	99	0.60	20.8
DF	D	4		4	15.0	216	184	6	100			69	31				17	6	16	0.29	11.1
DF	Totals			25	17.0	6,375	5,293	186	42	58			2	98			28	10	112	0.85	47.2
GF	D	3		77	12.5	1,510	1,321	46	100				100				32	8	83	0.46	15.8
GF	D	4		23	42.0	646	375	13	100			28	72				23	6	14	0.15	27.3
GF	Totals			8	21.3	2,155	1,696	60	100			6	94				26	7	39	0.29	43.2
WH	D	3		100	15.0	930	791	28	100				100				32	8	81	0.47	9.8
WH	Totals			4	15.0	930	791	28	100				100				32	8	81	0.47	9.8
WP	D	3		78	15.0	127	108	4	100				100				32	9	94	0.64	1.2
WP	D	4		22	15.0	35	29	1	100				100				24	6	25	0.27	1.2
WP	Totals			1	15.0	161	137	5	100				100				28	8	60	0.48	2.3
ES	D	2		56	20.0	206	165	6		100			100				32	18	392	1.76	.4
ES	D	3		44	20.0	156	125	4	27	73			100				32	11	148	0.83	.8
ES	Totals			1	20.0	362	290	10	12	31	57		100				32	13	229	1.14	1.3
Type Totals					21.1	27,374	21,594	758	70	29	2		6	94			26	8	61	0.51	356.2

T35N R45E S30 T00U6		T35N R45E S30 T00U6
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt		BdFt
35N 45E 30 TOWER FIRE 00U6 8.56 5 10 S		E

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			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	21-32	33-55	56-99					
GF	D	3	91	12.1	4,532	3,982	34	45	55			100				32	10	129	0.76	30.8
GF	D	4	9	10.0	404	363	3	100				100				15	6	18	0.26	20.2
GF	Totals		40	12.0	4,936	4,346	37	49	51			8	92			25	8	85	0.64	51.0
DF	D	3	97	18.4	3,761	3,068	26	75	25			100				32	8	82	0.54	37.6
DF	D	4	3	15.0	94	80	1	100				100				16	6	17	0.27	4.7
DF	Totals		29	18.3	3,854	3,147	27	76	24			3	97			30	8	74	0.52	42.3
LP	D	3	46	35.0	1,572	1,022	9	100				100				32	9	68	0.42	15.0
LP	D	4	54	56.7	2,750	1,192	10	100				33	67			24	7	19	0.24	61.1
LP	Totals		21	48.8	4,321	2,213	19	100				18	82			26	7	29	0.28	76.1
WL	D	3	100	15.0	1,261	1,071	9	100				100				32	9	93	0.63	11.5
WL	Totals		10	15.0	1,261	1,071	9	100				100				32	9	93	0.63	11.5
Type Totals				25.0	14,372	10,777	92	73	27			8	92			27	8	60	0.47	180.8

T35N R45E S30 T00U7		T35N R45E S30 T00U7
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt		
35N 45E 30 TOWER FIRE 00U7 109.80 49 41 S E		

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	21-32	33-55	56-99						
DF	D	2		19	20.2	1,467	1,170	129		64	36			100			32	14	228	1.49	5.1	
DF	D	3		74	17.6	5,468	4,505	495		81	19			100			32	9	87	0.65	51.8	
DF	D	4		7	25.2	493	369	40		100			46	54			23	6	23	0.34	15.8	
DF	Totals			39	18.6	7,428	6,044	664		66	27	7		3	97		30	8	83	0.66	72.8	
LP	D	3		70	42.8	2,362	1,351	148		100				100			32	8	55	0.39	24.6	
LP	D	4		30	76.0	2,372	569	62		100				100			31	7	15	0.14	37.0	
LP	Totals			12	59.4	4,735	1,920	211		100				100			32	7	31	0.24	61.6	
RC	D	2		18	32.8	433	291	32			41	59		100			32	16	252	1.87	1.2	
RC	D	3		66	27.9	1,463	1,055	116			75	25		100			31	10	96	0.93	11.0	
RC	D	4		16	20.0	311	249	27			100			37	63		22	6	23	0.30	10.7	
RC	Totals			10	27.7	2,207	1,595	175			65	24	11		6	94		27	8	70	0.74	22.9
WL	D	3		60	15.0	1,268	1,078	118			100			100			32	7	51	0.45	21.1	
WL	D	4		40	15.0	846	719	79			100			100			28	6	34	0.20	21.1	
WL	Totals			12	15.0	2,114	1,797	197			100			100			30	7	43	0.33	42.3	
GF	D	3		100	24.2	2,653	2,010	221			100			100			31	8	72	0.50	27.9	
GF	Totals			13	24.2	2,653	2,010	221			100			100			31	8	72	0.50	27.9	
PP	D	4		38	54.4	741	338	37			100			100			32	12	95	0.74	3.5	
PP	D	5		62	50.0	1,076	538	59			100			1	99		30	9	52	0.33	10.3	
PP	Totals			6	51.8	1,818	876	96			61	39		1	99		31	10	63	0.44	13.9	
WH	D	3		96	20.1	1,141	912	100			64	36		100			32	9	90	0.56	10.1	
WH	D	4		4	15.0	35	30	3			100			100			16	6	17	0.27	1.8	
WH	Totals			6	19.9	1,176	941	103			65	35		3	97		30	8	79	0.54	11.9	
WP	D	3		100	24.4	462	349	38			17	38	46	100			32	13	204	1.26	1.7	
WP	Totals			2	24.4	462	349	38			17	38	46	100			32	13	204	1.26	1.7	
Type Totals					31.2	22,592	15,534	1,706			77	18	5		2	98		30	8	61	0.48	254.9

T35N R44E S36 TRWU8										T35N R44E S36 TRWU8				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
35N	44E	36	TOWER FIRE R	RWU8	.40	2	52	S	E					

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	Dia	Bd	
					Def%	Gross	Net		4-5	6-11	12-16	17+	12-20	21-32	33-55	56-99	Ft	In	Ft	
WL	D		3	82	18.6	4,700	3,825	2	92	8			100			32	8	77	0.59	50.0
WL	D		4	18	47.6	1,500	786	0	100				49	51		22	7	22	0.24	35.0
WL	Totals			32	25.6	6,200	4,611	2	94	6			8	92		28	8	54	0.48	85.0
GF	D		2	51	17.3	2,475	2,048	1		46	54		100			32	15	273	1.72	7.5
GF	D		3	36	10.0	1,600	1,440	1	100				100			32	8	72	0.47	20.0
GF	D		4	13	10.0	575	518	0	100				39	61		21	6	26	0.31	20.0
GF	Totals			27	13.9	4,650	4,005	2	49	24	28		5	95		27	8	84	0.65	47.5
RC	D		3	74	28.2	1,700	1,220	0	75	25			100			32	9	81	0.78	15.0
RC	D		4	26	20.0	525	420	0	100				33	67		20	7	34	0.39	12.5
RC	Totals			11	26.3	2,225	1,640	1	82	18			9	91		27	8	60	0.65	27.5
DF	D		2	77	15.0	2,600	2,210	1		48	52		100			32	15	295	1.75	7.5
DF	D		3	18	15.0	625	531	0	100				12	88		27	9	71	0.60	7.5
DF	D		4	5	15.0	150	128	0	100				100			17	6	17	0.29	7.5
DF	Totals			20	15.0	3,375	2,869	1	23	37	40		7	93		25	10	128	1.01	22.5
PP	D		4	62	50.0	800	400	0		100			100			32	15	160	0.97	2.5
PP	D		5	38	50.0	475	238	0	100				16	84		24	9	48	0.36	5.0
PP	Totals			4	50.0	1,275	638	0	37	63			6	94		27	11	85	0.60	7.5
LP	D		3	82	39.2	775	471	0	100				100			32	9	63	0.43	7.5
LP	D		4	18	35.0	150	98	0	100				50	50		17	6	13	0.19	7.5
LP	Totals			4	38.5	925	569	0	100				9	91		25	7	38	0.35	15.0
WH	D		4	100	44.8	500	276	0	100				31	69		22	8	28	0.46	10.0
WH	Totals			2	44.8	500	276	0	100				31	69		22	8	28	0.46	10.0
Type Totals					23.7	19,150	14,608	6	64	21	15		7	93		27	8	68	0.59	215.0

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

T35N R44E S36 Ty00U1	19.4
T35N R44E S36 Ty00U2	201.4
T35N R45E S30 Ty00U	109.8

Project TOWERFS
Acres 456.25

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Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR	13,604	28,165	17,982	39.42	19.04	0.66	6,309	5,363	2,846	2,350
W LARCH	10,287	26,243	11,977	41.23	16.16	0.56	4,991	4,242	2,355	1,944
GR FIR	8,704	18,752	9,980	35.78	16.61	0.60	3,484	3,114	1,868	1,498
WR CEDAR	18,084	25,391	9,640	17.98	12.81	0.50	4,102	3,251	1,720	1,172
LP PINE	7,248	13,431	4,505	14.48	7.82	0.26	1,877	1,050	975	442
WHEMLOCK	4,592	7,341	2,909	16.82	10.52	0.40	909	773	466	370
W PINE	1,104	2,924	2,042	65.51	24.74	0.87	851	723	459	351
E SPRUCE	1,134	2,768	1,673	45.42	18.60	0.68	644	515	344	251
P PINE	823	1,844	1,112	28.15	12.56	0.42	463	232	222	107
Totals	65,581	126,859	61,821	29.37	15.18	0.54	23,629	19,262	11,255	8,484

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
				Tree	Log		Gross	Net	Gross	Net
C	65,581	126,859	61,821	29.37	15.18	0.54	23,629	19,262	11,255	8,484
Totals	65,581	126,859	61,821	29.37	15.18	0.54	23,629	19,262	11,255	8,484

Log Stock Table - MBF

T35N R44E S36 Ty00U1
THRU
T35N R45E S30 Ty00U7

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Acres 456.25

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Spp	S T	So rt	Gr de	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches												
									2-4	5-6	7-10	11-12	13-14	15-16	17-18	19-20	21-23	24-29	30-39	40+	
RC		D	4	24	23	20.0	19	1.6		18	0										
RC		D	4	26	15	20.0	12	1.0		12											
RC		D	4	28	21	20.0	17	1.4		17											
RC		D	4	32	366	38.6	225	19.2		76	128					21					
RC		Totals			1,720	31.9	1,172	13.8		242	672	118	92	26	21						
ES		D	2	32	99	28.8	70	28.0				25	16	29							
ES		D	3	32	222	26.8	162	64.5			63	51	3	18		27					
ES		D	4	14	3	20.0	3	1.1		3											
ES		D	4	16	7	20.0	5	2.1		5											
ES		D	4	20	4	20.0	3	1.2			3										
ES		D	4	24	10	20.0	8	3.2		8											
ES		Totals			344	26.9	251	3.0		16	65	76	19	18	29	27					
LP		D	3	32	596	47.5	313	70.7		38	194	62	19								
LP		D	4	12	0	35.0	0	.0		0											
LP		D	4	16	29	35.0	19	4.2		19											
LP		D	4	24	6	35.0	4	.8		4											
LP		D	4	26	9	35.0	6	1.3		6											
LP		D	4	28	17	35.0	11	2.5		11											
LP		D	4	30	22	35.0	14	3.2		14											
LP		D	4	32	297	74.3	76	17.3		41	36										
LP		Totals			975	54.6	442	5.2		132	229	62	19								
PP		D	4	32	82	54.4	37	34.9				27	10	0							
PP		D	5	16	0	50.0	0	.0			0										
PP		D	5	20	2	50.0	1	.8		1											
PP		D	5	22	3	50.0	2	1.6		2											
PP		D	5	26	5	50.0	2	2.2		2											
PP		D	5	32	131	50.6	65	60.4			41	23									
PP		Totals			222	52.0	107	1.3		5	41	50	10	0							
Total		All Species			11,255	24.6	8,484	100.0		1242	3844	1615	1058	437	172	101	8	7			

Project Log Stock Table - TONS(SED)

T35N R44E S36 Ty00U1
THRU
T35N R45E S30 Ty00U7

Project: TOWERFS
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S T	So rt	Gr de	Log Len	SED	TONS	Tons by Scaling Diameter in Inches											
						2-4	5-6	7-10	11-12	13-14	15-16	17-18	19-20	21-23	24-29	30-39	40+
RC	D	4	14	6.0	19		19										
RC	D	4	16	6.2	506		324	182									
RC	D	4	20	6.0	269		269										
RC	D	4	24	6.2	157		157	0									
RC	D	4	26	6.0	111		111										
RC	D	4	28	6.0	127		127										
RC	D	4	32	6.8	2,149		492	1443					215				
Graded					9640		1881	5495	1129	705		216	215				
RC	Totals			7.2	9,640		1881	5495	1129	705		216	215				
ES	D	2	32	14.4	444			164	94		186						
ES	D	3	32	9.5	1,088			460	359	17	93		159				
ES	D	4	14	6.0	17		17										
ES	D	4	16	6.0	37		37										
ES	D	4	20	8.0	30			30									
ES	D	4	24	6.0	58		58										
Graded					1673		111	490	523	112	93	186	159				
ES	Totals			9.0	1,673		111	490	523	112	93	186	159				
LP	D	3	32	8.1	2,775		280	1811	539	145							
LP	D	4	12	6.0	0		0										
LP	D	4	16	6.0	134		134										
LP	D	4	24	6.0	29		29										
LP	D	4	26	6.0	58		58										
LP	D	4	28	6.0	78		78										
LP	D	4	30	6.0	100		100										
LP	D	4	32	7.1	1,331		464	867									
Graded					4505		1143	2678	539	145							
LP	Totals			7.1	4,505		1143	2678	539	145							
PP	D	4	32	13.5	443			333	109	1							
PP	D	5	16	7.0	0		0										
PP	D	5	20	6.0	13		13										
PP	D	5	22	6.0	19		19										
PP	D	5	26	6.0	32		32										
PP	D	5	32	9.3	605			389	216								
Graded					1112		64	389	549	109	1						
PP	Totals			9.8	1,112		64	389	549	109	1						

Project Log Stock Table - TONS(SED)

T35N R44E S36 Ty00U1
 THRU
 T35N R45E S30 Ty00U7

Project: TOWERFS
Acres 456.25

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S Spp	T	So rt	Gr de	Log Len	SED	TONS	Tons by Scaling Diameter in Inches										
							2-4	5-6	7-10	11-12	13-14	15-16	17-18	19-20	21-23	24-29	30-39
Total		All Species				61,821		9516	28751	11484	7273	2771	1141	724	79	81	

TC TSTATS		STATISTICS							PAGE	1
		PROJECT TOWERFS					DATE	11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	44E	36	TOWER FIRE	00U1	19.47	11	24	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		11	24	2.2						
CRUISE		9	18	2.0	1,139	1.6				
DBH COUNT										
REFOREST										
COUNT		1	2	2.0						
BLANKS		1								
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
GR FIR	4	12.2	18.1	101	5.1	21.8	5,080	3,271	923	830
W LARCH	3	11.5	17.0	112	4.4	18.2	3,358	2,793	712	605
WR CEDAR	5	15.5	14.7	72	4.7	18.2	1,980	1,241	545	436
DOUG FIR	1	7.1	16.8	108	2.7	10.9	1,984	1,385	417	354
W PINE	3	4.0	22.3	96	2.3	10.9	2,805	2,148	495	421
WHEMLOCK	2	8.2	12.8	83	2.0	7.3	1,087	728	236	200
TOTAL	18	58.5	16.5	93	21.5	87.3	16,293	11,567	3,328	2,847
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
GR FIR	90.7	51.9	257	533	810					
W LARCH	10.1	7.0	227	244	261					
WR CEDAR	21.3	10.6	73	82	90					
DOUG FIR										
W PINE	44.9	31.1	400	581	761					
WHEMLOCK	6.7	6.3	84	89	95					
TOTAL	103.8	25.2	224	299	375	457	233	114		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
GR FIR	146.0	46.2	7	12	18					
W LARCH	115.2	36.4	7	11	16					
WR CEDAR	166.7	52.7	7	15	24					
DOUG FIR	171.3	54.2	3	7	11					
W PINE	237.1	75.0	1	4	7					
WHEMLOCK	223.7	70.7	2	8	14					
TOTAL			58	58	58					
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
GR FIR	126.1	39.9	13	22	31					
W LARCH	114.9	36.3	12	18	25					
WR CEDAR	151.3	47.8	9	18	27					
DOUG FIR	171.3	54.2	5	11	17					
W PINE	237.1	75.0	3	11	19					
WHEMLOCK	222.5	70.3	2	7	12					
TOTAL	18.5	5.9	82	87	92	15	8	4		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
GR FIR	130.9	41.4	1,917	3,271	4,626					
W LARCH	115.3	36.5	1,775	2,793	3,812					
WR CEDAR	155.8	49.3	630	1,241	1,853					

