

TIMBER NOTICE OF SALE

SALE NAME: *N-1100 VDT*

AGREEMENT NO: *30-090940*

AUCTION: March 30, 2016 starting at 10:00 a.m.,
Olympic Region Office, Forks, WA

COUNTY: Jefferson

SALE LOCATION: Sale located approximately 25 miles south of Forks, WA

**PRODUCTS SOLD
AND SALE AREA:**

All timber as described in Schedule B, except those trees as described in Schedule C, bounded by timber sale boundary tags, a blazed line, the N-1100 Road and double blue painted slashes in Unit 1.

All timber as described in Schedule B, except those trees as described in Schedule C, bounded by timber sale boundary tags, N-1100 Road, K-1100 Road, K-1108 Road, K-1250 Road, K-1258 Road, K-1259.1 Road, K-1170 Road, K-1100.64B Road, K-1107 Road and double blue painted slashes in Unit 2. All timber in areas marked as clearcut gaps on the timber sale map, bounded by special management unit boundary tags in Unit 2.

All timber as described in Schedule B, except those trees as described in Schedule C, bounded by timber sale boundary tags, the K-1107 Road, K-1100 Road, K-1100.56 Road, K-1100.55 Road and double blue painted slashes in Unit 3. All timber in areas marked as clearcut gaps on the timber sale map, bounded by special management unit boundary tags and the K-1107 Road in Unit 3.

All timber, as described in Schedule B, except those trees as described in Schedule C, bounded by timber sale boundary tags, double blue painted slashes, K-1100 Road, K-1151 Road, K-1153 Road, K-1100.46 Road, K-1106 Road, K-1165 Road and timber type change in Unit 4. All timber in areas marked as clearcut gaps on the timber sale maps, bounded by special management unit boundary tags in Unit 4.

All timber bounded by timber sale boundary tags, the K-1100 Road and the K-1100.38 Road in Unit 5.

All timber, except trees marked with blue paint or bounded out by leave tree area tags, bounded by timber sale boundary tags, timber type change, the K-1165 Road, and special management unit boundary tags in Unit 6.

All timber bounded by right of way boundary tags.

In no instance shall downed red cedar be removed.

All timber that has been on the ground for five years or more shall be left undisturbed and not yarded (five years is defined by more than 1.5 inches of sap rot). on part(s) of Sections 7 all in Township 25 North, Range 12 West, Sections 1, 11, 12, 14 and 15 all in Township 25 North, Range 13 West, W.M., containing 435 acres, more or less.

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

TIMBER NOTICE OF SALE

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	Total Tons	Price \$/Ton	MBF by Grade						UT		
						1P	2P	3P	SM	1S	2S		3S	4S
Hemlock	12.1	6	2,436	25,425	\$1.30						10	1,383	972	72
Douglas fir	12.5	5	910	9,203	\$1.30						65	453	370	21
Red alder	11.2		36	373	\$1.00							6	30	26
Red cedar	12.5		32	302	\$78.00								32	
Silver fir	9.9		32	280	\$1.30							10	22	
Spruce	9.9		14	133	\$1.30							15	14	
Sale Total			3,460	35,716										

MINIMUM BID: \$1.3/ton (est. value \$69,000.00)

BID METHOD: Sealed Bids

PERFORMANCE

SECURITY: \$13,800.00

SALE TYPE: Tonnage Scale

EXPIRATION DATE: October 31, 2018

ALLOCATION: Export Restricted

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

BID DEPOSIT: \$6,900.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable - 63%/Ground-37%. Rubber tire skidders may be allowed when conditions of clauses H-016, H-017 and H-040 can be met. 30' equipment limitation zones on all typed waters. There will be no operations (except 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 for marbled murrelet restrictions. Falling and Yarding will not be permitted from October 15 to April 15 unless authorized in writing by the Contract Administrator.

ROADS: 9.82 stations of optional construction. 134.12 stations of optional reconstruction. 728.04 stations of required pre-haul maintenance. 81.95 stations of optional pre-haul maintenance. 16.51 stations of required deactivation. There will be no operations (except 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 for marbled murrelet restrictions. Pre-haul maintenance, reconstruction, deactivation, rock and timber haul, and Road construction will not be permitted from October 15 to April 15 unless authorized in writing by the Contract Administrator. The hauling of forest products will not be permitted from October to April 15 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

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

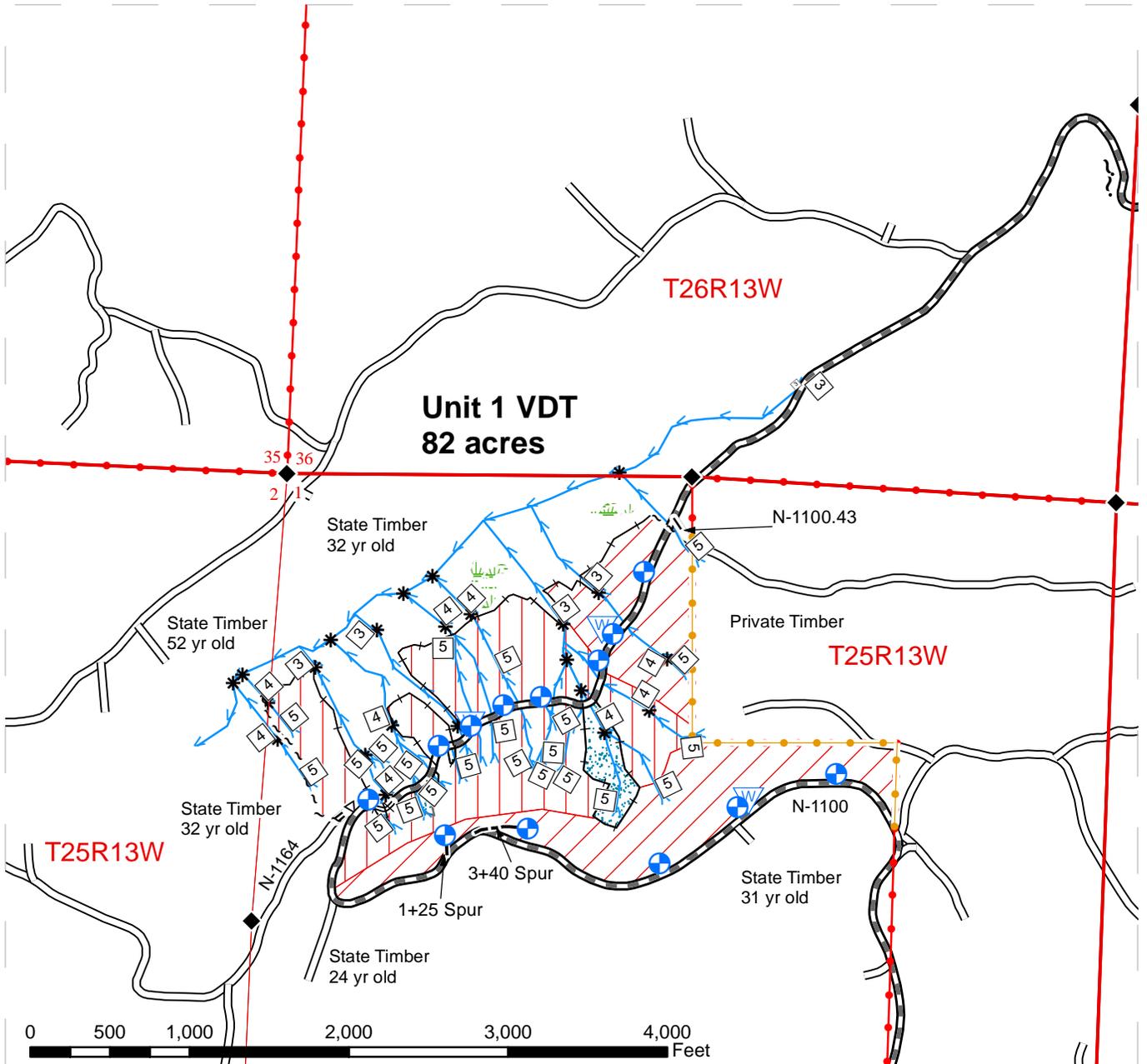
FEES: \$61,415.00 is due on day of sale. \$1.08 per ton is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: There are locked gates on the Winfield Pits - contact the Olympic Region Dispatch Center at 360-374-2800 to obtain a AA-1 key.

TIMBER SALE MAP

SALE NAME: N-1100 VDT
AGREEMENT#: 30-090940
TOWNSHIP(S): T25R12W, T25R13W
TRUST(S): Common School (3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 393- 1368

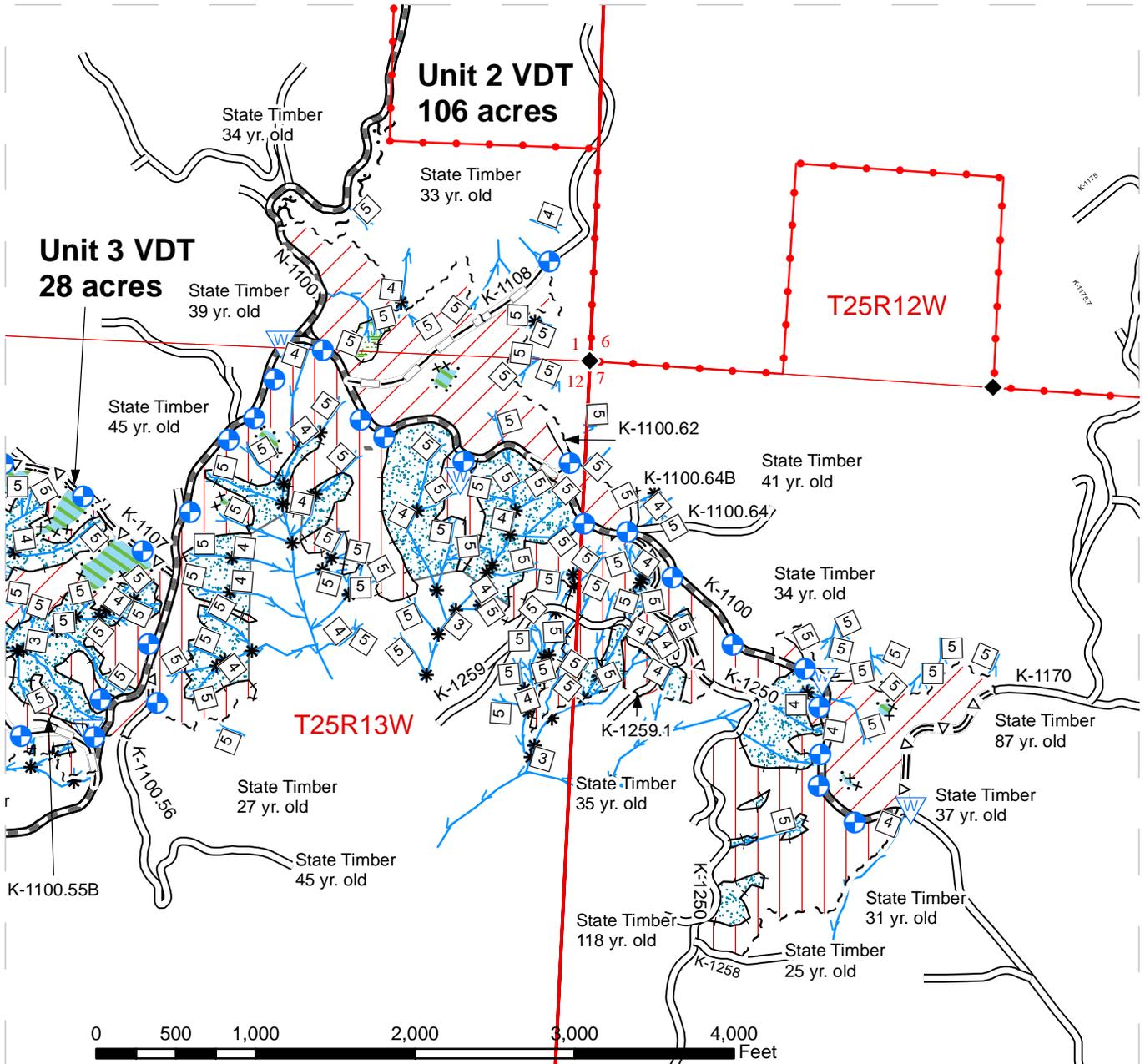


Unit_Boundaries	Waste Area	Right of Way	RMZ / Non-Op
Blaze Line	Landing	Stream Break	WMZ
Timber Sale Boundary Tags	Optional Construction	Streams	Clearcut Gap
Leave Tree Area Tags	Required Reconstruction	Stream Types	RD_50
Double Blue Painted Slashes	Required Prehaul Maintenance	Cable	DNR Managed Lands
Special Management Tags	Optional Prehaul Maintenance	Ground	Public Land Survey Sections
Timber Type Change	Optional Reconstruction	VRH	Public Land Survey Townships
	Required Deactivation		Monumented Corners

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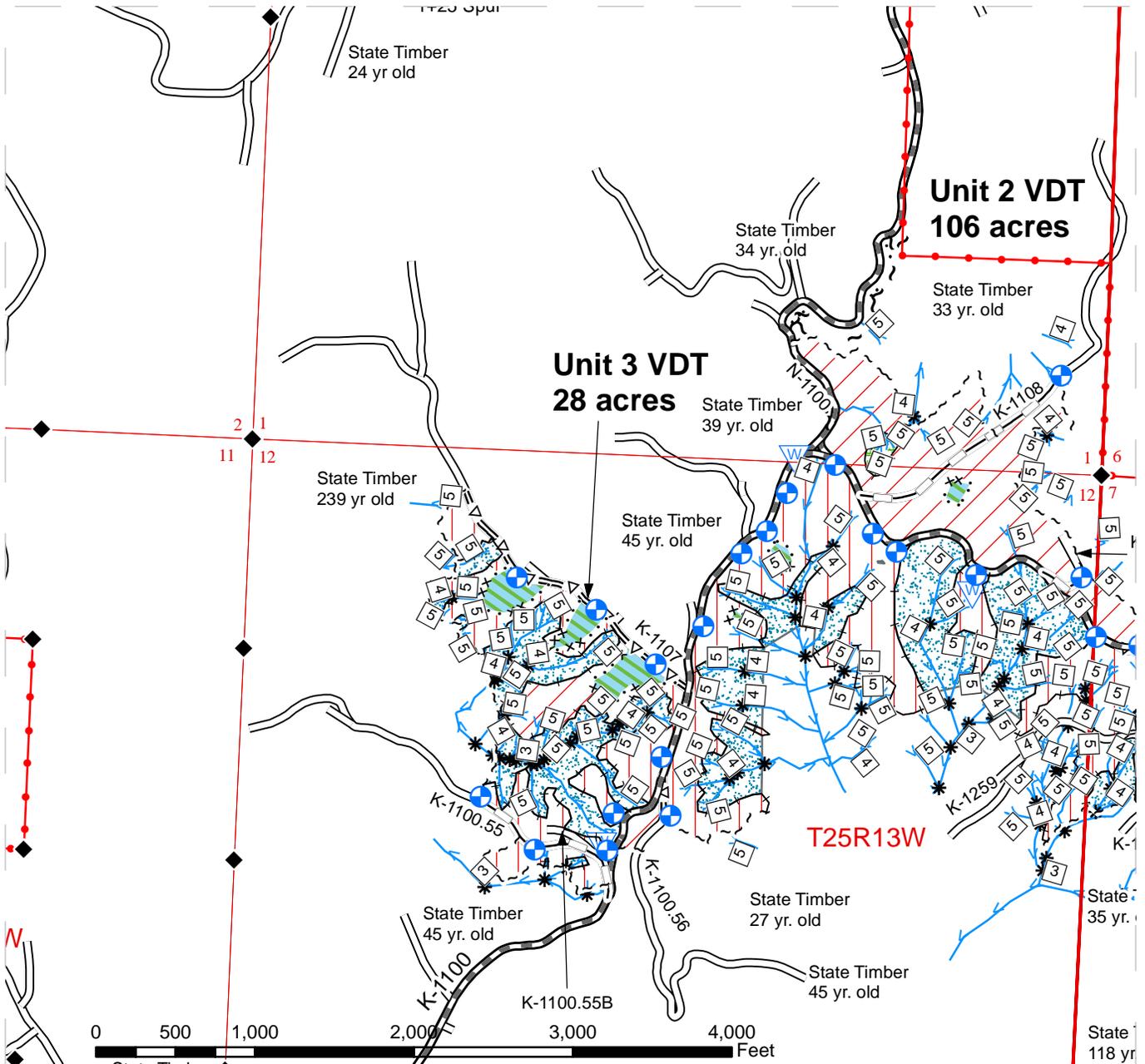


Unit_Boundaries		Waste Area		Right of Way		RMZ / Non-Op	
●—●	Blaze Line	⚠	Waste Area	~ ~ ~	Right of Way	▨	RMZ / Non-Op
~ ~ ~	Timber Sale Boundary Tags	⊕	Landing	*	Stream Break	▨	WMZ
⊕ ⊕ ⊕	Leave Tree Area Tags	---	Optional Construction	→	Streams	▨	Clearcut Gap
—+—+—	Double Blue Painted Slashes		Required Reconstruction	5	Stream Types	▨	RD_50
... x x	Special Management Tags	==Δ==	Required Prehaul Maintenance	▨	Cable	▨	DNR Managed Lands
—	Timber Type Change	—Δ—	Optional Prehaul Maintenance	▨	Ground	▨	Public Land Survey Sections
		—Δ—	Optional Reconstruction	⊗	VRH	▨	Public Land Survey Townships
		⊗⊗⊗	Required Deactivation	◆	Monumented Corners		

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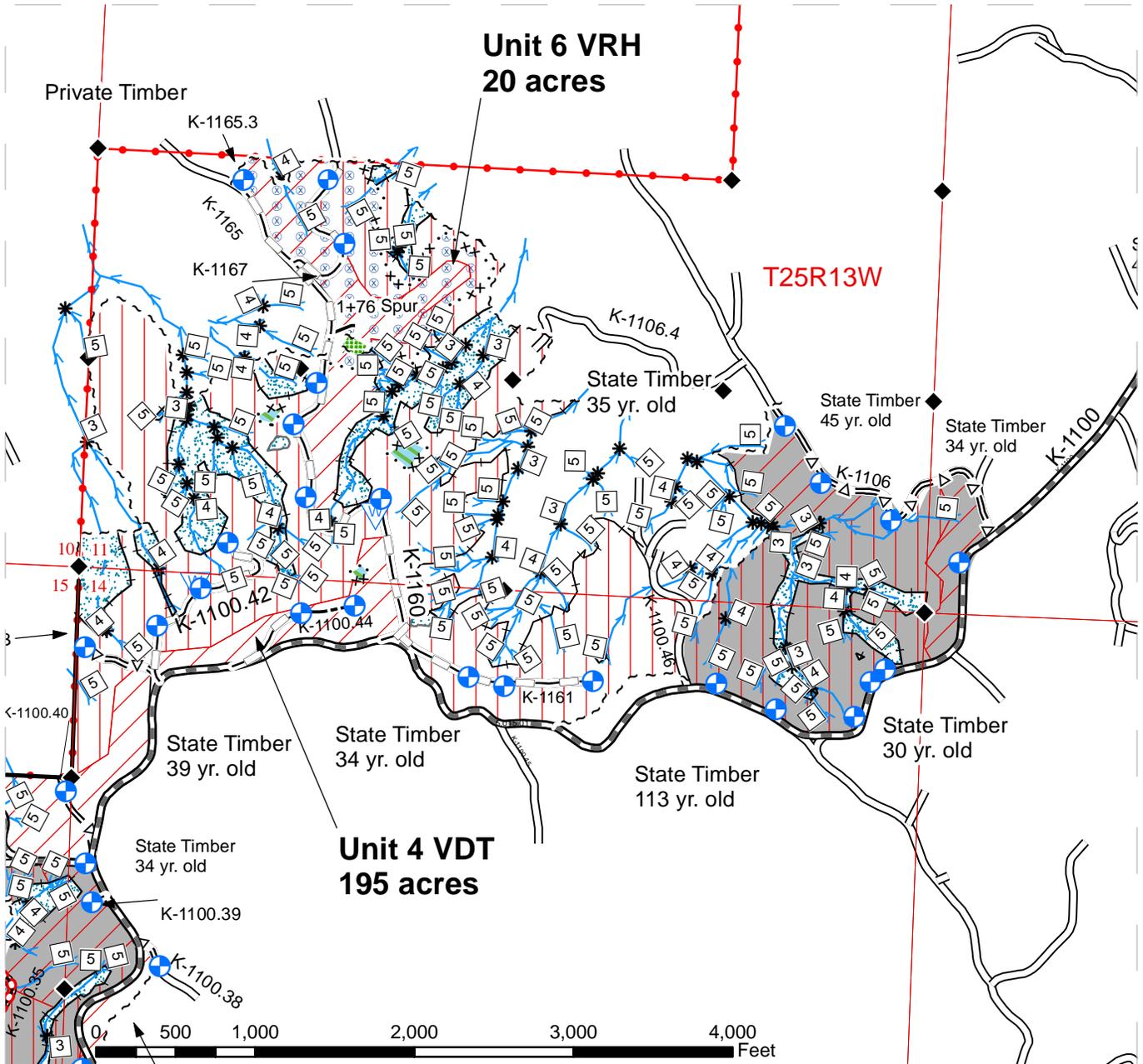


Unit_Boundaries	Waste Area	Right of Way	RMZ / Non-Op
Blaze Line	Landing	Stream Break	WMZ
Timber Sale Boundary Tags	Optional Construction	Streams	Clearcut Gap
Leave Tree Area Tags	Required Reconstruction	Stream Types	RD_50
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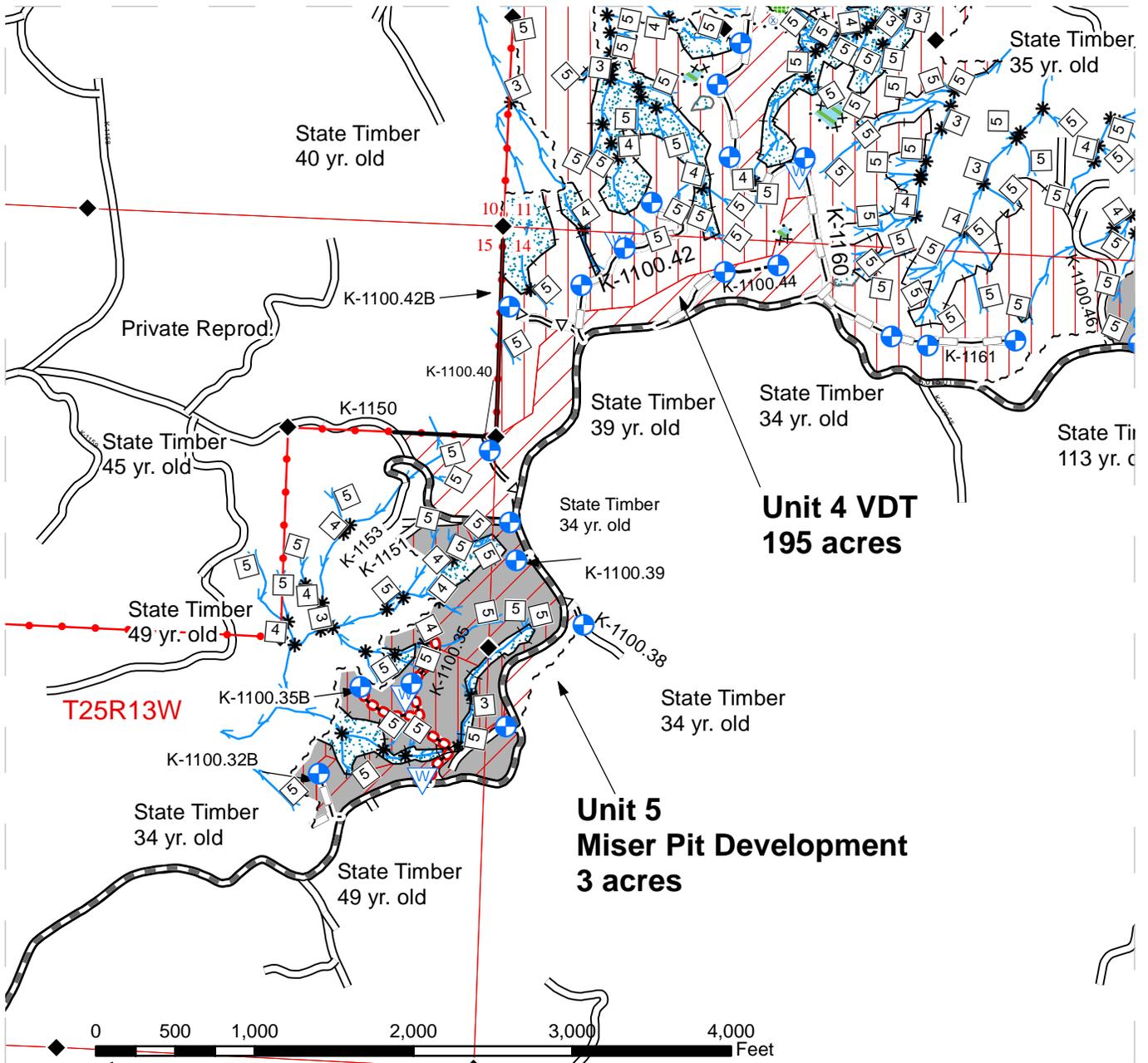


Unit_Boundaries		Waste Area		Right of Way		RMZ / Non-Op	
●—●	Blaze Line	⚠	Waste Area	~ ~ ~	Right of Way	🌳	RMZ / Non-Op
~ ~ ~	Timber Sale Boundary Tags	⊕	Landing	*	Stream Break	🌳	WMZ
⊕ ⊕ ⊕	Leave Tree Area Tags	---	Optional Construction	→	Streams	🌳	Clearcut Gap
—+—+—	Double Blue Painted Slashes		Required Reconstruction	5	Stream Types	RD_50	RD_50
... x x	Special Management Tags	==Δ==	Optional Prehaul Maintenance	▢	Cable	🔴	DNR Managed Lands
—	Timber Type Change	— —	Optional Reconstruction	▢	Ground	▢	Public Land Survey Sections
		⊕⊕⊕⊕	Required Deactivation	⊕⊕⊕	VRH	▢	Public Land Survey Townships
						◆	Monumented Corners

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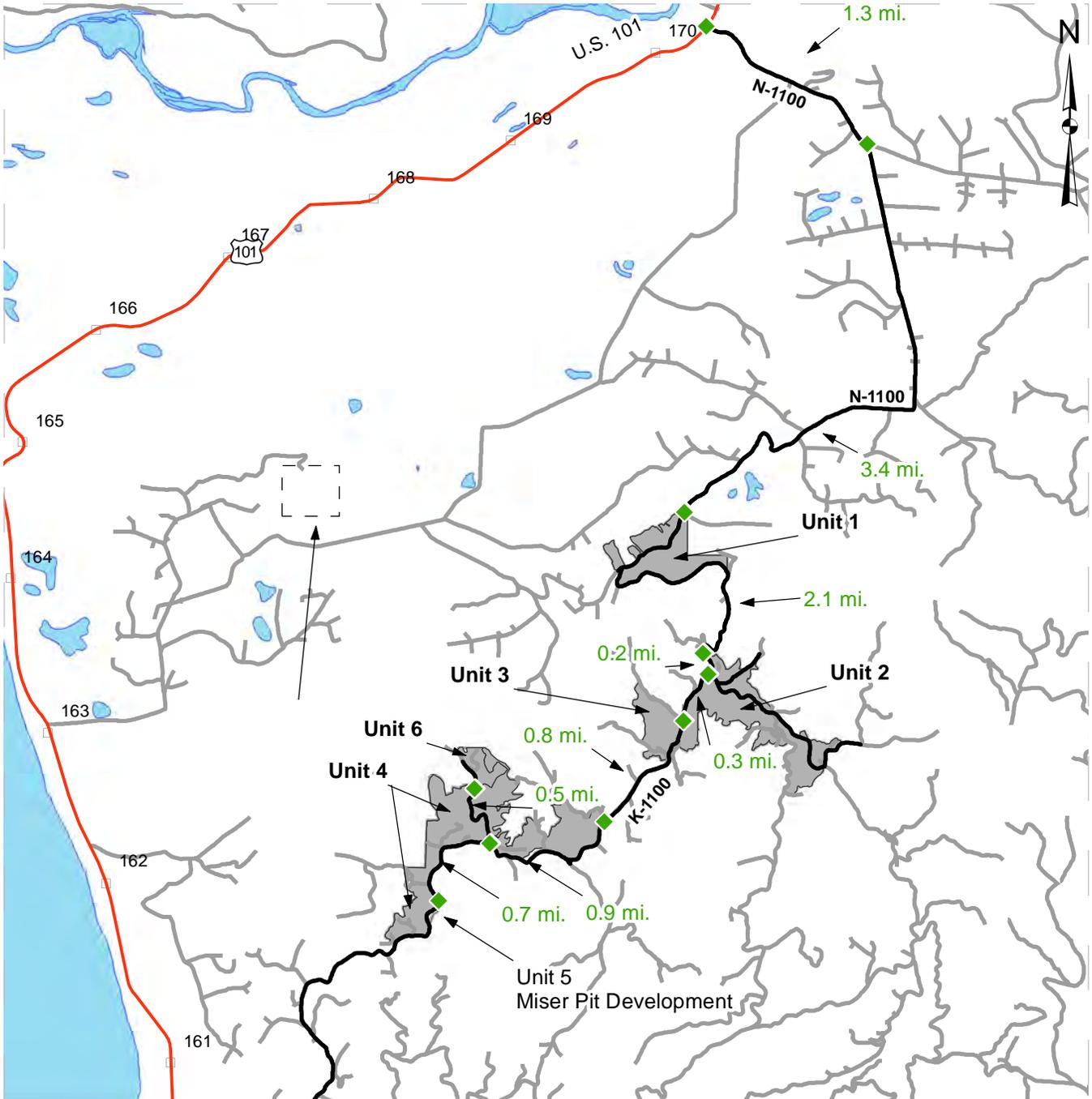


Unit_Boundaries		Waste Area		Right of Way		RMZ / Non-Op	
●—●	Blaze Line	♻️	Waste Area	~ ~ ~	Right of Way	🌳	RMZ / Non-Op
~ ~ ~	Timber Sale Boundary Tags	📍	Landing	*	Stream Break	🌳	WMZ
⊕ ⊕ ⊕	Leave Tree Area Tags	— — —	Optional Construction	➡	Streams	🌳	Clearcut Gap
— + +	Double Blue Painted Slashes	⊕ ⊕ ⊕	Required Reconstruction	5	Stream Types	🌳	RD_50
... x x	Special Management Tags	— — —	Required Prehaul Maintenance	▢	▢	▢	DNR Managed Lands
—	Timber Type Change	= Δ =	Optional Prehaul Maintenance	▢	▢	▢	Public Land Survey Sections
		— — —	Optional Reconstruction	⊗	⊗	⊗	Public Land Survey Townships
		⊗ ⊗ ⊗	Required Deactivation	⊗	⊗	⊗	Monumented Corners

DRIVING MAP

SALE NAME: N-1100 VDT and VRH
AGREEMENT#: 30-090940
TOWNSHIP(S): T25R12W, T25R13W
TRUST(S): Common School (3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
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Timber Sale Unit
 Highway
 Routes
Other Map Points
 Rock Pit
 Gates
 Distance Indicator
 Open Water

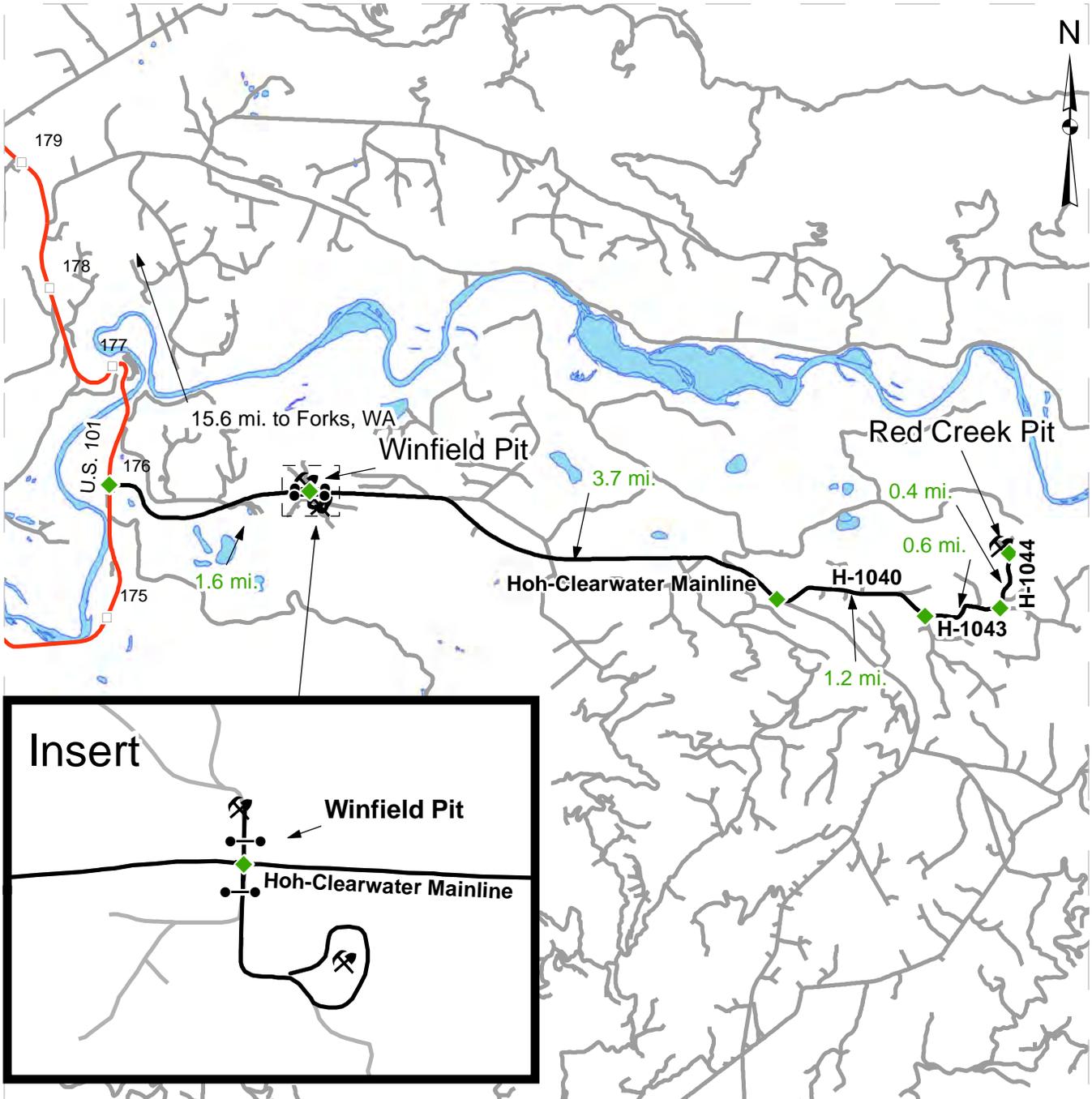
DRIVING DIRECTIONS:
 From Forks travel south on U.S. 101, 20 miles and take a left on the N-1000. Drive 1.3 miles and take a right on the N-1100.

