

TIMBER NOTICE OF SALE

SALE NAME: GOODMAN PLUS DEMO VDT

AGREEMENT NO: 30-092344

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

COUNTY: Clallam, Jefferson

SALE LOCATION: Sale located approximately 13 miles southwest of Forks WA

**PRODUCTS SOLD
AND SALE AREA:**

All timber as described in Schedule B, except those leave trees described in Schedule C, bounded by timber sale boundary tags, orange blazed property line, double blue painted slashes, and the G-1206 Road in Unit 1; bounded by timber sale boundary tags, the G-1400 Road and the 4+46 Spur in Unit 2; bounded by timber sale boundary tags, double blue painted slashes, the G-2100 Road, G-2180 Road and the G-2182 Road in Unit 3; bounded by timber sale boundary tags, double blue painted slashes, the G-2180 Road and the 3+53 Spur in Unit 4; bounded by timber sale boundary tags and the F-2011 Road in Unit 5; bounded by timber sale boundary tags, the F-2000 Road and the F-2005 Road in Unit 6; all timber bounded by special management unit boundary tags in Units 1 - 5; on part(s) of Sections 15, 17, 20, 22, 27 and 29 all in Township 27 North, Range 13 West, Sections 15 and 16 all in Township 28 North, Range 13 West, W.M., containing 354 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								
						1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	9.9	4	951	8,329	\$4.30						8	337	578	29
Hemlock	10.4	5	898	8,288	\$4.30							347	500	49
Spruce	10.1		211	1,859	\$4.30							19	188	4
Red alder	9.8		27	222	\$2.00									27
Red cedar	9.1		9	53	\$132.00									9
Sale Total			2,096	18,751										

MINIMUM BID: \$4.30/ton (est. value \$86,000.00) **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: \$17,200.00 **SALE TYPE:** Tonnage Scale

EXPIRATION DATE: October 15, 2018 **ALLOCATION:** Export Restricted

BIDDABLE SPECIES: Spruce, Hemlock, Douglas fir combined

BID DEPOSIT: \$8,600.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: 32% - Ground/68% Uphill Cable. No rubber tired skidders unless skid trail and soil disturbance requirements can be met and a harvest plan has been submitted and approved by the Contract Administrator. 30' Equipment Limitation Zones on all typed waters. As indicated on the sale map, there will be no operations (other than haul) 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, in portions of Units 1, 2, 3, 4 and 6 for marbled murrelet restrictions.

ROADS: 3.37 stations of optional construction. 348.95 stations of optional pre-haul maintenance. As indicated on the timber sale map in Units 1, 2, 3, 4 and 6, there will be no operations (other than

TIMBER NOTICE OF SALE

haul) one hour before to two hours after official sunrise and from hour before to one hour after official sunset from April 1 through September 23, for marbled murrelet restrictions.

ACREAGE DETERMINATION

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

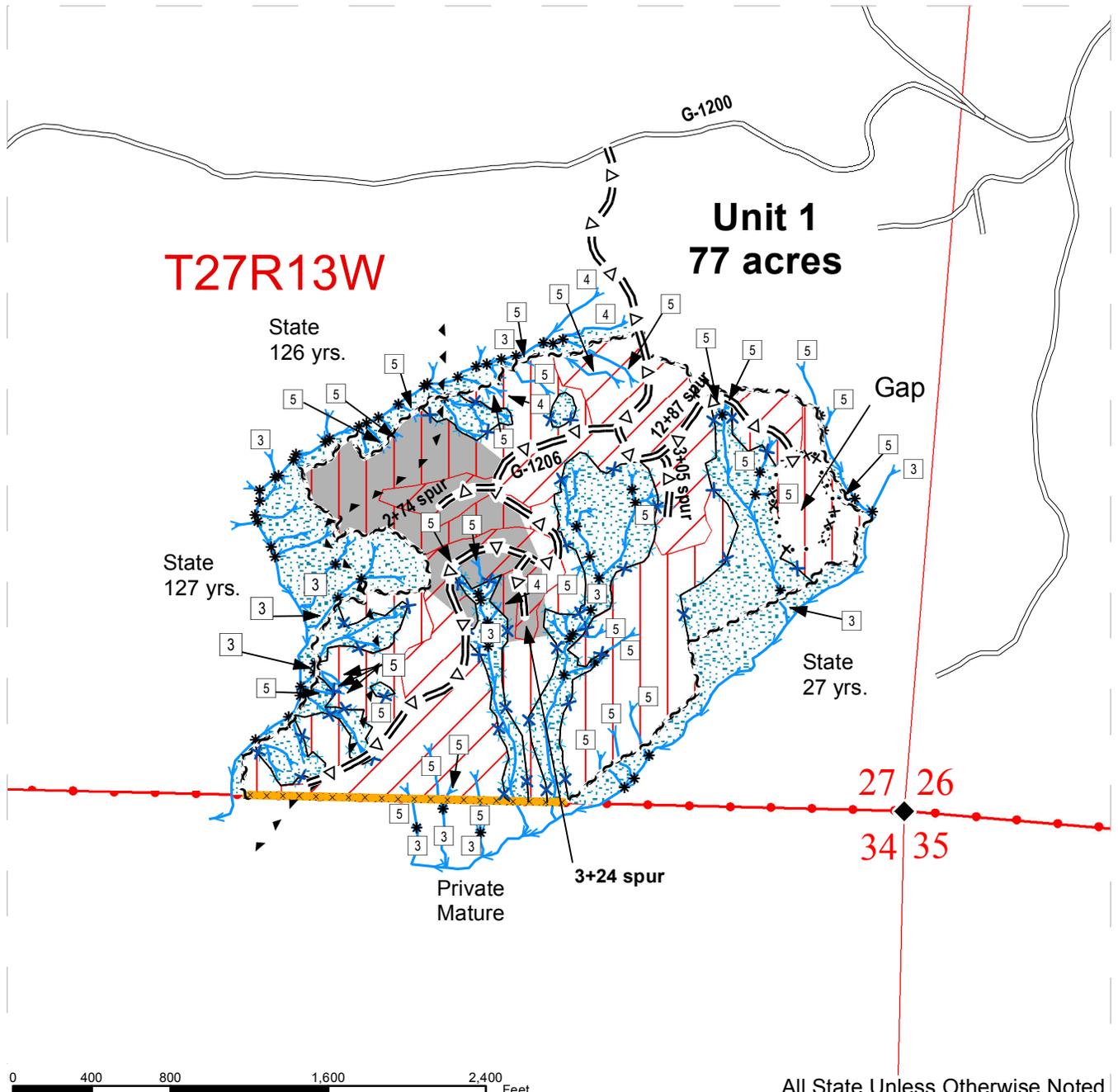
FEES: \$18,650.00 is due on day of sale. This is in addition to the bid price.

SPECIAL REMARKS: Total ARRF fees for this sale are \$18,650.00, with nothing additional due upon removal. This sale contains research gaps that range in diameters of 15', 30', and 45'. The research gaps are bounded by special management unit boundary tags and are contained in the gray areas as shown on the timber sale maps. There is a locked gate on the G-1000 and F-2000 Roads - contact Olympic Region Dispatch Center at 360-374-2811 to obtain a AA-1 key.

TIMBER SALE MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324-1026 ft.



All State Unless Otherwise Noted

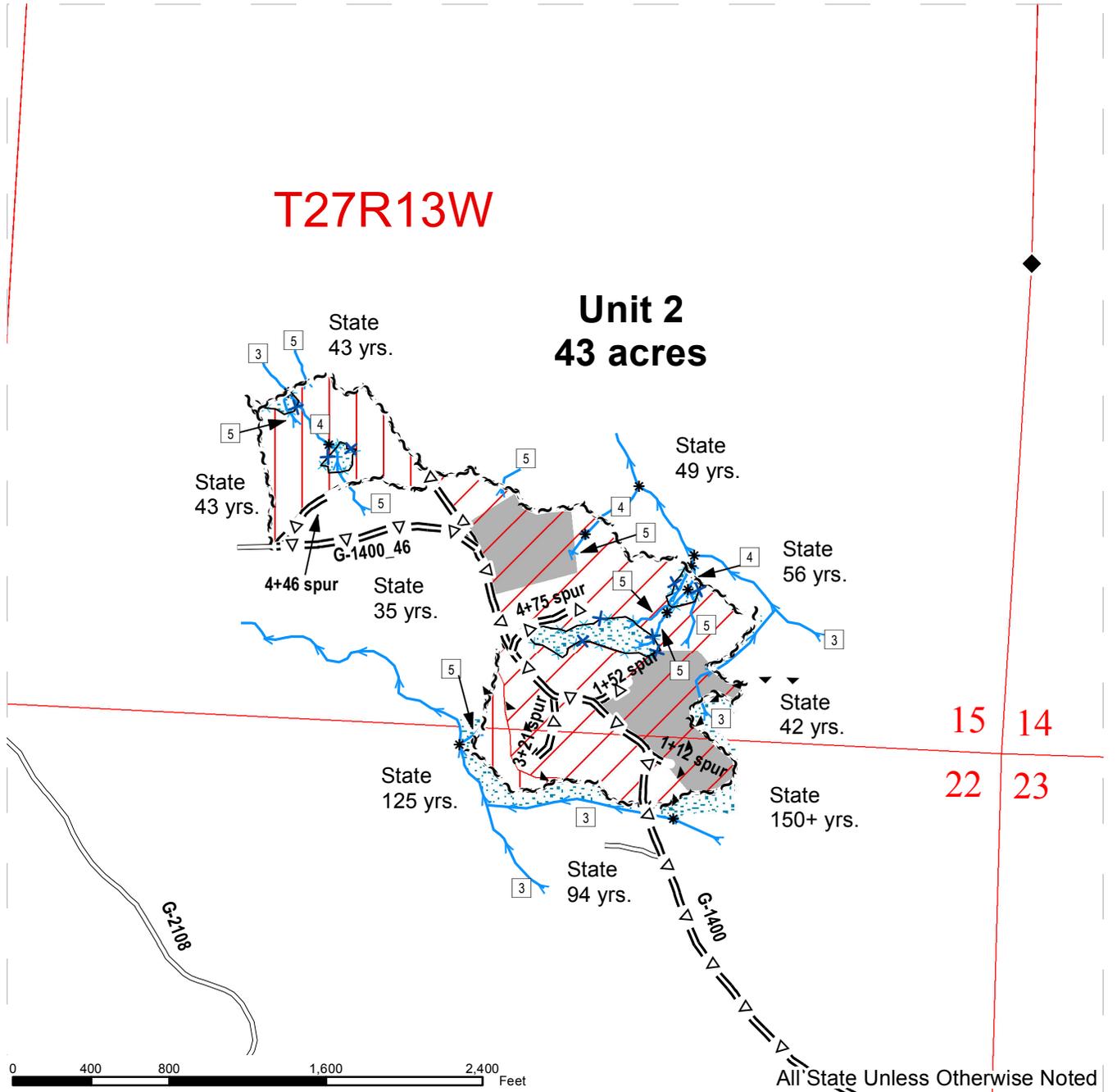
Boundary Lines		<ul style="list-style-type: none"> Research Gaps (15', 30', 45' dia.) Skip/RMZ/WMZ Streams Stream Type Stream Type Break Waste Area Gate (AA-1) 	<ul style="list-style-type: none"> DNR Managed Lands Public Land Survey Sections Public Land Survey Townships Monumented Corners
<ul style="list-style-type: none"> Timber Sale Boundary Tags Orange Blazes Double Blue Paint Slashes Special Management (Gap) Tags MM Restrictions Existing Roads Optional Construction Optional Pre-haul Maintenance 	<ul style="list-style-type: none"> Logging Method Cable Ground 		



TIMBER SALE MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324-1026 ft.



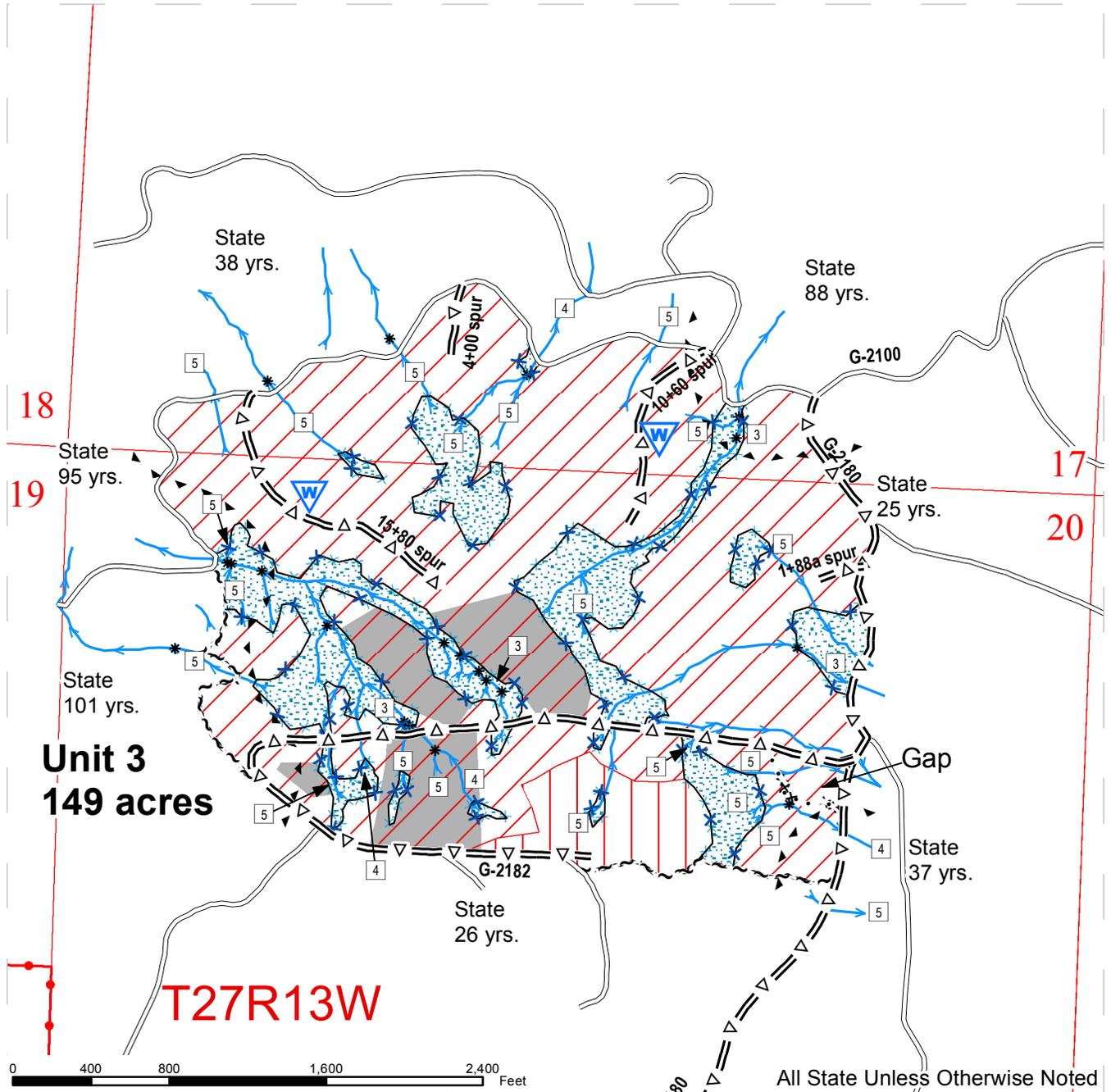
All State Unless Otherwise Noted

Boundary Lines		Research Gaps (15', 30', 45' dia.) Skip/RMZ/WMZ Streams Stream Type Stream Type Break Waste Area Gate (AA-1)	DNR Managed Lands Public Land Survey Sections Public Land Survey Townships Monumented Corners Logging Method Cable Ground
Timber Sale Boundary Tags Orange Blazes Double Blue Paint Slashes Special Management (Gap)Tags MM Restrictions Existing Roads Optional Construction Optional Pre-haul Maintenance			

TIMBER SALE MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324-1026 ft.



All State Unless Otherwise Noted

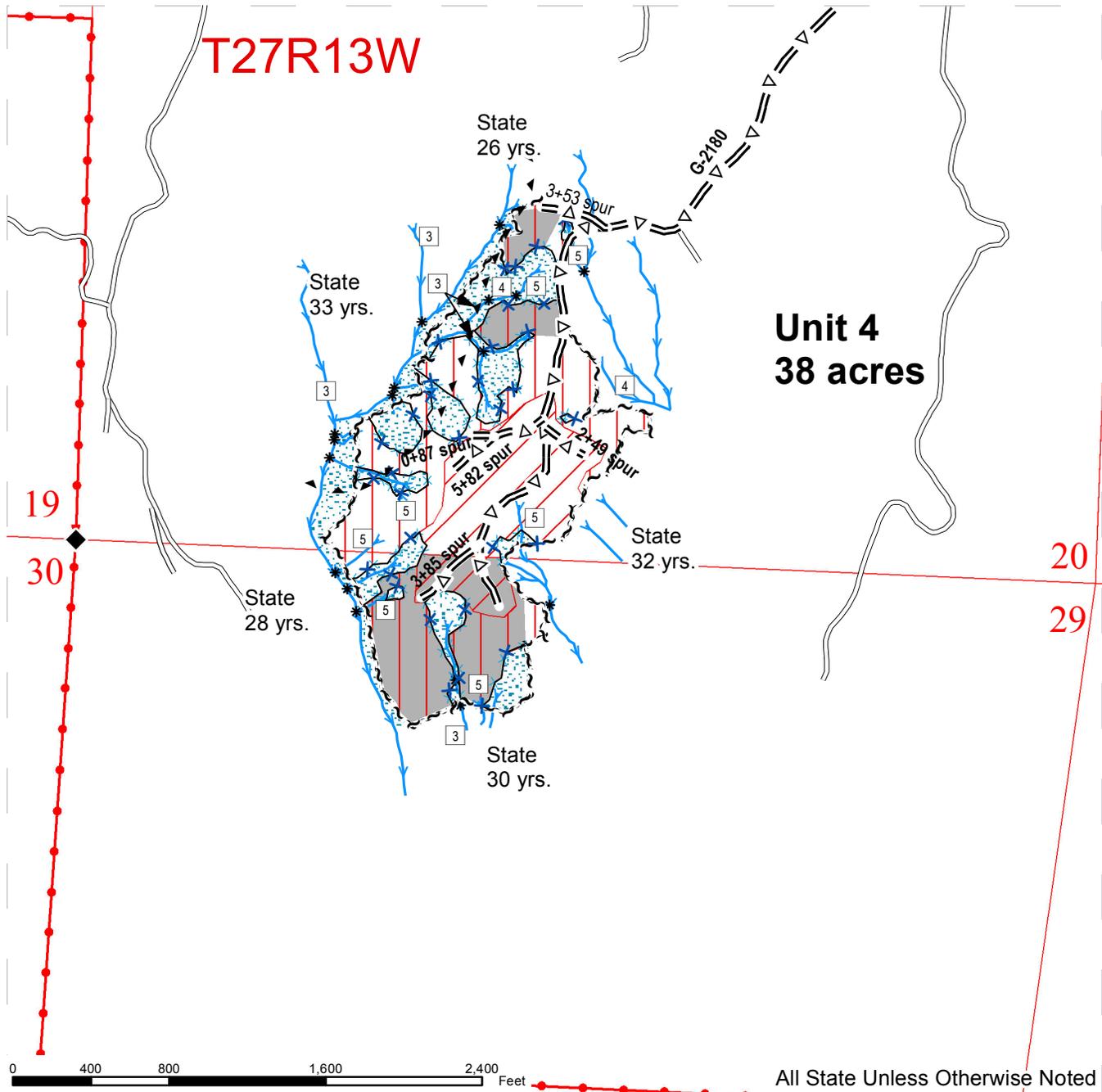
Boundary Lines		Research Gaps (15', 30', 45' dia.)		DNR Managed Lands	
~ ~ ~	Timber Sale Boundary Tags	■	Research Gaps (15', 30', 45' dia.)	□ (red)	DNR Managed Lands
▤ ▤ ▤	Orange Blazes	▨	Skip/RMZ/WMZ	□ (white)	Public Land Survey Sections
× × ×	Double Blue Paint Slashes	→	Streams	□ (red)	Public Land Survey Townships
· · · ×	Special Management (Gap) Tags	□	Stream Type	◆	Monumented Corners
▲ ▲ ▲	MM Restrictions	*	Stream Type Break	□ (red)	Logging Method
—	Existing Roads	▽	Waste Area	□ (hatched)	Cable
- - -	Optional Construction	●	Gate (AA-1)	□ (hatched)	Ground
= Δ =	Optional Pre-haul Maintenance				



TIMBER SALE MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324-1026 ft.



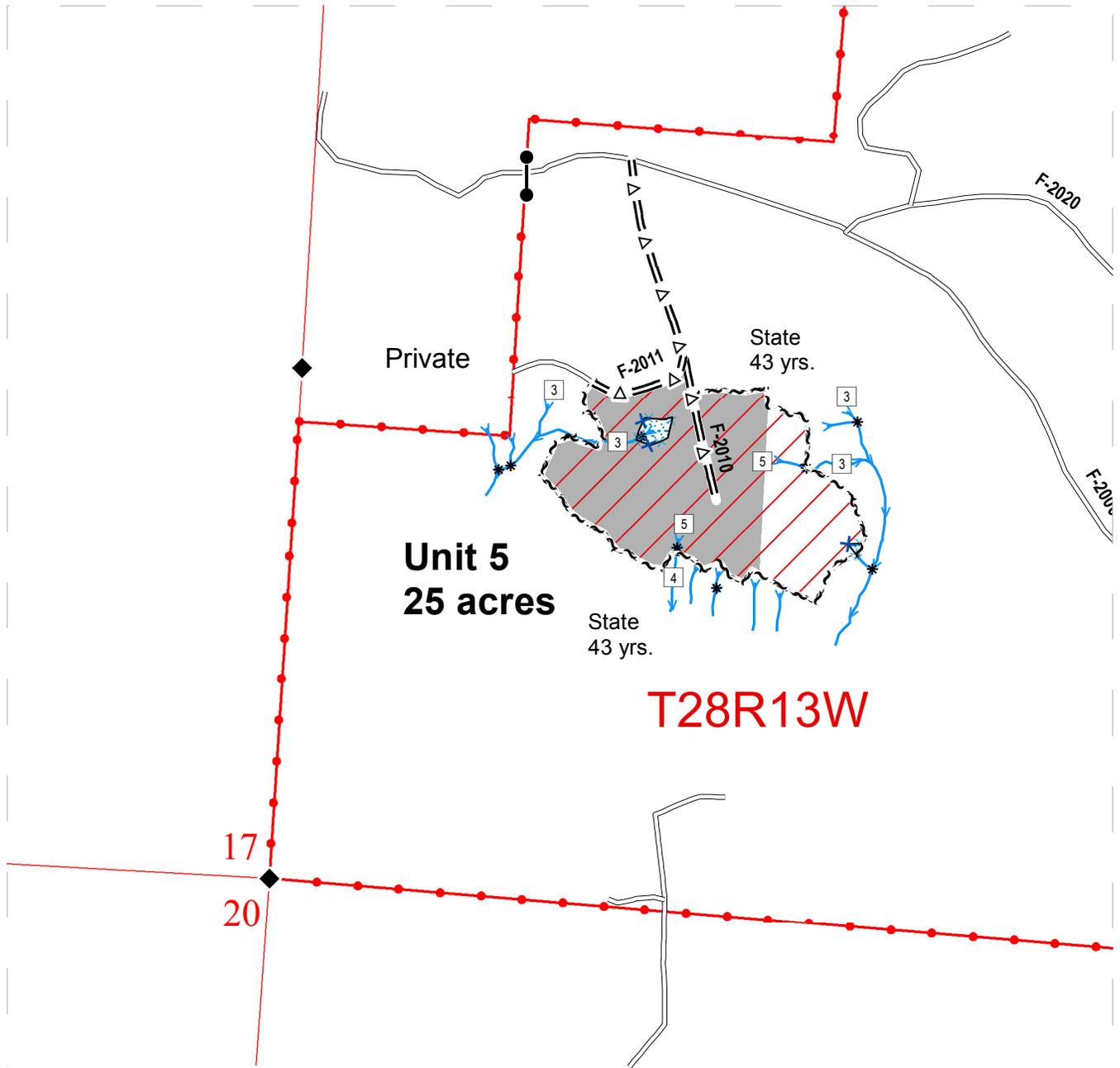
Boundary Lines		Research Gaps (15', 30', 45' dia.) Skip/RMZ/WMZ Streams Stream Type Stream Type Break Waste Area Gate (AA-1)	DNR Managed Lands Public Land Survey Sections Public Land Survey Townships Monumented Corners Logging Method Cable Ground
Timber Sale Boundary Tags Orange Blazes Double Blue Paint Slashes Special Management (Gap)Tags MM Restrictions Existing Roads Optional Construction Optional Pre-haul Maintenance			



TIMBER SALE MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324-1026 ft.



All State Unless Otherwise Noted

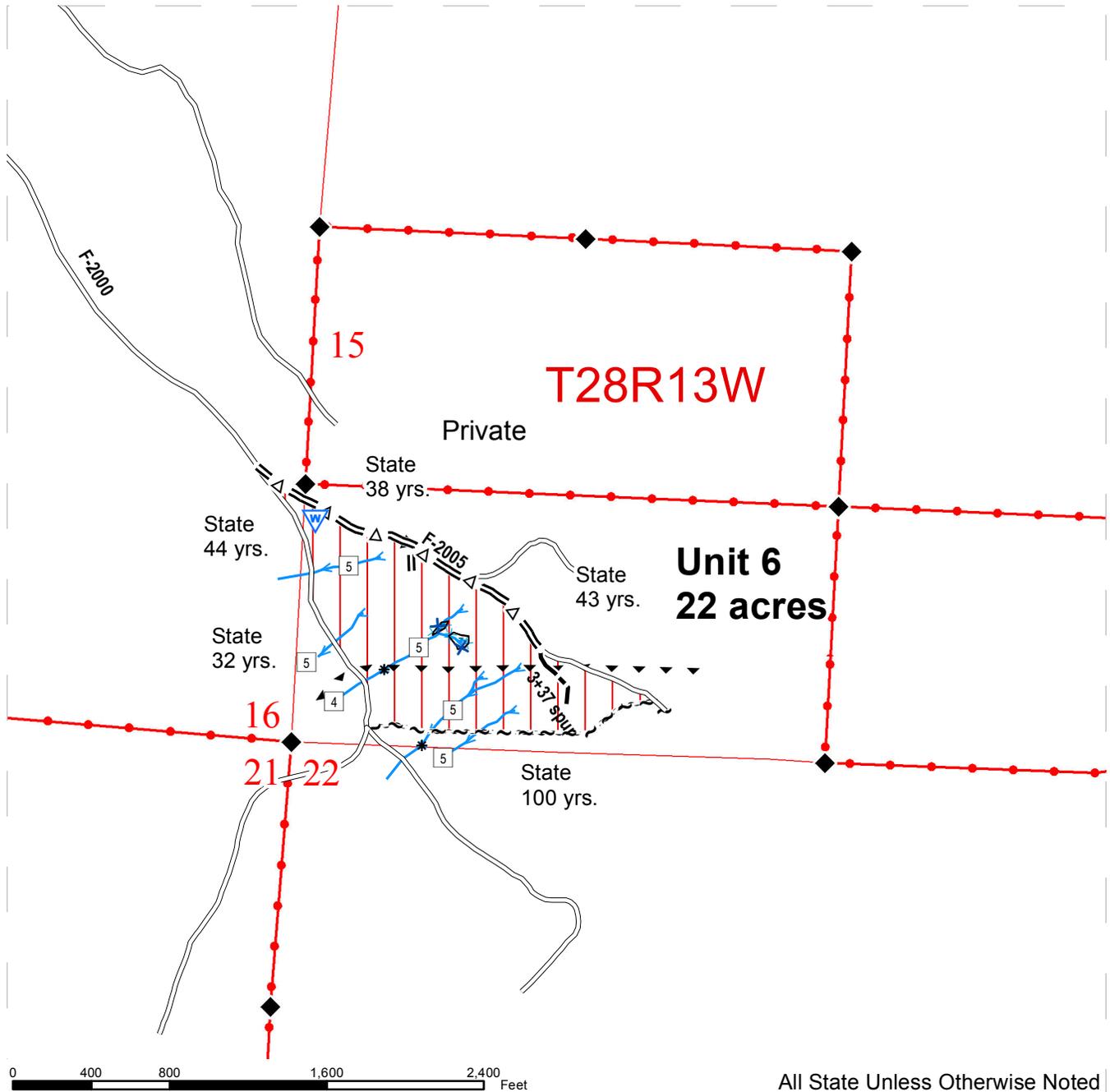
Boundary Lines		Research Gaps (15', 30', 45' dia.)		DNR Managed Lands	
~ ~ ~	Timber Sale Boundary Tags	■	Research Gaps (15', 30', 45' dia.)	□ (red border)	Public Land Survey Sections
× × × ×	Orange Blazes	■ (dotted)	Skip/RMZ/WMZ	□ (red border)	Public Land Survey Townships
× × × ×	Double Blue Paint Slashes	→	Streams	◆	Monumented Corners
· · · ×	Special Management (Gap) Tags	□	Stream Type	■ (red)	Logging Method
▲ ▲ ▲	MM Restrictions	*	Stream Type Break	□ (red)	Cable
— — —	Existing Roads	▽	Waste Area	□ (diagonal)	Ground
— - -	Optional Construction	● — ●	Gate (AA-1)		
= Δ =	Optional Pre-haul Maintenance				



TIMBER SALE MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324-1026 ft.