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	TOWERFS		DATE	11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	44E	36	TOWER FIRE	00U1	19.47	11	24	S	E	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		171.3	54.2	635	1,385	2,136				
W PINE		229.9	72.7	586	2,148	3,709				
WHEMLOCK		222.8	70.4	215	728	1,241				
TOTAL		<i>48.6</i>	<i>15.4</i>	<i>9,790</i>	<i>11,567</i>	<i>13,344</i>	<i>104</i>	<i>53</i>	<i>26</i>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
GR FIR		60.8	19.2	88	150	212				
W LARCH		60.2	19.0	98	154	210				
WR CEDAR		155.8	49.3	35	68	102				
DOUG FIR		49.4	15.6	58	127	196				
W PINE		229.9	72.7	54	197	340				
WHEMLOCK		222.8	70.4	30	100	171				
TOTAL		<i>118.8</i>	<i>37.6</i>	<i>112</i>	<i>133</i>	<i>153</i>	<i>621</i>	<i>317</i>	<i>155</i>	

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT		TOWERFS		DATE		11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	44E	36	TOWER FIRE	00U2	201.41	90	350	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		90	350	3.9						
CRUISE		48	85	1.8	30,525	.3				
DBH COUNT										
REFOREST										
COUNT		38	121	3.2						
BLANKS		4								
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	21	52.0	11.7	70	11.3	38.7	4,718	3,228	1,067	852
W LARCH	18	21.1	17.2	104	8.2	34.2	6,505	5,357	1,330	1,130
DOUG FIR	11	24.7	14.9	90	7.7	29.8	4,446	3,717	994	845
GR FIR	16	25.6	13.9	91	7.3	27.1	5,711	4,665	1,070	963
WHEMLOCK	5	15.8	9.4	65	2.5	7.6	960	747	189	160
W PINE	4	3.4	19.5	101	1.6	7.1	1,636	1,248	306	260
E SPRUCE	5	4.1	16.1	98	1.4	5.8	1,372	979	253	203
LP PINE	4	4.0	14.3	95	1.2	4.4	836	432	172	94
P PINE	1	.8	14.4	66	0.2	.9	110	51	26	13
TOTAL	85	151.6	13.7	83	42.0	155.6	26,294	20,426	5,407	4,520
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			10
WR CEDAR	87.7	19.6	71	88	106					
W LARCH	35.6	8.6	257	281	305					
DOUG FIR	58.6	18.5	173	213	252					
GR FIR	70.8	18.3	238	291	345					
WHEMLOCK	30.8	15.3	42	49	57					
W PINE	25.2	14.4	325	380	435					
E SPRUCE	84.3	41.9	217	374	531					
LP PINE	68.6	39.2	81	133	186					
P PINE										
TOTAL	80.2	8.7	195	214	232	258	131			64
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			10
WR CEDAR	85.4	9.0	47	52	57					
W LARCH	131.7	13.9	18	21	24					
DOUG FIR	134.5	14.2	21	25	28					
GR FIR	128.9	13.6	22	26	29					
WHEMLOCK	296.5	31.3	11	16	21					
W PINE	218.5	23.0	3	3	4					
E SPRUCE	262.9	27.7	3	4	5					
LP PINE	290.9	30.7	3	4	5					
P PINE	667.0	70.3	0	1	1					
TOTAL			152	152	152					
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7			10
WR CEDAR	82.7	8.7	35	39	42					
W LARCH	129.4	13.6	30	34	39					
DOUG FIR	131.4	13.8	26	30	34					
GR FIR	124.8	13.2	24	27	31					
WHEMLOCK	295.8	31.2	5	8	10					

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	TOWERFS		DATE	11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	44E	36	TOWER FIRE	00U2	201.41	90	350	S	E	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
W PINE		216.3	22.8	5	7	9				
E SPRUCE		244.7	25.8	4	6	7				
LP PINE		284.4	30.0	3	4	6				
P PINE		667.0	70.3	0	1	2				
TOTAL				<i>156</i>	<i>156</i>	<i>156</i>				
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		84.4	8.9	2,941	3,228	3,515				
W LARCH		129.3	13.6	4,627	5,357	6,088				
DOUG FIR		131.9	13.9	3,200	3,717	4,234				
GR FIR		127.1	13.4	4,040	4,665	5,291				
WHEMLOCK		296.6	31.3	513	747	980				
W PINE		216.7	22.8	963	1,248	1,534				
E SPRUCE		248.1	26.1	723	979	1,235				
LP PINE		296.3	31.2	297	432	567				
P PINE		667.0	70.3	15	51	87				
TOTAL				<i>20,426</i>	<i>20,426</i>	<i>20,426</i>				
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR				76	83	91				
W LARCH				135	157	178				
DOUG FIR				107	125	142				
GR FIR				149	172	195				
WHEMLOCK		78.0	8.2	68	99	130				
W PINE		65.7	6.9	135	176	216				
E SPRUCE		135.9	14.3	125	170	214				
LP PINE		182.2	19.2	67	97	128				
P PINE		466.3	49.2	17	57	98				
TOTAL		<i>389.7</i>	<i>41.1</i>	<i>131</i>	<i>131</i>	<i>131</i>	<i>6,073</i>	<i>3,099</i>	<i>1,518</i>	

TC TSTATS		STATISTICS							PAGE	1
		PROJECT		TOWERFS			DATE		11/13/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	44E	36	TOWER FIRE S	00U3	35.12	36	163	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		36	163	4.5						
CRUISE		32	50	1.6	7,124	.7				
DBH COUNT										
REFOREST										
COUNT		3	6	2.0						
BLANKS		1								
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	23	101.2	10.8	61	19.6	64.4	7,466	5,233	1,704	1,286
W LARCH	14	50.9	14.7	101	15.7	60.0	9,924	8,155	2,122	1,804
DOUG FIR	6	17.0	19.6	90	8.0	35.6	6,375	5,293	1,346	1,144
GR FIR	4	27.3	9.8	75	4.6	14.4	2,155	1,696	428	326
WHEMLOCK	1	4.9	12.9	99	1.2	4.4	930	791	173	147
E SPRUCE	1	.4	22.0	96	0.2	1.1	362	290	58	46
W PINE	1	1.2	13.3	92	0.3	1.1	161	137	37	31
TOTAL	50	202.9	12.8	76	50.6	181.1	27,374	21,594	5,867	4,784
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		96.8	20.6	87	109	132				
W LARCH		42.0	11.6	163	185	206				
DOUG FIR		37.8	16.8	276	332	387				
GR FIR		67.3	38.5	50	81	112				
WHEMLOCK										
E SPRUCE										
W PINE										
TOTAL		83.4	11.8	148	168	187	279	142	70	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		51.4	8.6	92	101	110				
W LARCH		56.4	9.4	46	51	56				
DOUG FIR		103.8	17.3	14	17	20				
GR FIR		211.5	35.3	18	27	37				
WHEMLOCK		286.9	47.8	3	5	7				
E SPRUCE		600.0	100.0	0	0	1				
W PINE		600.0	100.0	0	1	2				
TOTAL				203	203	203				
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		42.7	7.1	60	64	69				
W LARCH		54.0	9.0	55	60	65				
DOUG FIR		103.4	17.2	29	36	42				
GR FIR		210.9	35.2	9	14	20				
WHEMLOCK		286.9	47.8	2	4	7				
E SPRUCE		600.0	100.0	0	1	2				
W PINE		600.0	100.0	0	1	2				
TOTAL				181	181	181				
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR		55.1	9.2	4,752	5,233	5,713				

TC TSTATS				STATISTICS			PAGE 2		
				PROJECT TOWERFS			DATE 11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
35N	44E	36	TOWER FIRE S	00U3	35.12	36	163	S	E
CL: 68.1 %		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
W LARCH	55.7	9.3	7,399	8,155	8,912				
DOUG FIR	103.7	17.3	4,378	5,293	6,207				
GR FIR	228.1	38.0	1,051	1,696	2,341				
WHEMLOCK	286.9	47.8	413	791	1,169				
E SPRUCE	600.0	100.0	0	290	579				
W PINE	600.0	100.0	0	137	274				
TOTAL			<i>21,594</i>	<i>21,594</i>	<i>21,594</i>				
CL: 68.1 %		COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR			74	81	89				
W LARCH			123	136	149				
DOUG FIR			123	149	175				
GR FIR	102.0	17.0	73	117	162				
WHEMLOCK	113.4	18.9	93	178	263				
E SPRUCE	600.0	100.0	0	261	521				
W PINE	600.0	100.0	0	123	247				
TOTAL	<i>290.7</i>	<i>48.4</i>	<i>119</i>	<i>119</i>	<i>119</i>	<i>3,380</i>	<i>1,724</i>	<i>845</i>	

TC TSTATS		STATISTICS							PAGE	1
		PROJECT			TOWERFS		DATE			11/13/2015
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	44E	36	TOWER FIRE S	00U4	10.96	13	43	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		13	43	3.3						
CRUISE		8	10	1.3	1,681	.6				
DBH COUNT										
REFOREST										
COUNT		4	9	2.3						
BLANKS		1								
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	2	27.4	17.0	93	10.5	43.1	7,488	6,365	1,587	1,349
WHEMLOCK	2	23.1	13.1	85	6.0	21.5	4,400	3,568	805	685
WR CEDAR	1	49.1	8.3	61	6.4	18.5	983	786	251	201
W LARCH	1	13.6	15.8	101	4.6	18.5	2,712	1,844	637	541
W PINE	2	20.9	10.4	58	3.8	12.3	1,647	1,308	327	278
LP PINE	1	16.8	11.6	88	3.6	12.3	2,012	872	414	269
GR FIR	1	2.5	21.2	91	1.3	6.2	1,506	1,265	273	245
TOTAL	10	153.3	12.6	77	37.3	132.3	20,749	16,008	4,294	3,568
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	56.1	52.6	127	268	409					
WHEMLOCK	82.5	77.3	46	204	362					
WR CEDAR										
W LARCH										
W PINE	66.0	61.9	24	64	103					
LP PINE										
GR FIR										
TOTAL	93.0	31.0	123	178	233	384	196	96		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	81.1	23.4	21	27	34					
WHEMLOCK	126.6	36.5	15	23	31					
WR CEDAR	112.4	32.4	33	49	65					
W LARCH	190.0	54.8	6	14	21					
W PINE	156.2	45.1	11	21	30					
LP PINE	204.9	59.1	7	17	27					
GR FIR	244.1	70.4	1	3	4					
TOTAL			153	153	153					
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	80.1	23.1	33	43	53					
WHEMLOCK	122.6	35.4	14	22	29					
WR CEDAR	112.4	32.4	12	18	24					
W LARCH	190.0	54.8	8	18	29					
W PINE	156.1	45.0	7	12	18					
LP PINE	204.9	59.1	5	12	20					
GR FIR	244.1	70.4	2	6	10					
TOTAL			132	132	132					
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	80.1	23.1	4,894	6,365	7,836					

TC TSTATS				STATISTICS			PAGE 2		
PROJECT				TOWERFS			DATE 11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
35N	44E	36	TOWER FIRE S	00U4	10.96	13	43	S	E
CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	123.8	35.7	2,294	3,568	4,842				
WR CEDAR	112.4	32.4	531	786	1,041				
W LARCH	190.0	54.8	833	1,844	2,855				
W PINE	166.5	48.0	679	1,308	1,936				
LP PINE	204.9	59.1	357	872	1,388				
GR FIR	244.1	70.4	374	1,265	2,156				
TOTAL			<i>16,008</i>	<i>16,008</i>	<i>16,008</i>				
CL: 68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR. %	S.E. %	LOW	AVG	HIGH	5	7	10	
DOUG FIR			114	148	182				
WHEMLOCK			107	166	225				
WR CEDAR			29	43	56				
W LARCH			45	100	155				
W PINE	100.6	29.0	55	106	157				
LP PINE			29	71	113				
GR FIR	156.1	45.0	61	206	350				
TOTAL	<i>372.3</i>	<i>107.4</i>	<i>121</i>	<i>121</i>	<i>121</i>	<i>6,001</i>	<i>3,062</i>	<i>1,500</i>	

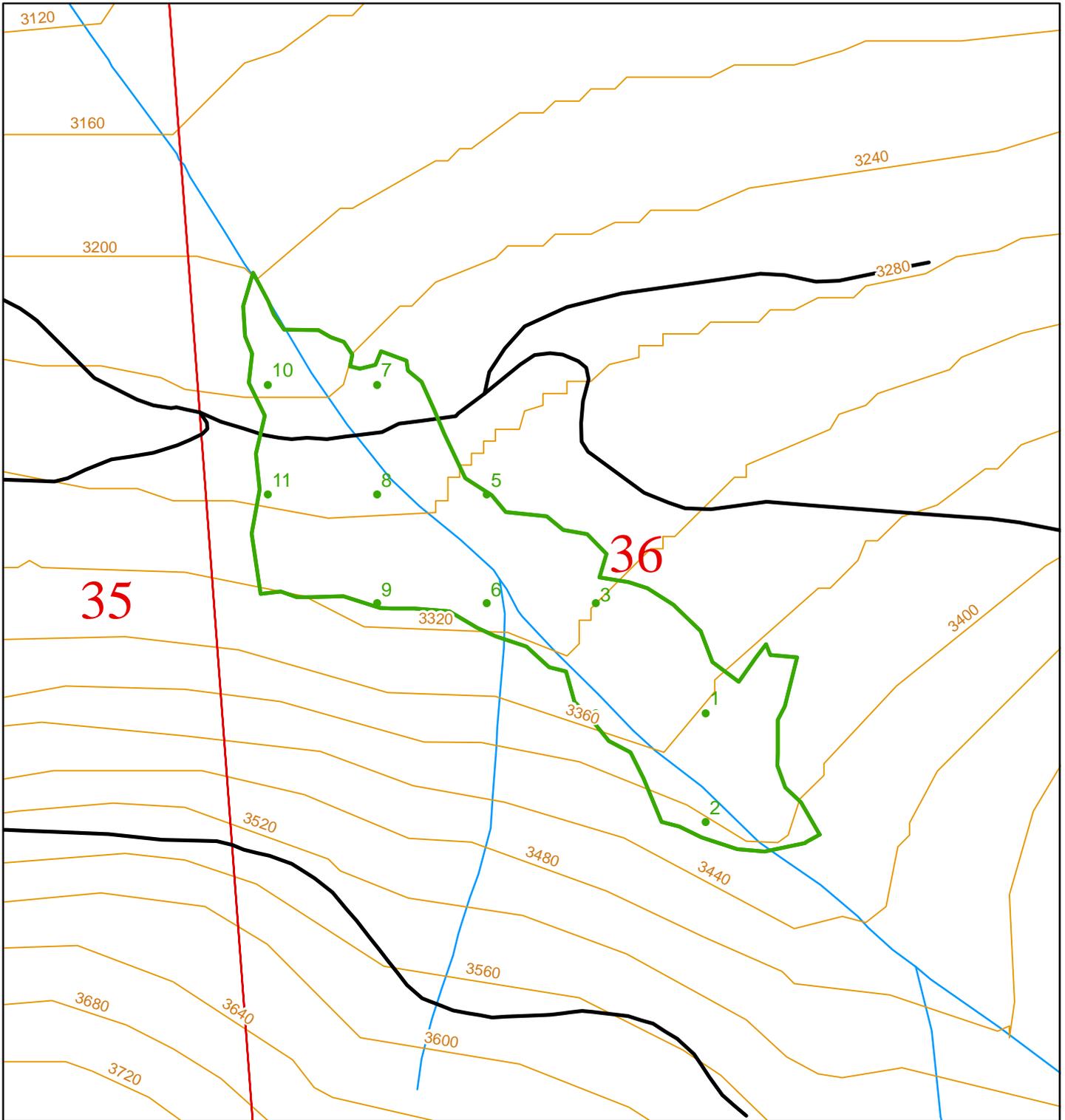
TC TSTATS		STATISTICS							PAGE	1
		PROJECT		TOWERFS			DATE		11/13/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	45E	30	TOWER FIRE	00U5	70.53	27	108	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		27	108	4.0						
CRUISE		16	22	1.4	9,404	.2				
DBH COUNT										
REFOREST										
COUNT		10	26	2.6						
BLANKS		1								
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	6	44.5	16.4	74	16.1	65.2	10,715	8,883	2,324	1,975
W LARCH	5	21.1	16.4	81	7.7	31.1	5,043	4,188	1,116	949
WR CEDAR	3	24.7	14.4	44	7.4	28.1	3,049	1,832	830	664
LP PINE	3	26.6	10.1	67	4.7	14.8	3,220	1,640	581	378
GR FIR	1	8.5	16.0	85	3.0	11.9	2,716	2,292	506	456
WHEMLOCK	1	3.7	14.9	52	1.2	4.4	587	499	126	107
E SPRUCE	3	4.1	14.0	60	1.2	4.4	780	624	160	128
TOTAL	22	133.3	14.8	68	41.5	160.0	26,110	19,958	5,644	4,657
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		54.4	24.2	178	235	292				
W LARCH		43.2	21.5	175	223	271				
WR CEDAR		58.6	54.9	70	156	242				
LP PINE		34.0	23.5	51	67	83				
GR FIR										
WHEMLOCK										
E SPRUCE				268	268	268				
TOTAL		48.6	11.1	177	199	221	99	51	25	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		82.3	16.1	37	45	52				
W LARCH		138.9	27.3	15	21	27				
WR CEDAR		114.9	22.5	19	25	30				
LP PINE		187.8	36.9	17	27	36				
GR FIR		182.8	35.9	5	8	12				
WHEMLOCK		288.2	56.6	2	4	6				
E SPRUCE		361.6	71.0	1	4	7				
TOTAL				133	133	133				
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		80.1	15.7	55	65	75				
W LARCH		139.6	27.4	23	31	40				
WR CEDAR		110.2	21.6	22	28	34				
LP PINE		185.7	36.4	9	15	20				
GR FIR		182.8	35.9	8	12	16				
WHEMLOCK		288.2	56.6	2	4	7				
E SPRUCE		381.3	74.8	1	4	8				
TOTAL				160	160	160				
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		79.6	15.6	7,496	8,883	10,270				

