

**TIMBER NOTICE OF SALE**

**SALE NAME: WILLY THINNER**

**AGREEMENT NO: 30-092822**

**AUCTION:** December 16, 2015 starting at 10:00 a.m., **COUNTY:** Jefferson  
Olympic Region Office, Forks, WA

**SALE LOCATION:** Sale located approximately 12 miles southeast of Forks, WA

**PRODUCTS SOLD  
AND SALE AREA:**

All timber as described in Schedule C, except trees described in Schedule B, bounded by timber sale boundary tags in Unit 1 and Unit 3; bounded by timber sale boundary tags, double blue painted slashes and the H-3200 Road in Unit 2; bounded by timber sale boundary tags and the H-3100 Road in Unit 4; bounded by timber sale boundary tags, double blue painted slashes and the H-3100 Road in Unit 5; bounded by timber sale boundary tags, double blue painted slashes, the H-3200 Road and the H-3204 Road in Unit 6; all timber bounded by timber sale boundary tags, the H-3200 Road and the H-3204 Road, except trees marked with blue paint in Unit 7; all trees within even-aged gaps as shown on the timber sale maps bounded by special management unit boundary tags; all timber bounded by right of way boundary tags except title to the timber in the right of ways does not pass to the Purchaser unless the road is constructed

In no instance shall downed red cedar be removed. All timber that has been on the ground for five years or more shall be left undisturbed and not yarded (five years is defined by more than 1.5 inches of sap rot). on part(s) of Sections 19, 20 and 22 all in Township 27 North, Range 11 West, Sections 14, 15, 16, 20, 21, 22 and 24 all in Township 27 North, Range 12 West, W.M., containing 357 acres, more or less.

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

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	Total Tons	Price \$/Ton	MBF by Grade						UT		
						1P	2P	3P	SM	1S	2S		3S	4S
Hemlock	11.2	5	2,297	21,475	\$4.90						59	1,015	1,217	5
Douglas fir	11.6	5	885	8,262	\$4.90						33	454	367	31
Spruce	13.6	4	145	1,398	\$4.90						5	78	46	15
Red alder	10.7		39	420	\$2.00									39
Red cedar	10.2		16	146	\$87.00									16
Silver fir	18.3		8	79	\$4.90						1	6	1	
Sale Total			3,390	31,780										

**MINIMUM BID:** \$4.90/ton (est. value \$121,000.00) **BID METHOD:** Sealed Bids

**PERFORMANCE SECURITY:** \$24,200.00 **SALE TYPE:** Tonnage Scale

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

**BIDDABLE SPECIES:** Spruce, Silver fir, Hemlock, Douglas fir combined

**BID DEPOSIT:** \$12,100.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

## TIMBER NOTICE OF SALE

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**HARVEST METHOD:** 34% Cable and 66% Ground. 30' Equipment Limitation Zones on all typed water. As indicated on the timber sale maps for Units 1, 3, 4, 5, 6, and 7, there will be no operations (other than haul), from one hour before to two hours after official sunrise and one hour before to one hour after official sunset from April 1 through September 23 for marbled murrelet restrictions.

**ROADS:** 6.75 stations of required construction. 21.65 stations of optional construction. 5.60 stations of optional reconstruction. 6.25 stations of required pre-haul maintenance. 320.35 stations of optional pre-haul maintenance. Road construction will not be permitted from October 15 to April 15 unless authorized in writing by the Contract Administrator.

### ACREAGE DETERMINATION

**CRUISE METHOD:** Sale area was 100% GPS'd. Sale units were cruised using a variable plot sample.

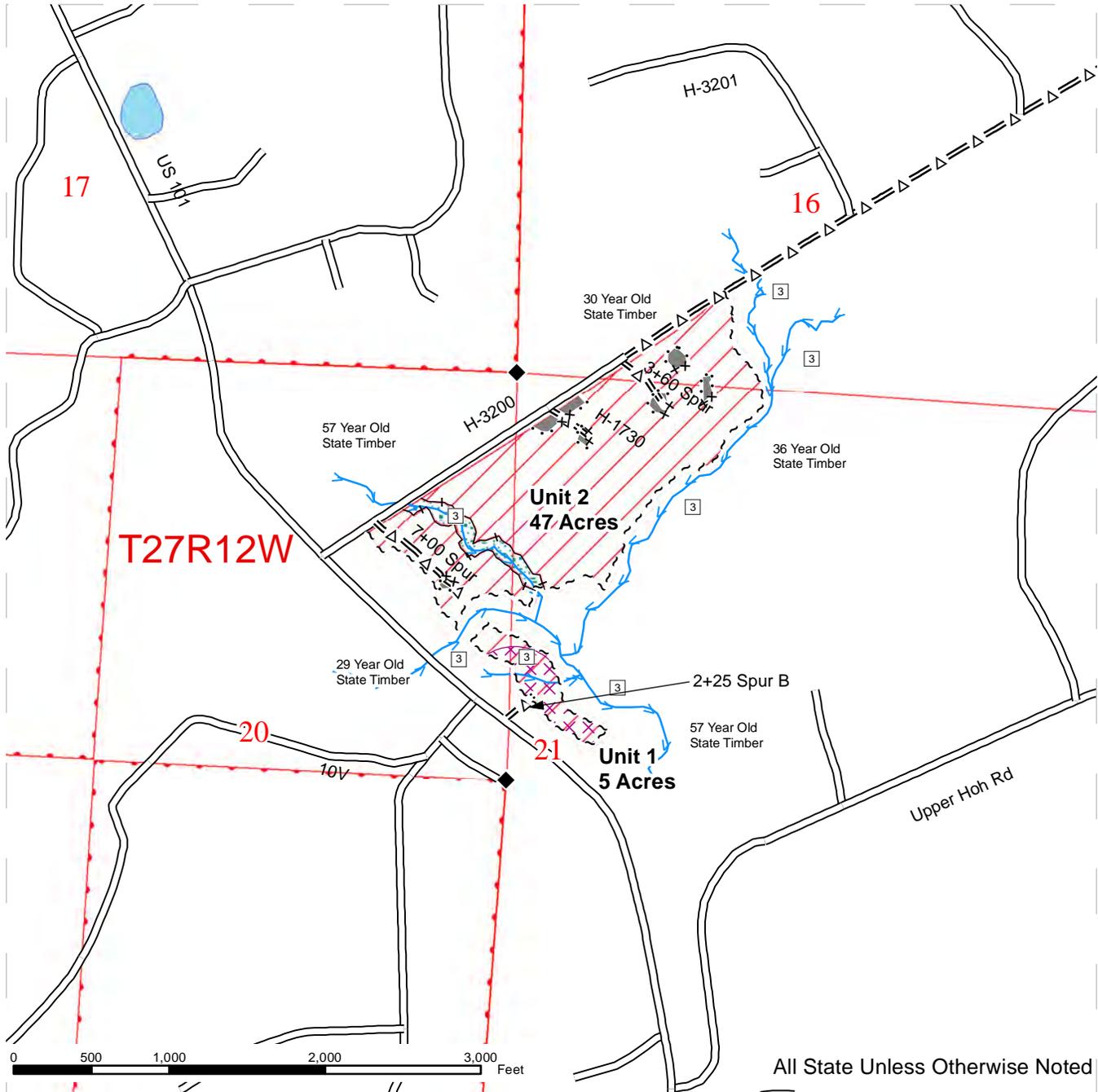
**FEES:** \$60,173.00 is due on day of sale. \$1.04 per ton is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** There are locked gates on North and South Winfield Pits - contact the Olympic Region Dispatch Center at 360-374-2811 to obtain a AA-1 key. Construction of the south end of the H-3102 Tie Road is scheduled to be completed by July 31, 2016 with the Roaring Men Timber Sale. The H-3200 is available for viewing this sale, and in the event the Roaring Men Timber Sale does not sell, upon approval of the Contract Administrator and by following weight restrictions, may also be used for haul.

# TIMBER SALE MAP

**SALE NAME:** Willy Thinner  
**AGREEMENT#:** 30-092822  
**TOWNSHIP(S):** T27R11W, T27R12W  
**TRUST(S):** Common School (03), Capital Grant (07)

**REGION:** Olympic Region  
**COUNTY(S):** Jefferson  
**ELEVATION RGE:** 440'-1480'



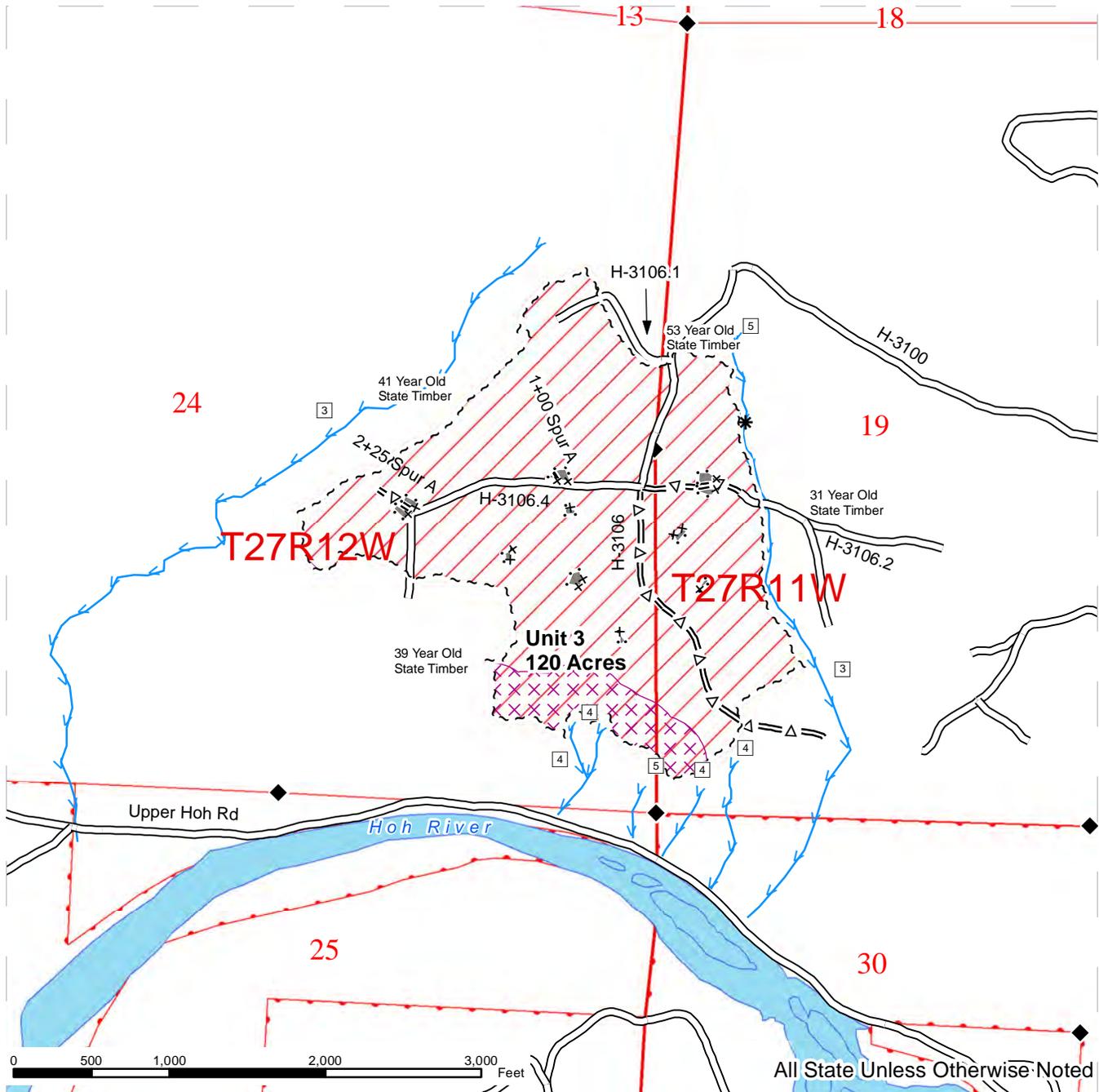
	Existing Rock Pit		Landings		Ground Harvest
	Special Management Tags		Streams		Cable Harvest
	Right Of Way Tag		Existing Roads		Even-Aged Gap
	Double Blue Paint Slash		Optional Reconstruction		Skip/RMZ/Non-Operable
	Timber Sale Boundary Tags		Required Pre Haul Maintenance		Timing Restrictions
	Monumented Corners		Required New Construction		Open Water
	Stream Break		Optional Pre Haul Maintenance		Sections Lines
	Stream Type		Optional New Construction		DNR Managed Lands



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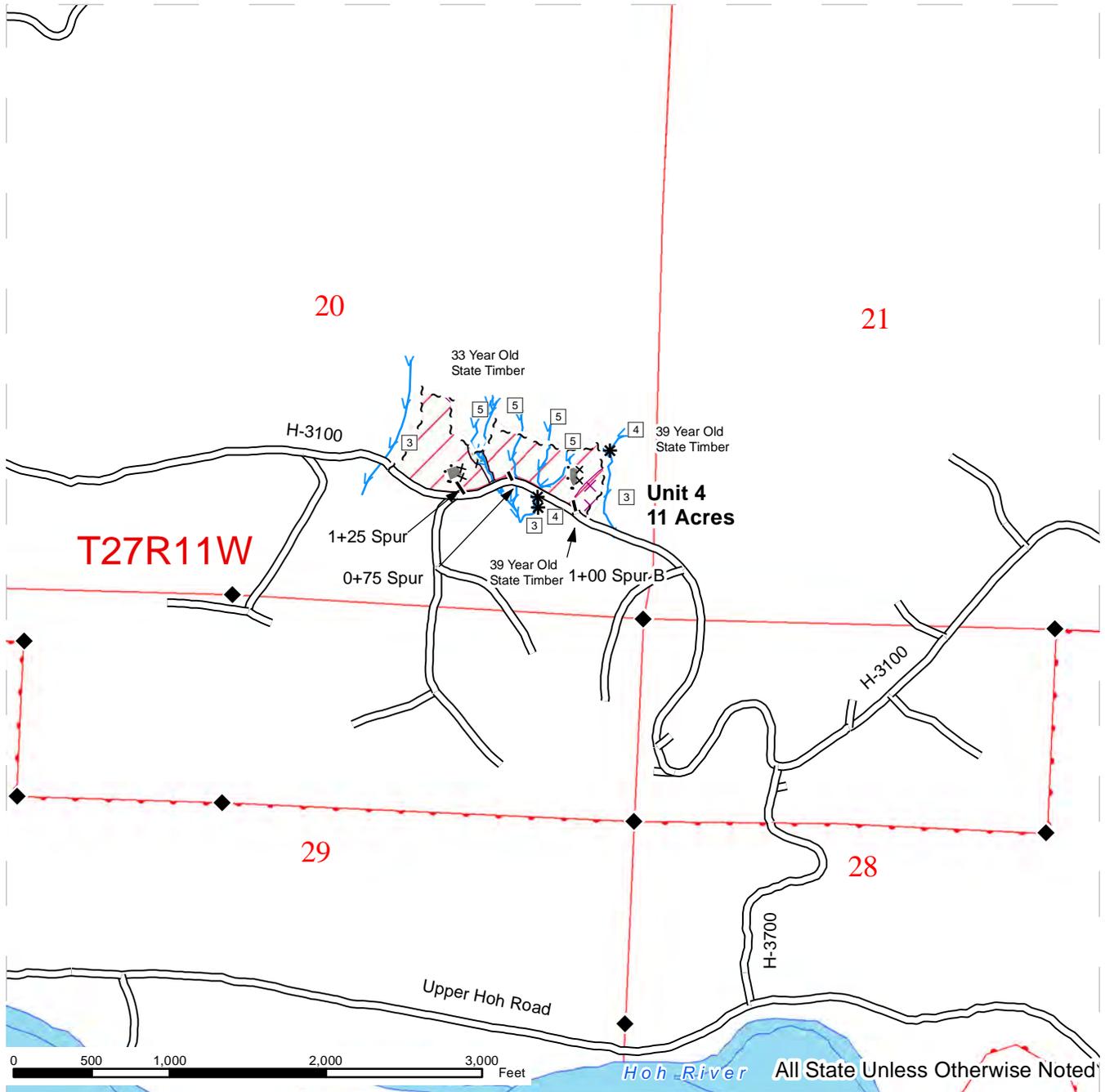
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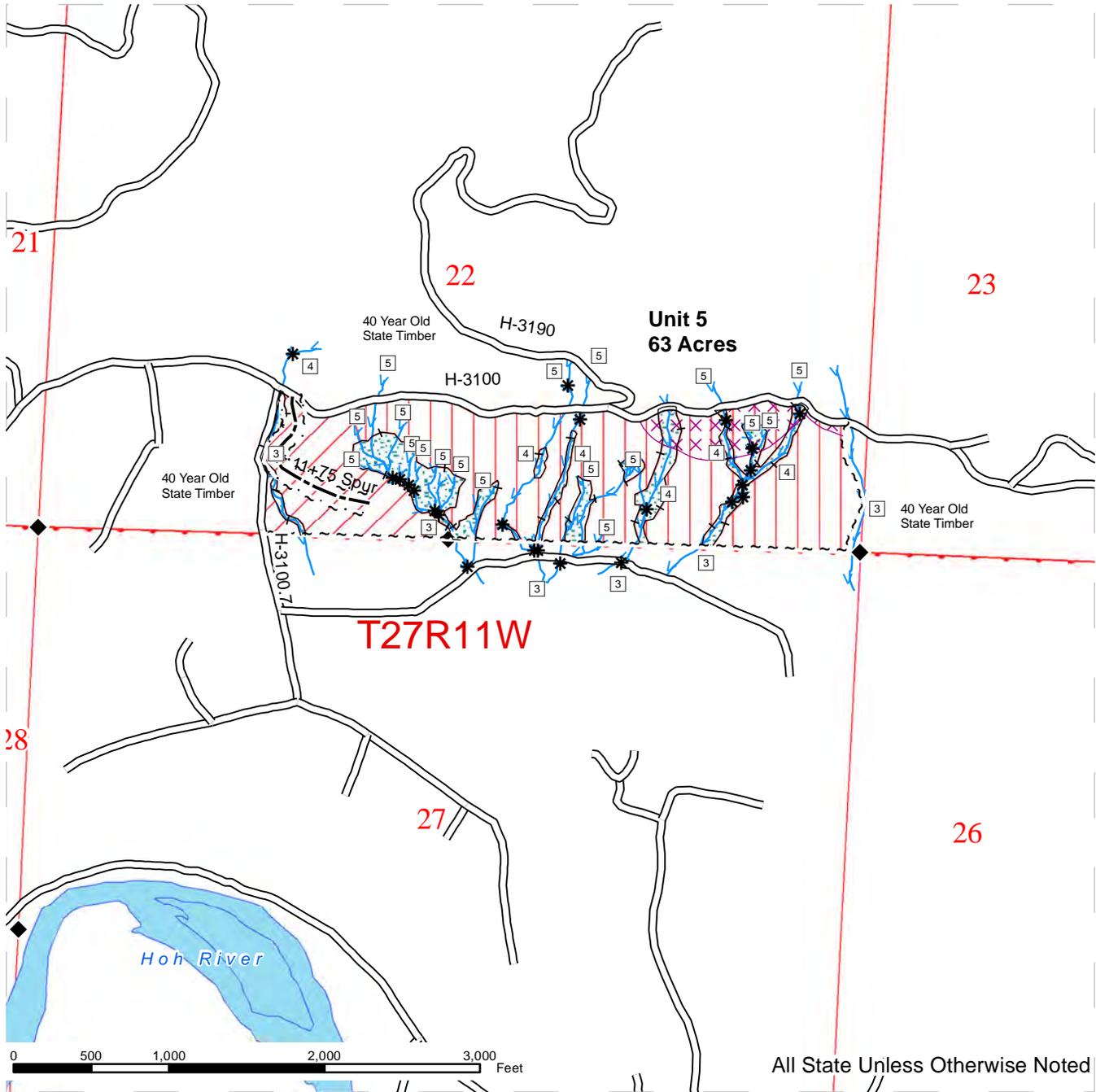


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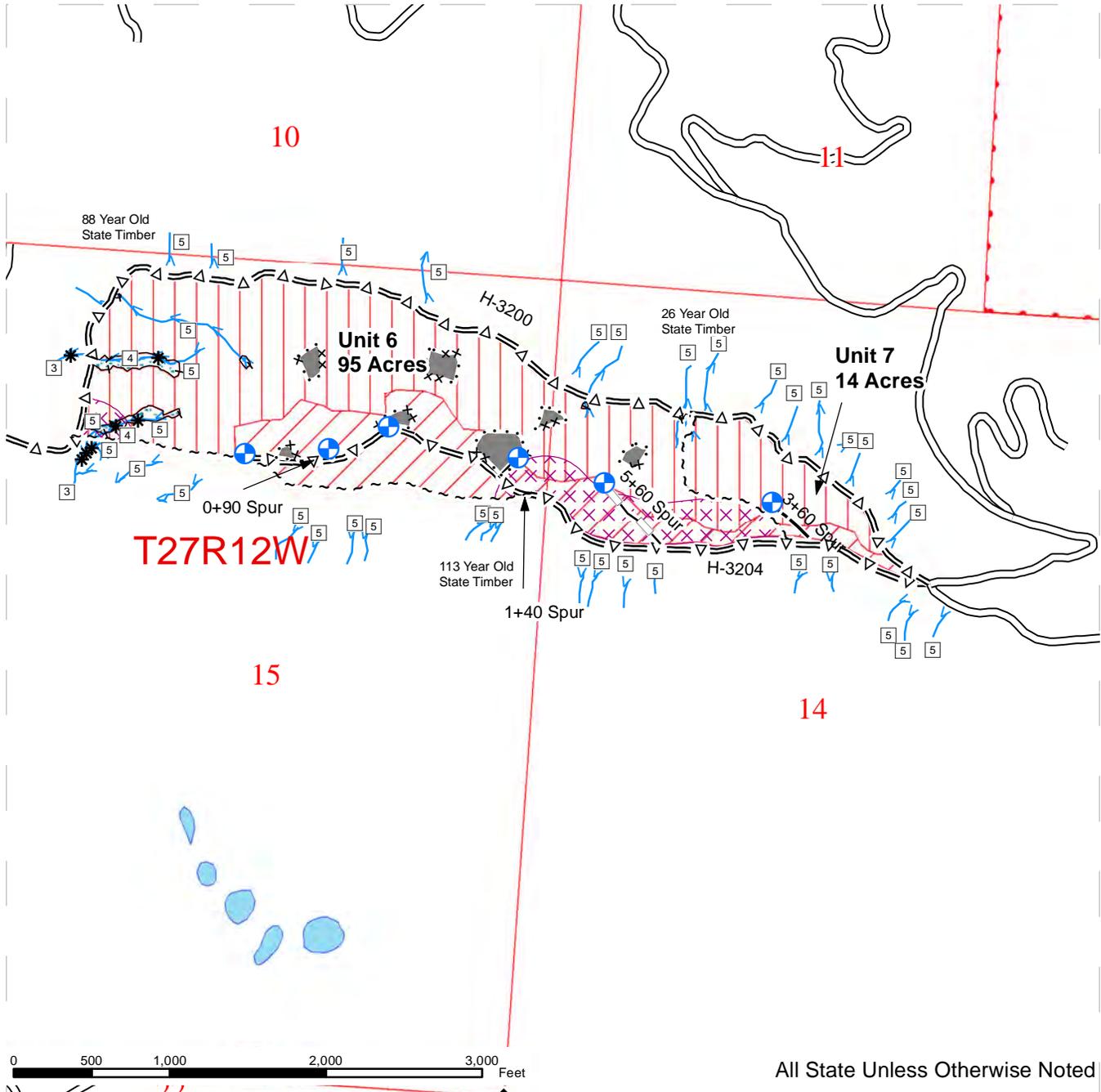
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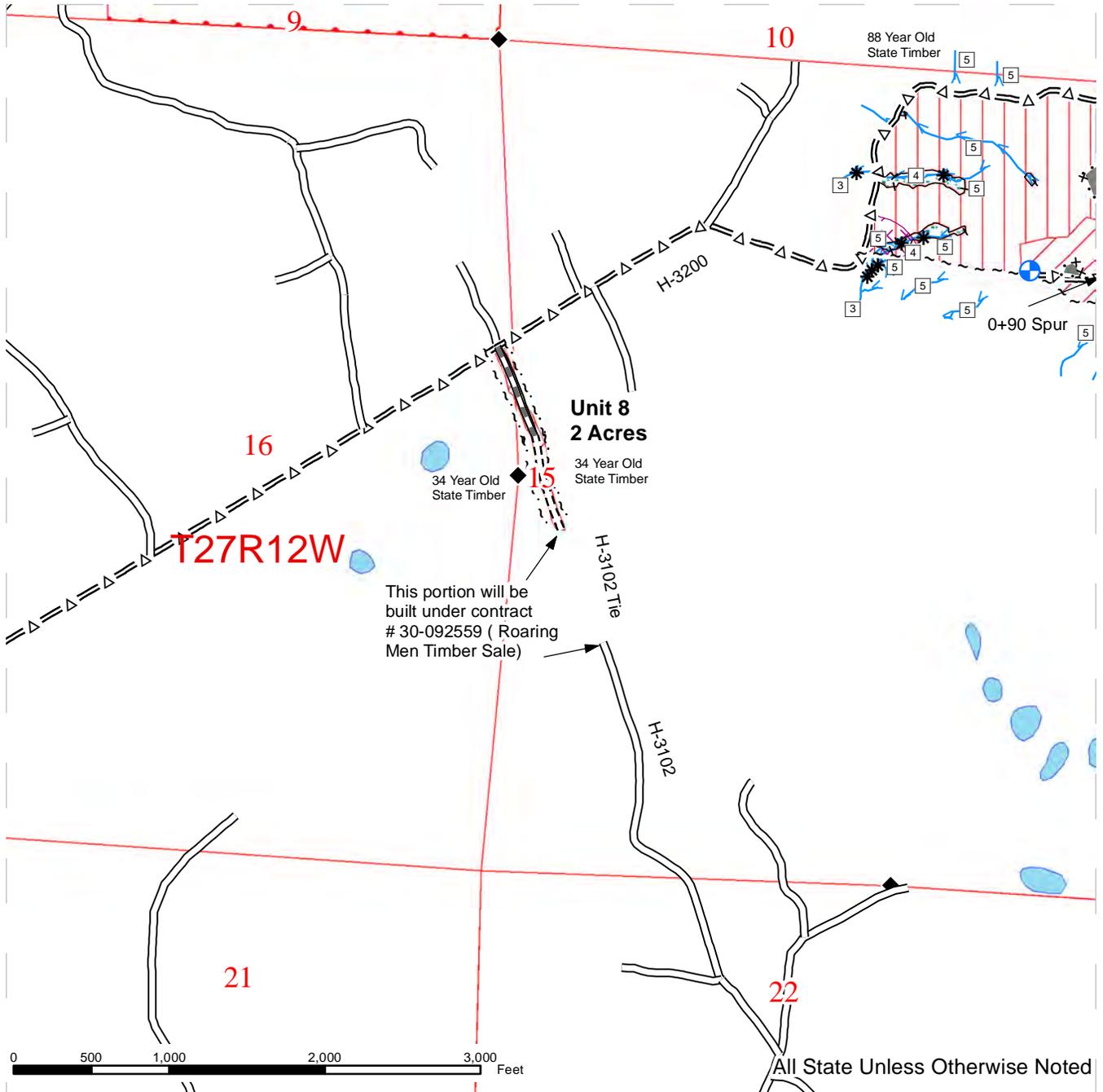
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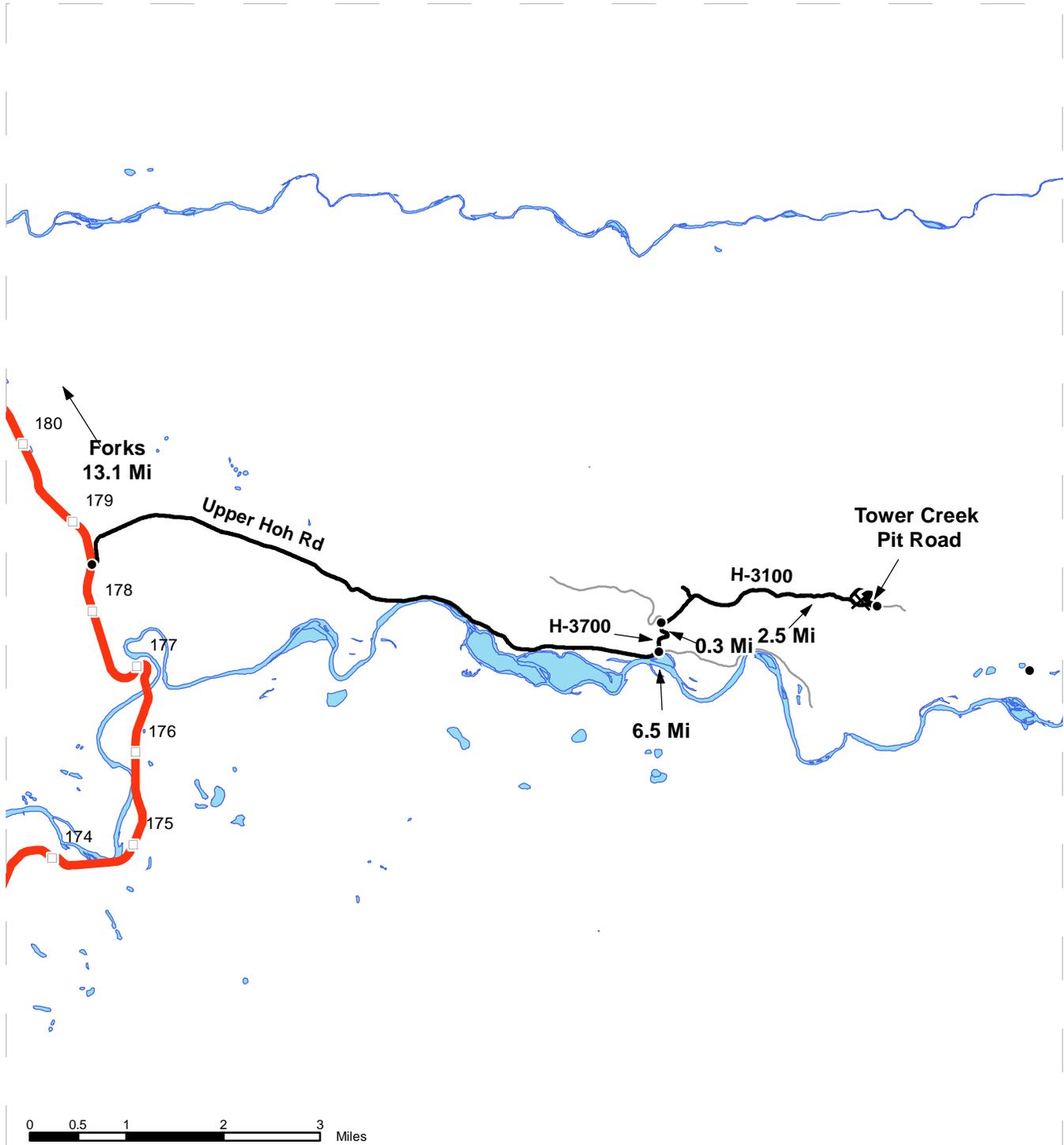
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# TOWER CREEK PIT VICINITY MAP



-  Tower Creek Pit
-  Hwy 101
-  Distance Indicator
-  Milepost Markers
-  Other Route
-  Haul Route
-  Highways

**DRIVING DIRECTIONS:**

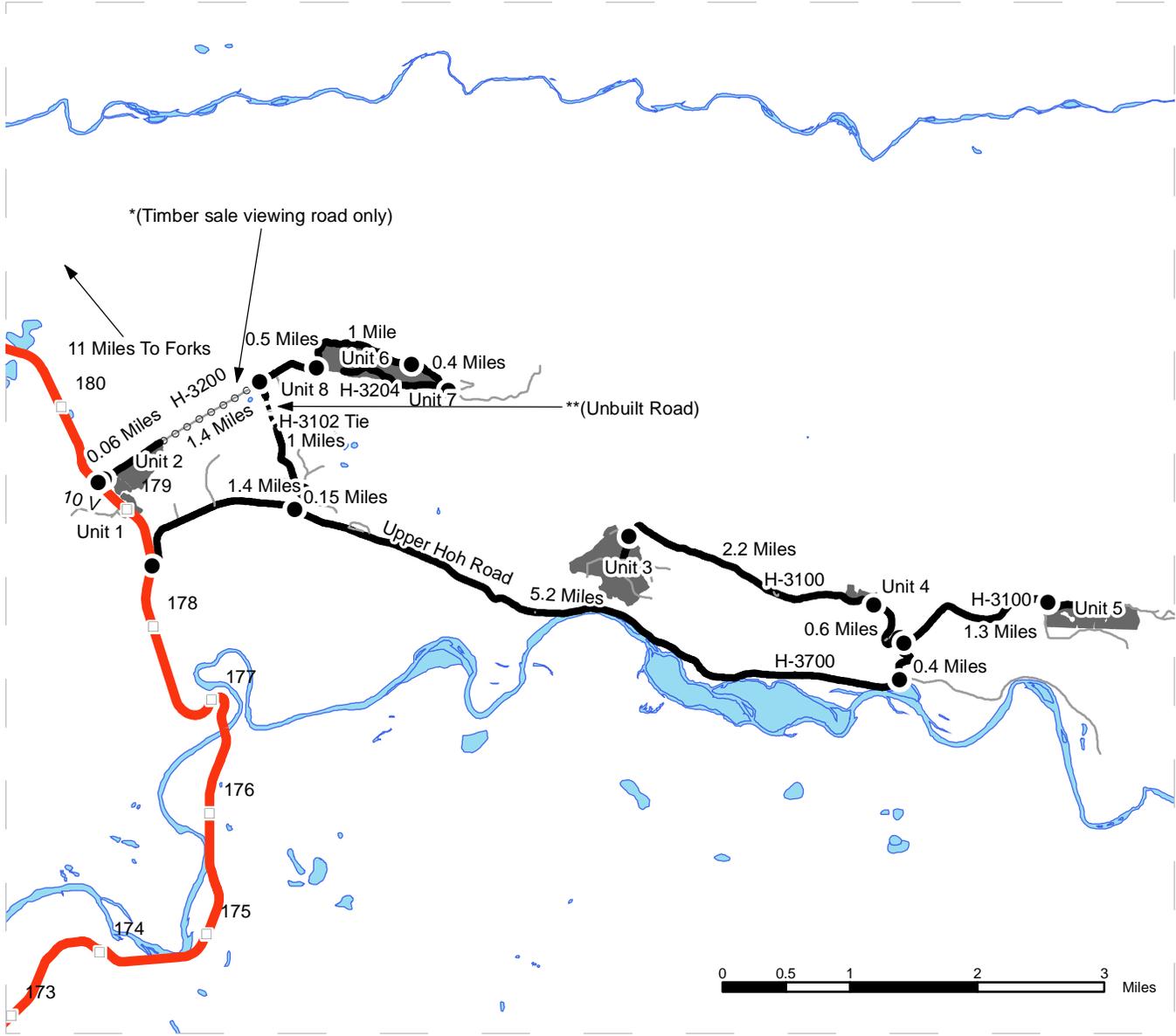
From Forks, WA. Drive 13.1 mi south on Hwy 101 and turn left onto the Upper Hoh Rd. Continue 6.5 mi and turn left onto the H-3700. Continue 0.3 mi to reach the H-3100 junction, turn right and continue on the H-3100 for 2.5 miles and turn left onto Tower Creek Pit Road to enter Tower Creek Pit.