All State Unless Otherwise Noted

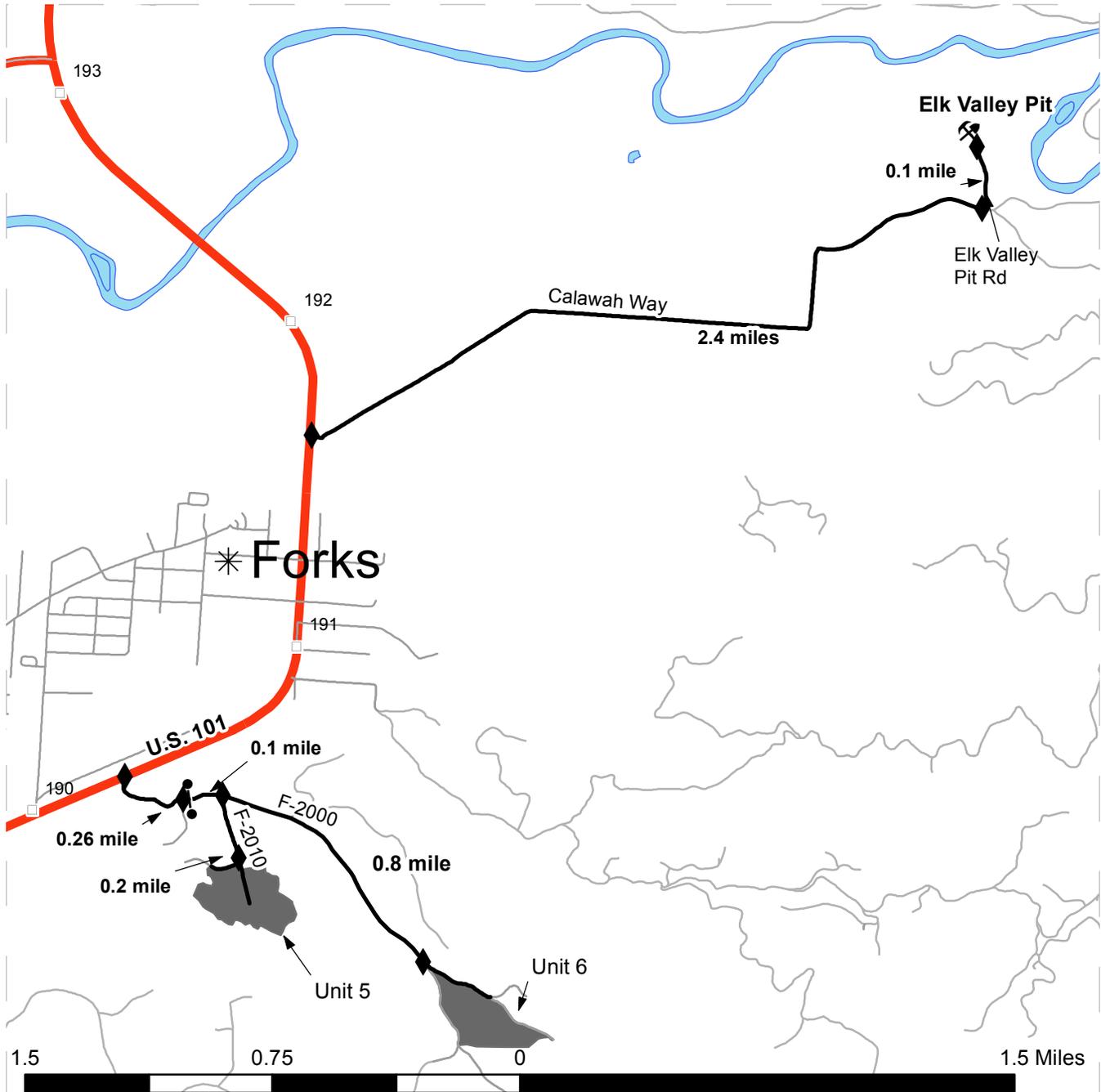
Boundary Lines		Research Gaps (15', 30', 45' dia.)		DNR Managed Lands	
~ ~ ~	Timber Sale Boundary Tags	■	Research Gaps (15', 30', 45' dia.)	□ (red border)	Public Land Survey Sections
× × × ×	Orange Blazes	■ (dotted)	Skip/RMZ/WMZ	□ (red border)	Public Land Survey Townships
× × × ×	Double Blue Paint Slashes	→ (blue)	Streams	◆	Monumented Corners
· · · ×	Special Management (Gap) Tags	□	Stream Type	□ (red border)	Logging Method
▲ ▲ ▲	MM Restrictions	*	Stream Type Break	□ (red border)	Cable
— — —	Existing Roads	▽ (blue)	Waste Area	□ (red border)	Ground
- - - -	Optional Construction	● — ●	Gate (AA-1)		
= Δ =	Optional Pre-haul Maintenance				



DRIVING MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W, T27R12W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324 - 1026 ft.



	Timber Sale Unit
	Highways
	Haul Route
	Other Route
	Milepost Markers
	Gate (AA-1)
	Distance Indicator

DRIVING DIRECTIONS:

Unit 5: From Forks, WA, drive south on HWY 101. Just after mile post 191 left turn onto the F-2000 towards the Olympic Natural Resource Center and travel 0.26 miles. At the fork continue left on the F-2000 through the gate for 0.1 miles. Turn right on the F-2010 and drive 0.2 miles to arrive at Unit 5.

Unit 6: Continue past the F-2010 on the F-2000 for 0.8 miles.

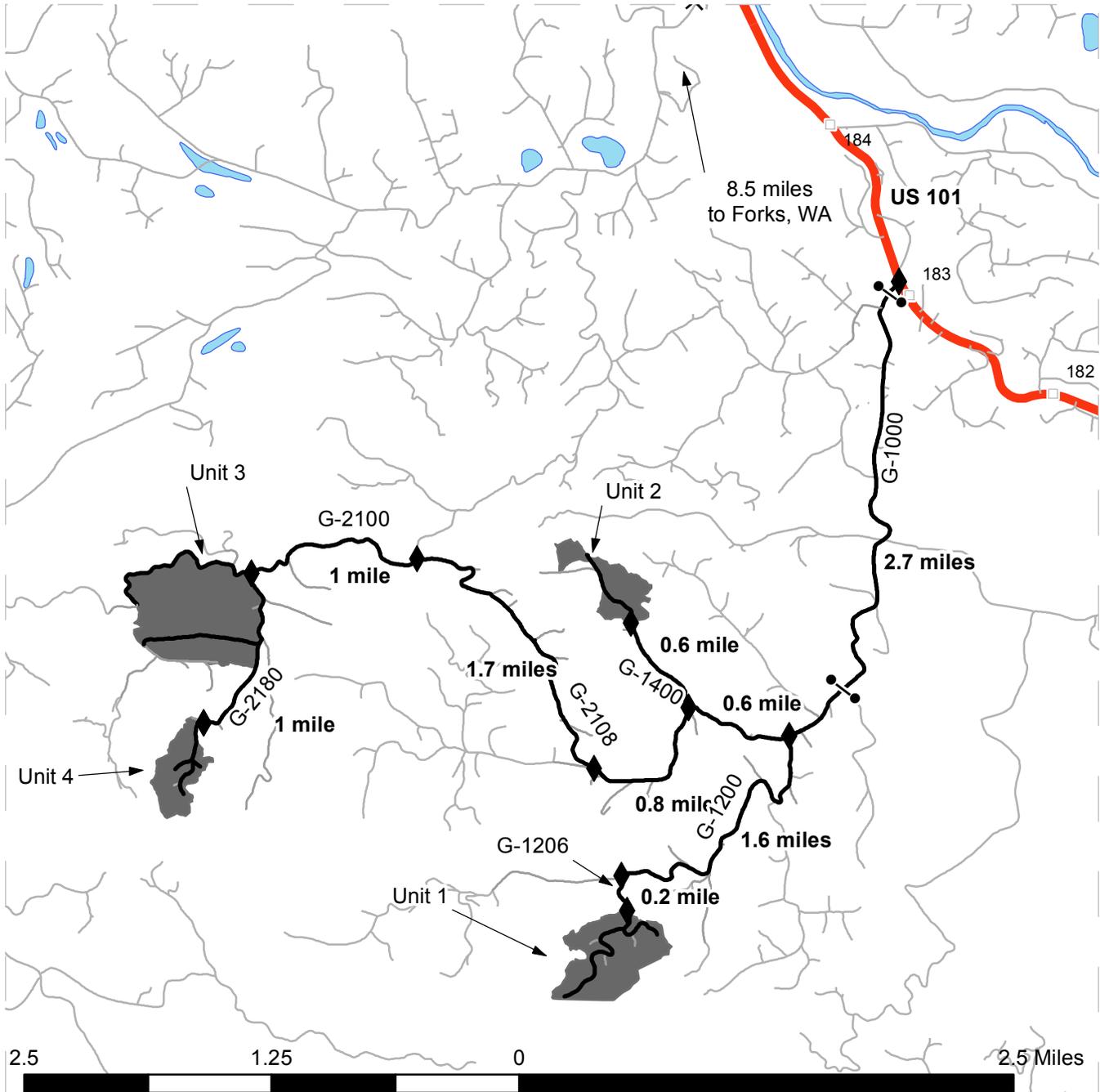
Elk Valley Pit: From Forks, WA travel east on Calawah Way 2.4 miles and turn left onto Elk Valley Pit Road. Continue for 0.1 miles to Elk Valley Pit.



DRIVING MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W, T27R12W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324 - 1026 ft.



- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Milepost Markers
- Gate (AA-1)
- Distance Indicator

DRIVING DIRECTIONS:

Unit 1: From Forks, WA drive south approximately 8.5 miles to mile post 183 on U.S. 101 and turn right on the G-1000 road. Continue on the G-1000 for 2.7 miles. Turn left on the G-1200 and drive 1.6 miles. Turn left on the G-1206 and drive 0.2 miles to arrive at Unit 1.

Unit 2: From U.S. 101 drive 3.3 miles on the G-1000. Turn right on the G-1400 and travel 0.6 miles to arrive at Unit 2.

Unit 3: From U.S. 101 drive 4.1 miles on the G-1000. Turn right on the G-2108 and drive 1.7 miles. Turn left on the G-2100 and drive 1 mile to arrive at Unit 3.

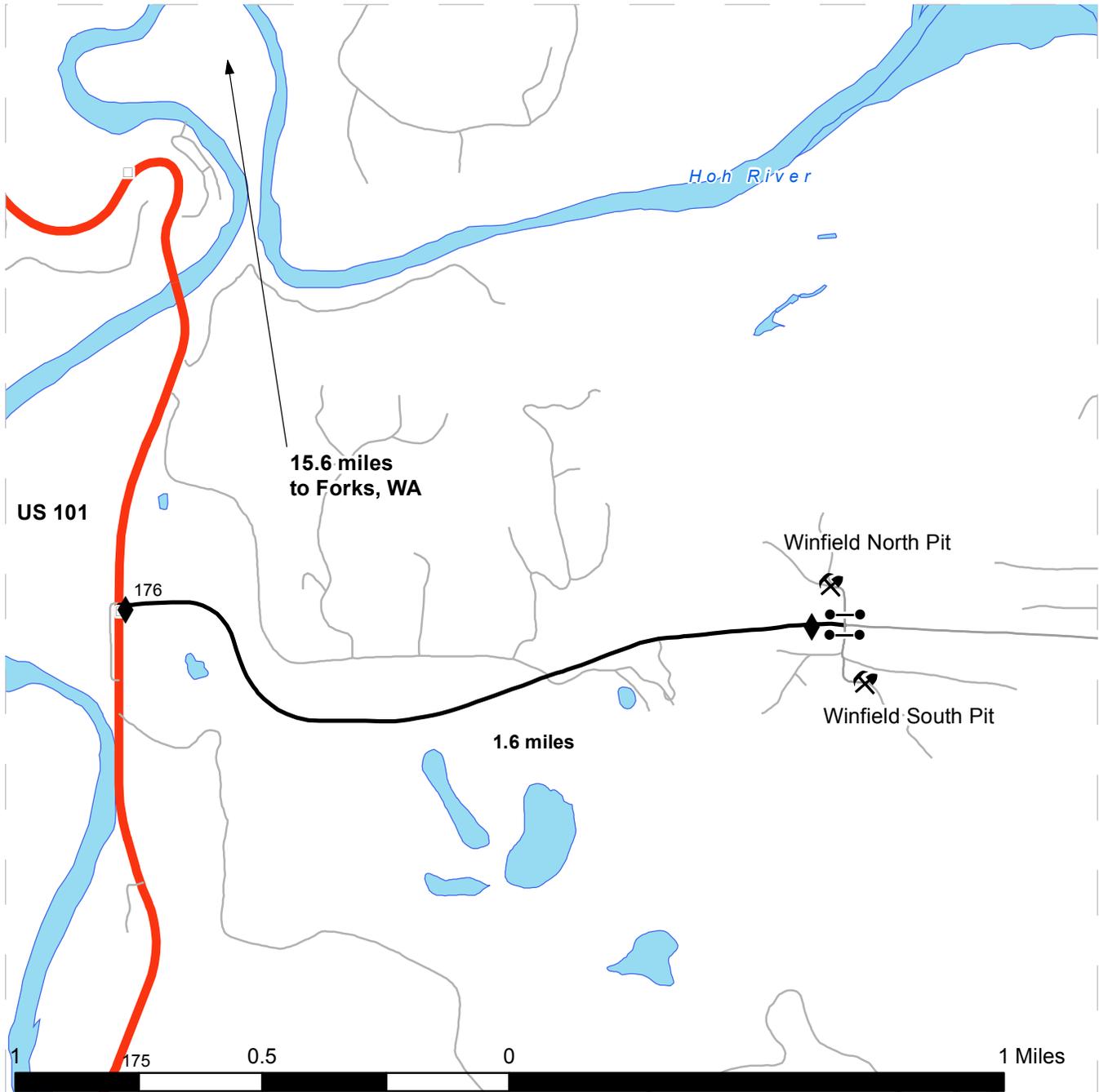
Unit 4: From Unit 3 turn onto the G-2180. Drive 1 mile to arrive at Unit 4.



DRIVING MAP

SALE NAME: Goodman Plus Demo VDT
AGREEMENT#: 30-092344
TOWNSHIP(S): T28R13W, T27R13W, T27R12W
TRUST(S): State Forest Transfer (1), Common School (3), & University (5)

REGION: Olympic
COUNTY(S): Clallam & Jefferson
ELEVATION RGE: 324 - 1026 ft.



	Timber Sale Unit
	Highways
	Haul Route
	Other Route
	Milepost Markers
	Gate (AA-1)
	Distance Indicator

DRIVING DIRECTIONS:

Winfield Pit: from Forks travel south on HWY 101 approximately 15.6 miles to the Hoh-Clearwater Mainline and turn left. Continue on the Hoh-Clearwater Mainline for approximately 1.6 miles. The north pit will be on your left and the south pit will be on your right.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Tonnage Scale AGREEMENT NO. 30-092344

SALE NAME: GOODMAN PLUS DEMO VDT

**THE STATE OF WASHINGTON DEPARTMENT OF NATURAL
RESOURCES, HEREINAFTER ACTING SOLELY, IN ITS PROPRIETARY
CAPACITY, STATE, AND PURCHASER, AGREE AS FOLLOWS:**

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

Bill of Sale and Contract for Forest Products: Contract between the Purchaser and the State, which sets forth the procedures and obligations of the Purchaser in exchange for the right to remove forest products from the sale area. The Bill of Sale and Contract for Forest Products may include a Road Plan for any road construction or reconstruction, where applicable.

Contract Administrator: Region Manager's designee responsible for assuring that the contractual obligations of the Purchaser are met.

Forest Product: Any material derived from the forest for commercial use.

Purchaser: The company or individual that has entered a Bill of Sale and Contract for Forest Products with the State for the right to harvest and remove forest products from the timber sale area.

Road Construction: Includes building new and maintaining existing forest roads and associated work that may be optional or required as described in the Road Plan.

State: The Washington State Department of Natural Resources, landowner and seller of Forest Products from the timber sale area. The State is represented by the Region Manager as designated on the contract signature page. Contractual obligations to the State are enforced by the Region Manager or the designated Contract Administrator.

Subcontractor: Individual or company employed by the Purchaser to perform a portion or all of the services required by The Bill of Sale and Contract for Forest Products. The Purchaser is responsible for independently negotiating, procuring and paying for all subcontracted services rendered.

G-010 Products Sold and Sale Area

Purchaser was the successful bidder on 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 B, except those leave trees described in Schedule C, bounded by timber sale boundary tags, orange blazed property line, double blue painted slashes, and the G-1206 Road in Unit 1; bounded by timber sale boundary tags, the G-1400 Road and the 4+46 Spur in Unit 2; bounded by timber sale boundary tags, double blue painted slashes, the G-2100 Road, G-2180 Road and the G-2182 Road in Unit 3; bounded by timber sale boundary tags, double blue painted slashes, the G-2180 Road and the 3+53 Spur in Unit 4; bounded by timber sale boundary tags and the F-2011 Road in Unit 5; bounded by timber sale boundary tags, the F-2000 Road and the F-2005 Road in Unit 6; all timber bounded by special management unit boundary tags in Units 1 - 5; located on approximately 354 acres on part(s) of Sections 15, 17, 20, 22, 27, and 29 all in Township 27 North, Range 13 West, Sections 15, and 16 all in Township 28 North, Range 13 West W.M. in Clallam, and 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	CUT TREE SELECTION CRITERIA
C	LEAVE TREE SELECTION CRITERIA
D	UNIT TARGET TABLE

G-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to October 15, 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; F-2000, F-2005, F-2010, F-2011, G-1000, G-1200, G-1206, G-1400, G-2100, G-2108, G-2180, G-2182, and all spurs and pit access road associated with this sale. 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 F-2000 and G-2100 Roads, 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 #55-001762 with Sherlie Anderson McCarthy, Earl T. McCarthy, Woodworth Anderson, Maureen Anderson, and Hazel Rude dated June 21, 1979.

Easement #55-001761 with Robert H. Cooper III and Carol Ann Cooper dated Mach 28, 1979.

Easement #55-000424 with City of Forks dated January 27, 1986.

Easement #55-002503 with University of Washington dated March 44, 1994.

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 \$18,650.00 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-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 \$17,200.00. 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 100 square inches.
- b. A leave tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

H-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 Units 3 and 5.

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 20 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-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for utilizing rubber tire skidders in the sale area. The plan shall address the timing and location of desired use, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-050 Rub Trees

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

H-052 Branding and Painting

Forest products shall be branded with a brand furnished by the State prior to removal from the landing. All purchased timber shall be branded in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

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

H-080 Snags Not to be Felled

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

H-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 by ground and cable methods, with rubber tire skidders allowed only when the conditions of H-015, H-017, and H-040 can be met unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. Purchaser shall immediately repair all gate damage resulting from operations to an equal or better condition than existed at the time of the sale.
2. While felling timber, 2 warning signs must be posted on the G-1400, G-1206, G-2100, G-2180, G-2182, F-2000, F-2005, and F-2010 Roads.
3. Yarding equipment shall not cross live streams without an HPA.
4. 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 in portions of Units 1, 2, 3, 4 and 6, there will be no operations from one hour before to two hours after official sunrise and from one hour before to one hour after official sunset from April 1 through September 23 for 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	35	1000	40	1000
Cable	N/A	1000	N/A	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 Mismanufacture

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

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

H-180 Removal of Specialized Forest Products or Firewood

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

H-190 Completion of Settings

Operations begun on any setting of the sale area shall be completed before any operation begins on subsequent settings unless authorized in writing by the Contract Administrator.

H-220 Protection of Residual or Adjacent Trees

Unless otherwise specified by this contract, the Contract Administrator shall identify damaged adjacent or leave trees that shall be paid for according to clause G-230.

H-230 Tops and Limbs Outside the Sale Boundary

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

H-260 Fall Leaners

Trees that have been pushed over in falling or skidding operations shall be felled.

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

Road construction and associated work provisions of the Road Plan for this sale, dated 3/31/2015 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on F-2005, F-2010, F-2001, G-1200, G-1206, G-1400, G-2180, G-2182, Elk Valley Pit and all construction and spurs associated with this sale. 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 F-2000, G-1000, G-2100, G-2108, Winfield Pit North and South Road and all other roads not covered in C-050. 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-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 water 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: Interest = $r \times LD \times N$.

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 all units.

DRAFT

DRAFT

DRAFT

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 landings 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.
7. Slash shall be placed in skid roads or ahead of machinery. Slash which accumulates on landings and/or roads shall be lopped and scattered within the harvest area or as designated by the Contract Administrator.
8. Slash generated during cable yarding shall be stacked in dirt free piles and shall not block roads or interfere with functioning of drainage structure, ditches, or stream channels.

Schedule B
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 or equal to 13 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.
- d. All timber in Unit 6 within 30' either side of centerline of newly constructed road. If road is not constructed timber will be thinned per this schedule.

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.

Schedule C
LEAVE TREE SELECTION CRITERIA

1. Leave trees are defined as follows:
 - a. All trees greater than or equal to 16 inches in diameter at a 12 inch stump height.
 - b. Trees greater than or equal to 13 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 13 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 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 30 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 D
UNIT TARGET TABLE

Unit	Acres	RD	Stems/acre	Approx. Spacing	Basal Area
1	77	40	125	19' x 19'	150
2	43	40	110	20' x 20'	140
3	149	40	160	17' x 17'	150
4	38	50	165	16' x 16'	190
5	25	40	135	18' x 18'	160
6	22	40	100	21' x 21'	160



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

Temporary Optional Construction: **linear feet**
Optional roads to be constructed and then abandoned

Temporary Optional Reconstruction: **linear feet**
Optional roads to be reconstructed and then abandoned

New Abandonment: **linear feet**
Abandonment of roads constructed or reconstructed under the contract

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contract. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.

(Revised 4/09)

PRE-CRUISE NARRATIVE

Sale Name: Goodman Plus Demo	Region: Olympic
Agreement #: 30-092344	District: Coast
Contact Forester: Kevin Alexander Phone / Location: 360-640-5506	County(s): Clallam, Jefferson
Alternate Contact: Elliot Mann Phone / Location: 360-640-9200	Other information:

Type of Sale: Weight Scale	
Harvest System: Ground based , Processor Forwarder	
Harvest System: Cable thinning	

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
Unit 1	Sec 27 T27N R13W	05	105.5	23.9	-	2.5		79.1	GPS (Garmin)
Unit 2	Sec 15 T27N R13W	05	46.2	2.9	-	1.0		43.3	GPS (Garmin)
Unit 3	Sec 20 T27N R13W	05	191.7	37.0	-	6.2		148.5	GPS (Garmin)
Unit 4	Sec 20 T27N R13W	05	50.9	10.0	-	1.7		39.2	GPS (Garmin)
Unit 5	Sec 16 T28N R13W	03	26.5	.5	-	.6		25.4	GPS (Garmin)
Unit 6	Sec 15 T28N R13W	01 / 03	24.3	.2	-	1.8		22.3	GPS (Garmin)
TOTAL ACRES			445.1	74.5	-	13.8		357.8	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
Unit 1	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, orange blazes, or the G-1206 road. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the	Gaps totaling 4 acres with 100% removal. Thinning residual target RD of 45.	

	tree. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon.		
Unit 2	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, orange blazes, or the G-1400 road and 4+46 spur. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon.	Gaps totaling 1 acre. Thinning residual target RD of 43.	
Unit 3	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, orange blazes, or the G- 2100, G-2180, G-2182 road. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree, or the G-2100 and G-2180 roads. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon.	Gaps totaling 3.5 acres. Thinning residual target RD of 50.	
Unit 4	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, orange blazes, or the G-2180 road and 3+57 spur. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree, or the G-2180 road. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon.	Gaps totaling 1 acre. Thinning residual target RD of 50.	
Unit 5	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, orange blazes, or the F-2011 road. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon.	Gaps totaling 0.9 acre. Thinning residual target RD of 43.	

Unit 6	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, orange blazes, or the F-2005 and F-2000 roads. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree, or the G-2180 road.	Thinning residual target RD of 40.	
--------	---	------------------------------------	--

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
TOTAL MBF	Click here to enter total mbf.		

REMARKS:

--

Prepared By: Date:	Title:	CC:
-------------------------------------	---------------	------------

Cruise Narrative

Sale Name: Goodman Plus Demo	Region: Olympic
Agree. #: 30- 092344	District: Coast
Lead cruiser: Jason Michaud	Completion date: 2/05/2014
Other cruisers on sale: Kevin Peterson	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1 (1206)	75.1	y	
2 (1400)	43.2	y	
3 (2100)	145	y	
4 (2180)	38.2	y	
5 (2010)	24.5	y	
6 (2000)	22.3	y	
Gaps	3.8	y	
Research Gaps	5.8	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 (cruise:count)	Total number of plots
1 (1206)	VP	54.44, 40	y	375X375	All Cruise	24
2 (1400)	VP	54.44, 40	y	375X375	All Cruise	14
3 (2100)	VP	54.44, 40	y	375X375	All Cruise	42
4 (2180)	VP	54.44, 40	y	375X375	All Cruise	11
5 (2010)	VP	54.44, 40	y	375X375	All Cruise	9
6 (2000)	VP	54.44, 40	y	375X375	All Cruise	9
Gaps	VP	54.44, 40	y	325X325	All Cruise	Plots from Unit
Research Gaps	VP	54.44, 40	y	N/A	All Cruise	Plots from Unit
Total						109

Sale/Cruise Description:

Minor species cruise intensity:	ALL minor species were cruised on all plots.					
Minimum cruise spec:	10 Bd. Ft. net / 5 inch top of 40% dia@16					
Avg ring count by sp:	DF =	4	WH =	5	SS =	
Leave/take tree description:	Timber sale boundaries are marked with white harvest boundary tags, red flashers, blue paint and pink ribbon. Skipped areas are marked with double slash blue paint. Gaps are marked with special management tags, red flashers, blue paint and pink ribbon. Research gaps are marked with special management tags, red flashers, blue paint and white ribbon					
Other conditions	All roads and existing right-of-ways acres were deducted from the gross acreage.					

Field observations:

The Goodman Demo timber sale is located in the Goodman Block south of Forks as well as on the F-2000 on Reade Hill just east of Forks. The timber in U1-U4 consisted of Douglas-fir and Western hemlock. The hemlock and fir had forked tops and spike knots present throughout the stand. The Average bole height of trees in these units is 55 feet. Unit 5 consisted of a nearly pure hemlock stand. Defect consisted of forked tops and bear damage. U6 consisted of Douglas-fir and hemlock with a minor alder and red cedar scattered throughout. Defect in this unit consisted of forked tops and spike knots.