Unit 1: Drive 3.4 miles on the N-1100 to arrive at Unit 1.
 Unit 2: Drive 2.1 miles past Unit 1 to arrive at Unit 2.
 Unit 3: Drive 0.2 miles past Unit 2 to the K-1100. Continue south 0.3 miles on the K-1100 to arrive at Unit 3 on your right.
 Unit 4: Drive 0.8 miles past Unit 3 on the K-1100 to arrive at Unit 4.
 Unit 5 (Miser Pit Development): Drive 1.6 miles past Unit 4 to arrive at Unit 5 on your left.
 Unit 6: From Unit 4 continue 0.9 miles on the K-1100 and turn right on the K-1160. Continue on the K-1160 0.5 miles to reach Unit 6.

DRIVING MAP

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REGION: Olympic Region
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Legend

- Timber Sale Unit
- Highway
- Routes
- Milepost Markers
- Other Map Points**
- Rock Pit
- Gates
- Distance Indicator
- Open Water

DRIVING DIRECTIONS:

Winfield Pit: from Forks travel south on U.S. 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.

Red Creek Pit: Continue past the Winfield Pit 3.7 miles and take a left the H-1040. Drive 1.2 miles and take a left on the H-1043. Drive 0.6 miles and take a left on the H-1044. Drive 0.4 miles and take a left. You will arrive at the Red Creek Pit in approximately 300 feet.

**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Tonnage Scale AGREEMENT NO. 30-090940

SALE NAME: N-1100 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 March 30, 2016 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber as described in Schedule B, except those trees as described in Schedule C, bounded by timber sale boundary tags, a blazed line, the N-1100 Road and double blue painted slashes in Unit 1.

All timber as described in Schedule B, except those trees as described in Schedule C, bounded by timber sale boundary tags, N-1100 Road, K-1100 Road, K-1108 Road, K-1250 Road, K-1258 Road, K-1259.1 Road, K-1170 Road, K-1100.64B Road, K-1107 Road and double blue painted slashes in Unit 2. All timber in areas marked as clearcut gaps on the timber sale map, bounded by special management unit boundary tags in Unit 2.

All timber as described in Schedule B, except those trees as described in Schedule C, bounded by timber sale boundary tags, the K-1107 Road, K-1100 Road, K-1100.56 Road, K-1100.55 Road and double blue painted slashes in Unit 3. All timber in areas marked as clearcut gaps on the timber sale map, bounded by special management unit boundary tags and the K-1107 Road in Unit 3.

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All timber bounded by timber sale boundary tags, the K-1100 Road and the K-1100.38 Road in Unit 5.

All timber, except trees marked with blue paint or bounded out by leave tree area tags, bounded by timber sale boundary tags, timber type change, the K-1165 Road, and special management unit boundary tags in Unit 6.

All timber bounded by right of way boundary tags.

In no instance shall downed red cedar be removed.

All timber that has been on the ground for five years or more shall be left undisturbed and not yarded (five years is defined by more than 1.5 inches of sap rot)., located on approximately 435 acres on part(s) of Section 7 in Township 25 North, Range 12 West, Sections 1, 11, 12, 14, and 15 all in Township 25 North, Range 13 West W.M. in Jefferson County(s) as shown on the attached timber sale map and as designated on the sale area.

All forest products described above from the bole of the tree that meet or exceed 2 inches diameter inside bark on the small end are eligible for removal. Above ground components of a tree that remain as by-products after the manufacture of logs, including but not limited to tree tops, branches, limbs, needles, leaves, stumps, are not eligible for removal under the terms of this contract.

Forest products purchased under a contract that is designated as export restricted shall not be exported until processed. Forest products purchased under a contract that is designated as exportable may be exported prior to processing.

G-020 Inspection By Purchaser

Purchaser hereby warrants to the State that they have had an opportunity to fully inspect the sale area and the forest products being sold. Purchaser further warrants to the State that they enter this contract based solely upon their own judgment of the value of the forest products, formed after their own examination and inspection of both the timber sale area and the forest products being sold. Purchaser also warrants to the State that they enter this contract without any reliance upon the volume estimates, acreage estimates, appraisals, pre-bid documentation, or any other representations by the State Department of Natural Resources.

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	SLASH PILING SPECS
B	CUT TREE SELECTION CRITERIA
C	LEAVE TREE SELECTION CRITERIA
D	UNIT TARGET TABLE
E	GREEN TREE RETENTION PLAN - COAST

G-030 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-050 Contract Term Extension - Payment

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

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

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

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

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

To determine the unpaid portion of the contract, multiply the contract payment rate for each item by the remaining volume for each item based on the volumes from the Timber Notice of Sale. In addition, all cash deposits that

can be used for timber payments, except the initial deposit, will be deducted from the unpaid portion of the contract.

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

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any

threatened or endangered species, or the presence of their habitat, within the sale area.

- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to

notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.

- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, PRT-812521 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

Purchaser shall remain responsible for payment of the total contract price notwithstanding the impracticability or frustration.

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

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

G-080 Scope of State Advice

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

G-090 Sale Area Adjustment

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

G-100 Forest Products Not Designated

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

G-105 Adding Naturally Damaged Forest Products

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

G-110 Title and Risk of Loss

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

All work, equipment, and materials necessary to perform this contract shall be the responsibility of Purchaser. Any damage to improvements, except as provided in

clause G-121 or unless the State issues an operating release pursuant to clause G-280, shall be repaired promptly to the satisfaction of the State and at Purchaser's expense.

G-121 Exceptions

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

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

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

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

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

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

Nothing contained in clauses G-120 and G-121 shall be construed as relieving Purchaser of responsibility for, or damage resulting from, Purchaser's operations or negligence, nor shall Purchaser be relieved from full responsibility for making good any defective work or materials. Authorization to haul does not warrant that Purchaser built roads are free from material defect and the State may require additional work, at Purchaser's 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; RY-1430_9578, N-1000, N-1100, Hoh-Clearwater Mainline and all spurs associated with the timber sale units. 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 N-1000, N-1100, K-1000, and K-1100 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:

#55-000001

#55-000433

#55-000430

G-430 Open Fires

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

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,

For: Road Use Permit

In Favor of: Rayonier Forest Resources, L.P.

Disclosed by Application No.: 50-086560

Granted: 2/14/2011

Expires: 11/30/2015

Easement, including the terms and provisions thereof,
For: Road Management Abandonment Plan
In Favor of: Green Crow Corp. & Green Crow Timber, LLC
Disclosed by: Application No.: 50-091098
Granted: 10/22/2013
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Exchange Road
In Favor of: ITT Rayonier Inc.
Disclosed by Application No.: 50-038923
Granted: 12/15/1959
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Road Use Permit
In Favor of: Timberlands Holding Company Washington, Inc.
Granted: 12/5/2013
Expires: 12/31/2015

Lease, including the terms and provisions thereof,
For: Minor Forest Products
In Favor of: DNR
Disclosed by Application No.: 35-FPHK01
Granted: 10/27/1995
Expires: 10/27/2020

Lease, including the terms and provisions thereof,
For: Road
In Favor of: Timberlands Holding Co. Washington
Disclosed by Application No.: 35-OL1324

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 \$61,415.00 on day of sale and \$1.08 per ton upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

DATA MISSING

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

P-027 Payment for Removal of Optional Forest Products

Purchaser agrees to pay the rate of \$1.00 per ton for forest products approved for removal from the sale area under clause H-157.

P-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 \$0.00. 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 of logs being measured or weighed. Purchaser agrees to pay the LLRS for log and load data supplied to the State.

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

L-110 State Approval of Log Scaling and Weighing Locations

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

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from October 15 to April 15 unless authorized in writing by the Contract Administrator.

H-011 Certification of Fallers and Yarder Operators

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

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

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

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

H-012 Leave Tree Damage Definition

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

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

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

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

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 20 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

H-015 Skid Trail Requirements

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

Purchaser shall comply with the following during the yarding operation:

- a. Skid trails will not exceed 12 feet in width, including rub trees.

- b. Skid trails shall not cover more than 15 percent of the total acreage on one unit.
- c. Skid trail location will be pre-approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 12 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

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

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-130 Hauling Schedule

The hauling of forest products will not be permitted from October 15 to April 15 unless authorized in writing by the Contract Administrator.

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, two warning signs must be posted on the N-1100 and K-1100 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:

There will be no operations (other than haul) from one hour before to two hours after official sunset and one hour before to one hour after official sunset from April 1 to September 23 for marbled murrelet restrictions.

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

H-150 Required Removal of Forest Products

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

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

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

H-151 Required Harvesting Area

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

Yarding Method	Max Slope % Downhill	Slope Dist Downhill	Max Slope % Uphill	Slope Dist Uphill
Ground	35	1000	45	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 3/24/2014 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the N-1100, N-1164, N-1100 Wye, N-1100.43, 4+88 Spur, 3+40 Spur, K-1000, K-1100.61, K-1100.61B, K-1108, K-1100.62, K-1100.64, K-1100.64B, K-1100.65, K-1170, K-1170.1, K-1171, K-1250, K-1107, K-1100.56, K-1100.55, K-1100.55B, K-1106, K-1100.46, K-1100.45, K-1160, K-1161, K-1165, K-1165.3, K-1167, K-1100.44, K-1100.42, K-1100.42B, K-1100.40, K-1100.38, K-1100.39, 4+35 Spur, K-1100.35, K-1100.35B, K-1100.32, K-1100.32B, K-1150, K-1152, and all other new construction and spurs associated with the 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 N-1000, K-1000 and any road used and not covered under 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-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 feet of any typed water unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any streams.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

Section D: Damages

D-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State caused by Purchaser's breach. These liquidated damages provisions are agreed to by the State and Purchaser with the understanding of the difficulty of proving loss and the inconvenience or infeasibility of obtaining an adequate remedy. These liquidated damages provisions provide greater certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

D-021 Failure to Remove Forest Products

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

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

Where:

LD = Liquidated Damage value.

V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal tonnage to date from the cruised tonnage multiplied by the contract bid rates.

ID = Initial Deposit paid at date of contract that has not been applied to timber payments.

P = Advance payments received but not yet applied to specific contract requirements.

- C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.
- A = Administrative Fee = \$2,500.00.

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

Where:

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

D-030 Inadequate Log Accountability

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

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore, Purchaser agrees to pay the State, as liquidated damages, a sum of \$100 each time a load of logs does not have branding as required in the contract, \$250 each time a load of logs does not have a load ticket as required by the contract, \$250 each time a load ticket has not been filled out as required by the plan of operations, \$250 each time a load is weighed or scaled at a location not approved as required under this contract, \$250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, \$250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service within 24 hours of log removal, and \$250 each time a ticket is either lost or otherwise unaccounted for.

D-040 Leave Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the State. The

value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of \$50.00 per tree for all damaged trees in sale area.

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

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

Schedule B
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 12 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. Remaining trees need to reach target basal area, starting with the lowest diameter classes.
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.
3. Timber within the clearing limits for roads within unit boundaries, if the road is built.

Schedule C
LEAVE TREE SELECTION CRITERIA

1. Leave trees are defined as follows:
 - a. All trees greater than or equal to 20 inches in diameter at a 12 inch stump height.
 - b. Trees greater than or equal to 16 inches in diameter at a 12 inch stump height, with good form, shall only be felled if leaving them results in a residual stand of higher relative density than shown in the Unit Target Table (Schedule D).
 - c. All trees less than 16 inches in diameter at a 12 inch stump height needed to achieve relative densities as shown in the Unit Target Table (Schedule D).
 - d. All trees within the non-operational areas, i.e., riparian management zones and non-op areas as shown on the timber sale map.
2. Leave trees shall be well distributed at the relative density and spacing shown in the Unit Target Table (Schedule D), and will consist of the largest diameter and best formed trees available.

Best form is defined as follows:

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

Schedule D
UNIT TARGET TABLE

Unit	Acres	RD	Approx Stems/acre	Approx Spacing	Approx Basal Area
1	83	40	150	17' X 17'	145/sqft
2	106	40	145	17'x17'	150/sqft
3	23	40	102	21'x21'	187/sqft
4	116	40	136	18'x18'	173/sqft
4	78	50*	139	18'x18'	219/sqft

*Prescription for target RD 50 of Unit 4 is represented by grey shaded area on timber sale map.

Schedule E
GREEN TREE RETENTION PLAN - COAST

Leave the following as directed by the Contract Administrator:

1. All trees marked with a blue band of paint and all leave tree area clumps shall remain standing. The perimeter of the leave tree clumps are designated by Leave Tree Area tags. The tags face outward from the leave tree clumps.

Unit #	# of Individually Marked Trees	# of Clumps	# of Trees Clumped	Total # of Leave Trees
6	80	1	80	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: N-1100 VDT	Region: Olympic
Agreement #: 30-090940	District: Coast
Contact Forester: Kevin Alexander Phone / Location: 360-640-5506 / Forks, WA	County(s): Jefferson
Alternate Contact: Justin Pagel Phone / Location: 360-640-9093 / Forks, WA	Other information:

Type of Sale: Weight Scale	
Harvest System: Uphill Cable	63
Harvest System: Ground based	37

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit #	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/ Skip Acres	Leave Tree Acres	Existing Road Acres	Other Acres		
1	Sec. 11, T 25 R 13 W	03	95	4.5	N/A	8		82.5	GPS (Garmin)
2	Sec. 12, T 25 R 13 W	03	161	39.5	N/A	15		106.5	GPS (Garmin)
3	Sec. 12, T 25 R 13 W	03	49	18	N/A	3		28	GPS (Garmin)
4	Sec. 01, T 25, R13 W	03	270	39	N/A	16		215	GPS (Garmin)
5	Sec. 14, T 25, R 13 W	03	3	0	N/A	0		3	
TOTAL ACRES			578	101	N/A	42		435	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Unit Boundaries are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint; or, orange, blazed property line; or the N-1100, N-1164, N-1100_18078; or double blue painted slashes with a spot at a base. Skip areas are marked with a double blue painted slashes with a spot at the base of the tree and the N-1100 road.	Thinning acres total 82.5 acres. Thinning acres will have a residual target of RD 50	
2	Unit Boundaries are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint; the K-1100, N-1100, K-1100S20, K-1100_36277, K-	5 gaps totaling 1 acre with 100% removal. Thinning acres total 105.5 acres.	

	1100_19244, K-1250, K-1250_10030, and K-1170 roads or double blue painted slashes with a spot at a base. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree and the K-1100, K-1250, K-1259 road. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon.	Thinning acres will have a residual target of RD 40	
3	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint; or the K-1100, K-100S21, K-1100_32539, and K-1100S20 roads. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree and the K-1100 road. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon, and the K-100S21 road.	3 gaps totaling 5 acres with 100% removal. Thinning acres total 23 acres. Thinning acres will have a residual target of RD 40	
4	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, distinct timber type changes, or blue double slashes and blue spot or line on base: or the K-1100, K-1100_19313, K-1100_25189, K-1100_26868, K-1100_29664 roads; or double blue painted slashes with a spot at the base. <u>Skip areas</u> are marked with a double blue painted slashes with a spot at the base of the tree and the K-1100 road. The <u>Clear Cut Gaps</u> are marked with blue Special Management Unit tags, Blue Paint, red flashers, and pink ribbon.	4 gaps totaling 1.3 acre with 100% removal. Thinning acres total 213.7 acres; 78 acres associated with the (1) K-1100_29664, K-1100_26868; and (2) K-1100_19313, K-1100_22409 spurs will be thinned to RD 50 and the remaining 135.7 acres will have a residual target of RD 40.	
5	<u>Unit Boundaries</u> are marked with white unit boundary tags, red flashers, pink ribbon, and blue paint, distinct timber type changes, or blue double slashes and blue spot or line on base: or the K-1100, and K-1100_38 roads.	Unit is being developed as a Pit	No leave trees in unit.

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary, secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1-5		No Gates. The N-1100 will be the proposed haul route. Can be accessed via the K-1100 or N-1100. Cable settings may be limited in the number of corridors available; averaging about three/setting across all 4 units.	Cruise Map
1		Yarding corridors are relatively short. Due to poor height:diameter ratios and larger crowns vol./acre removed will be on average lower to keep stand strength and vigor. There are no gaps to be thinned in the unit. Turnouts will be used as cable settings	Cruise Map
2		The portion of the unit north of K-1100 can primarily be tractor harvested. The portion of unit south of the K-1100 is primarily cable ground will multiple long narrow yarding corridors. The unit has multiple gaps that will not significantly increase vol. removed, but will increase final forest structure diversity in the unit. Turnouts and spurs will be used as cable settings	Cruise Map
3		The unit is primarily cable ground will multiple long yarding corridors. Corridors containing gaps have thinning ground beyond and/or bordering the gaps. The unit has multiple gaps to increase vol. removed and to increase final forest structure diversity in the unit. Turnouts and spurs will be used as cable settings	Cruise Map
4		Unit 4 is separated into two target RD's with RD 50 ground being the most north and the most south acres in the unit. The unit is primarily cable ground with some possible tractor ground throughout. Yarding corridors can be long, and may limited in size and number. The unit has multiple gaps that will not significantly increase vol. removed, but will increase final forest structure diversity in the unit.	Cruise Map

		Turnouts and spurs will be used as cable settings	
5		Unit 5 is tractor ground to be clear cut and developed into a pit for road material.	Cruise Map
TOTAL MBF			

REMARKS:

Prepared By: Elliot F. Mann 03/11/14	Title: Forester 1	CC:

Cruise Narrative

Sale Name: N-1100 VDT	Region: Olympic
Agree. #: 30-090940	District: Coast
Lead cruiser: Jason Michaud	Completion date: 4/23/2015
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	82.5	Yes	
2 Gap	1.0	Yes	
2	105.5	Yes	
3 Gap	5.0	Yes	
3	23.0	Yes	
4 Gap	1.3	Yes	
4 RD40	115.7	Yes	
4 RD50	78.0	Yes	
5	3.0	Yes	
6	19.9	Yes	
Total	435		

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:co unt)	Total number of plots
1	VP	54.45	D4'H	450'x450'	Cruise	22
2 Gap	VP	54.45	D4'H	Unit Plots	Cruise	25
2	VP	54.45	D4'H	450'x450'	Cruise	25
3 Gap	VP	54.45	D4'H	Unit Plots	Cruise	11
3	VP	54.45	D4'H	400'x400'	Cruise	11
4 Gap	VP	54.45	D4'H	Unit Plots	Cruise	21
4 RD40	VP	54.45	D4'H	450'x450'	Cruise	21
4 RD50	VP	54.45	D4'H	400'x400'	Cruise	12
5	VP	54.45	D4'H	Random	Cruise	3
6	VP	54.45	D4'H	400'x400'	Cruise	9

Sale/Cruise Description:

Minor species cruise intensity:	Cruise minors that fell in plots.				
Minimum cruise spec:	10 Bd. Ft. net / 5" minimum top Trees larger than 17.5"@DBH merchantable heights were cruised at 40% Dia.@16'				
Avg ring count by sp:	DF =	5	WH =	6	SS = N/A
Leave/take tree description:	Skip areas are marked with double blue paint slashes on the trees and blue spot the base of the tree. Clear cut gaps are marked with blue "Special Management Unit" tags, blue paint, and red flashers.				
Other conditions	All road existing right-of-way area acres were also deducted from the gross traversed units leaving the net acreages listed above, no plots were placed within these road areas and "road close" plots were turned using the walk-thru method.				

Field observations:

N-1100 VTD sale was dominated by 35-50 year old Western Hemlock and Douglas-fir with minor species of western Red Cedar, Silver fir, Sitka Spruce and Red Alder. Deductions made for spike knots, forks, basal scaring (bear damage), and crooks/redirects.

Unit 5 is a pit expansion and unit 6 is a 19.9 VRH unit. Unit 4 has a thinning prescription of 40 and 50 RD. These were broken out in the cruise packet as separate units.

Grants: 03-100%,**Prepared by:** Jason Michaud**Title:** Timber Cruiser**CC:**

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
<div style="border: 1px solid black; padding: 5px;"> T025 R013 S01 Ty00U1 THRU T025 R014 S13 Ty00U5 </div>				Project: N1100		Page 1																
				Acres 435.00		Date 4/28/2015 Time 2:29:35PM																
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
WH	T	CU	CU		100.0	41										1	5		0.00	40.3		
WH	T	D	CU														7		0.00	1.2		
WH	T	D	2S		5.5	23	22	10			100				11	89	39	13	210	1.63	.1	
WH	T	D	3S	57	4.8	3,339	3,179	1,383			100					100	40	7	81	0.70	39.0	
WH	T	D	4S	40	2.2	2,285	2,235	972	96	4				13	24	8	55	28	5	29	0.32	76.7
WH	T	D	UT	3		165	165	72	100					7	93			16	5	17	0.20	9.8
WH	Totals			28	4.3	5,853	5,600	2,436	41	58	0			5	12	3	79	24	6	33	0.46	167.2
WH		CU	CU		100.0	35											2	6		0.00	17.5	
WH		D	2S	13	6.7	770	718	312			100				23	77	37	12	186	1.57	3.9	
WH		D	3S	72	7.2	4,208	3,904	1,698			100					100	40	8	93	0.83	41.8	
WH		D	4S	14	5.4	762	721	314	78	22			40	30	7	23	21	5	21	0.35	34.1	
WH		D	UT	1		54	54	23	100				100				10	5	10	0.24	5.4	
WH	Totals			27	7.4	5,829	5,397	2,348	11	75	13			6	4	4	86	25	7	53	0.72	102.6
DF		CU	CU		100.0	29											2	6		0.00	11.3	
DF		D	2S	23	6.2	1,620	1,519	661		15	85					100	40	13	219	1.96	6.9	
DF		D	3S	62	8.1	4,258	3,913	1,702			100		1	0	1	98	39	8	98	0.98	39.7	
DF		D	4S	13	6.3	873	818	356	74	26			50	19	9	22	20	5	21	0.39	38.1	
DF		D	UT			29	29	13	100				100				14	5	14	0.40	2.1	
DF		RO	2S	2		85	85	37			100		100				16	13	100	1.34	.9	
DF	Totals			32	7.7	6,895	6,365	2,769	10	68	22			9	3	2	87	27	7	64	0.90	99.0
DF	T	CU	CU		100.0	6											1	5		0.00	11.1	
DF	T	D	2S	7	11.2	168	149	65			100					100	39	13	204	1.96	.7	
DF	T	D	3S	49	7.3	1,124	1,042	453			100		0		1	99	40	7	79	0.77	13.2	
DF	T	D	4S	41	8.4	930	851	370	88	12			10	46	11	34	25	5	26	0.33	32.3	
DF	T	D	UT	2		49	49	21	100				10	90			20	5	18	0.21	2.7	
DF	T	RO	2S	1		1	1	0			100		100				16	13	100	1.34	.0	
DF	Totals			10	8.2	2,278	2,092	910	38	55	7			4	21	5	71	24	6	35	0.52	60.0
RC		CU	CU														6			0.00	.7	
RC		D	3S	21		26	26	11			100					100	40	6	60	0.71	.4	
RC		D	4S	79	4.4	98	94	41	100				55	18		27	23	5	24	0.56	3.9	
RC	Totals			1	3.4	125	121	52	78	22			43	14		43	21	5	24	0.59	5.1	
RC	T	D	4S	100	3.7	76	73	32	100					90	10	0	28	5	29	0.42	2.5	
RC	Totals			0	3.7	76	73	32	100					90	10	0	28	5	29	0.42	2.5	
SF	T	CU	CU														5			0.00	2.0	
SF	T	D	3S	31		23	23	10			100					100	40	6	60	0.49	.4	
SF	T	D	4S	69		50	50	22	100					32	68		31	5	30	0.29	1.6	
SF	Totals			0		73	73	32	68	32				22	78		16	5	18	0.34	4.0	
RA	T	CU	CU														5			0.00	2.0	
RA	T	D	3S	15	14.3	15	13	6			100					100	20	10	60	0.73	.2	
RA	T	D	4S	85	19.2	85	69	30	100					6	23	71	35	5	31	0.35	2.2	
RA	Totals			0	18.4	100	82	36	84	16				16	5	19	60	19	5	18	0.37	4.5

TC PSPCSTGR **Species, Sort Grade - Board Foot Volumes (Project)**

T025 R013 S01 Ty00U1 THRU T025 R014 S13 Ty00U5	Project: N1100 Acres 435.00	Page 2 Date 4/28/2015 Time 2:29:35PM
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Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
SS	D	2S		48	5.6	81	77	33			100			100				30	13	170	1.66	.5
SS	D	3S		43	6.7	74	69	30		100					100			40	10	140	1.36	.5
SS	D	4S		9		14	14	6		100			100					15	6	15	0.48	.9
SS Totals				1	5.6	169	160	70	52	48		9	48	43			25	9	85	1.18	1.9	
SS	T	D	2S	2	5.6	1	1	0			100			100				30	13	170	1.66	.0
SS	T	D	3S	2	6.7	1	1	0		100					100			40	10	140	1.36	.0
SS	T	D	4S	1		0	0	0		100			100					15	6	15	0.48	.0
SS	T	D	UT	95		31	31	14	100				100					21	5	20	0.34	1.6
SS Totals				0	.3	33	33	14	95	3	3	0	97	2			21	5	21	0.35	1.6	
Totals					6.7	21,431	19,995	8,698	23	65	12	7	9	3	81		25	6	45	0.64	448.5	

Take Volumes
 WH- 2,436mbf
 RC-32mbf
 DF- 910mbf
 SF-32mbf
 RA-36mbf
 SS-14mbf

Total Take Volume --- 3,460mbf

TC PSTATS		PROJECT STATISTICS						PAGE 1		
		PROJECT N1100						DATE 4/23/2015		
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
025	013	01	N1100	00U1	THR	435.00	160	830	S	W
025	014	13	N1100	00U5						
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES			
TOTAL			160	830	5.2					
CRUISE			93	449	4.8	108,268	4			
DBH COUNT										
REFOREST										
COUNT			67	370	5.5					
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	81	59.9	14.9	55	18.8	72.7	6,197	5,734	1,996	1,981
WHEMLOCK-T	143	88.9	12.1	48	20.5	71.6	5,482	5,262	1,718	1,710
DOUG FIR	86	51.0	17.7	58	20.7	87.1	6,945	6,415	2,421	2,414
DOUG FIR-T	111	35.6	12.5	48	8.6	30.5	2,227	2,041	727	725
WR CEDAR	8	5.5	11.8	30	1.2	4.1	160	155	73	73
WR CEDAR-T	4	1.3	12.5	32	0.3	1.1	39	36	18	18
R ALDER-T	7	2.2	11.2	44	0.5	1.5	100	82	31	31
S SPRUCE	2	.9	20.0	53	0.5	2.1	169	160	56	56
S SPRUCE-T	3	1.6	9.9	30	0.3	.8	33	33	12	12
PS FIR-T	4	2.0	9.8	42	0.3	1.1	73	73	22	22
TOTAL	449	248.9	14.2	51	72.4	272.6	21,424	19,991	7,076	7,045
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	183.0	14.5		51	60	69				
WHEMLOCK-T	135.3	10.7		79	89	98				
DOUG FIR	150.3	11.9		45	51	57				
DOUG FIR-T	198.6	15.7		30	36	41				
WR CEDAR	564.2	44.6		3	5	8				
WR CEDAR-T	638.1	50.4		1	1	2				
R ALDER-T	750.6	59.3		1	2	4				
S SPRUCE	726.2	57.4		0	1	1				
S SPRUCE-T	1256.3	99.3		0	2	3				
PS FIR-T	747.6	59.1		1	2	3				
TOTAL	92.6	7.3		231	249	267	343	175	86	
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	166.1	13.1		63	73	82				
WHEMLOCK-T	134.9	10.7		64	72	79				
DOUG FIR	154.3	12.2		76	87	98				
DOUG FIR-T	166.4	13.2		26	30	34				
WR CEDAR	481.0	38.0		3	4	6				
WR CEDAR-T	643.1	50.8		1	1	2				
R ALDER-T	733.0	58.0		1	2	2				
S SPRUCE	725.7	57.4		1	2	3				
S SPRUCE-T	1229.7	97.2		0	1	2				
PS FIR-T	716.6	56.7		0	1	2				
TOTAL	88.0	7.0		254	273	292	310	158	77	
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	172.2	13.6		4,953	5,734	6,515				

TC PSTATS		PROJECT STATISTICS							PAGE	2	
		PROJECT N1100							DATE	4/23/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	01	N1100	00U1	THR	435.00	160	830	S	W	
025	014	13	N1100	00U5							
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	.00	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T		138.4	10.9	4,687	5,262	5,838					
DOUG FIR		164.9	13.0	5,579	6,415	7,251					
DOUG FIR-T		167.9	13.3	1,770	2,041	2,312					
WR CEDAR		554.8	43.9	87	155	224					
WR CEDAR-T		652.8	51.6	17	36	54					
R ALDER-T		802.9	63.5	30	82	134					
S SPRUCE		727.0	57.5	68	160	252					
S SPRUCE-T		1196.0	94.6	2	33	64					
PS FIR-T		726.6	57.4	31	73	115					
TOTAL		92.8	7.3	18,524	19,991	21,458	345	176	86		
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		133.2	10.5	68	79	90					
WHEMLOCK-T		32.8	2.6	65	73	82					
DOUG FIR		113.7	9.0	64	74	83					
DOUG FIR-T		118.6	9.4	58	67	76					
WR CEDAR		521.6	41.2	21	38	54					
WR CEDAR-T		508.2	40.2	16	32	49					
R ALDER-T		802.9	63.5	20	54	88					
S SPRUCE		591.3	46.7	33	77	122					
S SPRUCE-T		1195.8	94.5	2	39	76					
PS FIR-T		726.6	57.4	29	68	108					
TOTAL		92.3	7.3	68	73	79	340	174	85		

T025 R013 S01 T00U1 T025 R013 S01 T00U1
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 025 013 01 N1100 00U1 82.50 22 105 S W