# DRIVING MAP

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- Timber Sale Unit
- Highways
- Other Route
- Haul Route
- Timber Sale Viewing Road Only
- Unbuilt Road
- Milepost Markers
- Distance Indicator

Unit 2: From Forks drive 11 miles South and turn left on the H-3200 and then East for 0.06 miles to the start of Unit 2.  
 Unit 8: From Unit 2 continue East for 1.4 Miles and turn right onto the H-3102 tie.  
 Unit 6: From the junction of H-3200 and H-3102 tie continue East for 0.5 Miles.  
 Unit 7: From Unit 6 continue East for 1 Mile  
 Unit 1: From Hwy 101 and H-3200 go South 0.4 miles to the 2+25 Spur B and turn left to the unit.  
 Unit 4: From Forks drive 12 miles South and turn left on the Upper Hoh Road 6.6 miles to the H-3700 and turn left. Go for 0.4 miles and turn left on the H-3100 and go for 0.6 miles to Unit 4.  
 Unit 3: From Unit 4 continue for 2.2 miles to Unit 3.  
 Unit 5: From the H-3700 and H-3100 go right for 1.3 miles to Unit 5.  
 \*From the beginning of Unit 2, East to the H-3200/H-3102 Tie Junction: This route is for timber sale viewing only. Not a haul route.  
 \*\*The unbuilt portion of road on the H-3102 Tie will be constructed with this timber sale and the Roaring Men Timber Sale (Agreement #: 30-092559).



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Tonnage Scale AGREEMENT NO. 30-092822**

**SALE NAME: WILLY THINNER**

**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 December 16, 2015 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber as described in Schedule C, except trees described in Schedule B, bounded by timber sale boundary tags in Unit 1 and Unit 3; bounded by timber sale boundary tags, double blue painted slashes and the H-3200 Road in Unit 2; bounded by timber sale boundary tags and the H-3100 Road in Unit 4; bounded by timber sale boundary tags, double blue painted slashes and the H-3100 Road in Unit 5; bounded by timber sale boundary tags, double blue painted slashes, the H-3200 Road and the H-3204 Road in Unit 6; all timber bounded by timber sale boundary tags, the H-3200 Road and the H-3204 Road, except trees marked with blue paint in Unit 7; all trees within even-aged gaps as shown on the timber sale maps bounded by special management unit boundary tags; all timber bounded by right of way boundary tags except title to the timber in the right of ways does not pass to the Purchaser unless the road is constructed

In no instance shall downed red cedar be removed. All timber that has been on the ground for five years or more shall be left undisturbed and not yarded (five years is defined by more than 1.5 inches of sap rot)., located on approximately 357 acres on part(s) of Sections 19, 20, and 22 all in Township 27 North, Range 11 West, Sections 14, 15, 16, 20, 21, 22, and 24 all in Township 27 North, Range 12 West W.M. in Jefferson 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	SLASH PILING SPECS
B	LEAVE TREE SELECTION CRITERIA
C	CUT TREE SELECTION CRITERIA
D	UNIT TARGET TABLE
E	GREEN TREE RETENTION PLAN

G-030 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-050 Contract Term Extension - Payment

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

- a. A written request for extension of the contract term must be received prior to the expiration date of the contract.
- b. Completion of all required roads and compliance with all contract and regulatory requirements.
- c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the contract value based on the contract payment rate and advertised volume.

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

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

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

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

- e. Payment of \$3.00 per acre per annum for the acres on which an operating release has not been issued.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

#### G-053 Surveys - Sensitive, Threatened, Endangered Species

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

#### G-060 Exclusion of Warranties

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

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

G-062 Habitat Conservation Plan

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

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

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

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

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP

and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

The State shall adjust the total contract price by subtracting from the total contract price an amount determined in the following manner: The State shall cause the timber sale area subject to governmental regulation or order to be measured. The State shall calculate the percentage of the total sale area subject to the governmental regulation or order. The State shall reduce the total contract price by that calculated percentage. However, variations in species, value, costs, or other items pertaining to the affected sale area will be analyzed and included in the adjustment if deemed appropriate by the State. The State will further reduce the total contract price by the reasonable cost of

unamortized roads Purchaser constructed but was unable to fully use for removing timber. A reduction in total contract price terminates all of the Purchaser's rights to purchase and remove the timber and all other interest in the affected sale area.

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-090 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 Forest Products Not Designated

Any forest products not designated for removal, which must be removed in the course of operations authorized by the State, shall be approved and designated by the Contract Administrator. Added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-105 Adding Naturally Damaged Forest Products

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the Contract Administrator. Additions must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. Added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-110 Title and Risk of Loss

Title to the forest products conveyed passes at confirmation of the sale. Purchaser bears the risk of loss of or damage to and has an insurable interest in the forest products

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

The repair work identified by the State shall be promptly completed by Purchaser at an agreed price. The State may elect to accomplish repairs by means of State-provided

resources. The State will bear the cost to repair damages caused by a third party. In all other cases, the Purchaser shall bear responsibility for the costs as described below.

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

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

#### G-140 Indemnity

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

#### G-150 Insurance

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

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

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

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

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

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

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

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

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

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

Commercial General Liability (CGL) Insurance. Purchaser shall maintain general liability (CGL) insurance, and, if necessary, commercial umbrella insurance with a limit of not less than \$1,000,000.00 per each occurrence. If such CGL insurance

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

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

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

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

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

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

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Forks, 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; Upper Hoh, H-3100, H-3200, H-3102, H-3700, Hoh Mainline and all other roads designated in the road plan. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

**G-330 Pre-work Conference**

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

**G-340 Preservation of Markers**

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

**G-360 Road Use Reservation**

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

**G-370 Blocking Roads**

Purchaser shall not block the H-3100, 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 #55-001460 with the US Forest Service, dated October 14, 1976.

G-390 Road Approach Permit Requirements

Purchaser agrees to comply with the attached terms and conditions of the road approach permit entered into between the State and Washington State Dept of Transportation dated 08/14/2015.

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.

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 \$60,173.00 on day of sale and \$1.04 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 \$1.00 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 Olympic 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 Olympic 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 \$24,200.00. 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 24 hours 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-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 20 square inches.
- b. A leave tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a leave tree has been cut or damaged, the Purchaser may be required to pay liquidated damages for Excessive Leave Tree Damage as detailed in clause D-040.

##### H-013 Reserve Tree Damage Definition

Reserve trees are trees required and designated for retention within the sale boundary. Purchaser shall protect reserve trees from being cut, damaged, or removed during operations.

Reserve tree damage exists when one or more of the following criteria occur as a result of Purchaser's operation, as determined by the Contract Administrator:

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 100 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale area, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

#### H-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 12 feet in width, including rub trees.
- b. Skid trails shall not cover more than 15 percent of the total acreage on one unit.
- c. 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 12 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-018 Temporary Stream Crossings

A temporary stream crossing is required to access portions of Unit 1.

Purchaser shall comply with the following during the yarding operation:

- a. Adhere to the approved Hydraulic Permit Application (HPA) or Forest Practice Application (FPA) with approved hydraulic project work, if required, amend a current FPA or obtain a new FPA prior to commencing any new stream crossing construction.
- b. Location of the temporary stream crossing must be approved by the Contract Administrator.
- c. A temporary stream crossing shall not exceed 12 feet in width, including rub trees.
- d. Purchaser shall suspend operations during periods of wet weather when a high potential for sediment delivery into typed waters may occur.
- e. Temporary stream crossings shall be removed at the time of completion of yarding as 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-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-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-060 Skid Trail Locations

Locations of skid trails must be marked by Purchaser and approved by the Contract Administrator prior to the felling of timber.

## 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 harvested by ground and cable methods unless authority to use other equipment is granted in writing by the State.

## H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. Purchaser must have utility lines located before beginning harvest operations, constructing or reconstructing roads, or digging next to US Highway 101.
2. Purchaser shall immediately repair all gate damage resulting from operations to an equal or better condition than existed at the time of the sale.
3. While felling timber, 2 warning signs must be posted on US Highway 101.
4. Purchaser shall fully suspend logs over streams during logging operations.
5. The Purchaser shall notify all employees and contractors working on this sale that any danger tree, marked or unmarked, may be felled. Any felled marked danger tree shall be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

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

## H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

As indicated on the timber sale maps for Units 1, 3, 4, 5, 6, and 7, there will be no operations (other than haul), from one hour before to two hours after official sunrise and one hour before to one hour after official sunset from April 1 t through September 23 for marbled murrelet restrictions.

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

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

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-151 Required Harvesting Area

Unless otherwise authorized by the State, Purchaser is required to fall, yard and remove all forest products and other valuable materials conveyed and required to be removed under this contract within the percent slope and yarding distances listed below. The yarding distances are measured from all existing roads and those required roads constructed under this contract. Purchaser may yard beyond the required removal distances up to the designated sale boundaries. If Purchaser decides to yard beyond the required yarding distance, Purchaser must follow all requirements specified in this contract.

Yarding Method	Max Slope % Downhill	Slope Dist Downhill	Max Slope % Uphill	Slope Dist Uphill
Ground	40	1000	40	1000
Cable	90	1000	100	1000

Cable or aerial/helicopter equipment is permitted on all slopes. Cable or aerial/helicopter equipment may be used on any required harvest area of this sale where ground based equipment is not permitted or on designated ground based harvest areas where Purchaser does not choose to use ground based equipment.

**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 Mismatch**

Mismatch 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 mismatch 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 7/15/2015 are hereby made a part of this contract.

**C-050 Purchaser Road Maintenance and Repair**

Purchaser shall perform work at their own expense on all roads not designated in clause C-060. All work shall be completed to the specifications detailed in the Road Plan.

**C-060 Designated Road Maintainer**

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the H-3100, H-3700, H-3102, H-3102 Tie, H-3106, H-3106.4 and all roads accessing DNR rock pits. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

**C-080 Landing Locations Approved Prior to Construction**

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

**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-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

Slash or debris which enters any typed water 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 equipment may operate within the 30' of any typed waters unless authority is granted in writing by the Contract Administrator.

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 1-6.

D-041 Reserve Tree Excessive Damage

When Purchaser’s operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay the State as liquidated damages at the rate of \$500.00 per tree for all damaged reserve trees that are not replaced in in Unit 7.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Susan K. Trettevik  
Olympic 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**  
**SLASH PILING SPECS**

Specifications for Slash Piling

The area shall be piled by creating circular piles of slash and brush conforming to the following specifications:

1. Piles shall be a minimum of 12 feet tall by 8 feet wide to a maximum of 30 feet tall and 16 feet wide. Piles shall be cone shaped and stable.
2. Piles shall be free of topsoil, large rotten logs and large stumps. No material larger than 8 inches in diameter shall be piled. Any burnable material shall be well scattered.
3. Piles shall not be placed on large stumps or logs.
4. Piles shall be stacked a minimum of 50 feet from all unit boundaries, Riparian Management Zones, leave tree areas and any standing timber; a minimum of 100 feet from any public roads and highways; and a minimum of 200 feet from any structures.
5. Piling shall be completed using an approved hydraulic shovel and grapples.
6. Slash and displaced soil shall be removed from swales and natural drainage channels concurrent with yarding.

**Schedule B**  
**LEAVE TREE SELECTION CRITERIA**

1. Leave trees are defined as follows:
  - a. All trees greater than or equal to 24 inches in diameter at a 12 inch stump height.
  - b. Trees greater than or equal to 16 inches in diameter at a 12 inch stump height, with good form, shall only be felled if leaving them results in a residual stand of higher relative density than shown in the Unit Target Table (Schedule D).
  - c. All trees less than 16 inches in diameter at a 12 inch stump height needed to achieve relative densities as shown in the Unit Target Table (Schedule D).
  - d. All trees within the non-operational areas, i.e., wetland and skip areas as shown on the timber sale map.
  
2. Leave trees shall be well distributed at the relative density and spacing shown in the Unit Target Table (Schedule D), and will consist of the largest diameter and best formed trees available.

Best form is defined as follows:

- a. Tallest Trees
  - b. Full Crowns
  - c. Straightest Boles
  - d. Smaller Diameter Limbs
- 
3. Leave trees will be identified by comparing their characteristics with other trees in the stand. Spacing will be varied to ensure the best trees available are left as leave trees. Felling of trees shall not result in creating an opening in the stand greater than 36 feet in diameter. If openings in the stand approach this diameter, then sufficient trees shall be left on the perimeter of the opening to maintain the target density or spacing (Unit Target Table - Schedule D).

**Schedule C**  
**CUT TREE SELECTION CRITERIA**

1. Cut trees are defined as all trees in the sale area, as shown on the timber sale maps that meet the following criteria:
  - a. All trees less than 16 inches in diameter at a 12 inch stump height provided that enough evenly distributed trees per acre remain to achieve the relative densities shown in the Unit Target Table (Schedule D).
  - b. All trees which are severely deformed, as defined below in part 2, provided that the remaining stand is not reduced below the relative densities shown in the Unit Target Table (Schedule D); or unless designated by the Contract Administrator for snag recruitment.
  - c. Those trees which are not defined as leave trees.
2. Severely deformed trees are defined as trees with one or more of the following characteristics:
  - a. Trees with three (3) or more tops.
  - b. Trees with a broken top.
  - c. Trees with two (2) tops if they twist around each other or are otherwise badly deformed.
  - d. Trees with basal scars or scars on the lower stem if visible soft decay is evident. Trees with scars that have healed over are not to be considered severely deformed.

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**Schedule D**  
**UNIT TARGET TABLE**

Unit	Acres	Approximate Stems/acre	Approximate Spacing	Basal Area	RD
1	5	150	17 x 17'	200	50
2	45	110	19 x 19'	170	40
3	118	150	17 x 17'	190	50
4	10	120	19 x 19'	170	45
5	61	140	17 x 17'	200	50
6	91	130	19 x 19'	190	45

**Schedule E**  
**GREEN TREE RETENTION PLAN**

Leave the following as directed by the Contract Administrator:

1. All trees marked with a blue band of paint at breast height and butt marks.

Unit #	# of Individually Marked Trees	# of Clumps	# of Trees Clumped	Total # of Leave Trees
7	112	0	0	112



## 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)

## Cruise Narrative

Sale Name: Willy Thinner	Region: Olympic
Agree. #:	District: Coast
Lead cruiser: Jason Michaud	Completion date: 7/7/2015
Other cruisers on sale:	

### Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	5	Y	
2	45	Y	
2 gap	2	Y	
3	118	Y	
3 gap	2	Y	
4	10	Y	
4 gap	.5	Y	
5	61	Y	
5 ROW	2	Y	
6	91	Y	
6 gap	4	Y	
7	14	Y	
8 ROW	2	Y	
Total	356.5	Y	

### Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/ half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (Cru./Tally)	Total number of plots
1	VP	100%	4.5 ft.	325x325	All Cruise	6
2	VP	100%	4.5 ft.	250x250	All Cruise	32
2 gap	VP	100%	4.5 ft.	N/A	N/A	N/A
3	VP	100%	4.5 ft.	250x250	All Cruise	48
3 gap	VP	100%	4.5 ft.	N/A	N/A	N/A

4	VP	100%	4.5 ft.	250x250	All Cruise	8
4 gap	VP	100%	4.5 ft.	N/A	N/A	N/A
5	VP	100%	4.5 ft.	325X325	All Cruise	21
5 ROW	VP	100%	4.5 ft.	N/A	N/A	N/A
6	VP	100%	4.5 ft.	325x325	All Cruise	32
6 gap	VP	100%	4.5 ft.	N/A	N/A	N/A
7	VP	100%	4.5 ft.	250x250	1:1	14
8 ROW	VP	100%	4.5 ft.	175x175	1:1	3

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	Cruised on appropriate plots.					
<b>Minimum cruise spec:</b>	40% Of Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.					
<b>Avg. ring count by sp:</b>	<b>DF =</b>	5	<b>WH =</b>	5	<b>SS =</b>	4
<b>Leave/take tree description:</b>	Skip areas are marked with double blue shash. Timber sale boundary tags are white and marked with red flashers, ble paint and pint ribbon.					

Sort Description:

**HA**– Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½” in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½” in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (min dia 8”.)

**HB** – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½” in diameter. May include logs with not more than two larger knots up to 2 ½” in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (min dia 8”.)

**R** – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.

Field observations:

The Willy Thinner timber sale is located on the H-3100 and H-3200 road system. The units consist mostly of Western Hemlock and Douglas- fir. Minor species of red alder Sitka spruce and red cedar are also present. The average bole height for the Hemlock is 58-66 feet with the average for the Douglas-fir 59-67 feet. The main defect in the fir consist of forked tops, spike knots and bear damage. The topography is mostly flat under 35% grade except in uint 6 and 7 which are cable units. The main defect in the hemlock consists of forked tops and spike knots as well as some minor bear damage. Unit 8 is a ROW unit for a road re-alignment. The timber is smaller and inconsistent with the other units. The major species is hemlock with boles from 45-50 feet. The total take volume for the sale is 3,390mbf for all thinning and gaps.

Grants: 01,      Prepared by: J. Michaud Title:      Forester/Timber Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
<div style="border: 1px solid black; padding: 5px;">           T027 R011 S19 Ty3100            THRU            T027 R012 S20 TyU2G         </div>				Project: <b>WILLY</b>										Page <b>1</b>							
				Acres <b>356.50</b>										Date <b>7/7/2015</b>			Time <b>8:46:59AM</b>				
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH	D	2S		14	16.3	1,706	1,428	509		9	84	7				100	40	13	200	1.70	7.1
WH	D	3S		67	7.5	7,276	6,733	2,400		97	3				100	40	9	105	0.83	64.4	
WH	D	4S		19	6.6	1,961	1,832	653	75	25			25	40	12	23	24	5	25	0.34	73.2
<b>WH Totals</b>				<b>38</b>	<b>8.7</b>	<b>10,943</b>	<b>9,993</b>	<b>3,563</b>	<b>14</b>	<b>71</b>	<b>14</b>	<b>1</b>	<b>5</b>	<b>7</b>	<b>2</b>	<b>86</b>	<b>32</b>	<b>7</b>	<b>69</b>	<b>0.70</b>	<b>144.8</b>
WH	T	D	2S	2	17.8	203	167	59		1	98	1			100	40	13	201	1.67	.8	
WH	T	D	3S	44	7.3	3,073	2,847	1,015		100	0			2	98	40	8	79	0.64	36.1	
WH	T	D	4S	53	3.6	3,544	3,415	1,217	65	35			11	18	9	62	30	5	35	0.31	98.2
WH	T	D	UT	1		15	15	5	100				100			18	5	20	0.20	.8	
<b>WH Totals</b>				<b>25</b>	<b>5.7</b>	<b>6,835</b>	<b>6,444</b>	<b>2,297</b>	<b>35</b>	<b>63</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>11</b>	<b>5</b>	<b>79</b>	<b>33</b>	<b>6</b>	<b>47</b>	<b>0.42</b>	<b>135.9</b>
RA	T	D	3S	1	15.9	2	1	0		58	42		42	58		26	12	106	1.14	.0	
RA	T	D	4S	99	8.4	118	108	39	84	16				37	27	36	33	5	34	0.41	3.2
<b>RA Totals</b>				<b>0</b>	<b>8.5</b>	<b>120</b>	<b>109</b>	<b>39</b>	<b>83</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>27</b>	<b>35</b>	<b>32</b>	<b>5</b>	<b>34</b>	<b>0.41</b>	<b>3.2</b>	
RA		D	3S	73	15.9	25	21	8		58	42		42	58		26	12	106	1.14	.2	
RA		D	4S	27	10.2	9	8	3	43	57				43	57	33	5	39	0.48	.2	
<b>RA Totals</b>				<b>0</b>	<b>14.5</b>	<b>34</b>	<b>29</b>	<b>10</b>	<b>12</b>	<b>58</b>	<b>31</b>	<b>31</b>	<b>54</b>	<b>15</b>	<b>29</b>	<b>9</b>	<b>72</b>	<b>0.77</b>	<b>.4</b>		
SS		D	2S	23	17.0	365	303	108			100				100	40	13	186	1.76	1.6	
SS		D	3S	50	12.7	757	661	236		81	19				100	40	9	108	1.08	6.1	
SS		D	4S	23	5.2	311	295	105	34	66			42	26	26	6	24	6	29	0.47	10.1
SS		D	UT	4		47	47	17	100				100			24	5	30	0.24	1.6	
<b>SS Totals</b>				<b>5</b>	<b>11.8</b>	<b>1,480</b>	<b>1,306</b>	<b>465</b>	<b>11</b>	<b>56</b>	<b>33</b>	<b>9</b>	<b>9</b>	<b>6</b>	<b>75</b>	<b>30</b>	<b>7</b>	<b>67</b>	<b>0.85</b>	<b>19.4</b>	
SS	T	D	2S	3	17.0	17	14	5			100				100	40	13	186	1.76	.1	
SS	T	D	3S	54	8.8	241	220	78		97	3			80	20	29	9	66	0.91	3.3	
SS	T	D	4S	32	11.5	146	129	46	30	70			68	29	3	0	23	6	26	0.41	4.9
SS	T	D	UT	11		43	43	15	100				100			25	5	30	0.28	1.4	
<b>SS Totals</b>				<b>2</b>	<b>9.2</b>	<b>447</b>	<b>406</b>	<b>145</b>	<b>20</b>	<b>75</b>	<b>5</b>	<b>22</b>	<b>63</b>	<b>1</b>	<b>14</b>	<b>26</b>	<b>7</b>	<b>42</b>	<b>0.60</b>	<b>9.7</b>	
DF		D	2S	16	10.3	942	846	302			100				100	40	13	208	1.79	4.1	
DF		D	3S	64	10.2	3,754	3,371	1,202		99	1			1	99	40	9	107	0.96	31.6	
DF		D	4S	19	10.6	1,118	999	356	74	26			10	48	26	16	28	5	29	0.36	34.7
DF		D	UT	1	11.4	20	18	6	100				13	87		20	5	18	0.24	1.0	
<b>DF Totals</b>				<b>20</b>	<b>10.3</b>	<b>5,834</b>	<b>5,233</b>	<b>1,866</b>	<b>14</b>	<b>69</b>	<b>17</b>	<b>2</b>	<b>10</b>	<b>5</b>	<b>83</b>	<b>34</b>	<b>7</b>	<b>73</b>	<b>0.77</b>	<b>71.4</b>	
DF	T	D	2S	3	9.6	103	94	33			100				100	40	13	202	1.72	.5	
DF	T	D	3S	52	7.1	1,371	1,273	454		100	0			0	100	40	7	73	0.65	17.4	
DF	T	D	4S	41	7.8	1,118	1,031	367	88	12			21	21	9	50	28	5	26	0.30	39.3
DF	T	D	UT	4	.1	86	86	31	100				99	1		15	5	20	0.20	4.3	
<b>DF Totals</b>				<b>9</b>	<b>7.3</b>	<b>2,679</b>	<b>2,483</b>	<b>885</b>	<b>40</b>	<b>56</b>	<b>4</b>	<b>12</b>	<b>9</b>	<b>4</b>	<b>76</b>	<b>30</b>	<b>6</b>	<b>40</b>	<b>0.44</b>	<b>61.5</b>	
SF		D	1S	30	9.9	32	29	10			100				100	40	24	910	5.11	.0	
SF		D	2S	56	9.8	60	55	19			31	69			100	40	17	429	2.54	.1	
SF		D	3S	14	27.3	17	13	5		100				25	75	36	10	100	1.09	.1	
<b>SF Totals</b>				<b>0</b>	<b>12.6</b>	<b>110</b>	<b>96</b>	<b>34</b>	<b>13</b>	<b>18</b>	<b>69</b>	<b>3</b>	<b>97</b>	<b>38</b>	<b>15</b>	<b>337</b>	<b>2.24</b>	<b>.3</b>			
SF	T	D	1S	5	9.9	1	1	0			100				100	40	24	910	5.11	.0	

T027 R011 S19 Ty3100 THRU T027 R012 S20 TyU2G	<b>Project: WILLY</b>  <b>Acres 356.50</b>	<b>Page 2</b> <b>Date 7/7/2015</b> <b>Time 8:46:59AM</b>
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S Spp	So T	Gr rt	Ad ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre						
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf							
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99											
SF	T	D	2S	7	13.6	2	2	1										100			100	40	18	470	2.90	.0	
SF	T	D	3S	73	17.2	21	17	6											100			1		148	1.23	.1	
SF	T	D	4S	15		3	3	1											100				30	5	30	0.40	.1
<b>SF Totals</b>				0	14.4	28	24	8	14	73		12		15	85							35	8	101	0.94	.2	
RC	T	D	4S	100	11.6	51	45	16														35	64	1		2.1	
<b>RC Totals</b>				0	11.6	51	45	16	100					35	64	1						23	5	22	0.37	2.1	
RC		D	3S	40	10.0	8	7	2															28	10	90	1.84	.1
RC		D	4S	60		10	10	4															15		85	0.63	.4
<b>RC Totals</b>				0	4.3	18	17	6	59	41				9	41	50						29	6	39	0.84	.4	
<b>Totals</b>					8.4	28,578	26,186	9,335	22	66	12	1		6	10	4	80					32	7	58	0.59	449.2	

Take Volumes  
 WH- 2,297mbf  
 RA- 39mbf  
 SS-145mbf  
 DF-885mbf  
 SF-8mbf  
 RC-16mbf

Total Take Volume-3,390mbf

TC PSTATS											<b>PROJECT STATISTICS</b>					PAGE	1
											<b>PROJECT</b>		<b>WILLY</b>			DATE	7/7/2015
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt						
027	011	19	WILLY	3100	THR	356.50		302	1,580	S	W						
027	012	20	WILLY	U2G													
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES										
TOTAL			302	1580	5.2												
CRUISE			163	800	4.9	99,945		.8									
DBH COUNT REFOREST COUNT			139	772	5.6												
BLANKS 100 %																	
<b>STAND SUMMARY</b>																	
SAMPLE TREES		TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC							
WHEMLOCK	141	74.8	15.6	66	25.1	99.3	10,943	9,993	3,208	3,207							
WHEMLOCK-T	320	102.4	11.2	58	21.0	70.5	6,835	6,444	1,882	1,884							
DOUG FIR	96	37.2	16.9	69	14.1	57.9	5,834	5,233	1,841	1,843							
DOUG FIR-T	169	43.7	11.6	59	9.4	32.1	2,679	2,483	813	817							
S SPRUCE	14	10.1	16.8	63	3.8	15.5	1,480	1,306	500	500							
S SPRUCE-T	21	6.2	13.6	56	1.7	6.3	447	406	151	150							
R ALDER	2	.2	16.9	61	0.1	.3	34	29	9	9							
R ALDER-T	20	3.2	10.7	43	0.6	2.0	120	109	43	43							
WR CEDAR	2	.4	16.0	43	0.1	.5	18	17	11	11							
WR CEDAR-T	9	2.1	10.2	39	0.4	1.2	51	45	17	18							
PS FIR	3	.1	28.3	94	0.1	.6	110	96	24	24							
PS FIR-T	3	.1	18.3	73	0.0	.2	28	24	8	8							
<b>TOTAL</b>	<b>800</b>	<b>280.3</b>	<b>13.7</b>	<b>62</b>	<b>77.4</b>	<b>286.4</b>	<b>28,578</b>	<b>26,186</b>	<b>8,507</b>	<b>8,514</b>							
CONFIDENCE LIMITS OF THE SAMPLE																	
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR																	
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10								
WHEMLOCK	175.2	10.1		67	75	82											
WHEMLOCK-T	163.9	9.4		93	102	112											
DOUG FIR	241.8	13.9		32	37	42											
DOUG FIR-T	302.9	17.4		36	44	51											
S SPRUCE	515.4	29.6		7	10	13											
S SPRUCE-T	584.3	33.6		4	6	8											
R ALDER	1737.8	99.9		0	0	0											
R ALDER-T	985.2	56.6		1	3	5											
WR CEDAR	997.7	57.4		0	0	1											
WR CEDAR-T	643.5	37.0		1	2	3											
PS FIR	1266.3	72.8		0	0	0											
PS FIR-T	1685.9	96.9		0	0	0											
<b>TOTAL</b>	<b>114.9</b>	<b>6.6</b>		<b>262</b>	<b>280</b>	<b>299</b>	<b>528</b>	<b>269</b>	<b>132</b>								
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10								
WHEMLOCK	177.7	10.2		89	99	109											
WHEMLOCK-T	154.0	8.9		64	70	77											
DOUG FIR	232.1	13.3		50	58	66											
DOUG FIR-T	254.7	14.6		27	32	37											
S SPRUCE	535.5	30.8		11	16	20											
S SPRUCE-T	505.0	29.0		4	6	8											
R ALDER	1737.8	99.9		0	0	1											
R ALDER-T	836.3	48.1		1	2	3											
WR CEDAR	892.8	51.3		0	1	1											
WR CEDAR-T	615.2	35.4		1	1	2											
PS FIR	1396.9	80.3		0	1	1											

TC PSTATS		<b>PROJECT STATISTICS</b>							PAGE	<b>2</b>	
		<b>PROJECT WILLY</b>							DATE	7/7/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt
027	011	19	WILLY	3100	THR	356.50		302	1,580	S	W
027	012	20	WILLY	U2G							
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10		
PS FIR-T		1589.5	91.4	0	0	0					
<b>TOTAL</b>		<b>107.9</b>	<b>6.2</b>	<b>269</b>	<b>286</b>	<b>304</b>	<b>465</b>	<b>237</b>	<b>116</b>		
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		181.3	10.4	8,952	9,993	11,035					
WHEMLOCK-T		155.8	9.0	5,867	6,444	7,021					
DOUG FIR		235.7	13.5	4,524	5,233	5,942					
DOUG FIR-T		257.6	14.8	2,115	2,483	2,851					
S SPRUCE		559.7	32.2	886	1,306	1,726					
S SPRUCE-T		471.0	27.1	296	406	516					
R ALDER		1737.8	99.9	0	29	58					
R ALDER-T		933.5	53.7	51	109	168					
WR CEDAR		864.6	49.7	9	17	25					
WR CEDAR-T		634.5	36.5	28	45	61					
PS FIR		1394.1	80.2	19	96	174					
PS FIR-T		1515.6	87.1	3	24	44					
<b>TOTAL</b>		<b>109.8</b>	<b>6.3</b>	<b>24,533</b>	<b>26,186</b>	<b>27,838</b>	<b>481</b>	<b>245</b>	<b>120</b>		
CL	68.1	COEFF		V_BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		106.3	6.1	90	101	111					
WHEMLOCK-T		88.5	5.1	83	91	100					
DOUG FIR		150.3	8.6	78	90	103					
DOUG FIR-T		165.0	9.5	66	77	89					
S SPRUCE		284.2	16.3	57	84	111					
S SPRUCE-T		184.5	10.6	47	64	81					
R ALDER		1737.8	99.9	0	93	185					
R ALDER-T		916.4	52.7	26	56	85					
WR CEDAR		607.2	34.9	17	34	51					
WR CEDAR-T		484.9	27.9	24	38	52					
PS FIR		1394.1	80.2	34	173	312					
PS FIR-T		1515.6	87.1	14	111	208					
<b>TOTAL</b>		<b>109.3</b>	<b>6.3</b>	<b>86</b>	<b>91</b>	<b>97</b>	<b>477</b>	<b>243</b>	<b>119</b>		

T027 R012 S20 T00U1 T027 R012 S20 T00U1  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 027 012 20 WILLY 00U1 5.00 6 35 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH		DM	2S	43	10.9	9,567	8,527	43			84	16				100	40	13	235	1.67	36.3
WH		DM	3S	34	3.7	6,908	6,652	33		100					100	40	8	102	0.74	65.0	
WH		DM	4S	23	13.8	5,112	4,409	22	51	49			8	4	21	66	30	5	33	0.32	131.9
<b>WH</b>	<b>Totals</b>			55	9.3	21,587	19,588	98	11	45	36	7	2	1	5	92	34	7	84	0.70	233.2
WH	T	DM	2S	29	12.3	2,635	2,311	12		100					100	40	13	241	1.81	9.6	
WH	T	DM	3S	38	1.2	3,080	3,044	15		100					100	40	8	92	0.66	33.1	
WH	T	DM	4S	33	5.2	2,754	2,612	13	100				5	84	11		28	5	27	0.23	96.5
<b>WH</b>	<b>T Totals</b>			22	5.9	8,469	7,967	40	33	38	29		2	27	4	67	31	6	57	0.50	139.3
DF		DM	2S	51	9.9	1,781	1,606	8		100					100	40	13	238	1.87	6.7	
DF		DM	3S	34	9.3	1,166	1,057	5		100					100	40	9	98	0.70	10.8	
DF		DM	4S	15	8.3	487	447	2	73	27				27	73	35	5	37	0.35	12.2	
<b>DF</b>	<b>Totals</b>			9	9.4	3,434	3,110	16	10	38	52			4	96	38	8	104	0.85	29.8	
DF	T	DM	3S	32	33.3	703	468	2		100					100	40	8	60	0.70	7.8	
DF	T	DM	4S	68		981	981	5	16	84			16		84	32	6	46	0.34	21.6	
<b>DF</b>	<b>T Totals</b>			4	13.9	1,684	1,450	7	11	89			11		89	34	6	49	0.45	29.4	
RC		DM	3S	81	10.0	549	494	2		100				100		28	10	90	1.84	5.5	
RC		DM	4S	19		110	110	1	100				100			19	5	20	0.34	5.5	
<b>RC</b>	<b>Totals</b>			2	8.3	659	604	3	18	82			18	82		24	8	55	1.24	11.0	
SS	T	DM	3S	89	5.6	924	873	4		100					100	40	11	170	1.21	5.1	
SS	T	DM	4S	11		103	103	1	100					100		23	5	20	0.40	5.1	
<b>SS</b>	<b>T Totals</b>			3	5.0	1,027	976	5	11	89			11		89	32	8	95	0.92	10.3	
SF		DM	2S	76		1,215	1,215	6		100					100	40	15	360	1.93	3.4	
SF		DM	3S	24	8.3	405	371	2		100					100	40	9	110	0.83	3.4	
<b>SF</b>	<b>Totals</b>			4	2.1	1,621	1,587	8		23	77				100	40	12	235	1.38	6.8	
RA	T	DM	4S	100	25.0	370	277	1	100						100	40	5	30	0.45	9.2	
<b>RA</b>	<b>T Totals</b>			1	25.0	370	277	1	100						100	40	5	30	0.45	9.2	
<b>Type Totals</b>					8.5	38,849	35,558	178	16	45	35	4	2	9	3	86	33	7	76	0.66	468.8