Grants: 05**Prepared by: Jason Michaud****Title: Cruiser/Forester 1****CC:**

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																			
T027 R013 S09 Ty1206 THRU T028 R013 S16 TyRG				Project:		RDEMO										Page		1					
				Acres		354.10										Date		5/12/2015	Time	7:06:31AM			
Spp	S	So	Gr	% 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							
DF	D	2S		4	5.6	324	306	109	100				11				89	36	13	203	1.74	1.5	
DF	D	3S		73	6.3	5,211	4,883	1,729	100				0				100	40	8	83	0.74	59.2	
DF	D	4S		20	5.7	1,439	1,357	481	93	7	32				24	5	40	23	5	23	0.33	59.2	
DF	D	UT		2		137	137	49	53	47	25				20	9	47	10	6	15	0.46	9.1	
DF	RO	3S		1		37	37	13	100				100				40	9	120	1.01	.3		
DF Totals				39	6.0	7,149	6,720	2,380	20	76	5	7	6	1	86	30	6	52	0.60	129.3			
DF	T	D	2S		8.3	24	22	8	100				100				40	13	220	1.90	.1		
DF	T	D	3S		36	3.5	986	952	337	100				100				40	7	69	0.59	13.7	
DF	T	D	4S		61	4.9	1,714	1,631	578	93	7	12	26	15	47	29	5	29	0.30	55.5			
DF	T	D	UT		3		81	81	29	100				51	49	10				5	10	0.18	8.2
DF Totals				16	4.3	2,806	2,686	951	59	40	1	9	17	9	65	29	5	35	0.37	77.6			
SS	D	2S		9	3.8	92	89	31	100				26	74				30	12	140	2.04	.6	
SS	D	3S		70	5.1	701	665	235	100				100				40	8	89	0.88	7.4		
SS	D	4S		14	6.0	137	129	46	89	11	46	23	31	20				5	22	0.38	6.0		
SS	D	UT		7		61	61	22	26	74	23	77				23	6	38	0.63	1.6			
SS Totals				5	4.8	991	944	334	14	77	9	10	3	4	82	30	7	60	0.78	15.6			
SS	T	D	3S		9	3.6	56	54	19	100				100				40	8	109	0.95	.5	
SS	T	D	4S		89		531	531	188	84	16	13	43	12	33	29	5	31	0.36	17.0			
SS	T	D	UT		2		10	10	4	100				100				40	8	90	0.96	.1	
SS Totals				3	.3	598	596	211	75	25	11				38	10	40	29	5	34	0.39	17.6	
WH	D	2S		6	7.4	240	222	79	100				11	44	45	33	12	158	1.37	1.4			
WH	D	3S		71	5.1	2,627	2,493	883	100				100				40	7	80	0.69	31.2		
WH	D	4S		22	3.4	822	794	281	81	19	35	11	11	44	22	5	23	0.30	35.0				
WH	D	UT		1		8	8	3	100				100	2				6	2	0.26	4.6		
WH Totals				20	4.9	3,696	3,517	1,245	19	75	6	8	3	5	84	28	6	49	0.56	72.2			
WH	T	D	3S		38	3.4	1,013	979	347	100				100				40	7	67	0.57	14.6	
WH	T	D	4S		56	1.7	1,438	1,413	500	94	6	12	16	26	47	28	5	30	0.28	47.1			
WH	T	D	UT		6		139	139	49	100				11	57	33	23	5	22	0.22	6.2		
WH Totals				15	2.3	2,590	2,531	898	58	42	7				12	16	65	30	5	37	0.36	67.9	
RA	D	3S		43	14.3	57	49	17	100				8	92	29				9	75	1.10	.7	
RA	D	4S		54		61	61	22	36	64	46				54	34	6	46	0.53	1.3			
RA	D	UT		3		2	2	1	100				100				29	5	30	0.40	.1		
RA Totals				1	6.8	121	113	40	22	78	4				67	29	32	7	54	0.69	2.1		
RA	T	D	4S		100		76	76	27	49	51	6				36	58	29	6	37	0.37	2.1	
RA Totals				0		76	76	27	49	51	6				36	58	29	6	37	0.37	2.1		
RC	D	4S		100	6.7	79	74	26	73	27	27				28	45	27	6	32	0.45	2.3		
RC Totals				0	6.7	79	74	26	73	27	27				28	45	27	6	32	0.45	2.3		
RC	T	D	4S		100		25	25	9	100				100				26	5	30	0.29	.8	
RC Totals				0		25	25	9	100	100				100				26	5	30	0.29	.8	

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T027 R013 S09 Ty1206 THRU T028 R013 S16 TyRG				Project:		RDEMO						Page		2								
				Acres		354.10						Date		5/12/2015								
												Time		7:06:31AM								
S Spp	So T	Gr rt 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							
SF	D	2S	84		33	33	12				100				100			32	12	160	1.28	.2
SF	D	4S	16		6	6	2	100						100				27	5	30	0.46	.2
SF Totals			0		40	40	14	16		84			16	84				30	9	95	0.90	.4
Totals				4.7	18,171	17,321	6,133	33	63	4		8	10	6	76			29	6	45	0.50	388.0

Take volumes

WH- 898mbf

DF- 951mbf

RA- 27mbf

RC-9mbf

SS-211 mbf

Total take-2096mbf

PROJECT STATISTICS										PAGE 1
PROJECT RDEMO										DATE 3/10/2015
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
027	013	09	RDEMO	1206	THR	354.90	116	502	S	W
028	013	16	RDEMO	RG						
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES			
TOTAL			116	502	4.3					
CRUISE			116	502	4.3	98,304	.5			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	219	95.9	14.0	57	27.3	101.9	8,130	7,650	2,658	2,658
DOUG FIR-T	51	47.4	9.9	52	8.0	25.2	1,850	1,777	519	519
WHEMLOCK	113	59.0	12.7	54	14.5	51.5	4,370	4,176	1,332	1,332
WHEMLOCK-T	52	40.3	10.4	51	7.4	24.0	1,914	1,871	546	546
S SPRUCE	36	13.9	14.7	52	4.3	16.3	1,149	1,100	426	427
S SPRUCE-T	15	13.7	10.1	44	2.4	7.6	436	436	144	144
R ALDER	8	2.0	14.5	45	0.6	2.3	131	123	51	51
R ALDER-T	2	1.4	9.8	67	0.2	.7	65	65	18	18
WR CEDAR	4	2.3	11.1	47	0.5	1.6	79	74	28	28
WR CEDAR-T	1	.8	9.1	36	0.1	.4	25	25	6	6
PS FIR	1	.2	18.3	61	0.1	.4	40	40	11	11
TOTAL	502	277.0	12.4	54	65.9	231.8	18,190	17,336	5,740	5,741
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 REO.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		81.0	7.5	89	96	103				
DOUG FIR-T		153.3	14.2	41	47	54				
WHEMLOCK		162.8	15.1	50	59	68				
WHEMLOCK-T		155.1	14.4	35	40	46				
S SPRUCE		228.8	21.2	11	14	17				
S SPRUCE-T		351.0	32.6	9	14	18				
R ALDER		518.1	48.1	1	2	3				
R ALDER-T		795.2	73.8	0	1	2				
WR CEDAR		649.8	60.3	1	2	4				
WR CEDAR-T		1077.0	99.9	0	1	2				
PS FIR		1077.0	99.9	0	0	0				
TOTAL		53.8	5.0	263	277	291	116	59	29	
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REO.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		72.6	6.7	95	102	109				
DOUG FIR-T		132.7	12.3	22	25	28				
WHEMLOCK		139.7	13.0	45	52	58				
WHEMLOCK-T		141.5	13.1	21	24	27				
S SPRUCE		240.0	22.3	13	16	20				
S SPRUCE-T		365.9	33.9	5	8	10				
R ALDER		514.4	47.7	1	2	3				
R ALDER-T		759.5	70.5	0	1	1				
WR CEDAR		654.7	60.7	1	2	3				
WR CEDAR-T		1077.0	99.9	0	0	1				
PS FIR		1077.0	99.9	0	0	1				
TOTAL		35.1	3.3	224	232	239	49	25	12	

PROJECT STATISTICS
PROJECT RDEMO

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
027	013	09	RDEMO	1206	THR	354.90	116	502	S	W
028	013	16	RDEMO	RG						

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		78.0	7.2	7,097	7,650	8,203			
DOUG FIR-T		134.9	12.5	1,554	1,777	1,999			
WHEMLOCK		140.7	13.0	3,631	4,176	4,720			
WHEMLOCK-T		143.4	13.3	1,622	1,871	2,120			
S SPRUCE		262.1	24.3	832	1,100	1,367			
S SPRUCE-T		360.7	33.5	290	436	582			
R ALDER		506.3	47.0	65	123	181			
R ALDER-T		768.7	71.3	19	65	111			
WR CEDAR		663.2	61.5	28	74	119			
WR CEDAR-T		1077.0	99.9	0	25	51			
PS FIR		1077.0	99.9	0	40	79			
TOTAL		38.0	3.5	16,724	17,336	17,947	58	29	14

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		78.0	7.2	70	75	80			
DOUG FIR-T		134.9	12.5	62	71	79			
WHEMLOCK		140.6	13.0	70	81	92			
WHEMLOCK-T		143.0	13.3	68	78	88			
S SPRUCE		262.1	24.3	51	68	84			
S SPRUCE-T		360.7	33.5	38	57	77			
R ALDER		506.3	47.0	29	54	80			
R ALDER-T		768.7	71.3	26	90	154			
WR CEDAR		663.2	61.5	18	47	76			
WR CEDAR-T		1077.0	99.9	0	66	133			
PS FIR		1077.0	99.9	0	104	208			
TOTAL		37.5	3.5	72	75	77	56	29	14

T027 R013 S09 T1206 **T027 R013 S09 T1206**
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
027 013 09 RDEMO 1206 73.10 24 102 S W

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
									Net	Def%	Gross	Net	Log Scale Dia.				Log Length					Ln	Dia	Bd	CF/Lf	
													Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
DF	DM	2S	1	10.0	192	173	13	100								100	40	12	180	1.60	1.0					
DF	DM	3S	76	7.9	9,009	8,294	606	100								100	40	8	88	0.77	94.5					
DF	DM	4S	17	2.3	1,851	1,809	132	94	6					43	45	7	5	20	5	21	0.30	86.7				
DF	DM	UT	4		457	457	33	32	68					4	28	68		28	6	53	0.61	8.7				
DF	RO	3S	2		179	179	13	100								100	40	9	120	1.01	1.5					
DF	Totals		58	6.6	11,688	10,912	798	17	81	2					7	9	1	83	31	7	57	0.63	192.4			
DF	T	DM	3S	33		1,341	1,341	98	100								100	40	7	69	0.57	19.4				
DF	T	DM	4S	61		2,491	2,491	182	82	18					14	19	21	46	28	5	30	0.28	83.4			
DF	T	DM	UT	6		227	227	17	100								100	15	5	17	0.19	13.3				
DF	T	Totals	22	.0	4,059	4,059	297	56	44					9	17	13	61	29	5	35	0.34	116.1				
WH	T	DM	3S	46		862	862	63	100								100	40	6	66	0.53	13.1				
WH	T	DM	4S	54		1,005	1,005	73	100								100	27	5	29	0.24	35.0				
WH	T	DM	UT															5	0.00		4.5					
WH	T	Totals	10		1,867	1,867	136	54	46					7	28	65	28	5	36	0.35	52.6					
WH		DM	3S	86	1.6	1,136	1,118	82	100								100	40	7	79	0.61	14.2				
WH		DM	4S	14		173	173	13	100								100	11	5	12	0.24	14.2				
WH	Totals		7	1.4	1,309	1,291	94	13	87					13	87		26	6	45	0.53	28.4					
SS	T	DM	4S	100		311	311	23	100								100	65	35			20	6	26	0.40	12.0
SS	T	Totals	2		311	311	23	100								100	65	35			20	6	26	0.40	12.0	
RA		DM	3S	86	11.4	247	219	16	100								100	30	9	78	0.83	2.8				
RA		DM	4S	14		34	34	2	100								100	29	5	30	0.40	1.1				
RA	Totals		1	10.0	280	252	18	13	87					100			30	8	64	0.71	3.9					
Type	Totals			4.2	19,513	18,692	1,366	29	71	1					9	11	6	74	29	6	46	0.50	405.4			

STATISTICS
PROJECT RDEMO

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
027	013	09	RDEMO	1206	73.10	24	102	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	24	102	4.3		
CRUISE	24	102	4.3	19,475	.5
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	59	109.8	15.0	60	34.6	133.9	11,688	10,912	3,710	3,710
DOUG FIR-T	23	92.7	10.2	55	16.4	52.2	4,059	4,059	1,142	1,140
WHEMLOCK	6	14.2	13.3	58	3.7	13.6	1,309	1,291	384	384
WHEMLOCK-T	9	35.0	10.3	56	6.3	20.4	1,867	1,867	503	503
S SPRUCE-T	3	12.0	10.2	42	2.1	6.8	311	311	94	94
R ALDER	2	2.8	14.8	50	0.9	3.3	280	252	83	83
TOTAL	<i>102</i>	<i>266.4</i>	<i>12.6</i>	<i>56</i>	<i>64.9</i>	<i>230.2</i>	<i>19,513</i>	<i>18,692</i>	<i>5,915</i>	<i>5,914</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
DOUG FIR		48.0	10.0	99	110	121			
DOUG FIR-T		87.3	18.2	76	93	109			
WHEMLOCK		225.1	46.9	8	14	21			
WHEMLOCK-T		222.0	46.2	19	35	51			
S SPRUCE-T		275.2	57.3	5	12	19			
R ALDER		346.0	72.1	1	3	5			
TOTAL		<i>39.8</i>	<i>8.3</i>	<i>244</i>	<i>266</i>	<i>288</i>	<i>66</i>	<i>34</i>	<i>16</i>

CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		41.5	8.6	122	134	145			
DOUG FIR-T		72.0	15.0	44	52	60			
WHEMLOCK		212.6	44.3	8	14	20			
WHEMLOCK-T		189.6	39.5	12	20	28			
S SPRUCE-T		270.3	56.3	3	7	11			
R ALDER		338.8	70.6	1	3	6			
TOTAL		<i>26.8</i>	<i>5.6</i>	<i>217</i>	<i>230</i>	<i>243</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
DOUG FIR		46.8	9.8	9,848	10,912	11,977			
DOUG FIR-T		78.5	16.4	3,395	4,059	4,723			
WHEMLOCK		210.8	43.9	724	1,291	1,858			
WHEMLOCK-T		198.9	41.4	1,093	1,867	2,641			
S SPRUCE-T		270.5	56.3	136	311	486			
R ALDER		359.0	74.8	64	252	441			
TOTAL		<i>32.9</i>	<i>6.9</i>	<i>17,411</i>	<i>18,692</i>	<i>19,972</i>	<i>45</i>	<i>23</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
DOUG FIR		46.8	9.8	74	82	89			
DOUG FIR-T		78.5	16.4	65	78	91			
WHEMLOCK		210.8	43.9	53	95	136			
WHEMLOCK-T		198.9	41.4	54	91	129			

STATISTICS
PROJECT RDEMO

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
027	013	09	RDEMO	1206	73.10	24	102	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
S SPRUCE-T		270.5	56.3	20	46	71			
R ALDER		359.0	74.8	19	76	132			
TOTAL		32.4	6.8	76	81	87	44	22	11

TC TSTNDSUM		Stand Table Summary															
Project RDEMO											T027 R013 S09 T1206						
Twp Rge Sec Tract		Type		Acres		Plots		Sample Trees			Page: 1						
027 013 09 RDEMO		1206		73.10		24		102			Date: 5/5/2015						
											Time: 7:00:43AM						
Spc	S 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		10	1	80	45	4.331	2.27	4.33	8.1	30.0	1.00	35	130	73	26	9	
DF		11	1	82	51	3.376	2.27	3.38	11.9	40.0	1.15	40	135	84	29	10	
DF		12	3	80	74	8.252	6.81	13.80	12.6	39.9	4.95	174	551	362	127	40	
DF		13	8	84	69	20.344	18.15	27.74	16.1	47.5	12.72	446	1,319	930	326	96	
DF		14	7	83	74	15.247	15.88	28.21	15.1	46.0	12.11	425	1,297	885	311	95	
DF		15	7	82	76	12.803	15.88	25.61	17.3	49.2	12.61	443	1,261	922	324	92	
DF		16	13	82	79	20.852	29.49	41.70	20.9	61.7	24.81	871	2,574	1,814	637	188	
DF		17	11	82	79	16.185	24.96	30.84	23.2	67.7	20.43	716	2,088	1,493	523	153	
DF		19	2	82	82	2.317	4.54	4.63	30.2	90.0	3.98	140	417	291	102	30	
DF		20	3	81	84	3.153	6.81	6.31	32.9	90.0	5.89	207	567	431	152	41	
DF		21	3	80	83	2.922	6.81	5.84	36.5	98.3	6.09	214	574	445	156	42	
DF		Totals	59	82	74	109.781	133.86	192.39	19.3	56.7	105.73	3,710	10,912	7,729	2,712	798	
DF	T	8	6	85	58	37.362	13.61	37.36	6.3	29.8	6.74	235	1,115	493	172	81	
DF	T	9	3	85	59	16.247	6.81	16.25	8.0	33.2	3.70	130	540	270	95	39	
DF	T	11	4	82	63	13.967	9.08	20.92	9.1	29.9	5.43	190	625	397	139	46	
DF	T	12	5	82	67	14.166	11.34	19.76	14.2	41.5	7.98	280	821	583	205	60	
DF	T	13	3	84	76	7.164	6.81	14.33	12.9	43.3	5.27	185	621	385	135	45	
DF	T	15	2	82	70	3.748	4.54	7.50	16.0	45.1	3.42	120	338	250	88	25	
DF		Totals	23	84	62	92.655	52.18	116.11	9.8	35.0	32.53	1,140	4,059	2,378	834	297	
WH	T	8	2	86	62	12.999	4.54	13.00	7.5	40.0	3.10	97	520	227	71	38	
WH	T	10	2	86	64	8.845	4.54	13.36	7.7	26.5	3.27	102	354	239	75	26	
WH	T	11	1	85	73	3.316	2.27	6.63	9.4	35.0	1.99	62	232	146	46	17	
WH	T	12	2	86	69	5.841	4.54	11.68	9.9	35.0	3.70	116	409	271	85	30	
WH	T	14	1	86	68	2.153	2.27	4.31	14.6	40.0	2.01	63	172	147	46	13	
WH	T	15	1	86	69	1.800	2.27	3.60	17.5	50.0	2.01	63	180	147	46	13	
WH		Totals	9	86	65	34.954	20.42	52.58	9.6	35.5	16.09	503	1,867	1,176	368	136	
WH		11	1	85	67	3.376	2.27	6.75	8.6	30.0	1.85	58	203	135	42	15	
WH		13	1	84	76	2.424	2.27	4.85	13.5	45.0	2.09	65	218	153	48	16	
WH		14	3	85	71	6.624	6.81	13.25	14.5	48.3	6.14	192	639	449	140	47	
WH		15	1	84	75	1.777	2.27	3.55	19.3	65.0	2.19	69	231	160	50	17	
WH		Totals	6	85	72	14.201	13.61	28.40	13.5	45.5	12.28	384	1,291	897	280	94	
SS	T	9	1	72	41	5.023	2.27	5.02	5.4	20.0	.71	27	100	52	20	7	
SS	T	11	2	77	43	7.009	4.54	7.01	9.6	30.0	1.74	67	210	127	49	15	
SS		Totals	3	75	42	12.032	6.81	12.03	7.8	25.8	2.45	94	311	179	69	23	
RA		14	1	84	49	1.677	1.67	1.68	19.1	50.0	.88	32	84	64	23	6	
RA		17	1	84	74	1.122	1.67	2.24	22.5	75.0	1.39	51	168	102	37	12	
RA		Totals	2	84	59	2.799	3.33	3.92	21.1	64.3	2.27	83	252	166	60	18	
Totals			102	83	67	266.422	230.21	405.43	14.6	46.1	171.36	5914	18,692	12,526	4,323	1,366	

T027 R013 S19 TGAP	T027 R013 S19 TGAP
Twp 027 Rge 013 Sec 19 Tract RDEMO Type GAP Acres 2.00 Plots 1 Sample Trees 5 CuFt S	BdFt W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF		DM	3S	41	13.7	8,878	7,660	15	100				100				40	7	63	0.59	121.7
DF		DM	4S	59	11.9	12,155	10,706	21	100				6	10	41	43	29	5	28	0.26	382.1
DF	Totals			77	12.7	21,033	18,366	37	58	42			4	6	24	67	32	5	36	0.36	503.8
WH		DM	3S	81		4,456	4,456	9	100				100				40	8	90	0.71	49.5
WH		DM	4S	19		990	990	2	100				100				21	5	20	0.24	49.5
WH	Totals			23		5,446	5,446	11	18	82			18		82		31	7	55	0.55	99.0
Type Totals					10.1	26,479	23,812	48	49	51			3	9	18	70	32	6	39	0.39	602.9

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RDEMO		DATE 4/23/2015				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	19	RDEMO	GAP	2.00	1	5	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	5	5.0						
CRUISE		1	5	5.0	863		.6			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-T	4	382.1	10.2	66	68.1	217.8	21,033	18,366	5,729	5,754
WHEMLOCK-T	1	49.5	14.2	65	14.4	54.5	5,446	5,446	1,657	1,657
TOTAL	5	431.6	10.8	66	83.0	272.3	26,479	23,812	7,385	7,411
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

T027 R013 S09 TRG										T027 R013 S09 TRG			
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt				
027	013	09	RDEMO	RG	1.20	1	4	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					
DF		DM	3S	83	8.2	12,672	11,632	14	100				100				40	8	91	0.78	127.2
DF		DM	4S	17		2,347	2,347	3	100				67	33			18	5	18	0.27	127.2
DF	Totals			72	6.9	15,019	13,979	17	17	83			11	6	83	29	7	55	0.63	254.3	
WH		DM	3S	84	8.3	5,118	4,691	6	100				100				40	9	110	0.83	42.6
WH		DM	4S	16		853	853	1	100				100				18	5	20	0.29	42.6
WH	Totals			28	7.1	5,971	5,544	7	15	85			15		85	29	7	65	0.67	85.3	
Type Totals					7.0	20,989	19,523	23	16	84			12	4	84	29	7	57	0.64	339.6	

TC TSTATS				STATISTICS				PAGE 1		
PROJECT RDEMO				DATE 3/10/2015						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	09	RDEMO	RG	1.20	1	4	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	4	4.0						
CRUISE		1	4	4.0	204		2.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	3	127.2	15.3	62	41.7	163.4	15,019	13,979	4,596	4,607
WHEMLOCK	1	42.6	15.3	61	13.9	54.5	5,971	5,544	1,645	1,645
TOTAL	4	169.8	15.3	62	55.6	217.8	20,989	19,523	6,241	6,252
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

STATISTICS
PROJECT RDEMO

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
027	013	15	RDEMO	1400	42.30	14	53	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	14	53	3.8		
CRUISE	14	53	3.8	9,538	.6
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	26	73.7	15.9	62	25.4	101.1	9,421	8,831	2,934	2,933
DOUG FIR-T	3	16.9	11.3	52	3.5	11.7	820	820	263	266
WHEMLOCK	5	16.4	14.8	58	5.1	19.4	1,767	1,767	547	547
WHEMLOCK-T	11	87.5	9.4	52	13.7	41.8	3,278	3,278	862	862
R ALDER	4	9.9	14.5	44	3.0	11.4	528	508	243	243
R ALDER-T	1	4.0	11.5	62	0.8	2.9	317	317	84	84
S SPRUCE	2	9.4	12.3	35	2.2	7.8	308	281	135	138
S SPRUCE-T	1	7.7	9.6	52	1.3	3.9	232	232	82	82
TOTAL	53	225.5	12.8	55	56.0	199.9	16,670	16,034	5,150	5,154

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		73.0	20.2	59	74	89			
DOUG FIR-T		202.4	56.1	7	17	26			
WHEMLOCK		144.4	40.0	10	16	23			
WHEMLOCK-T		173.9	48.2	45	88	130			
R ALDER		257.2	71.2	3	10	17			
R ALDER-T		374.2	103.6		4	8			
S SPRUCE		280.8	77.8	2	9	17			
S SPRUCE-T		374.2	103.6		8	16			
TOTAL		70.4	19.5	182	225	269	213	109	53

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		72.7	20.1	81	101	121			
DOUG FIR-T		198.7	55.0	5	12	18			
WHEMLOCK		139.2	38.6	12	19	27			
WHEMLOCK-T		146.1	40.5	25	42	59			
R ALDER		254.2	70.4	3	11	19			
R ALDER-T		374.2	103.6		3	6			
S SPRUCE		254.2	70.4	2	8	13			
S SPRUCE-T		374.2	103.6		4	8			
TOTAL		36.6	10.2	180	200	220	58	29	14

CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		79.1	21.9	6,897	8,831	10,766			
DOUG FIR-T		203.5	56.4	358	820	1,282			
WHEMLOCK		141.5	39.2	1,074	1,767	2,460			
WHEMLOCK-T		149.2	41.3	1,923	3,278	4,632			
R ALDER		255.3	70.7	149	508	867			
R ALDER-T		374.2	103.6		317	645			
S SPRUCE		280.8	77.8	62	281	500			

TC TSTATS				STATISTICS			PAGE 2		
				PROJECT	RDEMO		DATE 5/5/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
027	013	15	RDEMO	1400	42.30	14	53	S	W
CL: 58.1%		COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.	S.E.%	LOW	AVG	HIGH	5	7	10
S SPRUCE-T		374.2	103.6		232	473			
TOTAL		<i>41.4</i>	<i>11.5</i>	<i>14,196</i>	<i>16,034</i>	<i>17,872</i>	<i>74</i>	<i>38</i>	<i>18</i>
CL: 68.1%		COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR		79.1	21.9	68	87	106			
DOUG FIR-T		203.5	56.4	31	70	110			
WHEMLOCK		141.5	39.2	55	91	127			
WHEMLOCK-T		146.4	40.5	46	79	111			
R ALDER		255.3	70.7	13	44	76			
R ALDER-T		374.2	103.6		111	226			
S SPRUCE		280.8	77.8	8	36	64			
S SPRUCE-T		374.2	103.6		60	122			
TOTAL		<i>38.9</i>	<i>10.8</i>	<i>71</i>	<i>80</i>	<i>89</i>	<i>65</i>	<i>33</i>	<i>16</i>

Stand Table Summary																
TC TSTNDSUM																
Project RDEMO																
T027 R013 S15 T1400										T027 R013 S15 T1400						
Page: 1																
Date: 5/5/2015																
Time: 7:01:18AM																
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees									
027	013	15	RDEMO	1400	42.30	14	53									
Spc	S 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		12	2	85	64	9.584	7.78	14.45	12.2	39.8	5.03	176	575	213	75	24
DF		13	2	82	65	8.647	7.78	13.14	12.9	39.5	4.84	170	519	205	72	22
DF		14	4	82	74	14.736	15.56	29.47	14.3	43.5	11.99	421	1,283	507	178	54
DF		15	2	83	81	6.467	7.78	12.93	17.5	50.0	6.43	226	647	272	96	27
DF		16	5	83	81	13.941	19.45	27.88	20.6	63.0	16.40	575	1,756	694	243	74
DF		17	1	83	86	2.439	3.89	4.88	25.8	85.0	3.59	126	415	152	53	18
DF		18	3	83	81	6.538	11.67	13.08	26.5	72.4	9.90	346	946	419	147	40
DF		19	2	81	77	4.122	7.78	8.24	26.4	82.5	6.21	218	680	263	92	29
DF		20	1	80	94	1.765	3.89	3.53	37.3	110.0	3.75	132	388	159	56	16
DF		21	1	81	90	1.572	3.89	3.14	39.3	120.0	3.52	123	377	149	52	16
DF		22	1	82	90	1.528	3.89	3.06	44.0	140.0	3.83	135	428	162	57	18
DF		23	1	79	99	1.325	3.89	2.65	50.8	125.0	3.85	135	331	163	57	14
DF		26	1	79	106	1.055	3.89	2.11	71.2	230.0	4.28	150	485	181	64	21
DF		Totals	26	83	77	73.718	101.12	138.57	21.2	63.7	83.62	2,933	8,831	3,537	1,241	374
WH	T	7	1	89	54	14.553	3.89	14.55	2.8	20.0	1.32	41	291	56	17	12
WH	T	8	2	85	55	22.011	7.78	22.01	6.7	30.0	4.69	147	660	198	62	28
WH	T	9	1	87	59	8.804	3.89	8.80	9.0	40.0	2.53	79	352	107	33	15
WH	T	10	4	88	57	28.699	15.56	28.70	11.3	40.0	10.42	326	1,148	441	138	49
WH	T	12	3	85	66	13.469	10.64	22.98	11.7	36.0	8.62	269	826	365	114	35
WH		Totals	11	87	58	87.535	41.75	97.04	8.9	33.8	27.58	862	3,278	1,167	365	139
WH		12	1	85	72	4.638	3.89	9.28	11.7	40.0	3.48	109	371	147	46	16
WH		15	3	85	71	9.221	11.67	15.43	21.1	67.8	10.42	326	1,047	441	138	44
WH		17	1	85	71	2.497	3.89	4.99	22.5	70.0	3.59	112	350	152	48	15
WH		Totals	5	85	71	16.355	19.45	29.70	18.4	59.5	17.49	547	1,767	740	231	75
DF	T	10	1	87	63	6.990	3.89	6.99	12.0	40.0	2.30	84	280	97	35	12
DF	T	12	2	81	64	9.912	7.78	14.70	12.4	36.7	5.19	182	540	219	77	23
DF		Totals	3	83	63	16.903	11.67	21.69	12.3	37.8	7.49	266	820	317	112	35
RA		12	1	84	51	3.578	2.86	3.58	15.8	50.0	1.55	56	179	66	24	8
RA		13	1	84	48	3.197	2.86	3.20	17.1	40.0	1.50	55	128	63	23	5
RA		15	1	82	55	2.458	2.86	2.46	28.5	60.0	1.92	70	147	81	30	6
RA		28	1	45	62	.668	2.86	1.34	46.4	40.0	1.71	62	53	72	26	2
RA		Totals	4	81	52	9.901	11.43	10.57	23.0	48.0	6.68	243	508	283	103	21
RA	T	12	1	85	75	3.961	2.86	7.92	10.6	40.0	2.31	84	317	98	35	13
RA		Totals	1	85	75	3.961	2.86	7.92	10.6	40.0	2.31	84	317	98	35	13
SS		10	1	81	40	6.722	3.89	6.72	10.0	30.0	1.67	67	202	71	28	9
SS		16	1	82	42	2.651	3.89	2.65	26.8	30.0	1.85	71	80	78	30	3
SS		Totals	2	81	41	9.373	7.78	9.37	14.8	30.0	3.52	138	281	149	59	12
SS	T	10	1	78	52	7.737	3.89	7.74	10.6	30.0	2.13	82	232	90	35	10
SS		Totals	1	78	52	7.737	3.89	7.74	10.6	30.0	2.13	82	232	90	35	10
Totals		53	84	64		225.483	199.94	322.61	16.0	49.7	150.82	5154	16,034	6,380	2,180	678