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	CU	CU													6		0.00	43.1		
WH	DM	3S	73	6.1	6,227	5,848	482		100						40	8	81	0.66	72.4	
WH	DM	4S	26	7.4	2,176	2,015	166	90	10			27	17	13	43	24	5	25	0.33	81.4
WH	DM	UT	1		73	73	6	100				100			9	5	10	0.20	7.3	
WH	Totals		43	6.4	8,475	7,936	655	24	76			8	4	3	85	24	6	39	0.52	204.1
WH	T	CU	CU		00.0	44									1	5		0.00	64.3	
WH	T	DM	3S	12		554	554	46	100						40	7	66	0.54	8.4	
WH	T	DM	4S	88	3.2	4,096	3,965	327	96	4		1	28	6	64	33	5	34	0.29	117.6
WH	T Totals		25	3.7	4,694	4,519	373	84	16			1	25	6	69	23	5	24	0.31	190.4
DF	CU	CU													7		0.00	3.4		
DF	DM	3S	84	5.4	2,621	2,478	204		100						40	8	98	0.93	25.2	
DF	DM	4S	16	4.8	471	448	37	100				56	29	15		20	5	21	0.29	21.8
DF	Totals		16	5.3	3,092	2,927	241	15	85			9	4	2	85	29	7	58	0.74	50.3
DF	T	CU	CU												5		0.00	29.3		
DF	T	DM	3S	26		522	522	43	100						40	6	64	0.57	8.1	
DF	T	DM	4S	62	4.6	1,294	1,234	102	100			3	45		52	31	5	31	0.33	39.5
DF	T	DM	UT	12		230	230	19	100				100			22	5	20	0.20	11.5
DF	T Totals		11	2.9	2,047	1,987	164	74	26			2	39		59	20	5	22	0.35	88.5
RC	CU	CU													6		0.00	3.9		
RC	DM	3S	28		139	139	11		100						40	6	60	0.71	2.3	
RC	DM	4S	72		340	340	28	100				81		19	20	5	22	0.41	15.4	
RC	Totals		3		479	479	40	71	29			57		43	18	5	22	0.48	21.6	
RC	T	DM	4S	100		319	319	26	100				100		28	5	30	0.41	10.6	
RC	T Totals		2		319	319	26	100					100		28	5	30	0.41	10.6	
SF	T	CU	CU												5		0.00	4.4		
SF	T	DM	4S	100		178	178	15	100						40	5	40	0.34	4.4	
SF	T Totals		1		178	178	15	100					100		20	5	20	0.34	8.9	
Type Totals				4.9	19,284	18,344	1,513	46	54			7	15	3	75	23	6	32	0.45	574.5

TC TSTATS				STATISTICS				PAGE 1		
PROJECT N1100				DATE 4/28/2015						
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	01	N1100	00U1	82.50	22	105	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		22	105	4.8						
CRUISE		14	69	4.9	28,016	.2				
DBH COUNT										
REFOREST										
COUNT		8	35	4.4						
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	28	104.5	13.2	54	27.3	99.0	8,475	7,936	2,587	2,590
WHEMLOCK-T	17	121.3	9.9	45	20.5	64.3	4,694	4,519	1,326	1,318
DOUG FIR	8	25.2	16.4	61	9.2	37.1	3,092	2,927	1,065	1,064
DOUG FIR-T	8	55.8	10.3	43	10.0	32.2	2,047	1,987	633	633
WR CEDAR	4	17.7	10.6	27	3.3	10.9	479	479	190	190
WR CEDAR-T	3	10.6	11.2	33	2.2	7.3	319	319	121	121
PS FIR-T	1	4.4	10.1	50	0.8	2.5	178	178	61	61
TOTAL	69	339.6	11.7	48	74.1	253.3	19,284	18,344	5,982	5,977
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		96.1	21.0	83	105	126				
WHEMLOCK-T		117.0	25.5	90	121	152				
DOUG FIR		107.4	23.4	19	25	31				
DOUG FIR-T		133.2	29.1	40	56	72				
WR CEDAR		282.1	61.6	7	18	29				
WR CEDAR-T		290.3	63.3	4	11	17				
PS FIR-T		469.0	102.3		4	9				
TOTAL		47.2	10.3	305	340	375	93	48	23	
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		82.5	18.0	81	99	117				
WHEMLOCK-T		109.7	23.9	49	64	80				
DOUG FIR		105.0	22.9	29	37	46				
DOUG FIR-T		124.2	27.1	23	32	41				
WR CEDAR		231.4	50.5	5	11	16				
WR CEDAR-T		275.6	60.1	3	7	12				
PS FIR-T		469.0	102.3		2	5				
TOTAL		30.6	6.7	236	253	270	39	20	10	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		84.0	18.3	6,481	7,936	9,390				
WHEMLOCK-T		111.5	24.3	3,419	4,519	5,619				
DOUG FIR		107.4	23.4	2,241	2,927	3,612				
DOUG FIR-T		123.9	27.0	1,450	1,987	2,524				
WR CEDAR		243.7	53.2	224	479	734				
WR CEDAR-T		290.3	63.3	117	319	521				
PS FIR-T		469.0	102.3		178	360				
TOTAL		36.5	8.0	16,884	18,344	19,804	56	28	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	

TC TSTATS				STATISTICS			PAGE 2		
PROJECT N1100							DATE 4/28/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
025	013	01	N1100	00U1	82.50	22	105	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	
WHEMLOCK	52.3	11.4	65	80	95				
WHEMLOCK-T	67.8	14.8	53	70	87				
DOUG FIR	48.0	10.5	60	79	97				
DOUG FIR-T	76.2	16.6	45	62	78				
WR CEDAR	183.8	40.1	21	44	67				
WR CEDAR-T	264.4	57.7	16	44	72				
PS FIR-T	469.0	102.3		72	145				
TOTAL	<i>128.7</i>	<i>28.1</i>	<i>67</i>	<i>72</i>	<i>78</i>	<i>694</i>	<i>354</i>	<i>174</i>	

TC TSTNDSUM														Stand Table Summary		
Project N1100																
T025 R013 S01 T00U1										T025 R013 S01 T00U1						
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:	1							
025	013	01	N1100	00U1	82.50	22	105	Date:	4/28/2011							
								Time:	2:24:30PM							
Spc	S T	DBH	Sample Trees	FF 16'	Av 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
WH		10	2	87	61	12.586	7.07	12.59	12.4	40.0	5.01	157	503	413	129	42
WH		11	2	85	42	10.546	7.07	10.55	11.6	34.7	3.92	122	366	323	101	30
WH		12	3	86	61	13.851	10.61	13.85	17.6	47.0	7.74	244	650	639	201	54
WH		13	11	86	72	41.712	38.89	75.75	14.3	46.9	34.71	1,085	3,555	2,863	895	293
WH		14	3	86	63	10.114	10.61	16.82	14.8	42.1	7.98	249	708	658	206	58
WH		15	1	86	77	3.000	3.54	6.00	18.0	70.0	3.46	108	420	285	89	35
WH		16	2	86	67	5.040	7.07	10.08	18.7	52.4	6.04	189	528	499	156	44
WH		18	3	81	79	6.010	10.61	12.02	27.7	77.8	10.66	333	935	879	275	77
WH		20	1	86	75	1.687	3.54	3.37	30.6	80.0	3.28	103	270	270	85	22
WH		Totals	28	86	65	104.547	99.00	161.03	16.1	49.3	82.79	2,590	7,936	6,830	2,137	655
WH	T	8	3	88	44	32.266	11.36	32.27	5.3	26.7	5.49	172	862	453	142	71
WH	T	9	2	88	44	16.949	7.57	16.95	7.2	30.0	3.89	121	508	321	100	42
WH	T	10	6	88	59	40.885	22.71	40.89	12.0	40.0	15.73	491	1,635	1,297	405	135
WH	T	11	3	87	60	18.422	11.36	18.42	13.5	40.0	7.97	249	737	658	205	61
WH	T	12	1	86	71	4.740	3.79	9.48	11.6	40.0	3.53	110	379	291	91	31
WH	T	13	1	90	64	4.372	3.79	4.37	21.0	40.0	3.17	92	175	262	76	14
WH	T	14	1	87	57	3.698	3.79	3.70	22.4	60.0	2.65	83	222	218	68	18
WH		Totals	17	88	54	121.332	64.35	126.07	10.5	35.8	42.42	1,318	4,519	3,500	1,088	373
DF		14	1	84	75	4.404	4.64	8.81	13.4	45.0	3.36	118	396	278	97	33
DF		15	1	83	71	3.732	4.64	7.46	17.5	50.0	3.71	130	373	306	108	31
DF		16	2	83	66	6.691	9.28	9.97	23.0	53.4	6.53	229	533	539	189	44
DF		17	1	74	77	2.944	4.64	5.89	23.2	50.0	3.92	137	294	323	113	24
DF		18	1	79	89	2.778	4.64	5.56	28.1	90.0	4.44	156	500	367	129	41
DF		19	2	79	86	4.616	9.28	9.23	31.8	89.9	8.37	294	830	691	242	68
DF		Totals	8	81	76	25.165	37.13	46.92	22.7	62.4	30.35	1,064	2,927	2,504	878	241
DF	T	8	2	85	41	23.044	8.04	23.04	4.6	25.0	3.05	107	576	251	88	48
DF	T	10	1	83	46	6.951	4.02	6.95	8.7	30.0	1.72	60	209	142	50	17
DF	T	11	3	81	59	17.644	12.07	17.64	15.6	36.6	7.82	275	646	645	227	53
DF	T	13	1	83	62	4.719	4.02	4.72	19.6	60.0	2.64	93	283	218	76	23
DF	T	15	1	82	67	3.412	4.02	6.82	14.5	40.0	2.82	99	273	232	81	23
DF		Totals	8	83	51	55.770	32.18	59.18	10.7	33.6	18.04	633	1,987	1,488	523	164
RC		8	1	79	21	7.437	2.73	7.44	3.9	20.0	.68	29	149	56	24	12
RC		9	1	79	26	6.313	2.73	6.31	5.5	20.0	.81	35	126	67	29	10
RC		15	1	79	58	2.314	2.73	2.31	28.5	60.0	1.55	66	139	128	54	11
RC		18	1	78	48	1.633	2.73	1.63	37.1	40.0	1.42	61	65	117	50	5
RC		Totals	4	79	30	17.696	10.91	17.70	10.7	27.1	4.47	190	479	368	157	40
RC	T	10	1	78	37	4.109	2.42	4.11	8.9	30.0	.86	36	123	71	30	10
RC	T	11	1	78	42	3.811	2.42	3.81	11.5	30.0	1.03	44	114	85	36	9
RC	T	13	1	78	37	2.713	2.42	2.71	14.8	30.0	.94	40	81	78	33	7
RC		Totals	3	78	39	10.633	7.27	10.63	11.3	30.0	2.83	121	319	234	100	26
SF	T	10	1	85	61	4.448	2.48	4.45	13.6	40.0	1.74	61	178	143	50	15
SF		Totals	1	85	61	4.448	2.48	4.45	13.6	40.0	1.74	61	178	143	50	15
Totals			69	85	57	339.591	253.31	425.98	14.0	43.1	182.64	5977	18,344	15,067	4,931	1,513

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
Project: N1100										Date 4/23/2015												
										Time 11:59:35AM												
T025 R013 S12 T00U2										T025 R013 S12 T00U2												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
025	013	12	N1100	00U2	105.50	25	126	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	Net MBF	Log Scale Dia.				Log Length				Ln	Dia		Bd
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
WH	CU	CU															6			0.00		15.7
WH	DM	2S		10	6.1	618	580	61		100							38	12	176	1.78		3.3
WH	DM	3S		80	7.0	4,541	4,222	445		100							40	8	88	0.87		47.7
WH	DM	4S		7	5.2	368	349	37	47	53			63	37			16	5	16	0.37		21.2
WH	DM	UT		3		141	141	15	100				100				10	5	10	0.24		14.1
WH	Totals			30	6.6	5,669	5,293	558	6	83	11		7	2		91	25	7	52	0.81		102.1
WH	T	CU	CU		00.0	98											2	5		0.00		53.8
WH	T	DM	CU														7			0.00		5.1
WH	T	DM	3S	55		2,690	2,690	284		100						100	40	7	69	0.60		39.2
WH	T	DM	4S	45	4.7	2,236	2,131	225	90	10			5	21	18	56	31	5	33	0.35		64.6
WH	T	Totals		28	4.0	5,024	4,822	509	40	60			2	9	8	81	23	6	30	0.45		162.8
DF	CU	CU			00.0	36											1	6		0.00		30.1
DF	DM	2S		10	4.3	536	513	54		100						100	40	12	209	1.93		2.5
DF	DM	3S		66	6.9	3,665	3,414	360		100						100	40	8	85	0.91		40.1
DF	DM	4S		23	7.1	1,218	1,131	119	84	16			25	10		65	26	5	26	0.46		44.2
DF	DM	UT		1		51	51	5	100				100				9	5	10	0.22		5.1
DF	Totals			29	7.2	5,506	5,109	539	20	70	10		7	2		91	24	6	42	0.75		122.0
DF	T	CU	CU														5			0.00		16.8
DF	T	DM	3S	16		364	364	38		100						100	40	6	65	0.81		5.6
DF	T	DM	4S	84	8.0	1,974	1,816	192	90	10			1	50	18	30	29	5	31	0.31		57.8
DF	T	Totals		12	6.8	2,339	2,181	230	75	25			1	42	15	42	24	5	27	0.37		80.2
RC	DM	4S		100	25.0	71	53	6	100							100	39	5	30	1.05		1.8
RC	Totals			0	25.0	71	53	6	100							100	39	5	30	1.05		1.8
RA	T	CU	CU														5			0.00		2.1
RA	T	DM	4S	100	25.0	84	63	7	100						100		33	5	30	0.40		2.1
RA	T	Totals		0	25.0	84	63	7	100						100		17	5	15	0.40		4.2
Type Totals					6.3	18,693	17,521	1,848	28	65	6		5	9	4	82	24	6	37	0.60		473.0

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT N1100							DATE	4/23/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	12	N1100	00U2		105.50	25	126	S	W	
		PLOTS	TREES	TREES PER PLOT		ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		25	126	5.0							
CRUISE		14	67	4.8		28,503	.2				
DBH COUNT											
REFOREST											
COUNT		11	58	5.3							
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	18	51.0	16.3	54	18.3	74.1	5,669	5,293	2,035	2,035	
WHEMLOCK-T	13	93.6	11.9	48	20.9	71.9	5,024	4,822	1,677	1,657	
DOUG FIR	24	61.0	16.0	53	21.2	84.9	5,506	5,109	2,190	2,184	
DOUG FIR-T	10	60.7	10.6	42	11.4	37.0	2,339	2,181	716	714	
WR CEDAR	1	1.8	18.2	40	0.8	3.2	71	53	73	73	
R ALDER-T	1	2.1	11.8	37	0.5	1.6	84	63	28	28	
TOTAL	67	270.2	13.6	49	73.9	272.7	18,693	17,521	6,718	6,691	
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		90.5	18.5	42	51	60					
WHEMLOCK-T		82.0	16.7	78	94	109					
DOUG FIR		86.5	17.7	50	61	72					
DOUG FIR-T		117.3	23.9	46	61	75					
WR CEDAR		346.1	70.6	1	2	3					
R ALDER-T		500.0	102.1	2	2	4					
TOTAL		34.9	7.1	251	270	289	51	26	13		
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		89.8	18.3	60	74	88					
WHEMLOCK-T		78.0	15.9	60	72	83					
DOUG FIR		80.8	16.5	71	85	99					
DOUG FIR-T		110.0	22.5	29	37	45					
WR CEDAR		346.1	70.6	1	3	5					
R ALDER-T		500.0	102.1	2	2	3					
TOTAL		26.7	5.4	258	273	288	30	15	7		
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		88.2	18.0	4,340	5,293	6,246					
WHEMLOCK-T		78.2	16.0	4,052	4,822	5,591					
DOUG FIR		81.1	16.6	4,263	5,109	5,955					
DOUG FIR-T		111.7	22.8	1,683	2,181	2,678					
WR CEDAR		346.1	70.6	16	53	91					
R ALDER-T		500.0	102.1	63	63	128					
TOTAL		32.7	6.7	16,351	17,521	18,692	45	23	11		
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				59	71	84					
WHEMLOCK-T				56	67	78					
DOUG FIR				50	60	70					
DOUG FIR-T		50.7	10.3	45	59	72					

TC		Stand Table Summary														
Project N1100																
T025 R013 S12 T00U2											T025 R013 S12 T00U2					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees			Page:	1					
025	013	12	N1100	00U2	105.50	25	126			Date:	4/23/2011					
										Time:	11:59:37AM					
S Spec	T	Sample		Av	Trees/ Acre	BA/ Acre	Logs Acre	Average Log		Tons/ Acre	Net	Net	Totals			
		DBH	Trees	16'				Ht Tot	Net Cu.Ft.		Net Bd.Ft.	Tons	Cunits	MBF		
WH		13	1	86	57	4.264	4.11	4.26	22.4	60.0	3.05	95	256	322	101	27
WH		14	4	85	61	15.145	16.46	18.89	20.9	54.0	12.62	395	1,020	1,332	416	108
WH		15	2	85	66	6.708	8.23	13.42	17.1	45.0	7.34	229	604	775	242	64
WH		16	1	75	67	2.984	4.11	5.97	19.6	30.0	3.73	117	179	394	123	19
WH		17	4	83	64	10.392	16.46	20.78	21.1	54.7	14.05	439	1,137	1,483	463	120
WH		18	1	85	80	2.354	4.11	4.71	28.8	95.0	4.35	136	447	459	143	47
WH		19	2	84	77	4.050	8.23	8.10	30.9	100.1	8.02	251	811	846	264	86
WH		20	2	80	71	3.887	8.23	7.77	31.3	77.6	7.78	243	603	821	257	64
WH		25	1	73	75	1.246	4.11	2.49	52.2	95.0	4.17	130	237	440	137	25
WH		Totals	18	83	66	51.032	74.05	86.40	23.6	61.3	65.12	2,035	5,293	6,870	2,147	558
DF		11	1	84	62	4.993	3.54	4.99	15.9	40.0	2.27	80	200	239	84	21
DF		13	2	79	58	7.506	7.08	7.51	21.2	40.0	4.53	159	300	478	168	32
DF		14	1	79	71	3.508	3.54	7.02	14.5	40.0	2.89	102	281	305	107	30
DF		15	6	82	64	17.356	21.24	25.78	19.9	46.6	14.63	512	1,202	1,543	540	127
DF		16	3	80	60	7.804	10.62	10.50	24.0	52.2	7.18	252	548	757	266	58
DF		17	3	79	64	6.851	10.62	11.53	23.0	47.6	7.61	265	549	803	279	58
DF		18	2	80	77	4.190	7.08	8.38	25.0	65.0	5.97	209	545	629	221	57
DF		19	1	82	69	1.760	3.54	3.52	27.5	75.0	2.76	97	264	291	102	28
DF		20	1	79	83	1.590	3.54	3.18	33.5	90.0	3.03	106	286	319	112	30
DF		21	2	76	66	2.974	7.08	4.52	40.9	79.7	5.36	185	360	566	195	38
DF		22	1	83	70	1.305	3.54	2.61	37.9	110.0	2.82	99	287	298	104	30
DF		24	1	78	90	1.146	3.54	2.29	51.9	125.0	3.38	119	286	356	125	30
DF		Totals	24	80	65	60.983	84.94	91.84	23.8	55.6	62.42	2,184	5,109	6,585	2,304	539
WH	T	8	1	89	39	14.714	5.53	14.71	6.3	30.0	2.97	93	441	313	98	47
WH	T	10	1	88	50	9.743	5.53	9.74	11.9	40.0	3.72	116	390	392	123	41
WH	T	11	3	85	62	25.360	16.59	25.36	14.5	46.3	11.77	368	1,173	1,242	388	124
WH	T	12	1	86	57	7.280	5.53	7.28	15.9	40.0	3.71	116	291	391	122	31
WH	T	13	2	86	63	12.094	11.06	18.00	15.2	46.9	8.76	274	844	925	289	89
WH	T	14	3	85	63	15.592	16.59	15.59	26.1	59.9	13.44	408	934	1,417	430	99
WH	T	15	2	86	63	8.836	11.06	13.17	21.5	56.8	9.28	283	748	979	298	79
WH		Totals	13	86	57	93.619	71.87	103.86	16.0	46.4	53.65	1,657	4,822	5,660	1,748	509
DF	T	8	1	87	42	10.607	3.70	10.61	4.8	30.0	1.46	51	318	154	54	34
DF	T	9	2	86	48	16.964	7.41	16.96	7.3	34.8	3.51	123	591	370	130	62
DF	T	10	1	79	41	7.366	3.70	7.37	7.5	20.0	1.58	55	147	166	58	16
DF	T	11	2	81	53	11.667	7.41	11.67	11.7	34.7	3.88	136	405	409	143	43
DF	T	12	1	80	51	4.714	3.70	4.71	16.6	30.0	2.23	78	141	235	83	15
DF	T	14	1	81	62	3.725	3.70	3.72	22.0	50.0	2.37	82	186	250	86	20
DF	T	15	1	76	61	2.900	3.70	2.90	31.9	60.0	2.63	92	174	278	97	18
DF	T	16	1	74	67	2.719	3.70	5.44	17.6	40.0	2.73	96	218	289	101	23
DF		Totals	10	83	50	60.663	37.03	63.38	11.3	34.4	20.40	714	2,181	2,152	754	230
RA	T	12	1	83	43	2.107	1.60	2.11	13.1	30.0	.76	28	63	80	29	7
RA		Totals	1	83	43	2.107	1.60	2.11	13.1	30.0	0.76	28	63	80	29	7
RC		18	1	74	48	1.771	3.20	1.77	41.0	30.0	1.71	73	53	180	77	6
RC		Totals	1	74	48	1.771	3.20	1.77	41.0	30.0	1.71	73	53	180	77	6
Totals			67	83	59	270.175	272.69	349.35	19.2	50.2	204.06	6691	17,521	21,528	7,059	1,848

Species, Sort Grade - Board Foot Volumes (Type)											Page 1											
T TSPCSTGR											Date 4/23/2015											
Project: N1100											Time 12:59:08PM											
T025 R013 S12 TGU2											T025 R013 S12 TGU2											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
025	013	12	N1100	GU2	1.00	25	126	S	W													
Spp	S	So	Gr	%	Net	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
						Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf	
WH	T	CU	CU			00.0	288											4	6		0.00	77.5
WH	T	DM	2S	2	15.0	285	242	0			100							40	12	170	2.38	1.4
WH	T	DM	3S	76	4.9	7,937	7,551	8			100							40	7	83	0.77	91.4
WH	T	DM	4S	21	4.0	2,245	2,154	2	83	17		14	23	15	47			27	5	29	0.37	75.4
WH	T	DM	UT	1		29	29	0	100			100						4	6	3	0.29	9.6
WH	T	Totals		58	7.5	10,784	9,977	10	18	79	2	3	5	3	88			24	6	39	0.61	255.4
DF	T	CU	CU		00.0	61												1	6		0.00	43.7
DF	T	DM	2S	3	8.3	279	255	0			100							40	13	220	2.17	1.2
DF	T	DM	3S	54	6.1	4,154	3,899	4			100							40	8	87	0.93	44.9
DF	T	DM	4S	42	7.4	3,271	3,030	3	83	17		9	33	10	47			29	5	30	0.39	100.4
DF	T	DM	UT	1		56	56	0	100			100						10	5	10	0.20	5.6
DF	T	Totals		42	7.4	7,820	7,241	7	36	61	4	5	14	4	77			25	6	37	0.60	195.8
RC	T	DM	4S	100	25.0	71	53	0	100									39	5	30	1.05	1.8
RC	T	Totals		0	25.0	71	53	0	100									39	5	30	1.05	1.8
RA	T	CU	CU															5			0.00	2.1
RA	T	DM	4S	100	25.0	84	63	0	100						100			33	5	30	0.40	2.1
RA	T	Totals		0	25.0	84	63	0	100						100			17	5	15	0.40	4.2
Type Totals					7.6	18,759	17,334	17	26	71	3	4	9	4	83			24	6	38	0.61	457.2

TC PSTATS		PROJECT STATISTICS					PAGE	1				
		PROJECT		N1100			DATE	4/23/2015				
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt		
025	013	12	N1100	GU2		1.00	25	126	S	W		
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			25	126	5.0							
CRUISE			14	67	4.8	263	25.5					
DBH COUNT												
REFOREST												
COUNT			11	58	5.3							
BLANKS												
100 %												
STAND SUMMARY												
			SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-T			31	138.1	13.9	50	39.1	145.9	10,784	9,977	3,763	3,699
DOUG FIR-T			34	120.6	13.6	48	33.1	122.0	7,820	7,241	2,909	2,896
WR CEDAR-T			1	1.8	18.2	40	0.8	3.2	71	53	73	73
R ALDER-T			1	2.1	11.8	37	0.5	1.6	84	63	28	28
TOTAL			67	262.6	13.8	49	73.4	272.7	18,759	17,334	6,772	6,695
CONFIDENCE LIMITS OF THE SAMPLE												
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR												
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK-T		69.0	14.1	119	138	158						
DOUG FIR-T		90.4	18.4	98	121	143						
WR CEDAR-T		346.1	70.6	1	2	3						
R ALDER-T		500.0	102.1		2	4						
TOTAL		35.3	7.2	244	263	281	52	26	13			
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK-T		67.0	13.7	126	146	166						
DOUG FIR-T		79.7	16.3	102	122	142						
WR CEDAR-T		346.1	70.6	1	3	5						
R ALDER-T		500.0	102.1		2	3						
TOTAL		26.7	5.4	258	273	288	30	15	7			
CL	68.1	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK-T		65.3	13.3	8,646	9,977	11,307						
DOUG FIR-T		81.7	16.7	6,034	7,241	8,447						
WR CEDAR-T		346.1	70.6	16	53	91						
R ALDER-T		500.0	102.1		63	128						
TOTAL		32.6	6.6	16,181	17,334	18,486	44	23	11			
CL	68.1	COEFF	V BAR/ACRE				# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WHEMLOCK-T				59	68	77						
DOUG FIR-T				49	59	69						
WR CEDAR-T		233.9	47.7	5	17	28						
R ALDER-T		500.0	102.1		40	80						
TOTAL		32.4	6.6	59	64	68	44	22	11			

T025 R013 S12 T00U3		T025 R013 S12 T00U3
Twp 025 Rge 013 Sec 12 Tract N1100 Type 00U3 Acres 23.00 Plots 11 Sample Trees 67 CuFt S BdFt W		

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
				Net BdFt	Def%	Gross		Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft		Dia In	Bd Ft	CF/ Lf
										4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
DF	CU	CU		00.0	65													13	7		0.00	3.2
DF	DM	2S	60	8.1	9,077	8,345	192			100								40	13	211	1.87	39.5
DF	DM	3S	28	4.5	4,203	4,014	92		100			5		12	83			35	9	119	1.08	33.6
DF	DM	4S	12	8.9	1,700	1,548	36	43	57				46	54				29	6	33	0.45	46.5
DF	Totals		47	7.6	15,044	13,908	320	5	35	60		1	5	10	84			34	9	113	1.16	122.8
DF	T DM	3S	85	13.5	5,031	4,351	100		100						100			40	9	99	0.92	44.0
DF	T DM	4S	15		758	758	17	100				43	57					19	5	17	0.30	44.0
DF	T Totals		17	11.7	5,789	5,109	118	15	85			6	8		85			29	7	58	0.72	88.1
WH	T CU	CU																6			0.00	30.0
WH	T DM	3S	68	3.5	4,974	4,802	110		100						100			40	7	74	0.58	65.3
WH	T DM	4S	32		2,234	2,234	51	100				24	76					25	5	24	0.21	92.0
WH	T DM	UT																5			0.00	56.7
WH	T Totals		24	2.4	7,209	7,036	162	32	68			8	24		68			20	6	29	0.41	244.0
WH	DM	2S	18	4.2	672	644	15		100						100			40	13	230	1.66	2.8
WH	DM	3S	66	14.0	2,693	2,317	53		100						100			40	9	103	0.81	22.4
WH	DM	4S	16		533	533	12	84	16			62	38					21	5	21	0.33	25.2
WH	Totals		12	10.4	3,898	3,494	80	13	69	18		9	6		85			31	7	69	0.70	50.5
SF	T CU	CU																6			0.00	6.0
SF	T DM	3S	100		360	360	8		100						100			40	6	60	0.49	6.0
SF	T Totals		1		360	360	8		100						100			20	6	30	0.49	12.0
Type Totals				7.4	32,300	29,907	688	14	56	30		5	10	4	81			26	7	58	0.74	517.4

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT N1100				DATE 4/23/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	12	N1100	00U3	23.00	11	67	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		11	67	6.1						
CRUISE		6	31	5.2	5,913	.5				
DBH COUNT										
REFOREST										
COUNT		5	36	7.2						
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	15	59.8	21.3	72	32.1	148.5	15,044	13,908	4,850	4,829
DOUG FIR-T	6	44.0	16.4	62	15.9	64.4	5,789	5,109	1,866	1,869
WHEMLOCK	5	25.2	15.9	64	8.7	34.7	3,898	3,494	1,091	1,091
WHEMLOCK-T	4	122.0	10.9	52	24.0	79.2	7,209	7,036	1,999	1,993
PS FIR-T	1	6.0	12.3	54	1.4	5.0	360	360	118	118
TOTAL	31	257.1	15.4	60	84.6	331.7	32,300	29,907	9,924	9,900
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		49.3	15.6	50	60	69				
DOUG FIR-T		96.3	30.4	31	44	57				
WHEMLOCK		173.0	54.7	11	25	39				
WHEMLOCK-T		106.1	33.6	81	122	163				
PS FIR-T		331.7	104.9		6	12				
TOTAL		49.0	15.5	217	257	297	105	54	26	
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		49.4	15.6	125	149	172				
DOUG FIR-T		98.8	31.2	44	64	84				
WHEMLOCK		176.0	55.7	15	35	54				
WHEMLOCK-T		103.6	32.8	53	79	105				
PS FIR-T		331.7	104.9		5	10				
TOTAL		25.9	8.2	304	332	359	30	15	7	
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		51.7	16.4	11,632	13,908	16,183				
DOUG FIR-T		99.5	31.5	3,502	5,109	6,716				
WHEMLOCK		174.0	55.0	1,571	3,494	5,417				
WHEMLOCK-T		103.7	32.8	4,729	7,036	9,344				
PS FIR-T		331.7	104.9		360	737				
TOTAL		26.6	8.4	27,396	29,907	32,418	31	16	8	
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	94	109				
DOUG FIR-T				54	79	104				
WHEMLOCK	142.9	45.2		45	101	156				
WHEMLOCK-T				60	89	118				
PS FIR-T	331.7	104.9			73	149				
TOTAL	207.3	65.5		83	90	98	1,891	965	473	

Stand Table Summary																
TC TSTNDSUM																
Project N1100																
T025 R013 S12 T00U3										T025 R013 S12 T00U3						
Twp Rge Sec Tract				Type			Acres		Plots	Sample Trees			Page: 1			
025 013 12 N1100				00U3			23.00		11	67			Date: 4/23/2011			
Time: 12:59:54PM																
Spc	S T	DBH	Sample Trees	FF 16'	Av 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		17	1	84	95	6.136	9.90	12.27	27.0	90.0	9.45	331	1,104	217	76	25
DF		19	1	82	93	5.081	9.90	10.16	32.7	100.0	9.46	332	1,016	218	76	23
DF		20	5	81	89	22.337	49.50	44.67	35.8	105.0	45.62	1,599	4,691	1,049	368	108
DF		22	1	83	95	3.716	9.90	7.43	45.1	145.0	9.56	335	1,078	220	77	25
DF		23	2	77	86	6.984	19.80	13.97	45.9	122.3	18.27	641	1,709	420	147	39
DF		24	3	81	88	9.750	29.70	19.50	48.5	151.6	27.47	946	2,956	632	217	68
DF		25	1	78	93	3.024	9.90	6.05	55.5	155.0	9.56	335	937	220	77	22
DF		26	1	70	79	2.770	9.90	5.54	55.9	75.0	8.84	310	415	203	71	10
DF		Totals	15	80	90	59.798	148.50	119.60	40.4	116.3	138.23	4,829	13,908	3,179	1,111	320
WH	T	8	1	89	54	56.723	19.80	113.45	3.0	15.0	10.99	343	1,702	253	79	39
WH	T	11	1	86	67	30.002	19.80	30.00	17.1	60.0	16.44	514	1,800	378	118	41
WH	T	14	1	86	78	18.004	19.80	36.01	16.6	55.0	19.14	598	1,980	440	138	46
WH	T	15	1	83	69	17.266	19.80	34.53	15.6	45.0	17.41	538	1,554	401	124	36
WH		Totals	4	87	63	121.995	79.20	213.99	9.3	32.9	63.98	1,993	7,036	1,472	458	162
DF	T	14	1	84	73	10.326	10.73	20.65	13.2	35.0	7.77	273	723	179	63	17
DF	T	16	3	83	76	22.965	32.18	45.93	20.1	56.7	26.23	921	2,606	603	212	60
DF	T	19	1	81	85	5.623	10.73	11.25	31.5	90.0	10.09	354	1,012	232	81	23
DF	T	20	1	77	81	5.119	10.73	10.24	31.4	75.0	9.10	322	768	209	74	18
DF		Totals	6	82	77	44.032	64.35	88.06	21.2	58.0	53.18	1,869	5,109	1,223	430	118
WH		15	3	86	79	17.659	20.79	35.32	18.6	63.4	21.07	659	2,240	485	151	52
WH		16	1	86	75	4.782	6.93	9.56	21.1	55.0	6.47	202	526	149	46	12
WH		21	1	85	86	2.801	6.93	5.60	41.1	130.0	7.37	230	728	169	53	17
WH		Totals	5	86	79	25.242	34.65	50.48	21.6	69.2	34.91	1,091	3,494	803	251	80
SF	T	12	1	85	66	5.999	4.95	6.00	19.6	60.0	3.37	118	360	78	27	8
SF		Totals	1	85	66	5.999	4.95	6.00	19.6	60.0	3.37	118	360	78	27	8
Totals			31	84	73	257.066	331.65	478.13	20.7	62.5	293.68	9900	29,907	6,755	2,277	688