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	20	WILLY	00U1	5.00	6	35	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		6	35	5.8						
CRUISE		5	28	5.6	1,489		1.9			
DBH COUNT										
REFOREST										
COUNT		1	6	6.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	13	132.0	14.6	72	40.3	154.3	21,587	19,588	5,597	5,597
WHEMLOCK-T	6	106.1	11.2	62	21.7	72.6	8,469	7,967	2,191	2,190
DOUG FIR	3	14.9	18.3	79	6.4	27.2	3,434	3,110	955	954
DOUG FIR-T	2	21.6	12.4	61	5.1	18.2	1,684	1,450	461	459
WR CEDAR	1	5.5	21.1	49	2.9	13.3	659	604	319	319
S SPRUCE-T	1	5.1	18.0	65	2.1	9.1	1,027	976	296	296
PS FIR	1	3.4	22.2	93	1.9	9.1	1,621	1,587	374	374
R ALDER-T	1	9.2	11.5	53	2.0	6.7	370	277	170	166
<b>TOTAL</b>	<b>28</b>	<b>297.8</b>	<b>13.8</b>	<b>67</b>	<b>83.5</b>	<b>310.4</b>	<b>38,849</b>	<b>35,558</b>	<b>10,363</b>	<b>10,355</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	73.6	32.8		89	132	175				
WHEMLOCK-T	87.4	38.9		65	106	147				
DOUG FIR	131.2	58.4		6	15	24				
DOUG FIR-T	244.9	109.1			22	45				
WR CEDAR	154.9	69.0		2	5	9				
S SPRUCE-T	244.9	109.1			5	11				
PS FIR	244.9	109.1			3	7				
R ALDER-T	244.9	109.1			9	19				
<b>TOTAL</b>	<b>19.3</b>	<b>8.6</b>		<b>272</b>	<b>298</b>	<b>323</b>	<b>18</b>	<b>9</b>	<b>4</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	52.0	23.1		119	154	190				
WHEMLOCK-T	77.5	34.5		48	73	98				
DOUG FIR	109.5	48.8		14	27	41				
DOUG FIR-T	244.9	109.1			18	38				
WR CEDAR	154.9	69.0		4	13	23				
S SPRUCE-T	244.9	109.1			9	19				
PS FIR	244.9	109.1			9	19				
R ALDER-T	244.9	109.1			7	14				
<b>TOTAL</b>				<b>310</b>	<b>310</b>	<b>310</b>				
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	54.5	24.3		14,831	19,588	24,345				
WHEMLOCK-T	81.3	36.2		5,082	7,967	10,852				
DOUG FIR	111.5	49.6		1,566	3,110	4,653				
DOUG FIR-T	244.9	109.1			1,450	3,030				
WR CEDAR	154.9	69.0		187	604	1,021				
S SPRUCE-T	244.9	109.1			976	2,040				
PS FIR	244.9	109.1			1,587	3,317				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
027	012	20	WILLY	00U1	5.00		6	35	S	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER-T		244.9	109.1		277	580				
<b>TOTAL</b>		23.7	10.5	31,810	35,558	39,306	27	14	7	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		22.0	9.8	96	127	158				
WHEMLOCK-T		46.0	20.5	70	110	149				
DOUG FIR		111.5	49.6	58	114	171				
DOUG FIR-T		244.9	109.1		80	167				
WR CEDAR		77.5	34.5	14	45	77				
S SPRUCE-T		244.9	109.1		108	225				
PS FIR		244.9	109.1		175	366				
R ALDER-T		244.9	109.1		42	87				
<b>TOTAL</b>		85.5	38.1	102	115	127	348	177	87	

TC		TSTNDSUM											Stand Table Summary			
Project														WILLY		
T027 R012 S20 T00U1											T027 R012 S20 T00U1					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
027	012	20	WILLY	00U1	5.00	6	35	Date:	7/7/2015							
								Time:	8:49:34AM							
S SpC	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.				Net Bd.Ft.	Tons	Cunits	MBF
WH		8	1	85	60	30.837	11.87	30.84	8.3	30.0	8.14	254	925	41	13	5
WH		11	1	89	84	19.735	11.87	39.47	9.7	35.0	12.30	384	1,381	62	19	7
WH		12	1	86	75	16.452	11.87	32.90	9.6	35.0	10.07	315	1,152	50	16	6
WH		15	2	86	89	19.601	23.73	39.20	21.9	82.5	27.45	858	3,234	137	43	16
WH		16	1	84	98	9.057	11.87	18.11	23.9	90.0	13.83	432	1,630	69	22	8
WH		19	2	84	112	11.867	23.73	23.73	40.5	140.0	30.76	962	3,323	154	48	17
WH		20	3	85	107	16.491	35.60	32.98	42.6	129.5	45.05	1,405	4,273	225	70	21
WH		21	1	85	110	5.078	11.87	10.16	48.9	180.0	15.90	497	1,828	79	25	9
WH		28	1	83	114	2.877	11.87	5.75	85.0	320.0	15.60	489	1,841	78	24	9
WH		Totals	13	86	86	131.994	154.27	233.15	24.0	84.0	179.09	5,597	19,588	895	280	98
WH	T	8	2	83	63	72.965	24.20	72.96	6.5	30.0	15.26	475	2,189	76	24	11
WH	T	13	1	85	76	14.198	12.10	28.40	12.0	40.0	10.94	342	1,136	55	17	6
WH	T	15	1	85	92	9.354	12.10	18.71	23.2	90.0	13.88	434	1,684	69	22	8
WH	T	19	1	84	107	6.018	12.10	12.04	37.3	115.0	14.39	449	1,384	72	22	7
WH	T	25	1	82	105	3.578	12.10	7.16	68.5	220.0	15.64	490	1,574	78	24	8
WH		Totals	6	83	71	106.114	72.60	139.26	15.7	57.2	70.10	2,190	7,967	351	109	40
DF		14	1	90	102	8.137	9.08	16.27	19.0	75.0	8.80	309	1,221	44	15	6
DF		20	1	80	90	4.038	9.08	8.08	37.0	110.0	8.52	299	888	43	15	4
DF		25	1	79	107	2.705	9.08	5.41	64.0	185.0	9.88	346	1,001	49	17	5
DF		Totals	3	85	100	14.880	27.23	29.76	32.1	104.5	27.21	954	3,110	136	48	16
SF		22	1	89	119	3.376	9.08	6.75	55.4	235.0	10.71	374	1,587	54	19	8
SF		Totals	1	89	119	3.376	9.08	6.75	55.4	235.0	10.71	374	1,587	54	19	8
DF	T	11	1	87	73	13.751	9.08	13.75	14.8	60.0	5.81	204	825	29	10	4
DF	T	15	1	83	79	7.806	9.08	15.61	16.3	40.0	7.34	255	624	37	13	3
DF		Totals	2	86	75	21.557	18.15	29.36	15.6	49.4	13.15	459	1,450	66	23	7
SS	T	18	1	83	81	5.135	9.08	10.27	28.8	95.0	7.70	296	976	39	15	5
SS		Totals	1	83	81	5.135	9.08	10.27	28.8	95.0	7.70	296	976	39	15	5
RC		21	1	64	60	5.491	13.33	10.98	29.0	55.0	7.50	319	604	37	16	3
RC		Totals	1	64	60	5.491	13.33	10.98	29.0	55.0	7.50	319	604	37	16	3
RA	T	12	1	80	64	9.242	6.67	9.24	18.0	30.0	4.69	166	277	23	8	1
RA		Totals	1	80	64	9.242	6.67	9.24	18.0	30.0	4.69	166	277	23	8	1
Totals			28	84	80	297.789	310.40	468.78	22.1	75.9	320.15	10355	35,558	1,601	518	178

T027 R012 S20 T00U2 T027 R012 S20 T00U2  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 027 012 20 WILLY 00U2 45.00 32 150 S W

S Sp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
DF		DM 2S	33	6.4	3,129	2,928	132	100				100				40	12	205	1.85	14.3	
DF		DM 3S	52	10.6	5,088	4,548	205	100				100				40	9	110	1.01	41.3	
DF		DM 4S	14	10.5	1,417	1,268	57	62	38			4	39	53	4	29	5	30	0.39	42.0	
DF		DM UT	1	50.0	36	18	1	100				100				15	5	10	0.24	1.8	
<b>DF</b>	<b>Totals</b>		40	9.4	9,670	8,761	394	9	56	35			1	6	8	86	35	8	88	0.92	99.4
DF	T	DM 3S	83	7.3	1,151	1,068	48	100				100				40	7	74	0.64	14.5	
DF	T	DM 4S	17	21.0	258	204	9	100				74	26			16	5	14	0.22	14.5	
<b>DF</b>	<b>T</b>	<b>Totals</b>	6	9.8	1,409	1,271	57	16	84			12	4		84	28	6	44	0.52	29.0	
WH		DM 3S	76	5.1	4,673	4,432	199	100				100				40	9	112	0.90	39.5	
WH		DM 4S	24	5.0	1,413	1,342	60	84	16			17	41	7	35	25	5	27	0.36	49.6	
<b>WH</b>	<b>Totals</b>		27	5.1	6,085	5,775	260	19	81			4	10	2	85	32	7	65	0.66	89.0	
WH	T	DM 3S	44	1.4	1,947	1,920	86	100				100				40	7	77	0.58	25.0	
WH	T	DM 4S	56	2.6	2,498	2,432	109	100				7	48	3	41	29	5	30	0.26	81.5	
<b>WH</b>	<b>T</b>	<b>Totals</b>	20	2.1	4,444	4,351	196	56	44			4	27	2	67	32	5	41	0.35	106.5	
RC	T	DM 4S	100	11.6	382	337	15	100				35	65			23	5	22	0.37	15.5	
<b>RC</b>	<b>T</b>	<b>Totals</b>	2	11.6	382	337	15	100				35	65			23	5	22	0.37	15.5	
RC		DM 4S	100		67	67	3	100				100				32	5	30	0.68	2.2	
<b>RC</b>	<b>Totals</b>		0		67	67	3	100				100				32	5	30	0.68	2.2	
RA		DM 3S	73	15.9	201	169	8	58	42			42	58			26	12	106	1.14	1.6	
RA		DM 4S	27	10.2	69	62	3	43	57				43	57		33	5	39	0.48	1.6	
<b>RA</b>	<b>Totals</b>		1	14.5	271	231	10	12	58	31		31	54	15	29	9	72	0.77	3.2		
RA	T	DM 4S	100	25.0	136	102	5	100				100				35	5	30	0.46	3.4	
<b>RA</b>	<b>T</b>	<b>Totals</b>	0	25.0	136	102	5	100				100				35	5	30	0.46	3.4	
SS		DM 3S	63	8.3	162	149	7	100				100				40	9	110	0.92	1.4	
SS		DM 4S	37	18.7	107	87	4	31	69			69	31			21	7	26	0.48	3.3	
<b>SS</b>	<b>Totals</b>		1	12.4	269	235	11	11	89			25	11	63	27	7	50	0.67	4.7		
SF		DM 1S	39	9.9	256	230	10	100				100				40	24	910	5.11	.3	
SF		DM 2S	50	13.6	344	297	13	100				100				40	18	470	2.90	.6	
SF		DM 3S	11	36.5	93	59	3	100						43	57	33	11	94	1.27	.6	
<b>SF</b>	<b>Totals</b>		3	15.3	693	587	26	10	90			4		96	37	16	387	2.69	1.5		
<b>Type</b>	<b>Totals</b>			7.3	23,426	21,718	977	24	59	15	2	4	12	5	79	32	7	61	0.64	354.5	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	20	WILLY	00U2	45.00	32	150	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		32	150	4.7						
CRUISE		19	85	4.5	10,544		.8			
DBH COUNT										
REFOREST										
COUNT		13	65	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	36	52.6	18.6	70	22.9	98.7	9,670	8,761	3,196	3,198
DOUG FIR-T	7	16.5	13.7	63	4.6	17.0	1,409	1,271	425	426
WHEMLOCK	15	49.6	15.1	62	15.8	61.3	6,085	5,775	1,862	1,862
WHEMLOCK-T	15	88.9	9.9	56	15.1	47.6	4,444	4,351	1,185	1,189
WR CEDAR	1	2.2	14.3	42	0.7	2.5	67	67	49	49
WR CEDAR-T	4	15.5	10.2	39	2.7	8.8	382	337	130	132
R ALDER	2	1.6	16.9	61	0.6	2.5	271	231	72	72
R ALDER-T	1	3.4	11.6	41	0.7	2.5	136	102	55	55
S SPRUCE	2	3.3	13.7	56	0.9	3.4	269	235	84	84
PS FIR	2	.6	31.4	95	0.6	3.4	693	587	152	152
<b>TOTAL</b>	<b>85</b>	<b>234.3</b>	<b>13.9</b>	<b>59</b>	<b>66.4</b>	<b>247.7</b>	<b>23,426</b>	<b>21,718</b>	<b>7,210</b>	<b>7,218</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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	65.8	11.6		46	53	59				
DOUG FIR-T	177.6	31.4		11	17	22				
WHEMLOCK	113.9	20.1		40	50	60				
WHEMLOCK-T	113.2	20.0		71	89	107				
WR CEDAR	393.5	69.5		1	2	4				
WR CEDAR-T	201.7	35.6		10	15	21				
R ALDER	565.7	99.9		0	2	3				
R ALDER-T	393.5	69.5		1	3	6				
S SPRUCE	401.2	70.9		1	3	6				
PS FIR	565.7	99.9		0	1	1				
<b>TOTAL</b>	<b>45.4</b>	<b>8.0</b>		<b>216</b>	<b>234</b>	<b>253</b>	<b>82</b>	<b>42</b>	<b>21</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	66.4	11.7		87	99	110				
DOUG FIR-T	171.2	30.2		12	17	22				
WHEMLOCK	112.3	19.8		49	61	73				
WHEMLOCK-T	99.5	17.6		39	48	56				
WR CEDAR	393.5	69.5		1	3	4				
WR CEDAR-T	192.0	33.9		6	9	12				
R ALDER	565.7	99.9		0	3	5				
R ALDER-T	393.5	69.5		1	3	4				
S SPRUCE	393.5	69.5		1	3	6				
PS FIR	565.7	99.9		0	3	7				
<b>TOTAL</b>	<b>29.6</b>	<b>5.2</b>		<b>235</b>	<b>248</b>	<b>261</b>	<b>35</b>	<b>18</b>	<b>9</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	68.2	12.0		7,706	8,761	9,816				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	20	WILLY	00U2	45.00	32	150	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T		186.5	32.9	853	1,271	1,690				
WHEMLOCK		112.5	19.9	4,627	5,775	6,922				
WHEMLOCK-T		98.9	17.5	3,591	4,351	5,112				
WR CEDAR		393.5	69.5	21	67	114				
WR CEDAR-T		198.7	35.1	219	337	455				
R ALDER		565.7	99.9	0	231	463				
R ALDER-T		393.5	69.5	31	102	173				
S SPRUCE		441.2	77.9	52	235	419				
PS FIR		565.7	99.9	1	587	1,173				
<b>TOTAL</b>		<b>37.8</b>	<b>6.7</b>	<b>20,268</b>	<b>21,718</b>	<b>23,169</b>	<b>57</b>	<b>29</b>	<b>14</b>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				78	89	99				
DOUG FIR-T		157.7	27.8	50	75	99				
WHEMLOCK				76	94	113				
WHEMLOCK-T		30.6	5.4	75	91	107				
WR CEDAR		268.8	47.5	8	27	46				
WR CEDAR-T		138.8	24.5	25	39	52				
R ALDER		565.7	99.9	0	93	185				
R ALDER-T		268.8	47.5	12	41	69				
S SPRUCE		441.2	77.9	15	69	123				
PS FIR		565.7	99.9	0	172	345				
<b>TOTAL</b>		<b>159.1</b>	<b>28.1</b>	<b>82</b>	<b>88</b>	<b>94</b>	<b>1,010</b>	<b>516</b>	<b>253</b>	

TC		Stand Table Summary											T027 R012 S20 T00U2			
TSTNDSUM		Project WILLY											T027 R012 S20 T00U2			
Twp		Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Page:	1				
027		012	20	WILLY	00U2	45.00	32	150			Date:	7/7/2015				
											Time:	8:51:39AM				
S Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Totals			
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.		Net Bd.Ft.	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF
DF		12	1	79	67	3.377	2.74	3.38	20.0	50.0	1.89	68	169	85	30	8
DF		14	2	79	75	4.882	5.48	7.34	20.6	53.3	4.31	151	391	194	68	18
DF		15	1	86	87	2.358	2.74	4.72	18.9	65.0	2.54	89	307	114	40	14
DF		16	3	78	85	5.844	8.22	11.69	22.2	60.3	7.38	259	704	332	117	32
DF		17	5	81	88	8.518	13.71	17.04	25.9	78.5	12.60	442	1,337	567	199	60
DF		18	1	78	81	1.623	2.74	3.25	25.4	60.0	2.35	82	195	106	37	9
DF		19	4	78	93	5.720	10.97	11.44	32.4	93.7	10.52	371	1,072	474	167	48
DF		20	3	80	83	3.822	8.22	7.64	33.0	78.7	7.16	252	601	322	113	27
DF		21	4	78	93	4.561	10.97	9.12	40.2	112.3	10.46	367	1,024	471	165	46
DF		22	6	77	95	6.206	16.45	12.41	45.6	120.8	16.12	565	1,499	725	254	67
DF		23	4	80	95	3.912	10.97	7.82	48.1	129.4	10.75	376	1,012	484	169	46
DF		24	2	78	87	1.761	5.48	3.52	49.8	127.6	5.00	176	449	225	79	20
DF		Totals	36	79	87	52.585	98.69	99.37	32.2	88.2	91.08	3,198	8,761	4,098	1,439	394
WH		11	1	86	65	6.419	4.08	6.42	13.6	40.0	2.80	88	257	126	39	12
WH		13	1	83	76	4.430	4.08	8.86	13.4	35.0	3.80	119	310	171	53	14
WH		14	3	83	63	11.204	12.25	18.75	16.9	47.8	10.17	318	895	458	143	40
WH		16	4	83	82	12.156	16.33	24.31	22.4	73.4	17.43	545	1,785	784	245	80
WH		17	4	82	85	10.713	16.33	21.43	25.3	81.2	17.33	542	1,740	780	244	78
WH		18	1	80	88	2.445	4.08	4.89	27.9	85.0	4.39	137	416	198	61	19
WH		19	1	85	73	2.188	4.08	4.38	26.2	85.0	3.67	115	372	165	52	17
WH		Totals	15	83	76	49.555	61.26	89.03	20.9	64.9	59.59	1,862	5,775	2,681	838	260
WH	T	7	1	84	60	11.552	3.18	11.55	5.0	30.0	1.87	58	347	84	26	16
WH	T	8	4	86	57	35.585	12.70	35.59	7.0	32.3	7.89	250	1,150	355	112	52
WH	T	9	1	90	61	6.733	3.18	6.73	11.6	40.0	2.49	78	269	112	35	12
WH	T	11	2	87	62	10.095	6.35	10.09	14.7	40.0	4.76	149	404	214	67	18
WH	T	12	3	82	74	12.076	9.53	20.11	13.1	41.9	8.40	263	843	378	118	38
WH	T	13	2	84	69	7.010	6.35	10.68	16.5	49.4	5.64	176	527	254	79	24
WH	T	14	1	87	80	3.149	3.18	6.30	15.1	55.0	3.05	95	346	137	43	16
WH	T	15	1	87	96	2.732	3.18	5.46	21.9	85.0	3.84	120	464	173	54	21
WH		Totals	15	86	63	88.933	47.64	106.51	11.2	40.9	37.93	1,189	4,351	1,707	535	196
DF	T	13	4	80	79	10.412	9.72	20.82	13.4	38.8	7.91	278	808	356	125	36
DF	T	14	1	85	79	2.340	2.43	4.68	15.0	50.0	2.00	70	234	90	32	11
DF	T	15	1	79	71	2.035	2.43									
DF	T	16	1	80	85	1.763	2.43	3.53	21.8	65.0	2.20	77	229	99	35	10
DF		Totals	7	81	79	16.550	17.02	29.03	14.7	43.8	12.11	426	1,271	545	192	57
SF		29	1	85	112	.379	1.70	.76	92.0	300.0	1.99	70	227	90	31	10
SF		35	1	84	136	.253	1.70	.76	108.0	473.3	2.35	82	360	106	37	16
SF		Totals	2	85	122	.632	3.40	1.52	100.0	386.8	4.35	152	587	196	68	26
RC	T	8	1	73	42	5.965	2.19	5.96	4.9	20.0	.68	29	119	31	13	5
RC	T	10	1	72	42	4.444	2.19	4.44	9.0	20.0	.89	40	89	40	18	4
RC	T	12	1	73	40	2.785	2.19	2.79	12.9	30.0	.84	36	84	38	16	4
RC	T	13	1	69	30	2.267	2.19	2.27	12.2	20.0	.65	28	45	29	12	2
RC		Totals	4	72	40	15.461	8.75	15.46	8.6	21.8	3.06	132	337	138	60	15
SS		13	1	74	61	1.997	1.70	2.00	12.7	30.0	.66	25	60	30	11	3
SS		15	1	81	82	1.350	1.70	2.70	21.8	65.0	1.52	59	176	69	27	8
SS		Totals	2	77	69	3.347	3.40	4.70	17.9	50.1	2.18	84	235	98	38	11
RA		16	1	85	75	.895	1.25	1.79	21.4	70.0	1.05	38	125	47	17	6

TC		TSTNDSUM		Stand Table Summary													
Project														WILLY			
T027 R012 S20 T00U2										T027 R012 S20 T00U2							
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Page:	2						
027	012	20	WILLY	00U2	45.00	32	150			Date:	7/7/2015						
										Time:	8:51:39AM						
Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	T o t a l s				
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.		Net Bd.Ft.	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF	
RA		18	1	85	73	.707	1.25	1.41	23.9	75.0	.93	34	106	42	15	5	
RA		Totals		2	85	74	1.603	2.50	3.21	22.5	72.2	1.98	72	231	89	32	10
RA	T	12	1	80	48	3.406	2.50	3.41	16.0	30.0	1.51	55	102	68	25	5	
RA		Totals		1	80	48	3.406	2.50	3.41	16.0	30.0	1.51	55	102	68	25	5
RC		14	1	73	42	2.242	2.50	2.24	21.8	30.0	1.15	49	67	52	22	3	
RC		Totals		1	73	42	2.242	2.50	2.24	21.8	30.0	1.15	49	67	52	22	3
Totals			85	82	71	234.313	247.66	354.47	20.4	61.3	214.94	7218	21,718	9,672	3,248	977	

T027 R012 S20 TU2G										T027 R012 S20 TU2G				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	012	20	WILLY	U2G	2.00	32	150	S	W					

Spp	So	Gr	T	rt	ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
							Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
											4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	T	DM	2S			28	6.4	3,071	2,874	6	100				100				40	12	205	1.85	14.0
DF	T	DM	3S			57	9.9	6,268	5,645	11		97	3				100	40	8	100	0.90	56.6	
DF	T	DM	4S			14	12.3	1,676	1,470	3	68	32		15	37	45	4	25	5	26	0.36	57.3	
DF	T	DM	UT			1	50.0	35	17	0	100			100				15	5	10	0.24	1.7	
<b>DF T Totals</b>						46	9.4	11,051	10,007	20	10	60	30	2	5	7	86	33	7	77	0.84	129.7	
WH	T	DM	3S			60	3.8	6,378	6,134	12	100				100				40	8	96	0.75	63.6
WH	T	DM	4S			40	3.3	4,110	3,972	8	95	5		10	46	4	40	28	5	29	0.29	137.2	
<b>WH T Totals</b>						46	3.6	10,488	10,106	20	37	63		4	18	2	76	32	6	50	0.47	200.9	
RC	T	DM	4S			100	10.1	453	407	1	100				30	55	15		24	5	23	0.41	17.9
<b>RC T Totals</b>						2	10.1	453	407	1	100			30	55	15		24	5	23	0.41	17.9	
SS	T	DM	3S			63	8.3	243	223	0	100				100				40	9	110	0.92	2.0
SS	T	DM	4S			37	18.7	160	130	0	31	69		69	31			21	7	26	0.48	5.0	
<b>SS T Totals</b>						2	12.4	403	353	1	11	89		25	11		63	27	7	50	0.67	7.0	
RA	T	DM	3S			59	15.9	268	226	0	58	42		42	58			26	12	106	1.14	2.1	
RA	T	DM	4S			41	17.5	183	151	0	69	31			24	45	31	34	5	34	0.47	4.4	
<b>RA T Totals</b>						2	16.6	452	377	1	28	47	25	25	44	18	13	31	7	58	0.65	6.5	
SF	T	DM	1S			39	9.9	256	230	0	100				100				40	24	910	5.11	.3
SF	T	DM	2S			50	13.6	344	297	1	100				100				40	18	470	2.90	.6
SF	T	DM	3S			11	36.5	93	59	0	100				43	57			33	11	94	1.27	.6
<b>SF T Totals</b>						3	15.3	693	587	1	10	90		4		96		37	16	387	2.69	1.5	
<b>Type Totals</b>							7.2	23,540	21,836	44	24	59	14	2	4	13	4	78	32	7	60	0.62	363.6

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	20	WILLY	U2G	2.00	32	150	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		32	150	4.7						
CRUISE		19	85	4.5	487		17.4			
DBH COUNT										
REFOREST										
COUNT		13	65	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-T	43	69.9	17.4	68	27.7	115.7	11,051	10,007	3,607	3,611
WHEMLOCK-T	30	145.7	11.7	58	31.8	108.9	10,488	10,106	3,010	3,013
WR CEDAR-T	5	17.9	10.7	40	3.4	11.3	453	407	178	180
S SPRUCE-T	2	5.0	13.7	56	1.4	5.1	403	353	126	126
R ALDER-T	3	4.4	14.4	51	1.3	5.0	452	377	133	133
PS FIR-T	2	.6	31.4	95	0.6	3.4	693	587	152	152
<b>TOTAL</b>	<b>85</b>	<b>243.6</b>	<b>13.7</b>	<b>59</b>	<b>67.4</b>	<b>249.4</b>	<b>23,540</b>	<b>21,836</b>	<b>7,206</b>	<b>7,215</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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-T	70.4	12.4		61	70	79				
WHEMLOCK-T	85.7	15.1		124	146	168				
WR CEDAR-T	189.9	33.5		12	18	24				
S SPRUCE-T	320.2	56.6		2	5	8				
R ALDER-T	321.4	56.8		2	4	7				
PS FIR-T	565.7	99.9		0	1	1				
<b>TOTAL</b>	<b>46.3</b>	<b>8.2</b>		<b>224</b>	<b>244</b>	<b>264</b>	<b>85</b>	<b>44</b>	<b>21</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	67.4	11.9		102	116	129				
WHEMLOCK-T	79.3	14.0		94	109	124				
WR CEDAR-T	185.8	32.8		8	11	15				
S SPRUCE-T	315.9	55.8		2	5	8				
R ALDER-T	337.0	59.5		2	5	8				
PS FIR-T	565.7	99.9		0	3	7				
<b>TOTAL</b>	<b>29.2</b>	<b>5.2</b>		<b>237</b>	<b>249</b>	<b>262</b>	<b>34</b>	<b>17</b>	<b>9</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	71.7	12.7		8,739	10,007	11,274				
WHEMLOCK-T	81.1	14.3		8,659	10,106	11,553				
WR CEDAR-T	187.9	33.2		272	407	542				
S SPRUCE-T	342.8	60.5		139	353	567				
R ALDER-T	375.6	66.3		127	377	627				
PS FIR-T	565.7	99.9		1	587	1,173				
<b>TOTAL</b>	<b>37.1</b>	<b>6.5</b>		<b>20,407</b>	<b>21,836</b>	<b>23,266</b>	<b>55</b>	<b>28</b>	<b>14</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T				76	86	97				
WHEMLOCK-T				80	93	106				
WR CEDAR-T	137.9	24.3		24	36	48				
S SPRUCE-T	284.2	50.2		27	69	111				

**STATISTICS**  
**PROJECT WILLY**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
027	012	20	WILLY	U2G	2.00	32	150	S	W
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER-T		347.0	61.3	25	75	125			
PS FIR-T		565.7	99.9	0	172	345			
<b>TOTAL</b>		159.9	28.2	82	88	93	1,021	521	255

<b>T027 R011 S19 T3100</b>										<b>T027 R011 S19 T3100</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
027	011	19	WILLY	U3	118.00	48	256	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
								Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf	
													4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
WH	DM	2S	12	14.9	2,571	2,189	258	17	72	11					100	40	13	206	1.74	10.6					
WH	DM	3S	69	7.8	13,233	12,194	1,439								100	40	8	100	0.81	122.5					
WH	DM	4S	19	4.8	3,427	3,262	385	72	28			32	35	9	24	23	5	24	0.33	135.1					
<b>WH</b>	<b>Totals</b>		66	8.3	19,231	17,644	2,082	13	74	11	1	6	7	2	86	31	7	66	0.68	268.2					
WH	T	DM	3S	35	6.4	3,028	2,834	334							5	95	39	7	68	0.57	41.7				
WH	T	DM	4S	65	2.8	5,306	5,157	609	56	44			10	8	3	78	32	5	38	0.32	134.8				
<b>WH</b>	<b>T</b>	<b>Totals</b>	30	4.1	8,334	7,991	943	36	64			6	7	2	84	34	6	45	0.39	176.5					
SS	T	DM	4S	100		244	244	29							100	20	7	30	0.53	8.1					
<b>SS</b>	<b>T</b>	<b>Totals</b>	1		244	244	29								100	20	7	30	0.53	8.1					
SS		DM	4S	100	33.3	82	55	6							100	40	6	40	0.97	1.4					
<b>SS</b>	<b>Totals</b>		0	33.3	82	55	6								100	40	6	40	0.97	1.4					
DF		DM	3S	80	10.8	585	522	62							100	40	9	107	0.95	4.9					
DF		DM	4S	20	11.7	146	129	15	100						100	27	5	26	0.29	4.9					
<b>DF</b>	<b>Totals</b>		2	11.0	731	651	77	20	80						20	80	34	7	67	0.68	9.7				
RA	T	DM	4S	100		164	164	19							45	29	26	30	5	32	0.34	5.1			
<b>RA</b>	<b>T</b>	<b>Totals</b>	1		164	164	19		100						45	29	26	30	5	32	0.34	5.1			
<b>Type</b>	<b>Totals</b>			7.1	28,787	26,750	3,156	21	71	7	1	7	7	2	84	32	7	57	0.56	469.1					

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	011	19	WILLY	U3	118.00	48	256	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		48	256	5.3						
CRUISE		24	118	4.9	35,438		.3			
DBH COUNT										
REFOREST										
COUNT		24	137	5.7						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	75	138.7	15.3	65	45.5	178.1	19,231	17,644	5,696	5,695
WHEMLOCK-T	35	142.1	11.0	57	28.1	93.0	8,334	7,991	2,329	2,331
S SPRUCE	1	1.4	17.4	45	0.5	2.3	82	55	54	54
S SPRUCE-T	1	8.1	11.3	50	1.7	5.7	244	244	86	86
DOUG FIR	3	4.9	16.0	71	1.7	6.8	731	651	223	223
R ALDER-T	3	5.1	9.5	41	0.8	2.5	164	164	52	52
<b>TOTAL</b>	<i>118</i>	<i>300.3</i>	<i>13.3</i>	<i>60</i>	<i>79.2</i>	<i>288.4</i>	<i>28,787</i>	<i>26,750</i>	<i>8,439</i>	<i>8,440</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	50.9	7.3		129	139	149				
WHEMLOCK-T	62.2	9.0		129	142	155				
S SPRUCE	484.7	69.9		0	1	2				
S SPRUCE-T	453.3	65.4		3	8	13				
DOUG FIR	484.7	69.9		1	5	8				
R ALDER-T	692.8	99.9		0	5	10				
<b>TOTAL</b>	<i>31.6</i>	<i>4.6</i>		<i>287</i>	<i>300</i>	<i>314</i>	<i>40</i>	<i>20</i>	<i>10</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	51.5	7.4		165	178	191				
WHEMLOCK-T	53.9	7.8		86	93	100				
S SPRUCE	484.7	69.9		1	2	4				
S SPRUCE-T	453.3	65.4		2	6	9				
DOUG FIR	484.7	69.9		2	7	12				
R ALDER-T	692.8	99.9		0	3	5				
<b>TOTAL</b>	<i>27.4</i>	<i>3.9</i>		<i>277</i>	<i>288</i>	<i>300</i>	<i>30</i>	<i>15</i>	<i>7</i>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	55.0	7.9		16,245	17,644	19,044				
WHEMLOCK-T	56.6	8.2		7,338	7,991	8,643				
S SPRUCE	484.7	69.9		17	55	93				
S SPRUCE-T	453.3	65.4		85	244	404				
DOUG FIR	484.7	69.9		196	651	1,106				
R ALDER-T	692.8	99.9		0	164	329				
<b>TOTAL</b>	<i>33.4</i>	<i>4.8</i>		<i>25,461</i>	<i>26,750</i>	<i>28,038</i>	<i>45</i>	<i>23</i>	<i>11</i>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				91	99	107				
WHEMLOCK-T				79	86	93				
S SPRUCE	335.2	48.3		7	24	41				
S SPRUCE-T	96.9	14.0		15	43	71				

**STATISTICS**  
**PROJECT WILLY**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
027	011	19	WILLY	U3	118.00	48	256	S	W
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		335.2	48.3	29	96	162			
R ALDER-T		692.8	99.9	0	66	131			
<b>TOTAL</b>		205.0	29.6	88	93	97	1,678	856	420