T027 R013 S15 TRG	T027 R013 S15 TRG
Twp 027 Rge 013 Sec 15 Tract RDEMO Type RG Acres 1.00 Plots 1 Sample Trees 4 CuFt S	BdFt W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre		
					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	3S	.63	3,789	3,789	4	100				100				40	8	90	0.79	42.1		
WH		DM	4S	.37	2,218	2,218	2	100				100				40	5	40	0.40	55.5		
WH		Totals		.61	6,007	6,007	6	37	63					100				40	6	62	0.57	97.5
RA		DM	4S	100	3,855	3,855	4	46	54					100				38	5	49	0.57	79.2
RA		Totals		39	3,855	3,855	4	46	54					100				38	5	49	0.57	79.2
Type Totals					9,862	9,862	10	41	59					100				39	6	56	0.57	176.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	RDEMO			DATE	3/10/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	15	RDEMO	RG	1.00	1	4	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				TREES	TREES	TREES				
TOTAL		1	4	4.0						
CRUISE		1	4	4.0	177		2.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	2	97.5	13.3	51	25.9	94.4	6,007	6,007	2,210	2,210
R ALDER	2	79.2	13.6	43	21.7	80.0	3,855	3,855	1,743	1,743
TOTAL	4	176.7	13.5	48	47.6	174.4	9,862	9,862	3,953	3,953
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
Project: RDEMO										Date 5/5/2015												
										Time 7:09:34AM												
T027 R013 S19 T2100										T027 R013 S19 T2100												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
027	013	19	RDEMO	2100	145.50	42	171	S	W													
S Spp	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	Dia	Bd		CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
DF	DM	2S		1	8.3	90	83	12	100				100				24	12	110	1.28	.8	
DF	DM	3S		67	4.8	3,568	3,397	494	100				100				40	7	77	0.71	44.2	
DF	DM	4S		30	8.8	1,679	1,532	223	93	7		19	1	4	75	28	5	27	0.37	56.1		
DF	DM	UT		2		75	75	11	100				60				40	5	5	6	0.30	13.5
DF	Totals			32	6.0	5,412	5,086	740	29	69	2	7	2	2	89	30	6	44	0.55	114.6		
DF	T	DM	3S	22	2.4	531	518	75	100				100				40	6	61	0.54	8.4	
DF	T	DM	4S	77	7.2	1,901	1,764	257	100			12	32	13	42	29	5	29	0.29	60.8		
DF	T	DM	UT	1		12	12	2	100				100				3	5	3	0.20	4.3	
DF	T	Totals		15	6.1	2,444	2,294	334	77	23		10	25	10	55	29	5	31	0.33	73.5		
WH	DM	3S		69	2.0	2,816	2,759	401	100				100				40	7	73	0.57	37.9	
WH	DM	4S		31	.7	1,226	1,217	177	92	8		25	9	11	55	24	5	25	0.27	48.6		
WH	DM	UT											6							0.00	9.3	
WH	Totals			25	1.6	4,042	3,976	579	28	72		8	3	3	86	28	6	42	0.44	95.8		
WH	T	DM	3S	14		315	315	46	100				100				40	6	63	0.46	5.0	
WH	T	DM	4S	80	3.1	1,745	1,691	246	95	5		10	21	32	37	29	5	31	0.27	54.2		
WH	T	DM	UT	6		111	111	16	100				100				32	5	30	0.20	3.7	
WH	T	Totals		13	2.5	2,171	2,117	308	81	19		8	17	31	45	30	5	34	0.29	62.9		
SS	DM	2S		10	5.0	169	161	23	100				100				40	12	190	2.24	.8	
SS	DM	3S		75	4.3	1,253	1,199	174	100				100				40	8	90	0.89	13.3	
SS	DM	4S		13	5.5	223	210	31	84	16		59	6	35		18	5	20	0.34	10.3		
SS	DM	UT		2		23	23	3	44	56		100				11	5	14	0.28	1.6		
SS	Totals			10	4.5	1,668	1,593	232	12	78	10	9	1	5	85	30	7	61	0.80	26.1		
SS	T	DM	4S	100		521	521	76	91	9		9	46	16	29	30	5	31	0.34	16.9		
SS	T	Totals		3		521	521	76	91	9		9	46	16	29	30	5	31	0.34	16.9		
RC	DM	4S		100	6.7	193	180	26	73	27		27	28	45		27	6	32	0.45	5.7		
RC	Totals			1	6.7	193	180	26	73	27		27	28	45		27	6	32	0.45	5.7		
Type Totals					4.2	16,452	15,768	2,294	44	55	2	8	9	9	74	29	6	40	0.45	395.4		

TC TSTATS				STATISTICS				PAGE 1		
PROJECT RDEMO				DATE 5/5/2015						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	19	RDEMO	2100	145.50	42	171	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		42	171	4.1						
CRUISE		42	171	4.1	43,267		.4			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	60	77.3	13.6	54	21.1	77.8	5,412	5,086	1,878	1,877
DOUG FIR-T	27	66.3	9.8	51	11.2	35.0	2,444	2,294	695	696
WHEMLOCK	36	60.9	11.9	53	13.6	46.7	4,042	3,976	1,180	1,181
WHEMLOCK-T	20	54.4	9.3	50	8.5	25.9	2,171	2,117	551	551
S SPRUCE	17	16.0	15.9	53	5.5	22.0	1,668	1,593	619	619
S SPRUCE-T	7	16.9	9.9	46	2.9	9.1	521	521	171	171
WR CEDAR	4	5.7	11.1	47	1.1	3.8	193	180	69	69
TOTAL	<i>171</i>	<i>297.4</i>	<i>11.7</i>	<i>52</i>	<i>64.5</i>	<i>220.3</i>	<i>16,452</i>	<i>15,768</i>	<i>5,163</i>	<i>5,163</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		
DOUG FIR	85.7	13.2	67	77	87					
DOUG FIR-T	110.4	17.0	55	66	78					
WHEMLOCK	159.7	24.6	46	61	76					
WHEMLOCK-T	149.1	23.0	42	54	67					
S SPRUCE	192.3	29.7	11	16	21					
S SPRUCE-T	274.0	42.2	10	17	24					
WR CEDAR	385.6	59.5	2	6	9					
TOTAL	<i>45.5</i>	<i>7.0</i>	<i>277</i>	<i>297</i>	<i>318</i>	<i>83</i>	<i>42</i>	<i>21</i>		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	76.0	11.7	69	78	87					
DOUG FIR-T	96.1	14.8	30	35	40					
WHEMLOCK	149.3	23.0	36	47	57					
WHEMLOCK-T	148.4	22.9	20	26	32					
S SPRUCE	197.2	30.4	15	22	29					
S SPRUCE-T	262.3	40.4	5	9	13					
WR CEDAR	388.7	59.9	2	4	6					
TOTAL	<i>30.1</i>	<i>4.6</i>	<i>210</i>	<i>220</i>	<i>231</i>	<i>36</i>	<i>18</i>	<i>9</i>		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	81.6	12.6	4,446	5,086	5,726					
DOUG FIR-T	100.5	15.5	1,939	2,294	2,650					
WHEMLOCK	159.0	24.5	3,001	3,976	4,951					
WHEMLOCK-T	141.9	21.9	1,654	2,117	2,580					
S SPRUCE	204.9	31.6	1,090	1,593	2,097					
S SPRUCE-T	259.0	39.9	313	521	729					
WR CEDAR	394.0	60.7	71	180	290					
TOTAL	<i>37.3</i>	<i>5.7</i>	<i>14,862</i>	<i>15,768</i>	<i>16,674</i>	<i>56</i>	<i>28</i>	<i>14</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		

STATISTICS
PROJECT RDEMO

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
027	013	19	RDEMO	2100	145.50	42	171	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		81.6	12.6	57	65	74			
DOUG FIR-T		100.5	15.5	55	66	76			
WHEMLOCK		159.0	24.5	64	85	106			
WHEMLOCK-T		141.9	21.9	64	82	100			
S SPRUCE		204.9	31.6	49	72	95			
S SPRUCE-T		259.0	39.9	34	57	80			
WR CEDAR		394.0	60.7	19	47	76			
TOTAL		<i>37.1</i>	<i>5.7</i>	<i>67</i>	<i>72</i>	<i>76</i>	55	28	14

TC TSTNDSUM														Stand Table Summary		
Project RDEMO																
T027 R013 S19 T2100											T027 R013 S19 T2100					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Page:	1					
027	013	19	RDEMO	2100	145.50	42	171			Date:	5/5/2015					
										Time:	7:09:35AM					
S Spc	T	DBH	Sample Trees	FF 16'	Ht Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals		
									Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF
DF		10	4	85	59	9.479	5.19	11.81	8.6	30.2	2.89	101	356	421	148	52
DF		11	5	84	63	10.060	6.48	12.02	12.0	36.7	4.10	144	442	597	209	64
DF		12	9	82	59	14.436	11.67	20.78	12.0	32.3	7.10	249	671	1,034	363	98
DF		13	6	82	65	8.694	7.78	11.49	16.3	42.7	5.36	187	490	779	273	71
DF		14	9	83	65	11.229	11.67	17.30	15.9	39.1	7.84	275	677	1,140	400	98
DF		15	9	82	68	9.677	11.67	18.34	16.4	45.7	8.60	302	837	1,251	439	122
DF		16	4	84	68	3.695	5.19	7.39	18.5	47.3	3.89	136	350	566	199	51
DF		17	3	81	67	2.578	3.89	4.29	22.5	53.9	2.76	97	231	402	141	34
DF		18	4	81	72	2.986	5.19	5.97	23.6	68.4	4.02	141	408	585	205	59
DF		19	5	81	70	3.322	6.48	5.32	32.3	81.5	4.90	172	434	713	250	63
DF		20	1	81	71	.600	1.30	1.20	30.5	75.0	1.03	37	90	151	53	13
DF		21	1	82	73	.524	1.30	1.05	34.3	95.0	1.02	36	100	149	52	14
DF		Totals	60	83	64	77.280	77.79	116.96	16.1	43.5	53.52	1,877	5,086	7,787	2,732	740
WH		8	2	89	53	6.992	2.59	6.99	7.2	34.8	1.62	51	243	235	74	35
WH		9	1	89	64	3.001	1.30	3.00	9.7	40.0	.93	29	120	136	42	17
WH		10	3	87	56	7.482	3.89	7.48	10.8	40.0	2.58	81	299	375	117	44
WH		11	4	86	65	8.156	5.19	14.27	8.6	31.4	3.94	123	449	573	179	65
WH		12	7	86	64	11.518	9.07	17.94	12.4	40.1	7.13	223	719	1,037	324	105
WH		13	7	86	71	10.039	9.07	20.08	12.4	42.0	7.99	250	844	1,163	363	123
WH		14	8	86	68	9.941	10.37	18.60	14.7	47.3	8.78	274	879	1,277	399	128
WH		15	2	85	69	2.158	2.59	4.32	16.8	45.0	2.30	72	194	334	105	28
WH		17	1	82	71	.863	1.30	1.73	22.3	55.0	1.24	38	95	181	56	14
WH		18	1	85	76	.702	1.30	1.40	28.3	95.0	1.27	40	133	185	58	19
WH		Totals	36	87	64	60.850	46.67	95.80	12.3	41.5	37.77	1,181	3,976	5,496	1,718	579
DF	T	7	1	88	45	5.457	1.30	5.46	2.8	20.0	.44	15	109	64	22	16
DF	T	8	4	84	51	15.116	5.19	15.12	5.0	25.1	2.15	75	380	313	110	55
DF	T	9	5	83	52	14.769	6.48	14.77	7.8	30.0	3.29	115	443	478	168	64
DF	T	10	4	83	59	9.859	5.19	9.86	10.7	30.1	2.99	106	297	436	154	43
DF	T	11	3	83	57	6.115	3.89	6.11	13.4	40.0	2.34	82	245	340	119	36
DF	T	12	6	82	64	9.828	7.78	13.13	13.3	36.2	4.98	175	475	724	254	69
DF	T	13	1	83	63	1.364	1.30	2.73	11.2	30.0	.87	31	82	127	44	12
DF	T	14	3	83	67	3.764	3.89	6.28	15.4	41.9	2.74	97	263	399	140	38
DF		Totals	27	83	56	66.271	35.00	73.45	9.5	31.2	19.80	696	2,294	2,880	1,012	334
WH	T	7	1	87	65	4.715	1.30	4.72	5.7	30.0	.85	27	141	124	39	21
WH	T	8	4	89	53	14.319	5.19	14.32	6.7	32.5	3.05	95	465	444	139	68
WH	T	9	4	88	55	11.580	5.19	11.58	9.3	35.3	3.45	108	409	503	157	59
WH	T	10	7	87	58	16.952	9.07	22.11	8.7	30.7	6.17	193	678	897	280	99
WH	T	11	1	83	59	1.895	1.30	1.89	15.9	40.0	.97	30	76	141	44	11
WH	T	12	3	86	69	4.983	3.89	8.29	11.8	42.0	3.13	98	348	455	142	51
WH		Totals	20	88	58	54.444	25.93	62.91	8.8	33.7	17.62	551	2,117	2,564	801	308
SS		11	1	84	46	1.862	1.30	1.86	13.5	40.0	.66	25	74	95	37	11
SS		12	1	79	65	1.571	1.30	1.57	22.4	60.0	.91	35	94	133	51	14
SS		13	1	83	58	1.385	1.30	1.39	22.4	60.0	.81	31	83	117	45	12
SS		14	1	84	66	1.196	1.30	2.39	14.4	40.0	.89	34	96	130	50	14
SS		15	3	82	66	3.046	3.89	5.06	20.8	50.1	2.74	105	254	398	153	37
SS		16	1	81	64	.940	1.30	1.88	18.7	45.0	.91	35	85	133	51	12
SS		17	3	81	71	2.401	3.89	4.80	23.6	65.0	2.95	113	312	430	165	45
SS		18	1	83	77	.734	1.30	1.47	26.5	85.0	1.01	39	125	147	57	18
SS		19	3	80	70	1.977	3.89	3.95	29.3	73.0	3.02	116	289	439	169	42

TC TSTNDSUM													Stand Table Summary				
Project RDEMO													T027 R013 S19 T2100				
T027 R013 S19 T2100													T027 R013 S19 T2100				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees						Page:	2			
027	013	19	RDEMO	2100	145.50	42	171						Date:	5/5/2015			
													Time:	7:09:35AM			
Spc	S T	Sample DBH	FF Trees	Av Ht 16' Tot	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net Tons/ Acre	Net Cu.Ft. Acre	Net Bd.Ft. Acre	Totals				
								Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF		
SS		23	1	77	74	.434	1.30	.87	46.7	105.0	1.05	41	91	153	59	13	
SS		24	1	72	80	.413	1.30	.83	53.1	110.0	1.14	44	91	166	64	13	
SS		Totals	17	81	65	15.959	22.04	26.07	23.7	61.1	16.09	619	1,593	2,342	901	232	
SS	T	9	2	82	50	5.878	2.59	5.88	8.5	30.0	1.30	50	176	189	73	26	
SS	T	10	3	77	47	7.277	3.89	7.28	8.5	26.7	1.60	62	195	233	90	28	
SS	T	11	1	85	58	2.076	1.30	2.08	13.6	40.0	.74	28	83	107	41	12	
SS	T	12	1	82	60	1.679	1.30	1.68	18.4	40.0	.80	31	67	117	45	10	
SS		Totals	7	80	51	16.910	9.07	16.91	10.1	30.8	4.44	171	521	646	249	76	
RC		10	2	78	45	3.293	1.90	3.29	8.3	30.0	.64	27	99	93	40	14	
RC		12	1	77	48	1.298	.95	1.30	15.2	30.0	.46	20	39	67	29	6	
RC		13	1	72	50	1.066	.95	1.07	21.1	40.0	.53	22	43	77	33	6	
RC		Totals	4	77	47	5.656	3.81	5.66	12.3	31.9	1.63	69	180	237	101	26	
Totals		171			84	60	297.370	220.31	397.76	13.0	39.6	150.87	5163	15,768	21,951	7,513	2,294

Species, Sort Grade - Board Foot Volumes (Type)										Page 1													
T TSPCSTGR		Project: RDEMO								Date 3/10/2015		Time 4:15:23PM											
T027 R013 S19 TGAP1										T027 R013 S19 TGAP1													
Twp	Rge	Sec	Tract	Type	Aces	Plots	Sample Trees	CuFt	BdFt														
027	013	19	RDEMO	GAP1	1.80	1	5	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	Dia	Bd	CF/ Lb			
DF	DM	2S		19	8.3	4,818	4,417	8	100				100				40	13	220	1.90	20.1		
DF	DM	3S		67	5.0	16,008	15,204	27	100				100				40	10	131	0.89	115.7		
DF	DM	4S		14	22.6	4,025	3,117	6	74	26			74		26		25	5	23	0.37	135.8		
DF	Totals			83	8.5	24,851	22,738	41	10	70	19		10		4		86	32	8	84	0.78	271.6	
WH	DM	3S		88	11.1	4,787	4,255	8	100				100				40	8	80	0.64	53.2		
WH	DM	4S		12	50.0	1,064	532	1	100				100				17	5	10	0.24	53.2		
WH	Totals			17	18.2	5,851	4,787	9	11	89			11		89		29	7	45	0.52	106.4		
Type Totals					10.3	30,702	27,525	50	10	74	16		2		8		3	87	31	7	73	0.71	378.0

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RDEMO				DATE 3/10/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	19	RDEMO	GAP1	1.80	1	5	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		1	5	5.0						
CRUISE		1	5	5.0	340	1.5				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	4	135.8	17.1	68	52.6	217.8	24,851	22,738	6,891	6,891
WHEMLOCK	1	53.2	13.7	62	14.7	54.5	5,851	4,787	1,571	1,571
TOTAL	5	189.0	16.3	66	67.5	272.3	30,702	27,525	8,462	8,462
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

Species, Sort Grade - Board Foot Volumes (Type)										Page 1													
T TSPCSTGR										Date 3/10/2015													
Project: RDEMO										Time 4:15:23PM													
T027 R013 S19 TRG										T027 R013 S19 TRG													
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt														
027	013	19	RDEMO	RG	1.70	1	4	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/	
	T	rt	ad	BdFt				Net MBF	4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
DF	DM	3S		89	3.9	15,170	14,584	25	100				100				40	8	100	0.91	145.8		
DF	DM	4S		11		1,770	1,770	3	75	25	100				17	5	20	0.33	88.5				
DF	DM	UT											6				0.00	57.3					
DF	Totals			100	3.5	16,940	16,353	28	8	92	11				89				25	7	56	0.79	291.6
Type Totals					3.5	16,940	16,353	28	8	92	11				89				25	7	56	0.79	291.6

TC TSTATS		STATISTICS				PAGE	1			
		PROJECT		RDEMO		DATE	3/10/2015			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	19	RDEMO	RG	1.70	1	4	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		1	4	4.0						
CRUISE		1	4	4.0	248	1.6				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	4	145.8	16.6	56	53.5	217.8	16,940	16,353	5,776	5,776
TOTAL	4	145.8	16.6	56	53.5	217.8	16,940	16,353	5,776	5,776
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

T027 R013 S28 T2180 T027 R013 S28 T2180
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 027 013 28 RDEMO 2180 37.20 11 60 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 Ft	Dia In	Bd Ft		CF/ Lf
										4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	DM	3S	82	5.6	6,313	5,962	222	100						100	40	7	74	0.67	80.4			
DF	DM	4S	16	4.0	1,182	1,135	42	95	5			57	21	22	18	5	18	0.28	63.9			
DF	DM	UT	2		115	115	4	100				100			12	5	10	0.22	11.5			
DF	Totals			35	5.2	7,610	7,212	268	16	84		11	3	86	29	6	46	0.56	155.8			
DF	T	DM	3S	25	15.5	737	622	23	100					100	40	6	55	0.55	11.4			
DF	T	DM	4S	65		1,584	1,584	59	100			4	43	53	31	5	31	0.33	51.6			
DF	T	DM	UT	10		222	222	8	100			100			12	5	10	0.17	22.2			
DF	T	Totals			12	4.5	2,542	2,428	90	74	26		12	28	60	27	5	28	0.36	85.2		
WH	DM	3S	77	5.3	3,496	3,312	123	100						100	40	8	82	0.77	40.3			
WH	DM	4S	23	12.7	1,097	957	36	24	76			29		71	24	5	29	0.41	33.1			
WH	Totals			21	7.0	4,593	4,269	159	5	95		6		94	33	7	58	0.65	73.4			
WH	T	DM	3S	41	11.6	1,177	1,040	39	100					100	40	7	68	0.60	15.3			
WH	T	DM	4S	56		1,416	1,416	53	75	25		4	25	71	31	5	33	0.32	42.4			
WH	T	DM	UT	3		68	68	3	100			100			19	5	20	0.29	3.4			
WH	T	Totals			12	5.1	2,661	2,525	94	45	55		5	14	81	33	6	41	0.40	61.1		
SS	DM	2S	8		217	217	8		100			100			17	12	80	1.48	2.7			
SS	DM	3S	68	7.4	1,771	1,640	61		100					100	40	8	87	0.85	19.0			
SS	DM	4S	3		86	86	3	100				100			14	5	15	0.32	5.8			
SS	DM	UT	21		489	489	18	22	78			9		91	33	7	56	0.72	8.7			
SS	Totals			12	5.1	2,562	2,431	90	8	83	9		14		86	32	7	67	0.81	36.2		
SS	T	DM	4S	100		1,438	1,438	53	100				63	37	31	5	33	0.36	43.5			
SS	T	Totals			7		1,438	1,438	53	100			63	37	31	5	33	0.36	43.5			
RA	T	DM	4S	100		258	258	10	100				100		30	5	30	0.29	8.6			
RA	T	Totals			1		258	258	10	100			100		30	5	30	0.29	8.6			
RC	T	DM	4S	100		242	242	9	100				100		26	5	30	0.29	8.1			
RC	T	Totals			1		242	242	9	100			100		26	5	30	0.29	8.1			
Type Totals					5.0	21,906	20,802	774	31	68	1		9	13	79	30	6	44	0.51	471.8		

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RDEMO		DATE 3/10/2015				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	28	RDEMO	2180	37.20	11	60	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES				
TOTAL		11	60	5.5						
CRUISE		11	60	5.5	13,109		.5			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	19	86.8	14.1	59	25.0	94.1	7,610	7,212	2,522	2,521
DOUG FIR-T	8	73.8	9.9	50	12.6	39.6	2,542	2,428	817	820
WHEMLOCK	12	54.0	14.2	58	15.8	59.4	4,593	4,269	1,571	1,569
WHEMLOCK-T	7	52.3	11.0	52	10.4	34.7	2,661	2,525	804	805
S SPRUCE	7	25.4	15.8	61	8.7	34.7	2,562	2,431	945	945
S SPRUCE-T	5	43.5	10.2	42	7.7	24.8	1,438	1,438	487	487
R ALDER-T	1	8.6	8.8	70	1.2	3.6	258	258	75	75
WR CEDAR-T	1	8.1	9.1	36	1.2	3.6	242	242	61	61
TOTAL	60	352.4	12.4	54	83.7	294.4	21,906	20,802	7,280	7,282
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	99.6	31.5	59	87	114					
DOUG FIR-T	144.9	45.8	40	74	108					
WHEMLOCK	134.6	42.5	31	54	77					
WHEMLOCK-T	146.7	46.3	28	52	77					
S SPRUCE	160.8	50.8	12	25	38					
S SPRUCE-T	249.8	78.9	9	44	78					
R ALDER-T	331.7	104.8	9	9	18					
WR CEDAR-T	331.7	104.8	8	8	16					
TOTAL	32.7	10.3	316	352	389	47	24	12		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	100.6	31.8	64	94	124					
DOUG FIR-T	124.4	39.3	24	40	55					
WHEMLOCK	138.7	43.8	33	59	85					
WHEMLOCK-T	127.1	40.2	21	35	49					
S SPRUCE	161.4	51.0	17	35	52					
S SPRUCE-T	267.0	84.3	4	25	46					
R ALDER-T	331.7	104.8	4	4	7					
WR CEDAR-T	331.7	104.8	4	4	7					
TOTAL	19.7	6.2	276	294	313	17	9	4		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	99.9	31.6	4,936	7,212	9,487					
DOUG FIR-T	127.1	40.2	1,453	2,428	3,403					
WHEMLOCK	131.3	41.5	2,498	4,269	6,040					
WHEMLOCK-T	132.3	41.8	1,469	2,525	3,580					
S SPRUCE	178.5	56.4	1,060	2,431	3,802					
S SPRUCE-T	255.5	80.7	277	1,438	2,599					
R ALDER-T	331.7	104.8	258	258	529					

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	RDEMO		DATE	3/10/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	28	RDEMO	2180	37.20	11	60	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	
WR CEDAR-T		331.7	104.8		242	495				
TOTAL		<i>15.5</i>	<i>4.9</i>	<i>19,787</i>	<i>20,802</i>	<i>21,818</i>	<i>10</i>	<i>5</i>	<i>3</i>	
CL: 68.1%		COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD: 1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		99.9	31.6	52	77	101				
DOUG FIR-T		127.1	40.2	37	61	86				
WHEMLOCK		131.3	41.5	42	72	102				
WHEMLOCK-T		132.3	41.8	42	73	103				
S SPRUCE		178.5	56.4	31	70	110				
S SPRUCE-T		255.5	80.7	11	58	105				
R ALDER-T		331.7	104.8		71	145				
WR CEDAR-T		331.7	104.8		66	136				
TOTAL		<i>14.7</i>	<i>4.6</i>	<i>67</i>	<i>71</i>	<i>74</i>	<i>10</i>	<i>5</i>	<i>2</i>	

Stand Table Summary																
TC TSTNDSUM																
Project RDEMO																
T027 R013 S28 T2180												T027 R013 S28 T2180				
Page: 1																
Date: 3/10/2011																
Time: 4:18:17PM																
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees									
027	013	28	RDEMO	2180	37.20	11	60									
S Spec	T	Av			Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Net			Totals			
		Sample DBH	FF 16'	Ht Tot				Net Cu.Ft.	Net Bd.Ft.	Tons/ Acre	Cu.Ft. Acre	Net Bd.Ft. Acre	Tons	Cunits	MBF	
DF		12	3	82	70	18.819	14.85	25.34	14.9	47.3	10.75	377	1,199	400	140	45
DF		13	2	83	70	10.425	9.90	15.48	16.4	46.9	7.23	254	727	269	94	27
DF		14	7	82	77	32.237	34.65	64.47	15.3	44.3	28.10	984	2,859	1,045	366	106
DF		15	3	82	68	12.721	14.85	25.44	14.5	38.4	10.47	369	977	390	137	36
DF		16	2	82	73	7.056	9.90	14.11	19.2	59.6	7.72	271	841	287	101	31
DF		17	1	82	78	3.032	4.95	6.06	22.7	60.0	3.93	138	364	146	51	14
DF		19	1	79	69	2.462	4.95	4.92	26.0	50.0	3.67	128	246	136	48	9
DF	Totals	19	82	73		86.752	94.05	155.83	16.2	46.3	71.87	2,521	7,212	2,674	938	268
WH		11	1	85	65	6.983	4.95	6.98	17.0	40.0	3.83	119	279	142	44	10
WH		12	2	83	67	13.489	9.90	13.49	18.4	60.0	7.93	248	809	295	92	30
WH		13	1	85	63	5.131	4.95	5.13	23.8	70.0	3.90	122	359	145	45	13
WH		14	3	84	63	13.632	14.85	18.26	20.4	54.8	11.93	373	1,001	444	139	37
WH		15	1	82	63	4.143	4.95	8.29	15.8	40.0	4.18	131	331	155	49	12
WH		18	2	83	72	5.796	9.90	11.59	25.3	69.8	9.38	293	809	349	109	30
WH		19	1	82	67	2.652	4.95	5.30	25.9	55.0	4.41	137	292	164	51	11
WH		21	1	80	71	2.160	4.95	4.32	34.1	90.0	4.71	147	389	175	55	14
WH	Totals	12	83	66		53.986	59.40	73.37	21.4	58.2	50.27	1,569	4,269	1,870	584	159
WH	T	9	1	85	58	11.720	4.95	11.72	7.1	30.0	2.66	83	352	99	31	13
WH	T	10	2	86	56	18.526	9.90	18.53	11.8	40.0	7.01	219	741	261	81	28
WH	T	12	2	84	61	13.263	9.90	13.26	16.5	49.8	7.01	219	661	261	81	25
WH	T	13	1	85	67	5.370	4.95	10.74	12.9	40.0	4.43	139	430	165	52	16
WH	T	16	1	84	75	3.416	4.95	6.83	21.2	50.0	4.62	145	342	172	54	13
WH	Totals	7	85	60		52.294	34.65	61.08	13.2	41.3	25.73	805	2,525	957	299	94
SS		12	1	82	70	6.518	4.95	6.52	20.0	50.0	3.33	130	326	124	48	12
SS		14	1	75	60	4.377	4.95	4.38	28.0	50.0	3.24	123	219	121	46	8
SS		16	1	76	71	3.729	4.95	3.73	38.5	90.0	3.73	144	336	139	53	12
SS		17	1	84	68	3.068	4.95	6.14	22.1	65.0	3.52	135	399	131	50	15
SS		18	2	78	72	5.480	9.90	10.96	24.8	72.6	7.06	271	796	263	101	30
SS		20	1	82	68	2.224	4.95	4.45	31.9	80.0	3.69	142	356	137	53	13
SS	Totals	7	79	68		25.396	34.65	36.17	26.1	67.2	24.57	945	2,431	914	352	90
DF	T	6	1	81	50	22.157	4.95	22.16	2.0	10.0	1.26	44	222	47	16	8
DF	T	9	1	84	45	10.723	4.95	10.72	6.8	30.0	2.08	73	322	77	27	12
DF	T	10	2	82	58	16.782	9.90	16.78	11.9	35.0	5.71	200	587	212	74	22
DF	T	12	3	83	66	18.910	14.85	25.11	14.1	35.1	10.01	354	880	372	132	33
DF	T	13	1	82	90	5.209	4.95	10.42	14.3	40.0	4.22	149	417	157	55	16
DF	Totals	8	82	58		73.781	39.60	85.19	9.6	28.5	23.28	820	2,428	866	305	90
SS	T	9	2	82	45	22.924	9.90	22.92	7.8	30.0	4.65	179	688	173	67	26
SS	T	11	2	84	47	14.601	9.90	14.60	13.5	35.0	5.13	197	510	191	73	19
SS	T	12	1	84	58	5.999	4.95	6.00	18.4	40.0	2.88	111	240	107	41	9
SS	Totals	5	83	48		43.524	24.75	43.52	11.2	33.0	12.66	487	1,438	471	181	53
RA	T	9	1	82	70	8.609	3.64	8.61	8.7	30.0	2.05	75	258	76	28	10
RA	Totals	1	82	70		8.609	3.64	8.61	8.7	30.0	2.05	75	258	76	28	10
RC	T	9	1	80	42	8.051	3.64	8.05	7.5	30.0	1.42	61	242	53	23	9
RC	Totals	1	80	42		8.051	3.64	8.05	7.5	30.0	1.42	61	242	53	23	9
Totals		60	83	63		352.395	294.37	471.82	15.4	44.1	211.84	7282	20,802	7,881	2,709	774

Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
T TSPCSTGR										Date 3/10/2015											
Project: RDEMO										Time 4:18:18PM											
T027 R013 S28 TRG										T027 R013 S28 TRG											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
027	013	28	RDEMO	RG	1.00	1	5	S	W												
Spp	S	So	Gr	Nct	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume						Average Log		Logs				
					Def%	Gross	Net		Net MBF	Log Scale Dia.			Log Length			Ln		Dia	Bd	CF/	Per
				BdFt					4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	/Acre
SS	DM	3S		32	16.7	4,302	3,585	4	100						100		40	6	50	0.50	71.7
SS	DM	4S		34		3,867	3,867	4	100				100				26	5	30	0.29	128.9
SS	DM	UT		34		3,692	3,692	4	100						100		40	8	90	0.96	41.0
SS	Totals			56	6.0	11,861	11,144	11	35	65			35		65		33	6	46	0.51	241.6
WH	DM	3S		50		4,451	4,451	4	100						100		40	6	60	0.43	74.2
WH	DM	4S		50		4,451	4,451	4	100						100		40	6	60	0.49	74.2
WH	Totals			44		8,903	8,903	9	100						100		40	6	60	0.46	148.4
Type Totals					3.5	20,764	20,047	20	19	81			19		81		35	6	51	0.49	390.0

TC TSTATS		STATISTICS				PAGE 1				
		PROJECT RDEMO				DATE 3/10/2015				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
027	013	28	RDEMO	RG	1.00	1	5	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		1	5	5.0						
CRUISE		1	5	5.0	390	1.3				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
S SPRUCE	3	241.6	11.1	57	49.0	163.4	11,861	11,144	3,956	3,982
WHEMLOCK	2	148.4	11.6	67	32.0	108.9	8,903	8,903	2,727	2,727
TOTAL	5	390.0	11.3	61	80.9	272.3	20,764	20,047	6,684	6,710
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

TC TSTATS				STATISTICS				PAGE 1		
PROJECT RDEMO				DATE 5/5/2015						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
028	013	16	RDEMO	2010	24.10	9	39	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	9	39	4.3							
CRUISE	9	39	4.3	5,382			.7			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	18	93.7	14.6	55	28.5	108.9	8,629	8,308	2,834	2,833
DOUG FIR-T	6	45.2	12.1	51	10.4	36.3	2,370	2,221	821	821
WHEMLOCK	8	41.0	14.7	54	12.6	48.4	4,443	4,222	1,334	1,335
WHEMLOCK-T	4	24.4	13.5	56	6.6	24.2	2,057	2,057	648	648
S SPRUCE-T	3	19.0	13.2	47	5.0	18.2	1,177	1,177	442	442
TOTAL	39	223.3	13.9	53	63.2	236.0	18,676	17,985	6,080	6,079
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	88.9	31.4	64	94	123					
DOUG FIR-T	102.8	36.3	29	45	62					
WHEMLOCK	100.3	35.4	27	41	56					
WHEMLOCK-T	167.0	58.9	10	24	39					
S SPRUCE-T	300.0	105.9		19	39					
TOTAL	53.7	18.9	181	223	266	129	66	32		
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	66.1	23.3	83	109	134					
DOUG FIR-T	106.1	37.4	23	36	50					
WHEMLOCK	87.9	31.0	33	48	63					
WHEMLOCK-T	163.5	57.7	10	24	38					
S SPRUCE-T	300.0	105.9		18	37					
TOTAL	46.2	16.3	198	236	274	96	49	24		
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	66.1	23.3	6,370	8,308	10,246					
DOUG FIR-T	103.5	36.5	1,410	2,221	3,033					
WHEMLOCK	95.4	33.7	2,801	4,222	5,642					
WHEMLOCK-T	177.2	62.6	770	2,057	3,344					
S SPRUCE-T	300.0	105.9		1,177	2,424					
TOTAL	42.9	15.1	15,263	17,985	20,707	82	42	21		
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	66.1	23.3	58	76	94					
DOUG FIR-T	103.5	36.5	39	61	84					
WHEMLOCK	95.4	33.7	58	87	117					
WHEMLOCK-T	177.2	62.6	32	85	138					
S SPRUCE-T	300.0	105.9		65	134					
TOTAL	42.9	15.1	65	76	88	82	42	21		

TC TSTNDSUM		Stand Table Summary														
Project RDEMO											T028 R013 S16 T2010					
T028 R013 S16 T2010											T028 R013 S16 T2010					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1		Date:	5/5/2015				
028	013	16	RDEMO	2010	24.10	9	39	Time:			7:23:42AM					
Spc	S T	Sample DBH	FF Trees	Av Ht 16'	Trees/ Acres	BA/ Acres	Logs Acres	Average Log		Net Tons/ Acres	Net Cu.Ft. Acres	Net Bd.Ft. Acres	Totals			
								Net Cu.Ft.	Net Bd.Ft.				Tons	Cunits	MBF	
DF		8	1	84	46	16.102	6.05	16.10	6.3	30.0	2.90	102	483	70	24	12
DF		13	2	82	65	13.370	12.10	19.64	14.9	40.0	8.34	293	786	201	71	19
DF		14	5	84	65	29.323	30.25	35.32	19.8	54.8	19.96	700	1,934	481	169	47
DF		15	1	83	85	4.677	6.05	9.35	20.2	75.0	5.37	189	702	130	45	17
DF		16	2	82	71	8.350	12.10	16.70	19.2	47.5	9.14	321	793	220	77	19
DF		17	2	82	73	7.632	12.10	15.26	22.6	62.5	9.88	345	953	238	83	23
DF		18	2	83	76	6.774	12.10	13.55	25.5	80.0	9.84	345	1,084	237	83	26
DF		19	1	78	77	2.947	6.05	5.89	30.7	80.0	5.15	181	472	124	44	11
DF		21	1	83	73	2.492	6.05	4.98	34.3	95.0	4.87	171	473	117	41	11
DF		23	1	84	86	2.026	6.05	4.05	45.9	155.0	5.31	186	628	128	45	15
DF	Totals		18	83	66	93.693	108.90	140.86	20.1	59.0	80.76	2,833	8,308	1,946	683	200
WH		9	1	87	50	14.004	6.05	14.00	7.8	30.0	3.48	109	420	84	26	10
WH		15	1	86	76	4.801	6.05	9.60	19.4	70.0	5.97	187	672	144	45	16
WH		16	2	84	66	8.785	12.10	13.01	24.0	63.2	10.00	313	823	241	75	20
WH		18	3	83	77	10.279	18.15	20.56	26.4	81.3	17.34	542	1,672	418	131	40
WH		19	1	85	78	3.172	6.05	6.34	29.1	100.0	5.91	185	634	142	45	15
WH	Totals		8	85	65	41.041	48.40	63.52	21.0	66.5	42.70	1,335	4,222	1,029	322	102
DF	T	11	1	85	62	8.687	6.05	8.69	15.9	40.0	3.94	138	347	95	33	8
DF	T	12	3	82	61	23.673	18.15	32.06	12.6	32.4	11.55	405	1,040	278	98	25
DF	T	13	2	83	64	12.830	12.10	19.20	14.5	43.4	7.92	278	833	191	67	20
DF	Totals		6	83	62	45.190	36.30	59.94	13.7	37.1	23.40	821	2,221	564	198	54
WH	T	12	1	85	69	7.214	6.05	14.43	11.5	40.0	5.33	166	577	128	40	14
WH	T	14	3	85	67	17.152	18.15	28.56	16.9	51.8	15.42	482	1,480	372	116	36
WH	Totals		4	85	67	24.366	24.20	42.99	15.1	47.8	20.75	648	2,057	500	156	50
SS	T	12	2	84	54	15.806	12.10	15.81	16.7	40.0	6.88	265	632	166	64	15
SS	T	19	1	82	70	3.206	6.05	6.41	27.7	85.0	4.62	178	545	111	43	13
SS	Totals		3	84	57	19.013	18.15	22.22	19.9	53.0	11.50	442	1,177	277	107	28
Totals			39	84	64	223.303	235.95	329.53	18.4	54.6	179.11	6079	17,985	4,317	1,465	433

T028 R013 S16 TRG										T028 R013 S16 TRG										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
028	013	16	RDEMO	RG	.90	1	9	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					
DF		DM	3S	81	18,014	18,014	16	100				100			40	7	71	0.64	254.8	
DF		DM	4S	19	29.7	5,782	4,065	4	50	50		50	50			16	5	15	0.35	272.4
DF	Totals			68	7.2	23,796	22,079	20	9	91		9	9	82		28	6	42	0.55	527.1
SS		DM	3S	40	4,328	4,328	4	100				100			40	10	150	1.26	28.9	
SS		DM	4S	60	6,267	6,267	6	100				9		91		35	5	37	0.42	171.1
SS	Totals			32	10,596	10,596	10	59	41			5		95		36	6	53	0.56	200.0
Type Totals					5.0	34,392	32,675	29	25	75		8	6	86		30	6	45	0.56	727.1

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT RDEMO				DATE 3/10/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
028	013	16	RDEMO	RG	0.90	1	9	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		1	9	9.0						
CRUISE		1	9	9.0	444	2.0				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	6	321.9	13.6	54	88.5	326.7	23,796	22,079	8,040	8,040
S SPRUCE	3	171.1	13.2	47	44.9	163.4	10,596	10,596	3,980	3,980
TOTAL	9	493.0	13.5	52	133.4	490.1	34,392	32,675	12,020	12,020
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1											
		Project: RDEMO								Date	5/5/2015										
										Time	7:32:24AM										
T028 R013 S15 T2000										T028 R013 S15 T2000											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
028	013	15	RDEMO	2000	22.30	9	41	S	W												
Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log		Logs Per /Acre			
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia		Bd	CF/Lf	
WH	DM	2S	17	8.7	2,032	1,854	41	100				20	26	54	32	12	159	1.47	11.6		
WH	DM	3S	71	14.6	8,863	7,572	169	100				100				40	8	89	0.94	84.9	
WH	DM	4S	10	9.5	1,192	1,079	24	64	36	68 32				15	5	15	0.35	72.1			
WH	DM	UT	2		122	122	3	100				100				10	5	10	0.26	12.2	
WH	Totals		62	13.0	12,210	10,627	237	8	75	17	8	7	4	81	28	7	59	0.83	180.9		
WH	T	DM	3S	76	5.3	4,674	4,428	99	100				100				40	7	63	0.61	70.3
WH	T	DM	4S	24		1,338	1,338	30	100				16	40	44		24	5	25	0.31	53.6
WH	T	DM	UT												6			0.00	6.4		
WH	T	Totals	34	4.1	6,012	5,766	129	23	77		4	9	87		31	6	44	0.52	130.3		
SF	DM	2S	84		530	530	12	100				100				32	12	160	1.28	3.3	
SF	DM	4S	16		99	99	2	100				100				27	5	30	0.46	3.3	
SF	Totals		4		629	629	14	16	84		16	84			30	9	95	0.90	6.6		
Type Totals				9.7	18,851	17,023	380	13	73	14	6	8	6	80	29	7	54	0.69	317.7		

STATISTICS
PROJECT RDEMO

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
028	013	15	RDEMO	2000	22.30	9	41	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	9	41	4.6		
CRUISE	9	41	4.6	4,522	.9
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	25	96.5	16.9	55	36.7	151.3	12,210	10,627	4,157	4,155
WHEMLOCK-T	15	102.9	12.7	49	25.4	90.8	6,012	5,766	2,111	2,111
PS FIR	1	3.3	18.3	61	1.4	6.1	629	629	176	176
TOTAL	41	202.8	15.0	52	64.1	248.1	18,851	17,023	6,445	6,443

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		34.4	12.2	85	97	108			
WHEMLOCK-T		78.8	27.8	74	103	132			
PS FIR		300.0	105.9		3	7			
TOTAL		45.9	16.2	170	203	236	95	48	24

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		30.0	10.6	135	151	167			
WHEMLOCK-T		60.0	21.2	72	91	110			
PS FIR		300.0	105.9		6	12			
TOTAL		27.1	9.6	224	248	272	33	17	8

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		28.8	10.1	9,548	10,627	11,706			
WHEMLOCK-T		66.9	23.6	4,405	5,766	7,128			
PS FIR		300.0	105.9		629	1,296			
TOTAL		30.4	10.7	15,195	17,023	18,850	42	21	10

CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK		28.8	10.1	63	70	77			
WHEMLOCK-T		66.9	23.6	49	64	79			
PS FIR		300.0	105.9		104	214			
TOTAL		30.4	10.7	61	69	76	42	21	10

TC TSTNDSUM		Stand Table Summary														
Project RDEMO											T028 R013 S15 T2000					
T028 R013 S15 T2000											Page: 1					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Date:	Time:					
028	013	15	RDEMO	2000	22.30	9	41			5/5/2015	7:32:25AM					
Spc	S 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		15	2	86	66	10.340	12.10	20.68	15.5	45.0	10.27	321	931	229	72	21
WH		16	10	83	65	43.315	60.50	78.12	20.8	50.6	51.86	1,621	3,949	1,157	362	88
WH		17	5	84	64	19.162	30.25	34.62	23.0	56.5	25.55	798	1,957	570	178	44
WH		18	3	84	70	10.160	18.15	20.32	25.2	60.0	16.46	512	1,219	367	114	27
WH		19	1	82	72	2.978	6.05	5.96	30.1	80.0	5.70	180	476	127	40	11
WH		20	2	83	76	5.633	12.10	11.27	32.7	85.4	11.81	368	962	263	82	21
WH		21	1	84	67	2.639	6.05	5.28	30.7	105.0	5.19	162	554	116	36	12
WH		22	1	86	77	2.313	6.05	4.63	41.9	125.0	6.20	194	578	138	43	13
WH		Totals	25	84	67	96.539	151.25	180.87	23.0	58.8	133.04	4,155	10,627	2,967	927	237
WH	T	8	1	88	50	17.774	6.05	17.77	5.7	30.0	3.21	100	533	72	22	12
WH	T	12	2	86	54	15.435	12.10	15.44	17.1	49.5	8.43	263	764	188	59	17
WH	T	13	5	85	62	33.141	30.25	45.97	15.2	43.1	22.39	700	1,982	499	156	44
WH	T	14	2	84	59	11.484	12.10	11.48	24.5	60.0	9.01	282	689	201	63	15
WH	T	15	4	84	61	20.686	24.20	30.82	19.6	46.9	19.28	603	1,447	430	134	32
WH	T	16	1	83	64	4.388	6.05	8.78	18.7	40.0	5.24	164	351	117	37	8
WH		Totals	15	85	58	102.907	90.75	130.26	16.2	44.3	67.57	2,111	5,766	1,507	471	129
SF		18	1	87	76	3.312	6.05	6.62	26.6	95.0	5.06	176	629	113	39	14
SF		Totals	1	87	76	3.312	6.05	6.62	26.6	95.0	5.06	176	629	113	39	14
Totals			41	85	63	202.758	248.05	317.75	20.3	53.6	205.66	6443	17,023	4,586	1,437	380

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

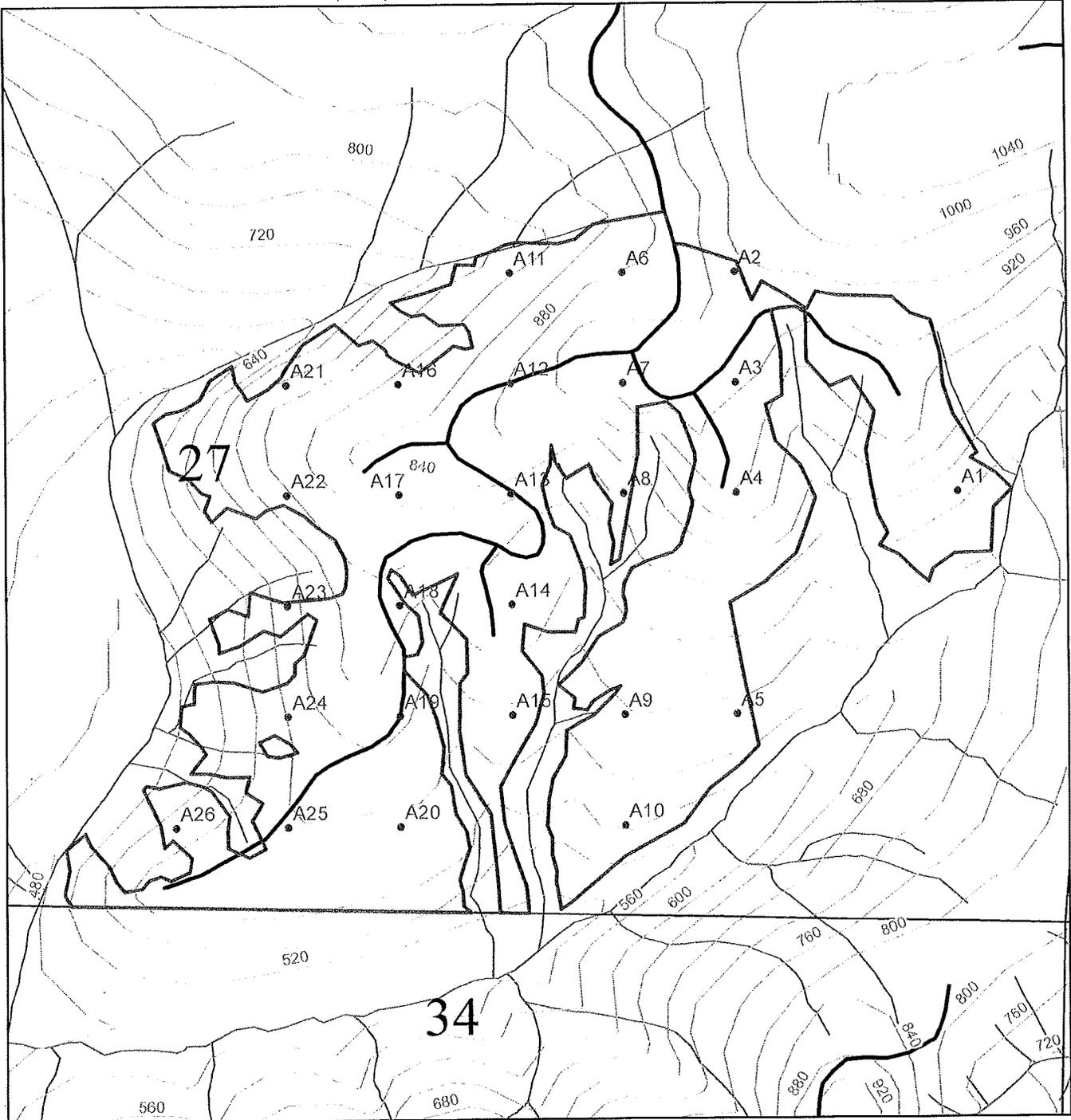
T027 R013 S09 Ty1206	73.1
T027 R013 S09 TyRG	1.2
T028 R013 S16 TyRG	.9

Project RDEMO
Acres 354.10

Page No 1
Date: 5/5/2015
Time 7:33:01AM

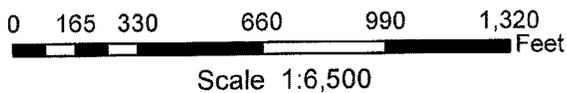
Species	S T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		27,873	46,134	23,673	29.80	18.00	0.60	8,306	8,305	2,531	2,380
WHEMLOCK		15,734	25,565	12,999	25.81	15.89	0.57	4,062	4,061	1,309	1,245
DOUG FIR	T	22,663	27,478	8,329	12.91	10.65	0.37	2,922	2,926	994	951
WHEMLOCK	T	19,499	24,052	8,288	13.28	10.77	0.35	2,590	2,590	917	896
S SPRUCE		3,663	5,535	3,405	35.78	23.68	0.77	1,309	1,311	351	334
S SPRUCE	T	6,140	6,243	1,859	11.65	11.46	0.39	715	715	212	211
R ALDER		623	734	449	26.17	22.24	0.69	163	163	43	40
R ALDER	T	567	735	222	14.23	10.98	0.37	81	81	27	27
WR CEDAR		823	823	237	12.27	12.27	0.44	101	101	28	26
PS FIR		74	148	113	53.28	26.64	0.89	39	39	14	14
WR CEDAR	T	300	300	53	7.52	7.52	0.29	23	23	9	9
Totals		97,958	137,747	59,626	20.74	14.75	0.50	20,312	20,316	6,435	6,133

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	96,768	136,279	58,955	20.74	14.73	0.50	20,068	20,072	6,365	6,067
H	1,190	1,468	670	20.48	16.61	0.54	244	244	70	67
Totals	97,958	137,747	59,626	20.74	14.75	0.50	20,312	20,316	6,435	6,133



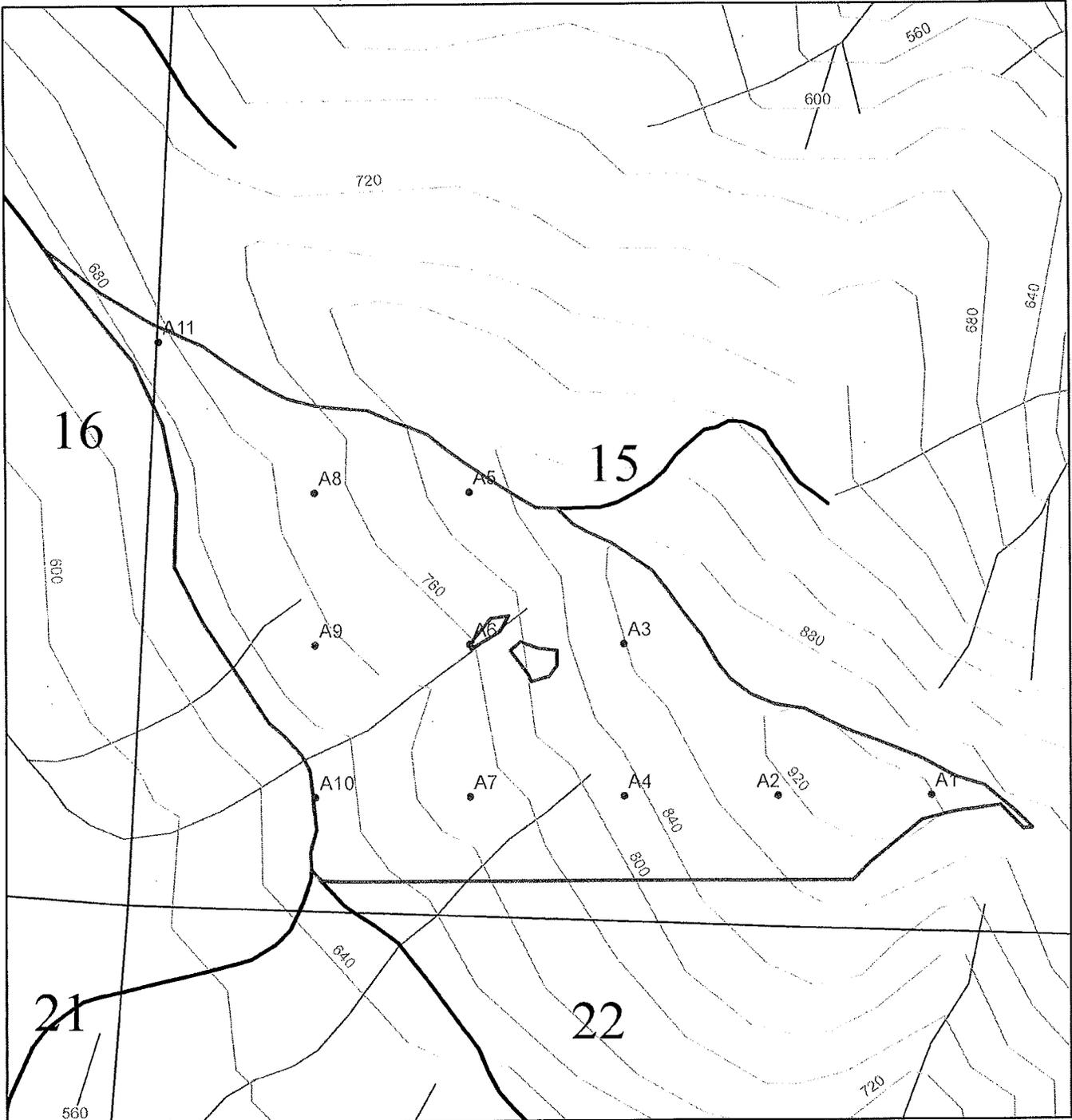
Cruiser Sample Point Locations

LAYER NAME:	harvest_area_g_1206	Township:	T27R13W
POLY ID:	1	Total Sample Points:	26
Acres:	82	Spacing Between Points: Width:	375 Height: 375