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	TOWERFS		DATE	11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	45E	30	TOWER FIRE	00U5	70.53	27	108	S	E	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
W LARCH		139.6	27.4	3,041	4,188	5,335				
WR CEDAR		108.6	21.3	1,442	1,832	2,223				
LP PINE		185.7	36.4	1,042	1,640	2,237				
GR FIR		182.8	35.9	1,470	2,292	3,114				
WHEMLOCK		288.2	56.6	217	499	781				
E SPRUCE		385.5	75.6	152	624	1,095				
TOTAL		2.5	.5	19,860	19,958	20,056	0	0	0	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				115	136	158				
W LARCH				98	135	171				
WR CEDAR				51	65	79				
LP PINE				70	111	151				
GR FIR				124	193	263				
WHEMLOCK		144.1	28.3	49	112	176				
E SPRUCE		385.5	75.6	34	140	246				
TOTAL		489.8	96.1	124	125	125	9,976	5,090	2,494	

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT		TOWERFS		DATE		11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	45E	30	TOWER FIRE	00U6	8.56	5	10	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		5	10	2.0						
CRUISE		5	10	2.0	764	1.3				
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
GR FIR	3	20.2	14.8	89	6.2	24.0	4,936	4,346	912	821
DOUG FIR	3	25.3	13.2	87	6.6	24.0	3,854	3,147	787	669
LP PINE	3	38.0	10.8	98	7.3	24.0	4,321	2,213	848	551
W LARCH	1	5.7	16.0	104	2.0	8.0	1,261	1,071	274	232
TOTAL	<i>10</i>	<i>89.3</i>	<i>12.8</i>	<i>93</i>	<i>22.3</i>	<i>80.0</i>	<i>14,372</i>	<i>10,777</i>	<i>2,820</i>	<i>2,273</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
GR FIR		51.8	35.9	158	246	334				
DOUG FIR		67.4	46.7	85	159	233				
LP PINE		78.7	54.5	33	72	110				
W LARCH										
TOTAL		<i>67.8</i>	<i>22.6</i>	<i>125</i>	<i>162</i>	<i>198</i>	<i>204</i>	<i>104</i>	<i>51</i>	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
GR FIR		137.3	68.3	6	20	34				
DOUG FIR		154.2	76.7	6	25	45				
LP PINE		173.9	86.5	5	38	71				
W LARCH		223.6	111.2	6	6	12				
TOTAL		<i>53.8</i>	<i>26.8</i>	<i>65</i>	<i>89</i>	<i>113</i>	<i>143</i>	<i>73</i>	<i>36</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
GR FIR		149.1	74.1	6	24	42				
DOUG FIR		149.1	74.1	6	24	42				
LP PINE		149.1	74.1	6	24	42				
W LARCH		223.6	111.2	8	8	17				
TOTAL		<i>50.0</i>	<i>24.9</i>	<i>60</i>	<i>80</i>	<i>100</i>	<i>124</i>	<i>63</i>	<i>31</i>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
GR FIR		169.5	84.3	681	4,346	8,010				
DOUG FIR		147.0	73.1	846	3,147	5,449				
LP PINE		137.6	68.4	698	2,213	3,728				
W LARCH		223.6	111.2	1,071	1,071	2,263				
TOTAL		<i>73.7</i>	<i>36.7</i>	<i>6,825</i>	<i>10,777</i>	<i>14,730</i>	<i>269</i>	<i>137</i>	<i>67</i>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
GR FIR		169.5	84.3	28	181	334				
DOUG FIR		147.0	73.1	35	131	227				
LP PINE		137.6	68.4	29	92	155				
W LARCH		223.6	111.2	134	134	283				
TOTAL		<i>73.7</i>	<i>36.7</i>	<i>85</i>	<i>135</i>	<i>184</i>	<i>269</i>	<i>137</i>	<i>67</i>	

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT		TOWERFS		DATE		11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	45E	30	TOWER FIRE	00U7	109.80	49	176	S	E	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		49	176	3.6						
CRUISE		26	41	1.6	14,892	.3				
DBH COUNT										
REFOREST										
COUNT		21	75	3.6						
BLANKS		2								
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	13	38.6	15.5	82	12.9	50.6	7,428	6,044	1,704	1,448
LP PINE	9	36.9	11.2	71	7.6	25.3	4,735	1,920	913	471
WR CEDAR	8	13.4	16.0	61	4.7	18.8	2,207	1,595	576	461
W LARCH	1	21.1	11.9	111	4.7	16.3	2,114	1,797	493	419
GR FIR	1	14.0	13.5	91	3.8	13.9	2,653	2,010	483	435
P PINE	6	6.0	18.6	87	2.6	11.4	1,818	876	374	187
WHEMLOCK	2	5.0	14.4	96	1.5	5.7	1,176	941	223	189
W PINE	1	.6	22.9	108	0.3	1.6	462	349	81	69
TOTAL	41	135.6	13.9	83	38.5	143.7	22,592	15,534	4,846	3,679
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		70.4	20.3	164	206	248				
LP PINE		80.1	28.3	47	66	84				
WR CEDAR		87.0	32.8	123	183	243				
W LARCH										
GR FIR										
P PINE		11.7	5.2	139	147	154				
WHEMLOCK		56.6	53.0	100	213	325				
W PINE										
TOTAL		84.0	13.1	146	168	190	282	144	71	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		102.1	14.6	33	39	44				
LP PINE		155.4	22.2	29	37	45				
WR CEDAR		166.4	23.8	10	13	17				
W LARCH		223.2	31.9	14	21	28				
GR FIR		161.7	23.1	11	14	17				
P PINE		208.1	29.7	4	6	8				
WHEMLOCK		289.1	41.3	3	5	7				
W PINE		489.8	70.0	0	1	1				
TOTAL		30.9	4.4	130	136	142	38	19	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		100.5	14.4	43	51	58				
LP PINE		153.7	22.0	20	25	31				
WR CEDAR		157.4	22.5	15	19	23				
W LARCH		223.2	31.9	11	16	22				
GR FIR		161.7	23.1	11	14	17				
P PINE		202.1	28.9	8	11	15				
WHEMLOCK		285.8	40.8	3	6	8				
W PINE		489.8	70.0	0	2	3				
TOTAL				144	144	144				

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	TOWERFS		DATE	11/13/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
35N	45E	30	TOWER FIRE	00U7	109.80	49	176	S	E	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		101.3	14.5	5,170	6,044	6,919				
LP PINE		158.7	22.7	1,485	1,920	2,355				
WR CEDAR		159.6	22.8	1,231	1,595	1,959				
W LARCH		223.2	31.9	1,224	1,797	2,370				
GR FIR		161.7	23.1	1,546	2,010	2,475				
P PINE		207.9	29.7	616	876	1,137				
WHEMLOCK		286.2	40.9	557	941	1,326				
W PINE		489.8	70.0	105	349	594				
TOTAL		<i>16.1</i>	<i>2.3</i>	<i>15,177</i>	<i>15,534</i>	<i>15,890</i>	<i>10</i>	<i>5</i>	<i>3</i>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				102	119	137				
LP PINE				59	76	93				
WR CEDAR		42.9	6.1	66	85	104				
W LARCH				75	110	145				
GR FIR				111	145	178				
P PINE		112.3	16.0	54	77	99				
WHEMLOCK		102.2	14.6	97	165	232				
W PINE		338.9	48.4	64	214	364				
TOTAL		<i>455.4</i>	<i>65.1</i>	<i>106</i>	<i>108</i>	<i>111</i>	<i>8,295</i>	<i>4,232</i>	<i>2,074</i>	



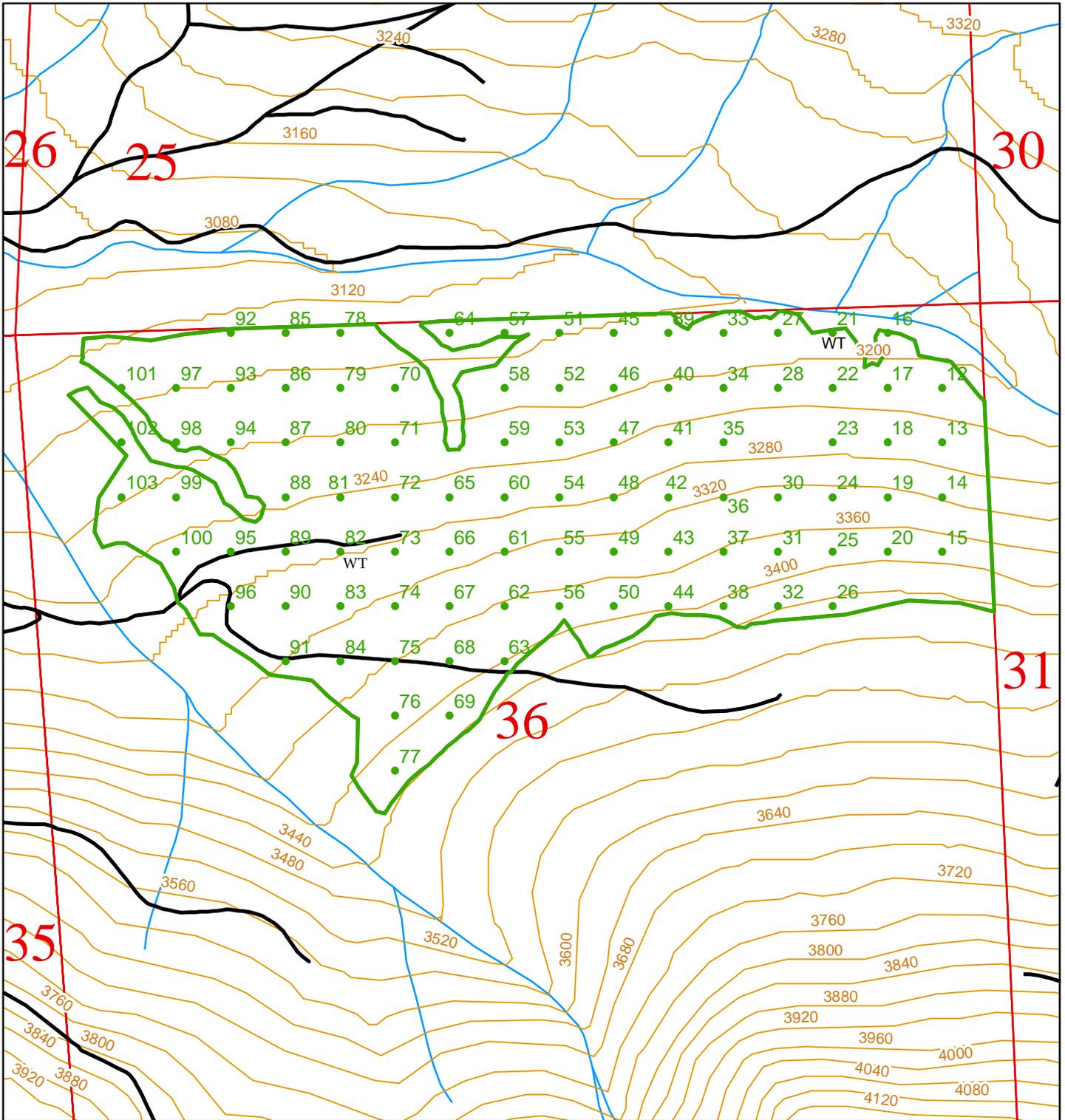
FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	TOWER F SALV U1	Township:	T35R44E
FMU_ID:	93815	DNR Region:	NORTHEAST
Acres:	20	Total Sample Points:	11
County:	SPOKANE	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



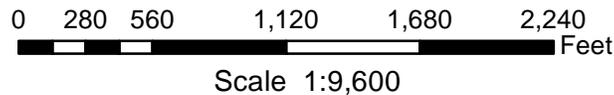
Legend

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



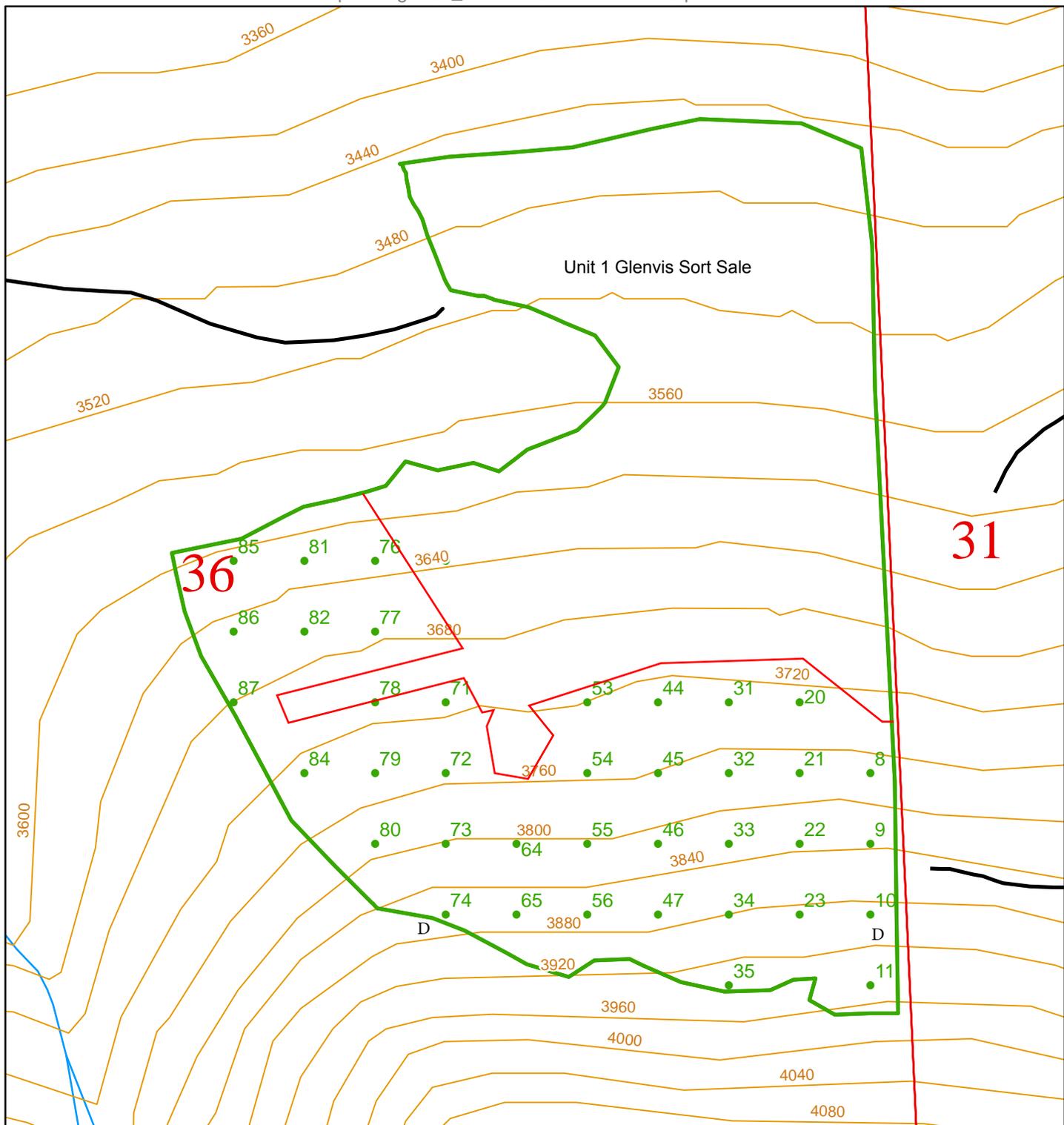
FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	TOWER F SALV U2	Township:	T35R44E
FMU_ID:	87997	DNR Region:	NORTHEAST
Acres:	202	Total Sample Points:	92
County:	SPOKANE	Spacing Between Points:	Width: 310 Height: 310
Walk Through Plot	WT	Point Rotation Degrees:	0