TC		Stand Table Summary														
TSTNDSUM		Project											WILLY			
T027 R011 S19 T3100											T027 R011 S19 T3100					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
027	011	19	WILLY	U3	118.00	48	256	Date:	7/7/2015							
								Time:	8:54:40AM							
S Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.				Net Bd.Ft.	Tons	Cunits	MBF
WH		11	1	89	67	3.949	2.37	3.95	14.8	60.0	1.87	59	237	221	69	28
WH		12	6	84	74	18.081	14.25	32.87	12.6	40.3	13.30	416	1,323	1,570	490	156
WH		13	11	86	76	28.774	26.12	57.55	13.4	44.0	24.71	773	2,534	2,916	912	299
WH		14	7	85	76	15.529	16.62	31.06	15.8	48.6	15.79	492	1,510	1,864	581	178
WH		15	6	85	78	11.724	14.25	21.43	20.2	61.7	13.88	432	1,323	1,638	510	156
WH		16	12	83	84	20.511	28.50	41.02	22.4	70.8	29.42	921	2,904	3,472	1,086	343
WH		17	11	82	84	16.729	26.12	33.46	25.7	79.9	27.56	861	2,675	3,252	1,016	316
WH		18	7	83	89	9.400	16.62	18.80	30.6	94.7	18.38	575	1,780	2,169	678	210
WH		19	4	79	89	4.879	9.50	9.76	33.4	103.7	10.42	326	1,012	1,230	384	119
WH		20	4	80	89	4.335	9.50	8.67	37.6	103.9	10.41	326	901	1,228	385	106
WH		21	1	79	90	1.036	2.37	2.07	39.6	105.0	2.62	82	218	309	97	26
WH		23	2	80	90	1.720	4.75	3.44	47.2	102.5	5.19	162	353	612	192	42
WH		24	1	86	98	.788	2.37	1.58	57.3	190.0	2.90	90	300	342	107	35
WH		26	2	82	102	1.269	4.75	2.54	71.5	227.4	5.81	181	577	685	214	68
WH		Totals	75	84	80	138.724	178.10	268.19	21.2	65.8	182.27	5,695	17,644	21,507	6,720	2,082
WH	T	8	1	89	60	8.663	2.66	8.66	5.0	30.0	1.40	44	260	165	52	31
WH	T	9	6	86	61	35.599	15.95	35.60	10.0	38.3	11.36	355	1,364	1,340	419	161
WH	T	10	3	86	70	15.066	7.97	15.07	12.3	36.6	5.88	186	552	694	219	65
WH	T	11	7	87	70	28.235	18.60	31.98	14.4	54.0	14.74	461	1,727	1,739	543	204
WH	T	12	8	86	68	27.480	21.26	33.87	15.9	53.2	17.25	539	1,803	2,035	636	213
WH	T	13	7	83	74	20.504	18.60	38.25	13.2	42.3	16.11	503	1,617	1,901	594	191
WH	T	14	1	86	77	2.417	2.66	4.83	16.3	45.0	2.55	79	217	301	93	26
WH	T	15	1	86	73	2.195	2.66	4.39	17.8	50.0	2.50	78	219	295	92	26
WH	T	16	1	82	86	1.927	2.66	3.85	22.3	60.0	2.75	86	231	324	101	27
WH		Totals	35	86	68	142.085	93.02	176.51	13.2	45.3	74.54	2,331	7,991	8,795	2,750	943
DF		16	2	80	89	3.419	4.54	6.84	22.3	67.5	4.33	152	462	511	180	54
DF		17	1	80	90	1.456	2.27	2.91	24.2	65.0	2.02	70	189	239	83	22
DF		Totals	3	80	89	4.875	6.81	9.75	22.8	66.8	6.35	223	651	749	263	77
SS	T	11	1	77	61	8.144	5.67	8.14	10.5	30.0	2.23	86	244	263	101	29
SS		Totals	1	77	61	8.144	5.67	8.14	10.5	30.0	2.23	86	244	263	101	29
RA	T	8	1	80	44	2.448	.83	2.45	6.0	30.0	.39	15	73	46	17	9
RA	T	10	1	80	48	1.591	.83	1.59	10.9	30.0	.48	17	48	56	20	6
RA	T	12	1	81	60	1.079	.83	1.08	18.4	40.0	.55	20	43	65	23	5
RA		Totals	3	80	49	5.118	2.50	5.12	10.1	32.1	1.42	52	164	167	61	19
SS		17	1	77	54	1.374	2.27	1.37	39.0	40.0	1.40	54	55	166	63	6
SS		Totals	1	77	54	1.374	2.27	1.37	39.0	40.0	1.40	54	55	166	63	6
Totals		118	84	73		300.321	288.36	469.09	18.0	57.0	268.20	8440	26,750	31,648	9,959	3,156

<b>T027 R011 S19 TU3G</b>										<b>T027 R011 S19 TU3G</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
027	011	19	WILLY	U3G	2.00	48	256	S	W					

Spp	So	Gr	T	rt	ad	%	Percent Net Board Foot Volume										Average Log				Logs Per /Acre		
							Bd. Ft. per Acre			Total Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In		Bd Ft	CF/Lf
							Def%	Gross	Net		4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH	T	DM		2S		8	14.9	2,668	2,272	5	17	72	11				100	40	13	206	1.74	11.0	
WH	T	DM		3S		60	7.6	16,543	15,284	31	97	3			1		99	40	8	92	0.75	165.8	
WH	T	DM		4S		32	3.7	8,478	8,168	16	63	37		19	20	6	56	27	5	31	0.33	265.2	
<b>WH T Totals</b>						96	7.1	27,689	25,724	51	20	71	8	1	6	7	2	85	32	7	58	0.57	442.1
DF	T	DM		3S		80	10.8	682	609	1	100						100	40	9	107	0.95	5.7	
DF	T	DM		4S		20	11.7	171	151	0	100						100	27	5	26	0.29	5.7	
<b>DF T Totals</b>						3	11.0	853	759	2	20	80				20		80	34	7	67	0.68	11.4
SS	T	DM		4S		100	15.3	315	267	1	100				64		36	26	7	33	0.73	8.1	
<b>SS T Totals</b>						1	15.3	315	267	1	100				64		36	26	7	33	0.73	8.1	
RA	T	DM		4S		100		164	164	0	100				45	29	26	30	5	32	0.34	5.1	
<b>RA T Totals</b>						1		164	164	0	100				45	29	26	30	5	32	0.34	5.1	
<b>Type Totals</b>							7.3	29,022	26,915	54	20	71	8	1	6	7	2	84	32	7	58	0.57	466.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	011	19	WILLY	U3G	2.00	48	256	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		48	256	5.3						
CRUISE		24	118	4.9	589	20.0				
DBH COUNT REFOREST COUNT		24	137	5.7						
BLANKS 100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-T	110	275.8	13.4	61	74.0	271.1	27,689	25,724	8,072	8,072
DOUG FIR-T	3	5.7	16.0	71	2.0	7.9	853	759	260	260
S SPRUCE-T	2	8.1	13.4	49	2.2	7.9	315	267	154	154
R ALDER-T	3	5.1	9.5	41	0.8	2.5	164	164	52	52
<b>TOTAL</b>	<i>118</i>	<i>294.7</i>	<i>13.4</i>	<i>61</i>	<i>79.0</i>	<i>289.5</i>	<i>29,022</i>	<i>26,915</i>	<i>8,538</i>	<i>8,538</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	43.1	6.2		259	276	293				
DOUG FIR-T	489.8	70.6		2	6	10				
S SPRUCE-T	428.0	61.7		3	8	13				
R ALDER-T	692.8	99.9		0	5	10				
<b>TOTAL</b>	<i>33.8</i>	<i>4.9</i>		<i>280</i>	<i>295</i>	<i>309</i>	<i>46</i>	<i>23</i>	<i>11</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	36.2	5.2		257	271	285				
DOUG FIR-T	489.8	70.6		2	8	14				
S SPRUCE-T	424.1	61.2		3	8	13				
R ALDER-T	692.8	99.9		0	3	5				
<b>TOTAL</b>	<i>27.3</i>	<i>3.9</i>		<i>278</i>	<i>289</i>	<i>301</i>	<i>30</i>	<i>15</i>	<i>7</i>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	39.0	5.6		24,277	25,724	27,171				
DOUG FIR-T	489.8	70.6		223	759	1,296				
S SPRUCE-T	426.0	61.4		103	267	431				
R ALDER-T	692.8	99.9		0	164	329				
<b>TOTAL</b>	<i>32.7</i>	<i>4.7</i>		<i>25,644</i>	<i>26,915</i>	<i>28,186</i>	<i>43</i>	<i>22</i>	<i>11</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	
WHEMLOCK-T				90	95	100				
DOUG FIR-T	282.5	40.7		28	96	163				
S SPRUCE-T	106.6	15.4		13	34	54				
R ALDER-T	692.8	99.9		0	66	131				
<b>TOTAL</b>	<i>206.1</i>	<i>29.7</i>		<i>89</i>	<i>93</i>	<i>97</i>	<i>1,696</i>	<i>865</i>	<i>424</i>	

**T027 R011 S20 T00U4** **T027 R011 S20 T00U4**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 027 011 20 WILLY 00U4 10.00 8 37 S W

Spp	So	Gr	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
				Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
DF	DM	2S	11	25.0	1,268	951	10	100				100				40	13	180	1.90	5.3		
DF	DM	3S	64	9.2	5,685	5,162	52	100				100				40	9	120	1.09	42.9		
DF	DM	4S	25	7.8	2,184	2,013	20	40	60					57	43	28	5	31	0.41	65.3		
<b>DF</b>	<b>Totals</b>		39	11.1	9,137	8,126	81	10	78	12					14	86	33	7	72	0.80	113.5	
DF	T	DM	3S	100	4,454	4,454	45	100				100				40	6	60	0.49	74.2		
<b>DF</b>	<b>T</b>	<b>Totals</b>	21	4,454	4,454	45	100				100				40	6	60	0.49	74.2			
WH	DM	3S	82	5.3	6,115	5,790	58	100				100				40	8	100	0.75	57.8		
WH	DM	4S	18	11.2	1,357	1,205	12	100				33	67	21	5	21	0.27	57.8				
<b>WH</b>	<b>Totals</b>		34	6.4	7,472	6,995	70	17	83					6	12	83	30	7	61	0.59	115.6	
WH	T	DM	3S	85	586	586	6	100				100				40	6	60	0.43	9.8		
WH	T	DM	4S	15	98	98	1	100				100				11	5	10	0.17	9.8		
<b>WH</b>	<b>T</b>	<b>Totals</b>	3	684	684	7	14	86					14	86	26	6	35	0.37	19.5			
RA	T	DM	4S	100	7.9	523	481	5	57	43					57	43	33	5	36	0.48	13.3	
<b>RA</b>	<b>T</b>	<b>Totals</b>	2	7.9	523	481	5	57	43					57	43	33	5	36	0.48	13.3		
<b>Type</b>	<b>Totals</b>			6.9	22,270	20,741	207	11	84	5					2	11	87	33	7	62	0.62	336.1

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	011	20	WILLY	00U4	10.00	8	37	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		8	37	4.6						
CRUISE		4	16	4.0	2,204		.7			
DBH COUNT										
REFOREST										
COUNT		4	21	5.3						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	7	65.3	16.9	64	24.8	102.1	9,137	8,126	3,012	3,024
DOUG FIR-T	1	74.2	12.3	57	17.5	61.3	4,454	4,454	1,458	1,458
WHEMLOCK	5	57.8	14.7	64	17.8	68.1	7,472	6,995	2,065	2,065
WHEMLOCK-T	1	9.8	11.3	60	2.0	6.8	684	684	185	185
R ALDER-T	2	13.3	11.7	41	2.9	10.0	523	481	211	209
<b>TOTAL</b>	<i>16</i>	<i>220.4</i>	<i>14.4</i>	<i>60</i>	<i>65.5</i>	<i>248.2</i>	<i>22,270</i>	<i>20,741</i>	<i>6,931</i>	<i>6,941</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	67.3	25.4	49	65	82					
DOUG FIR-T	120.6	45.5	40	74	108					
WHEMLOCK	110.1	41.5	34	58	82					
WHEMLOCK-T	282.8	106.6		10	20					
R ALDER-T	282.8	106.6		13	27					
<b>TOTAL</b>	<i>37.9</i>	<i>14.3</i>	<i>189</i>	<i>220</i>	<i>252</i>	<i>66</i>	<i>33</i>	<i>16</i>		
CL: 68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	72.3	27.3	74	102	130					
DOUG FIR-T	120.6	45.5	33	61	89					
WHEMLOCK	111.1	41.9	40	68	97					
WHEMLOCK-T	282.8	106.6		7	14					
R ALDER-T	282.8	106.6		10	21					
<b>TOTAL</b>	<i>30.9</i>	<i>11.6</i>	<i>219</i>	<i>248</i>	<i>277</i>	<i>43</i>	<i>22</i>	<i>11</i>		
CL: 68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	77.6	29.3	5,749	8,126	10,503					
DOUG FIR-T	120.6	45.5	2,430	4,454	6,479					
WHEMLOCK	114.7	43.2	3,971	6,995	10,019					
WHEMLOCK-T	282.8	106.6		684	1,414					
R ALDER-T	282.8	106.6		481	995					
<b>TOTAL</b>	<i>34.2</i>	<i>12.9</i>	<i>18,068</i>	<i>20,741</i>	<i>23,413</i>	<i>53</i>	<i>27</i>	<i>13</i>		
CL: 68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR			56	80	103					
DOUG FIR-T			40	73	106					
WHEMLOCK	70.1	26.4	58	103	147					
WHEMLOCK-T	282.8	106.6		101	208					
R ALDER-T	282.8	106.6		48	99					
<b>TOTAL</b>	<i>232.6</i>	<i>87.7</i>	<i>73</i>	<i>84</i>	<i>94</i>	<i>2,460</i>	<i>1,255</i>	<i>615</i>		

TC		TSTNDSUM		Stand Table Summary													
Project														WILLY			
T027 R011 S20 T00U4										T027 R011 S20 T00U4							
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Page:	1						
027	011	20	WILLY	00U4	10.00	8	37			Date:	7/7/2015						
										Time:	9:13:25AM						
Spc	S T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Totals				
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.		Net Bd.Ft.	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF	
DF		13	1	80	70	17.114	14.58	17.11	20.0	50.0	9.58	342	856	96	34	9	
DF		15	1	80	83	11.423	14.58	22.85	18.7	45.0	12.00	427	1,028	120	43	10	
DF		18	2	80	79	17.364	29.17	34.73	25.1	74.9	24.87	873	2,603	249	87	26	
DF		19	1	77	90	7.486	14.58	14.97	30.1	85.0	12.91	451	1,273	129	45	13	
DF		20	1	81	83	6.619	14.58	13.24	33.6	95.0	12.66	445	1,258	127	45	13	
DF		23	1	80	87	5.282	14.58	10.56	46.0	105.0	13.82	486	1,109	138	49	11	
DF		Totals		7	80	65.289	102.09	113.46	26.7	71.6	85.84	3,024	8,126	858	302	81	
WH		13	1	87	75	15.233	13.61	30.47	12.0	40.0	11.74	367	1,219	117	37	12	
WH		14	1	86	77	12.036	13.61	24.07	16.5	50.0	12.70	397	1,204	127	40	12	
WH		16	3	84	82	30.511	40.84	61.02	21.3	74.9	41.65	1,301	4,573	416	130	46	
WH		Totals		5	85	57.781	68.06	115.56	17.9	60.5	66.08	2,065	6,995	661	207	70	
DF	T	12	1	80	70	74.236	61.26	74.24	19.6	60.0	41.54	1,458	4,454	415	146	45	
DF		Totals		1	80	74.236	61.26	74.24	19.6	60.0	41.54	1,458	4,454	415	146	45	
WH	T	11	1	88	73	9.773	6.81	19.55	9.5	35.0	5.93	185	684	59	19	7	
WH		Totals		1	88	9.773	6.81	19.55	9.5	35.0	5.93	185	684	59	19	7	
RA	T	10	1	81	44	9.167	5.00	9.17	10.2	30.0	2.58	94	275	26	9	3	
RA	T	15	1	80	57	4.129	5.00	4.13	28.0	50.0	3.23	116	206	32	12	2	
RA		Totals		2	81	13.297	10.00	13.30	15.7	36.2	5.81	209	481	58	21	5	
Totals				16	82	74	220.375	248.22	336.10	20.7	61.7	205.21	6941	20,741	2,052	694	207

T027 R011 S20 TU4G										T027 R011 S20 TU4G				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	011	20	WILLY	U4G	.50	8	37	S	W					

Spp	T	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs						
									Net	BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
															4-5	6-11	12-16	17+	12-20	21-30		31-35					36-99
DF	T	DM	2S	10	25.0	1,775	1,331	1	100				100				40	13	180	1.90	7.4						
DF	T	DM	3S	68	7.8	9,444	8,712	4	100				100				40	8	103	0.92	84.8						
DF	T	DM	4S	22	7.8	3,058	2,818	1	40	60			57	43	28	5	31	0.41	91.4								
<b>DF T Totals</b>				61	9.9	14,277	12,861	6	9	81	10			13	87	34	7	70	0.75	183.6							
WH	T	DM	3S	83	4.4	6,680	6,383	3	100				100				40	8	90	0.67	70.9						
WH	T	DM	4S	17	9.8	1,423	1,283	1	100				42	58	18	5	18	0.26	70.9								
<b>WH T Totals</b>				36	5.4	8,103	7,666	4	17	83			7	10	83	29	6	54	0.54	141.8							
RA	T	DM	4S	100	7.9	523	481	0	57	43			57	43	33	5	36	0.48	13.3								
<b>RA T Totals</b>				2	7.9	523	481	0	57	43			57	43	33	5	36	0.48	13.3								
<b>Type Totals</b>					8.3	22,902	21,009	11	13	81	6			3	13	85	32	7	62	0.66	338.7						

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY		DATE	7/7/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	011	20	WILLY	U4G	0.50	8	37	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		8	37	4.6						
CRUISE		4	16	4.0	100		16.0			
DBH COUNT										
REFOREST										
COUNT		4	21	5.3						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-T	8	116.1	16.1	63	40.8	163.4	14,277	12,861	4,703	4,720
WHEMLOCK-T	6	70.9	13.9	63	20.1	74.9	8,103	7,666	2,233	2,233
R ALDER-T	2	13.3	11.7	41	2.9	10.0	523	481	211	209
<b>TOTAL</b>	<i>16</i>	<i>200.3</i>	<i>15.1</i>	<i>62</i>	<i>63.9</i>	<i>248.2</i>	<i>22,902</i>	<i>21,009</i>	<i>7,147</i>	<i>7,162</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T		77.5	29.2	82	116	150				
WHEMLOCK-T		124.2	46.8	38	71	104				
R ALDER-T		282.8	106.6		13	27				
<b>TOTAL</b>		<i>29.7</i>	<i>11.2</i>	<i>178</i>	<i>200</i>	<i>223</i>	<i>40</i>	<i>21</i>	<i>10</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T		75.6	28.5	117	163	210				
WHEMLOCK-T		122.5	46.2	40	75	109				
R ALDER-T		282.8	106.6		10	21				
<b>TOTAL</b>		<i>30.9</i>	<i>11.6</i>	<i>219</i>	<i>248</i>	<i>277</i>	<i>43</i>	<i>22</i>	<i>11</i>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T		77.0	29.0	9,128	12,861	16,594				
WHEMLOCK-T		126.0	47.5	4,025	7,666	11,308				
R ALDER-T		282.8	106.6		481	995				
<b>TOTAL</b>		<i>34.9</i>	<i>13.2</i>	<i>18,245</i>	<i>21,009</i>	<i>23,773</i>	<i>55</i>	<i>28</i>	<i>14</i>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T				56	79	102				
WHEMLOCK-T		95.2	35.9	54	102	151				
R ALDER-T		282.8	106.6		48	99				
<b>TOTAL</b>		<i>236.7</i>	<i>89.3</i>	<i>74</i>	<i>85</i>	<i>96</i>	<i>2,549</i>	<i>1,301</i>	<i>637</i>	

T027 R011 S22 T00U5										T027 R011 S22 T00U5				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	011	22	WILLY	00U5	61.00	21	129	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre			
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/				
				Def%	Gross	Net		Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft		Lf		
DF	DM	2S	11	13.8	1,505	1,298	79	100				100				40	13	197	1.70	6.6			
DF	DM	3S	67	9.0	8,413	7,652	467	100				100				40	9	109	0.97	69.9			
DF	DM	4S	21	12.8	2,678	2,334	142	74	26					54	18	28	30	5	31	0.37	75.7		
DF	DM	UT	1		89	89	5	100				100				22	5	20	0.24	4.5			
<b>DF</b>	<b>Totals</b>		37	10.3	12,685	11,374	694	16	73	11					12	4	84	35	7	73	0.74	156.7	
DF	T	DM	3S	29	13.8	1,755	1,513	92	100				100				40	7	62	0.58	24.3		
DF	T	DM	4S	61	3.3	3,182	3,077	188	91	9					13	27	11	49	29	5	28	0.28	111.9
DF	T	DM	UT	10		483	483	29	100				100				15	5	20	0.20	24.1		
<b>DF</b>	<b>T</b>	<b>Totals</b>		16	6.4	5,421	5,073	309	65	35					17	16	7	60	28	5	32	0.34	160.3
WH		DM	2S	35	16.1	3,860	3,237	197	100				100				40	13	197	1.58	16.4		
WH		DM	3S	48	6.1	4,719	4,432	270	89 11				100				40	9	120	0.86	37.0		
WH		DM	4S	17	13.9	1,801	1,550	95	64	36					4	36	36	24	29	5	31	0.40	49.4
<b>WH</b>	<b>Totals</b>		30	11.2	10,380	9,219	562	11	49	40					1	6	6	87	35	8	90	0.81	102.8
WH	T	DM	3S	53	8.4	3,070	2,812	172	100				100				40	8	84	0.70	33.3		
WH	T	DM	4S	47	6.3	2,576	2,415	147	55	45					15	30	4	51	28	5	33	0.30	73.4
<b>WH</b>	<b>T</b>	<b>Totals</b>		17	7.4	5,646	5,226	319	25	75					7	14	2	77	32	6	49	0.46	106.7
<b>Type</b>	<b>Totals</b>			9.5	34,131	30,892	1,884	24	60	16					4	11	5	80	32	7	59	0.59	526.5

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY		DATE	7/7/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	011	22	WILLY	00U5	61.00	21	129	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		21	129	6.1						
CRUISE		11	64	5.8	20,055		.3			
DBH COUNT										
REFOREST										
COUNT		10	65	6.5						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	23	84.8	16.4	70	30.7	124.5	12,685	11,374	4,003	4,010
DOUG FIR-T	12	122.7	10.0	57	21.3	67.4	5,421	5,073	1,540	1,551
WHEMLOCK	18	51.4	17.2	73	20.0	83.0	10,380	9,219	2,896	2,894
WHEMLOCK-T	11	69.9	12.0	62	15.8	54.5	5,646	5,226	1,552	1,551
<b>TOTAL</b>	<i>64</i>	<i>328.8</i>	<i>13.6</i>	<i>64</i>	<i>89.5</i>	<i>329.3</i>	<i>34,131</i>	<i>30,892</i>	<i>9,990</i>	<i>10,007</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	84.7	18.9		69	85	101				
DOUG FIR-T	113.7	25.4		92	123	154				
WHEMLOCK	110.7	24.7		39	51	64				
WHEMLOCK-T	119.9	26.8		51	70	89				
<b>TOTAL</b>	<i>42.0</i>	<i>9.4</i>		<i>298</i>	<i>329</i>	<i>360</i>	<i>74</i>	<i>38</i>	<i>18</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	83.2	18.6		101	124	148				
DOUG FIR-T	105.0	23.5		52	67	83				
WHEMLOCK	122.1	27.3		60	83	106				
WHEMLOCK-T	118.3	26.4		40	54	69				
<b>TOTAL</b>	<i>22.5</i>	<i>5.0</i>		<i>313</i>	<i>329</i>	<i>346</i>	<i>21</i>	<i>11</i>	<i>5</i>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	84.8	19.0		9,218	11,374	13,529				
DOUG FIR-T	105.4	23.6		3,878	5,073	6,268				
WHEMLOCK	123.8	27.7		6,668	9,219	11,771				
WHEMLOCK-T	115.6	25.8		3,875	5,226	6,577				
<b>TOTAL</b>	<i>23.3</i>	<i>5.2</i>		<i>29,285</i>	<i>30,892</i>	<i>32,499</i>	<i>23</i>	<i>12</i>	<i>6</i>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				74	91	109				
DOUG FIR-T	4.5	1.0		58	75	93				
WHEMLOCK	76.5	17.1		80	111	142				
WHEMLOCK-T				71	96	121				
<b>TOTAL</b>	<i>179.4</i>	<i>40.1</i>		<i>89</i>	<i>94</i>	<i>99</i>	<i>1,350</i>	<i>689</i>	<i>337</i>	

TC		TSTNDSUM		Stand Table Summary												
Project														WILLY		
T027 R011 S22 T00U5											T027 R011 S22 T00U5					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
027	011	22	WILLY	00U5	61.00	21	129	Date:	7/7/2015							
								Time:	9:21:57AM							
S SpC	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net		Net		Totals		
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits	MBF
DF		12	1	80	70	7.125	5.41	7.13	20.0	40.0	3.99	143	285	243	87	17
DF		13	1	80	75	5.781	5.41	5.78	24.0	50.0	3.92	139	289	239	85	18
DF		15	3	81	85	13.717	16.23	27.43	18.1	50.0	14.07	496	1,372	858	303	84
DF		16	7	80	89	27.010	37.88	54.02	22.7	67.9	34.80	1,225	3,667	2,123	747	224
DF		17	3	78	91	10.188	16.23	20.38	26.3	73.3	15.32	536	1,494	934	327	91
DF		18	3	80	87	9.087	16.23	18.17	28.4	85.0	14.73	517	1,545	899	315	94
DF		19	1	79	98	2.691	5.41	5.38	35.6	105.0	5.46	192	565	333	117	34
DF		20	2	80	101	5.114	10.82	10.23	37.4	112.2	10.90	383	1,148	665	233	70
DF		22	2	79	96	4.083	10.82	8.17	46.8	123.5	10.90	382	1,008	665	233	61
DF		Totals	23	80	87	84.797	124.46	156.69	25.6	72.6	114.09	4,010	11,374	6,959	2,446	694
WH		11	1	91	78	6.619	4.61	13.24	9.7	40.0	4.13	129	529	252	79	32
WH		13	1	85	88	4.778	4.61	9.56	15.7	50.0	4.81	150	478	294	92	29
WH		16	3	83	88	10.000	13.83	20.00	22.4	74.6	14.40	448	1,492	879	273	91
WH		17	2	85	90	5.781	9.22	11.56	27.5	92.5	10.20	317	1,069	622	194	65
WH		18	3	84	92	7.798	13.83	15.60	31.6	105.0	15.76	492	1,638	961	300	100
WH		19	2	86	96	4.561	9.22	9.12	37.6	122.5	10.96	343	1,117	669	209	68
WH		20	2	85	97	4.207	9.22	8.41	41.1	129.9	11.06	346	1,093	675	211	67
WH		21	3	82	97	5.826	13.83	11.65	42.8	123.6	15.91	499	1,440	971	304	88
WH		22	1	86	88	1.811	4.61	3.62	46.7	100.0	5.42	169	362	331	103	22
WH		Totals	18	85	90	51.380	82.97	102.76	28.2	89.7	92.66	2,894	9,219	5,652	1,765	562
WH	T	9	1	89	65	12.561	4.95	12.56	9.2	40.0	3.71	116	502	226	71	31
WH	T	10	1	89	75	9.076	4.95	18.15	6.8	35.0	3.94	123	635	240	75	39
WH	T	11	2	85	74	15.578	9.90	23.08	11.6	36.7	8.50	267	848	519	163	52
WH	T	12	1	85	67	6.863	4.95	6.86	17.1	60.0	3.76	118	412	229	72	25
WH	T	13	2	84	71	10.670	9.90	15.80	17.2	50.0	8.77	272	790	535	166	48
WH	T	14	2	80	78	9.007	9.90	18.01	17.1	50.0	9.87	309	901	602	188	55
WH	T	17	2	83	89	6.138	9.90	12.28	28.3	92.7	11.11	347	1,138	677	212	69
WH		Totals	11	85	73	69.893	54.45	106.74	14.5	49.0	49.66	1,551	5,226	3,029	946	319
DF	T	8	2	80	60	33.263	11.24	33.26	4.7	24.5	4.48	157	815	273	96	50
DF	T	9	1	89	74	13.301	5.62	26.60	4.6	20.0	3.45	121	532	211	74	32
DF	T	10	4	83	63	43.432	22.47	43.43	11.2	35.0	13.81	488	1,518	842	298	93
DF	T	11	1	79	74	8.360	5.62	8.36	16.0	40.0	3.79	134	334	231	82	20
DF	T	12	1	80	81	6.699	5.62	13.40	11.2	30.0	4.19	150	402	256	91	25
DF	T	13	3	82	81	17.646	16.85	35.29	14.2	41.7	14.15	501	1,472	863	306	90
DF		Totals	12	82	68	122.701	67.41	160.35	9.7	31.6	43.88	1,551	5,073	2,676	946	309
Totals			64	83	78	328.770	329.29	526.54	19.0	58.7	300.28	10007	30,892	18,317	6,104	1,884

**T027 R011 S22 T5RW** **T027 R011 S22 T5RW**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 027 011 22 WILLY 5RW 2.00 21 129 S W

S So Gr Twp Tract	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
						Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/			
						4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
DF T DM 2S	7	13.8	1,525	1,315	3	100				100				40	13	197	1.70	6.7		
DF T DM 3S	57	9.8	10,236	9,229	18	100				100				40	8	98	0.87	94.6		
DF T DM 4S	32	7.7	5,818	5,367	11	84	16					7	39	14	40	29	5	29	0.32	185.9
DF T DM UT	4	562		562	1	100				84	16					16	5	20	0.21	28.1
<b>DF T Totals</b>	53	9.2	18,141	16,473	33	31	61	8		5	13	5	77	32	6	52	0.56	315.2		
WH T DM 2S	22	16.1	3,968	3,328	7	100				100				40	13	197	1.58	16.9		
WH T DM 3S	51	7.0	7,790	7,248	14	93 7				100				40	8	104	0.79	69.9		
WH T DM 4S	27	9.5	4,317	3,905	8	58	42					11	32	17	40	29	5	32	0.35	121.0
<b>WH T Totals</b>	47	9.9	16,076	14,481	29	16	58	26		3	9	5	84	33	7	70	0.64	207.8		
<b>Type Totals</b>		9.5	34,216	30,954	62	24	60	17		4	11	5	80	32	7	59	0.59	523.0		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	011	22	WILLY	5RW	2.00	21	129	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		21	129	6.1						
CRUISE		11	64	5.8	651		9.8			
DBH COUNT										
REFOREST										
COUNT		10	65	6.5						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-T	35	205.6	13.1	62	53.1	191.9	18,141	16,473	5,558	5,577
WHEMLOCK-T	29	119.7	14.5	67	36.1	137.4	16,076	14,481	4,462	4,460
<b>TOTAL</b>	<i>64</i>	<i>325.4</i>	<i>13.6</i>	<i>64</i>	<i>89.2</i>	<i>329.3</i>	<i>34,216</i>	<i>30,954</i>	<i>10,020</i>	<i>10,036</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	85.2	19.0		166	206	245				
WHEMLOCK-T	95.2	21.3		94	120	145				
<b>TOTAL</b>	<i>41.2</i>	<i>9.2</i>		<i>295</i>	<i>325</i>	<i>355</i>	<i>71</i>	<i>36</i>	<i>18</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	73.8	16.5		160	192	224				
WHEMLOCK-T	104.5	23.4		105	137	170				
<b>TOTAL</b>	<i>22.5</i>	<i>5.0</i>		<i>313</i>	<i>329</i>	<i>346</i>	<i>21</i>	<i>11</i>	<i>5</i>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	73.6	16.5		13,761	16,473	19,184				
WHEMLOCK-T	105.1	23.5		11,078	14,481	17,883				
<b>TOTAL</b>	<i>23.4</i>	<i>5.2</i>		<i>29,334</i>	<i>30,954</i>	<i>32,573</i>	<i>23</i>	<i>12</i>	<i>6</i>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T				72	86	100				
WHEMLOCK-T	26.3	5.9		81	105	130				
<b>TOTAL</b>	<i>179.9</i>	<i>40.2</i>		<i>89</i>	<i>94</i>	<i>99</i>	<i>1,358</i>	<i>693</i>	<i>340</i>	

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1															
												Date		7/7/2015														
												Time		9:30:33AM														
T027 R012 S15 T00U6										T027 R012 S15 T00U6																		
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt																			
027	012	15	WILLY	00U6	91.00	32	162	S	W																			
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre							
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf						
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft									
DF	DM	2S		12	10.6	898	802	73	100				100				40	13	229	1.77	3.5							
DF	DM	3S		68	11.4	5,104	4,525	412	100				4 96				39	9	101	0.92	45.0							
DF	DM	4S		20	8.2	1,428	1,310	119	82	18					27	37	31	5	25	5	26	0.33	50.3					
<b>DF</b>	<b>Totals</b>			27	10.7	7,430	6,637	604	16	72	12					5	10	6	79	32	7	67	0.72	98.8				
DF	T	DM	3S	49		1,144	1,144	104	100				100				40	7	70	0.62	16.2							
DF	T	DM	4S	51	14.4	1,345	1,151	105	86	14					32	4	64					28	5	26	0.31	44.1		
<b>DF</b>	<b>T</b>	<b>Totals</b>		9	7.8	2,489	2,295	209	43	57					16	2	82					32	6	38	0.42	60.4		
WH	DM	2S		2	50.0	238	119	11	100				100				40	12	100	2.38	1.2							
WH	DM	3S		81	8.7	4,821	4,400	400	100				100				40	9	112	0.89	39.3							
WH	DM	4S		17	3.4	901	870	79	96	4					28	72					22	5	21	0.31	40.5			
<b>WH</b>	<b>Totals</b>			22	9.6	5,960	5,390	490	15	82	2					5	12	84					31	7	67	0.72	81.0	
WH	T	DM	3S	40	12.0	1,817	1,598	145	100				100				40	8	82	0.71	19.5							
WH	T	DM	4S	60	3.1	2,447	2,372	216	67	33					11	14	24	52					31	5	35	0.30	67.2	
<b>WH</b>	<b>T</b>	<b>Totals</b>		16	6.9	4,264	3,970	361	40	60					6	8	14	71					33	6	46	0.41	86.7	
SS	DM	2S		24	17.0	1,429	1,187	108	100				100				40	13	186	1.76	6.4							
SS	DM	3S		51	12.8	2,886	2,515	229	81 19				100				40	9	108	1.08	23.4							
SS	DM	4S		21	1.7	1,058	1,040	95	37	63					43	27	29					23	6	29	0.43	35.9		
SS	DM	UT		4		186	186	17	100				100				24	5	30	0.24	6.2							
<b>SS</b>	<b>Totals</b>			20	11.3	5,558	4,928	448	12	55	34					9	10	6	75					30	7	69	0.85	71.9
SS	T	DM	3S	70	8.4	730	669	61	100				100				27	9	59	0.88	11.3							
SS	T	DM	4S	13	33.3	183	122	11	100				100				29	5	20	0.28	6.1							
SS	T	DM	UT	17		156	156	14	100				100				25	5	30	0.28	5.2							
<b>SS</b>	<b>T</b>	<b>Totals</b>		4	11.4	1,069	947	86	29	71					100				27	7	42	0.58	22.6					
<b>Type</b>	<b>Totals</b>				9.7	26,770	24,166	2,199	22	67	11					7	13	5	75					31	7	57	0.63	421.3