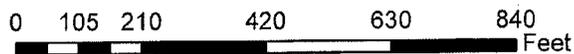
Legend

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



Cruiser Sample Point Locations

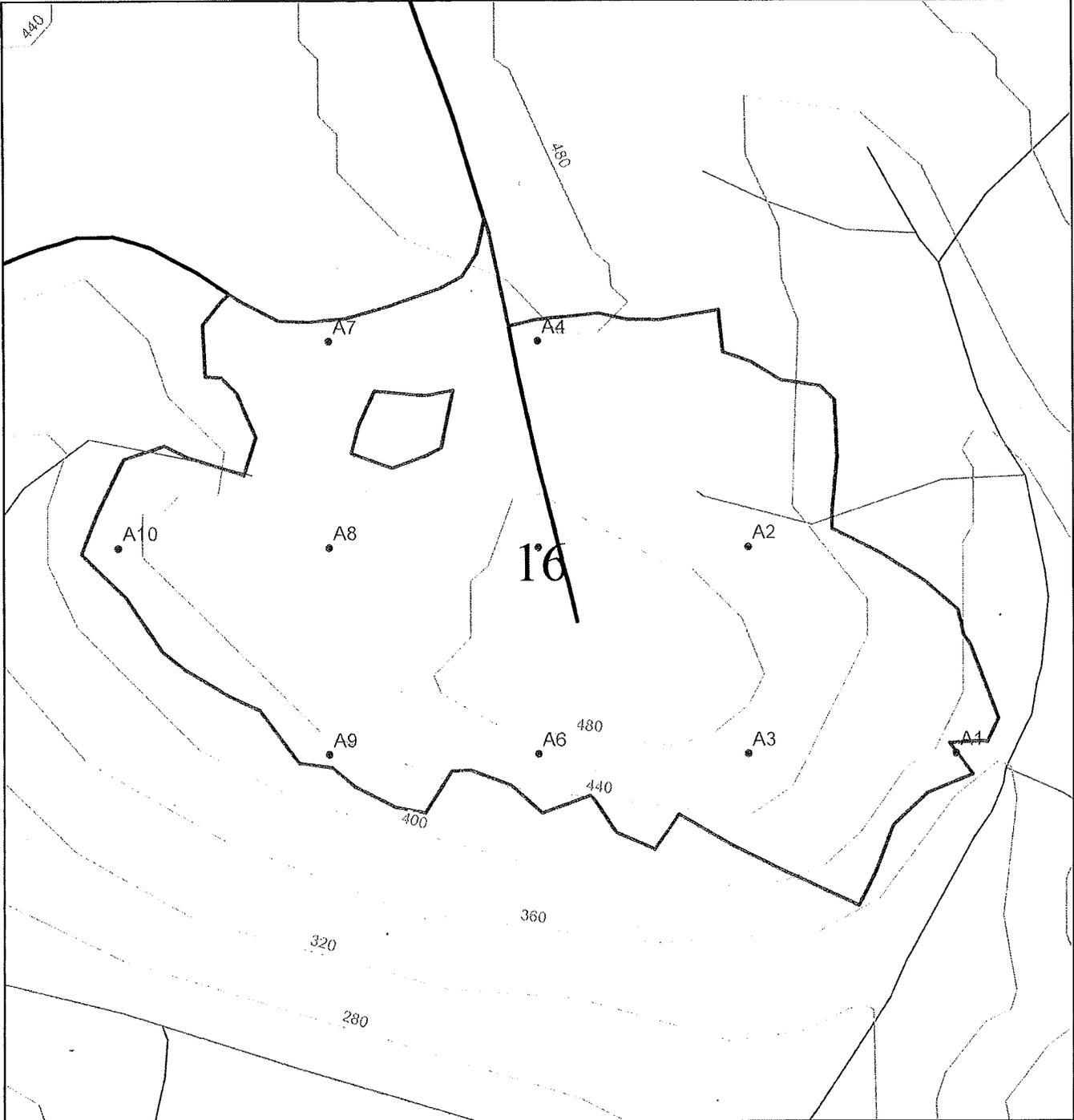
LAYER NAME:	harvest_area_f_2000	Township:	T28R13W
POLY ID:	1	Total Sample Points:	11
Acres:	24	Spacing Between Points:	325



Scale 1:4,100

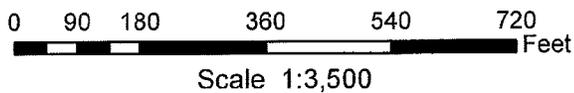
Legend

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



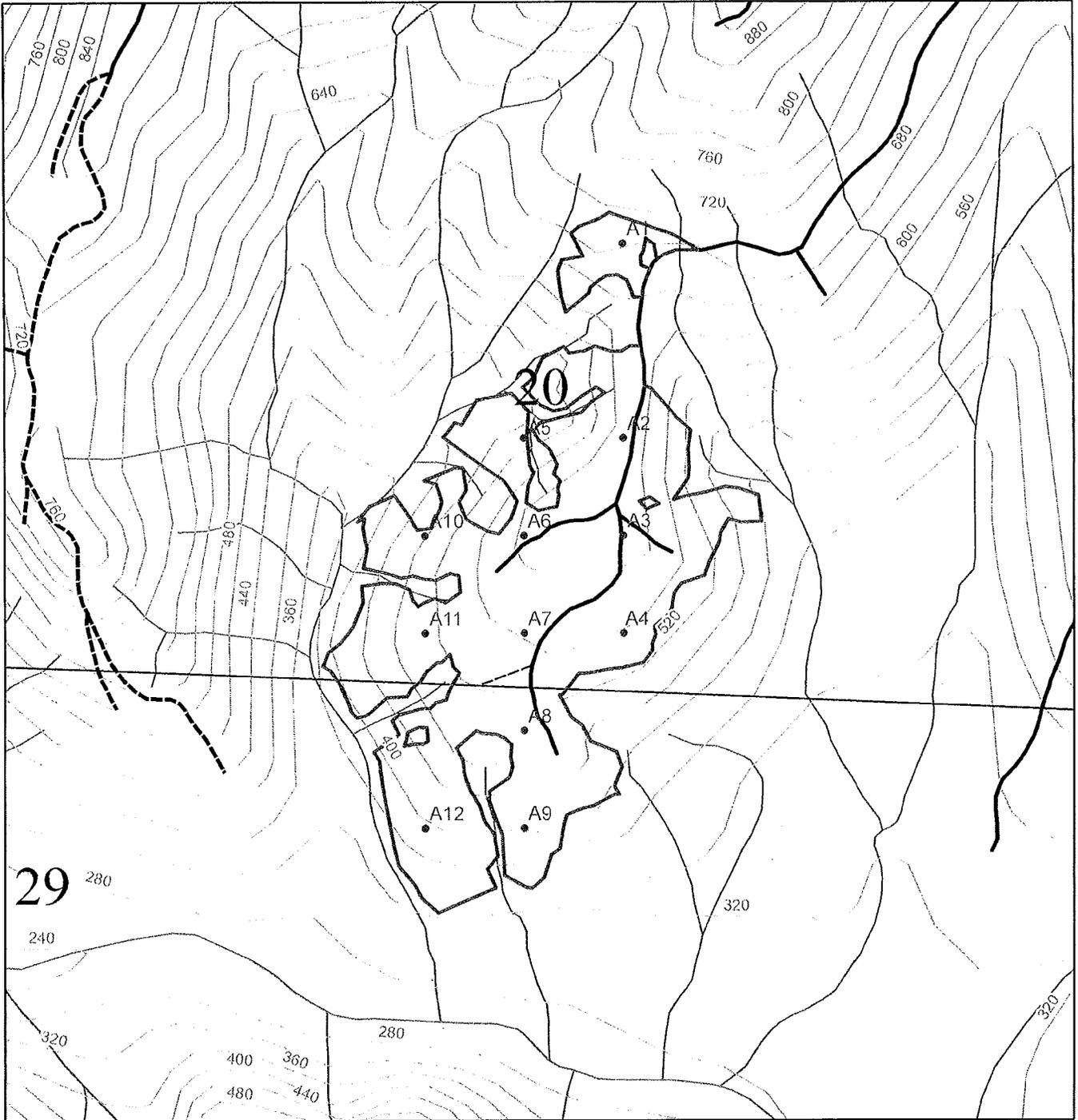
Cruiser Sample Point Locations

LAYER NAME:	harvest_area_f_2010	Township:	T28R13W
POLY ID:	1	Total Sample Points:	10
Acres:	26	Spacing Between Points: Width:	375 Height: 375



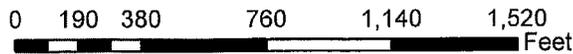
Legend

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



Cruiser Sample Point Locations

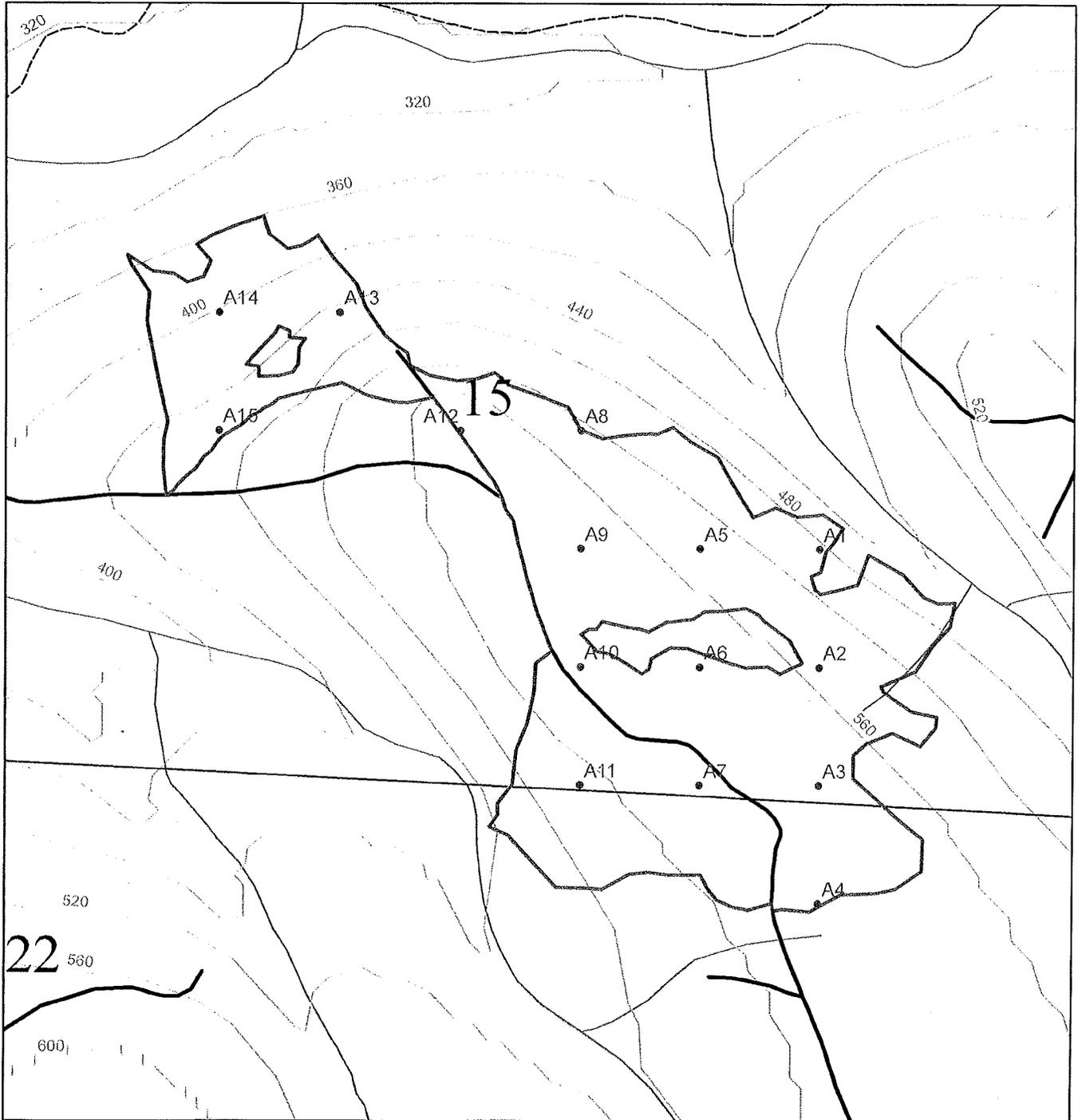
LAYER NAME:	harvest_area_g_2180	Township:	T27R13W
POLY ID:	1	Total Sample Points:	12
Acres:	41	Spacing Between Points: Width:	375 Height: 375



Scale 1:7,400

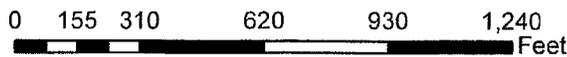
Legend

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



Cruiser Sample Point Locations

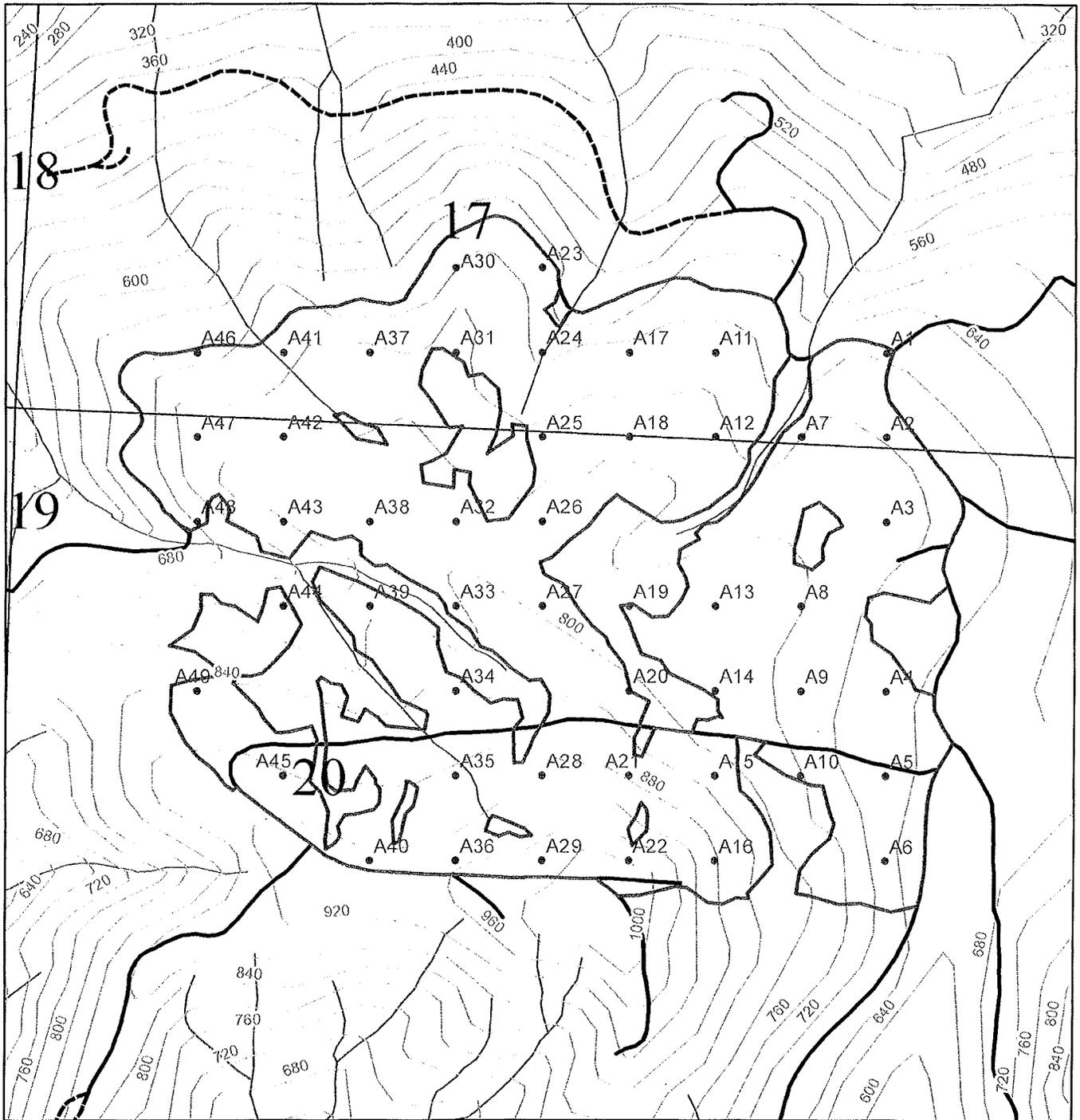
LAYER NAME:	harvest_area_g_1400	Township:	T27R13W
POLY ID:	1	Total Sample Points:	15
Acres:	44	Spacing Between Points:	Width: 375 Height: 375



Scale 1:6,100

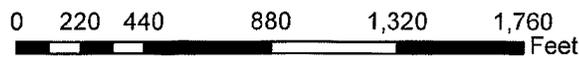
Legend

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



Cruiser Sample Point Locations

LAYER NAME:	harvest_area_g_2100	Township:	T27R13W
POLY ID:	1	Total Sample Points:	49
Acres:	155	Spacing Between Points:	375



Scale 1:8,500

Legend

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

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.

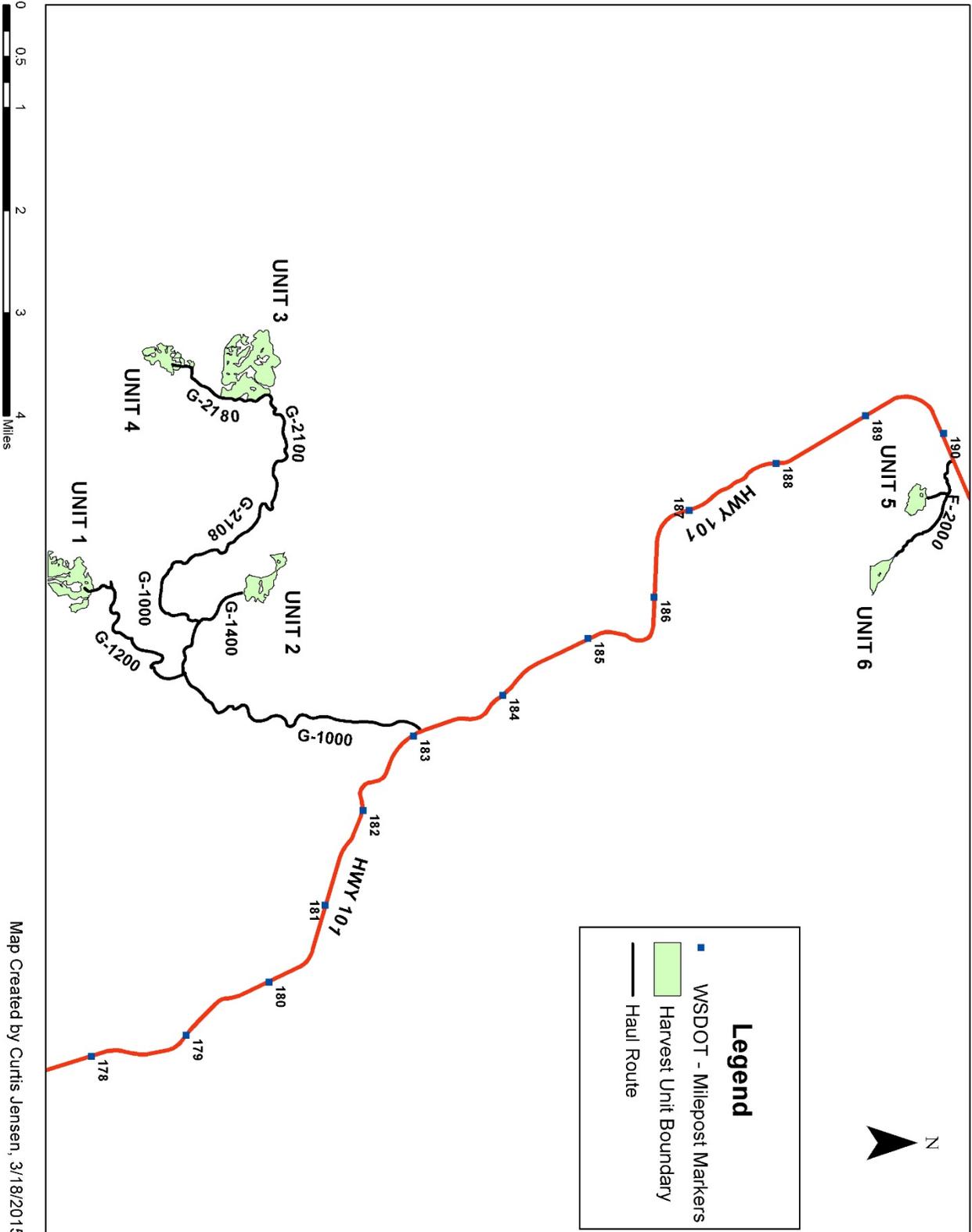
If the seller fails to notify the buyer about the continuing forest land obligation, the seller must pay the buyer's costs related to continuing forest land obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forest land obligation against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

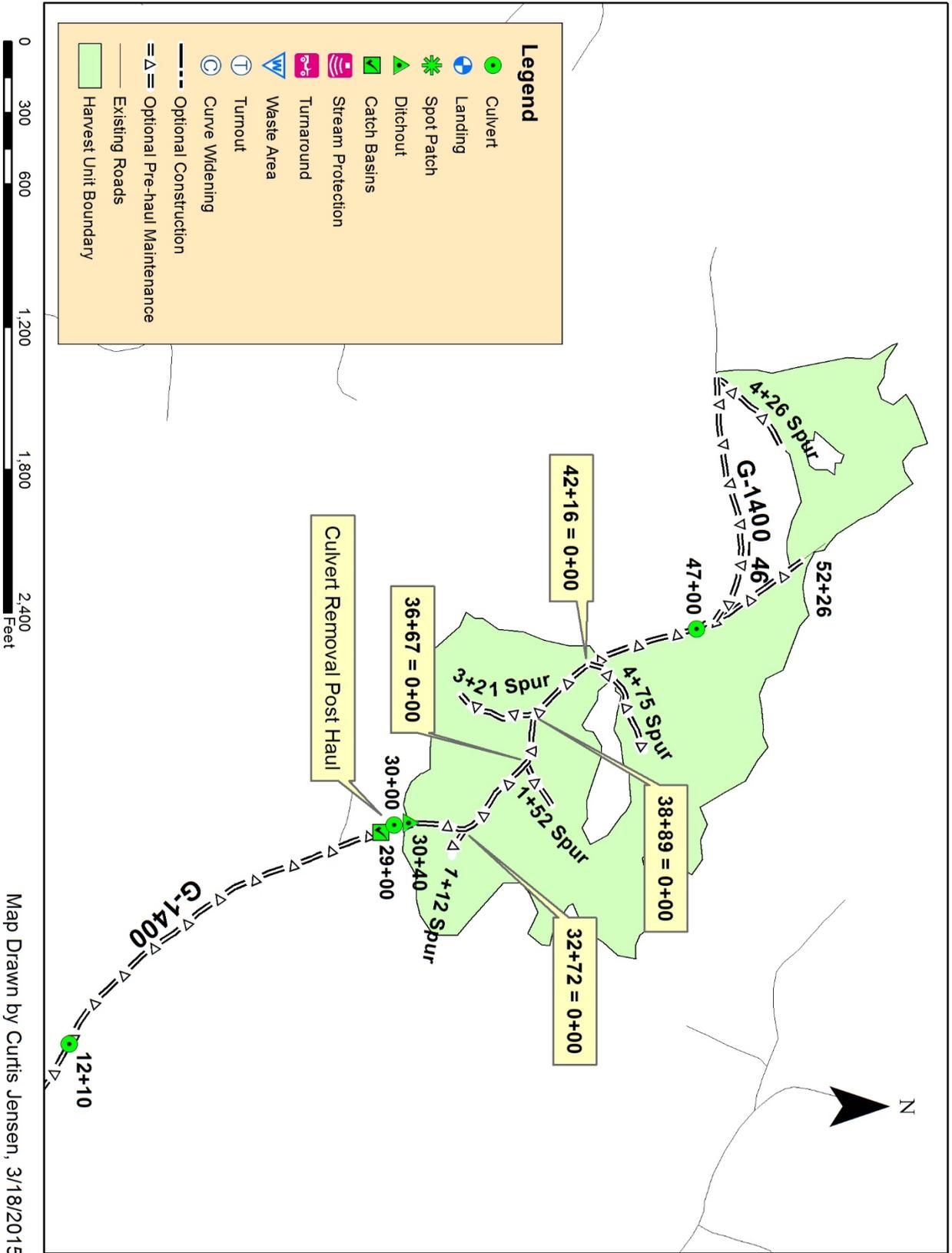
On this day _____,	I placed in the United States mail at _____, WA,
(date)	(post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # _____	
_____	_____
(Printed name)	(Signature)