Legend

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



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	TOWER F SALV U3	Township:	T35R44E
FMU_ID:	93816	DNR Region:	NORTHEAST
Acres:	35	Total Sample Points:	36
County:	Pend Oreille	Spacing Between Points:	Width: 200 Height: 200
New Unit Boundary	—		

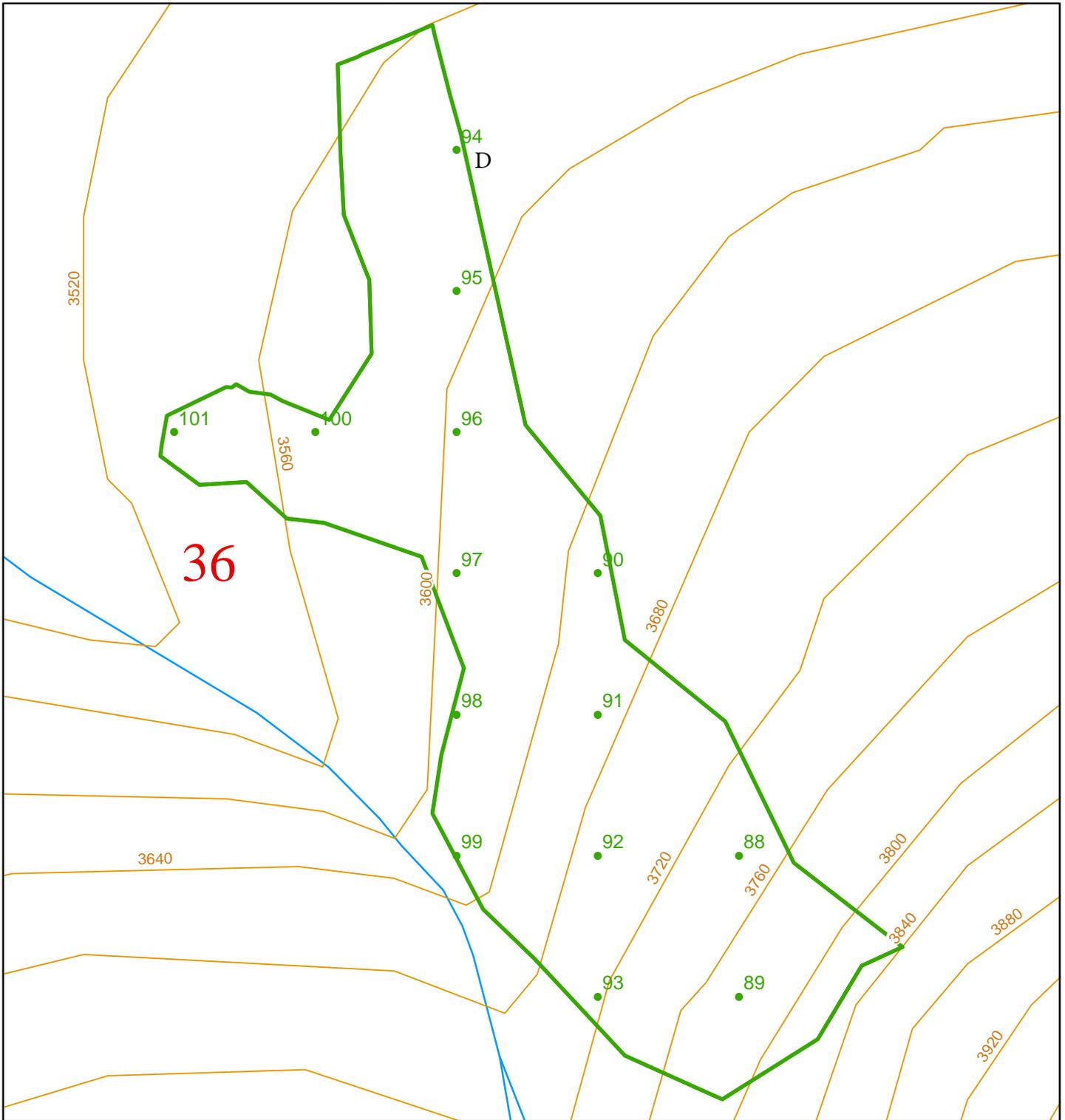


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Legend

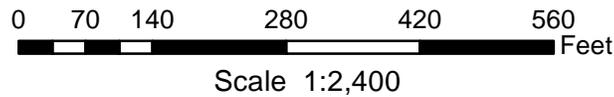
- Sample Points
- FMU polys

D = Deleted plot
WT = Walkthrough



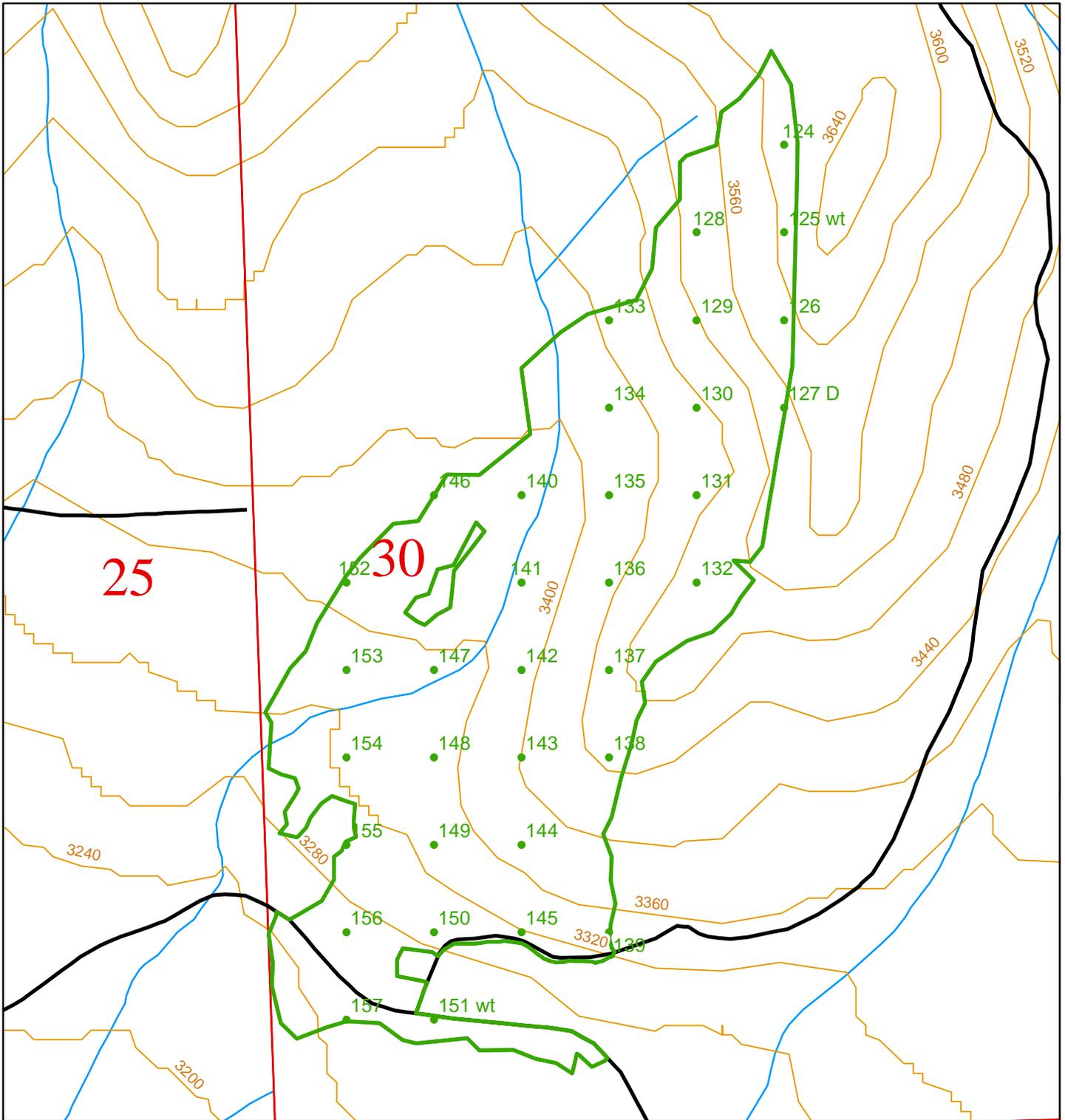
FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	TOWER F SALV U4	Township:	T35R44E
FMU_ID:	91058	DNR Region:	NORTHEAST
Acres:	11	Total Sample Points:	14
County:	Pend Oreille	Spacing Between Points:	Width: 200 Height: 200



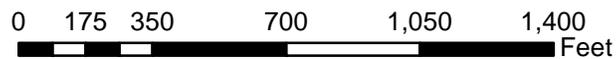
Legend

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



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	TOWER F SALV U5	Township:	T35R45E
FMU_ID:	93817	DNR Region:	NORTHEAST
Acres:	71	Total Sample Points:	34
County:	SPOKANE	Spacing Between Points:	Width: 310 Height: 310
Walk Through Plot	wt	Point Rotation Degrees:	0
Deleted Plot	D		

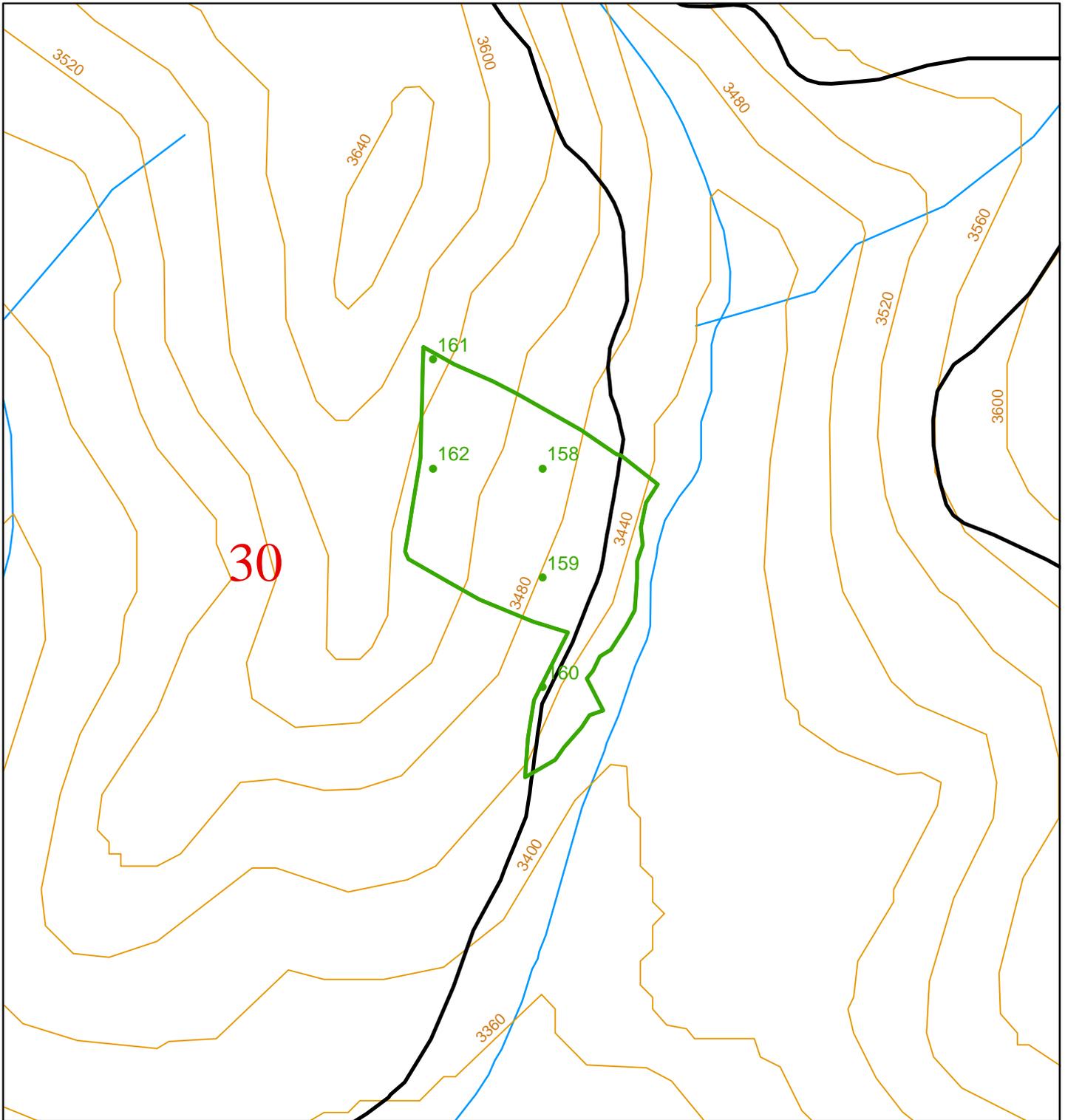


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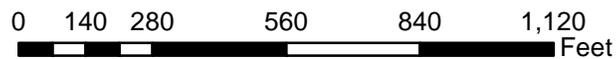
Legend