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY		DATE	7/7/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	15	WILLY	00U6	91.00	32	162	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		32	162	5.1						
CRUISE		16	77	4.8	22,528		.3			
DBH COUNT										
REFOREST										
COUNT		16	84	5.3						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	24	48.5	16.6	69	17.9	73.2	7,430	6,637	2,275	2,278
DOUG FIR-T	10	44.1	11.6	59	9.5	32.3	2,489	2,295	792	797
WHEMLOCK	15	40.5	15.9	65	14.1	56.2	5,960	5,390	1,784	1,783
WHEMLOCK-T	15	67.2	11.0	59	13.3	44.2	4,264	3,970	1,173	1,176
S SPRUCE	11	35.9	16.9	64	13.6	56.2	5,558	4,928	1,848	1,849
S SPRUCE-T	2	11.3	14.9	60	3.5	13.6	1,069	947	359	357
<b>TOTAL</b>	<b>77</b>	<b>247.6</b>	<b>14.3</b>	<b>63</b>	<b>72.9</b>	<b>275.7</b>	<b>26,770</b>	<b>24,166</b>	<b>8,231</b>	<b>8,239</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
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	111.1	19.6		39	48	58				
DOUG FIR-T	145.6	25.7		33	44	55				
WHEMLOCK	117.7	20.8		32	40	49				
WHEMLOCK-T	146.0	25.8		50	67	85				
S SPRUCE	158.1	27.9		26	36	46				
S SPRUCE-T	203.4	35.9		7	11	15				
<b>TOTAL</b>	<b>39.2</b>	<b>6.9</b>		<b>230</b>	<b>248</b>	<b>265</b>	<b>61</b>	<b>31</b>	<b>15</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	111.2	19.6		59	73	88				
DOUG FIR-T	141.0	24.9		24	32	40				
WHEMLOCK	116.8	20.6		45	56	68				
WHEMLOCK-T	134.2	23.7		34	44	55				
S SPRUCE	164.3	29.0		40	56	72				
S SPRUCE-T	203.2	35.9		9	14	18				
<b>TOTAL</b>	<b>28.8</b>	<b>5.1</b>		<b>262</b>	<b>276</b>	<b>290</b>	<b>33</b>	<b>17</b>	<b>8</b>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	112.5	19.9		5,319	6,637	7,955				
DOUG FIR-T	146.0	25.8		1,703	2,295	2,887				
WHEMLOCK	117.4	20.7		4,272	5,390	6,507				
WHEMLOCK-T	134.7	23.8		3,025	3,970	4,915				
S SPRUCE	165.9	29.3		3,484	4,928	6,371				
S SPRUCE-T	203.4	35.9		606	947	1,287				
<b>TOTAL</b>	<b>28.0</b>	<b>5.0</b>		<b>22,970</b>	<b>24,166</b>	<b>25,362</b>	<b>31</b>	<b>16</b>	<b>8</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	53.1	9.4		73	91	109				
DOUG FIR-T	87.1	15.4		53	71	89				
WHEMLOCK				76	96	116				
WHEMLOCK-T	99.2	17.5		68	90	111				

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
				PROJECT		WILLY		DATE	7/7/2015	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>027</b>	<b>012</b>	<b>15</b>	<b>WILLY</b>	<b>00U6</b>	91.00	32	162	S	W	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
S SPRUCE		14.6	2.6	62	88	113				
S SPRUCE-T		9.9	1.7	45	70	95				
<b>TOTAL</b>		<i>196.1</i>	<i>34.6</i>	<b>83</b>	<b>88</b>	<b>92</b>	<i>1,536</i>	<i>784</i>	<i>384</i>	

TC		TSTNDSUM		Stand Table Summary												
Project														WILLY		
T027 R012 S15 T00U6										T027 R012 S15 T00U6						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
027	012	15	WILLY	00U6	91.00	32	162	Date:	7/7/2015							
								Time:	9:30:31AM							
S Spc	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals			
		DBH	Trees	FF 16'				Ht Tot	Net Cu.Ft.				Net Bd.Ft.	Tons	Cunits	MBF
DF		14	2	83	77	5.800	6.10	11.60	14.3	35.0	4.70	166	406	427	151	37
DF		15	5	80	81	12.274	15.24	24.55	17.9	50.0	12.49	440	1,228	1,136	400	112
DF		16	4	82	84	8.823	12.19	17.65	21.1	58.8	10.59	372	1,038	964	339	94
DF		17	5	81	89	9.681	15.24	21.23	22.5	71.0	13.67	478	1,507	1,244	435	137
DF		18	3	80	94	5.199	9.15	10.40	29.3	88.5	8.69	305	920	791	277	84
DF		19	2	79	89	3.180	6.10	6.36	31.3	90.0	5.65	199	572	514	181	52
DF		22	2	81	95	2.407	6.10	4.81	44.0	125.0	6.03	212	602	549	193	55
DF		23	1	84	97	1.104	3.05	2.21	48.2	165.0	3.03	106	364	276	97	33
DF		Totals	24	81	86	48.469	73.17	98.81	23.1	67.2	64.84	2,278	6,637	5,900	2,073	604
WH		13	1	87	73	4.323	3.74	8.65	11.9	40.0	3.30	103	346	301	94	31
WH		14	1	86	78	3.502	3.74	7.00	16.6	55.0	3.72	116	385	339	106	35
WH		15	5	84	79	15.014	18.72	30.03	19.7	61.9	19.00	593	1,858	1,729	540	169
WH		16	2	86	81	5.606	7.49	11.21	21.0	70.0	7.53	235	785	685	214	71
WH		17	2	83	83	4.642	7.49	9.28	26.5	84.8	7.87	246	787	717	224	72
WH		18	2	85	80	4.214	7.49	8.43	28.1	77.5	7.56	237	653	688	216	59
WH		19	1	82	84	2.005	3.74	4.01	31.5	105.0	4.04	126	421	367	115	38
WH		24	1	70	80	1.192	3.74	2.38	53.1	65.0	4.06	127	155	370	115	14
WH		Totals	15	84	79	40.498	56.15	81.00	22.0	66.5	57.08	1,783	5,390	5,195	1,623	490
SS		12	1	77	64	6.186	5.10	12.37	9.3	35.0	2.98	115	433	271	104	39
SS		14	1	78	74	4.642	5.10	9.28	16.4	35.0	3.95	152	325	359	138	30
SS		15	1	79	73	4.451	5.10	8.90	16.4	40.0	3.79	146	356	345	133	32
SS		17	1	77	91	3.438	5.10	6.88	26.3	70.0	4.70	181	481	428	164	44
SS		18	1	78	78	2.857	5.10	5.71	28.6	80.0	4.24	163	457	386	148	42
SS		19	4	82	87	10.599	20.42	21.20	33.8	95.1	18.60	716	2,016	1,693	651	183
SS		22	1	78	95	1.969	5.10	3.94	47.3	145.0	4.84	186	571	441	170	52
SS		23	1	78	96	1.800	5.10	3.60	53.0	80.0	4.94	191	288	450	174	26
SS		Totals	11	79	80	35.943	56.15	71.89	25.7	68.5	48.04	1,849	4,928	4,372	1,682	448
WH	T	8	1	87	59	8.449	2.95	8.45	6.7	40.0	1.80	56	338	164	51	31
WH	T	9	2	83	55	14.969	5.90	14.97	7.5	30.0	3.55	112	449	323	102	41
WH	T	10	2	84	61	11.399	5.90	11.40	12.2	40.0	4.47	140	456	406	127	41
WH	T	11	3	84	73	12.939	8.85	12.94	17.1	60.0	7.09	222	776	645	202	71
WH	T	12	1	86	76	3.693	2.95	7.39	11.9	35.0	2.82	88	259	257	80	24
WH	T	13	1	86	77	3.104	2.95	6.21	14.8	50.0	2.93	92	310	267	83	28
WH	T	14	3	83	79	8.046	8.85	16.09	17.2	50.0	8.82	277	805	803	252	73
WH	T	15	1	86	76	2.403	2.95	4.81	19.4	60.0	2.99	93	288	272	85	26
WH	T	16	1	84	80	2.222	2.95	4.44	21.6	65.0	3.07	96	289	279	87	26
WH		Totals	15	84	66	67.225	44.24	86.69	13.6	45.8	37.54	1,176	3,970	3,416	1,070	361
DF	T	10	3	82	64	17.610	9.70	17.61	11.0	33.7	5.50	194	593	500	177	54
DF	T	11	2	83	67	10.275	6.47	10.28	14.0	30.0	3.99	144	308	363	131	28
DF	T	12	1	79	78	4.049	3.23	8.10	10.8	35.0	2.50	88	283	227	80	26
DF	T	13	2	81	81	6.753	6.47	13.51	13.6	42.5	5.24	184	574	477	167	52
DF	T	14	1	79	78	3.068	3.23	6.14	15.0	45.0	2.62	92	276	238	84	25
DF	T	16	1	80	82	2.374	3.23	4.75	20.1	55.0	2.72	96	261	248	87	24
DF		Totals	10	81	71	44.129	32.33	60.37	13.2	38.0	22.57	797	2,295	2,053	725	209
SS	T	14	1	77	74	6.103	6.81	12.21	14.5	35.0	4.64	177	427	422	161	39
SS	T	16	1	78	73	5.194	6.81	10.39	17.3	50.0	4.70	180	519	428	163	47
SS		Totals	2	77	74	11.297	13.61	22.59	15.8	41.9	9.34	357	947	850	324	86

TC		TSTNDSUM		Stand Table Summary														
Project														WILLY				
T027 R012 S15 T00U6											T027 R012 S15 T00U6							
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Page:	2							
027	012	15	WILLY	00U6	91.00	32	162			Date:	7/7/2015							
										Time:	9:30:31AM							
S Spc	T	Sample			Av			Average Log		Net		Net		Totals				
		DBH	Trees	16'	FF	Ht	Tot	Trees/ Acre	BA/ Acre	Logs Acre	Net Cu.Ft.	Net Cu.Ft.	Bd.Ft. Acre	Tons Acre	Cu.Ft. Acre	Bd.Ft. Acre	Tons	Cunits
Totals		77	82	75				247.561	275.65	421.35	19.6	57.4	239.41	8239	24,166	21,786	7,497	2,199

T027 R012 S15 TU6G										T027 R012 S15 TU6G				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	012	15	WILLY	U6G	4.00	32	162	S	W					

Spp	T	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre			
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd
					4-5	6-11	12-16							17+	12-20	21-30	31-35	36-99	Ft	In				
DF	T	DM	2S	9	10.6	914	817	3	100				100				40	13	229	1.77	3.6			
DF	T	DM	3S	63	9.4	6,293	5,703	23	100				3 97				40	8	93	0.84	61.3			
DF	T	DM	4S	28	11.1	2,744	2,438	10	84	16					29	22	17	31	26	5	26	0.32	93.6	
<b>DF T Totals</b>				37	10.0	9,951	8,958	36	23	68	9					8	8	5	79	32	7	57	0.61	158.5
WH	T	DM	2S	1	50.0	213	107	0	100				100				40	12	100	2.37	1.1			
WH	T	DM	3S	61	9.8	6,371	5,747	23	100				100				40	9	100	0.82	57.2			
WH	T	DM	4S	38	3.1	3,581	3,469	14	74	26					15	27	18	40	28	5	31	0.30	112.5	
<b>WH T Totals</b>				39	8.3	10,166	9,323	37	27	71	1					5	10	7	78	32	6	55	0.54	170.8
SS	T	DM	2S	21	17.0	1,502	1,247	5	100				100				40	13	186	1.76	6.7			
SS	T	DM	3S	53	12.1	3,609	3,172	13	84 16				17 83				37	9	95	1.04	33.5			
SS	T	DM	4S	20	5.3	1,257	1,190	5	42	58					40	33	27		24	6	28	0.40	42.6	
SS	T	DM	UT	6		318	318	1	100				100				24	5	30	0.26	10.6			
<b>SS T Totals</b>				24	11.4	6,686	5,927	24	14	57	30					8	21	5	66	30	7	63	0.81	93.4
<b>Type Totals</b>					9.7	26,802	24,207	97	22	67	11					7	12	6	75	31	7	57	0.62	422.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	15	WILLY	U6G	4.00	32	162	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		32	162	5.1						
CRUISE		16	77	4.8	1,003		7.7			
DBH COUNT										
REFOREST										
COUNT		16	84	5.3						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-T	34	91.7	14.5	64	27.7	105.5	9,951	8,958	3,075	3,083
WHEMLOCK-T	30	112.5	12.8	61	28.1	100.4	10,166	9,323	2,926	2,928
S SPRUCE-T	13	46.7	16.6	63	17.1	69.8	6,686	5,927	2,226	2,225
<b>TOTAL</b>	<b>77</b>	<b>250.9</b>	<b>14.2</b>	<b>63</b>	<b>73.2</b>	<b>275.7</b>	<b>26,802</b>	<b>24,207</b>	<b>8,227</b>	<b>8,236</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	94.5	16.7		76	92	107				
WHEMLOCK-T	104.1	18.4		92	112	133				
S SPRUCE-T	136.3	24.1		35	47	58				
<b>TOTAL</b>	<b>39.2</b>	<b>6.9</b>		<b>233</b>	<b>251</b>	<b>268</b>	<b>61</b>	<b>31</b>	<b>15</b>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	91.7	16.2		88	105	123				
WHEMLOCK-T	93.5	16.5		84	100	117				
S SPRUCE-T	141.9	25.1		52	70	87				
<b>TOTAL</b>	<b>28.8</b>	<b>5.1</b>		<b>262</b>	<b>276</b>	<b>290</b>	<b>33</b>	<b>17</b>	<b>8</b>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	94.9	16.8		7,457	8,958	10,459				
WHEMLOCK-T	92.9	16.4		7,793	9,323	10,852				
S SPRUCE-T	144.6	25.5		4,412	5,927	7,441				
<b>TOTAL</b>	<b>27.9</b>	<b>4.9</b>		<b>23,016</b>	<b>24,207</b>	<b>25,398</b>	<b>31</b>	<b>16</b>	<b>8</b>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR-T	30.3	5.4		71	85	99				
WHEMLOCK-T				78	93	108				
S SPRUCE-T				63	85	107				
<b>TOTAL</b>	<b>196.4</b>	<b>34.7</b>		<b>83</b>	<b>88</b>	<b>92</b>	<b>1,541</b>	<b>786</b>	<b>385</b>	

T027 R012 S14 T00U7										T027 R012 S14 T00U7				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
027	012	14	WILLY	00U7	14.00	11	65	S	W					

Spp	T	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre			
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd
					4-5	6-11	12-16							17+	12-20	21-30	31-35	36-99	Ft	In				
WH	T	DM	2S	13	19.5	3,220	2,591	36	100				100				40	13	193	1.63	13.4			
WH	T	DM	3S	58	7.6	12,515	11,569	162	100				100				40	8	94	0.66	123.4			
WH	T	DM	4S	27	7.5	5,700	5,273	74	95	5					14	31	27	28	28	5	28	0.28	190.4	
WH	T	DM	UT	2	387		387	5	100				100				18	5	20	0.20	19.4			
<b>WH T Totals</b>				62	9.2	21,822	19,821	277	27	60	13					6	8	7	79	32	6	57	0.51	346.6
DF	T	DM	2S	13	9.1	1,653	1,502	21	100				100				40	12	199	1.68	7.6			
DF	T	DM	3S	64	8.0	8,107	7,460	104	100				100				40	8	87	0.75	85.8			
DF	T	DM	4S	23	5.3	2,695	2,552	36	85	15					18	31	20	30	24	5	24	0.32	106.6	
<b>DF T Totals</b>				36	7.6	12,455	11,514	161	19	68	13					4	7	5	85	32	7	58	0.62	200.0
SF	T	DM	3S	83	16.7	521	435	6	100				100				40	11	150	1.23	2.9			
SF	T	DM	4S	17	87		87	1	100				100				30	5	30	0.40	2.9			
<b>SF T Totals</b>				2	14.3	608	521	7	17	83					17	83			35	8	90	0.87	5.8	
RA	T	DM	4S	100	14.3	219	188	3	100				100				30	9	60	0.83	3.1			
<b>RA T Totals</b>				1	14.3	219	188	3	100				100				30	9	60	0.83	3.1			
<b>Type Totals</b>					8.7	35,104	32,045	449	24	63	13					5	8	6	81	32	7	58	0.56	555.5

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY		DATE	7/7/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	14	WILLY	00U7	14.00	11	65	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		11	65	5.9						
CRUISE		7	40	5.7	4,514		.9			
DBH COUNT										
REFOREST										
COUNT		4	22	5.5						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK-T	24	209.8	12.6	63	51.2	181.8	21,822	19,821	5,732	5,734
DOUG FIR-T	14	106.6	14.9	66	33.4	128.7	12,455	11,514	3,887	3,887
PS FIR-T	1	2.9	17.7	72	1.2	5.0	608	521	175	177
R ALDER-T	1	3.1	14.6	52	1.0	3.6	219	188	78	78
<b>TOTAL</b>	<b>40</b>	<b>322.4</b>	<b>13.5</b>	<b>64</b>	<b>86.9</b>	<b>319.1</b>	<b>35,104</b>	<b>32,045</b>	<b>9,873</b>	<b>9,876</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	81.4	25.7		156	210	264				
DOUG FIR-T	101.9	32.2		72	107	141				
PS FIR-T	331.7	104.8			3	6				
R ALDER-T	331.7	104.8			3	6				
<b>TOTAL</b>	<b>26.5</b>	<b>8.4</b>		<b>295</b>	<b>322</b>	<b>349</b>	<b>31</b>	<b>16</b>	<b>8</b>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	66.2	20.9		144	182	220				
DOUG FIR-T	105.8	33.4		86	129	172				
PS FIR-T	331.7	104.8			5	10				
R ALDER-T	331.7	104.8			4	7				
<b>TOTAL</b>				<b>319</b>	<b>319</b>	<b>319</b>				
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	68.8	21.7		15,512	19,821	24,130				
DOUG FIR-T	109.9	34.7		7,518	11,514	15,510				
PS FIR-T	331.7	104.8			521	1,068				
R ALDER-T	331.7	104.8			188	384				
<b>TOTAL</b>				<b>32,045</b>	<b>32,045</b>	<b>32,045</b>				
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	33.8	10.7		85	109	133				
DOUG FIR-T				58	89	121				
PS FIR-T	331.7	104.8			105	216				
R ALDER-T	331.7	104.8			52	106				
<b>TOTAL</b>	<b>133.4</b>	<b>42.1</b>		<b>100</b>	<b>100</b>	<b>100</b>	<b>782</b>	<b>399</b>	<b>195</b>	

<b>T027 R012 S15 T0ROW</b>										<b>T027 R012 S15 T0ROW</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
<b>027</b>	<b>012</b>	<b>15</b>	<b>WILLY</b>	<b>0ROW</b>	<b>2.00</b>	<b>3</b>	<b>12</b>	<b>S</b>	<b>W</b>					

S Spp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/			
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
WH	T	DM	3S	86	3.7	5,563	5,358	11	100				100				40	7	71	0.64	75.8		
WH	T	DM	4S	14		864	864	2	100				11				89	31	5	30	0.38	28.9	
<b>WH T Totals</b>				72	3.2	6,427	6,222	12	14	86	2				98				37	6	59	0.58	104.8
RA	T	DM	4S	100	11.1	2,736	2,434	5	76	24					100				40	5	39	0.44	62.6
<b>RA T Totals</b>				28	11.1	2,736	2,434	5	76	24					100				40	5	39	0.44	62.6
<b>Type Totals</b>					5.5	9,163	8,656	17	31	69	1				99				38	6	52	0.53	167.4

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	WILLY			DATE	7/7/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	012	15	WILLY	OROW	2.00	3	12	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL		3	12	4.0						
CRUISE		3	12	4.0	342		3.5			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK-T	8	108.4	13.4	52	29.1	106.7	6,427	6,222	2,265	2,270
R ALDER-T	4	62.6	11.5	48	13.2	44.8	2,736	2,434	1,102	1,099
<b>TOTAL</b>	<i>12</i>	<i>171.0</i>	<i>12.7</i>	<i>51</i>	<i>42.4</i>	<i>151.5</i>	<i>9,163</i>	<i>8,656</i>	<i>3,367</i>	<i>3,370</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	86.8	60.1		43	108	174				
R ALDER-T	173.2	119.8			63	138				
<b>TOTAL</b>	<i>9.3</i>	<i>6.5</i>		<i>160</i>	<i>171</i>	<i>182</i>	<i>5</i>	<i>3</i>	<i>1</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	86.6	59.9		43	107	171				
R ALDER-T	173.2	119.8			45	99				
<b>TOTAL</b>	<i>9.7</i>	<i>6.7</i>		<i>141</i>	<i>151</i>	<i>162</i>	<i>5</i>	<i>3</i>	<i>1</i>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	89.7	62.0		2,362	6,222	10,081				
R ALDER-T	173.2	119.8			2,434	5,351				
<b>TOTAL</b>	<i>21.5</i>	<i>14.9</i>		<i>7,369</i>	<i>8,656</i>	<i>9,943</i>	<i>27</i>	<i>14</i>	<i>7</i>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK-T	89.7	62.0		22	58	95				
R ALDER-T	173.2	119.8			54	119				
<b>TOTAL</b>	<i>16.4</i>	<i>11.3</i>		<i>49</i>	<i>57</i>	<i>66</i>	<i>15</i>	<i>8</i>	<i>4</i>	

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

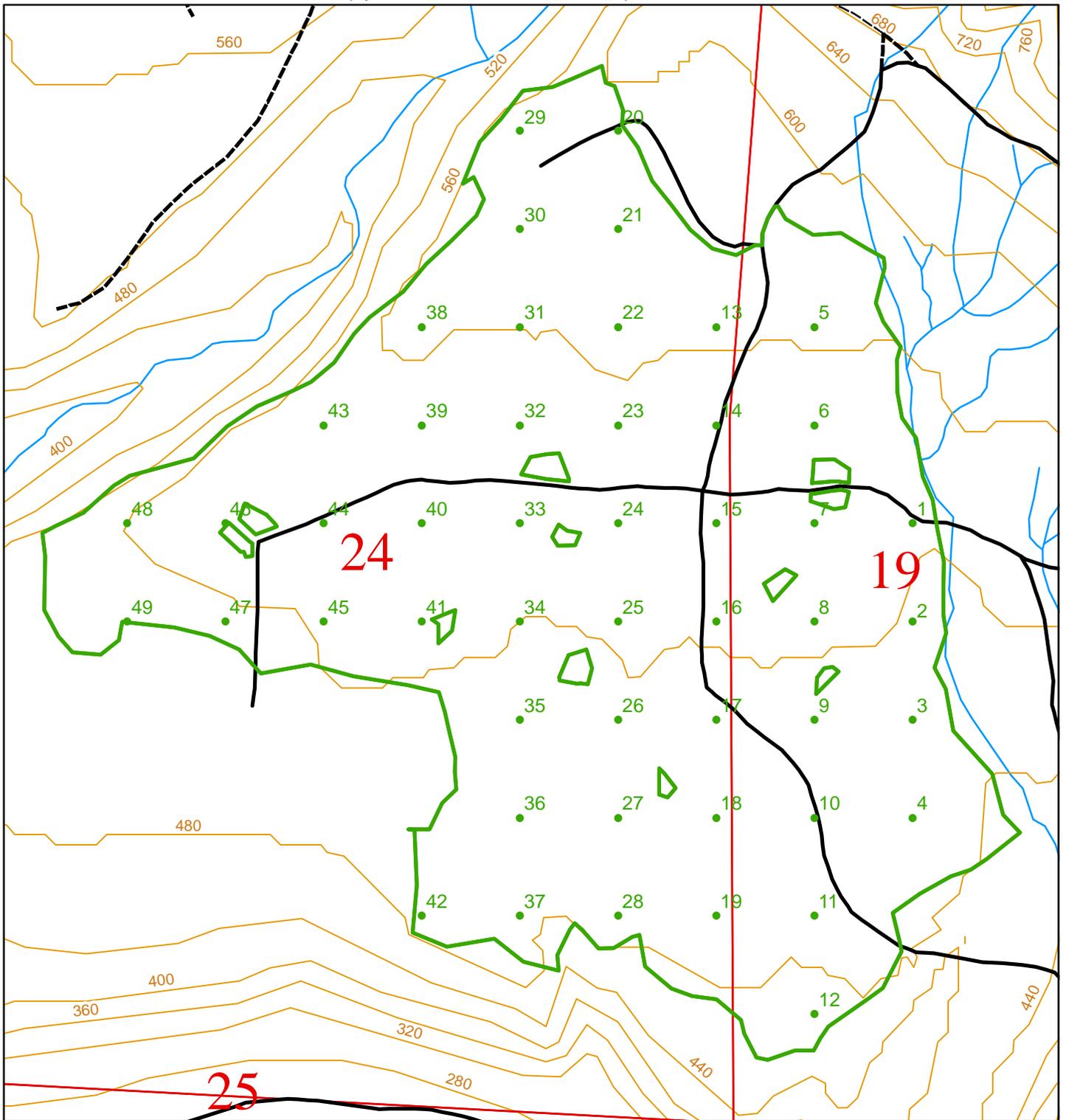
T027 R011 S19 Ty3100	118.0
T027 R011 S19 TyU3G	2.0
T027 R012 S20 TyU2G	2.0

**Project WILLY**  
**Acres 356.50**

**Page No 1**  
**Date: 7/7/2015**  
**Time 10:19:19AM**

Species	s T	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
WHEMLOCK		26,657	51,613	36,592	42.89	22.15	0.72	11,435	11,432	3,901	3,563
WHEMLOCK	T	36,499	48,431	21,475	18.40	13.87	0.42	6,711	6,716	2,437	2,297
DOUG FIR		13,252	25,455	18,702	49.58	25.81	0.79	6,562	6,571	2,080	1,866
DOUG FIR	T	15,575	21,909	8,262	18.70	13.29	0.44	2,899	2,912	955	885
S SPRUCE		3,584	6,915	4,636	49.77	25.79	0.86	1,783	1,783	528	465
S SPRUCE	T	2,228	3,472	1,398	24.02	15.41	0.61	538	535	159	145
R ALDER	T	1,131	1,135	420	13.50	13.45	0.41	153	153	43	39
PS FIR		45	102	249	191.89	85.23	2.24	87	87	39	34
WR CEDAR	T	732	732	146	8.64	8.64	0.37	62	63	18	16
R ALDER		72	144	89	45.04	22.52	0.78	32	32	12	10
PS FIR	T	42	84	79	66.36	32.98	0.94	28	28	10	8
WR CEDAR		128	156	89	29.58	24.37	0.84	38	38	6	6
<b>Totals</b>		99,945	160,149	92,137	30.37	18.95	0.60	30,328	30,351	10,188	9,335

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
C	98,741	158,869	91,628	30.55	18.99	0.60	30,142	30,166	10,133	9,286
H	1,203	1,280	510	15.39	14.47	0.45	185	185	55	49
<b>Totals</b>	99,945	160,149	92,137	30.37	18.95	0.60	30,328	30,351	10,188	9,335



**Willy Thinner**

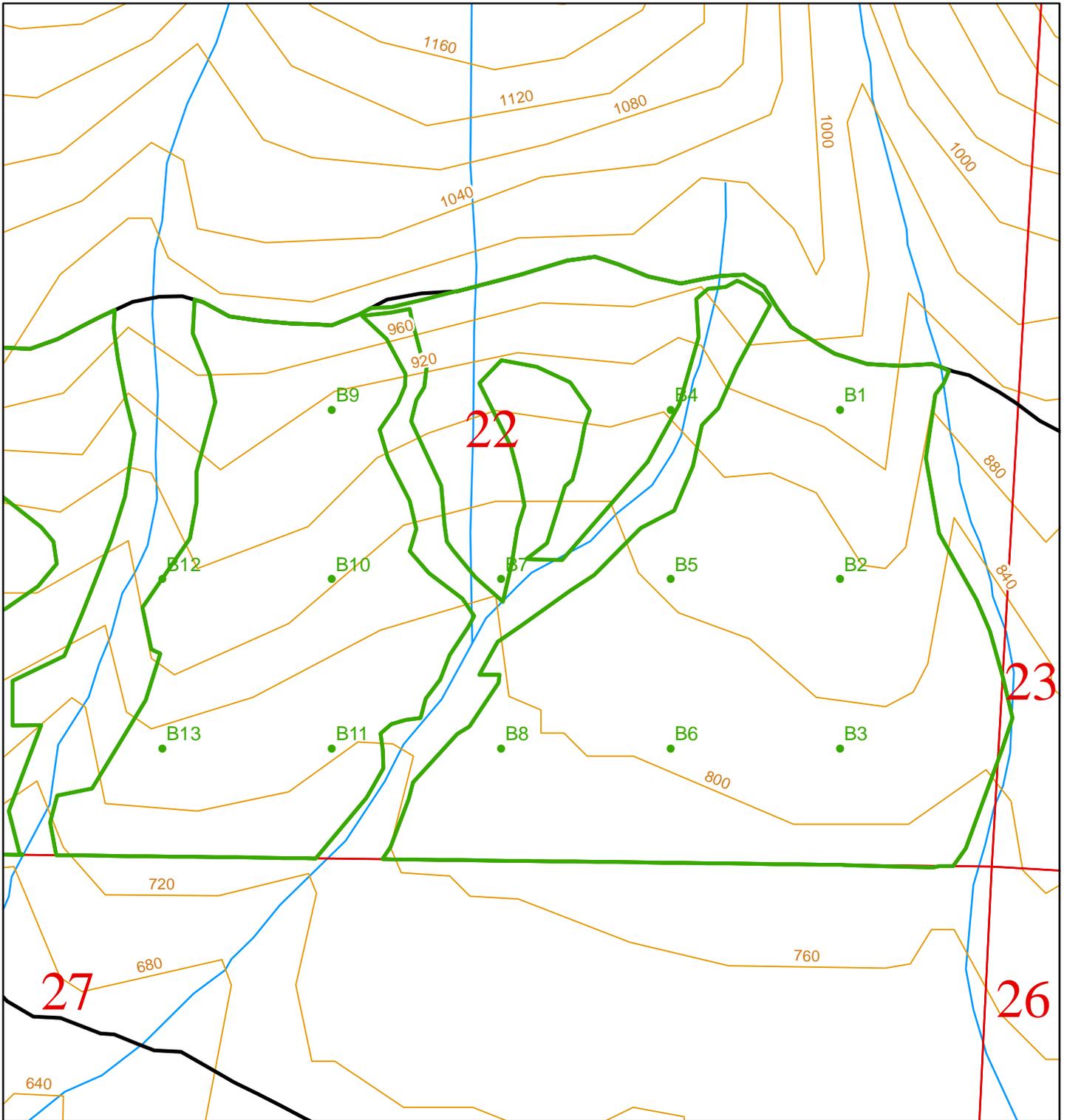
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Acres:	122	Spacing Between Points: Width: 325 Height: 325
		Point Rotation Degrees: 0



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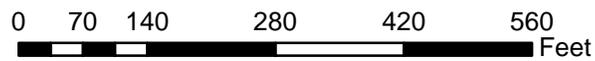
**Legend**

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



**Cruiser Sample Point Locations**

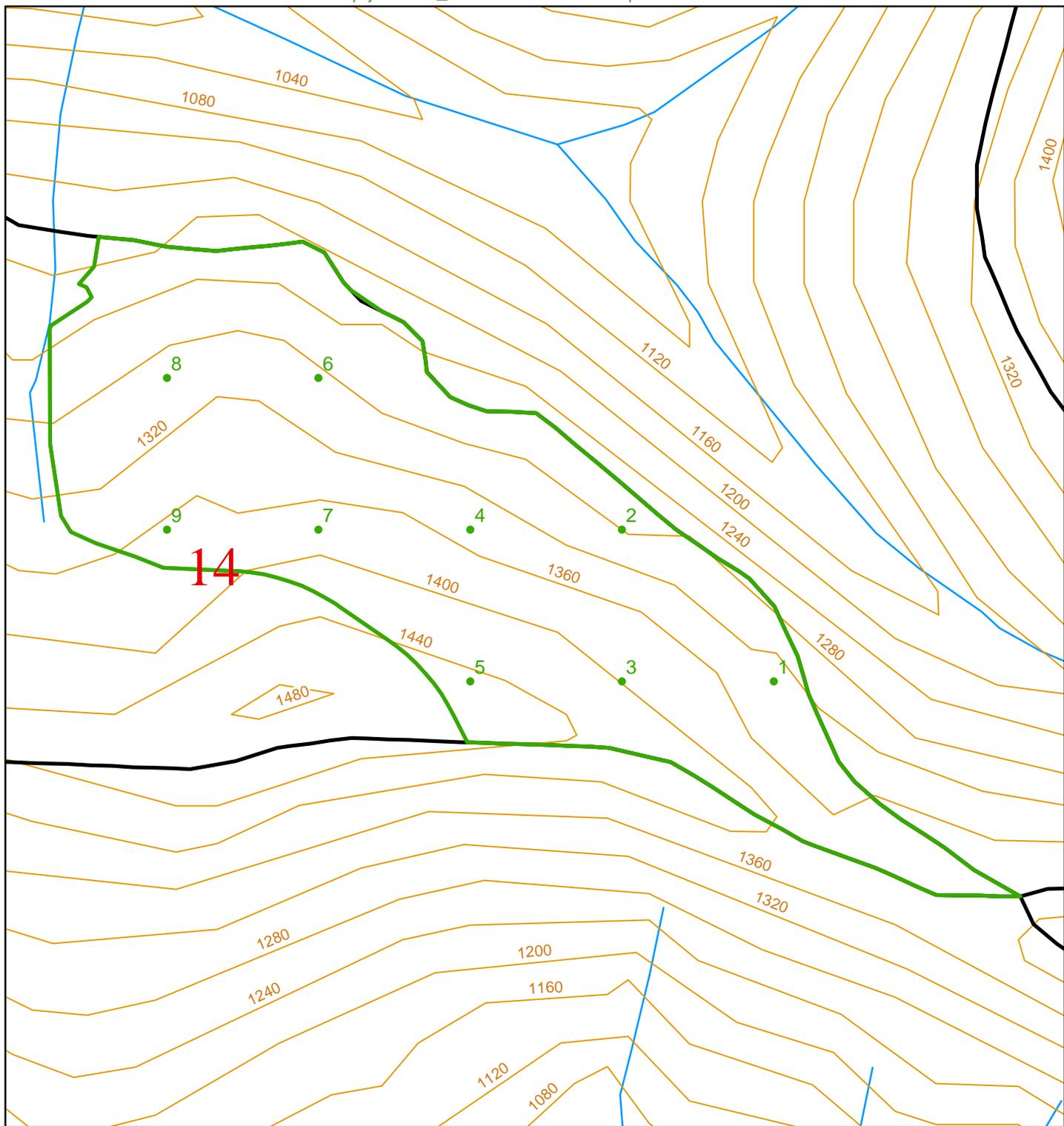
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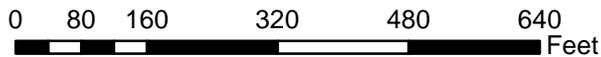
**Legend**