Goodman Plus Demo VDT Overview

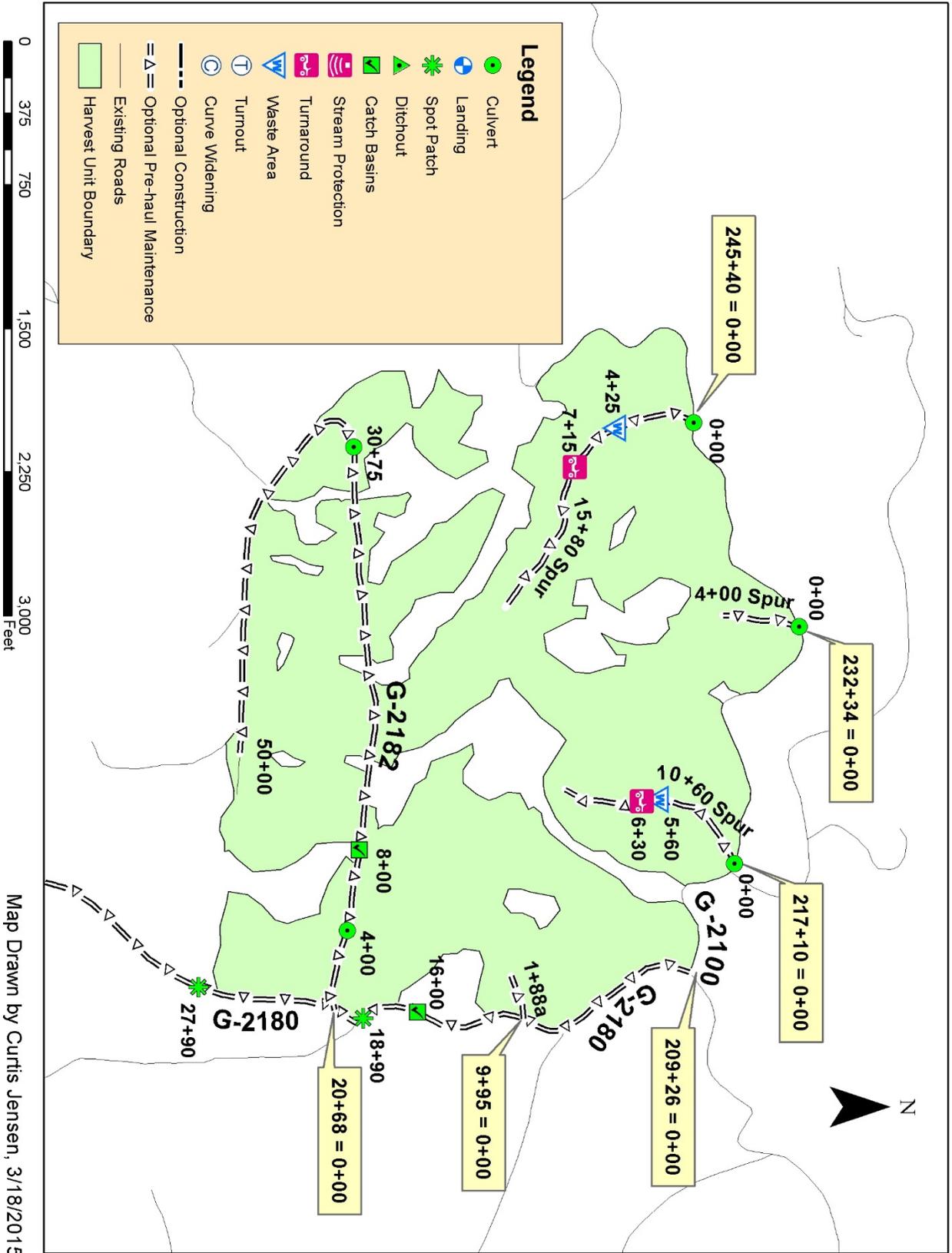


Map Created by Curtis Jensen, 3/18/2015

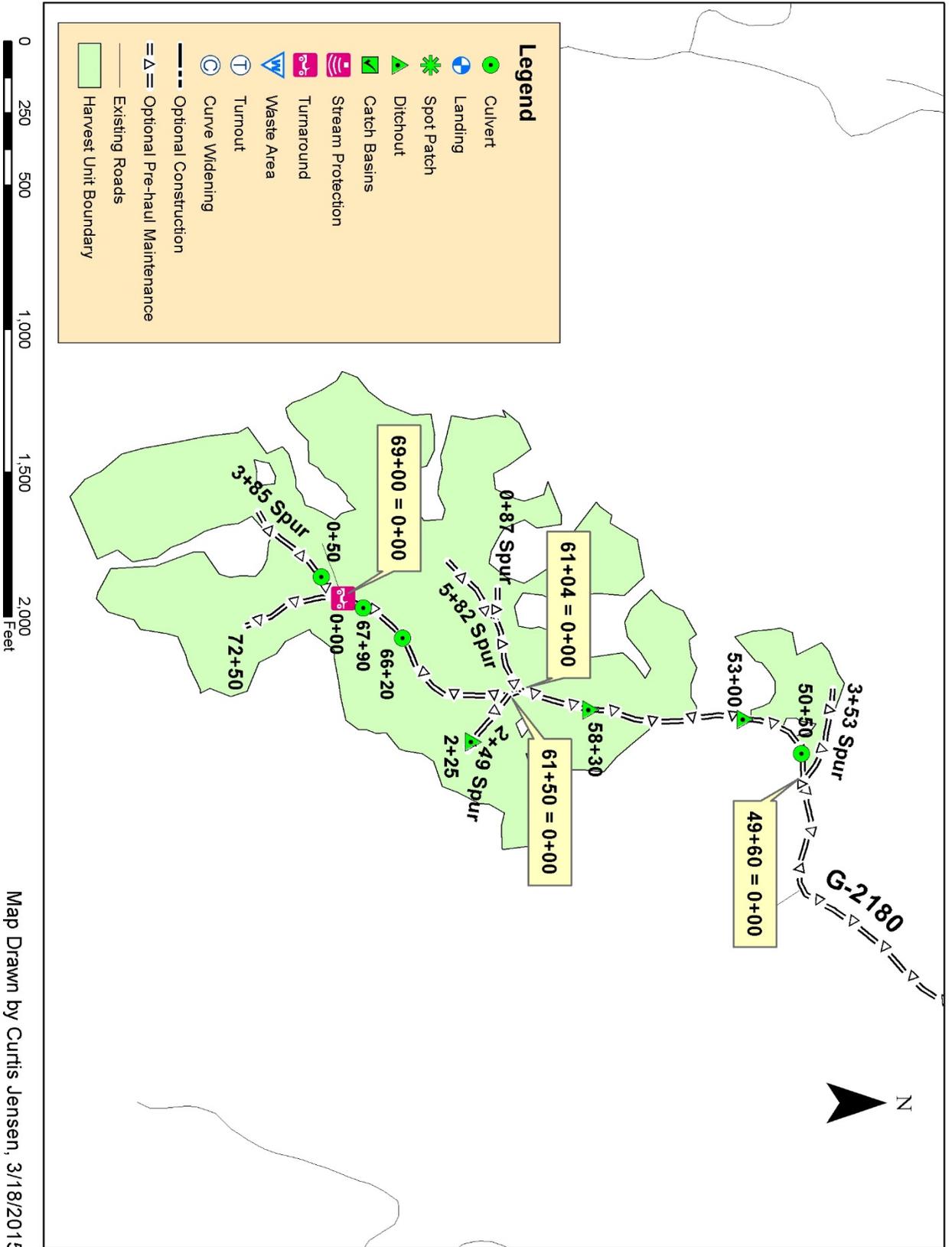
Goodman Plus Demo VDT Unit 2



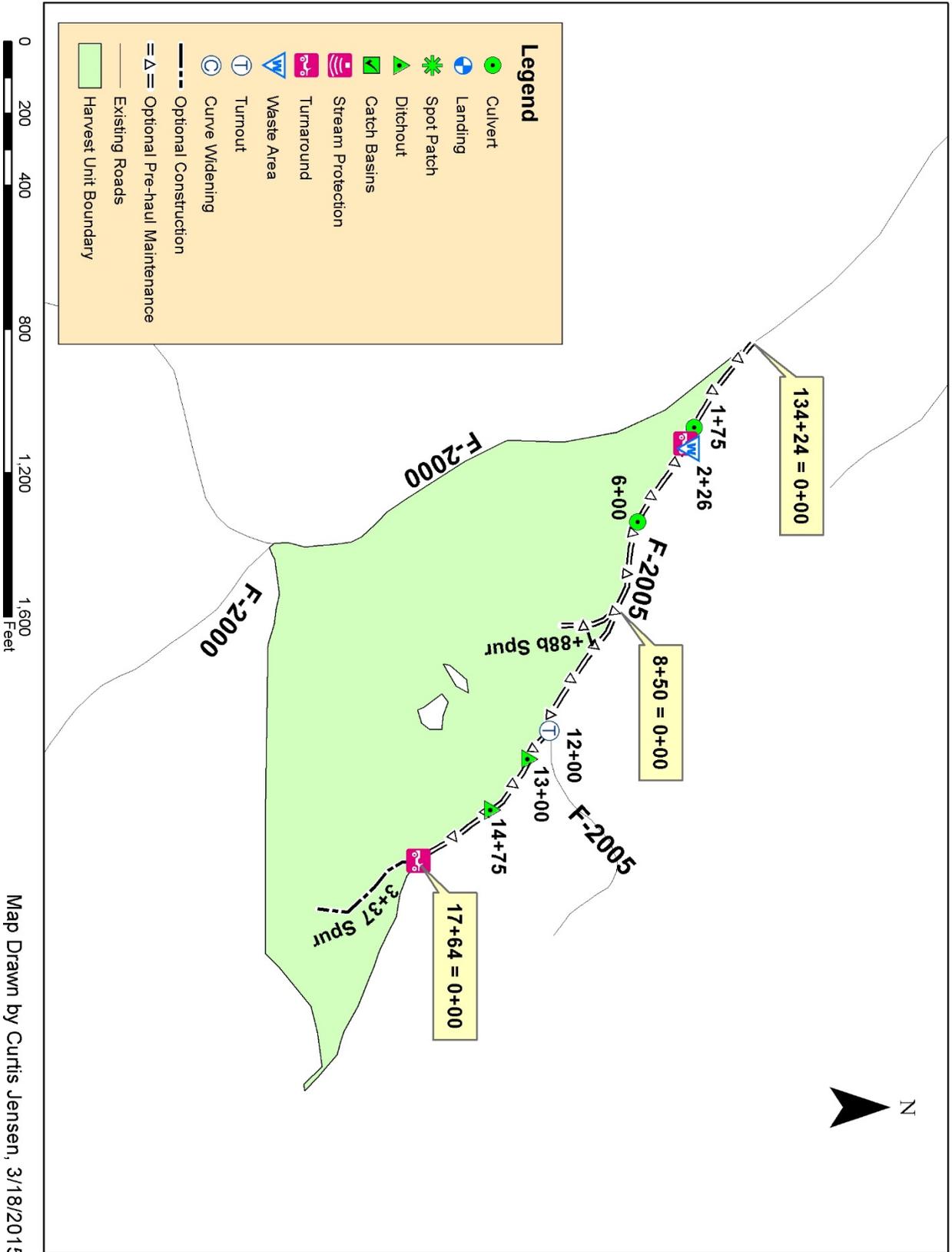
Goodman Plus Demo VDT Unit 3



Goodman Plus Demo VDT Unit 4



Goodman Plus Demo VDT Unit 6



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

GOODMAN PLUS DEMO VDT TIMBER SALE ROAD PLAN
JEFFERSON AND CLALLAM COUNTIES
OLYMPIC REGION COAST DISTRICT

AGREEMENT NO.: 30-092344

STAFF ENGINEER: BILL MEHL

DATE: MARCH 31, 2015

DRAWN & COMPILED BY: KEVIN ALEXANDER

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.

0-3 OPTIONAL ROADS

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

Road	Stations	Type
G-2182	50.0	Pre-haul Maintenance
G-2180	71.50	Pre-haul Maintenance
G-1400	52.0	Pre-haul Maintenance
G-1206	50.00	Pre-haul Maintenance
F-2011	6.0	Pre-haul Maintenance
F-2010	18.5	Pre-haul Maintenance
F-2005	17.70	Pre-haul Maintenance
5+82 spur	5.85	Pre-haul Maintenance
4+75 spur	4.75	Pre-haul Maintenance
4+00 spur	4.00	Pre-haul Maintenance
3+85 spur	3.85	Pre-haul Maintenance
3+53 spur	3.53	Pre-haul Maintenance
3+24 spur	3.24	Pre-haul Maintenance
3+21 spur	3.21	Pre-haul Maintenance
3+05 spur	3.05	Pre-haul Maintenance
2+74 spur	2.74	Pre-haul Maintenance
2+49 spur	2.49	Pre-haul Maintenance
15+80 spur	15.80	Pre-haul Maintenance
12+87 spur	12.87	Pre-haul Maintenance
10+60 spur	10.60	Pre-haul Maintenance

1+88b spur	1.88	Pre-haul Maintenance
1+88a spur	1.88	Pre-haul Maintenance
1+52 spur	1.52	Pre-haul Maintenance
1+12 spur	1.12	Pre-haul Maintenance
0+87 spur	0.87	Pre-haul Maintenance
3+37 spur	3.37	Construction
Total:	352.32	

0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
3+37 spur	0+00 to 3+37	Construct in accordance with the TYPICAL SECTION SHEET and ROCK LIST.

Construction includes, but is not limited to 3.37 stations of clearing, grubbing. Right-of-way debris disposal, excavation and/or embankment to subgrade, construction of ditches, acquisition and installation of drainage structures, landing construction, application of rock, grading and shaping road surfaces, compaction of subgrades and road surfacing, and application of grass seed and hay.

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
G-2182	0+00 to 37+25	Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5 and Typical Section Sheet. Compact road surface in accordance with Compaction List.
G-2182	37+25 to 50+00	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5 and Typical Section Sheet. Compact road surface in accordance with Compaction List.
G-2180	0+00 to 46+30	Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Fix hole at sta 27+90. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5 and Typical Section Sheet. Compact road surface in accordance with Compaction List.

G-2180	46+30 to 71+50	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List..
G-1400	0+00 to 30+50	Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5 and Typical Section Sheet. Compact road surface in accordance with Compaction List.
G-1400	30+50 to 52+00	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List.
G-1206	0+00 to 16+00	Brush as per Clause 3-1. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5 and Typical Section Sheet. Compact road surface in accordance with Compaction List.
G-1206	16+00 to 50+00	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List.
F-2011	0+00 to 6+00	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Apply rock in accordance with Rock List.
F-2010	0+00 to 11+00	Excavator limb trees for truck haul, add rock per Rock list
F-2010	11+00 to 18+50	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Apply rock in accordance with Rock List.
F-2005	0+00 to 17+70	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List.

5+82 spur	0+00 to 5+82	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List.
4+75 spur	0+00 to 4+75	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List. Fix intersection @ G-1400
4+00 spur	0+00 to 4+00	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List.
3+85 spur	0+00 to 3+85	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List.
3+53 spur	0+00 to 3+53	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Pull pipe post-haul in accordance with Culvert List and Np typical sheet. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List.
3+24 spur	0+00 to 3+24	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List
3+21 spur	0+00 to 3+21	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List. Fix intersection @ G-1400.
3+05 spur	0+00 to 3+05	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List.
2+74 spur	0+00 to 2+74	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List

2+49 spur	0+00 to 2+49	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List
15+80 spur	0+00 to 15+80	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List
12+87 spur	0+00 to 12+87	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List
10+60 spur	0+00 to 10+60	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Install culverts in accordance with Culvert List. Apply rock in accordance with Rock List. Shape road in accordance with Typical Section Sheet. Compact road surface in accordance with Compaction List
1+88b spur	0+00 to 1+88	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List
1+88a spur		Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List
1+52 spur	0+00 to 1+52	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List. Fix intersection @ G-1400
1+12 spur	0+00 to 1+12	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Clean and/or construct ditches, headwalls, and catch basins in accordance with Clause 2-7. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List. Fix intersection @ G-1400
0+87 spur	0+00 to 0+87	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 4-38. Shape road as per Typical Section Sheet. Apply rock in accordance with Rock List

Pre-haul maintenance includes, but is not limited to 332.43 stations of right-of-way brushing, right-of-way debris disposal, cleaning ditches, culvert replacement, installing

additional culverts, constructing headwalls, cleaning culvert inlets and outlets, application of rock, grading and shaping existing road surfaces and turnouts, compaction of road surfaces, 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 must be submitted in writing to the Contract Administrator for consideration. Before work begins, Purchaser shall obtain approval from the State for the submitted plan

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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 the road plan will be resolved by giving the documents precedence in the following order:

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-11 HPA REQUIREMENTS

The following work is subject to requirements under a Hydraulics Project Approval (HPA) issued by the state of Washington.

<u>Road</u>	<u>Station(s)</u>	<u>Work</u>
G-1400	30+00	Remove culvert and pull back fill after logging.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

- Orange flagging and paint for construction.
- Stakes for all other road work.

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete pre-haul road work before the start of timber haul.

1-21 HAUL APPROVAL

Purchaser shall not use roads under this road plan any hauling without written approval from the Contract Administrator.

1-23 ROAD WORK PHASE APPROVAL

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

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

SUBSECTION RESTRICTIONS

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

Any road work, right-of-way timber falling and yarding, or heavy equipment operation is not allowed from one hour before official sunrise to two hours after official sunrise, and from one hour before official sunset to one hour after official sunset from April 1st through September 23. This restriction does not apply to hauling timber, rock, or equipment.

This timing restriction applies to all roads in this plan **EXCEPT** the F2010 and F2011 roads, and Elk Valley and Winfield Pit roads.

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

In accordance with Contract Clause G-220 State Suspends Operation, the Contract Administrator 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.

1-33 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

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

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 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. Purchaser shall maintain roads 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>
G-1400	0+00 to 30+00	Grade, shape, and compact road
G-2182	0+00 to 37+25	Grade, shape, and compact 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>
G-1206	9+00
G-1400	19+20
G-1400	29+20
G-2180	12+10
G-2180	24+80
G-2180	29+80

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>	<u>Waste Area Location</u>
G-2180	27+20 to 72+50	Right	Per clause 4-38
G-2182	37+25 to 50+00	Right	Per clause 4-38
G-1206	16+00 to 28+00	Left	Per clause 4-38
G-1206	29+00 to 46+00	Right	Per clause 4-38
G-1400	30+40 to 33+40	Left & Right	Per clause 4-38
G-1400	44+00 to 47+00	Right	Per clause 4-38
1+12 spur	0+00 to 1+12	Right	Per clause 4-38
1+52 spur	0+00 to 1+52	Right	Per clause 4-38
3+21 spur	0+00 to 3+21	Right	Per clause 4-38
15+80 spur	0+00 to 6+50	Left	Per clause 4-38
15+80 spur	7+50 to 12+00	Right	Per clause 4-38
4+00 spur	0+00 to 4+00	Left	Per clause 4-38
10+60 spur	0+00 to 5+00	Left	Per clause 4-38
2+49 spur	0+00 to 2+49	Right	Per clause 4-38
F-2005	0+00 to 17+50	Left	Per clause 4-38
F-2010	11+00 to 18+50	Right	Per clause 4-38
3+85 spur	0+00 to 3+00	Right	Per clause 4-38

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), vegetative material up to 5 inches in diameter, including limbs, shall be cut as shown on the Brushing Detail. Brushing shall be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation shall not be disturbed unless directed by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
G-1206	0+00 to 16+00
12+87 spur	0+00 to 12+87

3-2 BRUSHING RESTRICTION

On the following road(s), pulling, digging, pushing over, and other non-cutting methods used for vegetation removal may not be used for brushing. Excavator buckets, log loaders and similar equipment may not be used for brushing unless otherwise approved in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
G-1206	0+00 to 16+00
12+87 spur	0+00 to 12+87

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material that will make a merchantable log between the marked right-of-way boundaries and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

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

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

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

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.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

In the following waste area(s), Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

Road	Waste Area	Stations
10+60 spur	4+25	1
15+80 spur	5+60	1

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

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

SUBSECTION PILE

3-32 END HAULING ORGANIC DEBRIS

On slopes greater than 45%, Purchaser shall end haul or push organic debris to the designated waste areas specified below, or to a waste area located by the Contract Administrator.

<u>Road</u>	<u>Waste area station</u>
15+80 spur	4+25
10+60 spur	5+60
F-2005	2+25

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 may not extend past construction that will be completed during the current construction season.

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for new construction road grade and alignment.

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

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

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

4-5 CUT SLOPE RATIO

Purchaser shall construct excavation slopes 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

Purchaser shall construct embankment slopes 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

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

Curve widening is modified as follows:

<u>Road</u>	<u>Stations</u>	<u>Curve Widening (ft)</u>
G-1206	28+50 to 29+50	10

4-12 FULL BENCH CONSTRUCTION

Where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS

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

<u>Road</u>	<u>Stations</u>
1+12 spur	0+00 to 0+45
1+52 spur	0+00 to 0+45
3+21 spur	0+00 to 0+45

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 1+12, 1+52, and 3+21 spurs where they intersect the G-1400 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>Stations</u>	<u>L or R</u>
G-1206	28+50	L
G-1206	44+75	R
G-1206	45+60	R
12+87 spur	12+40	L
G-1400	30+40	L & R
G-2180	53+00	R
G-2180	58+30	L
2+49 spur	2+25	R
F-2005	13+00	L
F-2005	14+75	L
F-2010	18+50	R

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

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in the listed designated areas or approved by the Contract Administrator. Additional waste areas may also be identified or approved by the Contract Administrator. The amount of material allowed in a waste area is as listed.

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>	<u>Volume</u>
15+80 spur	4+25		500
10+60 spur	5+60		500
F-2005	2+25		500

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.

SUBSECTION BORROW

4-45 SELECT BORROW

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

4-46 COMMON BORROW

Common borrow consists of soil, and/or aggregate that is non-plastic and contains no more than 5% clay, organic debris, or trash by volume. The material is considered non-

plastic if the fines in the sample cannot be rolled, between the hand and a smooth surface, into a thread at any moisture content.

4-47 NATIVE MATERIAL

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

4-48 BORROW MATERIAL

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

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

4-56 DRY WEATHER SHAPING

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

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 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.

SECTION 5 – DRAINAGE

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.

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

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts shall be installed with a depth of cover of not less than 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 $\frac{3}{4}$ foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet.

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.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culvert(s), rip rap shall be set in place immediately following construction of the embankment. Rock shall be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the Typical Type Ns Np Culvert Installation Detail as directed by the Contract Administrator. Rock shall not restrict the flow of water into culvert inlets or catch basins. Rock shall be set in place by machine. Placement shall be by zero-drop-height method only. No placement by end dumping or dropping of rock shall be allowed.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>
G2180	50+50	Oversize

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	T27N R12W SW1/4 Sec 35	1 ¼” Minus crushed rock stockpile; and dig & load; pitrun, oversize, and Light loose rip rap.
Elk Valley	T28N R13W Sec2	Dig & load pitrun, oversize, and light loose rip rap.

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 40 cubic yards of 1 ¼” minus crushed rock.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Quantity</u>
---------------	-----------------	------------------	-----------------

Winfield North	T27N R12W SW1/4 Sec 35	1 ¼" Minus	40 cy
----------------	------------------------	------------	-------

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 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

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

SECTION 7 – STRUCTURES

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures(s) must be removed from state land. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL

On the following road(s), sediment control shall be accomplished as listed below.

<u>Road</u>	<u>Station</u>	<u>Comments</u>
G-1400	29+00	5 catch basins (right and left)
G-1206	8+00	5 catch basins left
G-1206	28+00	5 catch basins left
G-2180	16+00	5 catch basins left

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall furnish and evenly spread a 3-inch layer of hay 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

SUBSECTION STRUCTURES

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

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
3+53 spur	At 0+50	Pull Pipe
G-1400	At 30+00	Pull Pipe per drawings/HPA stipulations

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 ⁻¹
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.

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 must 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.

10-19 CORRUGATED ALUMINUM STRUCTURAL PLATE

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

10-20 FLUME AND DOWNSPOUT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

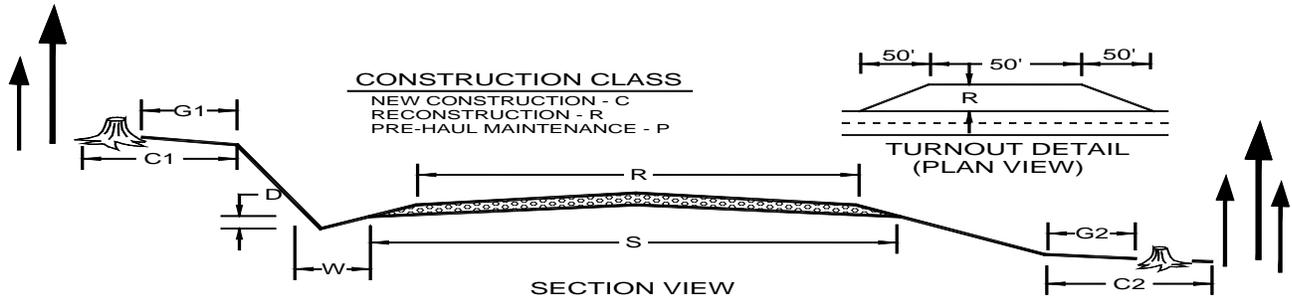
Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

10-24 GAGE AND CORRUGATION

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

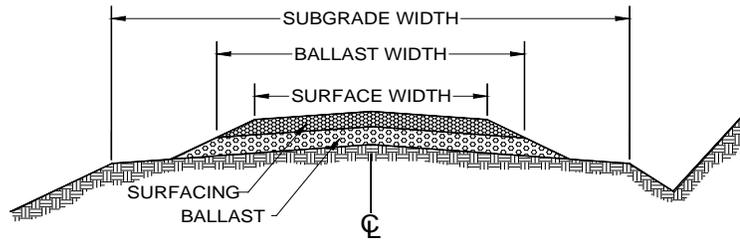
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 48"	14 (0.079")	2 2/3" X 1/2"
54" to 96"	14 (0.079")	3" X 1"

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)
3+37 spur	0+00	3+37	C	17	12	3	3	1	5	5	10	5
G-2182	0+00	50+00	P		12	3	3	1	5	5	10	5
G-2180	0+00	71+50	P		12	3	3	1	5	5	10	5
G-1400	0+00	52+00	P		12	3	3	1	5	5	10	5
G-1206	0+00	46+00	P		12	3	3	1	5	5	10	5
G-1206	46+00	50+00	P		12	3			5	5	10	5
F-2011	0+00	6+00	P		12	3	3	1	5	5	10	5
F-2010	0+00	18+50	P		12	3	3	1	5	5	10	5
F-2005	0+00	17+70	P		12	3	3	1	5	5	10	5
5+82 spur	0+00	5+82	P		12	-3/+3			5	5	10	5
4+75 spur	0+00	4+75	P		12	3	3	1	5	5	10	5
4+00 spur	0+00	4+00	P		12	3	3	1	5	5	10	5
3+85 spur	0+00	3+85	P		12	3	3	1	5	5	10	5
3+53 spur	0+00	3+53	P		12	-3/+3			5	5	10	5
3+24 spur	0+00	3+24	P		12	+3/-3			5	5	10	5
3+21 spur	0+00	3+21	P		12	3	3	1	5	5	10	5
3+05 spur	0+00	3+05	P		12	3			5	5	10	5
2+74 spur	0+00	2+74	P		12	3			5	5	10	5
2+49 spur	0+00	2+49	P		12	3	3	1	5	5	10	5
15+80 spur	0+00	15+80	P		12	3	3	1	5	5	10	5
12+87 spur	0+00	12+87	P		12	+3/-3			5	5	10	5
10+60 spur	0+00	5+00	P		12	3	3	1	5	5	10	5
10+60 spur	5+00	10+60	P		12	+3/-3			5	5	10	5
1+88b spur	0+00	1+88	P		12	3	3	1	5	5	10	5

ROCK LIST SHEET



SECTION VIEW

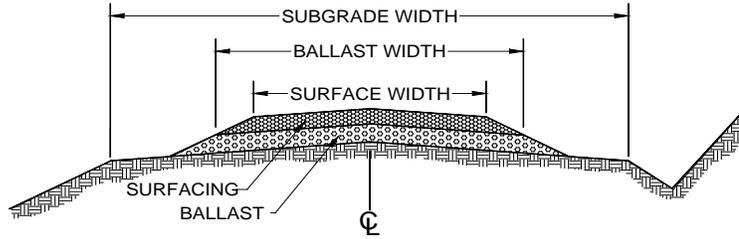
1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun 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 Pitrun, 2: Winfield 1 ¼" minus 3: Elk Valley Pitrun

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
G-1206	16+00	31+00		1	12	6	35	525							
Misc.				1			--	225							
culvert	19+00			1				20							
Curve widening	28+50	29+50		1				50							
Culvert	31+45			1				20						1	1
Culvert	40+90			1				20						1	1
Turnout	41+50			1				20							
Turnaround	46+00			1				50							
12+87 spur															
Misc.				1				215							
3+05 spur	0+00	3+05		1	12	6	35	110							
Misc.				1				25							
2+74 spur															
Misc.				1				65							
														1	1
Totals:								1345					0		3

ROCK LIST SHEET CONTINUED



SECTION VIEW

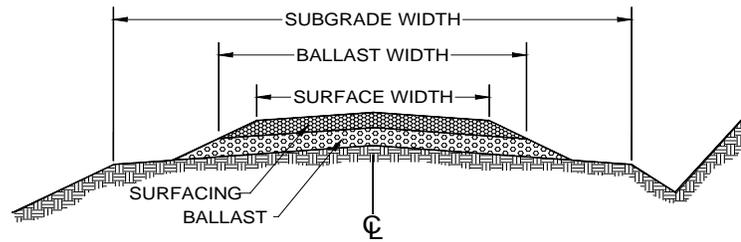
1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun 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 Pitrun, 2: Winfield 1 ¼" minus 3: Elk Valley Pitrun

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
1+12 spur	0+00	1+12		1	12	6	35	40							
Flare intersect.L	0+00	25+00		1				20							
1+52 spur	0+00	1+52		1	12	6	35	50							
Flare intersect.L	0+00	25+00		1				20							
3+21 spur	0+00	3+21		1	12	6	35	110							
Flare intersect.R	0+00	25+00		1				20							
4+75 spur	0+00	4+75		1	12	6	35	170							
G-2182	misc			1				190							
Culvert	4+00			1				20						1	1
Culvert	30+75			1				20						1	1
10+60 spur	0+00	10+60		1	12	3	15	160							
Culvert	0+00			1				40						1	1
4+00 spur	0+00	4+00		1	12	3	15	60							
Culvert	0+00			1				40						1	1
15+80 spur	0+00	15+80		1	12	3	15	240							
Culvert	0+00			1				40						1	1
Totals:								1240					0		5

ROCK LIST SHEET CONTINUED



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 Pitrun, 2: Winfield 1 ¼" minus 3: Elk Valley Pitrun

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
G-2180															
Culvert	50+50			1				30						1	1
Culvert	66+20			1				20						1	1
Culvert	67+90			1				20						1	1
Spot patch	27+90	(fix hole)						40							
Spot patch	18+90			1				20							
6" lift	45+50	69+50		1	12	6	35	840							
3+53 spur	Misc.			1				50							
5+82 spur	Misc.			1				90							
0+87 spur	Misc.			1				10							
2+49 spur	Misc.			1				40							
3+85 spur	Misc.			1				60							
Culvert	0+50							20						1	1
F-2010															
approach	0+00	0+50							2	20	6	20	40		
6" lift	11+00	18+50		3	12	6	35	260							
F-2011															
Turnaround	5+50			3				50							
Totals:								1550					40	4	

CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	DOWNPOUT LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
G-2182	4+00	18	26			.5	.5	PR	New culvert
G2182	30+75	18	30			.5	.5	PR	Replace existing culvert
G-2180	9+70								Fix pipe inlet and clean
G-2180	12+10								Clean inlet and outlet
G-2180	24+80								Clean inlet
G-2180	29+80								Clean inlet
G-2180	50+50	24	60			1	1	PR	Replace existing culvert
G-2180	66+20	18	26			.5	.5	PR	New culvert
G-2180	67+90	24	26			.5	.5	PR	New culvert (seep)
3+85 spur	0+50	18	26			.5	.5	PR	New culvert
10+60 spur	0+00	18	40			.5	.5	PR	Road approach
4+00 spur	0+00	18	40			.5	.5	PR	Road approach
15+80 spur	0+00	18	40			.5	.5	PR	Road approach
G-1206	9+00								Clean Inlet
G-1206	19+00	18	26			.5	.5	PR	New culvert
G-1206	31+45	18	30			.5	.5	PR	New culvert
G-1206	40+90	18	30			.5	.5	PR	New culvert
G-1400	12+10	18	30			.5	.5	PR	Replace existing culvert
G-1400	19+19								Clean inlet & outlet
G-1400	30+00								Pull pipe after logging
G-1400	47+00	18	30			.5	.5	PR	New culvert
F-2005	1+75	18	26			.5	.5	PR	New culvert
F-2005	6+00	18	26			.5	.5	PR	New culvert
3+53 spur	0+50								Pull pipe after logging

COMPACTION LIST

Road	Stations	Type	Max Depth Per Lift (inches)	Equipment Type	Min Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
Prehaul	All	Culvert Backfill	8"	Jumping Jack		2	
Construction	All	Subgrade	6"	Vibratory Smooth Drum	6,000	2	3
Construction	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3
Prehaul	All	Rock Lifts	6"	Vibratory Smooth Drum	6,000	2	3
F2000	MP 0.26 to MP 1.22	Existing Surface	6"	Vibratory Smooth Drum	6,000	2	3

Typical Type Ns, Np Culvert Installation Detail Sheet.

-Water shall be diverted away from the work site before any "in stream" work begins, and shall continue until culvert installation is complete.

-Culvert lay shall match stream gradient up to 5%.