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



FMU POLYGON AND SAMPLE POINT INFORMATION

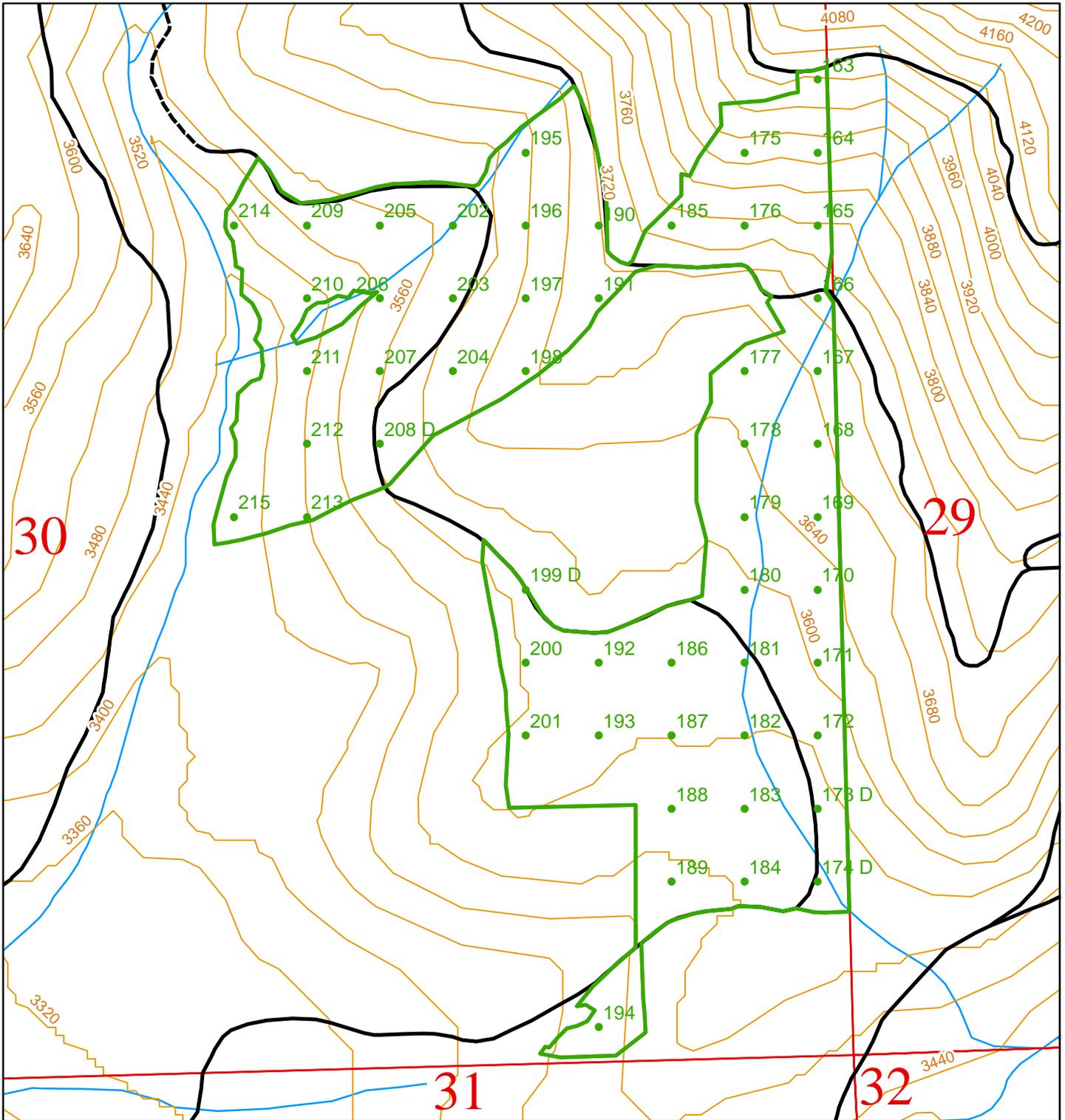
FMU_NM:	TOWER F SALV U6	Township:	T35R45E
FMU_ID:	93818	DNR Region:	NORTHEAST
Acres:	10	Total Sample Points:	5
County:	SPOKANE	Spacing Between Points:	Width: 310 Height: 310
		Point Rotation Degrees:	0



Scale 1:4,800

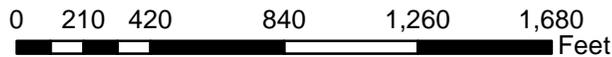
Legend

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



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	TOWER F SALV U7	Township:	T35R45E
FMU_ID:	93819	DNR Region:	NORTHEAST
Acres:	110	Total Sample Points:	53
County:	SPOKANE	Spacing Between Points:	Width: 310 Height: 310
Deleted Plot	D	Point Rotation Degrees:	0



Scale 1:7,200

Legend

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



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

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

FPA/N No: 3020564
 Effective Date: 11/30/2015
 Expiration Date: 11/30/2018
 Shut Down Zone: 688
 EARR Tax Credit: Eligible Non-eligible
 Reference: DNR TOWER FIRE SALVAGE
 36-35-44, 30-35-45

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

Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

4 years 5 years

Conditions on Approval / Reasons for Disapproval

APPROVED AS REVISED

Issued By: CRAIG DIBBLE **Region:** Northeast

Title: Forest Practices Forester **Date:** 11/30/15

Copies to: Landowner, Timber Owner and Operator.

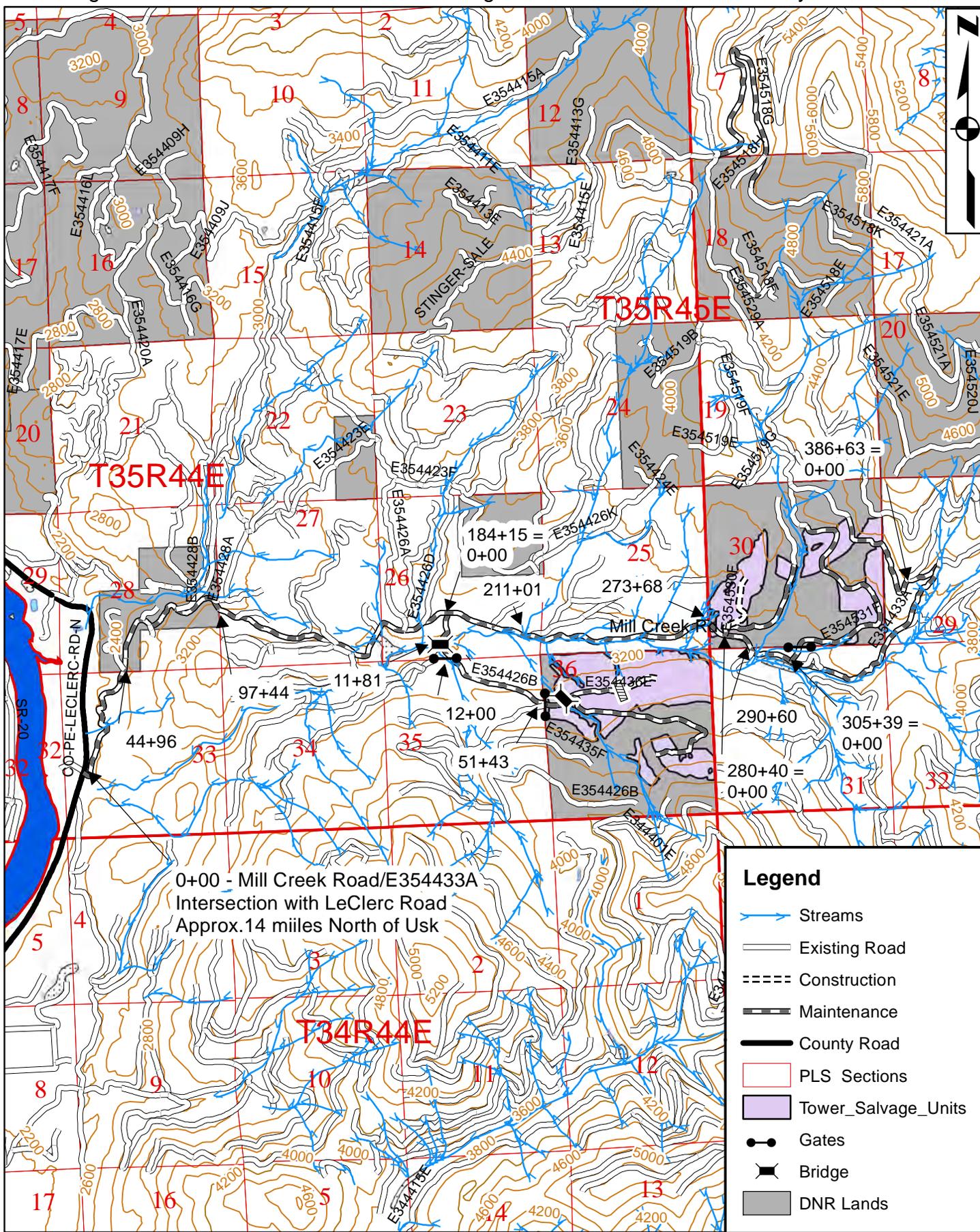
Issued in person: Landowner Timber Owner Operator **By:** NONDIS TAYLOR

Washington State Department of Natural Resources

Sale Name: Tower Fire Salvage
 Agreement No.: 30-093222

Road Plan Map
 Page 1 of 3

Region: Northeast
 County: Pend Oreille



0+00 - Mill Creek Road/E354433A
 Intersection with LeClerc Road
 Approx. 14 miles North of Usk

Legend	
	Streams
	Existing Road
	Construction
	Maintenance
	County Road
	PLS Sections
	Tower_Salvage_Units
	Gates
	Bridge
	DNR Lands

5,000 2,500 0 5,000
 Feet 1 inch = 4,200 feet

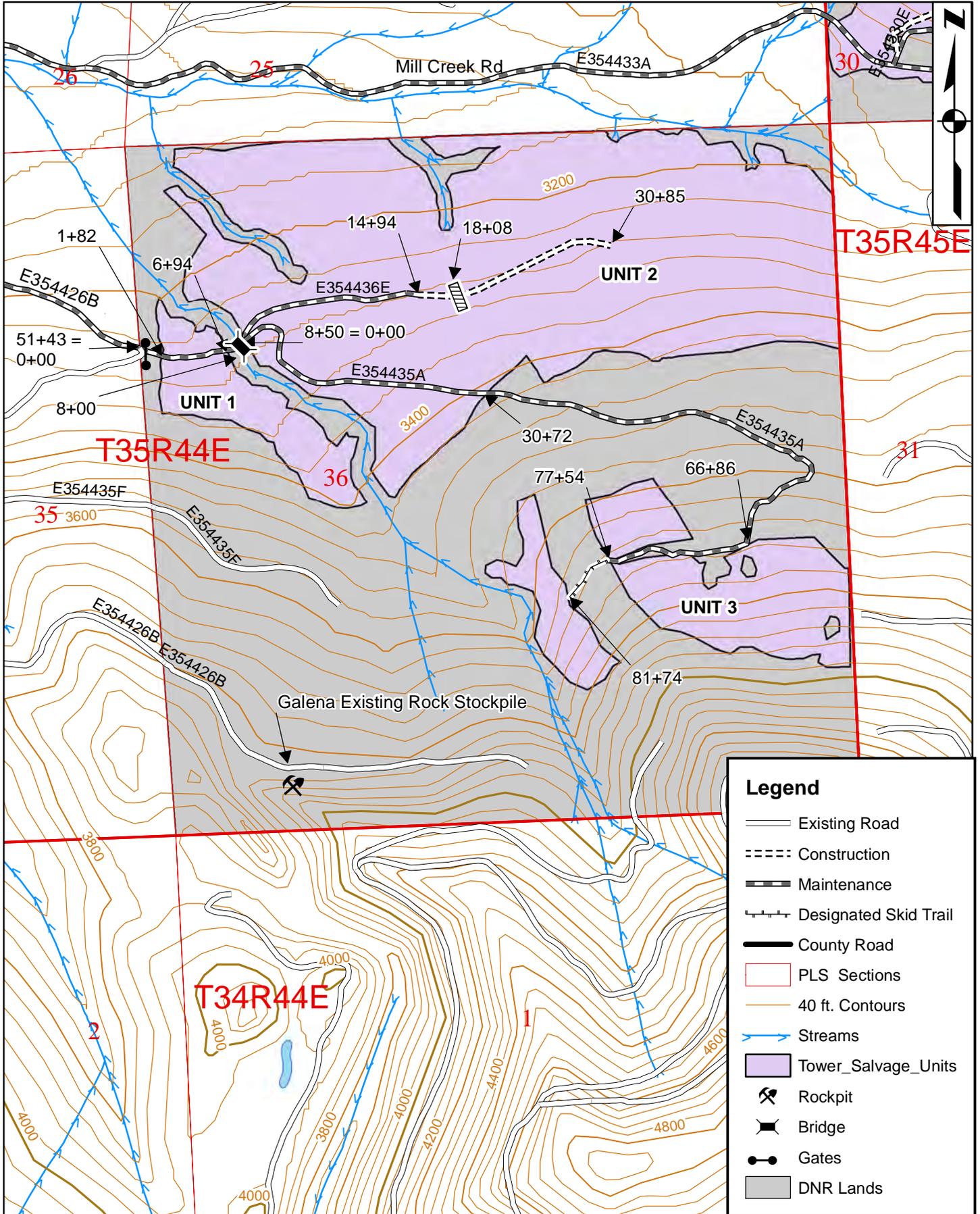
Date: 10/29/2015

Washington State Department of Natural Resources

Sale Name: Tower Fire Salvage
 Agreement No.: 30-093222

Road Plan Map
 Page 2 of 3

Region: Northeast
 County: Pend Oreille



Legend	
	Existing Road
	Construction
	Maintenance
	Designated Skid Trail
	County Road
	PLS Sections
	40 ft. Contours
	Streams
	Tower_Salvage_Units
	Rockpit
	Bridge
	Gates
	DNR Lands

1,000 500 0 1,000
 Feet

1 inch = 1,000 feet

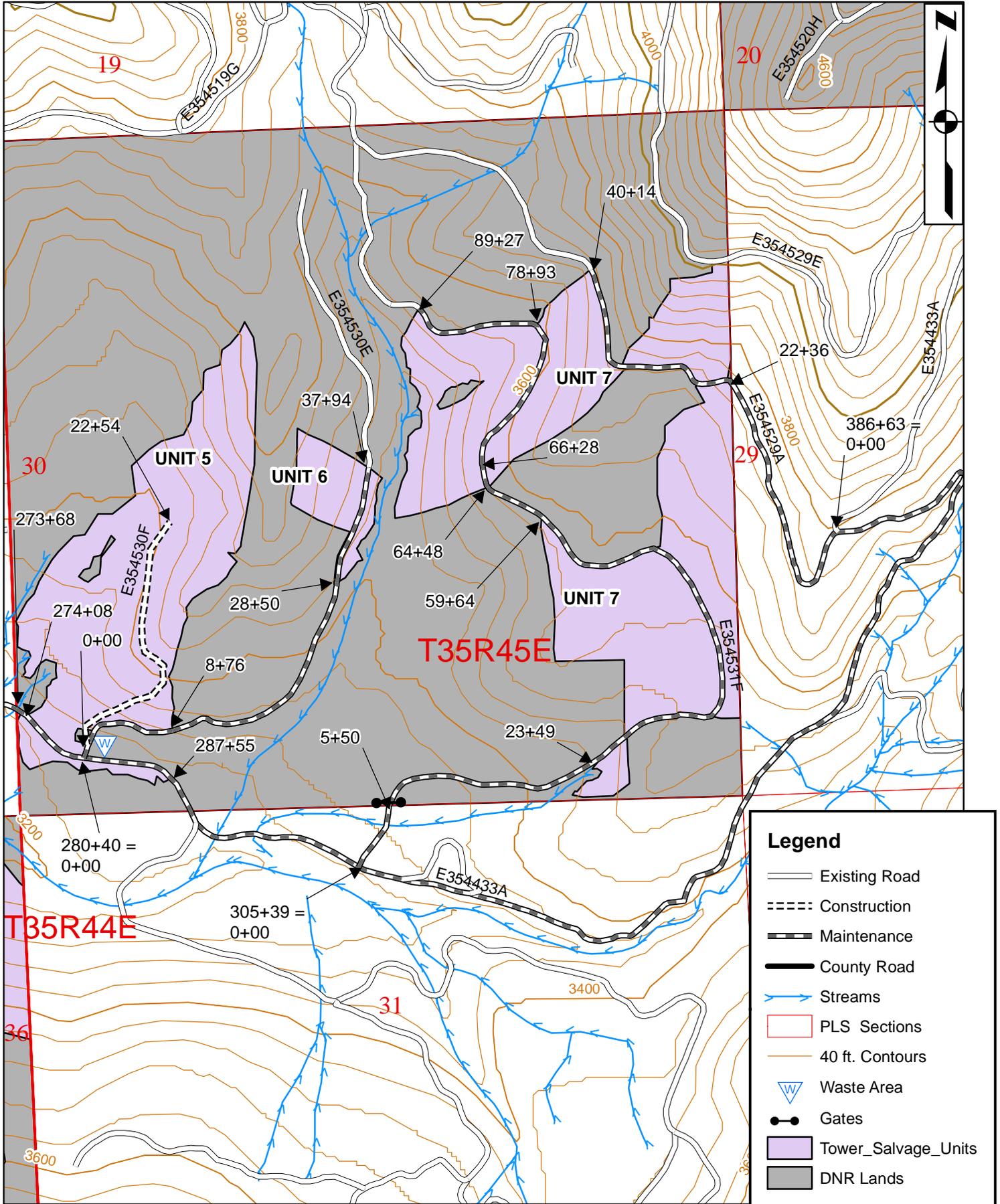
Date: 10/29/2015

Washington State Department of Natural Resources

Sale Name: Tower Fire Salvage
Agreement No.: 30-093222

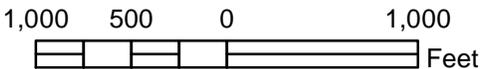
Road Plan Map
Page 3 of 3

Region: Northeast
County: Pend Oreille



Legend

- Existing Road
- Construction
- Maintenance
- County Road
- Streams
- PLS Sections
- 40 ft. Contours
- Waste Area
- Gates
- Tower_Salvage_Units
- DNR Lands