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



**Cruiser Sample Point Locations**

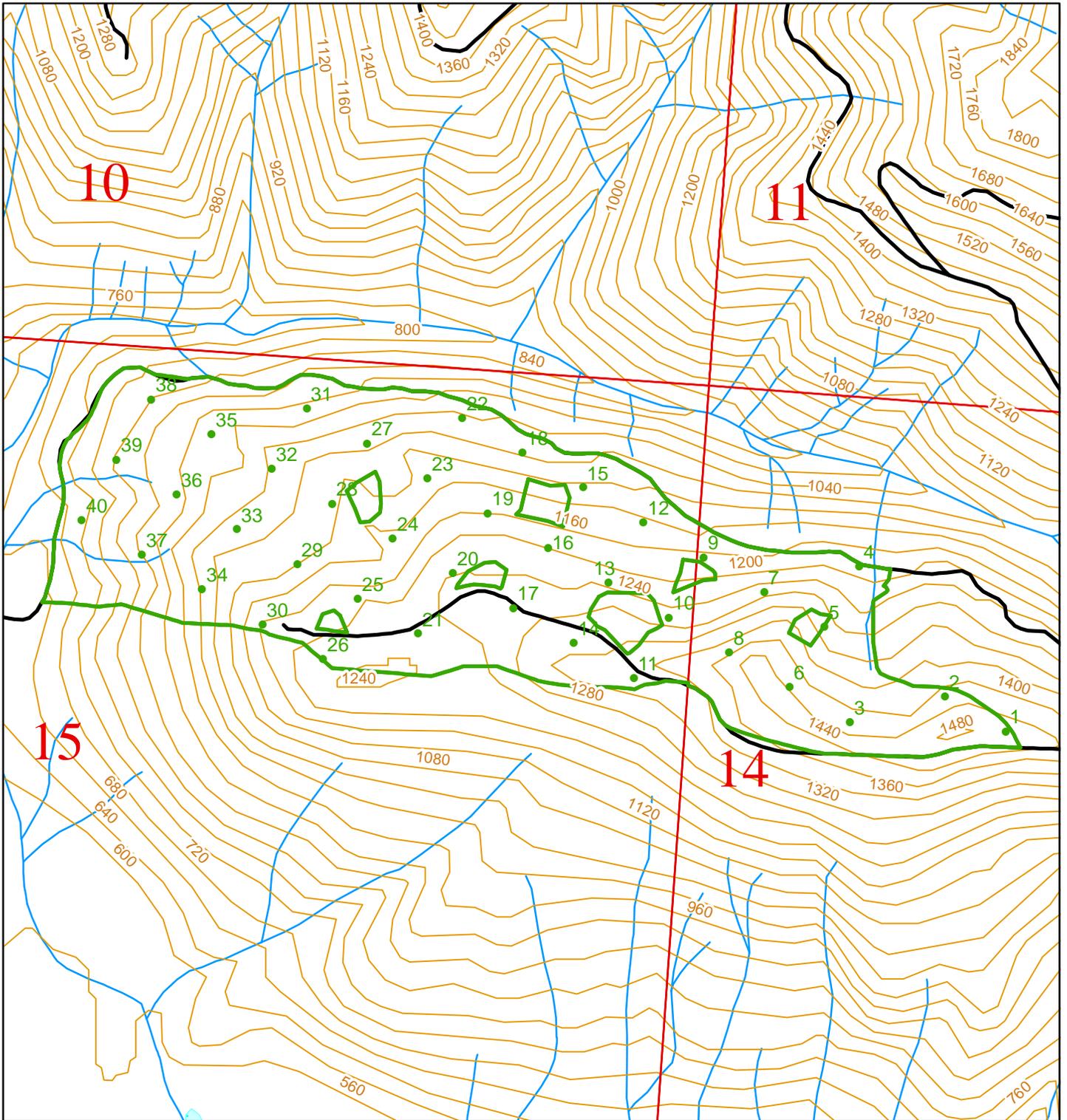
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POLY ID:	1	Total Sample Points:	9
Acres:	15	Spacing Between Points:	250
		Point Rotation Degrees:	0



Scale 1:2,800

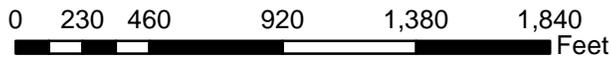
**Legend**

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



**Willy Thinner**

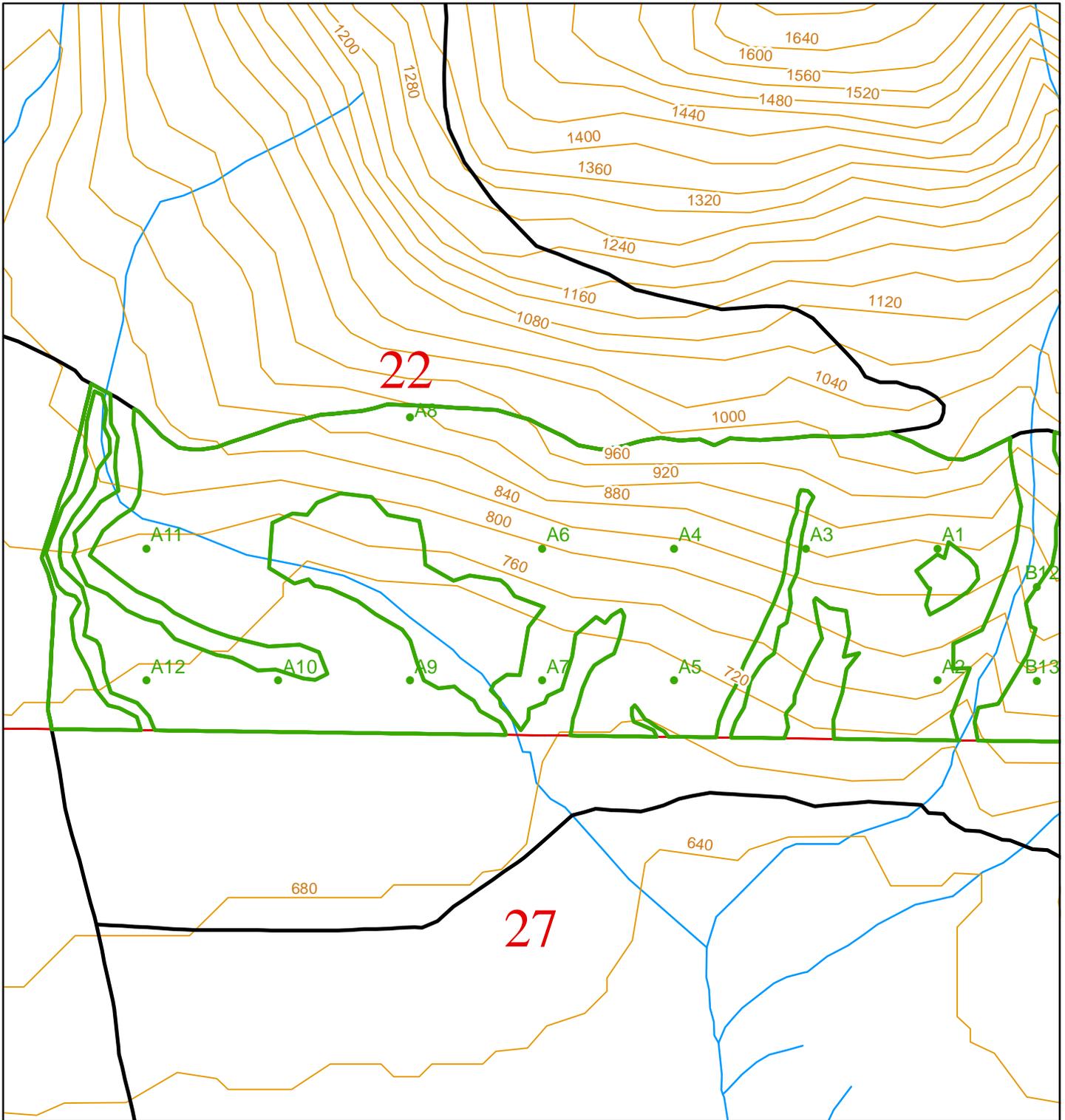
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Acres:	94	Spacing Between Points:	325
		Point Rotation Degrees:	30



Scale 1:7,900

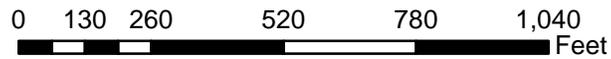
**Legend**

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



**Cruiser Sample Point Locations**

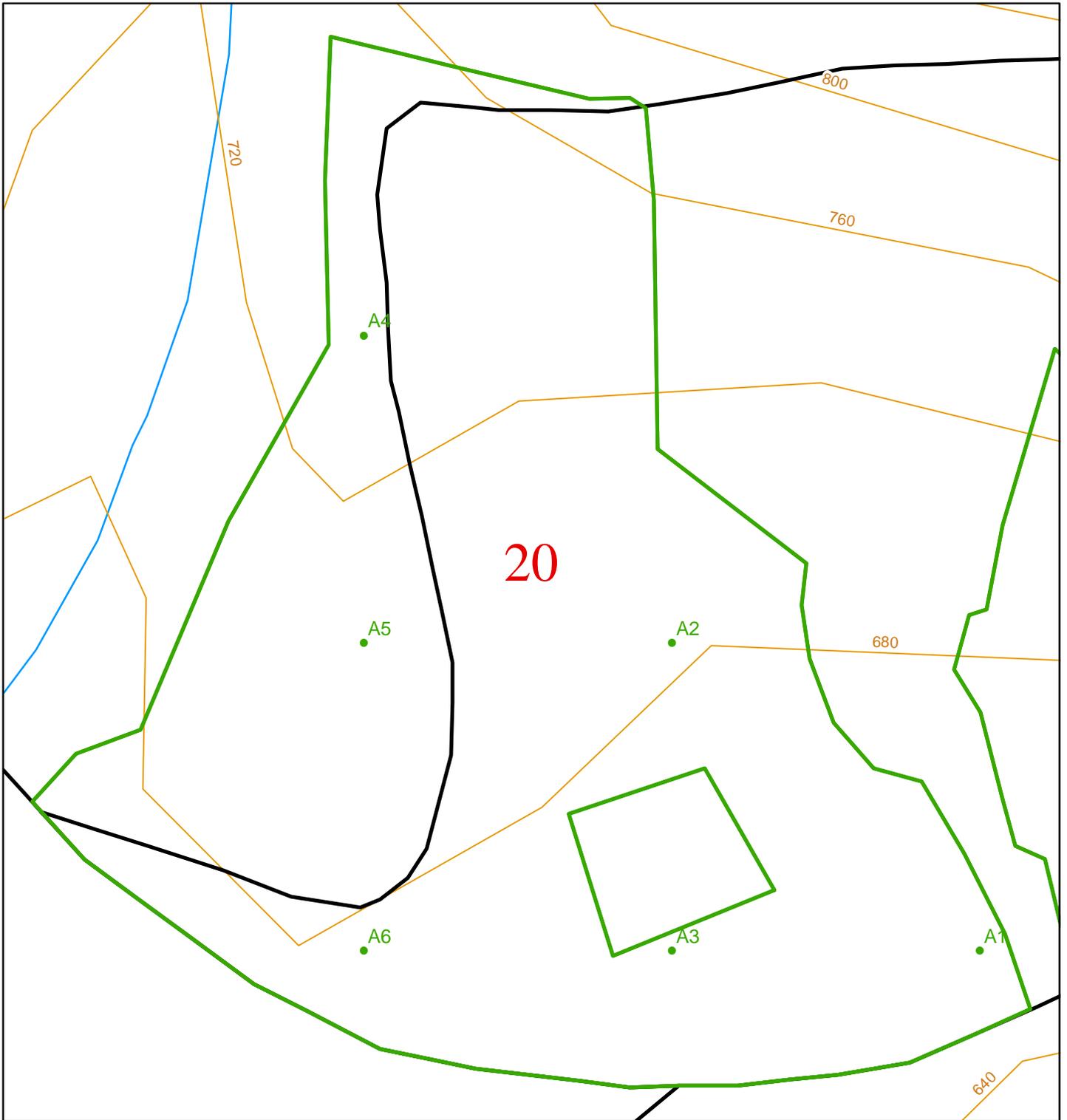
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		Point Rotation Degrees:	0



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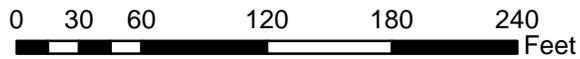
**Legend**

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



**Cruiser Sample Point Locations**

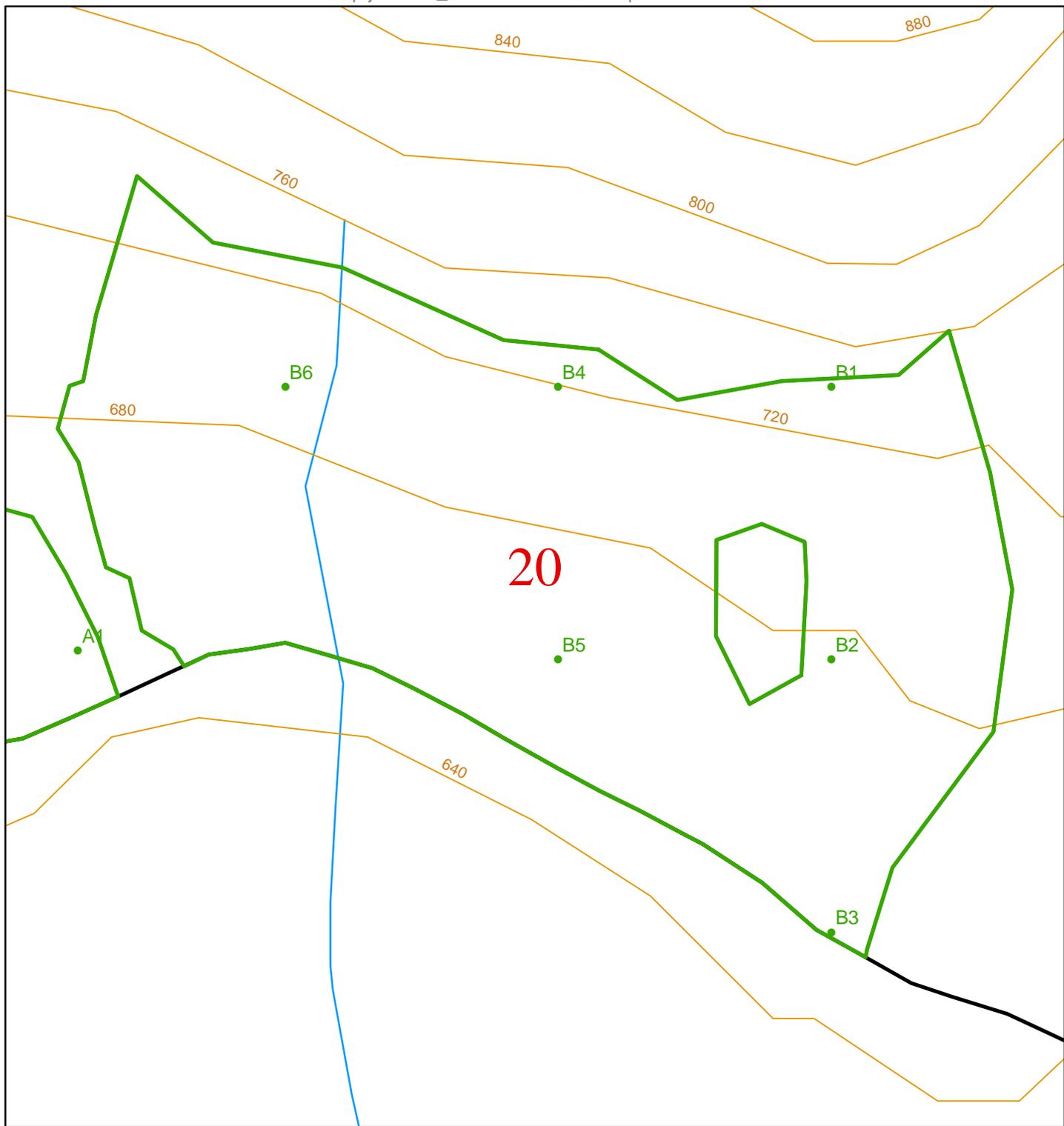
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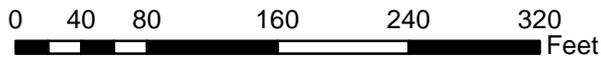
**Legend**

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot



**Cruiser Sample Point Locations**

LAYER NAME:	export_output_3	Township:	T27R11W
POLY ID:	2	Total Sample Points:	6
Acres:	acres	Spacing Between Points:	200
		Point Rotation Degrees:	0



Scale 1:1,400

**Legend**

- Sample Points
- Unit
- 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: 2613839  
 Effective Date: 9/5/2015  
 Expiration Date: 9/5/2018  
 Shut Down Zone: 650, 652SW  
 EARR Tax Credit:  Eligible [ ] Non-eligible  
 Reference: DNR - Willy Thinner

**Decision**

- Notification Operations shall not begin before the effective date.
- Approved This Forest Practices Application is subject to the conditions listed below.
- Disapproved This Forest Practices Application is disapproved for the reasons listed below.
- Closed Applicant has withdrawn FPA/N.

**FPA/N Classification**

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

Class II  Class III  Class IVG  Class IVS  4 years  5 years

**Conditions on Approval / Reasons for Disapproval**

Note: Forest practice activities located near an occupied marbled murrelet site are subject to disturbance avoidance timing restrictions.

Issued By: Jenny Garstang Region: Olympic  
 Title: Forest Practice Forester Date: 9/5/2015  
 Copies to:  Landowner, Timber Owner and Operator.  
 Issued in person:  Landowner [ ] Timber Owner [ ] Operator By: Connie L Sallee

**Appeal Information**

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

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

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

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

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

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

And

Department Of Natural Resources  
Olympic Region  
411 Tillicum Lane  
Forks, WA 98331

**Other Applicable Laws**

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

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

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

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

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

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

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

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

**DNR affidavit of mailing:**

On this day _____, I placed in the United States mail at _____, WA,
(date) <span style="float: right;">(post office location)</span>
postage paid, a true and accurate copy of this document. Notice of Decision FPA # <u>2613839</u>
_____ (Printed name) <span style="float: right;">_____ (Signature)</span>

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

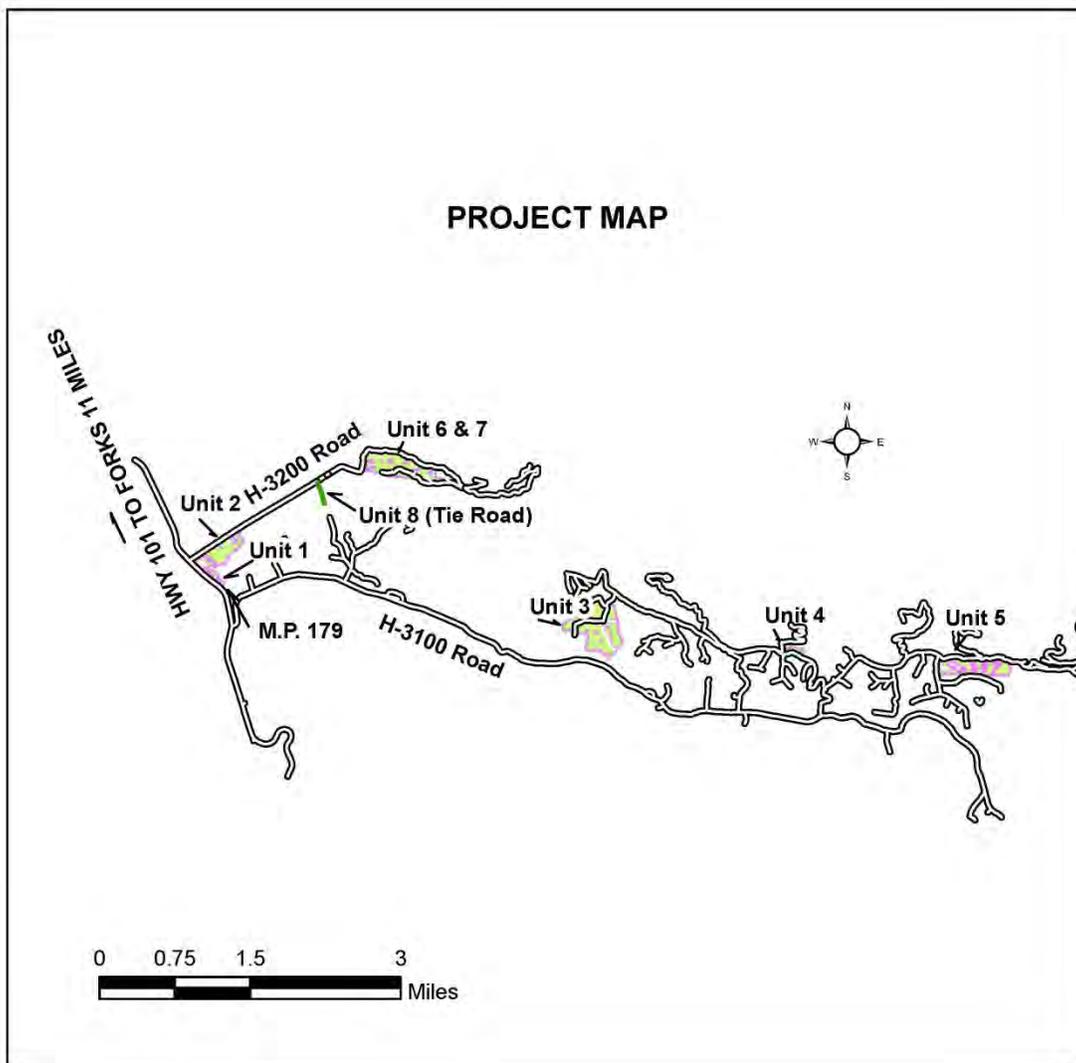
WILLY THINNER TIMBER SALE ROAD PLAN  
JEFFERSON COUNTY  
COAST DISTRICT

AGREEMENT NO.: 30-092822

STAFF ENGINEER: BILL MEHL

DATE: JULY 15, 2015

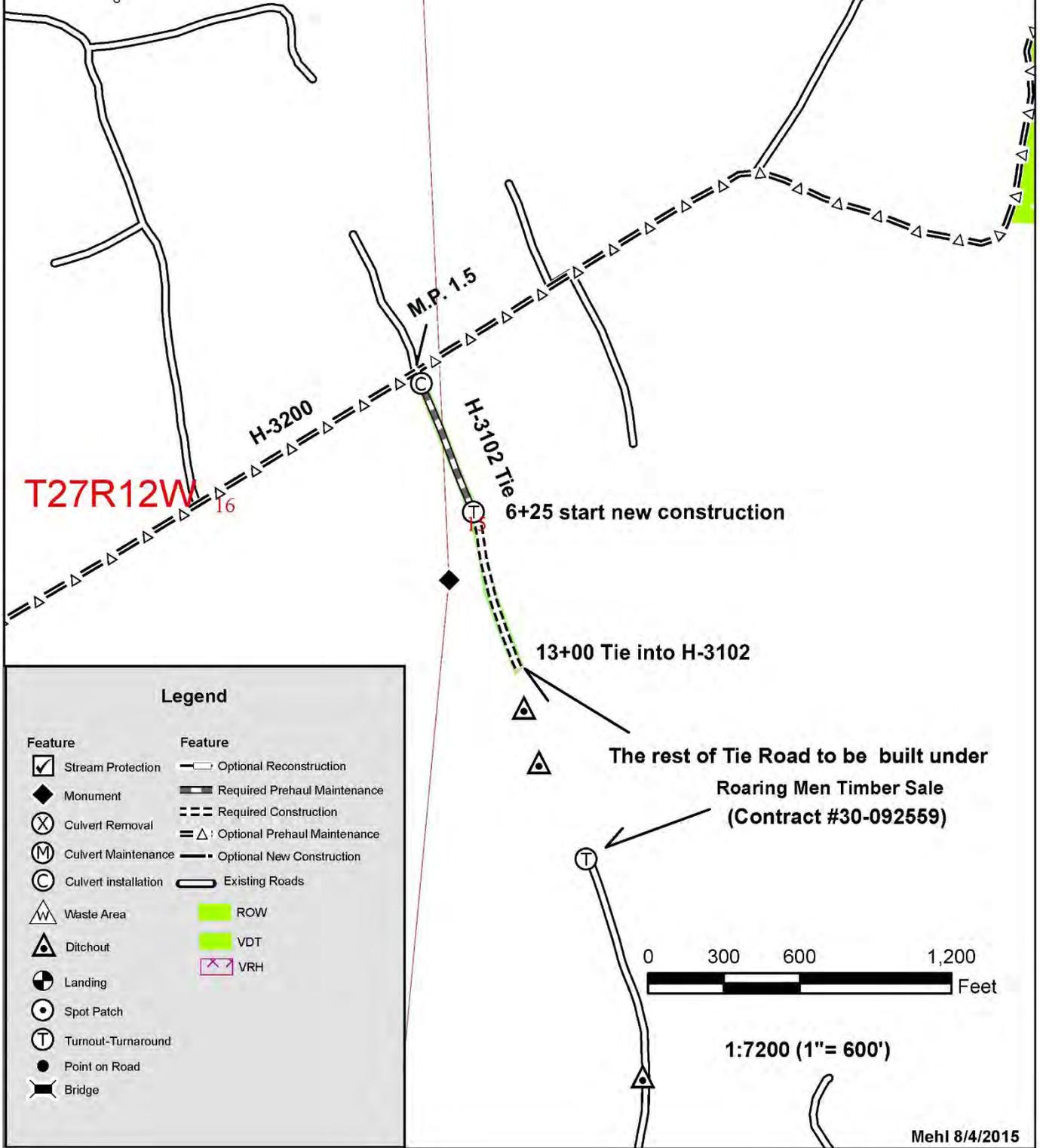
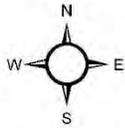
DRAWN & COMPILED BY: BILL MEHL



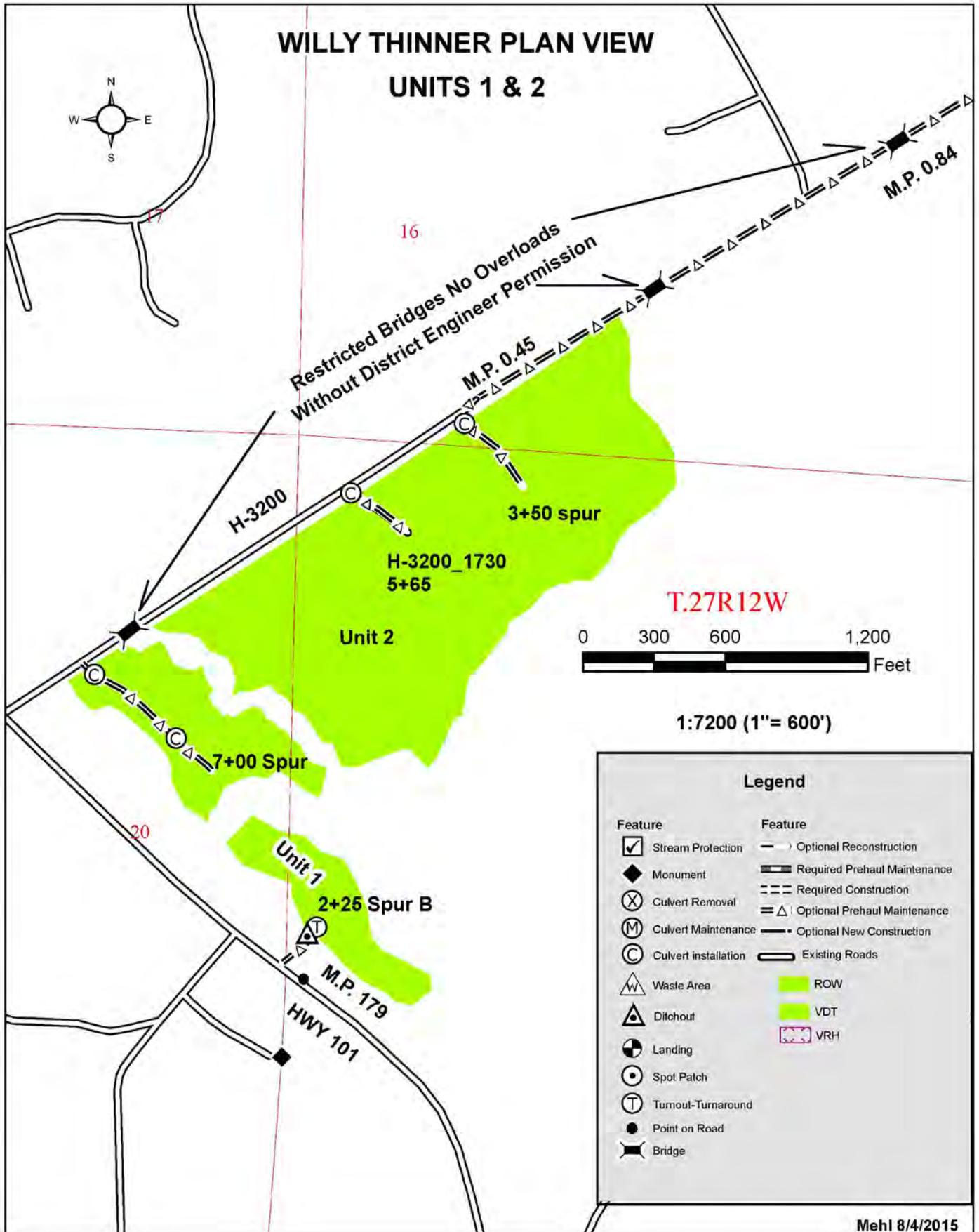
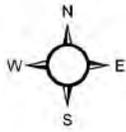
9  
**WILLY THINNER PLAN VIEW**

10

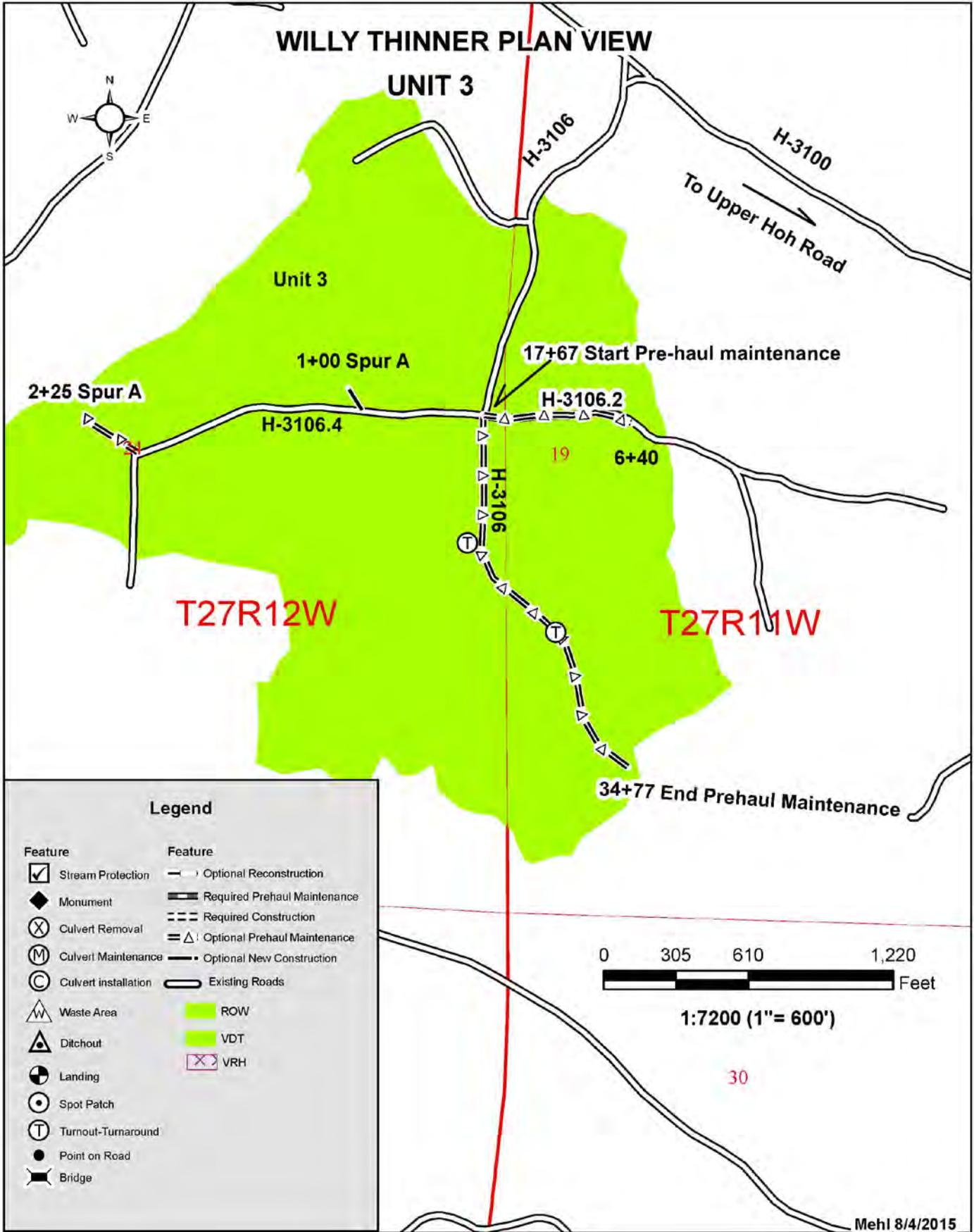
**H-3102 Tie Road**



# WILLY THINNER PLAN VIEW UNITS 1 & 2

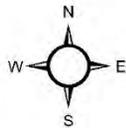


Mehl 8/4/2015



# WILLY THINNER PLAN VIEW

## UNIT 4



H-3100

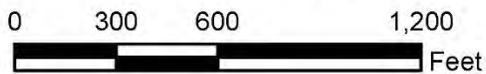
Unit 4

1+25 Spur 0+75 Spur

1+00 Spur B

21

T27R11W



1:7200 (1"= 600')

### Legend

Feature	Feature
Stream Protection	Optional Reconstruction
Monument	Required Prehaul Maintenance
Culvert Removal	Required Construction
Culvert Maintenance	Optional Prehaul Maintenance
Culvert installation	Optional New Construction
Waste Area	Existing Roads
Ditchout	ROW
Landing	VDT
Spot Patch	VRH
Turnout-Turnaround	
Point on Road	
Bridge	