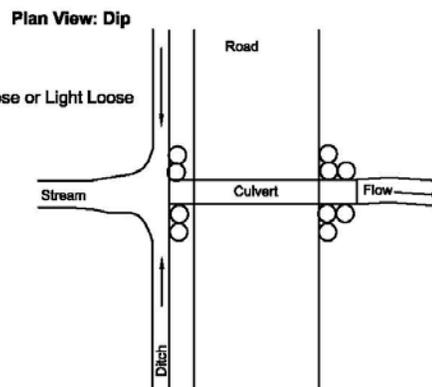
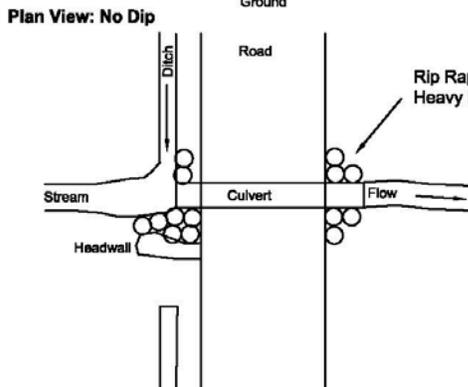
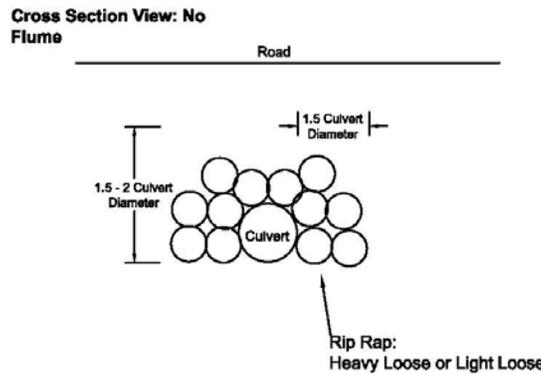
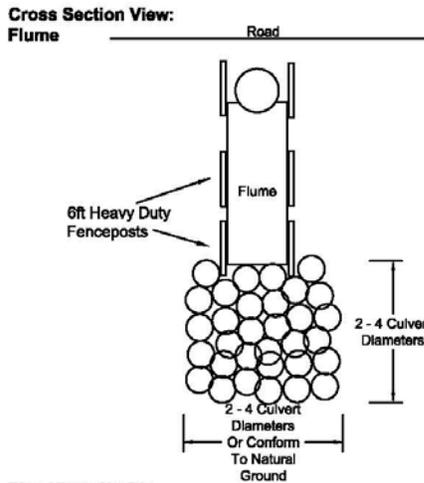
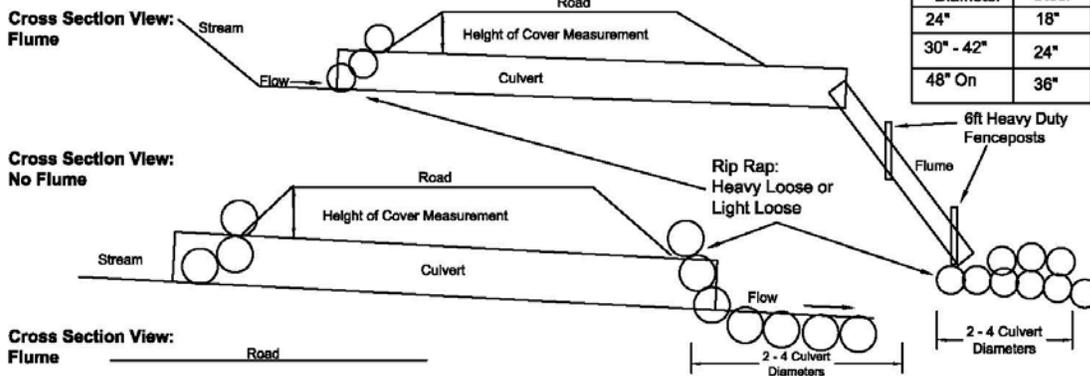
-Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.

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

-Rip rap shall be placed at headwalls, along the fill at the inlet, and at the end off flumes in accordance with this Detail. On culverts with no flume rip rap shall be placed along the fill at the outlet, unless there is stream drop or it is called for in the Road Plan, at which point it will be installed as an energy dissipater at the end of the culvert as specified in this Detail. All rip rap distance to be determined by the Contract Administrator or the District Engineer.

-Backfill compaction shall be achieved using a jumping jack, walk behind vibratory roller, 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 3 times the width of the compactor footprint used.

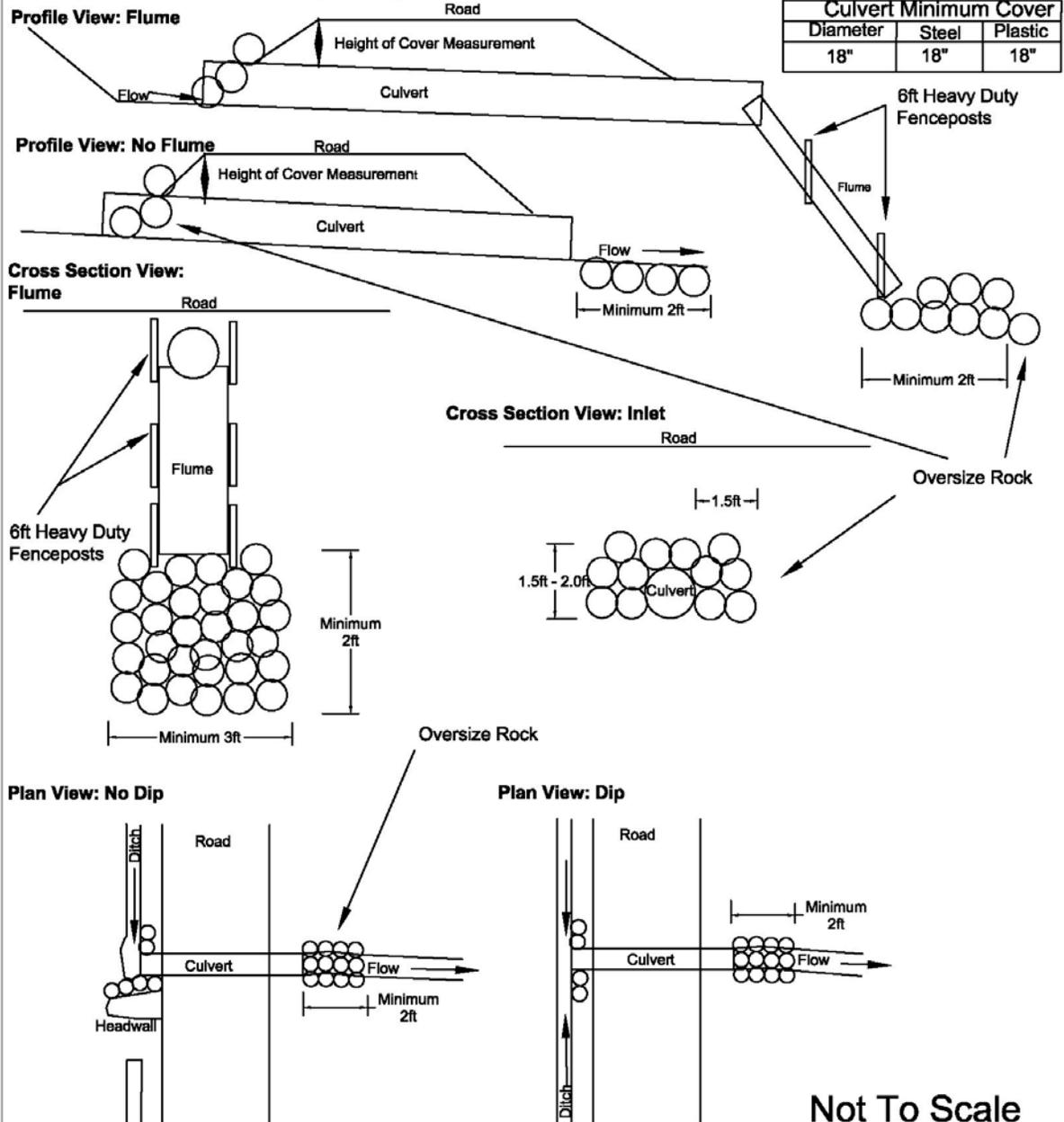
Culvert Minimum Cover		
Diameter	Steel	Plastic
24"	18"	24"
30" - 42"	24"	24"
48" On	36"	36"



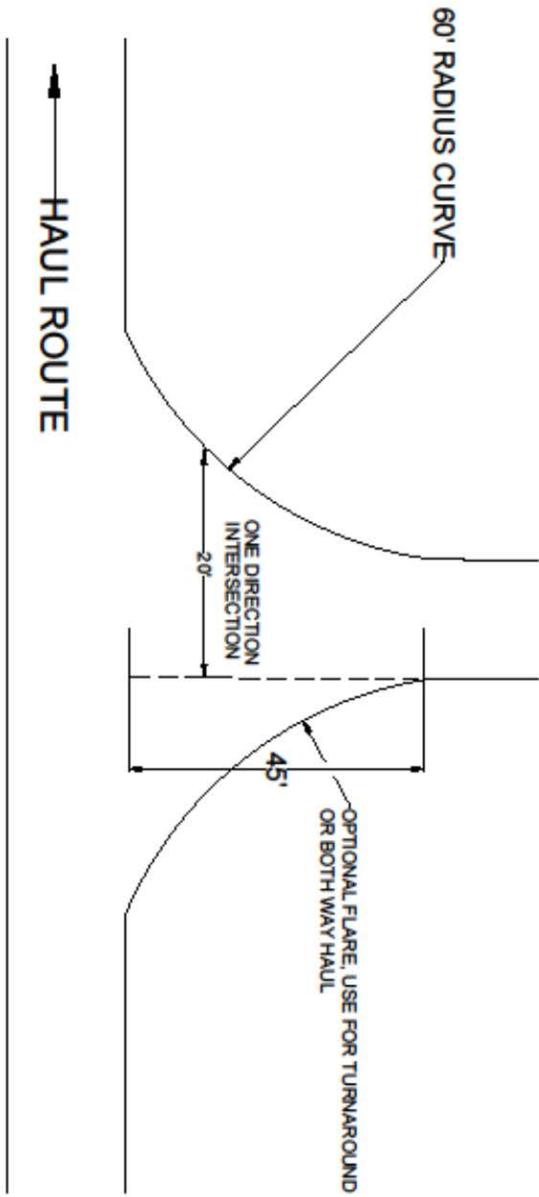
Not To Scale

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 off 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.

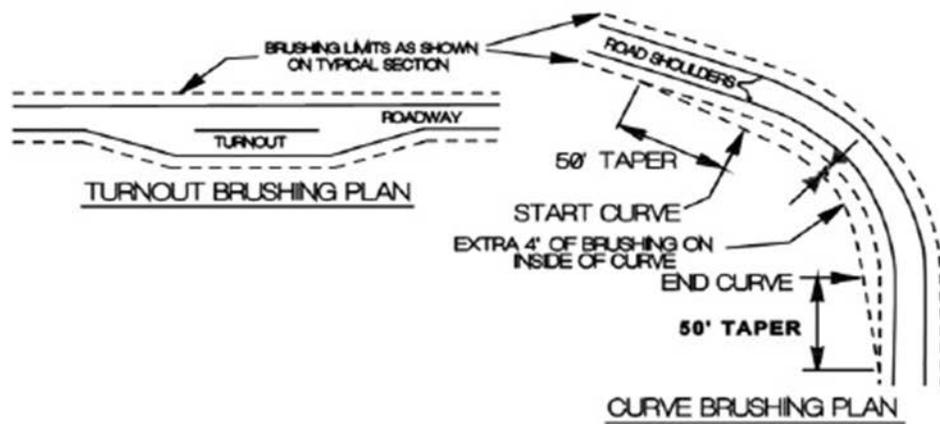
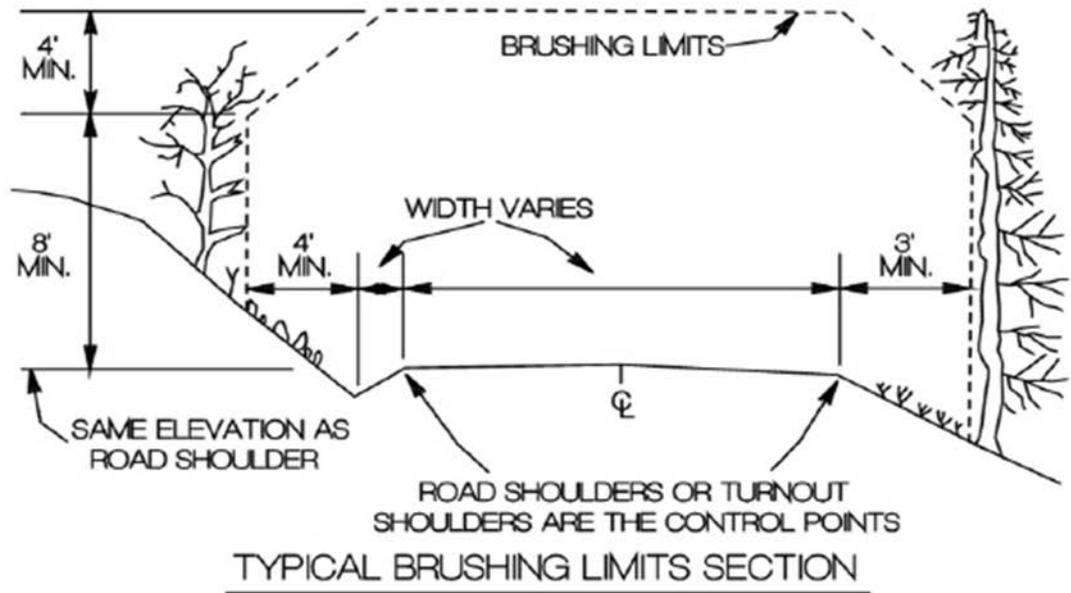


TYPICAL INTERSECTION



NOT TO SCALE

BRUSHING DETAIL



- 1) ALL VEGETATION WITHIN THE BRUSHING LIMITS SHALL BE CUT TO WITHIN 8' OF THE GROUND, UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR.
- 2) ALL BRUSH, TREES, LIMBS, ETC. SHALL BE REMOVED FROM THE ROAD SURFACE.
- 3) ALL BRUSH, TREES, LIMBS, ETC. THAT MAY RESTRICT THE FLOW OF WATER SHALL BE REMOVED FROM THE DITCH LINE.
- 4) ALL DEBRIS THAT MAY ROLL OR MIGRATE INTO THE DITCHLINE SHALL BE REMOVED.

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

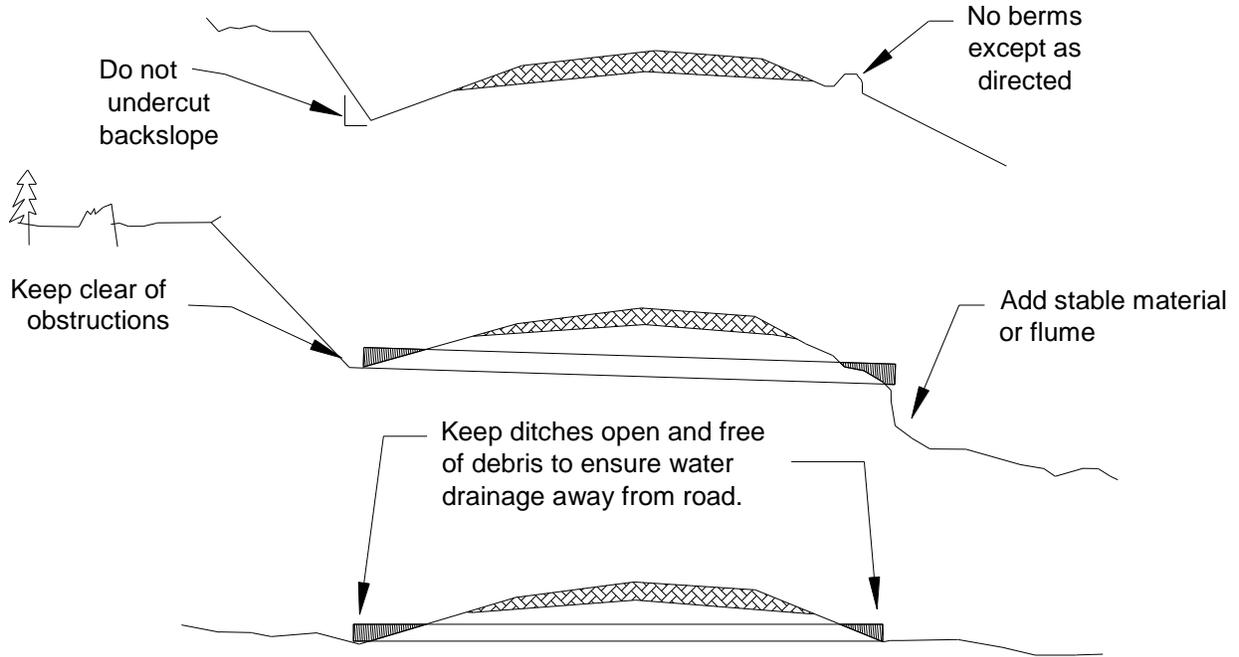
Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

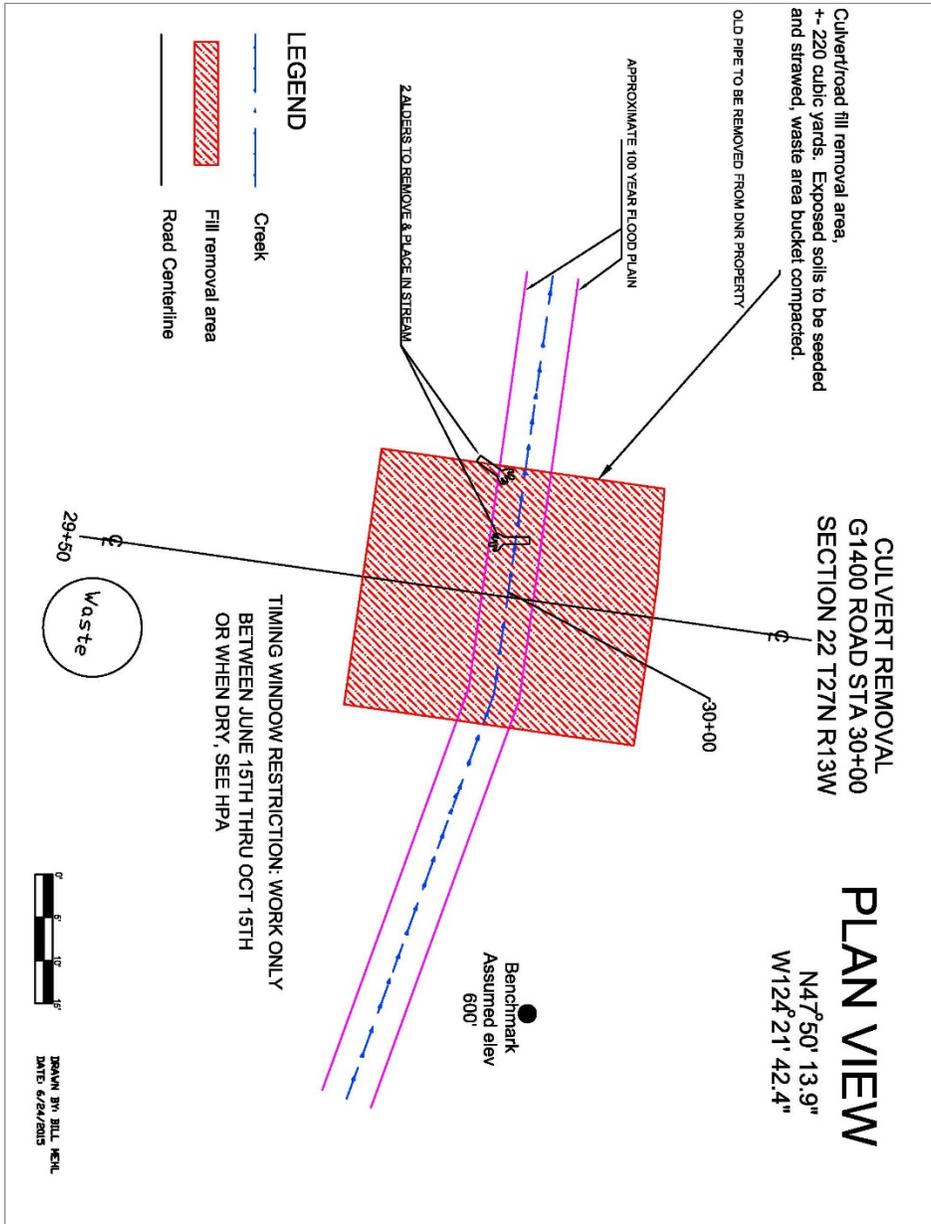
Termination of Use or End of Season

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

Debris

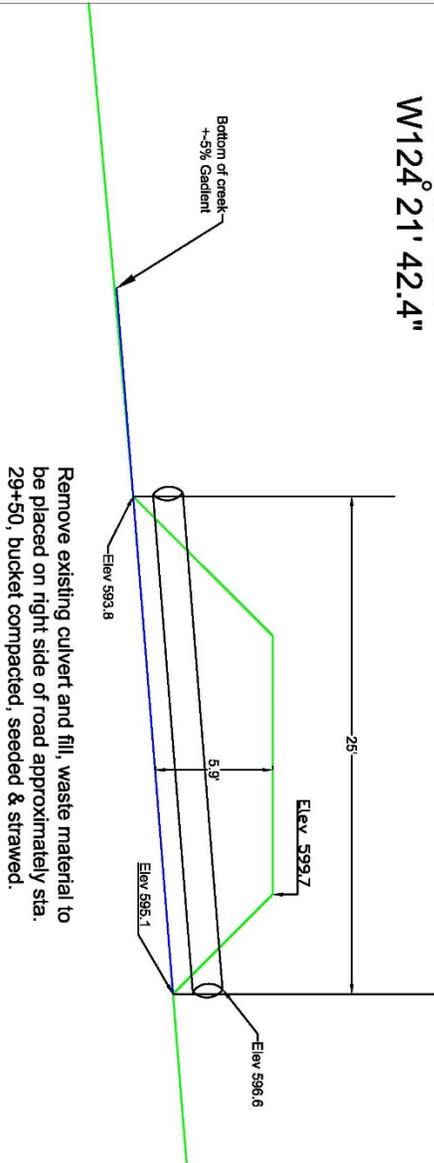
Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.





PROFILE VIEW
N47°50' 13.9"
W124°21' 42.4"

CULVERT REMOVAL
G1400 ROAD STA 30+00
SECTION 22 T27N R13W

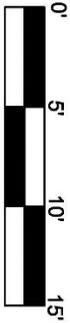


Elevations off of benchmark
 Note: BM assumed elevation: 600'

TIMING WINDOW RESTRICTION: WORK ONLY
BETWEEN JUNE 15TH THRU OCT 15TH
OR IF DRY. SEE HPA

LEGEND

- EXISTING GROUND
- FINAL GROUND LINE

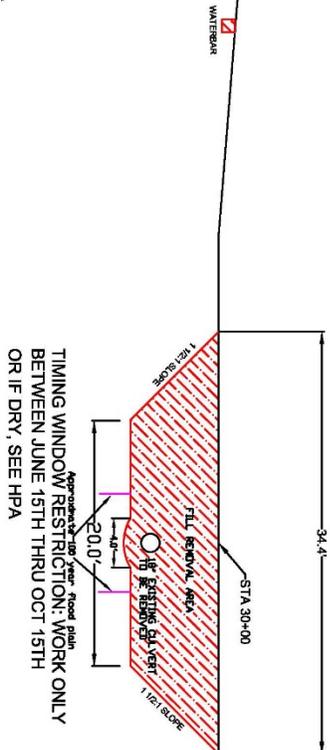


DRAWN BY: BILL MEHL
 DATE: 3/25/2015

CROSS SECTION VIEW

N47° 50' 13.9"
W124° 21' 42.4"

CULVERT REMOVAL
G1400 ROAD STA 30+00
SECTION 22 T77N R13W



Approximate 100 year flood plain
TIMING WINDOW RESTRICTION: WORK ONLY
BETWEEN JUNE 15TH THRU OCT 15TH
OR IF DRY, SEE HPA

- NOTES**
- FILL TO BE MOVED TO APPROXIMATELY STA 29+50
 - BACKSLOPES 1 1/2:1
 - ALL EXPOSED SOILS TO BE SEEDED & STRAWED
 - 20' VALLEY WIDTH, WITH A 4' BY 6" DEEP CHANNEL



DRAWN BY: BILL MEHL
DATE: 3/25/2015

DEPARTMENT OF NATURAL RESOURCES

FORM 0-87(Rev. 01-08)

SUMMARY - Road Development Costs

SALE NAME: Goodman Dem CONTRACT#: 30-092344 REGION: Olympic

DISTRICT: Coast

TOTAL SHEET #23

ROAD NAME:	3.137 spur	G-2182	G-2180	G-1400	G-1206	F-2011	F-2010	F-2005	5.182 spur	4.75 spur	4.00 spur	TOTAL:	TOTAL:	
ROAD TYPE:	Construction	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul			
NUMBER OF STATIONS:	3.37	50	72	52	50	6	19	18	6	5	4	283.67	119.65	
SIDE SLOPE:	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%			
CLEARING AND GRUBBING:	\$303	0	0	0	0	0	0	0	0	0	0	\$303	\$0	
ROAD BRUSHING:	\$0	0	0	0	288	0	0	0	0	0	0	\$288	\$232	
EXCAVATION AND FILL:	\$607	0	0	0	0	0	0	0	0	0	0	\$607	\$0	
ROAD GRADING:	\$0	325	465	338	325	39	49	0	38	31	26	\$1,635	\$441	
DITCH CLEANING/CONSTRUCTION:	\$0	0	714	390	975	0	293	690	185	185	156	\$3,246	\$1,213	
ROCK TOTALS (Cu. Yds.):														
Ballast:	6301	6,300	3,106	13,541	14,435	11,169	331	1,718	2,601	1,261	1,907	1,349	\$53,123	\$18,095
Surface:	40	40	0	0	0	0	0	0	0	0	0	0	\$418	\$0
Oversize:	16	16	30	62	25	27	0	0	17	0	15	161	\$45	
CULVERTS AND PIPES:	\$0	1,232	2,913	1,320	1,892	0	0	1,144	0	0	880	\$8,501	\$2,332	
STRUCTURES:	\$0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	
MISC. EXPENSES:	\$6	1,273	2,413	1,116	2,691	11	578	1,356	431	353	297	\$10,227	\$5,348	
OVERHEAD:	\$476	477	1,609	1,410	1,389	30	244	465	138	198	218	\$6,438	\$2,217	
TOTAL COSTS:	\$4,446	\$6,444	\$21,715	\$19,034	\$18,757	\$412	\$3,299	\$6,273	\$1,868	\$2,674	\$2,941	\$87,863	\$29,923	
COST PER STATION:	\$1,319	\$129	\$304	\$366	\$375	\$69	\$178	\$354	\$319	\$863	\$735	\$310	\$256.14	

MOBILIZATION: \$6,400
ROAD DEACTIVATION AND ABANDONMENT COSTS: \$0
PW Work: \$0

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

TOTAL (All Roads) = \$124,186
SALE VOLUME MBF = 2,096
TOTAL COST PER MBF = \$59.25
TOTAL COST PER STATION = \$307.91
Compiled by: Bill Walsh Date: 03/31/15

Goodman Demo ROAD COSTFinal .xlsx

SUMMARY - Road Development Costs
 SALE NAME: Goodman Dam CONTRACT#: 30-092344 REGION: Oymjpc
 LEGAL DESCRIPTION: 0

DISTRICT: Cass

ROAD NAME:	3+43 spur	3+51 spur	3+24 spur	3+21 spur	3+05 spur	2+74 spur	2+49 spur	15+80 spur	12+87 spur	10+60 spur	1+88b spur	1+88a spur	1+52 spur	1+12 spur	0+87 spur	F2000
ROAD TYPE:	Prebid	Prebid	Prebid	Prebid	Prebid	Prebid	Prebid	Prebid	Prebid							
NUMBER OF STATIONS	3.85	3.53	3.24	3.21	3.05	2.74	2.49	15.80	12.87	10.60	1.88	1.88	1.52	1.12	0.87	51.00
SIDE/SLOPE:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CLEARING AND GRUBBING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD BRUSHING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$212	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EXCAVATION AND FILL:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD GRADING:	\$25	\$23	\$21	\$21	\$20	\$18	\$17	\$103	\$84	\$69	\$12	\$12	\$10	\$7	\$6	\$332
DITCH/CLEANING/CONSTRUCTION:	\$117	\$0	\$0	\$125	\$0	\$0	\$97	\$429	\$0	\$195	\$73	\$73	\$59	\$44	\$34	\$0
ROCK TOTALS (Cal Yds.):	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ballast:	\$1,113	\$729	\$901	\$1,215	\$1,618	\$782	\$563	\$1,794	\$2,583	\$2,833	\$212	\$407	\$786	\$339	\$140	\$0
Surface:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Oversize:	\$15	\$0	\$0	\$0	\$0	\$0	\$0	\$15	\$0	\$15	\$0	\$0	\$0	\$0	\$0	\$0
CULVERTS AND PIPES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$880	\$0	\$880	\$0	\$0	\$0	\$0	\$0	\$0
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:	\$286	\$512	\$241	\$239	\$227	\$204	\$205	\$1,175	\$977	\$788	\$160	\$140	\$113	\$83	\$65	\$94
OVERHEAD:	\$170	\$101	\$93	\$130	\$149	\$80	\$71	\$512	\$310	\$382	\$37	\$51	\$77	\$54	\$20	\$14
TOTAL COSTS:	\$2,299	\$1,366	\$1,256	\$1,749	\$2,014	\$1,084	\$953	\$6,907	\$4,185	\$5,162	\$494	\$683	\$1,045	\$727	\$264	\$459
COST PER STATION:	\$597.22	\$386.83	\$387.56	\$544.88	\$660.36	\$395.48	\$382.69	\$437.15	\$325.16	\$486.96	\$262.88	\$363.46	\$687.57	\$648.97	\$303.60	\$9.01

TOTAL
 Costs \$30,647
 Stations 118.65
 Construction \$2,981.14