1 inch = 1,000 feet

Date: 10/29/2015

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

TOWER FIRE SALVAGE TIMBER SALE ROAD PLAN
PEND OREILLE COUNTY
NORTHEAST REGION – ARCADIA DISTRICT

AGREEMENT NO.: 30-093222

STAFF ENGINEER: TRAVIS PARRY

DATE: 10/29/2015

DRAWN & COMPILED BY: TRAVIS PARRY

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>
E354433A	0+00 to 386+63	Pre-haul maintenance
E354426B	0+00 to 51+43	Pre-haul maintenance
E354435A	0+00 to 77+54	Pre-haul maintenance
E354436E	0+00 to 14+94	Pre-haul maintenance
E354436E	14+94 to 30+85	Construction
E354530E	0+00 to 37+94	Pre-haul maintenance
E354531F	0+00 to 89+27	Pre-haul maintenance
E354529A	0+00 to 40+14	Pre-haul maintenance
E354530F	0+00 to 22+54	Construction

0-4 CONSTRUCTION

This project includes, but is not limited to the following construction requirements:

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
E354436E	14+94 to 30+85	New construction
	18+08	Install 18" X 30' CMP culvert, armor headwall and catch basin, and apply 10 cy rock
E354530F	0+00 to 22+54	New construction

Construction includes, but is not limited to clearing & grubbing, pioneering & decking logs, subgrade construction and compaction, rolling dip, cross drain, culvert installation, fish passage structure installation, cut & fill, embankment construction, and riprap and rock application. Construct to the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications, unless otherwise specified in design details.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
E354433A	0+00 to 386+63	Pre-haul and post-haul maintenance
	44+96 to 97+44	On DNR managed land
	184+15	Intersection with E354426B on right
	211+01	Wanless Creek crossing
	273+68 to 290+60	On DNR managed land
	274+08 to 287+55	Within Unit 5
	280+40	Intersection with E354530E on left
	305+39	Intersection with E354531F on left
E354426B	386+63	Intersection with E354529A, end pre-haul maintenance of E354433A
	0+00 to 51+43	Pre-Haul and post-haul maintenance
	11+81	Existing bridge, speed limit across bridge is 5 MPH and walking equipment across bridge is not allowed.
	12+00	Existing gate, close after hauling is completed each day
	51+43	End maintenance on E354426B, enter DNR managed land
E354435A	0+00 to 77+54	Pre-haul and post-haul maintenance
	0+00	Enter DNR managed land, existing steel tube gate
	8+00	Existing bridge
	1+82 to 6+94	Within Unit 1
	8+50	Intersection with E354436E on left
E354435A cont'd	8+50 to 30+72	Within Unit 2
	66+86 to 77+54	Within Unit 3
	77+54	End maintenance on E354435A
	77+54 to 81+74	Designated skid trail
E354436E	0+00 to 14+94	Pre-haul and post-haul maintenance

	14+94	End of existing road, begin new construction
E354530E	0+00 to 37+94	Pre-haul and post-haul maintenance
	0+00 to 8+76	Within Unit 5
	28+50 to 37+94	Within Unit 6
	37+94	End maintenance of E354530E
E354531F	0+00 to 89+27	Pre-haul and post-haul maintenance
	5+50	Enter DNR managed land, yellow steel tube gate
	23+49 to 59+64 and 64+48 to 89+27	Within Unit 7
	89+27	End maintenance on E354531F
E354529A	0+00 to 40+14	Pre-haul and post-haul maintenance
	0+00	Intersection with Sta 386+63 E354433A Road
	22+36	Enter DNR managed land
	22+36 to 40+14	Within Unit 7
	40+14	End maintenance of E354529A

Maintenance includes, but is not limited to brushing, clearing, grubbing, subgrade reshaping, rolling dip, cross drain and culvert installation, cleaning culverts and ditches, grading, and riprap and rock application. Reference the TYPICAL SECTION SHEET, ROCK LIST, and CULVERT & DRAINAGE LIST, for general specifications.

0-7 POST-HAUL MAINTENANCE

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

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

If the Contractor 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 Contractor's choice of construction season or techniques will be at the Contractor's expense. Unforeseen conditions include, but are not limited to, solid subsurface rock, subsurface springs, saturated ground, and unstable soils.

1-3 ROAD DIMENSIONS

Contractor shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan, unless controlled by construction stakes, or design data (plan, profile, and cross-sections).

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-7 TEMPORARY ROAD CLOSURE

Contractor shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. Construction may not close any road for more than 21 consecutive days.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-15 ROAD MARKING

Contractor shall perform road work in accordance with the state's marked location. All road work is marked as follows:

- Centerline flagging for new construction.

1-18 REFERENCE POINT DAMAGE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

Contractor shall notify the Contract Administrator a minimum of 10 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

Contractor shall obtain written approval from the Contract Administrator upon completion of each of the following phases of road work:

- Subgrade construction
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction

1-25 ACTIVITY TIMING RESTRICTION

Construction restrictions apply to this contract. All construction, reconstruction and transportation of heavy equipment and/or trucks is prohibited between the following dates, except as may be authorized in writing by the Contract Administrator.

November 15 to May 31

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTIONS, the Contractor shall provide a maintenance plan to include

further protection of state resources. The Contract Administrator must approve the maintenance plan, in writing, before operation in the closure period. The Contractor shall be required to maintain all haul roads including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER.

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- Wheel track rutting exceeds 4 inches on jaw run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 6 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- 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, the Contractor will be required to cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan. Before and during any suspension, Contractor shall protect the work from damage or deterioration.

1-31 SPEED LIMITS

On the following road speeds are limited to 5 mph.

<u>Road</u>	<u>Stations</u>
E354426B	11+81 – Speed limit restricted to 5 mph across existing bridge

1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION

The use of metal tracked equipment is not allowed on bridges or asphalt at any time. If Contractor must run equipment on bridges or asphalt, then rubber tired equipment or other methods, approved in writing by the Contract Administrator, must be used.

If tracked equipment is used on bridges or asphalt, Contractor shall immediately cease all road construction and hauling operations. Contractor shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt and have surface(s) evaluated

for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Contractor's expense, as directed by the Contract Administrator.

Contractor shall have bridges load rated by a Registered Professional Engineer licensed in the State of Washington. All load rating reports, calculations, or drawings must be stamped by the licensed engineer and submitted to the Contract Administrator prior to allowing any work to continue. All damage to the bridge from transporting equipment will be repaired at the Contractor's expense.

Contractor shall have asphalt surfaces reviewed by a third party, specializing in asphalt construction and repair. The third party's scope of the damage and repairs must be agreed upon between the Contractor and the Contract Administrator. Damage to the asphalt from transporting equipment will be repaired at the Contractor's expense.

1-33 SNOW PLOWING RESTRICTION

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

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

Contractor shall immediately remove any mud, dirt, rock, or other material tracked or spilled on to county roads and state highways.

If additional damage to the surface, signs, guardrails, etc. occurs then the damage will be repaired, at the Contractor's expense, as directed by the Contract Administrator when authorized by the county or WSDOT.

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – CONTRACTOR MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-4 PASSAGE OF LIGHT VEHICLES

Contractor shall maintain all roads in a condition that will allow the passage of light administrative vehicles.

2-6 CLEANING CULVERTS

Contractor shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before beginning work.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

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

3-5 CLEARING

Contractor shall fall all vegetative material larger than 3 inches DBH or over 6 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 must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

On the following road(s), Contractor shall deck all right-of-way timber. Decks must be parallel to the road centerline and placed within the cleared right-of-way. Decks must be free of dirt, limbs, and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

<u>Road</u>	<u>Stations</u>
E354436E	14+94 to 30+85
E354530F	0+00 to 22+54

3-8 PROHIBITED DECKING AREAS

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

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

3-10 GRUBBING

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. Stumps over 22 inches diameter shall be split. Stumps over 40 inches shall be quartered. Grubbing shall be completed before starting excavation and embankment.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

Contractor is not required to remove stumps within waste areas if they are cut flush with the ground.

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 grubbing limits as shown on the TYPICAL SECTION SHEET.

3-21 DISPOSAL COMPLETION

Contractor shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Contractor shall complete all disposal of organic debris, except by burning, before the application of rock or timber haul.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris shall be located within the cleared right-of-way or in natural openings, or in areas approved in writing by the Contract Administrator.

3-23 PROHIBITED DISPOSAL AREAS

Contractor shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, wetland, or within the riparian management zone.
- On road subgrades or 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.
- Organic debris may be used as mulch or in slash filter windrows to prevent sediment delivery

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

On the following roads the Contractor shall scatter stumps organic debris outside of the grubbing limits unless otherwise directed by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
E354436E	14+94 to 30+85
E354530F	0+00 to 22+54

3-30 EXCLUSION OF DOZER BLADES

Contractor shall not use dozer blades for the piling of organic debris.

3-31 PILING

Right-of-way debris shall be piled. Debris piles shall be made to be burnable, clean, tight, and free of rock or soil. Piles shall be made no closer than 20 feet from standing timber, and no higher than 10 feet. Debris piles shall be placed within the cleared right-of-way, or in natural openings, as designated by the Contract Administrator. Placement of debris piles outside of the right-of-way limits is subject to the written approval of the Contract Administrator.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

Contractor shall use a track mounted hydraulic excavator for construction work, unless authorized, in writing, by the Contract Administrator.

4-2 PIONEERING

Pioneering shall not extend past construction that will be completed during the current construction season. Pioneering shall not extend more than 1000 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

Contractor shall follow these standards for road grade and alignment except as designed.

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.

- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees. Contractor shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10%.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
Common Earth (on slopes over 70%)	½:1	200
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

- 7 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 1 to 6 feet.
- 4 feet for embankment heights at centerline of greater than 6 feet.

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

4-12 FULL BENCH CONSTRUCTION

Where side slopes exceed 45%, Contractor shall use full bench construction for the entire subgrade width except as construction staked or designed.

4-21 TURNOUTS

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

4-22 TURNAROUNDS

Turnarounds shall be no larger than 30 feet long and 30 feet wide. Locations shall be subject to approval by the Contract Administrator.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Contractor shall construct ditchouts as identified, as needed, and as directed by the Contract Administrator. Ditchouts shall be constructed in a manner that diverts ditch water onto the forest floor and shall have excavation backslopes no steeper than a 1:1 ratio.

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

Contractor may sidecast waste material on side slopes up to 55% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Waste material shall be deposited in areas designated or approved by the Contract Administrator. The amount of material to be contained in a waste area shall be at the discretion of the Contract Administrator.

<u>Road</u>	<u>Waste Area Location</u>
E354530E	STA. 2+00

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 35%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

4-45 SELECT BORROW

Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume.

4-46 COMMON BORROW

Common borrow consists of soil, and/or aggregate that is non-plastic and contains no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines in the sample cannot be rolled, between the hand and a smooth surface, into a thread at any moisture content.

4-47 NATIVE MATERIAL

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 6 inches in any dimension.

4-48 BORROW MATERIAL

Borrow material may not contain more than 5% clay, organic debris, or trash by volume.

4-55 ROAD SHAPING

Contractor shall shape the subgrade and surface as shown on the TYPICAL SECTION SHEET. The subgrade and surface shape must ensure runoff in an even, un-concentrated manner, and must be uniform, firm, and rut-free. Contractor shall accomplish all shaping using a motor grader with a minimum of 175 horsepower.

4-56 DRY WEATHER SHAPING

At any time of year, the Contract Administrator may require the application of water to facilitate shaping activities. The method of water application is subject to written approval by the Contract Administrator.

4-60 FILL COMPACTION

Contractor shall compact all embankment and waste material. Minimum acceptable compaction is achieved by placing embankments in 1 foot or shallower lifts, and routing excavation equipment over the entire width of each lift.

Except as otherwise specified in this plan, a vibratory plate compactor or tamper shall be used for areas specifically requiring keyed embankment construction, and for embankment segments too narrow to accommodate equipment. Compaction with a plate compactor shall be made by a minimum of three full coverages; each lift shall not exceed 6 inches in depth.

4-61 SUBGRADE COMPACTION

Contractor shall compact constructed or reconstructed subgrades deeper than 3 feet at the road shoulder by routing equipment over the entire width. Contractor shall obtain written approval from the Contract Administrator for subgrade compaction before Rock application.

4-62 DRY WEATHER COMPACTION

At any time of year, the Contract Administrator may require the application of water to facilitate compaction activities. The method of water application is subject to written approval by the Contract Administrator.

4-63 EXISTING SURFACE COMPACTION

Contractor shall compact maintained road surfaces by routing equipment over the entire width.

SECTION 5 – DRAINAGE

5-1 REMOVAL OF SHOULDER BERMS

Berms shall be removed from road shoulders to permit the escape of runoff. The construction of ditchouts will be required where ponding will result from the effects of sidecast debris.

5-5 CULVERTS

Contractor shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT & DRAINAGE LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts shall be new steel, aluminum, or polyethylene meeting the material specifications in Clauses 10-15 through 10-23. Culvert placement shall precede embankment construction.

5-11 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT & DRAINAGE LIST that are not installed will become the property of the state. Contractor shall stockpile materials as directed by the Contract Administrator and at locations determined by the Contract Administrator.

5-15 CULVERT INSTALLATION

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

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Contractor shall obtain written approval from the Contract Administrator for the installation of culverts 30 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts shall be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts shall be installed with a depth of cover specified in the Engineer's design, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

5-20 ENERGY DISSIPATERS

Energy dissipaters shall be installed to prevent erosion and are subject to approval by the Contract Administrator. The type of energy dissipater and the amount of material shall be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Rock used for energy dissipaters should be specified in the ROCK LIST

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 5 feet shall be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts with No. 10 galvanized smooth wire or 1/2-inch bolts in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-25 CATCH BASINS

Contractor shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long unless specified otherwise on the CULVERT AND DRAINAGE LIST.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Contractor shall construct headwalls in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts, except for temporary culverts. Headwalls shall also be constructed at all culverts identified on the CULVERT AND DRAINAGE LIST that specifies the placement of rock. Rock shall be placed by zero drop height methods. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameters above the top of the culvert.

5-30 DRIVABLE WATERBAR CONSTRUCTION

Contractor shall construct drivable waterbars in accordance with the DRIVABLE WATERBAR DETAIL, as specified on the CULVERT & DRAINAGE LIST, or as marked in the field. Drivable waterbars must be installed concurrently with construction of the subgrade and must be maintained in an operable condition. Contractor shall install drivable waterbars using a crawler tractor. Use of any other equipment is not allowed without written approval from the Contract Administrator.

5-31 ROLLING DIP CONSTRUCTION

Rolling dips shall be constructed in accordance with the ROLLING DIP DETAIL and as specified on the CULVERT & DRAINAGE LIST. Rolling dips shall be installed concurrently with construction of the subgrade and shall be maintained in an operable condition. Minimum frequency of rolling dips shall be at a maximum spacing of 400 feet horizontal or one for every 10 feet of vertical change.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCKLIST may be obtained from the following source(s) on state land at no charge to the Contractor. 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. The Contractor shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Galena Pit	E354426B – STA. 207+50	3" minus

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT PLAN:

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling

Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.

- All vehicle access to the top of the pit faces must be blocked.

6-20 ROCK GRADATION TYPES

Contractor shall provide or manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock shall meet the following specifications for gradation and uniform quality. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

6-26 5/8-INCH MINUS CRUSHED ROCK

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

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

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

6-28 1 1/4-INCH MINUS CRUSHED ROCK

% Passing 1 1/4" square sieve	100%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%
% Passing U.S. #200 sieve	6-12% max.

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

6-38 4-INCH IN-PLACE ROCK

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

In-place rock may not contain more than 5 percent by weight of organic debris and trash. No more than 40 percent of rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension.