28

H-3700

M.P. 6.6

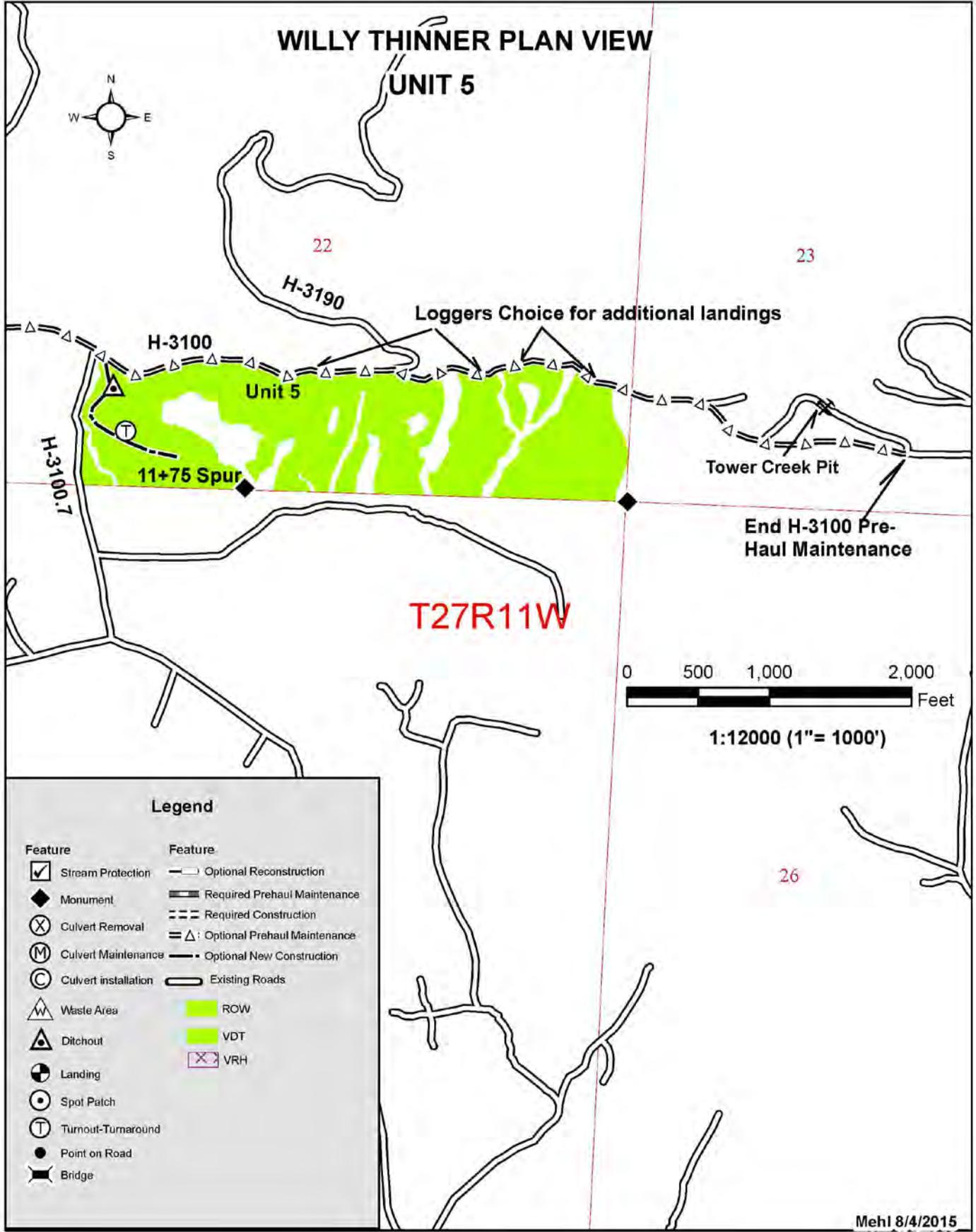
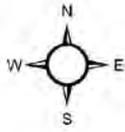
Upper Hoh Road

To Hwy 101

Mehl 8/4/2015

# WILLY THINNER PLAN VIEW

UNIT 5



## Legend

Feature	Feature
Stream Protection	Optional Reconstruction
Monument	Required Prehaul Maintenance
Culvert Removal	Required Construction
Culvert Maintenance	Optional Prehaul Maintenance
Culvert installation	Optional New Construction
Waste Area	Existing Roads
Ditchout	ROW
Landing	VDT
Spot Patch	VRH
Turnout-Turnaround	
Point on Road	
Bridge	

Mehl 8/4/2015

# WILLY THINNER PLAN VIEW UNIT 6 & 7



10

T27R12W

11

M.P. 2.34

Unit 6

H-3200

47+50

0+90 Spur

45+60

1+40 Spur

5+60 Spur

17+70

Unit 7 (VRH)

3+60 Spur

H-3204

Spur, Jct M.P. 3.35  
H-3200

Fix Junction

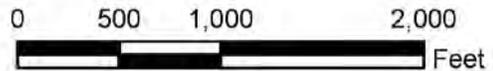
15

14

23

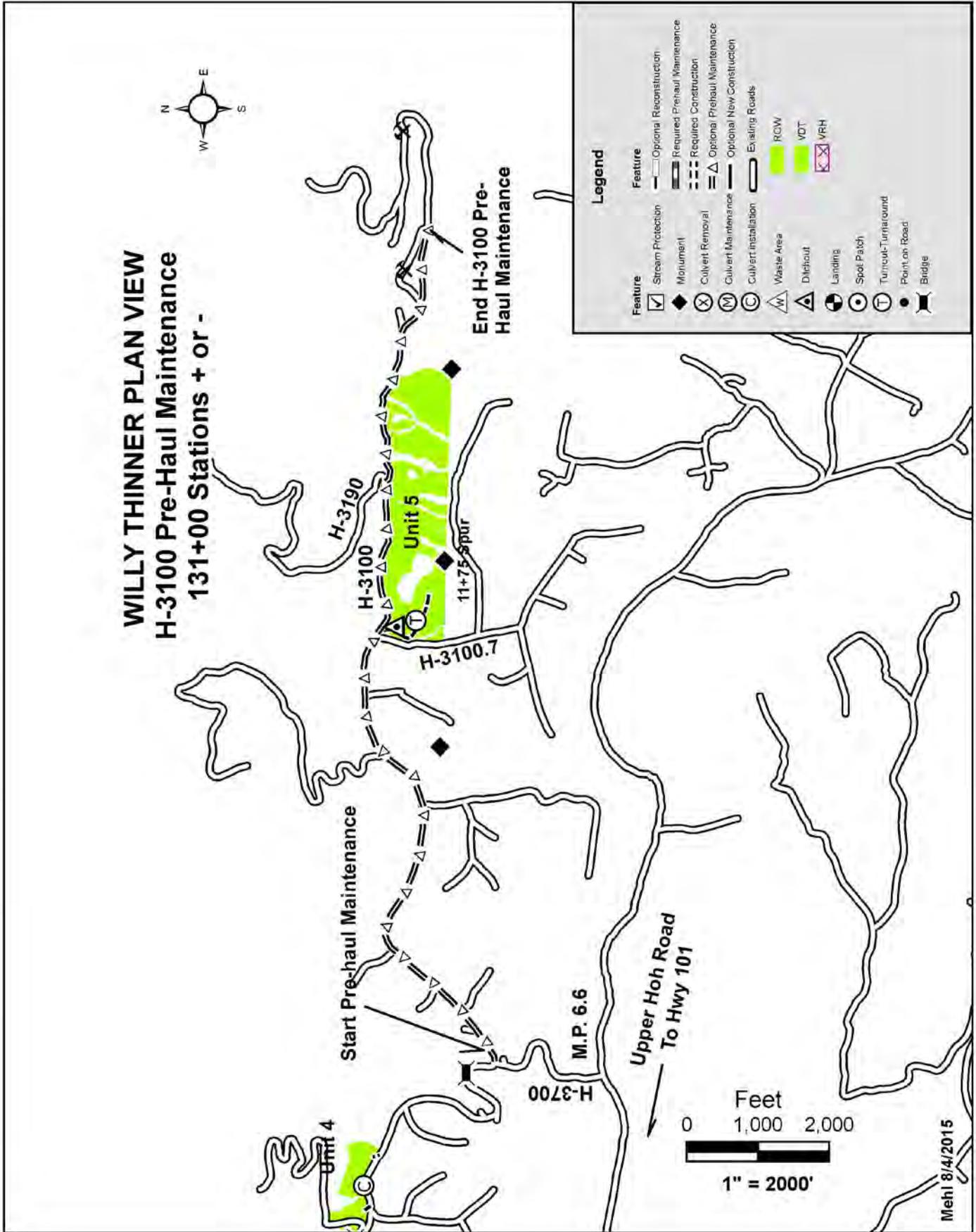
## Legend

Feature	Feature
Stream Protection	Optional Reconstruction
Monument	Required Prehaul Maintenance
Culvert Removal	Required Construction
Culvert Maintenance	Optional Prehaul Maintenance
Culvert installation	Optional New Construction
Waste Area	Existing Roads
Ditchout	ROW
Landing	VDT
Spot Patch	VRH
Turnout-Turnaround	
Point on Road	
Bridge	



1:12000 (1"= 1000')

Mehl 8/4/2015



**SECTION 0 – SCOPE OF PROJECT**

**0-1 ROAD PLAN SCOPE**

Clauses in this Road Plan apply to all road related work, including landings and rock source development, unless otherwise noted.

**0-2 REQUIRED ROADS**

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
H-3102 Tie	6+25	Prehaul Maintenance
H-3102 Tie	6+75	Construction

**0-3 OPTIONAL ROADS**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
H-3100	131.00	Prehaul Maintenance
H-3200	97.70	Prehaul Maintenance
H-3204	47.5	Prehaul Maintenance
H-3106	17.1	Prehaul Maintenance
H-3106.2	6.40	Prehaul Maintenance
H-3200_1730	5.65	Prehaul Maintenance
0+75 Spur	0.75	Construction
0+90 Spur	0.90	Construction
1+00 Spur A	1.00	Construction
1+00 Spur B	1.00	Construction
1+25 Spur	1.25	Construction
1+40 Spur	1.40	Construction
2+25 Spur A	2.25	Prehaul Maintenance
2+25 Spur B	2.25	Prehaul Maintenance
3+50 Spur	3.50	Prehaul Maintenance
3+60 Spur	3.60	Construction
5+60 Spur	5.60	Reconstruction
7+00 Spur	7.00	Prehaul Maintenance
11+75 Spur	11.75	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>
H-3102 Tie	6.00	See Below
0+75 Spur	0.75	See Below
0+90 Spur	0.90	See Below
1+00 Spur A	1.00	See Below
1+00 Spur B	1.00	See Below
1+25 Spur	1.25	See Below
1+40 Spur	1.40	See Below

3+60 Spur	3.60	See Below
11+75 Spur	11.75	See Below

Construction includes, but is not limited to:

Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, constructing ditchlines, constructing ditchouts, constructing turnouts and turnarounds, curve widening, acquisition and installation of drainage structures, application of rock, compaction, spreading grass seed and hay.

#### 0-5 RECONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
5+60 Spur	5.60	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing surface, apply rock as per Rock List.

Reconstruction includes, but is not limited to:

Installing additional culverts, realigning road segments, application of rock, compaction, removing culverts.

#### 0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
H-3102 Tie	6.25	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade, shape, and compact existing running surface, apply rock as per Rock List, install culvert as per Culvert List, add turnout.
H-3100	131.00	Grade, shape, remove shoulder vegetation starting at H-3700 Junction to Tower Creek Pit Road.
H-3200	97.70	Grade and shape existing running surface, compact as directed by contract administrator apply rock as per Rock List, clean/construct ditch lines, construct ditchouts.
H-3204	47.50	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing running surface, apply rock as per Rock List, clean culvert as per Culvert List, clean/construct ditch lines as marked in the field, construct ditchouts as marked in the field.
H-3106	17.10	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing surface, add turnouts/turnarounds, apply rock as per Rock List.
H-3106.2	6.40	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade

		and shape existing surface, apply rock as per Rock List.
H-3200_1730	5.65	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing running surface, apply rock as per Rock List, install culvert as per Culvert List.
2+25 Spur A	2.25	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing surface, apply rock as per Rock List.
2+25 Spur B	2.25	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing running surface, apply rock as per Rock List, clean/construct ditch lines as marked in the field, construct ditchouts as marked in the field, construct turnaround.
3+50 Spur	3.50	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing running surface, apply rock as per Rock List, install culvert as per Culvert List.
7+00 Spur	7.00	Remove all vegetative material with a minimum loss of rock and dispose of as per Clause 4-38, grade and shape existing running surface, apply rock as per Rock List, install culverts as per Culvert List.

Maintenance includes, but is not limited to:

Brushing right-of-way, right-of-way debris disposal, cleaning ditches, constructing ditches, installing additional culverts, widening road segments, constructing headwalls, cleaning culvert inlets and outlets, cross drain culvert replacement, installing erosion control materials and sediment removal structures, spot rocking, grading and shaping existing road surface and turnouts, constructing additional turnouts, compaction of road surface, application of rock, acquisition and application of grass seed and hay.

**0-7 POST-HAUL MAINTENANCE**

This project includes, but is not limited to post-haul road maintenance listed in Clause 9-5 Post Haul Maintenance.

**SECTION 1 – GENERAL**

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORSEEN CONDITIONS**

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

### **1-3 ROAD DIMENSIONS**

Unless controlled by construction stakes or design data (plan, profile, and cross-sections), road work shall be performed in accordance with the dimensions shown on the Typical Section Sheet and the specifications within this Road Plan.

### **1-6 ORDER OF PRECEDENCE**

Any conflict or inconsistency in this Road Plan shall be resolved by giving the documents precedence in the following order:

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

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

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

The Purchaser is responsible for the repair or replacement of all materials, roadway infrastructure, and road components damaged during roadwork or operation activities. Repairs and replacements shall be directed by the Contract Administrator. Repairs to structural materials will be made according to the manufacturer's recommendation, and shall 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 shall be cleaned and treated with a minimum of two coats of zinc rich paint.

### **1-10 WSDOT STANDARD SPECIFICATION REFERENCE**

References in this Road Plan to "WSDOT Standard Specifications" means the Washington State Department of Transportation's Standard Specifications for Road, Bridge, and Municipal Construction 2012 (M41-10).

### **1-12 SURVEY MONUMENTS**

At no time during construction, reconstruction, or maintenance shall survey monuments, witness trees, or bearing trees be disturbed or damaged. If damaged or disturbed, Purchaser shall hire a licensed land surveyor to repair, replace, and/or reset them.

### **1-13 LOG LOADING**

At no time shall the loading of logs occur on the paved part of the H-3200 road. In addition, no debris from harvesting operations shall be allowed on this road. Also, the skidding of logs down existing roads will not be allowed without prior written approval from the Contract Administrator.

### **1-14 NON-SALE ASSOCIATED CLOSURE**

Construction of the south end of the H-3102 tie road is scheduled under the "Roaring Men" Timber Sale, and is currently scheduled to be completed by July 31, 2016. Purchaser will need to coordinate with the "Roaring Men" purchaser for access through the southern half of the H-3102.

## **SUBSECTION ROAD MARKING**

**1-15 ROAD MARKING**

Road work must be in accordance with the State’s marked location. All road work is marked as follows:

- Orange ribbon and paint for construction centerlines.
- Construction stakes for everything else.

**1-18 REFERENCE POINT DAMAGE**

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

SUBSECTION TIMING

**1-20 COMPLETE BY DATE**

On the all roads, road work shall be completed before the start of timber haul.

**1-21 HAUL APPROVAL**

The Purchaser shall not use roads under this Road Plan without written approval from the Contract Administrator.

**1-22 WORK NOTIFICATIONS**

On all roads, the Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before work begins.

**1-23 ROAD WORK PHASE APPROVAL**

Written approval by Contract Administrator needs to be given at these phases of road work:

- Subgrade approval
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction

SUBSECTION RESTRICTIONS

**1-25 ACTIVITY TIMING RESTRICTION**

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

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
All new construction	All	All	October 15 <sup>th</sup> – April 15 <sup>th</sup>

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period listed in Clause 1-25 Activity Timing Restriction, the Purchaser shall provide a maintenance plan to include further protection of State resources. The Contract Administrator must approve the maintenance plan in writing, and preventative measures shall be put in place, before operation in the closure period. The Purchaser shall be required to maintain all haul roads at their own expense including those listed in Contract Clause C-060

Designated Road Maintainer. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan shall be developed. All parties shall follow this plan.

**1-27 TIMING RESTRICTION FOR MARBLED MURRELET**

On the following road(s), any road work, right-of-way timber falling and yarding, rock pit operations, or operation of heavy equipment is not permitted from one hour before official sunrise to two hours after official sunrise, and from one hour before official sunset to one hour after official sunset from April 1 through September 23. This restriction does not apply to the hauling of timber, rock, or equipment.

<u>Road</u>	<u>Stations</u>
1+00 Spur B	1.0
H-3204	47.50
3+60 Spur	3.60
5+60 Spur	5.60
1+40 Spur	1.40
0+90 Spur	0.90
H-3200	M.P. 1.80 to M.P. 3.35
H-3100	M.P. 7.6 to M.P. 7.9

**1-29 SEDIMENT RESTRICTION**

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

**1-30 CLOSURE TO PREVENT DAMAGE**

In accordance with Contract Clause G-220 State Suspends Operation, the Contract Administrator shall suspend road work or hauling of right-of-way timber, forest products, or rock under the following conditions:

- 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 Purchaser will be required to cease operations, or perform corrective maintenance or repairs, subject to specifications within this Road Plan. Before and during any suspension, the Purchaser shall protect the work from damage or deterioration.

**1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION**

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

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road work and hauling operations. Any dirt, rock, or other material tracked or spilled on bridge or asphalt surface(s) shall be removed immediately. Any damage to the surface(s) shall be repaired at the Purchaser's expense as directed by the Contract Administrator.

**1-33 SNOW PLOWING RESTRICTION**

On all roads, snowplowing shall be permitted only after the execution of a Snow Plowing Agreement, which is available from the Contact Administrator upon request. Purchaser shall request a Snow Plowing Agreement each time plowing occurs. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

SUBSECTION OTHER INFRASTRUCTURE

**1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS**

At existing road approaches to county roads and state highways, any mud, dirt, rock or other material tracked or spilled on the asphalt surface shall be removed immediately by the Purchaser.

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

The following county roads and state highways are affected by this sale:

<u>Road Name</u>
US 101
Upper Hoh Rd

**1-41 REQUIREMENTS FOR PAVED ROAD APPROACHES**

Requirements for the 2+25 Spur B and Highway 101 road approach:  
Approaches shall be built up to allow a smooth grade transition between the 2+25 Spur B and Highway 101 roads. The top of the 2+25 Spur B road, surfacing shall be kept level with the asphalt surface of the Highway 101 road at all times. On sloped approaches, the surface of the 2+25 Spur B approach shall slope from the edge of the Highway 101 road at the rate of no more than 2%, unless otherwise directed by the Contract Administrator or DOT Access Connection Permit.

**1-43 ROAD WORK AROUND UTILITIES**

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

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
2+25 Spur B	0+25	Fiber Optic	811

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

All roads used under this contract shall be maintained in accordance with the Forest Access Road Maintenance Specifications for the entire term of this contract. Maintenance is required even during periods of inactivity.

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

Purchaser shall perform maintenance on roads listed in Contract Clause C-050 Purchaser Road Maintenance And Repair in accordance with Forest Access Road Maintenance Specifications.

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

Purchaser may be required to perform maintenance on roads listed in Contract Clause C-060 Designated Road Maintainer as directed by the Contract Administrator. Maintenance work shall be in accordance with Forest Access Road Maintenance Specifications.

**2-5 MAINTENANCE GRADING – EXISTING ROAD**

On the following road(s), a grader shall be used to shape the existing surface.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
H-3200	79+20 – 104+50	Grade, shape, remove shoulder vegetation
H-3200	104+50 -176+90	Grade, shape, compact and remove shoulder vegetation
H-3100	131+00	Grade, shape, remove shoulder vegetation starting at H-3700 Junction to Tower Creek Road.

**2-6 CLEANING CULVERTS**

On the following road(s), all inlets and outlets of culverts shall be cleaned before the start of timber haul and shall be subject to the written approval of the Contract Administrator.

<u>Road</u>	<u>Stations</u>
H-3204	17+70
H-3204	45+60

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

On the following road(s), Purchaser shall clean and/or construct the ditches, headwalls, and catch basins. Work shall be completed before the start of timber haul and shall be done in accordance with the Typical Section Sheet. Pulling ditch material across the road or mixing in with the road surface will not be allowed. Ditchlines, headwalls, and catch basins shall not encroach into the existing road.

<u>Road</u>	<u>Stations</u>	<u>Left or Right</u>
H-3204	4+25 – 24+40	Right
H-3204	26+40 – 39+75	Right
H-3204	29+75 – 33+40	Left
H-3204	35+05 – 39+75	Left
H-3204	41+85 – 47+50	Left
7+00 Spur	0+00-7+00	Right
2+25 Spur B	0+50-2+00	Left

**2-9 REMOVING VEGETATIVE MATERIAL**

On the following road(s), Purchaser shall remove all vegetative material, dirt, mud, and other debris on the existing road surface with a minimum loss of rock. Material removed shall be disposed of in accordance with Clause 4-36 through Clause 4-38. A motor grader shall not be used to remove material.

<u>Road</u>	<u>Stations</u>
H-3102 Tie	0+00-6+25
H-3106	17+67-32+67
H-3106.2	0+00-6+40
H3204	0+00-47+50
H-3200_1730	0+00-5+65
2+25 spur A	0+00-2+50
2+25 spur B	0+00-2+40
3+50 spur	0+00-3+50

7+00 spur	0+00-7+00

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

**3-3 BRUSH REMOVAL**

Remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets. Brush should be disposed of so that it will not fall back onto the road prism.

SUBSECTION CLEARING

**3-5 CLEARING**

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

**3-7 RIGHT-OF-WAY DECKING**

Deck all merchantable right-of-way timber. Decks shall be parallel to the road centerline and placed within the cleared right-of-way. Decks shall be free of dirt, limbs and other right-of-way debris, and removable by standard log loading equipment.

**3-8 PROHIBITED DECKING AREAS**

Right-of-way timber shall not be decked in the following areas:

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

SUBSECTION GRUBBING

**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. Stump removal shall be accomplished using a hydraulic mounted excavator unless authorized, in writing, by the Contract Administrator. Grubbing shall be completed before starting excavation and embankment.

**3-12 STUMP PLACEMENT**

Grubbed stumps shall be placed outside of the clearing limits, as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps shall be positioned upright, with root wads in contact with the forest floor and on stable locations.

SUBSECTION ORGANIC DEBRIS

**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 Typical Section Sheet.

### **3-21 DISPOSAL COMPLETION**

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

### **3-23 PROHIBITED DISPOSAL AREAS**

Organic debris shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades road prism excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

### **3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

### **3-25 SCATTERING ORGANIC DEBRIS**

Organic debris shall be scattered outside of the grubbing limits in accordance with Clause 3-23 unless otherwise detailed in this Road Plan and as directed by the Contract Administrator.

## **SECTION 4 – EXCAVATION**

### **4-1 EXCAVATOR CONSTRUCTION**

All roads shall be constructed, reconstructed, and prehaul maintained using a track mounted hydraulic excavator unless stated otherwise within this Road Plan, or permission to do otherwise is granted 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**

The following road grade and alignment standards shall be followed:

- Grade and alignment shall have smooth continuity, without abrupt changes in direction.
- Maximum grade shall not exceed 18 percent favorable and 16 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Sag vertical curves shall not have a grade change greater than 5% in 100 feet.

Crest vertical curves shall not have a grade change greater than 4% in 100 feet

### **4-4 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. The following standards for switchbacks shall be followed:

- a. Adverse grades on switchbacks shall not exceed 10%.
- b. Favorable grades through switchbacks shall not exceed 12%.
- c. Transition grades entering and leaving switchbacks shall not exceed a 5% grade change.
- d. Transition grades required to meet switchback grade limitations shall be constructed on the tangents preceding and departing from the switchbacks.

**4-5 CUT SLOPE RATIO**

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
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**

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

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

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

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

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**4-9 EMBANKMENT WIDENING**

The minimum embankment widening is:

2 feet for embankment heights at centerline of 2 to 6 feet.

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

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

**4-12 FULL BENCH CONSTRUCTION**

On all roads, full bench construction shall be utilized for the entire subgrade width.

#### SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

##### 4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS

On the following road(s), the Purchaser shall construct the subgrade to the dimensions shown on the Intersection Detail.

<u>Road</u>	<u>Stations</u>
H-3204	0+00-0+50
H-3201 Tie	0+00 -0+50

##### 4-21 TURNOUTS

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

##### 4-22 TURNAROUNDS

Turnarounds shall be no larger than 50 feet long and 30 feet wide. Locations shall be subject to written approval by the Contract Administrator.

##### 4-23 SUBGRADE FLARE FOR INTERSECTIONS

The H-3102 Tie and H-3204 intersections shall be constructed/reconstructed to include additional intersection flare.

#### SUBSECTION DITCH CONSTRUCTION

##### 4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

The Purchaser shall construct ditches into the subgrade as specified on the Typical Section Sheet. Excavated slopes shall be consistent with Clause 4-5 Cut Slope Ratio. Ditches shall be constructed concurrently with construction of the subgrade.

##### 4-27 DITCH WORK – MATERIAL USE PROHIBITED

On all roads, pulling ditch material across the road or mixing in with the road surface will not be allowed. Excavated material shall be disposed of as specified in Clause 4-36 through Clause 4-38.

##### 4-28 DITCH DRAINAGE

Ditches shall drain to cross-drain culverts and ditchouts.

##### 4-29 DITCHOUTS

Ditchouts shall be constructed at locations shown on the list below, and as needed to fit as built conditions. 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. L or R denotes ditchout left or ditchout right heading in.

<u>Road</u>	<u>Station</u>	<u>Left or Right</u>
H-3200	MP 3.35 (approx. 50')	Right
H-3204	15+20 (approx. 20')	Right
H-3204	39+50 (approx. 20')	Right
H-3204	47+50 (approx. 20')	Left
11+75 Spur	2+00	Left
2+25 Spur B	1+75	Left

#### SUBSECTION WASTE MATERIAL (DIRT)

#### 4-35 WASTE MATERIAL DEFINITION

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

#### 4-36 DISPOSAL OF WASTE MATERIAL

Waste material may be sidecast on side slopes up to 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, all excavation shall be end hauled or pushed to designated embankment sites and waste areas.

#### 4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

#### 4-39 WASTE AREA COMPACTION

Excavated material may be deposited adjacent to the road prism on side slopes up to 45% if the waste material is compacted and free of debris. On side slopes of 45% or more, all excavation shall be end hauled or pushed to designated waste areas. All waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts. Except for side hill embankments too narrow to accommodate excavation equipment may be placed by end-dumping or side casting until sufficiently wide to support the equipment.

#### SUBSECTION BORROW

#### 4-47 NATIVE MATERIAL

Native material shall be excavated material free of organic debris, trash, and rocks greater than 12" in any dimension.

#### SUBSECTION SHAPING

#### 4-55 ROAD SHAPING

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

**4-56 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.

**SUBSECTION COMPACTION**

**4-60 FILL COMPACTION**

Purchaser shall compact all embankment and waste material in accordance with the Compaction List by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction, and embankment segments too narrow to accommodate equipment.

**4-61 SUBGRADE COMPACTION**

Purchaser shall compact constructed and reconstructed subgrades in accordance with the Compaction List by routing equipment over the entire width, except ditch. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before placement of rock.

**4-62 DRY WEATHER COMPACTION**

At any time of the 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**

Purchaser shall compact maintained road surfaces in accordance with the Compaction List by routing equipment over the entire width.

**4-64 WASTE MATERIAL COMPACTION**

All waste material shall be compacted by running equipment over it or bucket tamping.

**4-65 CULVERT BACKFILL COMPACTION**

Culvert backfills on the prehaul maintenance shall be accomplished by using a jumping jack compactor, performing at least 2 passes per lift, in lifts not to exceed 8 inches.

**4-66 COMPACTION BY METHOD**

Compaction shall consist of three complete passes over the entire width of each lift with a vibratory drum roller weighing a minimum of 6,000 pounds at a maximum operating speed of 3 mph. For embankment segments too narrow to accommodate a drum roller, a plate compactor shall be used.

**SECTION 5 – DRAINAGE START**

**5-1 REMOVAL OF SHOULDER BERMS**

On the following road(s), berms shall be removed from road shoulders to permit the escape of runoff. Material shall be disposed of in accordance with Clauses 4-35 through 4-38. The construction of ditchouts will be required where ponding will result from the effects of sidecast debris.

<u>Road</u>	<u>Stations</u>
H-3200	79+20 – 176+90
H-3100	131.00 stations starting @ Jct. H-3700

**5-4 PUNCHEON RESTRICTED**

At no time shall puncheon be used in the subgrade without approval of the contract administrator.

SUBSECTION CULVERTS

**5-5 CULVERTS**

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

**5-11 UNUSED MATERIALS STATE PROPERTY**

On required roads, any materials listed on the Culvert List and Rock List that are not installed shall become the property of the State. Purchaser shall stockpile materials as directed by the Contract Administrator.

SUBSECTION CULVERT INSTALLATION

**5-15 CULVERT INSTALLATION**

Installation shall be in accordance with the Typical Cross Drain Culvert Installation Detail, Typical Type Ns Np Culvert Installation Detail, the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures", and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe shall be installed in a manner consistent with the manufacturer's recommendations.

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

Installation of culverts 30 inches in diameter and over shall be subject to written approval by the District Engineer or their designee before backfilling.

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

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

**5-18 CULVERT DEPTH OF COVER**

Cross drain culverts shall be installed with a depth of cover of not less than 18 inches of compacted depth 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, Type Ns Np Typical Detail Sheet, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

SUBSECTION ENERGY DISSIPATERS

**5-20 ENERGY DISSIPATERS**

Energy dissipaters shall be installed to prevent erosion and are subject to approval by the Contract Administrator. Rock shall weigh at least 10 pounds and be placed by zero-drop-height method. Energy dissipater shall extend a minimum of ¾ foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet.

**5-21 DOWNSPOUTS AND FLUMES**

Downspouts and flumes longer than 10 feet shall be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts or 1 ½" X 3/16" angle iron, and fastened securely to the posts with No. 10 galvanized smooth wire, or bolted using minimum 5/16" bolts and 2 washers per bolt, in accordance with the Culvert Installation Typical Details Page.

**5-22 ABOVE GROUND CULVERT ENERGY DISSIPATORS**

At the end of the culvert, approximately 1yd<sup>3</sup> of oversize material shall be placed. The extents of placement shall be in accordance with Culvert Installation Typical Details Page.

**5-23 STAKING ABOVE GROUND CULVERTS**

Culverts shall be staked on both the outlet and inlet. In addition, no more than 10ft of culvert shall be allowed without being staked. Staking shall consist of driving two heavy duty steel fence posts, or 1 ½" X 3/16" angle iron, at least 2 feet into the ground at each point, and attaching them to the culvert using No.10 or larger galvanized smooth wire.

**5-24 PLASTIC CULVERT BANDS**

All plastic culvert bands shall be secured using No. 10 galvanized smooth wire.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

**5-25 CATCH BASINS**

Catch basins shall be constructed to resist erosion. Approximate dimensions are 1-2 feet deep, 1-2 feet wide, and 2-4 feet long.

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

Headwalls shall be constructed in accordance with the Typical Cross Drain Culvert Installation Detail at all cross drain culverts that specify the placement of rock. Rock used for headwalls shall consist of oversize or quarry spall material. Rock shall be placed on shoulders, slopes, and around culvert inlets and outlets. Rock shall not restrict the flow of water into culvert inlets or catch basins. No end dumping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

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

Rock used in accordance with the quantities on the Rock List may be obtained from the following source(s) on state land at no charge to the Purchaser. Use of material from any other source must have prior written approval from the Contract Administrator. If other operators are using, or desire to use the rock source(s), a joint operating plan shall be developed. All parties shall follow this plan. The Purchaser 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>
Winfield Pit (South)	T27N R12W Sec 35	Pit Run
Tower Creek	T 27N R11W Sec 22	Pit Run

**6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE**

Rock used in accordance with the quantities on the Rock List may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall remove no more than 650 cubic yards of 1 1/4" minus crushed rock.

<u>Source</u>	<u>Location</u>	<u>Quantity</u>
Winfield Pit (North)	T27N R12W Sec35	650 yd <sup>3</sup>

**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 Purchaser's expense. Rock sources will be subject to written approval by the Contract Administrator before their use.

**SUBSECTION ROCK GRADATIONS**

**6-28 1 ¼-INCH MINUS CRUSHED ROCK**

% Passing 1 ¼" 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	5%

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

**6-52 OVERSIZE**

% Passing 8" square sieve	100%
% Passing 4" square sieve	0%

Rock shall not contain more than 5 percent vegetative debris or trash. All percentages are by weight.

**SUBSECTION ROCK MEASUREMENT**

**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 estimated truck yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements, and are not subject to reduction.

**SUBSECTION ROCK APPLICATION**

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Subgrade drainage installation including grading and compaction, shall be completed and approved in writing by the Contract Administrator, before rock application.

**6-71 ROCK APPLICATION**

Rock shall be applied in accordance with the specifications and quantities shown on the Rock List. Rock shall be spread, shaped, and compacted full width concurrent with rock hauling operations. Rock shall be compacted in accordance with Compaction List, in lifts not to exceed 6 inches.

**6-73 ROCK FOR WIDENED PORTIONS**

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

**6-78 ROCK FOR SPOT PATCHING**

Rock for spot patching shall be applied before any grading is done and before any rock lifts are applied. Once applied, spot patches shall be graded into the existing running surface.

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

**7-1 SIGN INSTALLATION (HIGHWAY)**

The Purchaser shall be responsible for the purchase, installation, and maintenance of the following road signs. Signs shall be installed a minimum before hauling rock or logs. Signs shall comply with the Federal Highway Administration’s Manual on Uniform Traffic Control Devices (MUTCD).

<u>Road</u>	<u>Station</u>	<u>Sign</u>
2+25 Spur B	Entrance at Hwy 101 M.P. 179	2 Truck Crossing signs North & South

SECTION 8 – EROSION CONTROL

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall furnish and evenly spread a 3-inch layer of straw to all exposed soils at stream culvert installations. Soils shall not be allowed to sit exposed during any rain event.

SUBSECTION REVEGETATION

**8-15 REVEGETATION**

Purchaser shall grass seed and hay mulch all exposed soils, including but not limited to, stream culverts, waste areas, sidecast pull back areas, stream crossing removals, bridge installations, and

areas directed by the Contract Administrator. Revegetation of exposed soils shall be accomplished by manual dispersal of grass seed unless otherwise detailed in this Road Plan. Other methods of revegetation must be approved in writing by the Contract Administrator.

**8-16 REVEGETATION SUPPLY**

All seed, mulch, hay, matting, etc. will be provided by the Purchaser.

**8-17 REVEGETATION TIMING**

Purchaser shall perform revegetation during the first available opportunity. Soils shall not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator. Soils shall not be allowed to sit exposed during any rain event.

**8-18 PROTECTION FOR SEED**

Purchaser shall provide a protective cover over the revegetated area. The protective cover may consist of, but not be limited to, such items as dispersed hay mulch 3" thick or jute matting.

**8-19 ASSURANCE FOR SEEDED AREA**

The Purchaser shall be responsible to ensure a uniform and dense crop of grass. The Purchaser shall reapply the seed and/or mulch in areas that have been damaged through any cause, before approval from the Contract Administrator. The Purchaser shall restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and/or mulch at no addition cost to the state.