Species, Sort Grade - Board Foot Volumes (Type)											Page 1										
T TSPCSTGR											Date 4/23/2015										
Project: N1100											Time 1:11:48PM										
T025 R013 S12 TGU3											T025 R013 S12 TGU3										
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt																					
025 013 12 N1100 GU3 5.00 11 67 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	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
DF	T	CU	CU		00.0	66											13	7		0.00	3.3
DF	T	DM	2S	44	8.1	9,293	8,544	43		100						100	40	13	211	1.87	40.4
DF	T	DM	3S	43	9.2	9,057	8,221	41		100			2		6	91	38	9	108	0.99	76.0
DF	T	DM	4S	13	6.3	2,457	2,301	12	61	39			13	49	37		24	5	26	0.40	89.3
DF	T	Totals		63	8.7	20,873	19,067	95	7	48	45		3	6	7	84	32	8	91	1.00	209.0
WH	T	DM	2S	10	4.2	1,227	1,176	6		100						100	40	13	230	1.66	5.1
WH	T	DM	3S	67	9.8	8,094	7,298	36		100						100	40	8	88	0.69	82.7
WH	T	DM	4S	23		2,400	2,400	12	94	6			39	61			23	5	23	0.26	104.8
WH	T	DM	UT														5			0.00	55.4
WH	T	Totals		36	7.2	11,721	10,874	54	21	69	11		9	13		78	24	6	44	0.55	248.0
SF	T	CU	CU														6			0.00	6.0
SF	T	DM	3S	100		360	360	2		100						100	40	6	60	0.49	6.0
SF	T	Totals		1		360	360	2		100						100	20	6	30	0.49	12.0
Type Totals					8.1	32,954	30,300	152	12	56	32		5	9	5	82	28	7	65	0.78	469.0

TC TSTATS		STATISTICS					PAGE 1			
		PROJECT N1100					DATE 4/23/2015			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	12	N1100	GU3	5.00	11	67	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		11	67	6.1						
CRUISE		6	31	5.2	1,164	2.7				
DBH COUNT										
REFOREST										
COUNT		5	36	7.2						
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-T	21	102.8	19.5	68	48.2	212.9	20,873	19,067	6,729	6,711
WHEMLOCK-T	9	124.0	13.0	57	31.6	113.9	11,721	10,874	3,269	3,265
PS FIR-T	1	6.0	12.3	54	1.4	5.0	360	360	118	118
TOTAL	31	232.9	16.2	61	82.5	331.7	32,954	30,300	10,116	10,093
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	33.6	10.6	92	103	114					
WHEMLOCK-T	91.8	29.0	88	124	160					
PS FIR-T	331.7	104.9		6	12					
TOTAL	42.5	13.4	202	233	264	79	41	20		
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	35.2	11.1	189	213	237					
WHEMLOCK-T	91.9	29.1	81	114	147					
PS FIR-T	331.7	104.9		5	10					
TOTAL	25.9	8.2	304	332	359	30	15	7		
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	37.7	11.9	16,796	19,067	21,338					
WHEMLOCK-T	93.2	29.5	7,670	10,874	14,077					
PS FIR-T	331.7	104.9		360	737					
TOTAL	27.5	8.7	27,662	30,300	32,939	33	17	8		
CL: 68.1 %	COEFF	V-BAR/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T			79	90	100					
WHEMLOCK-T			67	96	124					
PS FIR-T	331.7	104.9		73	149					
TOTAL	211.3	66.8	83	91	99	1,965	1,002	491		

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1									
Project: N1100												Date 4/23/2015									
												Time 1:12:34PM									
T025 R013 S14 TU440										T025 R013 S14 TU440											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
025	013	14	N1100	U440	115.80	21	111	S	W												
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume							Average Log			Logs		
					Net	Def%	Gross		Net	Net MBF	Log Scale Dia.			Log Length				Ln		Dia	Bd
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	/Acre
WH	CU	CU			00.0	131											14	6		0.00	7.9
WH	DM	2S	27	7.0	2,196	2,041	236			100				31	69		37	12	186	1.51	11.0
WH	DM	3S	62	7.6	4,994	4,615	534		100							100	40	10	129	1.06	35.8
WH	DM	4S	10	2.8	782	760	88	65	35				45	55			19	5	21	0.39	36.7
WH	DM	UT	1		22	22	3	100					100				10	5	10	0.29	2.2
WH	Totals		34	8.4	8,125	7,438	861	7	66	27			5	6	8	81	29	8	80	0.90	93.6
WH	T	CU	CU		00.0	31											1	6		0.00	18.4
WH	T	DM	3S	71	8.2	5,616	5,154	597		100						100	40	8	92	0.80	56.0
WH	T	DM	4S	21		1,529	1,529	177	100				39	6		54	22	5	23	0.32	66.9
WH	T	DM	UT	8		573	573	66	100					100			29	5	30	0.20	19.1
WH	T	Totals	33	6.4	7,749	7,256	840	29	71				8	9		82	27	6	45	0.55	160.4
DF	CU	CU															8			0.00	5.9
DF	DM	3S	83	11.1	5,022	4,463	517		100							100	40	9	100	1.00	44.8
DF	DM	4S	9	5.7	556	524	61	79	21				100				13	5	13	0.32	38.9
DF	DM	UT	2		64	64	7	100					100				20	5	20	0.53	3.2
DF	RO	2S	6		321	321	37		100				100				16	13	100	1.34	3.2
DF	Totals		24	9.9	5,963	5,372	622	9	85	6			17			83	25	7	56	0.85	96.1
DF	T	CU	CU		00.0	20											13	5		0.00	2.0
DF	T	DM	3S	82	4.8	1,176	1,120	130		100						100	40	7	72	0.67	15.6
DF	T	DM	4S	16	29.5	319	225	26	44	56			44			56	12	6	12	0.47	18.0
DF	T	DM	UT	2		18	18	2	100				100				11	5	10	0.29	1.8
DF	T	Totals	6	11.1	1,533	1,363	158	9	91				9			91	24	6	36	0.60	37.4
SS	DM	2S	48	5.6	305	288	33		100				100				30	13	170	1.66	1.7
SS	DM	3S	43	6.7	278	260	30		100							100	40	10	140	1.36	1.9
SS	DM	4S	9		52	52	6		100				100				15	6	15	0.48	3.6
SS	Totals		3	5.6	636	601	70		52	48			9	48		43	25	9	85	1.18	7.1
RA	T	CU	CU														5			0.00	2.6
RA	T	DM	4S	100	25.0	104	78	9	100							100	40	5	30	0.40	2.6
RA	T	Totals	0	25.0	104	78	9	100								100	20	5	15	0.40	5.2
Type Totals					8.3	24,110	22,108	2,560	15	73	12		9	6	3	82	27	7	55	0.72	399.7

TC TSTATS		STATISTICS					PAGE 1			
		PROJECT N1100					DATE 4/23/2015			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	14	N1100	U440	115.80	21	111	S	W	
				TREES	ESTIMATED		PERCENT			
		PLOTS	TREES	PER PLOT	TOTAL		SAMPLE			
					TREES		TREES			
TOTAL		21	111	5.3						
CRUISE		11	57	5.2	24,959		.2			
DBH COUNT										
REFOREST										
COUNT		10	54	5.4						
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	21	46.8	18.0	60	19.5	83.0	8,125	7,438	2,464	2,409
WHEMLOCK-T	14	95.9	13.4	52	25.5	93.3	7,749	7,256	2,390	2,381
DOUG FIR	13	48.1	17.5	55	19.2	80.4	5,963	5,372	2,066	2,067
DOUG FIR-T	6	18.7	14.3	56	5.5	20.7	1,533	1,363	535	529
S SPRUCE	2	3.6	20.0	53	1.7	7.8	636	601	212	212
R ALDER-T	1	2.6	11.6	46	0.6	1.9	104	78	41	42
TOTAL	57	215.5	15.6	55	72.6	287.1	24,110	22,108	7,709	7,639
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	98.1	21.9	37	47	57					
WHEMLOCK-T	78.0	17.4	79	96	113					
DOUG FIR	91.2	20.4	38	48	58					
DOUG FIR-T	204.5	45.7	10	19	27					
S SPRUCE	251.2	56.2	2	4	6					
R ALDER-T	458.3	102.5		3	5					
TOTAL	38.7	8.7	197	216	234	63	32	16		
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	91.9	20.6	66	83	100					
WHEMLOCK-T	69.4	15.5	79	93	108					
DOUG FIR	84.7	18.9	65	80	96					
DOUG FIR-T	175.6	39.3	13	21	29					
S SPRUCE	251.0	56.1	3	8	12					
R ALDER-T	458.3	102.5		2	4					
TOTAL	26.7	6.0	270	287	304	30	15	7		
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	103.1	23.1	5,722	7,438	9,154					
WHEMLOCK-T	72.7	16.3	6,076	7,256	8,436					
DOUG FIR	89.0	19.9	4,303	5,372	6,441					
DOUG FIR-T	192.8	43.1	775	1,363	1,951					
S SPRUCE	251.5	56.3	263	601	939					
R ALDER-T	458.3	102.5		78	158					
TOTAL	36.7	8.2	20,292	22,108	23,924	57	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		
WHEMLOCK	80.9	18.1	69	90	110					
WHEMLOCK-T			65	78	90					
DOUG FIR			54	67	80					
DOUG FIR-T	153.0	34.2	37	66	94					

TC TSTATS				STATISTICS			PAGE 2		
				PROJECT N1100			DATE 4/23/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
025	013	14	N1100	U440	115.80	21	111	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	196.9	44.0	34	77	121				
R ALDER-T	458.3	102.5		41	83				
TOTAL	182.9	40.9	71	77	83	1,406	717	351	

Stand Table Summary																	
TC TSTNDSUM																	
Project N1100																	
T025 R013 S14 TU440													T025 R013 S14 TU440				
Twp Rge Sec Tract				Type			Acres		Plots		Sample Trees				Page: 1		
025 013 14 N1100				U440			115.80		21		111				Date: 4/23/2011		
Time: 1:12:36PM																	
Spc	S T	Sample		Av		Trees/ Acres	BA/ Acres	Logs Acres	Average Log		Net		Net		Totals		
		DBH	Trees	FF 16'	Ht Tot				Net Cu.Ft.	Net Bd.Ft.	Tons/ Acres	Cu.Ft. Acres	Bd.Ft. Acres	Tons	Cunits	MBF	
WH		14	1	86	61	3.593	3.95	3.59	26.7	70.0	3.07	96	251	356	111	29	
WH		16	3	85	78	8.393	11.85	16.79	22.0	81.8	11.84	370	1,373	1,371	428	159	
WH		17	1	86	63	2.449	3.95	4.90	21.6	65.0	3.39	106	318	392	123	37	
WH		18	10	86	73	22.228	39.51	40.11	27.4	83.6	36.97	1,100	3,353	4,282	1,274	388	
WH		19	2	86	76	3.992	7.90	7.98	29.9	97.4	7.64	239	778	884	276	90	
WH		20	1	85	73	1.758	3.95	3.52	33.9	95.0	3.84	119	334	444	138	39	
WH		21	1	84	88	1.707	3.95	3.41	41.4	135.0	4.52	141	461	523	164	53	
WH		22	1	72	69	1.483	3.95	2.97	39.8	65.0	3.76	118	193	436	137	22	
WH		25	1	85	72	1.178	3.95	2.36	50.8	160.0	3.83	120	377	443	139	44	
WH	Totals	21	85	73		46.780	82.97	85.62	28.1	86.9	78.86	2,409	7,438	9,132	2,789	861	
WH	T	8	1	88	50	19.101	6.67	19.10	5.9	30.0	3.58	112	573	414	129	66	
WH	T	10	1	87	55	12.224	6.67	12.22	11.0	40.0	4.30	134	489	498	155	57	
WH	T	12	1	78	60	8.489	6.67	8.49	18.4	40.0	5.01	156	340	580	181	39	
WH	T	13	1	86	60	6.808	6.67	6.81	22.4	60.0	4.87	152	408	564	176	47	
WH	T	14	2	86	67	12.481	13.33	24.96	13.7	37.6	10.96	342	938	1,269	396	109	
WH	T	15	1	85	65	5.657	6.67	11.31	15.5	50.0	5.62	176	566	651	203	66	
WH	T	16	4	86	75	19.598	26.67	39.20	20.3	67.5	25.50	797	2,645	2,953	923	306	
WH	T	17	2	86	67	8.416	13.33	16.83	21.2	62.4	11.39	357	1,051	1,319	413	122	
WH	T	20	1	86	60	3.087	6.67	3.09	50.0	80.0	5.26	154	247	609	179	29	
WH	Totals	14	86	62		95.861	93.34	142.01	16.8	51.1	76.48	2,381	7,256	8,856	2,757	840	
DF		12	1	83	67	7.373	6.18	14.75	9.8	30.0	4.13	145	442	478	168	51	
DF		16	3	82	73	13.072	18.55	26.14	19.9	53.1	14.81	520	1,387	1,715	602	161	
DF		17	1	82	71	4.017	6.18	8.03	20.7	60.0	4.74	166	482	549	192	56	
DF		19	4	81	60	12.662	24.73	22.22	25.9	65.7	16.41	576	1,459	1,900	667	169	
DF		20	3	81	66	8.308	18.55	13.81	35.6	79.9	13.99	491	1,104	1,620	569	128	
DF		21	1	84	75	2.620	6.18	5.24	32.3	95.0	4.82	169	498	558	196	58	
DF	Totals	13	82	67		48.052	80.38	90.19	22.9	59.6	58.89	2,067	5,372	6,820	2,394	622	
DF	T	11	1	83	70	4.964	3.46	9.93	8.6	30.0	2.42	85	298	281	98	34	
DF	T	12	1	82	70	4.259	3.46	8.52	10.5	35.0	2.54	89	298	295	103	35	
DF	T	14	1	80	70	3.144	3.46	6.29	14.6	25.0	2.59	92	157	300	106	18	
DF	T	16	1	84	65	2.507	3.46	5.01	17.0	50.0	2.43	85	251	281	99	29	
DF	T	18	1	80	67	2.046	3.46	2.05	42.3	80.0	2.65	87	164	307	100	19	
DF	T	19	1	82	65	1.774	3.46	3.55	25.7	55.0	2.60	91	195	301	106	23	
DF	Totals	6	82	69		18.694	20.74	35.34	15.0	38.6	15.24	529	1,363	1,765	613	158	
SS		20	1	82	66	1.856	3.89	3.71	29.5	75.0	2.85	110	278	330	127	32	
SS		21	1	82	64	1.697	3.89	3.39	30.3	95.0	2.67	103	322	309	119	37	
SS	Totals	2	82	65		3.553	7.78	7.11	29.9	84.6	5.52	212	601	639	246	70	
RA	T	12	1	82	55	2.595	1.90	2.60	16.0	30.0	1.14	42	78	132	48	9	
RA	Totals	1	82	55		2.595	1.90	2.60	16.0	30.0	1.14	42	78	132	48	9	
Totals		57	84	66		215.535	287.12	362.86	21.1	60.9	236.13	7639	22,108	27,344	8,846	2,560	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)								Page 1										
		Project: N1100								Date 4/23/2015										
										Time 1:14:12PM										
T025 R013 S12 T4R50										T025 R013 S12 T4R50										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
025	013	12	N1100	4R50	78.00	12	56	S	W											
Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
DF	CU	CU			00.0	91										10	6		0.00	8.7
DF	DM	2S	39	5.6	5,632	5,316	415		24	76					100	40	13	223	2.00	23.8
DF	DM	3S	51	7.5	7,323	6,773	528		100			2	1	2	95	38	9	105	1.02	64.2
DF	DM	4S	10	5.3	1,398	1,325	103	61	39			63	29	8		20	5	23	0.37	58.2
DF	Totals		71	7.1	14,444	13,414	1,046	6	64	30		7	3	2	88	30	8	87	1.04	154.9
DF	T	CU	CU													6			0.00	4.2
DF	T	DM	3S	86	8.0	1,168	1,074	84	100						100	40	7	76	0.76	14.2
DF	T	DM	4S	14		162	162	13	100			42	58			14	5	16	0.26	10.0
DF	T	Totals	7	7.0	1,330	1,236	96	13	87			6	8		87	25	6	44	0.66	28.3
WH	CU	CU														7			0.00	19.1
WH	DM	3S	94	7.5	2,531	2,340	183		100						100	40	7	72	0.79	32.4
WH	DM	4S	6		133	133	10	100				100				13	5	10	0.24	13.3
WH	Totals		13	7.2	2,663	2,472	193	5	95			5			95	23	7	38	0.73	64.7
WH	T	DM	3S	66		1,067	1,067	83	100						100	40	7	70	0.59	15.2
WH	T	DM	4S	34		537	537	42	100			28	72			17	5	19	0.30	28.1
WH	T	Totals	8		1,604	1,604	125	33	67			10	24		67	25	6	37	0.46	43.3
SS	T	DM	UT	100		173	173	14	100				100			21	5	20	0.34	8.7
SS	T	Totals	1		173	173	14	100					100			21	5	20	0.34	8.7
RC	DM	4S	100		94	94	7	100					100			25	5	30	0.60	3.1
RC	Totals		0		94	94	7	100					100			25	5	30	0.60	3.1
Type Totals					6.5	20,308	18,993	1,481	10	69	21	7	6	1	86	27	7	63	0.85	303.0

TC TSTATS		STATISTICS							PAGE	1	
		PROJECT		N1100			DATE		4/23/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
025	013	12	N1100	4R50	78.00	12	56	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		12	56	4.7							
CRUISE		9	36	4.0	12,777	.3					
DBH COUNT REFOREST COUNT		3	17	5.7							
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
DOUG FIR	25	77.4	19.7	62	36.8	163.4	14,444	13,414	4,833	4,809	
DOUG FIR-T	4	14.2	15.3	55	4.6	18.2	1,330	1,236	464	464	
WHEMLOCK	2	32.4	15.2	53	10.5	40.8	2,663	2,472	1,063	1,068	
WHEMLOCK-T	3	28.1	12.2	45	6.5	22.7	1,604	1,604	510	510	
S SPRUCE-T	1	8.7	9.8	30	1.4	4.5	173	173	62	62	
WR CEDAR	1	3.1	14.0	28	0.9	3.3	94	94	47	47	
TOTAL	36	163.8	16.8	55	61.7	252.9	20,308	18,993	6,979	6,960	
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	46.6	14.0	67	77	88						
DOUG FIR-T	149.5	45.1	8	14	21						
WHEMLOCK	189.6	57.2	14	32	51						
WHEMLOCK-T	152.7	46.0	15	28	41						
S SPRUCE-T	346.4	104.4		9	18						
WR CEDAR	346.4	104.4		3	6						
TOTAL	29.5	8.9	149	164	178	38	19	9			
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	42.6	12.9	142	163	184						
DOUG FIR-T	147.7	44.5	10	18	26						
WHEMLOCK	189.6	57.2	17	41	64						
WHEMLOCK-T	160.5	48.4	12	23	34						
S SPRUCE-T	346.4	104.4		5	9						
WR CEDAR	346.4	104.4		3	7						
TOTAL	16.8	5.1	240	253	266	12	6	3			
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	49.3	14.9	11,420	13,414	15,408						
DOUG FIR-T	151.7	45.7	671	1,236	1,802						
WHEMLOCK	189.6	57.2	1,059	2,472	3,886						
WHEMLOCK-T	171.8	51.8	773	1,604	2,434						
S SPRUCE-T	346.4	104.4		173	354						
WR CEDAR	346.4	104.4		94	191						
TOTAL	26.7	8.1	17,464	18,993	20,522	31	16	8			
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			70	82	94						
DOUG FIR-T	151.7	45.7	37	68	99						
WHEMLOCK			26	61	95						
WHEMLOCK-T	138.0	41.6	34	71	107						

STATISTICS
PROJECT N1100

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
025	013	12	N1100	4R50	78.00	12	56	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	346.4	104.4		38	78				
WR CEDAR	346.4	104.4		28	57				
TOTAL	<i>128.6</i>	<i>38.7</i>	<i>69</i>	<i>75</i>	<i>81</i>	<i>721</i>	<i>368</i>	<i>180</i>	

TC TSTNDSUM		Stand Table Summary														
Project N1100																
T025 R013 S12 T4R50											T025 R013 S12 T4R50					
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	Page:								
025	013	12	N1100	4R50	78.00	12	56	1	Date: 4/23/2014				Time: 1:14:14PM			
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		16	2	83	76	9.364	13.07	14.16	24.0	76.0	10.41	340	1,076	812	265	84
DF		17	4	81	69	16.839	26.14	29.58	24.1	62.9	20.24	711	1,861	1,579	555	145
DF		18	5	81	79	18.329	32.67	36.66	26.3	72.8	27.49	965	2,668	2,144	752	208
DF		20	3	81	83	9.108	19.60	18.22	32.3	93.4	16.77	588	1,702	1,308	458	133
DF		21	2	82	82	5.514	13.07	11.03	37.0	119.4	11.64	408	1,317	908	319	103
DF		22	2	78	76	4.862	13.07	9.72	39.7	90.0	10.98	386	876	857	301	68
DF		23	1	74	99	2.207	6.53	4.41	53.6	145.0	6.75	237	640	526	185	50
DF		24	2	82	72	4.197	13.07	8.39	44.2	127.4	10.58	371	1,070	825	290	83
DF		25	1	77	77	1.872	6.53	3.74	52.0	130.0	5.55	195	487	433	152	38
DF		26	2	83	79	3.559	13.07	7.12	54.8	172.0	11.11	390	1,224	867	304	95
DF		27	1	72	85	1.596	6.53	3.19	68.5	155.0	6.23	218	495	486	170	39
DF		Totals	25	81	77	77.444	163.35	146.23	32.9	91.7	137.75	4,809	13,414	10,744	3,751	1,046
WH		14	1	80	63	19.101	20.42	19.10	27.0	60.0	16.34	516	1,146	1,274	402	89
WH		17	1	81	67	13.264	20.42	26.53	20.8	50.0	17.68	553	1,326	1,379	431	103
WH		Totals	2	80	65	32.365	40.84	45.63	23.4	54.2	34.02	1,068	2,472	2,653	833	193
WH	T	10	1	77	39	12.820	7.56	12.82	9.2	30.0	3.78	118	385	295	92	30
WH	T	13	1	84	65	7.958	7.56	15.92	12.8	40.0	6.52	204	637	508	159	50
WH	T	14	1	86	65	7.281	7.56	14.56	12.9	40.0	6.01	188	582	469	147	45
WH		Totals	3	81	53	28.058	22.69	43.30	11.8	37.0	16.30	510	1,604	1,272	397	125
DF	T	14	1	79	63	4.185	4.54	4.18	25.3	60.0	3.02	106	251	235	83	20
DF	T	15	1	82	63	3.747	4.54	7.49	14.2	40.0	3.03	106	300	236	83	23
DF	T	16	2	82	73	6.224	9.08	12.45	20.3	55.1	7.19	252	685	561	197	53
DF		Totals	4	81	67	14.156	18.15	24.13	19.2	51.2	13.24	464	1,236	1,032	362	96
SS	T	10	1	78	30	8.662	4.54	8.66	7.2	20.0	1.61	62	173	126	48	14
SS		Totals	1	78	30	8.662	4.54	8.66	7.2	20.0	1.61	62	173	126	48	14
RC		14	1	73	32	3.118	3.33	3.12	15.1	30.0	1.10	47	94	86	37	7
RC		Totals	1	73	32	3.118	3.33	3.12	15.1	30.0	1.10	47	94	86	37	7
Totals			36	81	66	163.804	252.90	271.06	25.7	70.1	204.02	6960	18,993	15,914	5,429	1,481

Species, Sort Grade - Board Foot Volumes (Type)											Page 1										
T TSPCSTGR											Date 4/23/2015										
Project: N1100											Time 1:15:09PM										
T025 R013 S14 TGU4											T025 R013 S14 TGU4										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt	W											
025	013	14	N1100	GU4	1.30	21	111	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	Net MBF	Log Scale Dia.				Log Length				Ln		Dia
	T	rt	ad						4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
WH	T	CU	CU		00.0	190											7	6		0.00	24.0
WH	T	DM	2S	17	7.0	2,800	2,603	3		100				31	69		37	12	186	1.51	14.0
WH	T	DM	3S	65	7.8	10,611	9,779	13		100					100		40	9	111	0.93	88.0
WH	T	DM	4S	14	1.3	2,152	2,124	3	84	16			42	28		29	21	5	22	0.35	97.3
WH	T	DM	UT	4		461	461	1	100				6	94			26	5	27	0.21	17.2
WH	T	Totals		61	7.7	16,214	14,966	19	15	68	17		6	7	5	82	28	7	62	0.73	240.5
DF	T	CU	CU		00.0	32											5	7		0.00	8.2
DF	T	DM	3S	73	14.6	7,495	6,398	8		100					100		40	8	91	0.87	70.1
DF	T	DM	4S	22	1.4	2,019	1,992	3	23	77			28	72			14	7	30	0.44	66.7
DF	T	DM	UT	1		83	83	0	100				100				16	5	15	0.44	5.5
DF	T	RO	2S	4		276	276	0		100			100				16	13	100	1.34	2.8
DF	T	Totals		36	11.7	9,904	8,748	11	6	91	3		10	16		73	25	7	57	0.75	153.3
SS	T	DM	2S	48	5.6	305	288	0		100				100			30	13	170	1.66	1.7
SS	T	DM	3S	43	6.7	278	260	0		100					100		40	10	140	1.36	1.9
SS	T	DM	4S	9		52	52	0		100			100				15	6	15	0.48	3.6
SS	T	Totals		2	5.6	636	601	1		52	48		9	48		43	25	9	85	1.18	7.1
RA	T	CU	CU														5			0.00	2.6
RA	T	DM	4S	100	25.0	104	78	0	100						100		40	5	30	0.40	2.6
RA	T	Totals		0	25.0	104	78	0	100						100		20	5	15	0.40	5.2
Type Totals					9.2	26,858	24,393	32	12	75	13		8	11	3	78	27	7	60	0.74	406.1

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT N1100				DATE	4/23/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	14	N1100	GU4	1.30	21	111	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		21	111	5.3						
CRUISE		11	57	5.2	274		20.8			
DBH COUNT										
REFOREST										
COUNT		10	54	5.4						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-T	35	132.1	15.6	55	44.6	176.3	16,214	14,966	4,948	4,870
DOUG FIR-T	19	72.9	16.2	55	25.9	104.1	9,904	8,748	2,944	2,937
S SPRUCE-T	2	3.6	20.0	53	1.7	7.8	636	601	212	212
R ALDER-T	1	2.6	11.6	46	0.6	1.9	104	78	41	42
TOTAL	57	211.1	15.9	55	72.8	290.1	26,858	24,393	8,146	8,061
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	60.0	13.4	114	132	150					
DOUG FIR-T	98.0	21.9	57	73	89					
S SPRUCE-T	251.2	56.2	2	4	6					
R ALDER-T	458.3	102.5		3	5					
TOTAL	40.9	9.2	192	211	230	70	36	18		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	60.9	13.6	152	176	200					
DOUG FIR-T	86.4	19.3	84	104	124					
S SPRUCE-T	251.0	56.1	3	8	12					
R ALDER-T	458.3	102.5		2	4					
TOTAL	27.3	6.1	272	290	308	31	16	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-T	69.9	15.6	12,627	14,966	17,305					
DOUG FIR-T	104.3	23.3	6,706	8,748	10,790					
S SPRUCE-T	251.5	56.3	263	601	939					
R ALDER-T	458.3	102.5		78	158					
TOTAL	41.0	9.2	22,158	24,393	26,629	71	36	18		
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T			72	85	98					
DOUG FIR-T	29.4	6.6	64	84	104					
S SPRUCE-T	196.9	44.0	34	77	121					
R ALDER-T	458.3	102.5		41	83					
TOTAL	187.5	41.9	76	84	92	1,478	754'	370		

Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
T TSPCSTGR										Date 4/23/2015											
Project: N1100										Time 1:17:56PM											
T025 R014 S13 T00U5										T025 R014 S13 T00U5											
Twp	Rgc	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
025	014	13	N1100	00U5	3.00	3	10	S	W												
Spp	Sp	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/	
DF	T	DM	2S	72	16.7	8,822	7,352	22	100				100				38	13	192	2.10	38.4
DF	T	DM	3S	16	11.1	1,772	1,575	5	100				100				40	8	80	1.27	19.7
DF	T	DM	4S	12	11.5	1,349	1,194	4	16	84			74	26			17	6	21	0.51	58.1
DF	T	Totals		55	15.2	11,942	10,121	30	2	25	73		9	3		88	28	9	87	1.42	116.2
WH	T	CU	.CU														6	0.00		66.1	
WH	T	DM	3S	78	5.1	6,950	6,593	20	100				100				40	7	83	0.82	79.4
WH	T	DM	4S	22		1,803	1,803	5	95	5			30	70			23	5	24	0.33	76.3
WH	T	Totals		45	4.1	8,753	8,396	25	20	80			6	94			22	6	38	0.65	221.7
Type Totals					10.5	20,695	18,518	56	10	50	40		8	2		91	24	7	55	0.95	337.9

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT N1100		DATE 4/23/2015				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	014	13	N1100	00U5	3.00	3	16	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		3	16	5.3						
CRUISE		2	10	5.0	507		2.0			
DBH COUNT										
REFOREST										
COUNT		1	6	6.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR-T	4	58.1	22.7	58	34.3	163.4	11,942	10,121	4,580	4,586
WHEMLOCK-T	6	110.9	14.5	51	33.4	127.1	8,753	8,396	3,196	3,194
TOTAL	10	169.0	17.8	53	68.9	290.4	20,695	18,518	7,776	7,780
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	61.6	42.7	33	58	83					
WHEMLOCK-T	56.9	39.4	67	111	155					
TOTAL	28.7	19.9	135	169	203	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-T	66.7	46.2	88	163	239					
WHEMLOCK-T	49.5	34.3	84	127	171					
TOTAL	21.7	15.0	247	290	334	27	14	7		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T	72.2	50.0	5,062	10,121	15,181					
WHEMLOCK-T	54.3	37.6	5,241	8,396	11,551					
TOTAL	35.0	24.2	14,033	18,518	23,003	70	36	18		
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR-T			31	62	93					
WHEMLOCK-T	45.0	31.2	41	66	91					
TOTAL	160.2	111.0	48	64	79	1,478	754	369		

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1									
		Project: N1100										Date 4/23/2015									
												Time 1:19:14PM									
T025 R013 S11 T00U6												T025 R013 S11 T00U6									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
025	013	11	N1100	00U6	19.90	9	25	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
WH	T	CU	CU						4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
WH	T	DM	3S	58	2.9	9,640	9,365	186		100					100		40	8	88	0.74	170.9
WH	T	DM	4S	40		6,404	6,404	127	100				10	2	13	75	32	5	33	0.37	106.3
WH	T	DM	UT	2		231	231	5	100				100				8	5	10	0.20	193.7
WH T Totals				91	1.7	16,275	16,000	318	41	59			5	1	5	89	22	6	32	0.52	23.1
RA	T	CU	CU														5			0.00	17.5
RA	T	DM	3S	28	14.3	332	285	6		100			100				20	10	60	0.73	4.7
RA	T	DM	4S	72	11.3	796	705	14	100					13	87		34	5	32	0.30	22.3
RA T Totals				6	12.2	1,128	990	20	71	29			29	10	62		19	6	22	0.35	44.5
RC	T	DM	4S	100	18.0	336	275	5	100					44	56		28	5	25	0.46	11.2
RC T Totals				2	18.0	336	275	5	100					44	56		28	5	25	0.46	11.2
SF	T	CU	CU														5			0.00	17.3
SF	T	DM	4S	100	.0	347	347	7	100				100				21	5	20	0.20	17.3
SF T Totals				2	.0	347	347	7	100				100				11	5	10	0.20	34.7
Type Totals					2.6	18,085	17,612	350	45	55			6	4	6	84	21	6	30	0.50	584.4

TC TSTATS				STATISTICS				PAGE 1		
				PROJECT N1100		DATE 4/23/2015				
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	013	11	N1100	00U6	19.90	9	45	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		9	45	5.0						
CRUISE		6	24	4.0	5,926	.4				
DBH COUNT										
REFOREST										
COUNT		3	16	5.3						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-T	18	247.0	13.1	49	63.6	229.9	16,275	16,000	5,511	5,515
R ALDER-T	3	22.3	10.5	45	4.1	13.3	1,128	990	291	291
WR CEDAR-T	2	11.2	12.1	32	2.6	8.9	336	275	143	143
PS FIR-T	1	17.3	8.0	28	2.1	6.1	347	347	73	73
TOTAL	24	297.8	12.6	47	72.7	258.2	18,085	17,612	6,019	6,022
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	44.9	15.9	208	247	286					
R ALDER-T	300.0	106.0		22	46					
WR CEDAR-T	199.3	70.4	3	11	19					
PS FIR-T	300.0	106.0		17	36					
TOTAL			298	298	298					
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	37.0	13.1	200	230	260					
R ALDER-T	300.0	106.0		13	27					
WR CEDAR-T	198.4	70.1	3	9	15					
PS FIR-T	300.0	106.0		6	12					
TOTAL			258	258	258					
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T	34.2	12.1	14,066	16,000	17,934					
R ALDER-T	300.0	106.0		990	2,039					
WR CEDAR-T	200.2	70.7	81	275	470					
PS FIR-T	300.0	106.0		347	714					
TOTAL			17,612	17,612	17,612					
CL: 68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK-T			61	70	78					
R ALDER-T	300.0	106.0		74	153					
WR CEDAR-T	200.2	70.7	9	31	53					
PS FIR-T	300.0	106.0		57	118					
TOTAL	162.7	57.5	68	68	68	1,190	607	297		