6-50 LIGHT LOOSE RIP RAP

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

<u>At Least/Not More Than</u>	<u>Weight Range</u>	<u>Size Range</u>
20% / 90%	300 lbs. to 1 ton	20" - 36"
80% / --	50 lbs. to ½ ton	12" - 30"
10% / 20%	<u>50</u> lbs. max	3" - 8"

6-51 HEAVY LOOSE RIP RAP

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

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

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

Contractor shall obtain written approval from the Contract Administrator for approved completion of subgrade and drainage installations before rock application.

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

Contractor shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way unless otherwise specified in the ROCK LIST.

6-80 WATERING FOR DUST ABATEMENT

Contractor shall use water for dust abatement as directed by the Contract Administrator.

SECTION 7 – STRUCTURES

7-1 SIGN INSTALLATION

Purchaser shall purchase, install, and maintain the following road signs.

<u>Road</u>	<u>Station</u>	<u>Sign</u>
E354426B	11+81 on each side of existing bridge	SPEED LIMIT 5 MPH

7-57 CULVERT SHAPE CONTROL

Contractor shall monitor the culvert shape during backfill and compaction. Special attention must be paid to maintaining the structure’s rise dimensions, concentricity, and smooth uniform curvature. If compaction methods are resulting in peaking or deflection of the culvert, Contractor shall modify the compaction method to achieve the appropriate end result.

7-70 GATE CLOSURE

On the following road(s), Contractor shall keep gates closed and locked except during periods of haul. All gates that remain open during haul must be locked or securely fastened in the open position. All gates must be closed at termination of use.

<u>Road</u>	<u>Station</u>	<u>Comment</u>
E354426B	12+00	Close and lock gate after hauling has stopped each day

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Sediment control shall be accomplished using sediment traps, silt fences, settling ponds, slash windrows, or other methods as approved in writing by the Contract Administrator.

8-2 PROTECTION FOR EXPOSED SOIL

Contractor shall provide and evenly spread a 6-inch layer of straw to all exposed soils at within 50 feet of a live stream or wetland. Soils may not sit exposed during any rain event.

SECTION 9 – POST-HAUL ROAD WORK

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

9-5 POST-HAUL MAINTENANCE

Contractor shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS and as specified below.

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
E354433A	0+00 to 386+63	Post haul grade
E354426B	0+00 to 51+43	Post haul grade
E354435A	0+00 to 77+54	Post haul grade
E354436E	0+00 to 14+94	Post haul grade
E354436E	14+94 to 30+85	Post haul grade
E354530E	0+00 to 37+94	Post haul grade
E354531F	0+00 to 89+27	Post haul grade
E354529A	0+00 to 40+14	Post haul grade
E354530F	0+00 to 22+54	Post haul grade. Install 6 additional rolling dips location to be determined by contract administrator

9-10 LANDING DRAINAGE

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

9-11 LANDING EMBANKMENT

Contractor shall slope landing embankments to the original construction specifications.

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 must 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 pipe. Culverts shall be Type S – double walled with a corrugated exterior and smooth interior.

10-18 CORRUGATED STEEL STRUCTURAL PLATE

Structural plate culverts must be galvanized steel meeting AASHTO M-167 (ASTM A-761) specifications.

10-19 CORRUGATED ALUMINUM STRUCTURAL PLATE

Structural plate culverts must be aluminum alloy meeting AASHTO M-219 (ASTM A-746) specifications.

10-20 FLUME AND DOWNSPOUT

Downspouts and flumes shall meet the AASHTO specification designated for the culvert. Plastic downspouts and flumes shall be Type S – double walled with a corrugated exterior and smooth interior.

10-21 METAL BAND

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

10-22 PLASTIC BAND

Plastic coupling and end bands shall meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer shall be used. Couplings shall be split coupling band. Split coupling bands shall have a minimum of four corrugations, two on each side of the pipe joint.

10-23 RUBBER CULVERT GASKETS

Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

10-24 GAGE AND CORRUGATION

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

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

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 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.

Structures

- Repair culverts, bridges, gates, fences, cattle guards, signs, and other road structures as required because of timber haul or other hauling activities. Repairs shall be subject to Contract Administrator's approval.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Preventative Maintenance

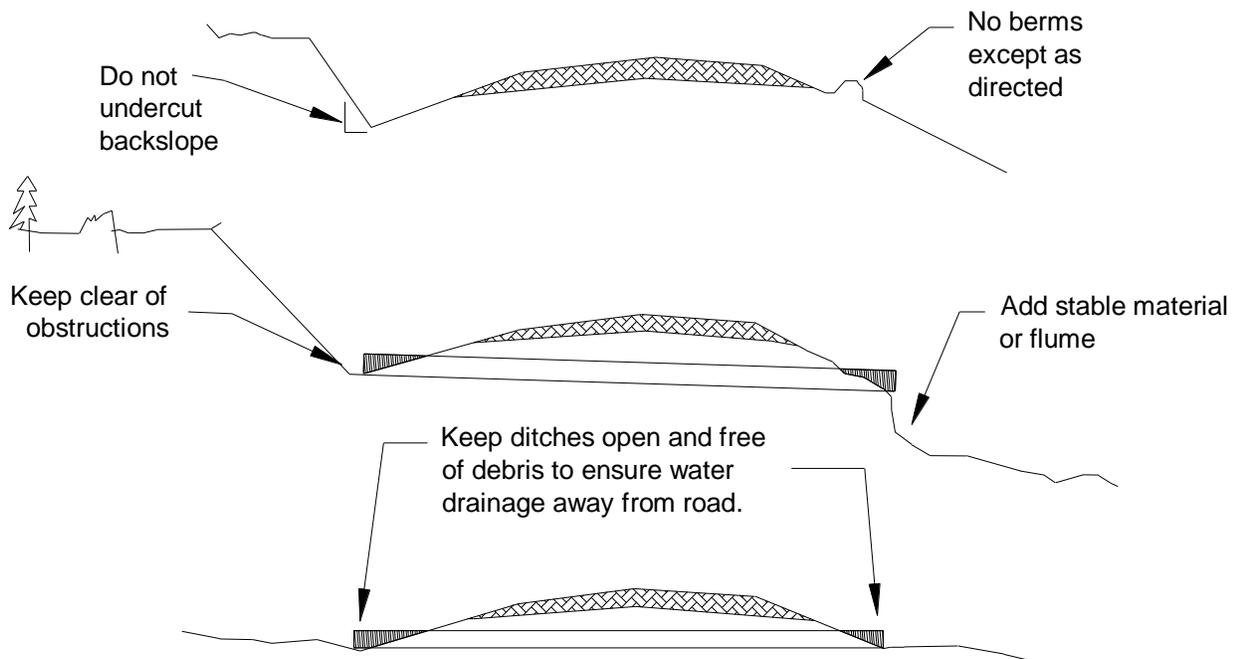
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

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.

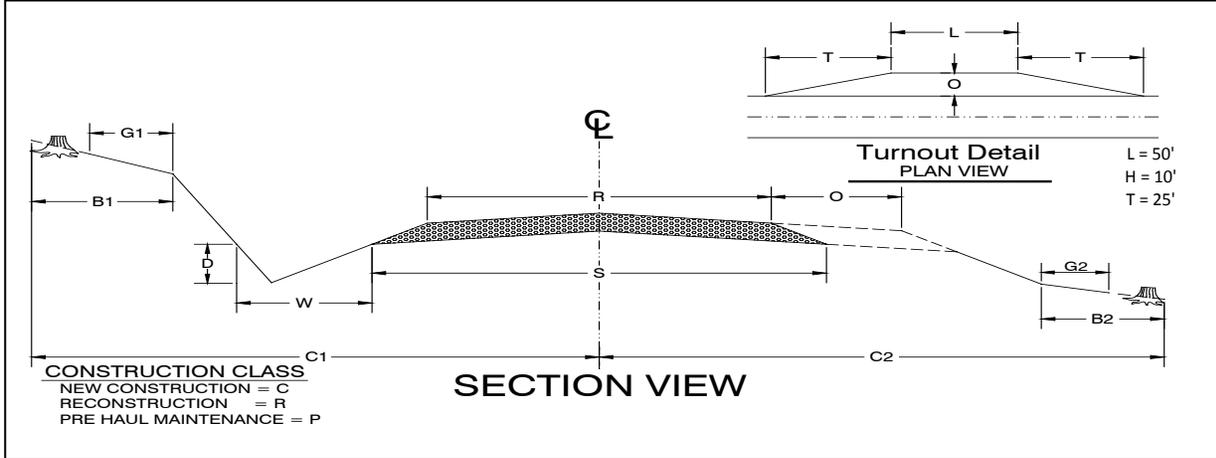


DEPARTMENT OF NATURAL RESOURCES

Application No.: 30-093222

Name of Sale: Tower Fire Salvage

TYPICAL SECTION SHEET



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	FULL BENCH	TOLERANCE CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	INSLOPE "/10'	OUTSLOPE "/10'	CROWN " AT CL	DITCH WIDTH (W)	DITCH DEPTH (D)	DITCH 2 SIDES	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (B1)	ROAD FILL CLEARING (B2)	R/W CUT CLEARING (C1)	R/W FILL CLEARING (C2)
E354433A	0+00	386+63	P		C	14' 12'		subgrade shape varies											
E354426B	0+00	51+43	P		C	14' 12'		subgrade shape varies											
E354435A	0+00	77+54	P		C	14' 12'		subgrade shape varies											
E354436E	0+00	14+94	P		C	14' 12'		subgrade shape varies											
E354436E	14+94	30+85	C		C	14' 12'		4					2	2	10	10			
E354530E	0+00	37+94	P		C	14' 12'		subgrade shape varies											
E354531F	0+00	89+27	P		C	14' 12'		subgrade shape varies											
E354529A	0+00	40+14	P		C	14' 12'		subgrade shape varies											
E354530F	0+00	22+54	C		C	14' 12'		4					2	2	10	10			

BRUSHING DETAIL - D2

TYPICAL BRUSHING LIMITS SECTION

BRUSHING LIMITS

Trim all limbs, vegetation, and down logs that fall within brushing limits.

14' min

width varies

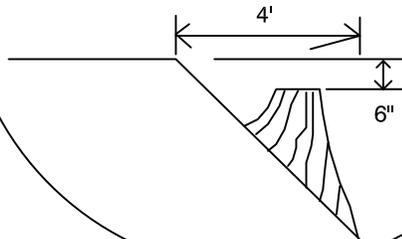
C1

C2

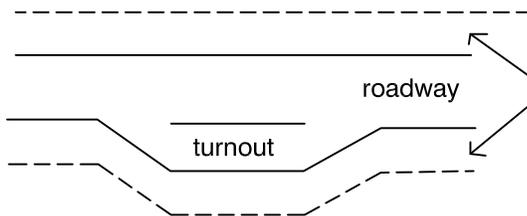
All limbs on standing trees that extend into the brushing limits shall be trimmed within 6" of the stem.

Any trees less than 6" in diameter shall be cleared within the transition zones.

Trim all stumps and vegetation within 4' of edge of road and in ditch to at least 6" below the elevation of the edge of road.



CURVE BRUSHING PLAN



Brushing limits as shown on typical section

TURNOUT BRUSHING PLAN

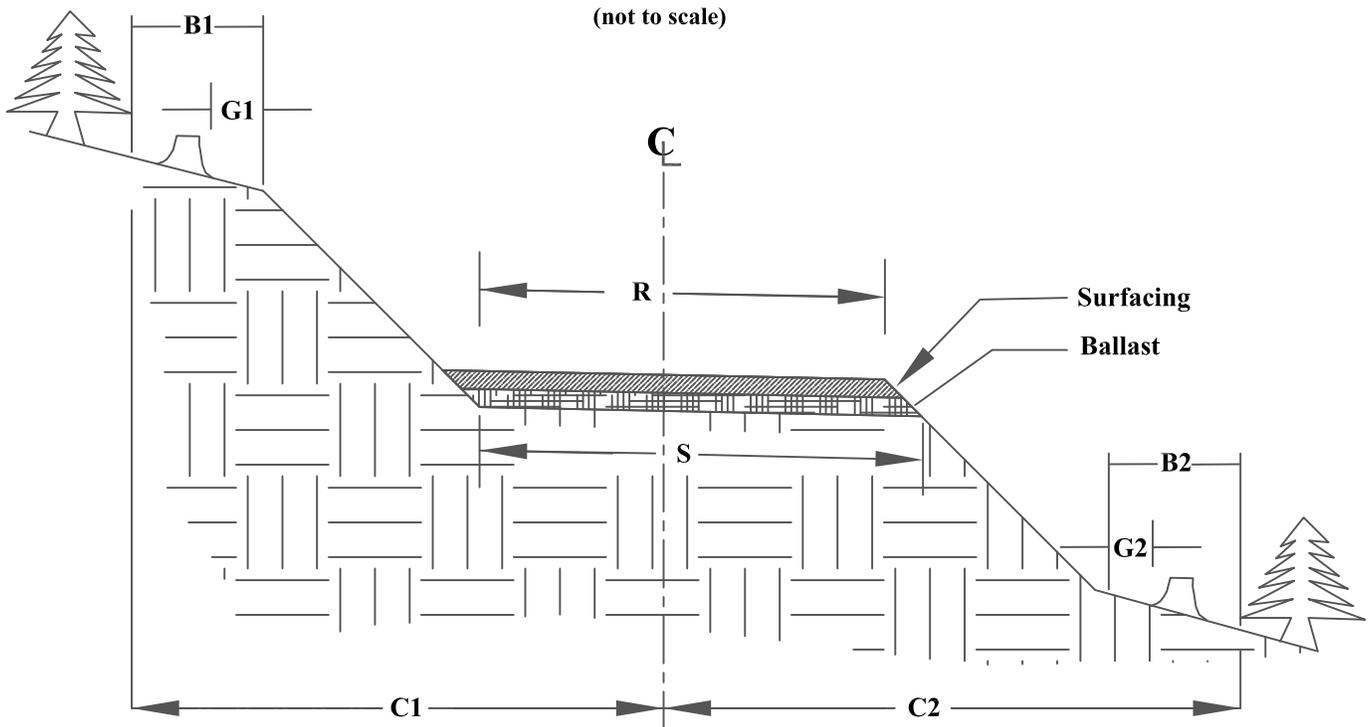
50' taper

extra 4' brushing limits on inside of curve.

50' taper

1. All vegetation within the brushing limits shall be cut to within 8" of the ground, unless otherwise directed by the contract administrator.
2. All brush, trees, limbs, etc. shall be removed from the road surface and ditchline.
3. All debris that may roll or migrate into the ditchline shall be removed.

OUTSLOPED ROAD CROSS-SECTION DETAIL D7

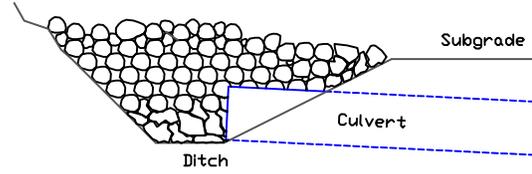
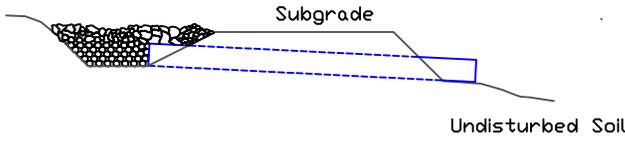


Drawn by: JBB 2/18/03

Revised: JE 12/20/2012

CULVERT AND DRAINAGE SPECIFICATIONS DETAIL - D1

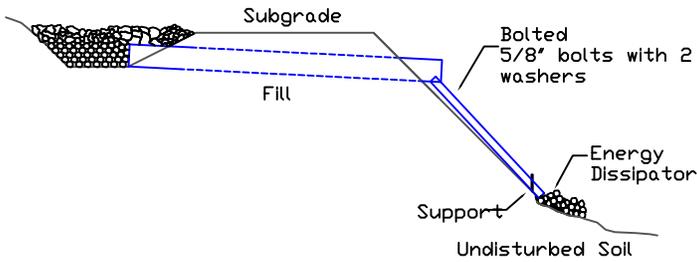
HEADWALLS



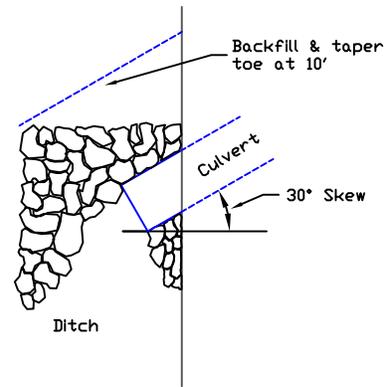
Headwall to be constructed of material that will resist erosion

FLUME

Use where ground conditions are uniform, providing for stability of flume.