SUBSECTION SEED, FERTILIZER, AND MULCH

**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soils at a rate of 60 pounds per acre of exposed soil.

- Perennial Ryegrass 40.00
- Creeping Red Fescue 40.00
- White Dutch Clover 10.00
- Colonial Bentgrass 10.00

Grass seed shall meet the following specifications:

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

SECTION 9 – POST-HAUL ROAD WORK

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

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

SUBSECTION POST-HAUL MAINTENANCE

**9-5 POST-HAUL MAINTENANCE**

Post haul maintenance shall be performed in accordance with the Forest Access Road Maintenance Specifications and as specified below.

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
All	All	Clean culverts, clean ditches, grade road shape and compact as directed by the Contract Administrator
H-3100	26.4	Between m.p. 7.25 & m.p. 7.75 add up to 100 cy crushed rock as directed by the Contract Administrator
H-3200	73.9	Between m.p. 2.0 & m.p. 3.4 add up to 100 cy crushed rock as directed by the Contract Administrator

SUBSECTION POST-HAUL LANDING MAINTENANCE

**9-10 LANDING DRAINAGE**

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

**9-11 LANDING EMBANKMENT**

On all roads, landing embankments shall be sloped to original construction specifications.

SECTION 10 MATERIALS

SUBSECTION GEOTEXTILES

**10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE**

Geotextiles shall meet the following minimum requirements for strength and property qualities, and shall be designed by the manufacturer to be used for filtration. Woven slit-film geotextiles will not be allowed. Material shall be free of defects, cuts, and tears.

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Unsupported between posts
Apparent opening size	D 4751	No. 30 max., No. 100 min.
Water permittivity	D 4491	0.02 sec <sup>-1</sup>
Grab tensile strength	D 4632	180 lb in machine direction, 100lb in cross-machine direction
Grab tensile elongation	D 4632	30% max. at 180 lb or more
Ultraviolet stability	D 4355	70% retained after 500 hours of exposure

SUBSECTION EROSION CONTROL AND REVEGETATION

**10-10 JUTE EROSION CONTROL MATTING**

Jute mesh shall have a uniform open plain weave made from jute yarn that does not vary by more than half its nominal diameter. Erosion control matting shall conform to the specifications listed below, and shall be recommended by the manufacturer for use on embankments with a slope of 1½:1 (H:V) or steeper.

- Mesh size 1 inch max.
- Mesh mass, 0.9 lb/yd<sup>2</sup> ±5%

## SUBSECTION CULVERTS

### 10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts shall meet AASHTO M-36 (ASTM A-760) specifications. Culverts shall be aluminized (aluminum type 2 coated meeting AASHTO M-274).

### 10-16 CORRUGATED ALUMINUM CULVERT

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

### 10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts shall meet AASHTO M-294 specifications. Culverts shall be Type S – double walled with a corrugated exterior and smooth interior.

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

### 10-22 PLASTIC BAND

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

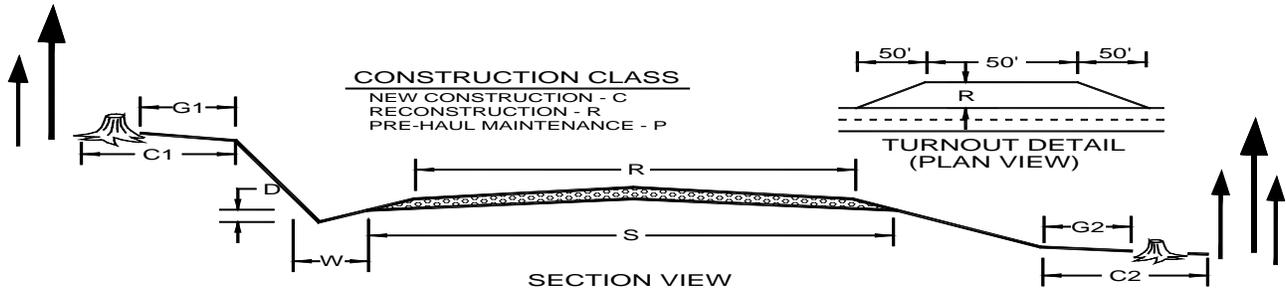
Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

### 10-24 GAGE AND CORRUGATION

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

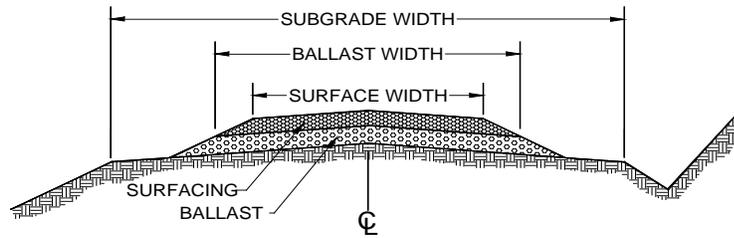
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
24" to 42"	14 (0.079")	2 <sup>2</sup> / <sub>3</sub> " X 1/2"
48" to 54"	12	3" X 1"
60" +	10	5" X 1"

# TYPICAL SECTION SHEET



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS		SUBGRADE WIDTH (S)	ROAD WIDTH (R)	CROWN AT CL (in)	DITCH WIDTH (W)	DITCH DEPTH (D)	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (C1)	ROAD FILL CLEARING (C2)
H-3102 Tie	0+00	6+25	P										
H-3102 Tie	6+25	13+10	C		17	12'	3"	3	1'	5'	5'	10'	5'
H-3200	MP 1.5	MP 3.35	P			12'	3"	3	1'				
H-3204	0+00	47+50	P			12'	3"	3	1'				
H-3106	17+67	34+77	P			12'	3"	3	1'				
H-3106.2	0+00	6+54	P			12'	3"	3	1'				
H-3200_1730	0+00	5+65	P			12'	3"	3	1'				
0+75 Spur	0+00	0+75	C		17	12'	3"	3	1'	5'	5'	10'	5'
0+90 Spur	0+00	0+90	C		17	12'	3"	3	1'	5'	5'	10'	5'
1+00 Spur A	0+00	1+00	C		17	12'	3"	3	1'	5'	5'	10'	5'
1+00 Spur B	0+00	1+00	C		17	12'	3"	3	1'	5'	5'	10'	5'
1+25 Spur	0+00	1+25	C		17	12'	3"	3	1'	5'	5'	10'	5'
1+40 Spur	0+00	1+40	C		17	12'	3"	3	1'	5'	5'	10'	5'
2+25 Spur A	0+00	2+25	P			12'	3"	3	1'				
2+25 Spur B	0+00	2+25	P			12'	-3/+3	3	1'				
3+50 Spur	0+00	3+50	P			12'	3"	3	1'				
3+60 Spur	0+00	3+60	C			12'	3"	3	1'	5'	5'	10'	5'
5+60 Spur	0+00	5+60	R			12'	3"	3	1'				
7+00 Spur	0+00	7+00	P			12'	3"	3	1'				
11+75 Spur	0+00	11+75	C		17	12'	3"	3	1'	5'	5'	10'	5'

# ROCK LIST SHEET



SECTION VIEW

1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼" minus to 4" minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources= 1: Winfield Pit Ballast, 2: Winfield 1 ½" minus, 3: Tower Creek Ballast

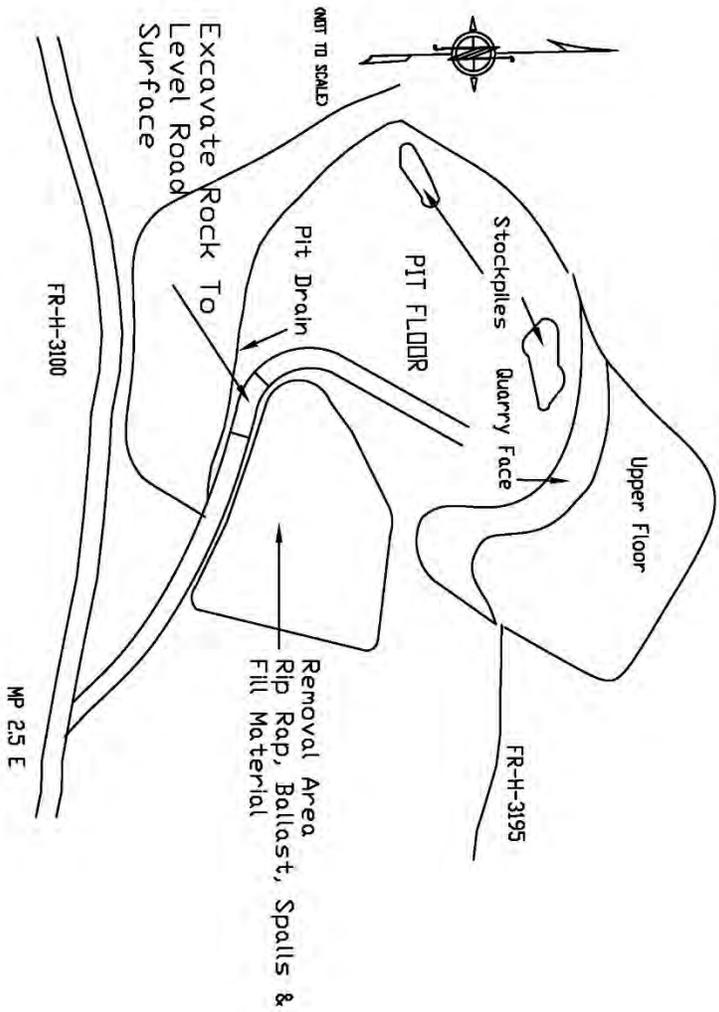
ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd³/sta)	Pitrun SUBTOTAL(yd³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd³/sta)	Crushed Subtotal(yd³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd³)
<b>0+75 Spur</b>	0+00	0+75	17'	3	12'	12"	80	60							
Culvert	0+10			3				20							
<b>0+90 Spur</b>	0+00	0+90	17'	1	12'	18"	110	100							
Landing	0+90			1				50							
<b>1+00 Spur A</b>	0+00	1+00	17'	3	12'	12"	80	80							
<b>1+00 Spur-B</b>	0+00	1+00	17'	3	12'	12"	80	80							
<b>1+40 Spur</b>	0+00	1+40		1		18"	110	190							
Landing	1+75			1				50							
<b>2+25 Spur A</b>				3				0							
Misc.				3				20							
<b>2+25 Spur B</b>	0+00	2.25		1	12'	6"	35	80							
Turnaround				1				50							
<b>3+50 Spur</b>	0+00	3+50	17'	1	12'	6"	35	130							
Culvert	0+10			1				20							
<b>3+60 Spur</b>	0+00	3+60	17'	1	12'	18"	110	400							
Landing	4+00			1				50							
<b>5+60 Spur</b>				1				0							
Misc.				1				100							
<b>7+00 Spur</b>	0+00	7+00	17'	1	12'	6"	35	250							
Culvert	0+85			1				20							
Culvert	1+75			1				20							
<b>11+75 Spur</b>	0+00	11+75		3	12'	12"	80	940							
Turnout				3				20							
<b>H-3200 1730</b>	0+00	5+65		1	12'	6"	35	200							
Culvert	0+10			1				20							
<b>Total:</b>								2950							







TOWER CREEK QUARRY  
T27N R11W Section 23



Pit Development Plan 06/11/2015

1. Areas to be developed as directed by the Contract Administrator.
2. Waste material shall be placed in designated areas.
3. Diversize rock shall be segregated into piles.
4. Suitable drainage shall be maintained at all times.
5. Pit floor is to be maintained at a 2% grade towards drain.
6. Woody debris shall be stacked as directed by the Contract Administrator.
7. Rock shall not be removed from existing stockpiles unless directed by Contract Administrator.

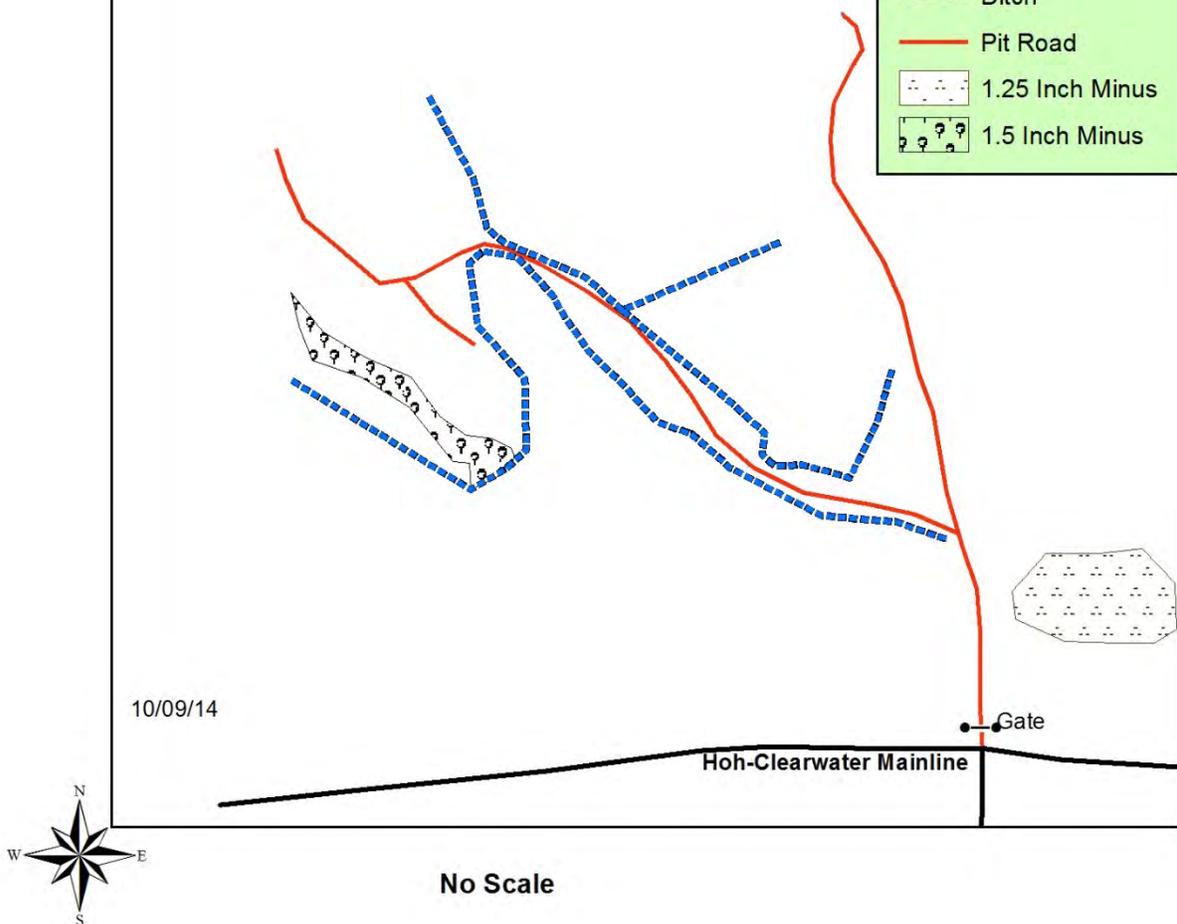
# North Winfield Pit T27N R12W Sec 35

## Pit Development Plan

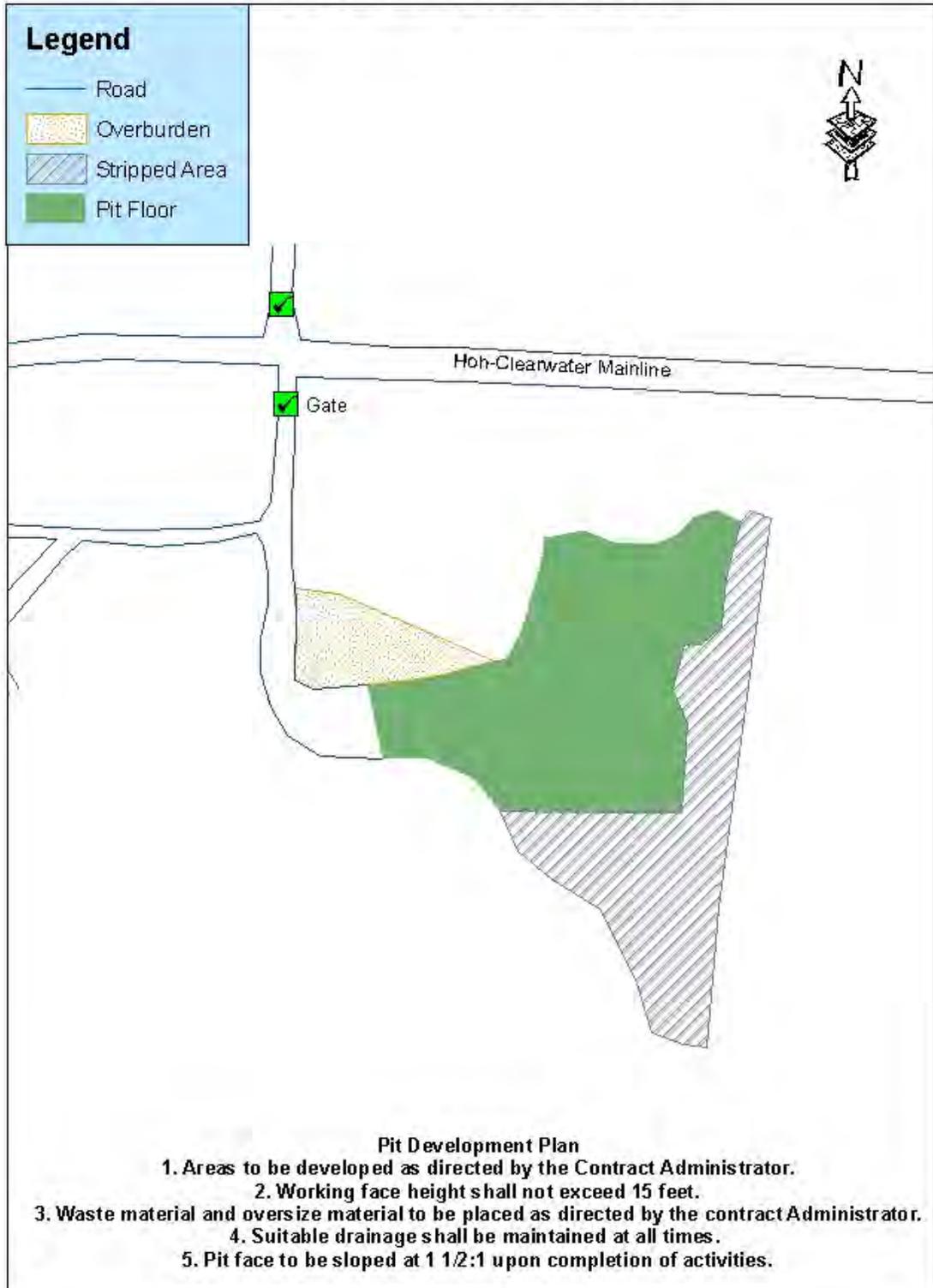
1. Areas to be developed as directed by the Contract Administrator.
2. Working face height shall not exceed 15 feet.
3. Waste material and oversize material to be placed as directed by the contract Administrator.
4. Suitable drainage shall be maintained at all times.
5. Pit face to be sloped at 1 1/2:1 upon completion of activities.
6. All operations shall comply with The Spill Response Plans.
7. Only Crushed Rock may be removed from this pit. 1.5 Inch Minus shall be depleted before any 1.25 Inch Minus is used.

### Legend

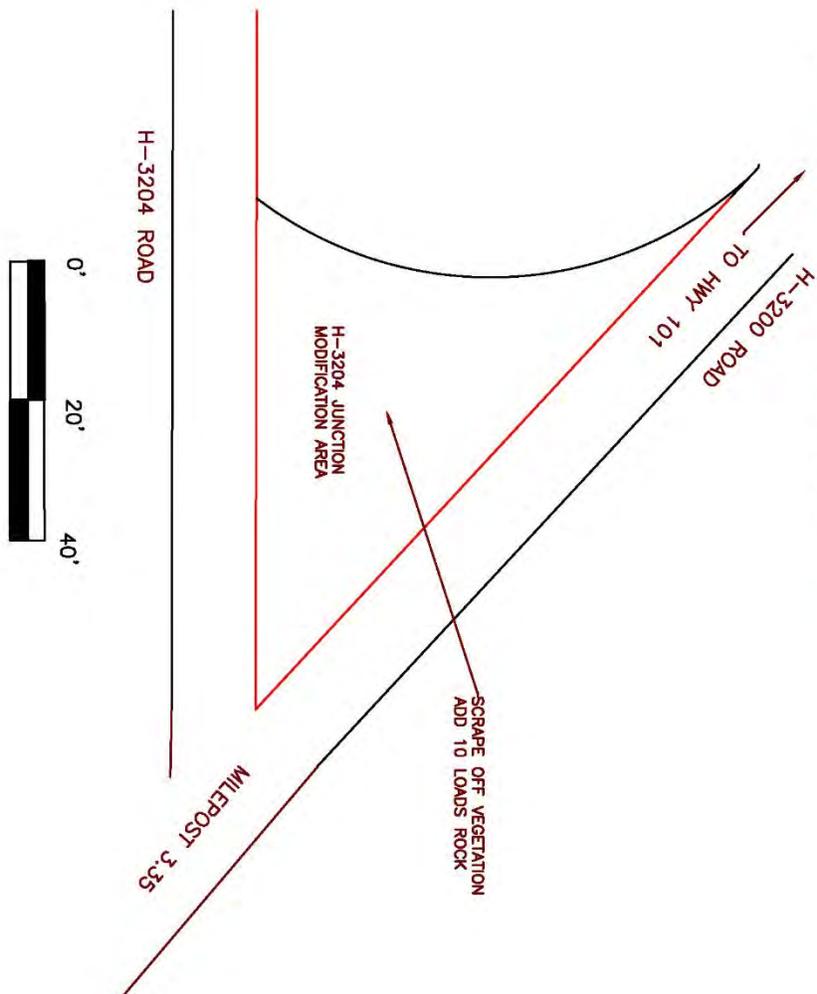
- Ditch
- Pit Road
- 1.25 Inch Minus
- 1.5 Inch Minus



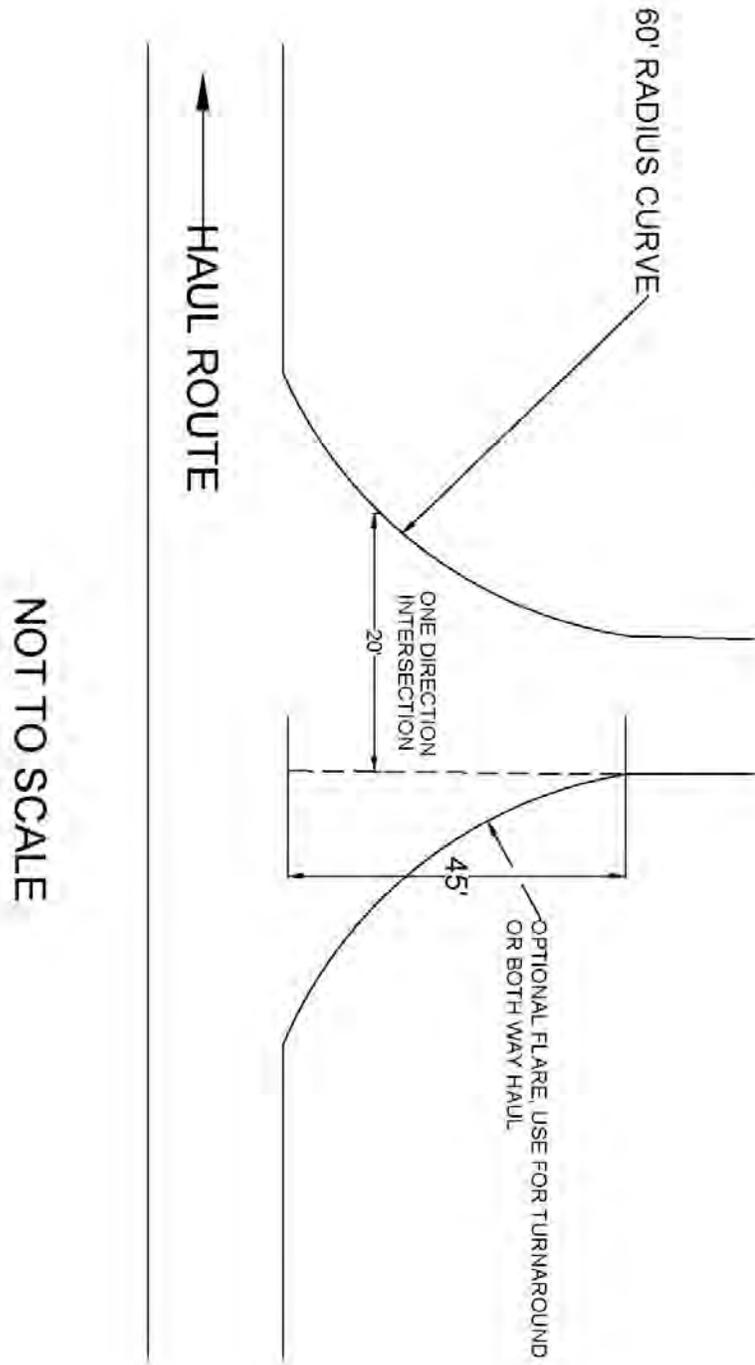
# South Winfield Pit T27N R12W Sec35



H-3200/3204 JUNCTION  
T.27N. R.11W. SEC 14

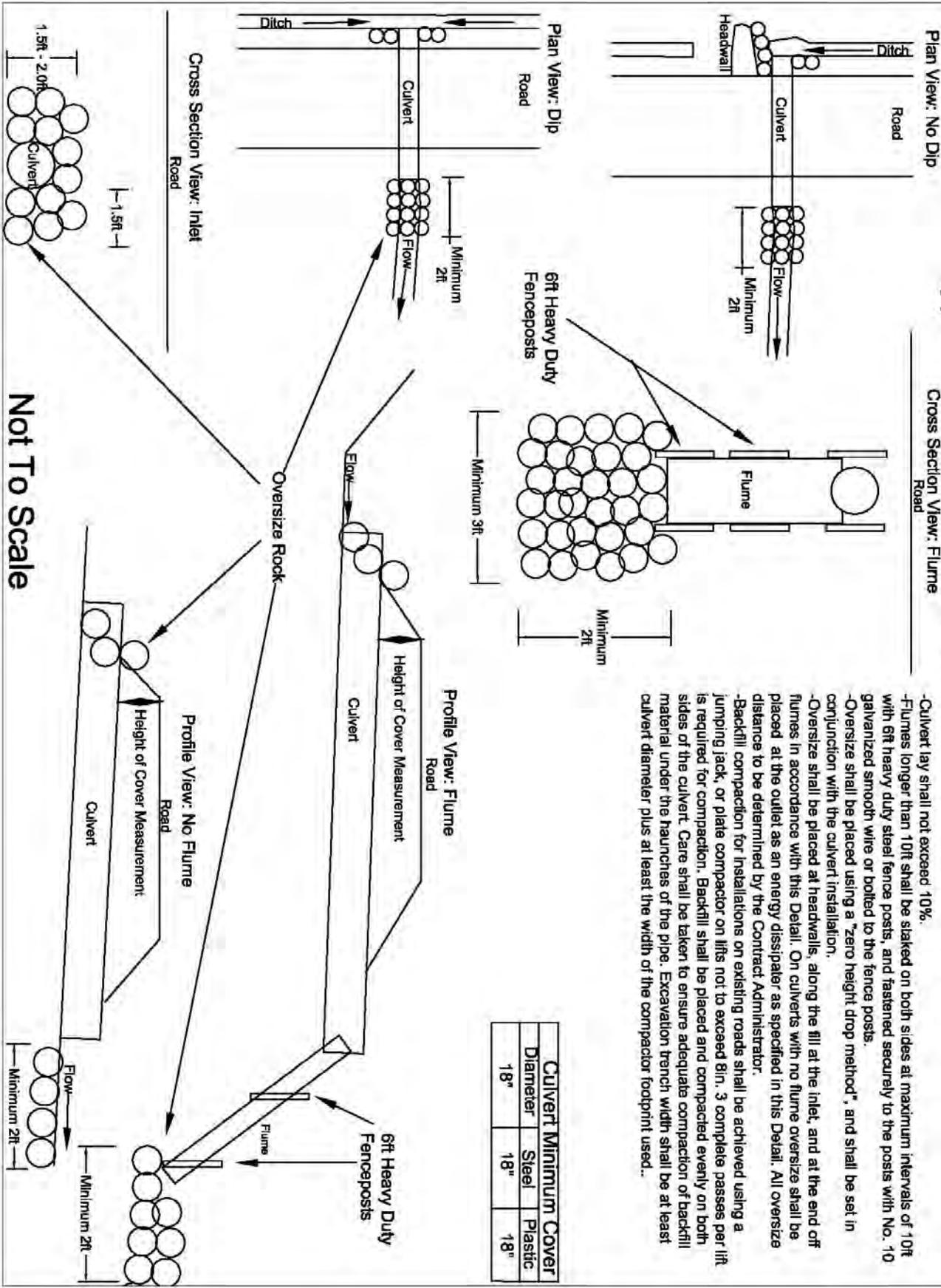


# TYPICAL INTERSECTION



NOT TO SCALE

# Typical Cross Drain Culvert Installation Detail Sheet.



-Culvert lay shall not exceed 10%.

-Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.

-Oversize shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.

-Oversize shall be placed at headwalls, along the fill at the inlet, and at the end of flumes in accordance with this Detail. On culverts with no flume oversize shall be placed at the outlet as an energy dissipater as specified in this Detail. All oversize distance to be determined by the Contract Administrator.

-Backfill compaction for installations on existing roads shall be achieved using a jumping jack, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus at least the width of the compactor footprint used.

DEPARTMENT OF NATURAL RESOURCES

SUMMARY - Road Development Costs

CONTRACT # 30-092822 REGION: Olympic DISTRICT: Coast

SALE NAME: Willy Thinner LEGAL DESCRIPTION: 0

ROAD NAME:	H-3102 Tie	0-75 Spur	1-00 Spur A	1-00 Spur B	1+25 Spur	1+40 Spur	3+60 Spur	11+75 Spnr	0+90 Spur	5+50 Spur	H-3102 Tie	TOTAL:
ROAD TYPE:	Construction	Recon.	Prehaul	TOTAL SHEET #2-4								
NUMBER OF STATIONS:	6.00	0.75	1.00	1.00	1.25	1.40	3.60	11.75	0.90	5.50	6.25	39.40
SIDE SLOPE:	0%	0%	0%	0%	0%	0%	40%	10%	5%	10%	0%	
CLEARING AND GRUBBING:	\$473	\$75	\$100	\$100	\$125	\$154	\$666	\$1,174	\$99	\$309	\$0	\$3,274
ROAD BRUSHING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EXCAVATION AND FILL:	\$540	\$68	\$90	\$90	\$113	\$126	\$1,377	\$1,586	\$101	\$675	\$0	\$4,766
ROAD GRADING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,100
DITCH CLEANING/CONSTRUCTION:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$156	\$0	\$156
ROCK TOTALS (Cu. Yds.):												
Ballast:	5228	\$622	\$754	\$622	\$777	\$2,632	\$4,914	\$6,336	\$1,823	\$1,597	\$4,026	\$30,696
Surface:	650	\$0	\$0	\$0	\$0	\$0	\$0	\$1,030	\$0	\$0	\$1,958	\$5,117
Oversize:	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CULVERTS AND PIPES:	\$1,100	\$660	\$0	\$0	\$0	\$0	\$880	\$0	\$0	\$0	\$0	\$2,640
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:	\$11	\$1	\$2	\$2	\$2	\$3	\$7	\$39	\$0	\$10	\$726	\$805
OVERHEAD:	\$976	\$128	\$85	\$73	\$92	\$362	\$706	\$915	\$182	\$330	\$604	\$4,339
TOTAL COSTS:	\$11,824	\$1,554	\$1,030	\$887	\$1,108	\$3,177	\$8,550	\$11,080	\$2,205	\$3,077	\$7,314	\$51,807
COST PER STATION:	\$1,971	\$2,072	\$1,030	\$887	\$887	\$2,270	\$2,375	\$943	\$2,450	\$559	\$1,170	\$1,315
MOBILIZATION:			\$6,100									
ROAD DEACTIVATION AND ABANDONMENT COSTS:			\$0									
PA Work:		\$0										

TOTAL (All Roads) = \$134,679  
 SALE VOLUME MBF = 3,390  
 TOTAL COST PER MBF = \$39.73  
 TOTAL COST PER STATION = \$336.56  
 Compiled by: Bill Mehl Date: 8-4-2015

NOTE: This appraisal has no allowance for profit and risk.  
 Sheet 1 of 2  
 Plans to be furnished by:

**SUMMARY - Road Development Costs**

SALE NAME: Willy Thinner	CONTRACT#: 30-092822	REGION: Olympic	DISTRICT: Coast							
LEGAL DESCRIPTION:	0									
ROAD NAME:	H-3200	H-3204	H-3106	H-3106.2	H-1730	2+25 Spur A	2+25 Spur B	3+50 Spur	7+00 Spur	H-3100
ROAD TYPE:	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul
NUMBER OF STATIONS:	97.70	48	17	7	6	3	2	4	7	131
SIDESLOPE:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CLEARING AND GRUBBING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD BRUSHING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EXCAVATION AND FILL:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD GRADING:	\$1,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$850
DITCH CLEANING/CONSTRUCTION:	\$0	\$1,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROCK TOTALS (Cu. Yds.):	\$0	\$3,300	\$6,307	\$471	\$1,998	\$155	\$1,067	\$1,224	\$2,375	\$0
Ballast:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Surface:	\$1,438	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Oversize:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CULVERTS AND FLUMES:	\$0	\$0	\$0	\$0	\$880	\$0	\$0	\$880	\$1,144	\$0
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:	\$153	\$3,619	\$1,116	\$476	\$224	\$167	\$187	\$261	\$521	\$0
OVERHEAD:	\$251	\$789	\$668	\$85	\$279	\$29	\$113	\$213	\$364	\$77
TOTAL COSTS:	\$3,042	\$9,558	\$8,090	\$1,032	\$3,381	\$352	\$1,367	\$2,578	\$4,404	\$92.7
COST PER STATION:	\$31	\$201	\$473	\$159	\$598	\$141	\$569	\$736	\$629	\$7

Sheet 2 Total  
Costs \$34,729  
Stations 320.85  
Cost/station \$108.24

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. Remove slides from ditches and the roadway. Repair fill-failures in accordance with Clause 4-6 Embankment Slope Ratio, and with 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, shape, and compact the road surface, turnouts, and shoulders to the original shape on the Typical Section Sheet, to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, or as directed by the Contract Administrator.
- Remove shoulder berms, created by grading, to facilitate drainage, except as marked or directed by the Contract Administrator.
- For roads with geotextile fabric: spread surface aggregate to fill in soft spots and wheel ruts (barrel spread) to prevent damage to the geotextile fabric.

### Drainage

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

### Preventative Maintenance

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

### Termination of Use or End of Season

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

### Debris

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