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

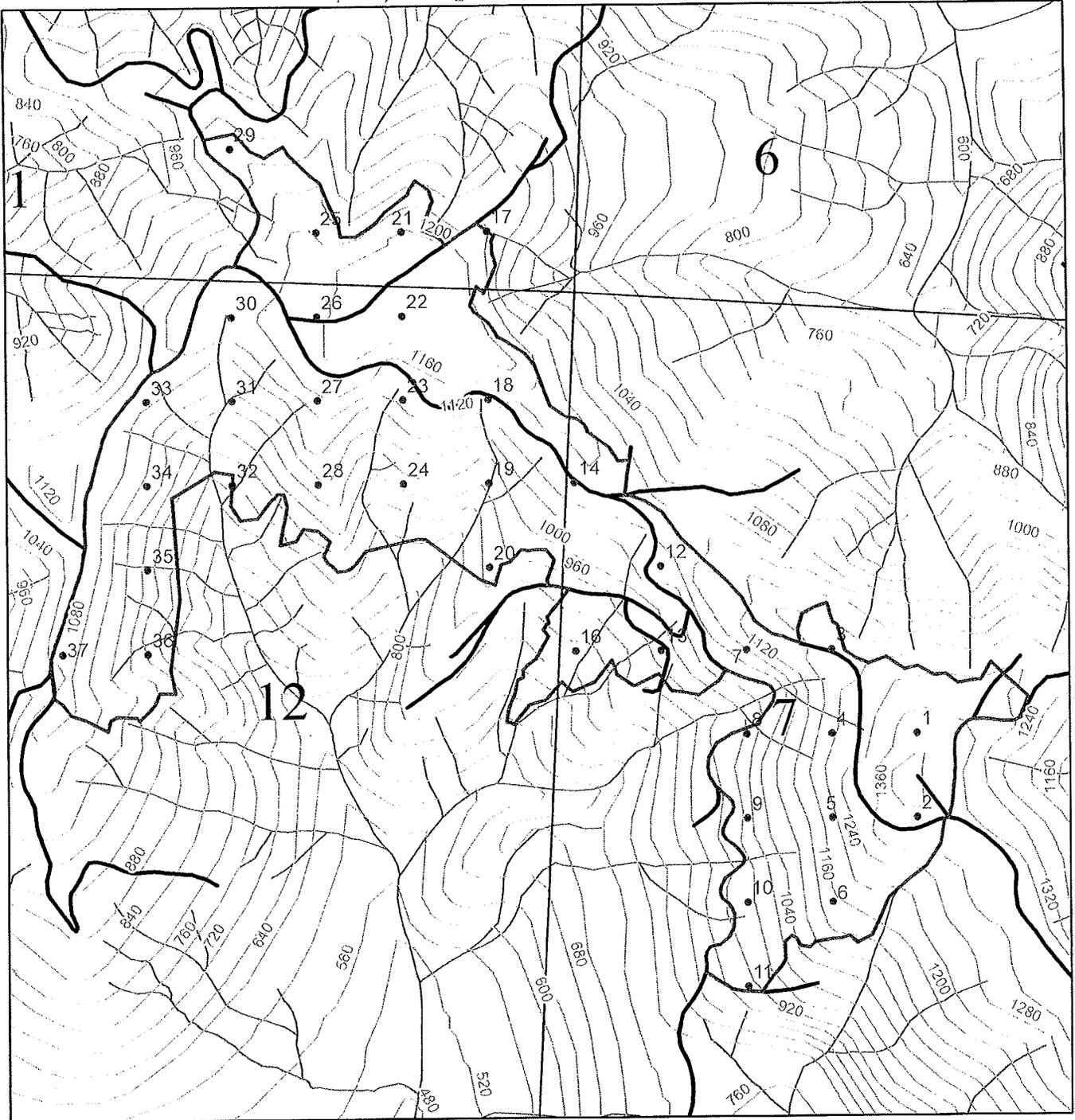
T025 R013 S01 Ty00U1	82.5
T025 R013 S11 Ty00U6	19.9
T025 R014 S13 Ty00U5	3.0

Project N1100
Acres 435.00

Page No 1
Date: 4/28/2015
Time 2:39:24PM

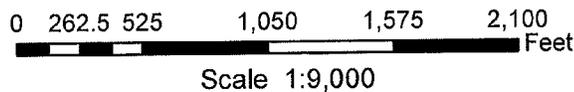
Species	S T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		21,490	38,160	29,832	48.57	27.35	0.90	10,467	10,437	2,999	2,769
WHEMLOCK	T	42,159	54,697	25,425	18.75	14.45	0.46	7,945	7,906	2,546	2,436
WHEMLOCK		22,531	37,034	26,289	36.21	22.03	0.73	8,215	8,158	2,535	2,348
DOUG FIR	T	16,186	21,287	9,203	19.90	15.13	0.52	3,229	3,221	991	910
S SPRUCE		411	823	639	59.73	29.86	1.19	246	246	74	70
WR CEDAR		1,890	1,890	635	14.29	14.29	0.59	270	270	54	52
R ALDER	T	971	1,066	373	14.00	12.76	0.38	136	136	44	36
WR CEDAR	T	1,102	1,102	302	11.68	11.68	0.43	129	129	33	32
PS FIR	T	880	880	280	11.10	11.10	0.34	98	98	32	32
S SPRUCE	T	680	685	133	7.52	7.46	0.35	51	51	14	14
Totals		108,302	157,624	93,112	28.30	19.45	0.64	30,786	30,651	9,322	8,698

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	107,330	156,558	92,738	28.43	19.49	0.64	30,651	30,515	9,279	8,662
H	971	1,066	373	14.00	12.76	0.38	136	136	44	36
Totals	108,302	157,624	93,112	28.30	19.45	0.64	30,786	30,651	9,322	8,698



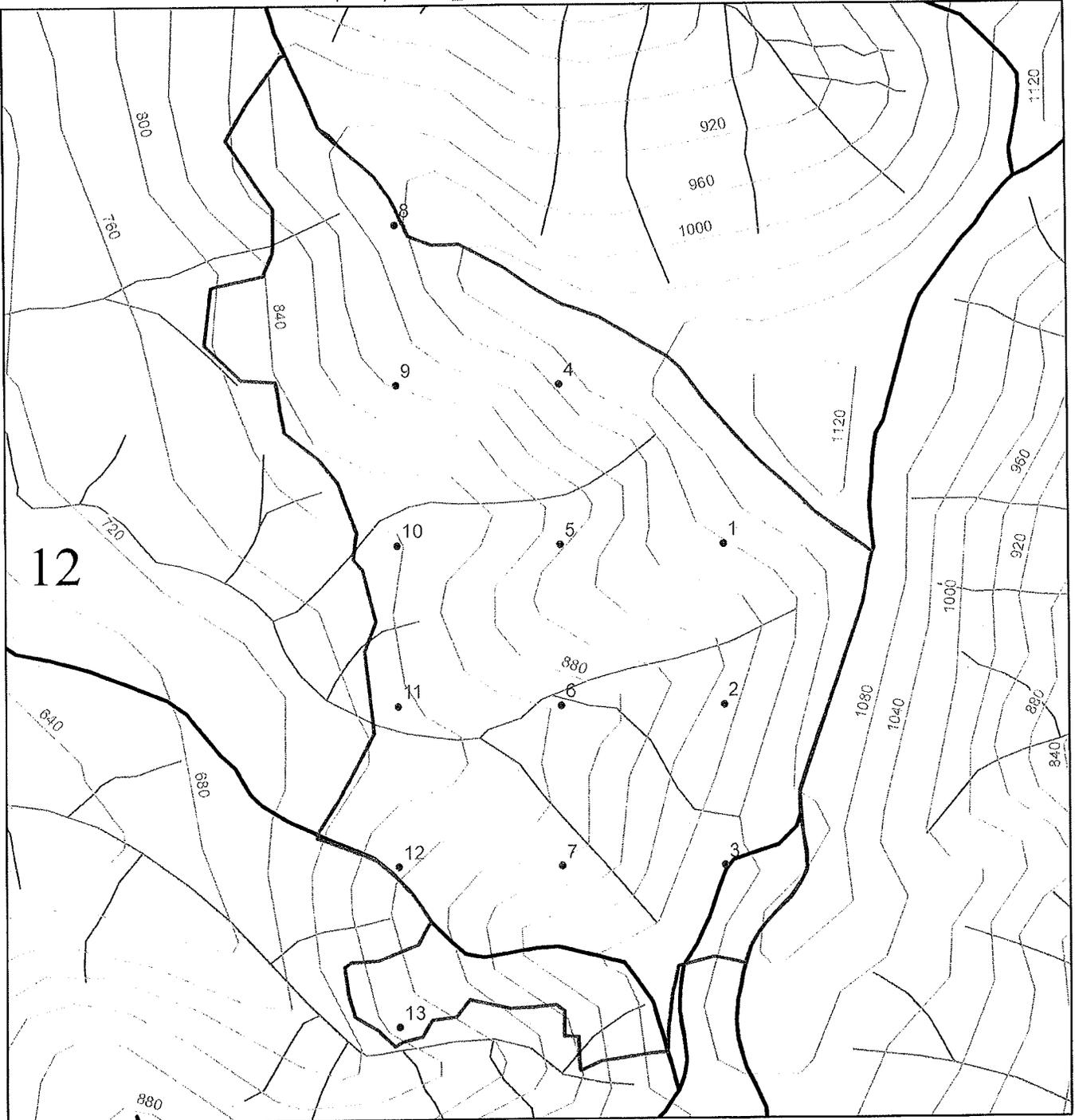
FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	N-1100 VDT U2	Township:	T25R12W, T25R13W
FMU_ID:	89820	DNR Region:	OLYMPIC
Acres:	158	Total Sample Points:	37
County:	JEFFERSON	Spacing Between Points:	Width: 450 Height: 450



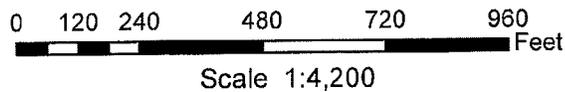
Legend

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



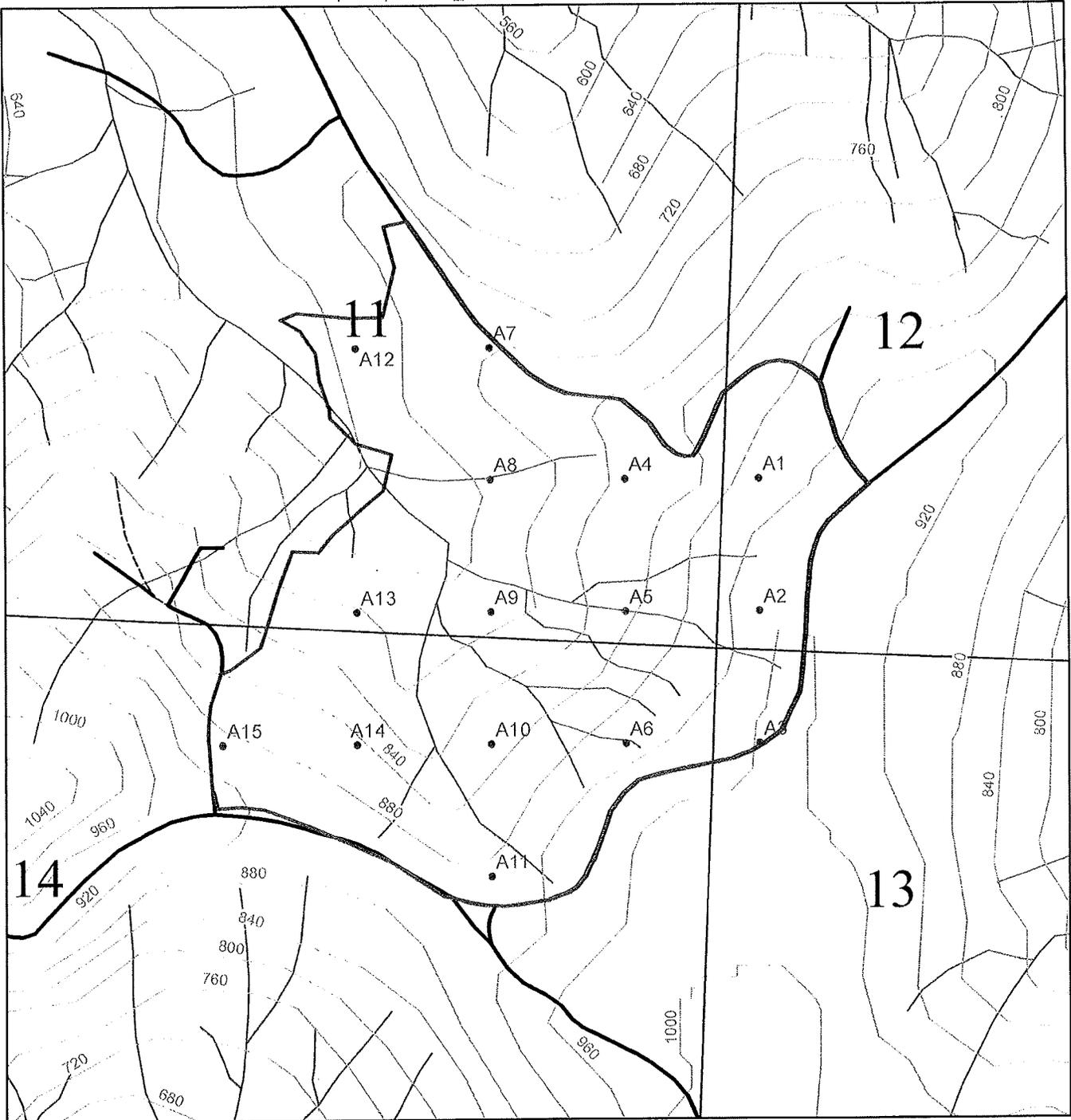
FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	N-1100 VDT U3	Township:	T25R13W
FMU_ID:	89821	DNR Region:	OLYMPIC
Acres:	49	Total Sample Points:	13
County:	JEFFERSON	Spacing Between Points:	Width: 400 Height: 400



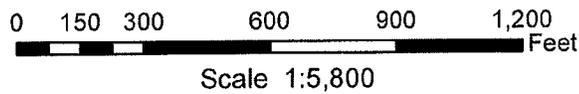
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- Sample Points
- ▭ FMU polys
- ▭ Public Land Survey Sections
- Contours 40-foot



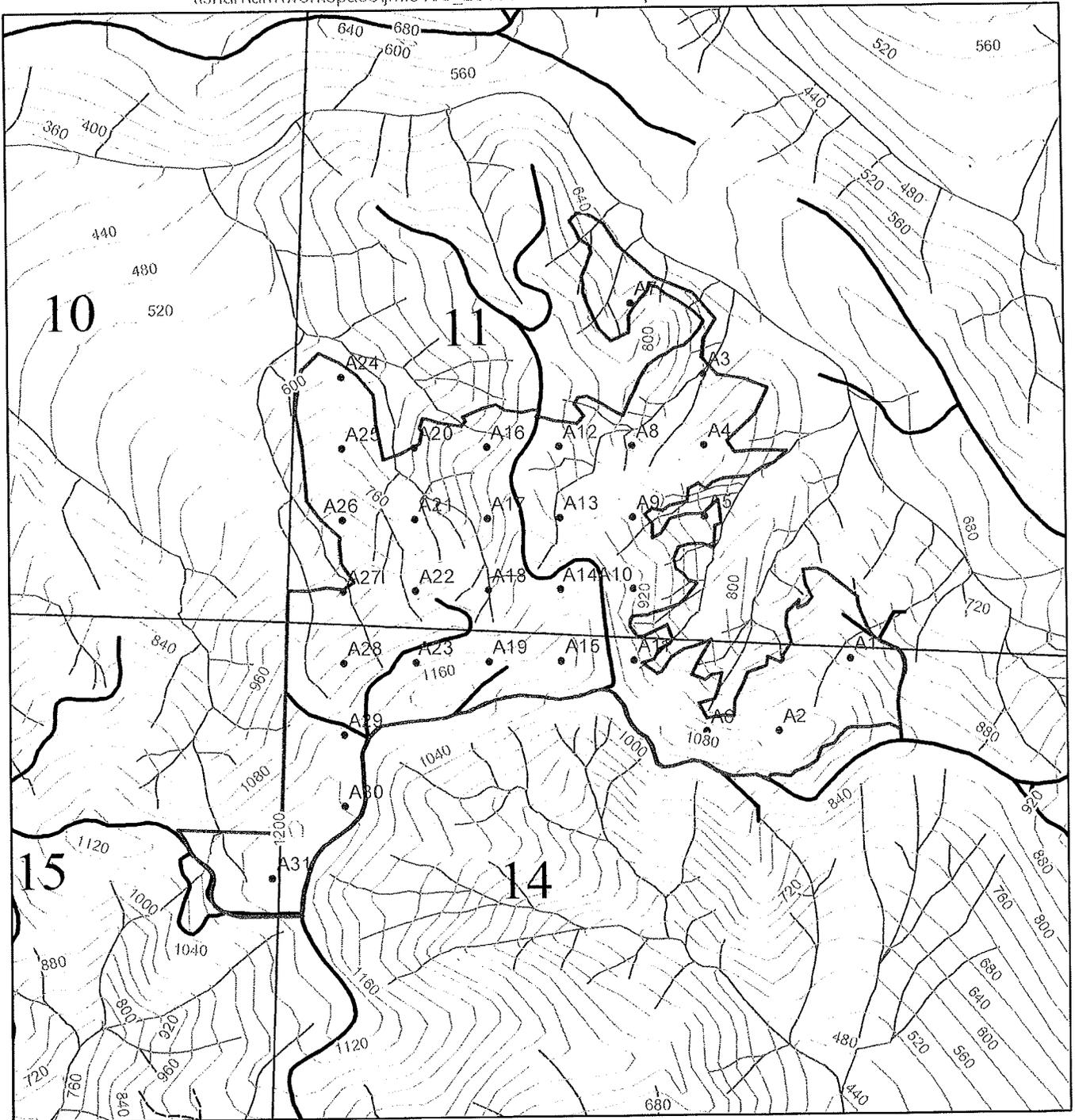
Cruiser Sample Point Locations

LAYER NAME:	export_output	Township:	T25R13W
POLY ID:	1	Total Sample Points:	15
Acres:	52	Spacing Between Points:	Width: 400 Height: 400



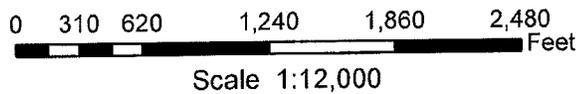
Legend

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



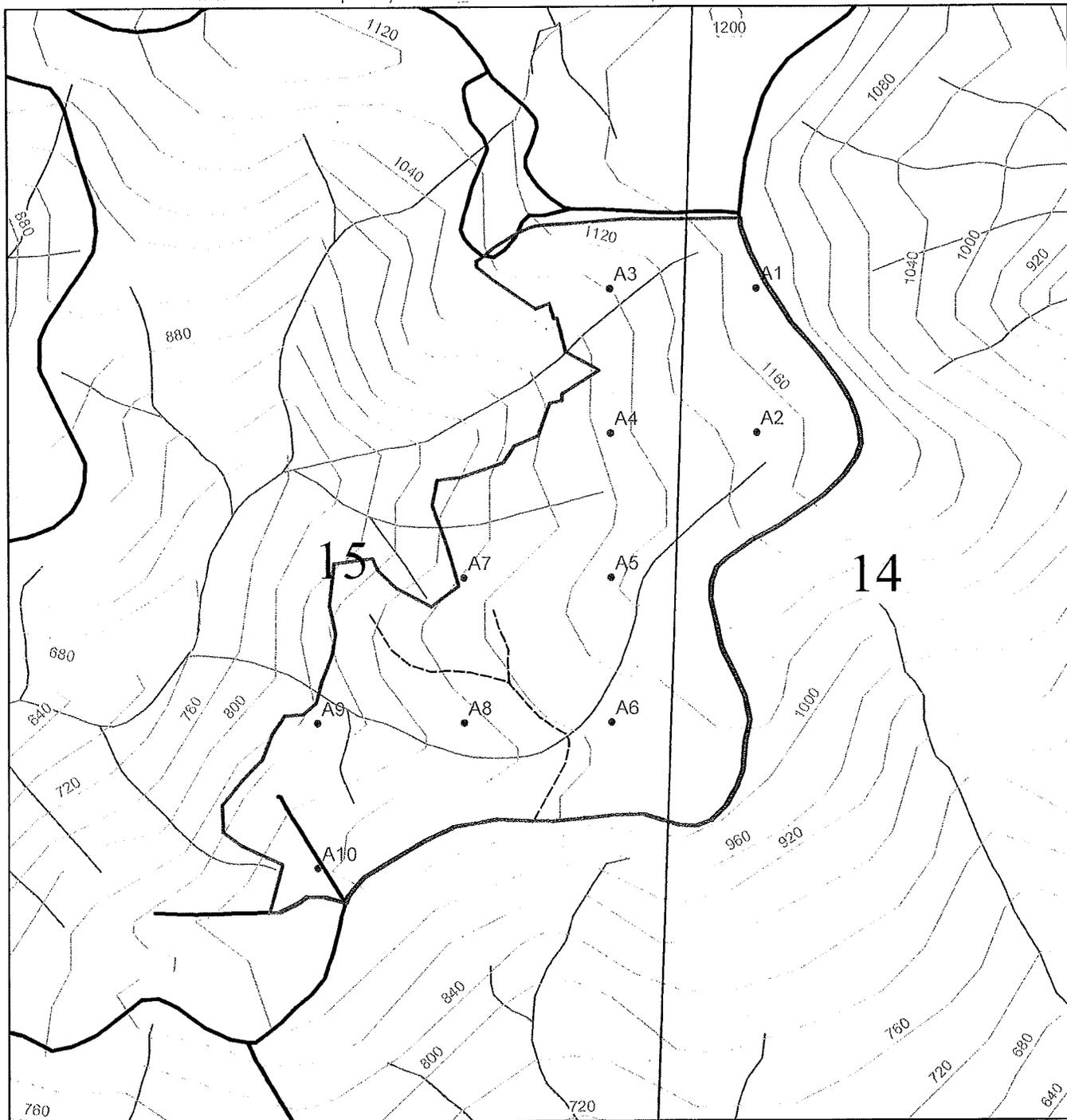
Cruiser Sample Point Locations

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POLY ID:	1	Total Sample Points:	31
Acres:	158	Spacing Between Points: Width: 450 Height: 450	



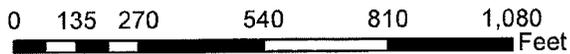
Legend

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



Cruiser Sample Point Locations

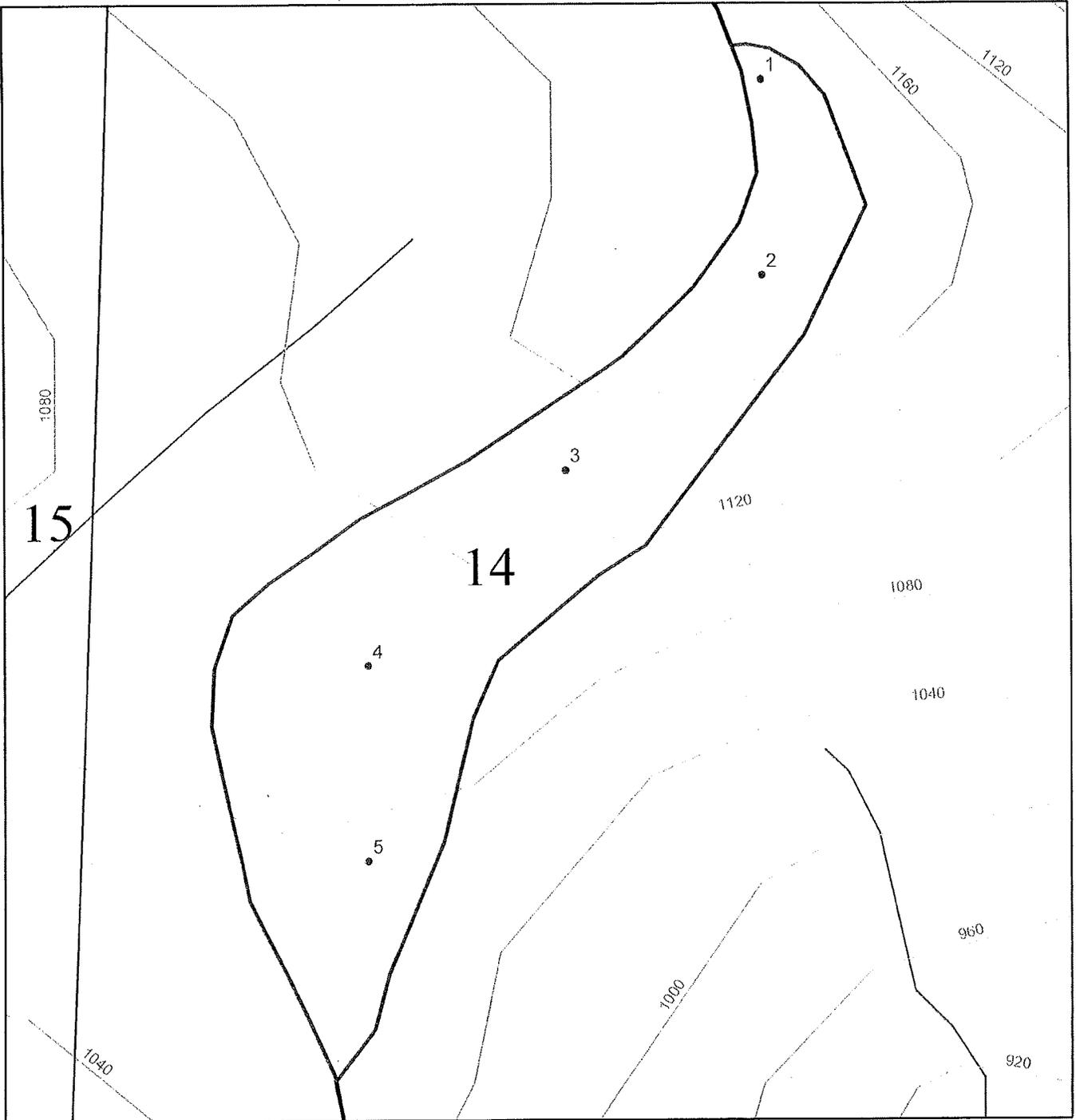
LAYER NAME:	export_output_2	Township:	T25R13W
POLY ID:	1	Total Sample Points:	10
Acres:	38	Spacing Between Points: Width: 400 Height: 400	



Scale 1:5,300

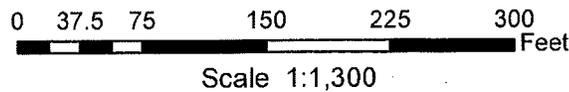
Legend

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



FMU POLYGON AND SAMPLE POINT INFORMATION

FMU_NM:	N-1100 VDT U7 PIT	Township:	T25R13W
FMU_ID:	89944	DNR Region:	OLYMPIC
Acres:	3	Total Sample Points:	5
County:	JEFFERSON	Spacing Between Points:	150



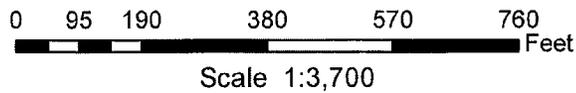
Legend

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



Cruiser Sample Point Locations

LAYER NAME:	unit_6	Township:	T25R13W
POLY ID:	1	Total Sample Points:	10
Acres:	22	Spacing Between Points: Width: 300 Height: 300	



Legend

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



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

FPA/N No: 2612877
 Effective Date: 4/27/2014
 Expiration Date: 4/27/2017
 Shut Down Zone: 650
 EARR Tax Credit: Eligible [] Non-eligible
 Reference: DNR - N-1100 VDT

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

Decision

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

FPA/N Classification

Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

4 years 5 years

Conditions on Approval / Reasons for Disapproval

Issued By: Jenny Garstang

Region: OLYMPIC

Title: FORESTER PRACTICE FORESTER

Date: 4/27/2014

Copies to: Landowner, Timber Owner and Operator.