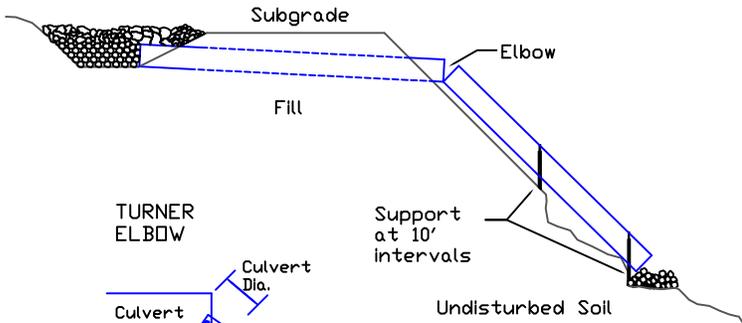


PLAN VIEW

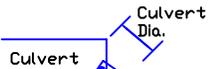


DOWNSPOUT

Use where ground conditions are irregular.



TURNER ELBOW



Bolted 5/8" bolts with bridge washers on both sides

CULVERT BACKFILL & BASE PREPARATION (For Culverts Less Than 36")

Minimum Cover	Minimum Bed Depth	Min. Trench Width	Nominal Diameter
A	B	C	D
12"	6"	36"	18"
12"	6"	42"	24"
12"	6"	48"	30"
12"	6"	54"	36"

DISSIPATOR SPEC'S Size In Culvert Diameters

Area 2 X 2
Depth 1
Aggregate 1/3

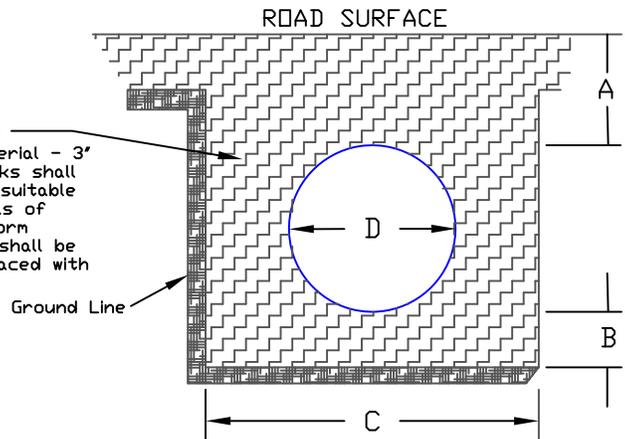


Level



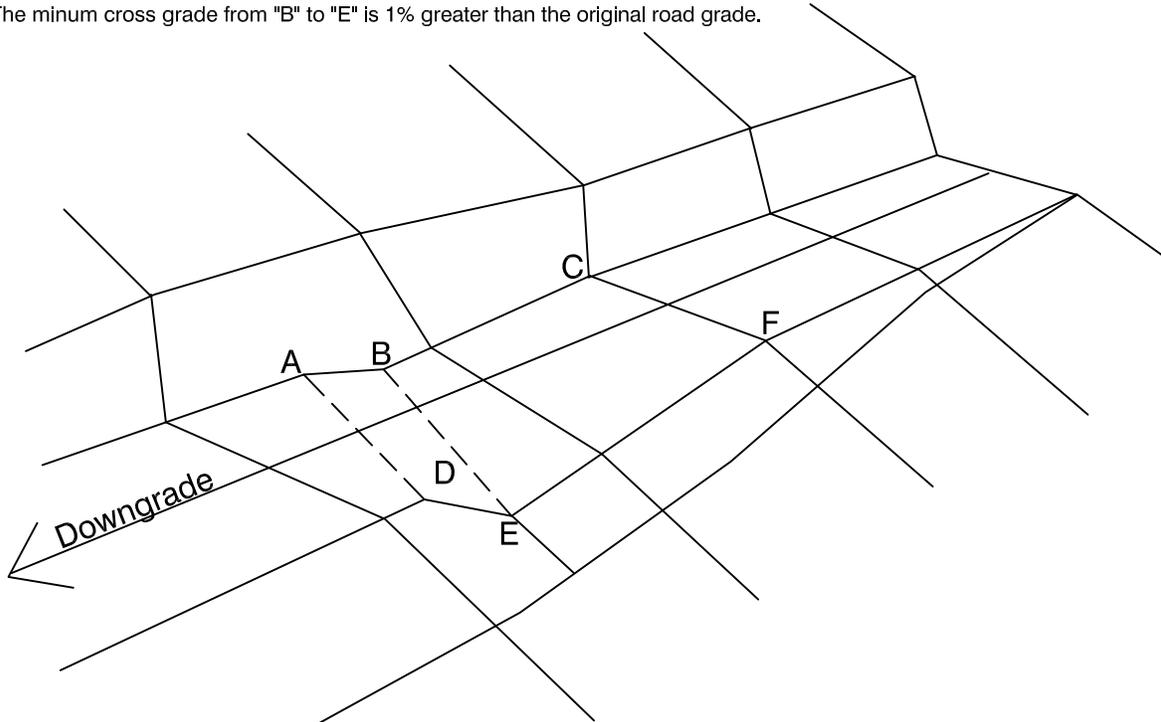
Side Hill

BEDDING MATERIAL:
Use granular material - 3" minus. Large rocks shall be replaced with suitable material. Materials of poor or non-uniform bearing capacity shall be removed and replaced with suitable fill.



Note: Plan of dip shown is for an outsloped rolling dip. Dips may be either insloped or outsloped. When insloped, dips shall discharge into a culvert, drop inlet, overside drain, or drainage ditch. When outsloped, they shall discharge into an overside drain or on to natural ground.

The minum cross grade from "B" to "E" is 1% greater than the original road grade.



STANDARD 30° ROLLING DIP - D5

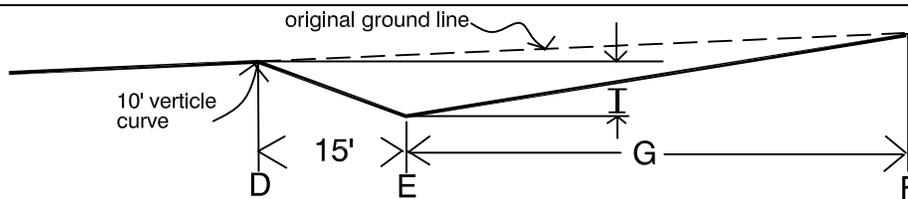
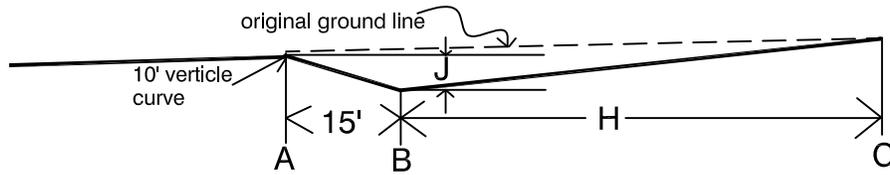
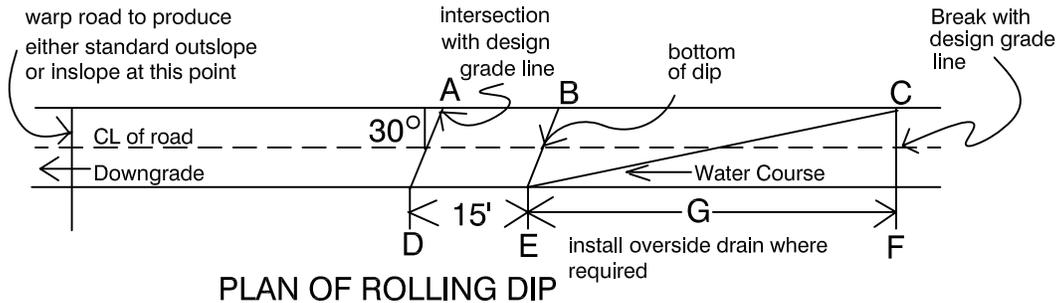
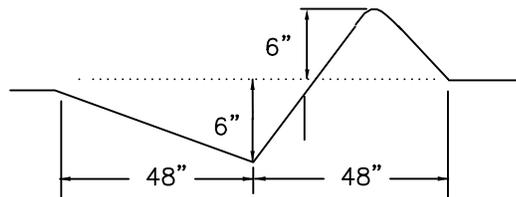
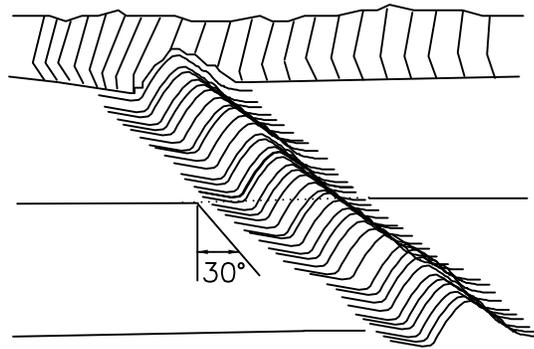


TABLE OF ROLLING DIP DEMENSSIONS

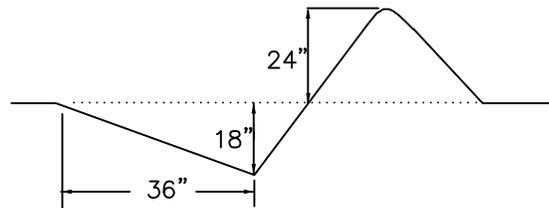
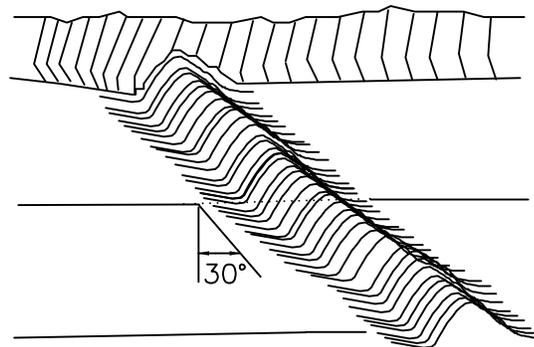
Width	12'	14'	16'	ALL		
Dimension	G			H	I	J
Road Grade 6% and under	60	61	62	52	.8	0.3
8%	70	71	72	62	1.0	0.2
10%	80	81	82	72	1.1	0.1

WATERBAR DETAIL—D6

DRIVABLE WATERBAR



NON DRIVABLE WATERBAR

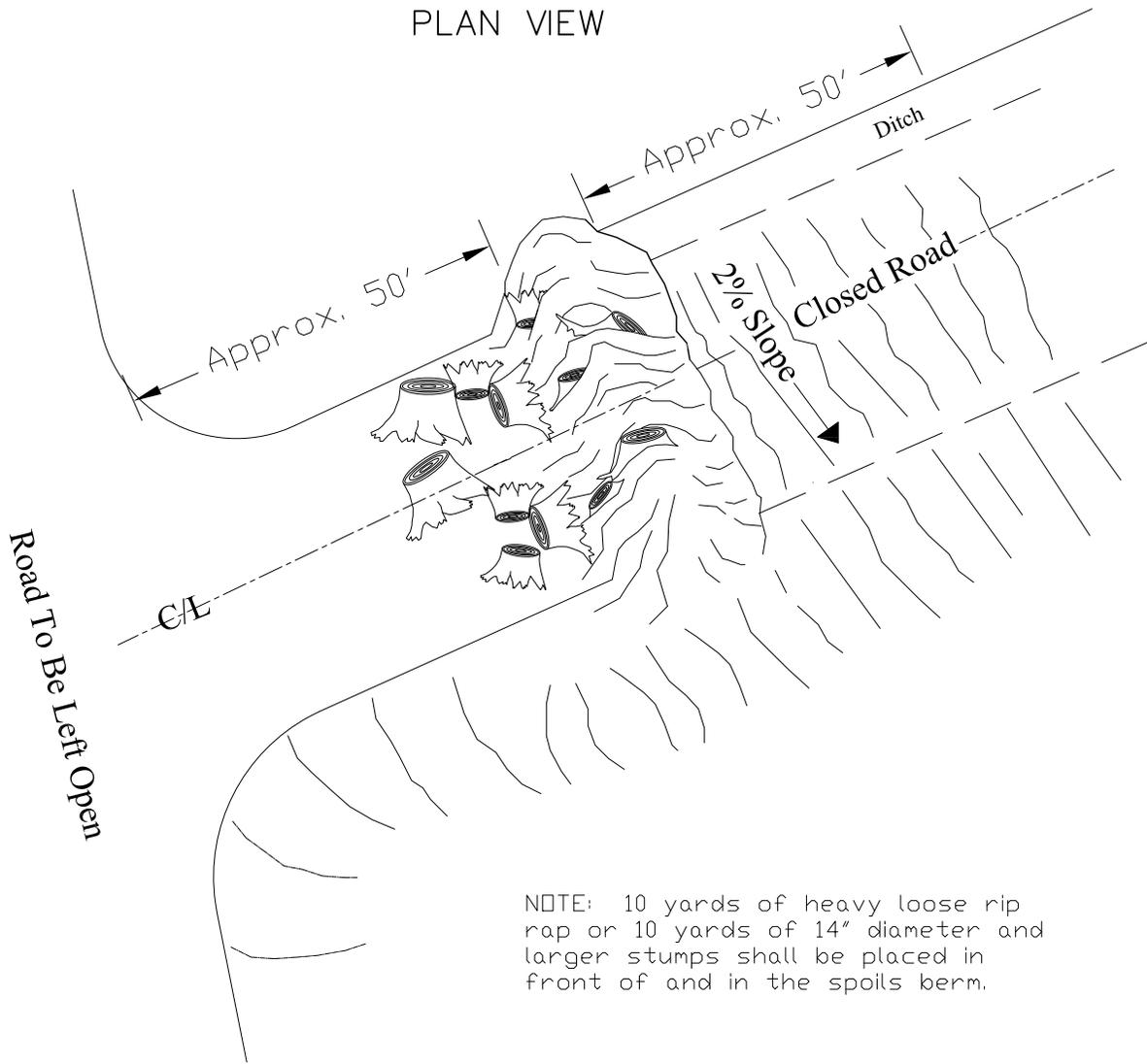


1. Waterbar construction for forest roads Specifications are average and may be adjusted to conditions.
2. Waterbar shall keyed into the bank.
3. The waterbar shall be outsloped for proper drainage.
4. Rock outlet if fill slope is present.

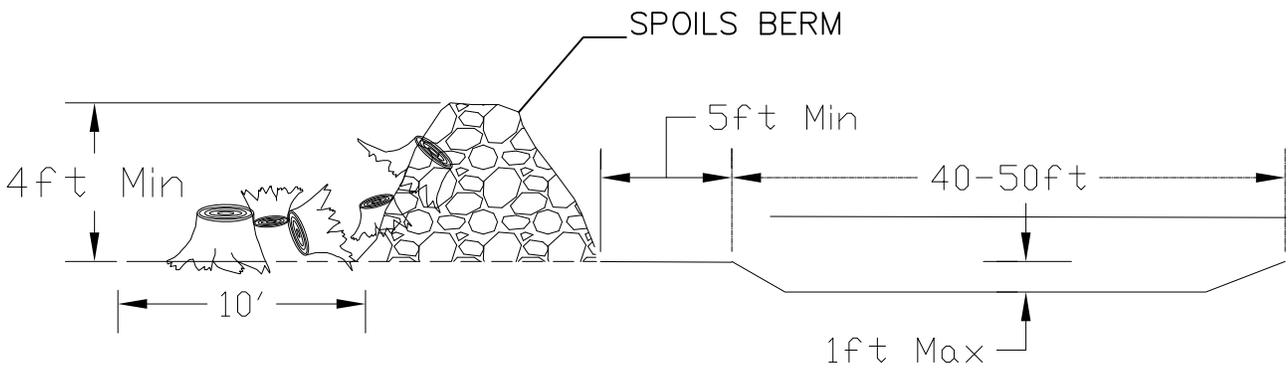
Revised: 05/21/2012

SPOILS BERM DETAIL-D8

PLAN VIEW



NOTE: 10 yards of heavy loose rip rap or 10 yards of 14" diameter and larger stumps shall be placed in front of and in the spoils berm.



Note: $\frac{1}{3}$ of stumps or rip rap shall be partially buried in the spoils berm and/or road surface.