Issued in person: Landowner [] Timber Owner [] Operator By: _____

Connie L. Sallee
 Connie L. Sallee

Appeal Information

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

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

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

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

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

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

And

Department Of Natural Resources
OLYMPIC Region
411 TILlicum LANE
FORKS, WA 98331

Other Applicable Laws

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

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

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

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

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

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices 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 # _____

Connie L Sallee

(Printed name)

(Signature)

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

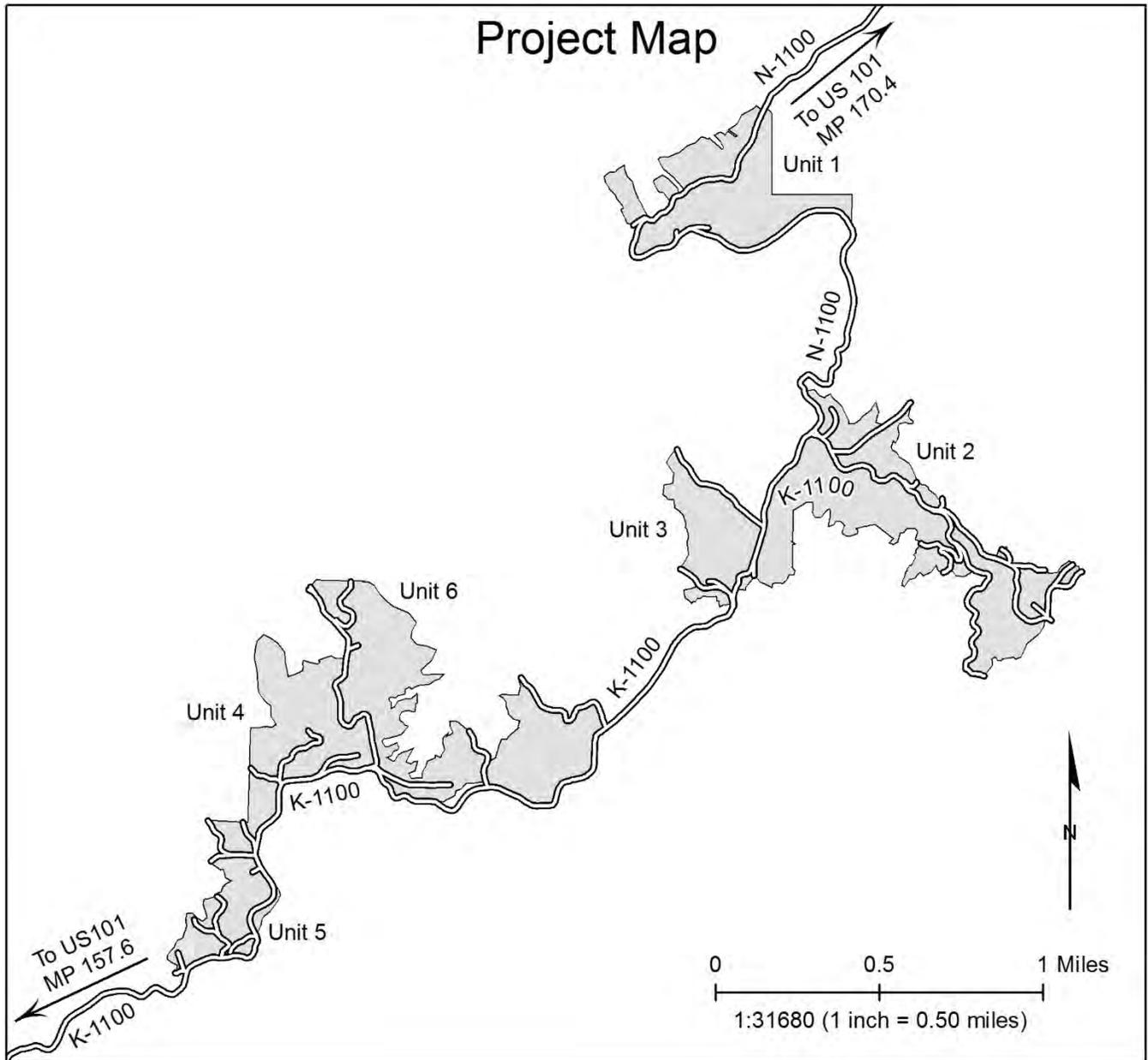
N-1100 VDT TIMBER SALE ROAD PLAN
JEFFERSON COUNTY
COAST DISTRICT

AGREEMENT NO.: 30-090940

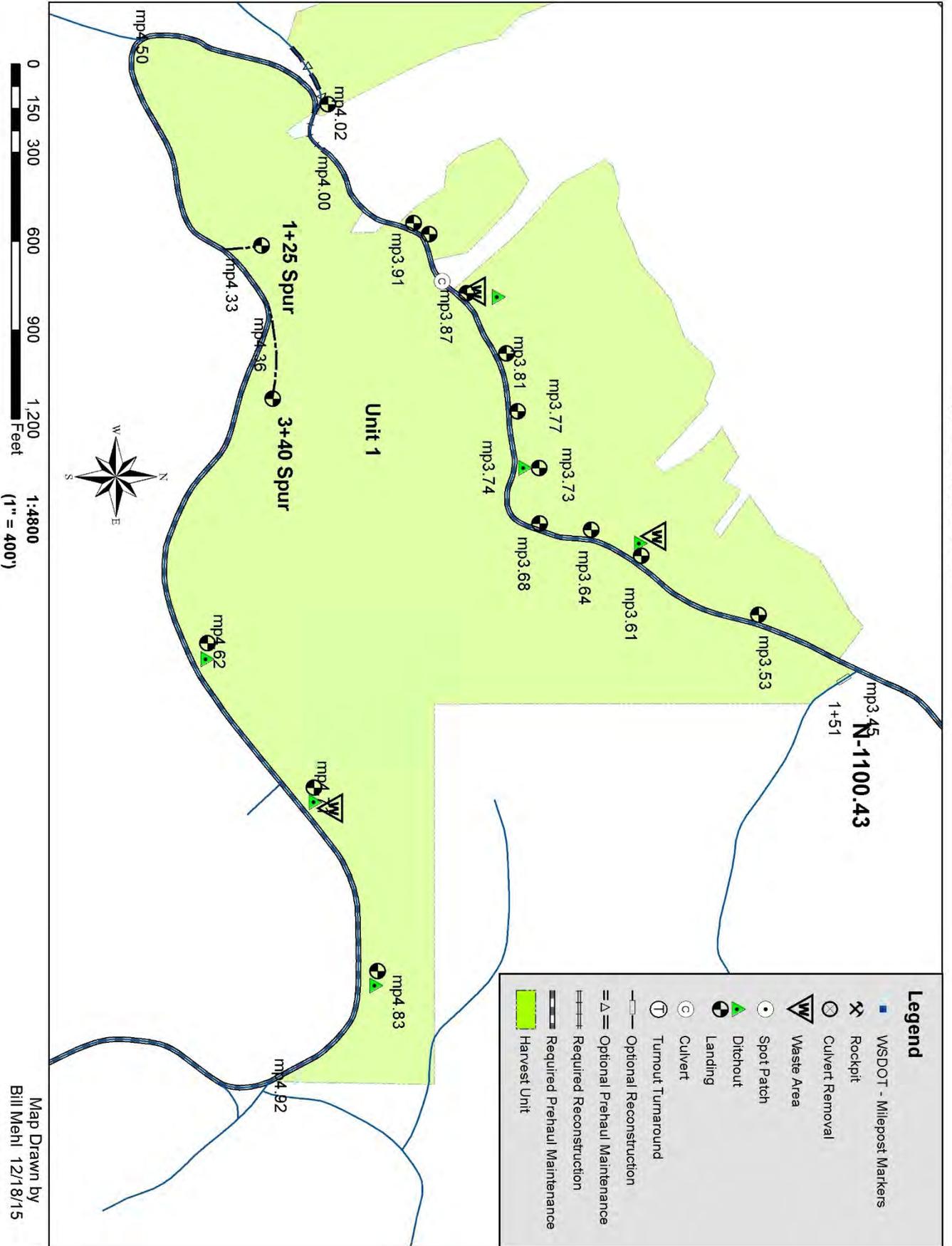
DISTRICT ENGINEER: BILL MEHL

DATE: DECEMBER 21, 2015

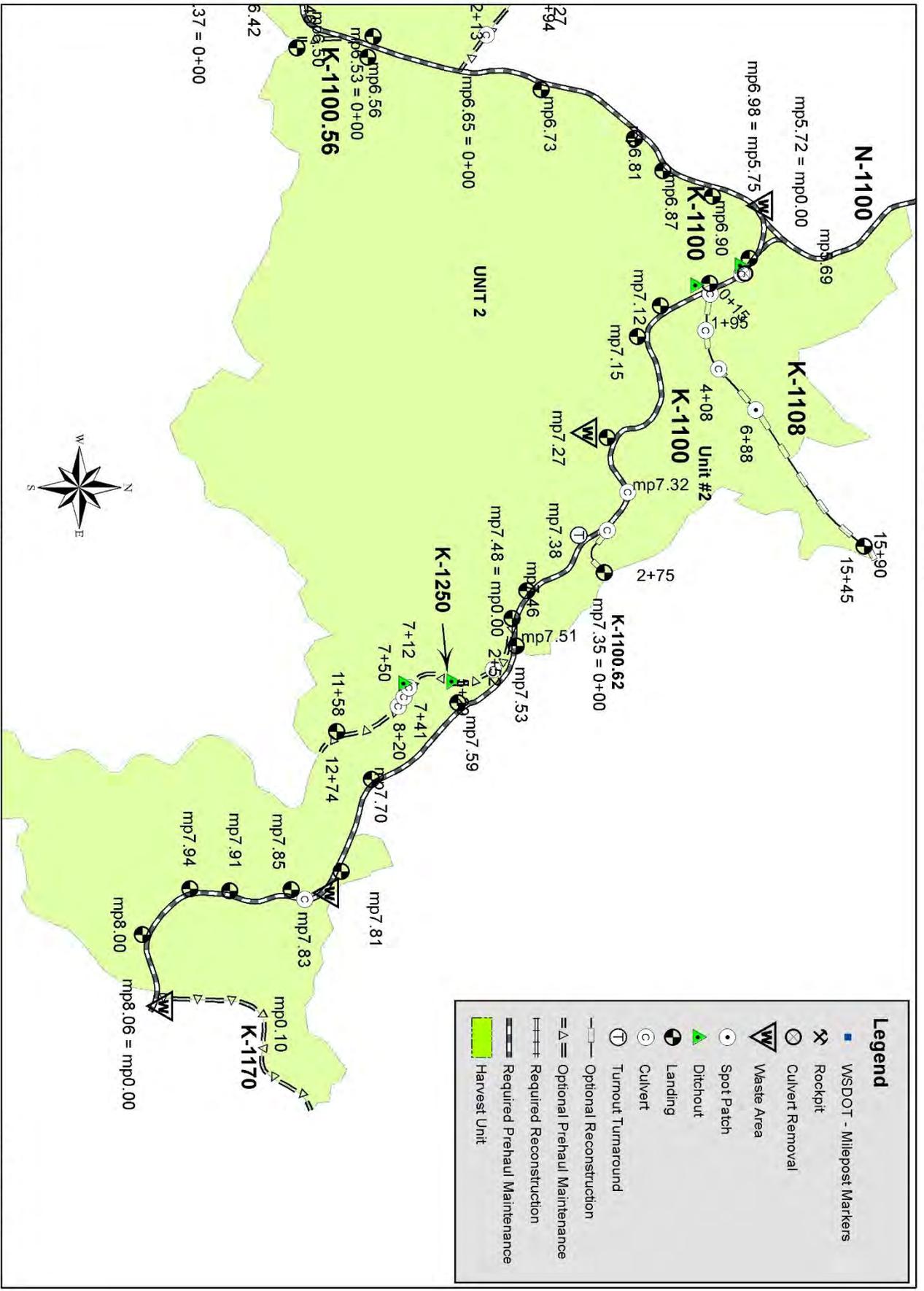
DRAWN & COMPILED BY: BILL MEHL



N-1100VDT

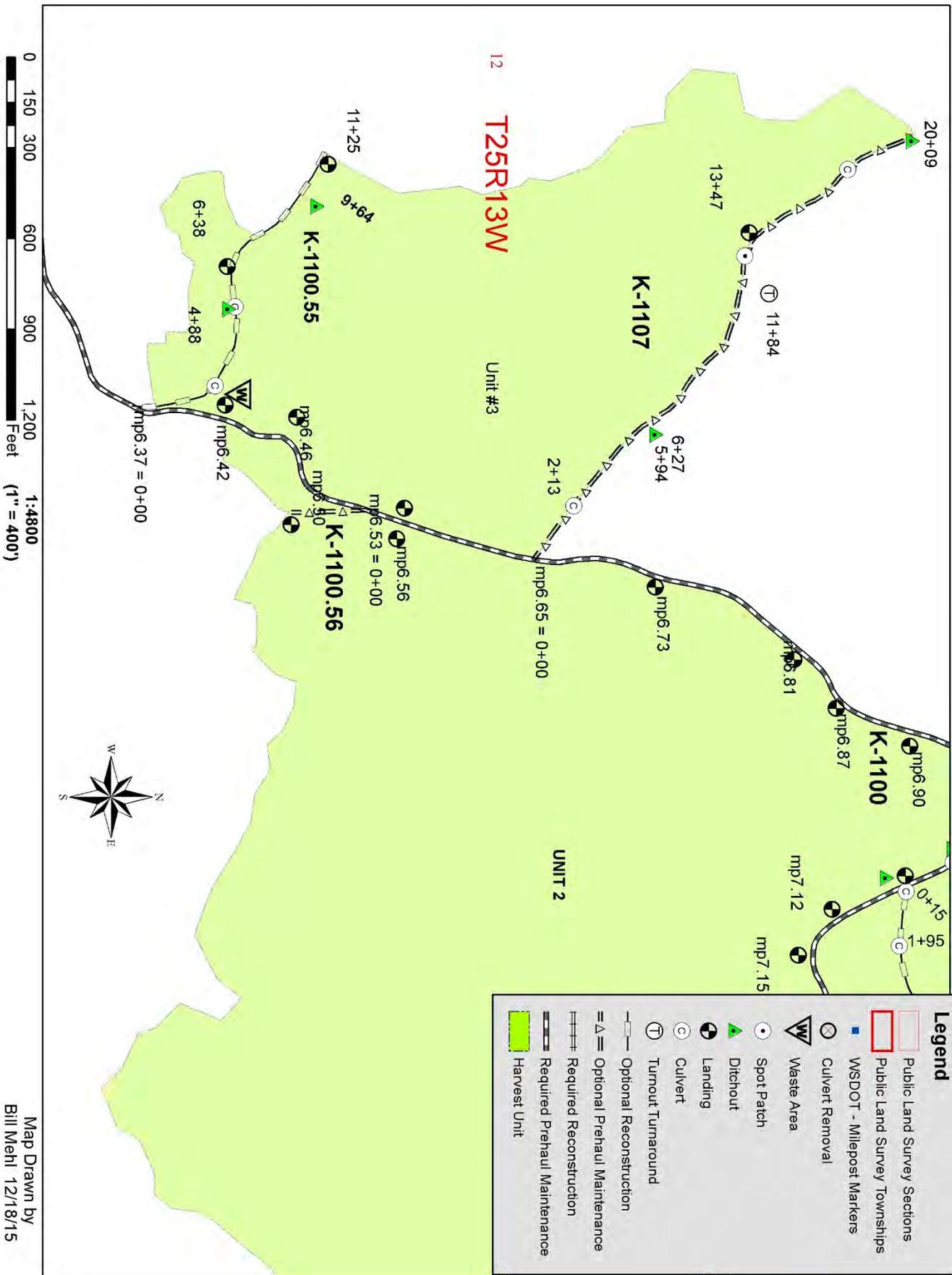


N-1100VDT

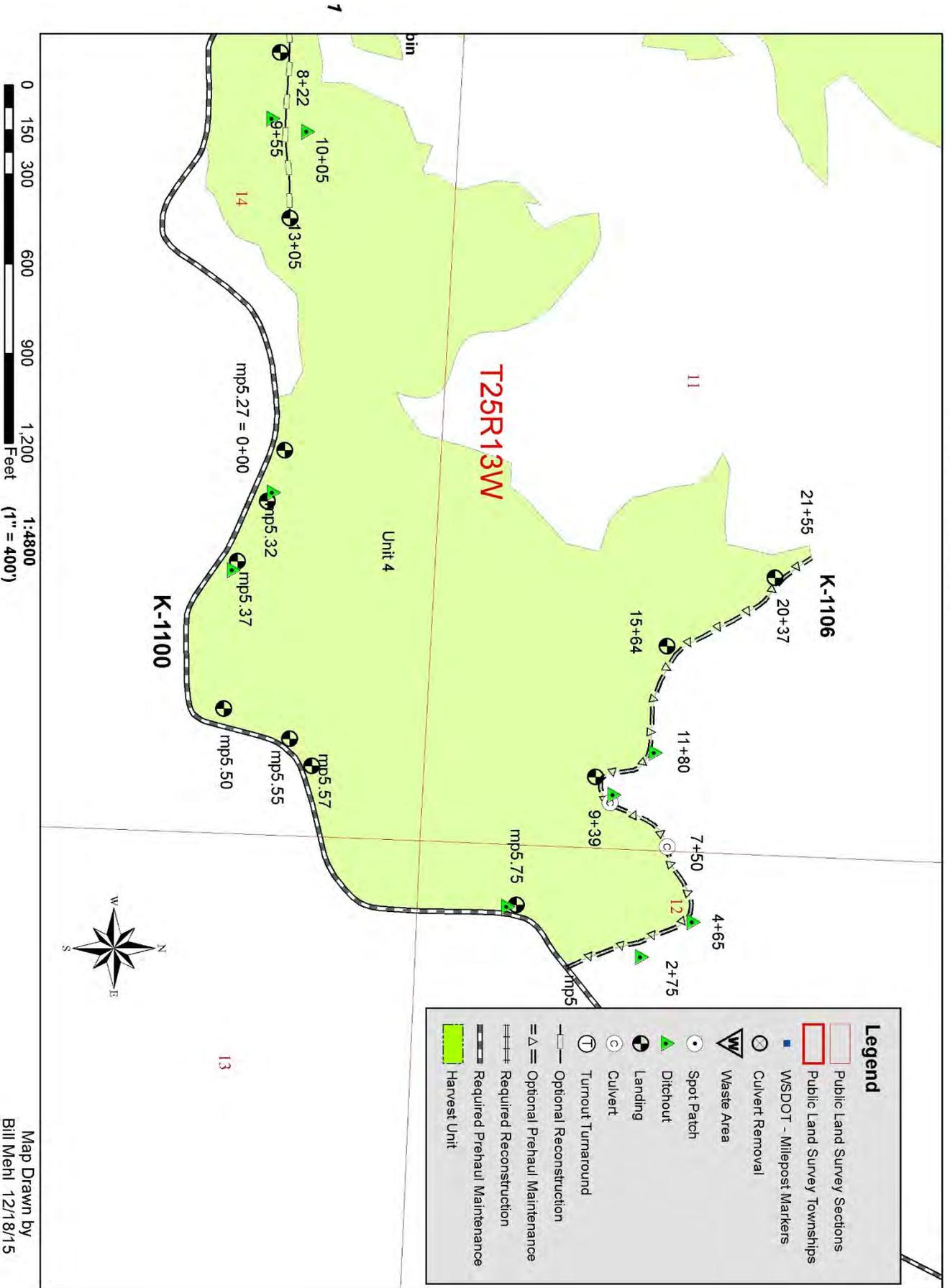


Map Drawn by
Bill Mehl 12/18/15

N-1100VDT

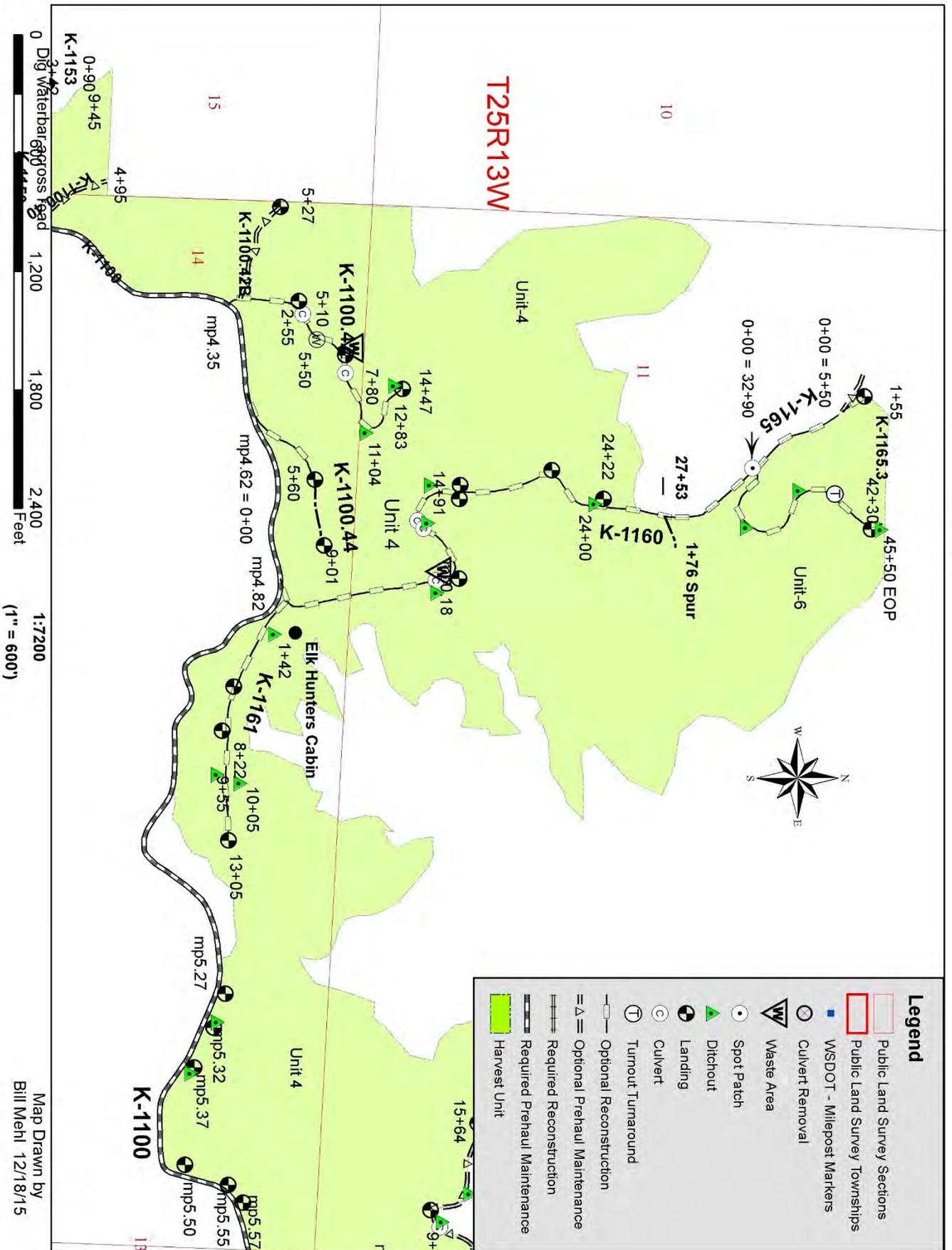


N-1100VDT



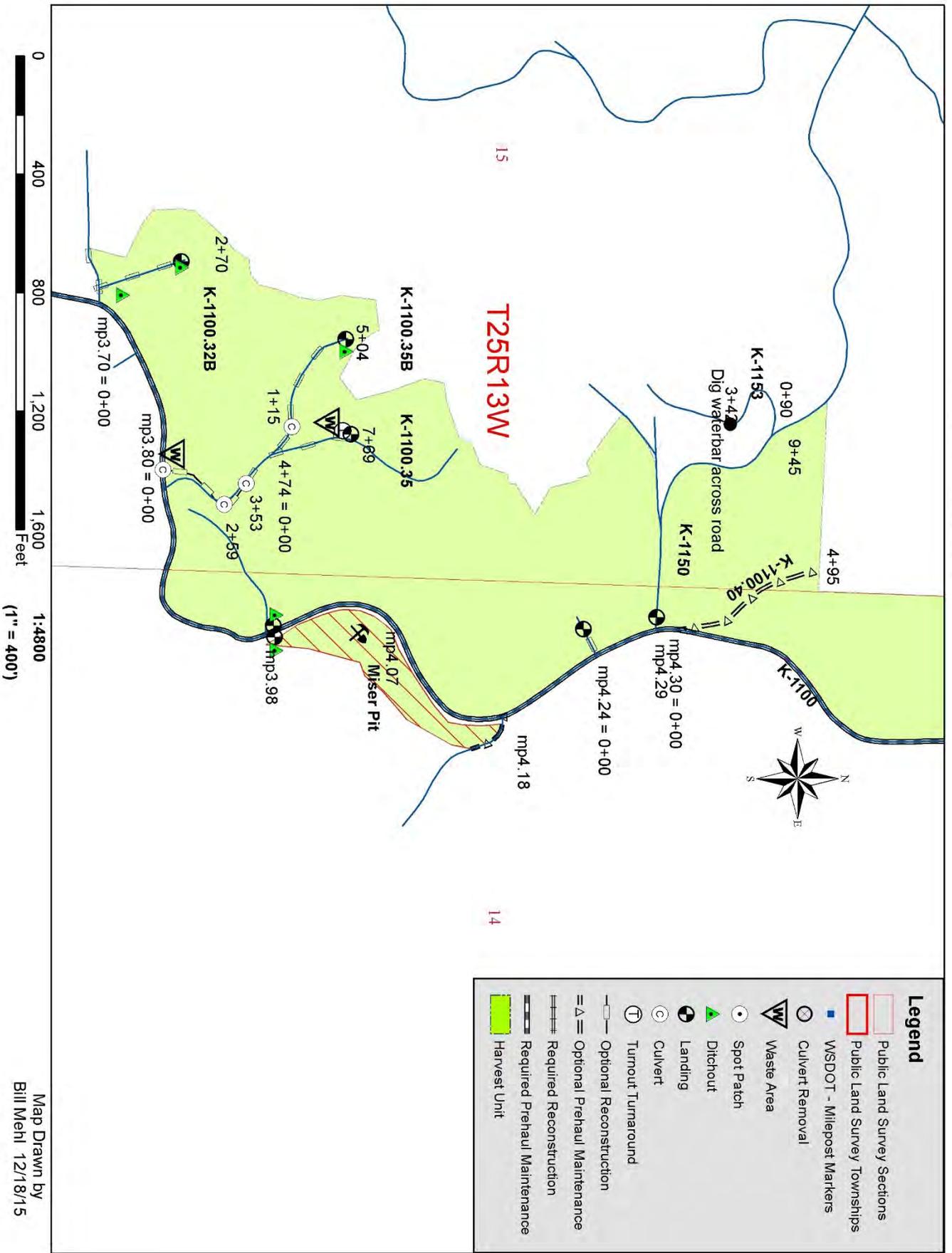
Map Drawn by
Bill Mehl 12/18/15

N-1100VDT



N-1100VDT

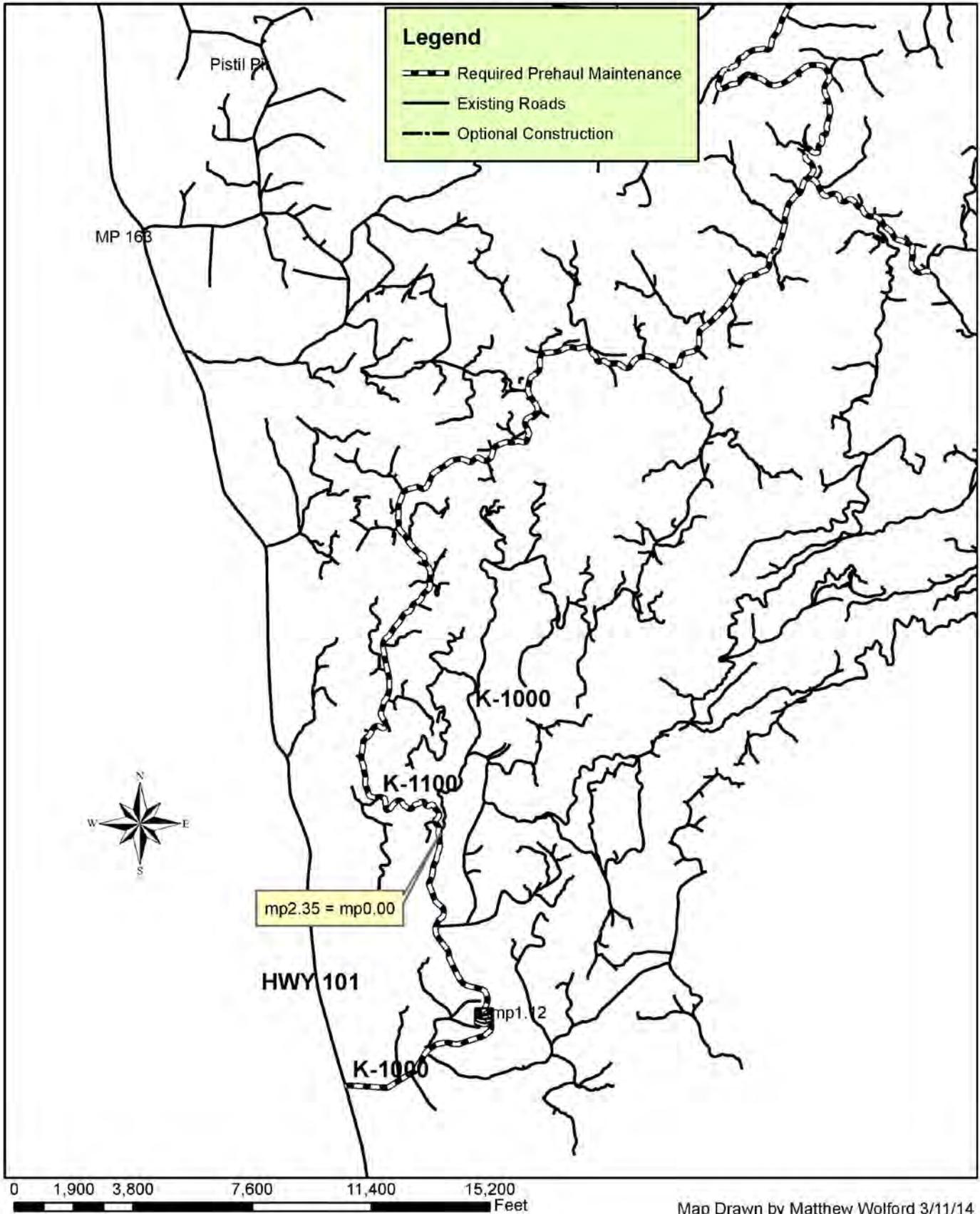
N-1100-729



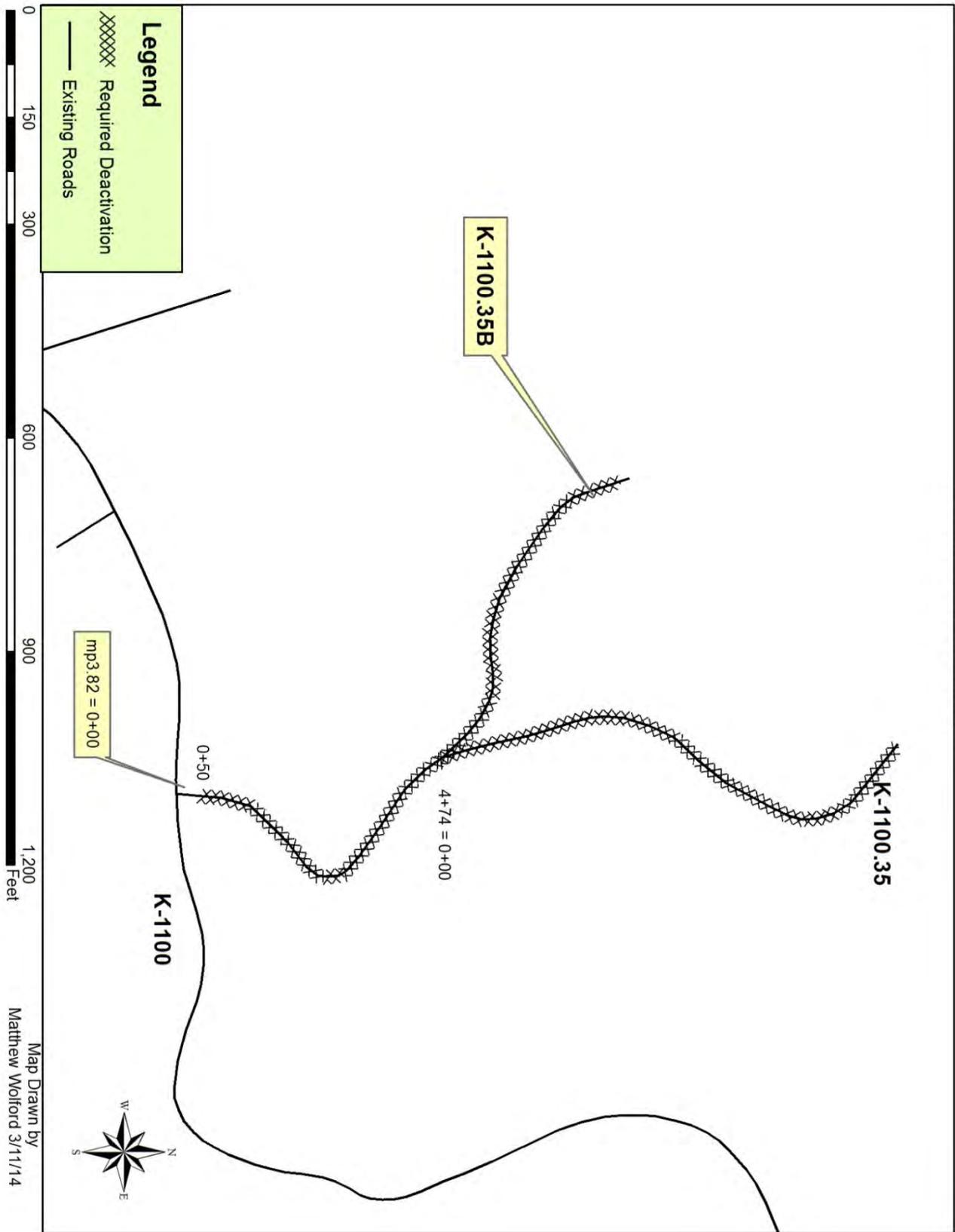
Legend	
[Pink Box]	Public Land Survey Sections
[Red Box]	Public Land Survey Townships
[Blue Square]	WSDOT - Milepost Markers
[Circle with X]	Culvert Removal
[Triangle with W]	Waste Area
[Circle with Dot]	Spot Patch
[Green Triangle]	Ditchout
[Circle with Arrow]	Landing
[Circle]	Culvert
[Circle with T]	Turnout Turnaround
[Dashed Line]	Optional Reconstruction
[Dashed Line with Triangle]	Optional Prehaul Maintenance
[Dashed Line with Square]	Required Reconstruction
[Dashed Line with Circle]	Required Prehaul Maintenance
[Green Box]	Harvest Unit

Map Drawn by
Bill Mehl 12/18/15

N-1100 VDT K-1000/K-1100 Prehaul Maintenance



N-1100.35 Deactivation



SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

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

0-2 REQUIRED ROADS

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
N-1100	301.94	Prehaul Maintenance
K-1100	426.10	Prehaul Maintenance
K-1100.35	11.47	Deactivation
K-1100.35B	5.04	Deactivation

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
N-1100.43	1.51	Reconstruction
N-1164	2.53	Prehaul Maintenance
1+25 Spur	1.25	Construction
3+40 Spur	3.40	Construction
K-1108	15.90	Reconstruction
K-1100.62	2.75	Reconstruction
K-1250	12.74	Prehaul Maintenance
K-1170	11.51	Prehaul Maintenance
1+76 spur	1.76	Construction
K-1107	20.09	Prehaul Maintenance
K-1100.56	2.11	Prehaul Maintenance
K-1100.55	11.25	Reconstruction
K-1106	21.55	Prehaul Maintenance
K-1160	45+50	Reconstruction
K-1161	13.05	Reconstruction
K-1165	5+50	Reconstruction
K-1165.3	1.55	Reconstruction
K-1100.44	5.60	Reconstruction
K-1100.44	3.41	Construction
K-1100.42	14.47	Reconstruction
K-1100.42B	5.27	Prehaul Maintenance
K-1100.40	4.95	Prehaul Maintenance
K-1100.39	0.86	Reconstruction
K-1100.38	1.20	Prehaul Maintenance
K-1100.35	7.69	Reconstruction
K-1100.35B	5.04	Reconstruction
K-1100.32	0.75	Reconstruction
K-1100.32B	2.70	Reconstruction

0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
1+25 Spur	0+00 – 1+25	See Below.
3+40 Spur	0+00 – 3+40	See Below.
K-1100.44	5+60 – 9+01	See Below.

Construction includes, but is not limited to:

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

0-5 RECONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
N-1100.43	0+00 – 1+51	Grade and compact existing road surface, apply rock as per Rock List.
K-1108	0+00 – 15+90	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culverts as per Culvert List, clean ditch lines.
K-1100.62	0+00 – 2+25	Construct approach, remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culvert as per Culvert List, construct ditch lines, dispose of waste material in accordance with Clause 4-37, and 4-38.
K-1100.55	0+00 – 11+25	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culverts as per Culvert List, clean ditch line, fill in tank trap, fill in waterbars, dispose of waste material per Clause 4-37 & 4-38, construct ditchouts.
K-1160	0+00 – 45+50	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culverts as per Culvert List, clean ditch lines, construct ditchouts, dispose of waste material in accordance with Clauses 4-35 to 4-38.
K-1161	0+00 – 13+05	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, clean ditch lines, construct ditchouts.
K-1165	0+00 – 5+50	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List.
K-1165.3	0+00 – 1+55	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List.
K-1100.44	0+00 – 5+60	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, endhaul waste material as per Clause 4-37, realign road as staked in the field, construct approach.
K-1100.42	0+00 – 14+47	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culvert as per Culvert List, construct

		ditchouts, construct ditch lines, dispose of waste material in accordance with Clause 4-37 and 4-38.
K-1100.39	0+00 – 0+86	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List.
K-1100.35	0+00 – 7+69	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culverts as per Culvert List, construct ditchout, construct temporary log fill at station 2+59 in accordance with Detail Sheet, construct ditch lines, endhaul waste material in accordance with Clause 4-37.
K-1100.35B	0+00 – 5+04	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culvert as per Culvert List, construct ditchout, construct ditch lines, remove waste from road and scatter, fill in tank trap, construct ditchout..
K-1100.32B	0+00 – 2+70	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, remove waste from road and scatter, fill in tank trap, construct ditchout.

Reconstruction includes, but is not limited to:

Installing additional culvert, realigning road segments, application of rock, removing culvert.

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>
N-1100	mp0.00 – mp5.75	Grade, compact, and spot patch existing road surface as directed by contract administrator, install pipe.
N-1164	mp0.00 – mp0.05	Grade and compact existing road surface, brush road, clean ditch line.
K-1250	0+00 – 12+74	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, install culverts as per Culvert List, apply rock as per Rock List, clean ditch lines, construct ditchout, remove culvert as per Culvert List.
K-1170	mp0.00 – mp0.22	Brush road, remove vegetative material from road with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List.
K-1107	0+00 – 20+09	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, install culverts as per Culvert List, construct ditchouts, construct/clean ditch lines,
K-1100.56	0+00 – 2+11	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface, apply rock as per Rock List, construct ditch line.
K-1106	0+00 – 21+55	Remove vegetative material and debris from existing road surface with a minimum loss of rock, apply rock as per Rock List, install culverts as per Culvert List, construct ditchouts, construct/clean ditch lines.
K-1100.40	0+00 – 4.95	Apply rock as per Rock List.

K-1100.38	0+00 – 1+20	Remove vegetative material and debris from existing road surface with a minimum loss of rock, grade and compact existing road surface.
K-1100	Mp0.00 – mp8.07	Install culverts and perform culvert work as per Culvert List, Grade, shape, add rock and compact as per contract administrator.

Maintenance includes, but is not limited to:

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

0-7 POST-HAUL MAINTENANCE

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

0-9 DEACTIVATION

This project includes, but is not limited to deactivation listed in Clause 9-20.

0-12 DEVELOP ROCK SOURCE

The Purchaser may explore a new rock source called Miser Pit. The Contract Administrator shall determine suitability of rock source. Development will involve stripping sufficient area for the needed quantity and possible drilling and shooting to obtain ballast material.

0-13 STRUCTURES

The Purchaser shall acquire and install all structures. Requirements for these structures are listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORSEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-5 DESIGN DATA

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

1. Addenda.

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

The Purchaser is responsible for the repair or replacement of all materials, roadway infrastructure, and road components damaged during roadwork or operation activities. Repairs and replacements shall be directed by the Contract Administrator. Repairs to structural materials will be made according to the manufacturer's recommendation, and shall not begin without written approval from the Contract Administrator.

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

1-12 SURVEY MONUMENTS

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

1-13 LOG LOADING

The loading of logs occurring on the N-1100 or K-1100 roads will be done in a manner that minimizes damage to these roads. In addition, these roads need to be used so as not to unduly restrict traffic through the area.

1-14 NON-SALE ASSOCIATED CLOSURE

Culvert and fill replacement work is currently scheduled to take place on the K-1000 sometime during the hydraulic seasons of 2014 through 2016, which will result in the road being closed for up to 2 weeks at a time. Also, another sale is taking place on the K-1100 from mp1.00 to mp3.33, which will have the K-1100 blocked for periods of time from 2014 through 2016. State shall give at least 2 weeks notice to Purchaser before closure begins.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

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

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

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

1-23 ROAD WORK PHASE APPROVAL

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

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

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

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

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

1-26 OPERATING DURING CLOSURE PERIOD

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

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

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

<u>Road</u>	<u>Stations</u>
N-1100	mp0.00 – mp1.25, mp2.32 – mp4.09
N-1100.43	All
N-1164	All
K-1170	All
1+76 spur	0+00 – 1+76
K-1250	9+50 – 12+74
K-1107	4+60 – 20+09
K-1100.56	All
K-1100.55	All
K-1100.55B	All
K-1106	0+00 – 19+33
K-1160	0+00 – 2+40
K-1161	All
K-1100.44	0+00 – 4+00
K-1100.42	All
K-1100.42B	All
K-1100.40	0+00 – 2+45
K-1150	0+00 – 3+60
K-1100.39	All
K-1100.38	All
Miser Pit	All
K-1100.35	All
K-1100.35B	0+00 – 4+10
K-1100.32	0+00 – 0+30
K-1100	mp0.44 – mp1.37, mp3.69 – mp4.67, mp4.80 – mp6.56, mp7.73 – mp8.07
K-1000	mp0.41 – mp0.54

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- In the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

1-33 SNOW PLOWING RESTRICTION

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

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

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

<u>Road Name</u>
K-1000 / HWY 101
N-1000 / HWY 101

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
N-1100	mp0.00 – mp5.75	Spot grade as directed by the Contract Administrator.
N-1100.43	0+00 – 1+51	Grade and shape and compact road
N-1164	mp0.00 – mp0.05	Grade and shape and compact road
K-1170	mp0.00 – mp0.22	Grade and shape and compact road
K-1250	0+00 – 12+74	Grade and shape and compact road
K-1100.62	0+50 – 2+25	Grade and shape and compact road
K-1108	0+00 – 15+90	Grade and shape and compact road
K-1107	0+00 – 20+09	Grade and shape and compact road
K-1100.56	0+00 – 2+11	Grade and shape and compact road
K-1100.55	0+00 – 11+25	Grade and shape and compact road
K-1100.55B	0+00 – 3+72	Grade and shape and compact road
N-1160	0+00 – 27+33	Grade and shape and compact road
K-1161	0+00 – 13+05	Grade and shape and compact road
K-1165	0+00 – 12+50	Grade and shape and compact road

K-1165.3	0+00 – 1+55	Grade and shape and compact road
K-1100.44	0+00 – 5+60	Grade and shape and compact road
K-1100.42	0+00 – 14+47	Grade and shape and compact road
K-1100.40	0+00 – 4+95	Grade and shape and compact road
K-1100.39	0+00 – 0+86	Grade and shape and compact road
K-1100.38	0+00 – 1+20	Grade and shape and compact road
K-1100.35	0+00 – 7+69	Grade and shape and compact road
K-1100.35B	0+00 – 5+04	Grade and shape and compact road
K-1100.32	0+00 – 0+75	Grade and shape and compact road
K-1100.32B	0+00 – 2+70	Grade and shape and compact road
K-1100	mp6.98 – mp8.01	Spot grade as directed by the Contract Administrator.
K-1000	mp0.00 – mp2.63	Spot grade as directed by the Contract Administrator.

2-7 CLEANING AND CONSTRUCTING 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. A bucket no larger than one cubic yard shall be used in for ditch cleaning and construction.

<u>Road</u>	<u>Stations</u>
N-1100	mp5.33 – mp5.36
N-1164	mp0.00 – mp0.05
K-1170	mp0.01 – mp0.10, mp0.11 – mp0.22
K-1250	0+00 – 12+74
K-1100.62	0+00 – 2+75
K-1108	0+00 – 1+45, 0+00 – 10+87, 12+87 – 14+65
K-1107	0+00 – 5+94, 6+83 – 10+61, 8+62 – 10+35, 12+09 – 19+89
K-1100.56	0+00 – 2+11
K-1100.55	1+50 – 2+55, 2+70 – 4+88, 5+03 – 9+64
K-1100.55B	0+00 – 1+50
K-1106	1+71 – 2+64, 3+54 – 6+00, 6+15 – 8+13, 8+28 – 9+39
K-1161	0+00 – 13+05
K-1160	6+81 – 8+00, 13+63 – 14+91, 18+20 – 19+63, 27+53 – 35+95, 37+92 – 41+22
K-1100.44	2+85 – 4+28
K-1100.42	1+53 – 4+10, 4+30 – 7+80, 8+02 – 11+04, 12+37 – 13+95
K-1100.35	2+78 – 3+38, 3+53 – 7+28
K-1100.35B	0+83 – 5+04
K-1100.32B	0+40 – 2+70
K-1100	mp7.83

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), vegetative material shall be cut sufficiently for safe truck haul.

<u>Road</u>	<u>Stations</u>
K-1170	mp0.00 – mp0.22

3-3 BRUSH REMOVAL

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

SUBSECTION CLEARING

3-5 CLEARING

Fell all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing shall be completed before starting excavation and embankment. No trees shall be disturbed between mp5.10 and mp5.27 on the K-1100.

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

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

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

SUBSECTION GRUBBING

3-10 GRUBBING

Remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Those stumps outside the grubbing limits but with undercut roots shall also be removed. Stump removal shall be accomplished using a hydraulic mounted excavator unless authorized, in writing, by the Contract Administrator. Grubbing shall be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Grubbed stumps shall be placed outside of the clearing limits and in compliance with all other clauses in this road plan.

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.

- On road subgrades road prism excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

On all roads not listed in Clause 3-22, organic debris shall scattered outside of the grubbing limits 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%, organic debris shall be end hauled or pushed to the designated waste areas specified in Clause 3-22 or to a waste area located by the Contract Administrator.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

All roads shall be constructed, reconstructed, and prehaul maintained using a track mounted hydraulic excavator unless stated otherwise within this Road Plan, or permission to do otherwise is granted in writing by the Contract Administrator.

4-2 PIONEERING

Pioneering shall not extend past construction that will be completed during the current construction season. Pioneering shall not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions shall be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed:

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

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

Grade limitations and alignment are modified as follows:

The following road(s) have specific limitations for grade and alignment and are referenced in the table below.

4-4 SWITCHBACK STANDARDS

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

Adverse grades on switchbacks shall not exceed 10% of the curve radius.

Favorable grades through switchbacks shall not exceed 12%.

Transition grades entering and leaving switchbacks shall not exceed a 5% grade change.

Transition grades required to meet switchback grade limitations shall be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	3/4:1	133
Common Earth (on slopes over 70%)	1/2:1	200
Fractured or loose rock	1/2:1	200
Hardpan or solid rock	1/4:1	400

4-6 EMBANKMENT SLOPE RATIO

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

<u>Material Type</u>	<u>Embankment Slope Ratio</u>	<u>Embankment Slope Percent</u>
Sandy Soils	2:1	50
Common Earth and Rounded Gravel	1 1/2:1	67
Angular Rock	1 1/4:1	80

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

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 N-1100/N-1100.43, K-1108, K-1100/ K-1160/K-1161/K-1100, K-1100/K-1100.42, K-1100/K-1100.35, and K-1100/K-1100.32 intersections shall be constructed/reconstructed to include additional intersection flare.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION

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 without engineering or contract administrator approval. 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>
N-1100	mp3.61R, mp4.62L, 4.71L, 4.83L,
K-1250	5+29R, 7+12R
K-1107	5+94R, 19+89R
K-1100.55	4+88L, 9+64R
K-1106	2+64R, 4+65R, 9+39R, 11+36L, 11+80R
K-1160	8+45R, 12+55R, 14+91L, 24+00L, 30+50L 32+15R, 36+20L, 41+22R
K-1161	0+90R, 1+42L, 9+55R, 10+05L
K-1100.42	11+04R, 13+95L
K-1100.35B	5+04R
K-1100.32B	2+70R
K-1100	mp3.98R, mp3.98L, mp5.32L, mp5.37L, mp5.75L

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas:

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

SUBSECTION BORROW

4-47 NATIVE MATERIAL

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

4-48 BORROW MATERIAL

Borrow material shall contain no more than 5% clay, organic debris, or trash by volume.

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

4-56 DRY WEATHER SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

All embankment material shall be compacted. Compaction shall be in accordance with Clause 4-66 using 2 foot or shallower lifts.

4-61 SUBGRADE COMPACTION

Constructed and reconstructed subgrades shall be compacted full width except ditch in accordance with Clause 4-66. Subgrade compaction shall be approved, in writing, by the Contract Administrator before rock application.

4-62 DRY WEATHER COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

On the following road(s), a motor grader shall be used to shape the existing road surface and the surface shall be compacted full width except ditch. Compaction shall be in accordance with Clause 4-66.

<u>Road</u>	<u>Stations</u>
N-1100.43	0+00 – 1+51
N-1164	mp0.00 – mp0.05
K-1170	mp0.00 – mp0.22
K-1250	0+00 – 12+74
K-1100.62	0+50 – 2+25
K-1108	0+00 – 15+90
K-1107	0+00 – 20+09
K-1100.56	0+00 – 2+11
K-1100.55	0+00 – 11+25
K-1100.55B	0+00 – 3+72
N-1160	0+00 – 27+33
K-1161	0+00 – 13+05
K-1165	0+00 – 12+50
K-1165.3	0+00 – 1+55
K-1100.44	0+00 – 5+60
K-1100.42	0+00 – 14+47
K-1100.40	0+00 – 4+95
K-1100.39	0+00 – 0+86
K-1100.38	0+00 – 1+20
K-1100.35	0+00 – 7+69
K-1100.35B	0+00 – 5+04
K-1100.32	0+00 – 0+75
K-1100.32B	0+00 – 2+70

4-64 WASTE MATERIAL COMPACTION

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

4-65 CULVERT BACKFILL COMPACTION

Culvert backfills on all existing roads shall be accomplished by using a jumping jack or plate compactor, performing at least 3 passes per lift, in lifts not to exceed 8 inches.

4-66 COMPACTION BY METHOD

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

SECTION 5 – DRAINAGE START

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-6 USED CULVERT MATERIAL

The Purchaser may install used culverts on the following roads. All other roads shall have new culverts installed.

<u>Road</u>	<u>Stations</u>
K-1100.35	2+59, 3+53
K-1100.35B	1+15

5-7 TEMPORARY STREAM CULVERT INSTALLATION

On the following roads, temporary stream culverts shall be located in the natural channel of the stream. Temporary culverts shall be installed as shown in the Type Ns Np Detail and Temporary Log Fill Stream Crossing Detail. Temporary culverts shall be removed as directed by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
K-1100.35	2+59

5-11 UNUSED MATERIALS STATE PROPERTY

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

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

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

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts shall be installed with a depth of cover of not less than 18 inches of compacted depth over the top of the culvert at the shallowest point. Stream crossing culverts shall be installed with a depth of cover specified in the Engineer's design, Type Ns Np Typical Detail Sheet, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

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

5-21 DOWNSPOUTS AND FLUMES

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

5-23 STAKING ABOVE GROUND CULVERTS

Culverts shall be staked on both the outlet and inlet. In addition, no more than 10ft of culvert shall be allowed without being staked. Staking shall consist of driving two heavy duty steel fence posts at least 2 feet into the ground at each point, and attaching them to the culvert using No.10 or larger galvanized smooth wire. Holes will be drilled in the outer wall of the culvert, below the half way mark, to allow the wire to pass through the culvert and out to the posts. No drilling of the inner wall shall be permitted.

5-24 PLASTIC CULVERT BANDS

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

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-26 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 weigh at least 10lbs. 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.

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>Type</u>
N-1100	mp3.87	Heavy Loose Rip Rap
K-1100	mp7.32	Light Loose Rip Rap
K-1100	mp7.83	Light Loose Rip Rap
K-1160	13+07	Light Loose Rip Rap

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>
South Winfield Pit	T27N R12W Sec35	Pitrun, oversize
North Winfield Pit	T27N R12W Sec35	1 ¼" Minus Crushed Rock
Red Creek Pit	T27N R11W Sec34	Light Loose & Heavy Loose Rip Rap & Spalls
Miser Pit	T25N R13W Sec14	Ballast Material & Oversize
Nolan Stockpile	T26N R12W Sec19	Crushed Rock, To The Extent Available
Pistil Pit	T25 R13W Sec4	Pitrun

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 what is listed on the rock list. The Nolan Stockpile is available to the quantity present at time of use.

<u>Source</u>	<u>Location</u>
North Winfield 1 ¼" minus Crushed Stockpile	T27N R12W Sec35 Nolan Stockpile

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. Rock source(s) shall be a WSDOT certified source. Purchaser shall submit laboratory tests for the rock to be used to the Contract Administrator. Tests shall include degradation and Los Angeles Rattler tests.

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

All rock source development and use shall be in accordance with a written ROCK SOURCE DEVELOPMENT AND RECLAMATION PLAN prepared by the State and included in this Road Plan. Rock source operations shall be conducted as directed by the Contract Administrator and in accordance with the plan. Upon completion of operations, the rock source shall be left in the condition specified in the ROCK SOURCE DEVELOPMENT AND RECLAMATION PLAN, and approved in writing by the Contract Administrator. The Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources shall be in accordance with the following unless otherwise specified in the ROCK SOURCE DEVELOPMENT AND RECLAMATION PLAN:

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

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

- Pit walls shall be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches shall be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches shall be uniform and free-draining at a minimum 2% outslope gradient.
- All operations shall be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Block all vehicle access to the top of the pit faces.

6-14 DRILL AND SHOOT

Rock drilling and shooting shall meet the following specifications:

*Oversize material remaining in the rock source at the conclusion of the timber sale shall not exceed 5% of the total volume mined in that source.

Oversize material is defined as rock fragments larger than five feet in any dimension.

Oversized rock that exceeds the maximum allowable amount shall be shot or broken up.

The Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.

The Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 10 working days before any drilling (Form #M-126PAC).

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

SUBSECTION ROCK GRADATIONS

6-42 CLEAN ROCK, SHOT BALLAST

Shot Ballast rock shall contain no more than 5 percent by weight of organic debris, dirt, and trash. Shot Ballast will meet the following specifications for rock gradation when placed on the subgrade:

No more than 10 percent of the rock by weight shall exceed 8 inches in any dimension and no rock shall be larger than 12 inches in any dimension. Rock may require processing to meet these requirements.

6-43 QUARRY SPALLS

% Passing 8" square sieve	100%
% Passing U.S. #40 sieve	5% maximum
% Passing 8" square sieve	100%

% Passing 3" square sieve	40% maximum
% Passing 3/4" square sieve	10% maximum

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

6-50 LIGHT LOOSE RIP RAP

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

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

6-51 HEAVY LOOSE RIP RAP

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

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

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 Clause 4-66, in lifts not to exceed 6 inches.

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

The Purchaser shall ensure that debris from the installation or removal of structures does not enter any stream. Components removed from the existing structures(s) shall be placed at designated site(s), as directed in writing, by the Contract Administrator. The Purchaser is responsible for maintaining a clean jobsite, with all materials stored away from any high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream shall be removed immediately, and placed in the site(s) designated for stockpiling or disposal. The Purchaser is responsible for retrieving all material carried downstream from the jobsite by the stream current.

7-6 STREAM CROSSING INSTALLATION

Installation of stream crossing structures shall be in accordance with the manufacturer's requirements, and as directed by the District Engineer or their designee.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

Bank protection shall be designed and constructed to prevent the undermining of the structure.

SUBSECTION ACCEPTANCE

7-19 INSTALLATION FINAL ACCEPTANCE

The Purchaser shall notify the District Engineer, or their designee in writing when each structure is complete.

SUBSECTION BRIDGE MAINTENANCE

7-34 WOOD SHEAR RAIL REPAIR

The new shear rails shall be 1 log per side with a small end diameter of at least 12". Purchaser shall supply logs for the shear rail repair from the harvest units.

SUBSECTION LARGE CULVERTS

7-55 LARGE CULVERT INSTALLATION

On the following road(s), Purchaser shall install large culverts. The installation of the culvert shall follow the Type NS/NP Typical Culvert installation Sheet, and as directed by the District Engineer, or their designee.

<u>Road</u>	N-1100	K-1100	K-1100		K-1160	K-1100.35
<u>Station</u>	mp3.87	mp7.32	mp7.83		13+07	2+41
<u>Type</u>	Culvert	Culvert	Culvert		Culvert	Culvert
<u>Material and Coating Type*</u>	Plastic or steel	Plastic or steel	Plastic or steel		Plastic or steel	Steel
<u>Span (in.)</u>	36	24	24		30	30
<u>Length (ft.)</u>	40	40	50		50	40

<u>Depth of Cover</u>	3	3	3		2	Log Fill
<u>Material (min.ft.)</u>						
<u>Corrugations</u>	3" X 1"	3" X 1"	3" X 1"		2 2/3" X 1/2"	2 2/3" X 1/2"
<u>Gauge</u>	12	12	12		14	14

* See Clause 10-15 CORRUGATED STEEL CULVERT and 10-17 CORRUGATED PLASTIC CULVERT

7-56 STEEL PIPE, PIPE ARCH, AND STRUCTURAL PLATE INSTALLATION

Steel pipe, pipe arches, and structural plate culverts shall be installed according to the National Corrugated Pipe Association Installation Manual, and are subject to the inspection and approval of the Contract Administrator before placement and backfill. The latest edition of the NCSPA Installation Manual can be found at www.ncspa.org.

7-57 CULVERT SHAPE CONTROL

Purchaser shall monitor the culvert shape during backfill and compaction. Special attention shall be paid to maintaining the structure's rise dimensions, concentricity and smooth, uniform curvature. If compaction methods are resulting in peaking and/or deflection of the culvert, Purchaser shall, in consultation with the Contract Administrator, modify their compaction method to achieve the appropriate end-result. The National Corrugated Steel Pipe Association "Installation Manual for Corrugated Steel Pipe, Pipe Arches, and Structural Plate" includes guidance on how to monitor culvert shape control and recommended corrective actions to take when shape control problems arise.

7-59 LOG FILL

The culvert fill at station 2+41 on the K-1100.35 shall be a temporary log fill with logs coming from the sale unit, and constructed in accordance with the Temporary Log Fill Stream Crossing Detail, and as directed by the District Engineer, or their designee.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL

As shown on the plan view, sediment control shall be accomplished with crushed rock berms and approved in writing by the District Engineer or their designee. Crushed rock berms shall be approximately one foot high and approximately two feet wide at the base.

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 SLOPE STABILIZATION

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 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 Roads	All	Clean culverts, clean ditch lines, grade roads, shape and compact, and apply rock as directed by the Contract Administrator.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

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

9-11 LANDING EMBANKMENT

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

SUBSECTION DEACTIVATION AND ABANDONMENT

9-20 ROAD DEACTIVATION

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
K-1100.35	0+50 – 11+97	Light Deactivation
K-1100.35B	0+00 – 5+04	Light Deactivation

9-22 LIGHT DEACTIVATION

Deactivation shall consist of:

1. Removing all culverts. Resulting back slopes shall be 1:1 or shallower. Material removed shall be placed on the roadbed and compacted, with slopes of 2:1 or shallower. Culverts removed shall become the property of the Purchaser and removed from State land.
2. Construct non-drivable water bars as directed by the Contract Administrator. On grades in excess of 3%, non-drivable water bars shall be skewed 30 degrees from the perpendicular of the road centerline.
3. Restore all ditchouts to drain water.
4. Repair or construct ditchlines.
5. Remove any berms, except as directed.
6. Restoration of natural stream channels across road prism, as directed by the Contract Administrator.
7. Removing all fill material as approved by the Contract Administrator.
8. All material from fill removals, culvert removals, and bridge removals shall be placed on roadbed and compacted, except that material listed in Clause 4-37.
9. Purchaser shall furnish and apply grass seed to all areas of exposed soil, including but not limited to: water bars, waste piles, and culvert removal sites. Grass seed shall be applied at a rate of 60 pounds per acre.
10. Block road to vehicular traffic using logs, slash, and stumps, as directed by the Contract Administrator.

SECTION 10 MATERIALS

SUBSECTION GEOTEXTILES

10-2 GEOTEXTILE FOR SEPARATION

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

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Non-woven
Apparent opening size	D 4751	No. 30 max
Water permittivity	D 4491	0.02 sec ⁻¹
Grab tensile strength	D 4632	160 lb
Grab tensile elongation	D 4632	>= 50%
Puncture strength	D 6241	310 lb
Tear strength	D 4533	50 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

SUBSECTION EROSION CONTROL AND REVEGETATION

10-10 JUTE EROSION CONTROL MATTING

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

- Mesh size 1 inch max.
- Mesh mass, 0.9 lb/yd² ±5%

10-11 COCONUT EROSION CONTROL MATTING

Coconut mat shall have a uniform open plain weave made from jute, coconut coir, synthetic polypropylene fibers, or other approved yarn. Erosion control matting shall conform to the specifications listed below, and shall be recommended by the manufacturer for use on embankments with a slope of 1½:1 (H:V) or steeper.

- Mesh size 0.5 to 1 inch.
- Mesh mass, 0.4 lb/yd² min.
- Netting shall be photodegradable on one side.
- Moisture content shall not exceed 20%.

10-12 WOOD EXCELSIOR EROSION CONTROL MATTING

Excelsior blanket shall have a uniform thickness made of curled wood excelsior secured on the top side to a biodegradable, photodegradable extruded plastic mesh. Matting shall be smolder resistant without the use of additional chemical additives. Erosion control matting shall conform to the specifications listed below, and shall be recommended by the manufacturer for use on embankments with a slope of 1½:1 (H:V) or steeper.

- Mesh size 1 to 2 inch.
- Blanket mass, 1 lb/yd² ±10%
- Excelsior fibers 7.8 inch (200-mm) length 80% min.

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-18 CORRUGATED STEEL STRUCTURAL PLATE

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

10-19 CORRUGATED ALUMINUM STRUCTURAL PLATE

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

10-22 PLASTIC BAND

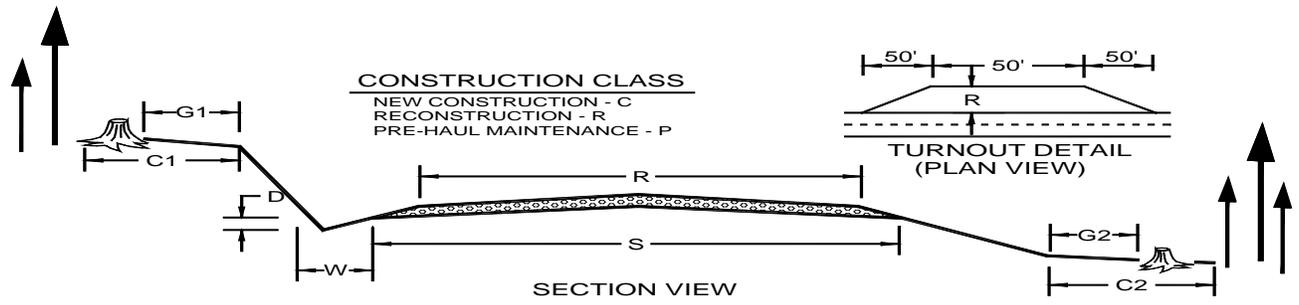
Plastic coupling and end bands shall meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer shall be used. Couplings shall be split coupling band. Split coupling bands shall have a minimum of four corrugations, two on each side of the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

10-23 GAGE AND CORRUGATION

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

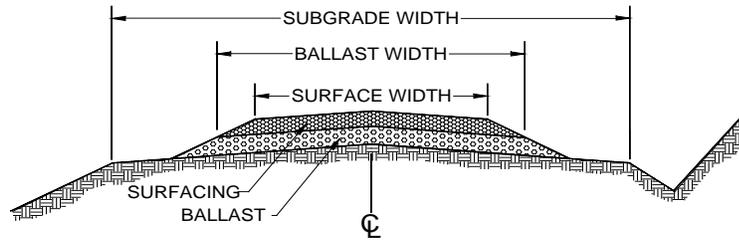
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 42"	14 (0.079")	2 2/3" X 1/2"
48" to 54"	12	3" X 1"
60" +	10	5" X 1"

TYPICAL SECTION SHEET



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS		SUBGRADE WIDTH (S)	ROAD WIDTH (R)	CROWN AT CL (in)	DITCH WIDTH (WD)		GRIBBING CLIT BANK (G1)	GRIBBING FILL TOE (G2)	ROAD CUT CLEARING (C1)	ROAD FILL CLEARING (C2)
N-1100.43	0+00	1+51	R		12	3	3'	1'				10'	15'
N-1164	mp0.00	mp0.05	P		12	3	3'	1'					
1+25 Spur	0+00	1+25	C	17	12	3	3'	1'	3'	5'	5'	5'	
3+40 Spur	0+00	3+40	C	17	12	3	3'	1'	3'	5'	5'	5'	
K-1108	0+00	15+90	R		12	3	3'	1'				10'	15'
K-1100.62	0+00	2+75	R		12	3	3'	1'				10'	15'
K-1250	0+00	12+74	P		12	3	3'	1'					
K-1170	mp0.00	mp0.22	P		12	3	3'	1'					
K-1107	0+00	20+09	P		12	3	3'	1'					
K-1100.56	0+00	2+11	P		12	3	3'	1'					
K-1100.55	0+00	11+25	R		12	3	3'	1'				10'	15'
K-1100.55B	0+00	3+72	R		12	3	3'	1'				10'	15'
K-1106	0+00	21+55	P		12	3	3'	1'					
K-1160	0+00	45+50	R		12	3	3'	1'				10'	15'
K-1161	0+00	13+05	R		12	3	3'	1'				10'	15'
K-1165	0+00	5+50	R		12	3	3'	1'				10'	15'
K-1165.3	0+00	1+55	R		12	3	3'	1'				10'	15'

ROCK LIST SHEET

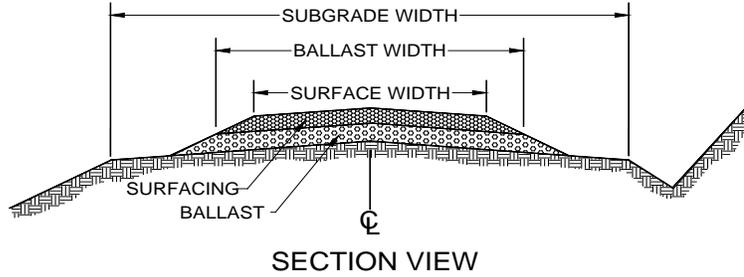


SECTION VIEW

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. Rock sources= 1: South Winfield Pit Pitrun, 2: Miser Ballast, 3: Nolan Stockpile (NSP) crushed rock, 4: South Winfield Oversize, 5: Red Creek Pit Rip Rap/spalls, 6: Pistil Pit Pitrun, 7: North Winfield crushed rock

ROAD NAME	START STATION	END STATION	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)
N-1100												0		0
Misc							0	3,7				20		0
Culvert	mp3.87		1,6				200	3,7				30	6	10
K-1100							0					0		0
Culvert	mp7.32		1,6				20	3,7				20	5	10
Turnout	mp7.38						0	3,7				10		0
Culvert	mp7.83		1				80	3,7				20	5	10
Misc							0	3,7				50		0
K-1100.32B	0+12	2+70	1,6	12	6	35	90					0		0
Approach	0+10		1,6				20					0		0
Spot Patch	0+40		1,6				30					0		0
K-1100.35	0+10	2+05	1,6	12	12	70	140					0		0
Culvert		0+05	1,6				50					0		0
Log Fill	2+59	2+78	1,6	12	12	70	50					0		0
Culvert	3+53		1,6				20					0		0
Misc			1,6				30					0		0
Turnaround	7+28		2				30					0		0
K-1100.35B							0					0		0
Misc	0+37		1,6				60					0		0
Culvert	1+15		1,6				20					0		0
Landing	5+04		1,2,6				30					0		0
K-1100.38							0					0		0
Approach	0+10		1,6				10					0		0
K-1100.39	0+00	0+86	1,6	12	6	35	30					0		0
Approach	0+13		1,6				20					0		0
							0					0		0
							0					0		0
Totals:							930					150		30

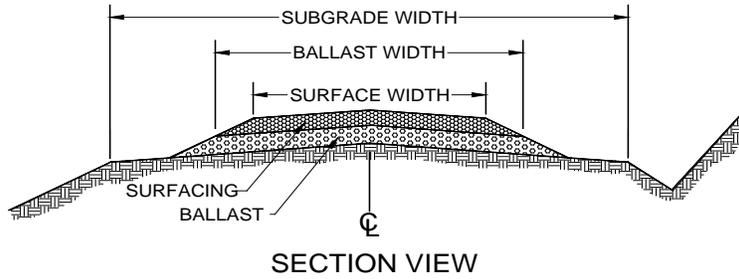
ROCK LIST SHEET CONTINUED



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. Rock sources= 1: South Winfield Pit Pitrun, 2: Miser Ballast, 3: Nolan Stockpile (NSP) crushed rock,
- 4: South Winfield Oversize, 5: Red Creek Pit Rip Rap/spalls, 6: Pistil Pit Pitrun, 7: North Winfield crushed rock

ROAD NAME	START STATION	END STATION	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	Oversize/Rip Rap Quantity(yd ³)
K-1100.40	0+00	4+95	1,6	12	6	35	170							0
Approach			1,6				20							0
K-1100.42							0							0
Misc			1,6				80							0
Culvert	4+10		1,6				20						4	1
Culvert	7+80		1,6				20						4	1
K-1100.44	0+35	2+85	1	12	12	70	175							0
Lift	2+85	5+60	1	12	6	35	100							0
Approach	0+35		1				50							0
Construction	5+60	9+01	2	15	12	75	260							0
Construction	5+60	9+01	1,6	12	6	35	120							0
Landing			1,6				50							0
K-1160							0							0
Approach	0+35		1,6				40							0
Lift	0+00	45+50	1,6	12	6	35	1600							0
Culvert	8+45		1,6				20						4	1
Culvert	12+55		1,6				20						4	1
Fill Repair	12+87	13+27	1,6	12	18	110	40							0
Culvert	13+07		1,6				540						5	5
Spot Patch	32+90		1,6				40							0
K-1161							0							0
Misc	0+90	4+58	1,6	2	18	22	200							0
							0							0
							0							0
							0							0
Totals:							3565							9

ROCK LIST SHEET CONTINUED



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. Rock sources= 1: South Winfield Pit Pitrun, 2: Miser Ballast, 3: Nolan Stockpile (NSP) crushed rock,
- 4: South Winfield Oversize, 5: Red Creek Pit Rip Rap/spalls, 6: Pistil Pit Pitrun, 7: North Winfield crushed rock

ROAD NAME	START STATION	END STATION	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	Oversize/Rip Rap Quantity(yd ³)
K-1165							0							0
Spot Patch	2+52		1,6				10							0
K-1106	3+54	21+55	1,6	12	6	35	630							0
Culvert	6+00		1,6				20						4	2
Culvert	9+39		1,6				30						4	2
K-1100.55	0+00	11+25	1,6	12	6	35	400							0
Approach	0+30		1,6				20							0
Culvert	4+88		1,6				20						4	1
K-1107							0							0
Culvert	2+13		1,6				20						4	1
Turnaround	11+84		1,2,6				30							0
Spot Patch	12+40		1,6				20							0
Culvert	17+02		1,6				20						4	1
K-1108							0							0
Culvert	0+15		1,6				30						4	1
Culvert	1+95		1,6				20						4	1
Culvert	4+08		1,6				20						4	1
Spot Patch	6+88		1,6				30							0
K-1100.62	0+00	2+75	1,6	12	6	35	100							0
Culvert	0+05		1,6				50						4	1
							0							0
							0							0
							0							0
Totals:							1470							11

CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
N-1100	mp3.87	36	40			4.0	16	CR	Replace Existing
K-1100	mp7.32	24	40			5.0	15	CR	New Culvert
K-1100	mp7.83	24	50			4.0	16	CR	Replace Existing Culvert
K-1100.35	0+05	18	50			0.5	0.5	PR	New CMP
K-1100.35	2+59	30	40						Temporary Culvert / Log Fill
K-1100.35	3+53	18	36					PR	Temporary Culvert
K-1100.35B	1+15	18	30	20				PR	Temporary Culvert
K-1100.42	4+10	18	30			0.5	0.5	PR	New Culvert
K-1100.42	7+80	18	26			0.5	0.5	PR	New Culvert
K-1160	8+45	18	26			0.5	0.5	PR	New Culvert
K-1160	12+55	18	26			0.5	0.5	PR	New Culvert
K-1160	13+07	30	48	20		1.5	2.5	PR	New Culvert
K-1106	7+50	18	30			1.0	2.5	PR	New Culvert
K-1106	9+39	24	30			1.0	1.0	PR	New Culvert
K-1100.55	4+88	18	26			0.5	0.5	PR	New Culvert
K-1107	2+13	18	26			0.5	0.5	PR	New Culvert
K-1107	17+02	18	30	40		0.5	0.5	PR	Replacement
K-1100.62	0+05	18	50			0.5	0.5	PR	New Culvert
K-1108	0+15	18	50			0.5	0.5	PR	New Culvert
K-1108	1+95	18	30			0.5	0.5	PR	New Culvert
K-1108	4+08	18	30			0.5	0.5	PR	New Culvert
K-1250	2+52	18	36			0.5	0.5	PR	Replacement
K-1250	7+12	18	24			0.5	0.5	PR	New Culvert
K-1250	7+50	24	36			1.0	1.0	PR	New Culvert
K-1250	8+20	18	26	18		0.5	0.5	PR	New Culvert

All rip rap shall be 6" – 12" Oversize unless specified otherwise here, in the Rock List, or in the field.

LRR=Light Loose Rip Rap, HRR=Heavy Loose Rip Rap

All backfill shall be native material (NT) unless specified otherwise. CR= 1 ¼"- crushed rock, PR= Pitrun,

Required Minimum Gauge for Metal Pipe

Diameter	Gauge
----------	-------

18"	16
24" - 42"	14
48" - 54"	12
60" - 96"	10

DEPARTMENT OF NATURAL RESOURCES

FORM 9-87(Rev. 01-08)

SUMMARY - Road Development Costs

SALE NAME: N-1100 VDT	CONTRACT#: 30-090940	REGION: Olympic	DISTRICT: Coast	TOTAL SHEET #24								
LEGAL DESCRIPTION: 0												
ROAD NAME:	1+25 Spur	3+40 Spur	R-1100.44	1+76 Spur	N-1100.43	R-1108	R-1100.62	R-1100.55	R-1160	R-1161	R-1165	TOTAL
ROAD TYPE:	Construction	Construction	Construction	Construction	Recon	Recon	Recon	Recon	Recon	Recon	Recon	TOTAL
NUMBER OF STATIONS:	1.25	3.40	3.41	1.76	1.51	15.90	2.25	11.25	45.50	13.05	5.50	104.78
SIDE SLOPE:	0	0	0	0	0	0	0	0	0	0	0	844.51
CLEARING AND GRUBBING:	\$137	\$373	\$374	\$193	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,078
ROAD BRUSHING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EXCAVATION AND FILL:	\$169	\$459	\$460	\$317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,405
ROAD GRADING:	\$0	\$0	\$0	\$0	\$10	\$104	\$18	\$73	\$300	\$81	\$40	\$1,940
DITCH CLEANING/CONSTRUCTION:	\$0	\$0	\$0	\$0	\$0	\$550	\$107	\$306	\$609	\$0	\$0	\$1,572
ROCK TOTALS (Col. Y&B):	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,572
Ballast:	6745	6,745	\$4,114	\$6,803	\$2,209	\$1,467	\$2,246	\$16,284	\$38,770	\$2,950	\$171	\$76,988
Surface:	150	150	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Oversize:	57	50	\$0	\$0	\$0	\$27	\$9	\$9	\$89	\$0	\$0	\$134
CULVERTS AND FITTINGS:	\$0	\$0	\$0	\$0	\$0	\$2,420	\$1,100	\$572	\$5,112	\$0	\$0	\$9,204
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:	\$2	\$6	\$6	\$3	\$3	\$852	\$142	\$643	\$2,072	\$698	\$675	\$5,104
OVERHEAD:	\$228	\$495	\$495	\$272	\$1	\$434	\$290	\$1,431	\$3,756	\$298	\$71	\$8,041
TOTAL COSTS:	\$2,512	\$5,447	\$8,408	\$2,994	\$14	\$5,853	\$3,912	\$19,318	\$50,708	\$4,028	\$957	\$104,152
COST PER STATION:	\$2,009	\$1,602	\$2,466	\$1,701	\$9	\$368	\$1,739	\$1,717	\$1,114	\$309	\$174	\$994
MOBILIZATION:			\$5,100									
ROAD DEACTIVATION AND ABANDONMENT COSTS:			\$3,574									
P&I Work:			\$0									
TOTAL (All Roads) -			\$187,691									
SALE VOLUME MBF -			3,460									
TOTAL COST PER MBF -			\$54.25									
TOTAL COST PER STATION -			\$197.72									

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

Computed by: Bill Mehl
 Date: 12-18-2015

N1100 ROAD COST DECEMBER 2015.XLSX

SALE NAME: N-1100 VDT CONTRACT#: 30-090940
 LEGAL DESCRIPTION: 0

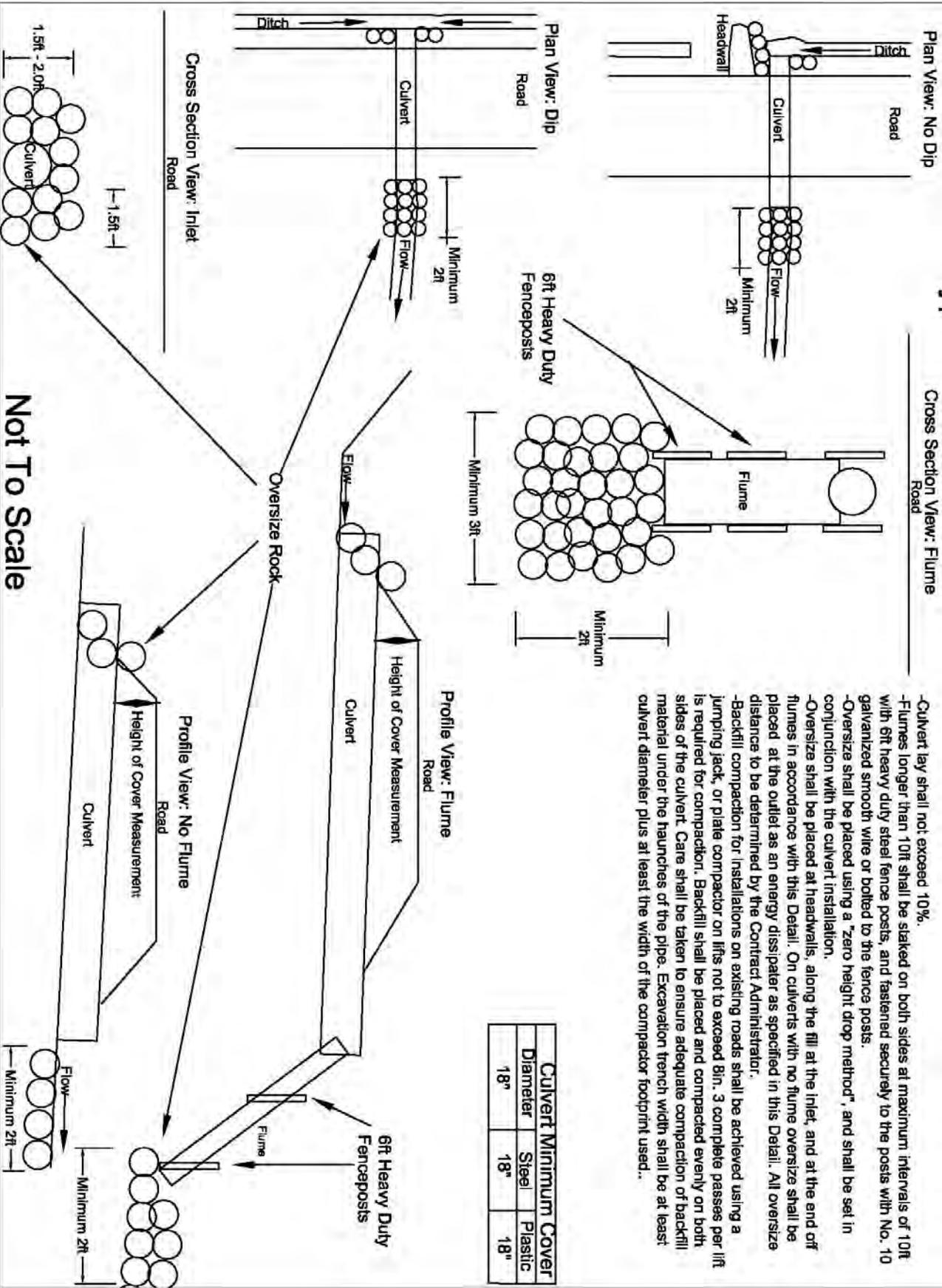
REGION: Olympic

SUMMARY - Road Development Costs

DISTRICT: Coast

ROAD NAME:	K-1165.3	K-1100.44	K-1100.42	K-1100.35K-1100.35	K-1100.35B	K-1100.32B	N-1100	N-1164	K-1250	K-1170	K-1107	K-1100.56	K-1106	K-1100.4	K-1100.38	K-1100
ROAD TYPE:	Recon.	Recon.	Recon.	Recon.	Recon.	Recon.	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul
NUMBER OF STATIONS:	1.55	5.60	14.47	0.86	7.69	5.04	2.70	303.60	2.64	12.74	11.62	20.09	2.11	21.55	4.95	1.20
SIDE SLOPE:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1	\$2	\$3	\$4	\$5	\$6	\$7	\$8
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	\$46	\$0	\$207	\$0	\$0	\$0	\$0	\$0
EXCAVATION AND FILL:	\$0	\$1,576	\$364	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD GRADING:	\$10	\$36	\$94	\$6	\$50	\$33	\$0	\$512	\$16	\$83	\$75	\$131	\$14	\$256	\$0	\$10
DITCH CLEANING/CONSTRUCTION	\$0	\$56	\$416	\$0	\$170	\$164	\$0	\$0	\$99	\$497	\$449	\$387	\$82	\$253	\$0	\$0
ROCK TOTALS (Cu. Yds.):	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ballast:	\$0	\$5,164	\$2,030	\$846	\$5,758	\$2,785	\$2,801	\$2,476	\$0	\$1,808	\$304	\$1,372	\$0	\$10,750	\$3,280	\$0
Surface:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$607	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Oversize:	\$0	\$0	\$18	\$0	\$0	\$0	\$0	\$110	\$0	\$0	\$89	\$0	\$0	\$0	\$0	\$0
CULVERTS AND FLUMES:	\$0	\$0	\$1,232	\$0	\$4,752	\$1,554	\$0	\$3,000	\$0	\$3,142	\$0	\$0	\$1,440	\$0	\$0	\$0
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:	\$83	\$300	\$815	\$46	\$14	\$290	\$0	\$412	\$5	\$446	\$21	\$37	\$67	\$540	\$0	\$2
OVERHEAD:	\$7	\$571	\$398	\$72	\$860	\$386	\$224	\$640	\$15	\$538	\$95	\$181	\$15	\$1,192	\$295	\$1
TOTAL COSTS:	\$101	\$7,703	\$5,367	\$970	\$11,603	\$5,212	\$3,026	\$7,757	\$180	\$6,514	\$1,151	\$2,196	\$178	\$14,431	\$3,575	\$13
COST PER STATION:	\$65	\$1,376	\$371	\$1,128	\$1,509	\$1,034	\$1,121	\$26	\$68	\$511	\$99	\$109	\$84	\$670	\$722	\$11

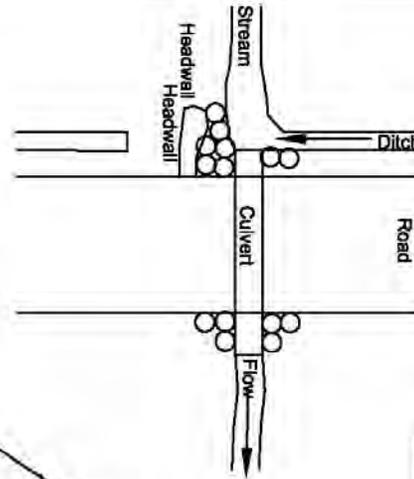
Typical Cross Drain Culvert Installation Detail Sheet.



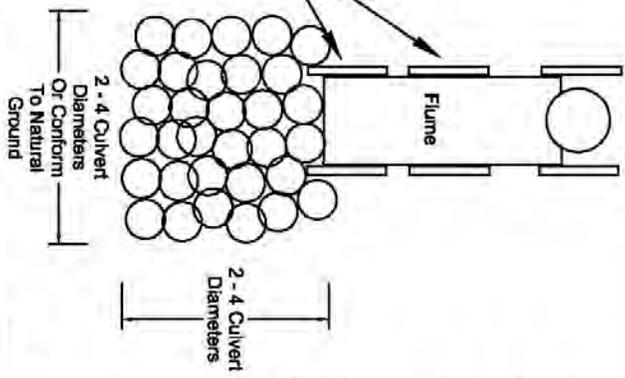
- Culvert lay shall not exceed 10%.
- Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
- Oversize shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.
- Oversize shall be placed at headwalls, along the fill at the inlet, and at the end of flumes in accordance with this Detail. On culverts with no flume oversize shall be placed at the outlet as an energy dissipater as specified in this Detail. All oversize distance to be determined by the Contract Administrator.
- Backfill compaction for installations on existing roads shall be achieved using a jumping jack, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus at least the width of the compactor footprint used.

Typical Type Ns, Np Culvert Installation Detail Sheet.

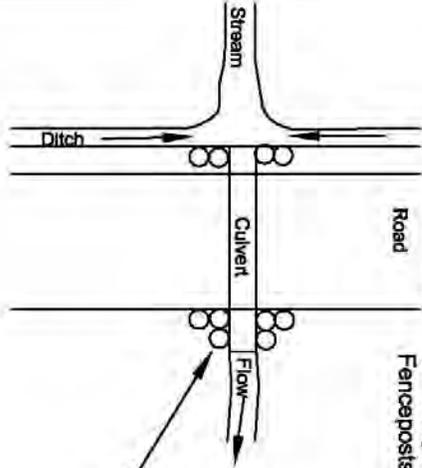
Plan View: No Dip



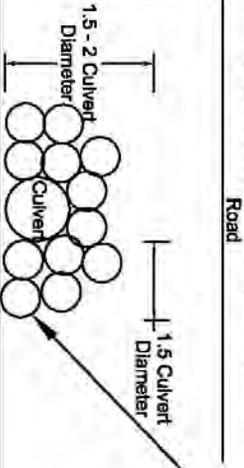
Cross Section View: Flume



Plan View: Dip

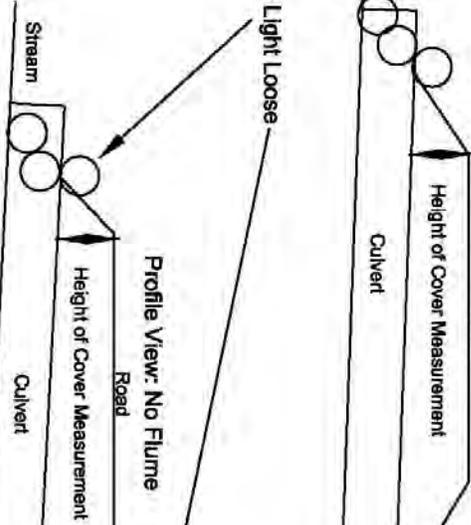


Cross Section View: No Flume



Not To Scale

Rip Rap:
Heavy Loose or Light Loose

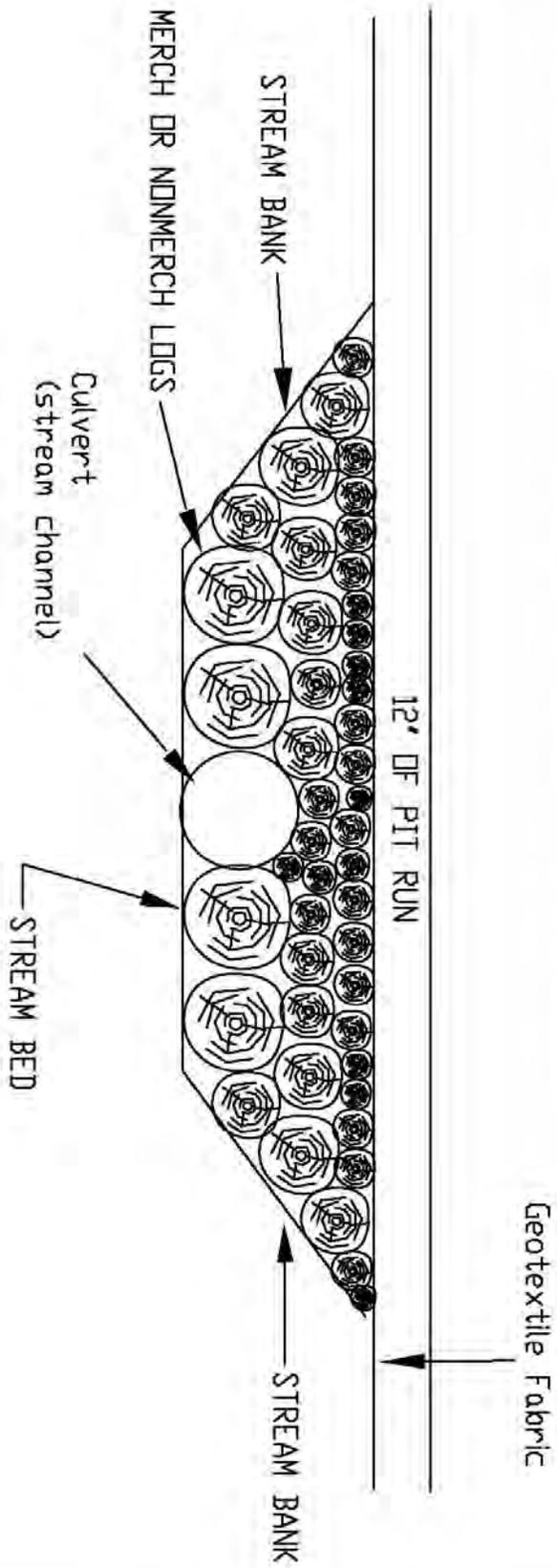


Profile View: Flume

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

-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 of 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.

TEMPORARY LOG FILL STREAM CROSSING



FISH STREAM WORK, PROVISIONS

1. TIMING LIMITATIONS: The fish culvert project may begin July 1 and shall be completed by September 30.
2. Work shall conform to plans and specifications in the road plan.
3. Prior to the commencement of in-stream work, the Purchaser shall isolate the work area in a manner that fish cannot enter the work area, capture and safely move fish and other fish life from the work area. The Purchaser shall have fish capture and transportation equipment ready and on the job site. Captured fish shall be immediately and safely transferred to free-flowing water downstream of the work area.

TEMPORARY STREAM FLOW BYPASS

4. All in-stream work shall be conducted in the dry or in isolation from the stream flow by the installation of a bypass flume/pipe or by pumping the flow around the work area, back into the stream below the work area. Waste water pumped from within the work area shall terminate on the forest floor, sufficient distance from the stream to filter sediment prior to entering the stream.
5. The temporary bypass to divert flow around the work area shall be in place prior to initiation of other work in the wetted perimeter.
6. A sandbag revetment or similar device shall be installed at the bypass inlet to divert the entire flow through the bypass.
7. The bypass shall be of sufficient size to pass all flows and debris for the duration of the project.
8. If a pump is used for diverting water from the stream where fish are present, as per RCW 77.57.010 and 77.57.070, the pump intake shall be equipped with a fish guard to prevent passage of fish into the diversion pump. The pump intake shall be screened with 1/8 inch mesh to prevent fish from entering the pump. Velocity through the screened intake shall be less than 0.4 feet per second. Screens shall be maintained to prevent injury or entrapment of juvenile fish.

WATER QUALITY

9. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the stream.

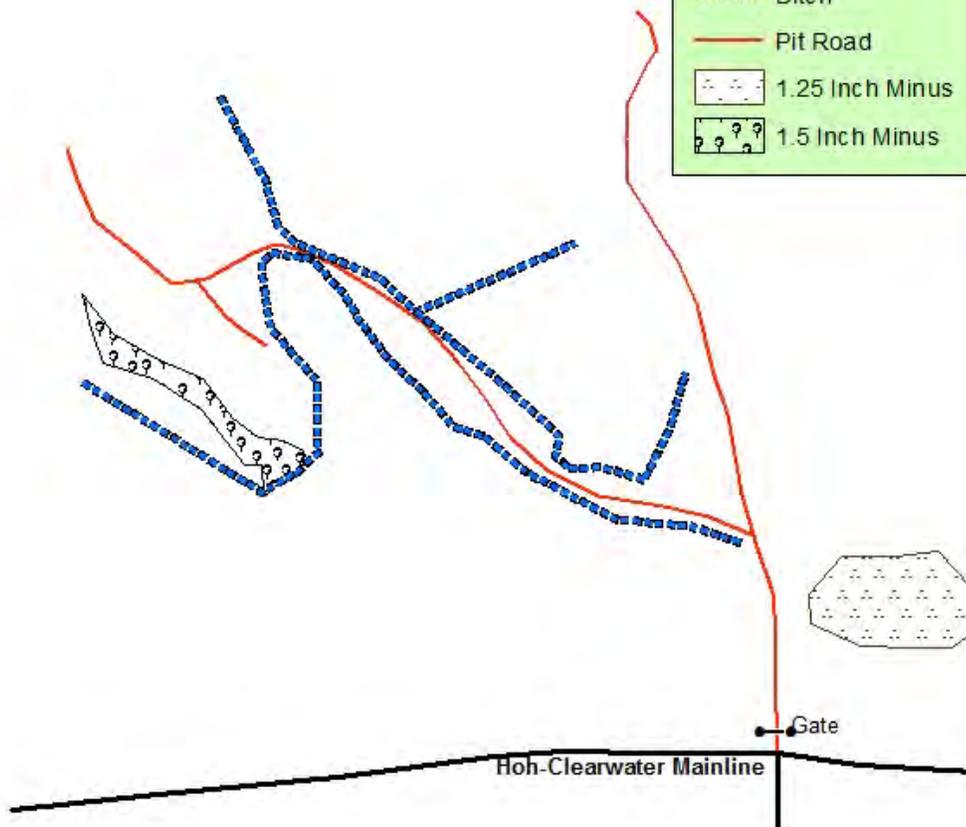
North Winfield Pit T27N R12W Sec 35

Pit Development Plan

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

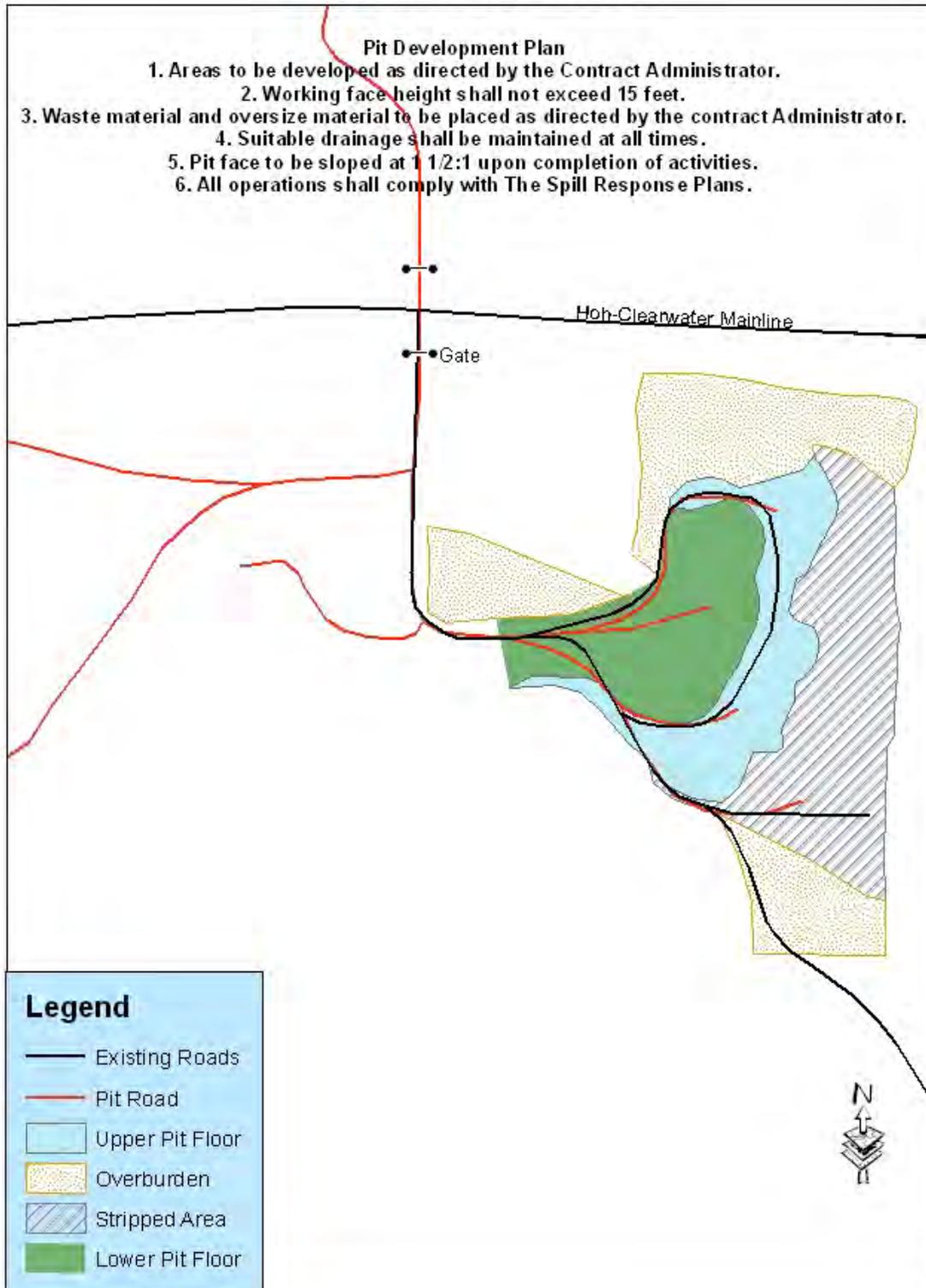
Legend

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



No Scale

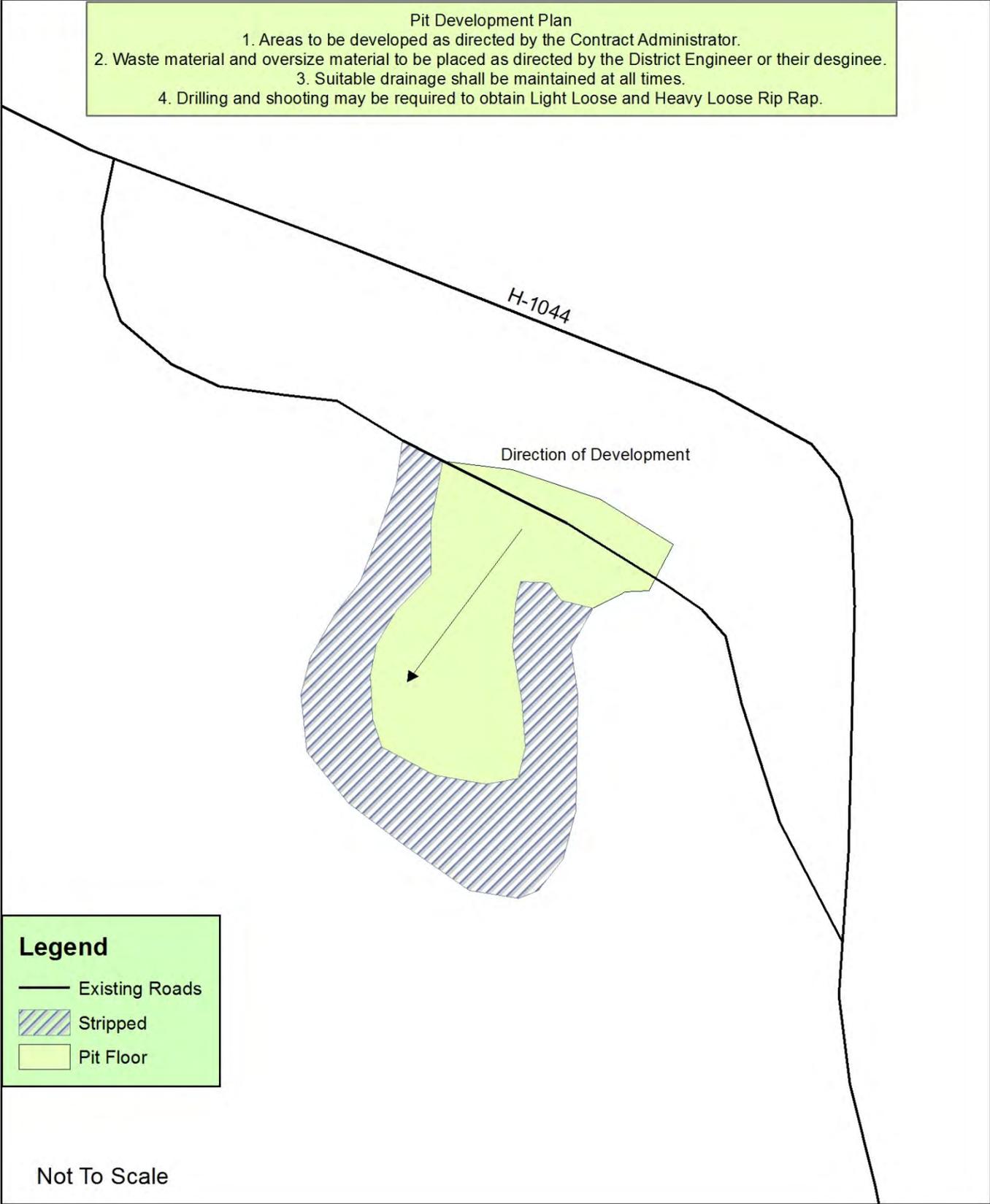
South Winfield Pit T27N R12W Sec35



Not To Scale

Red Creek Pit T27N R11W Sec34

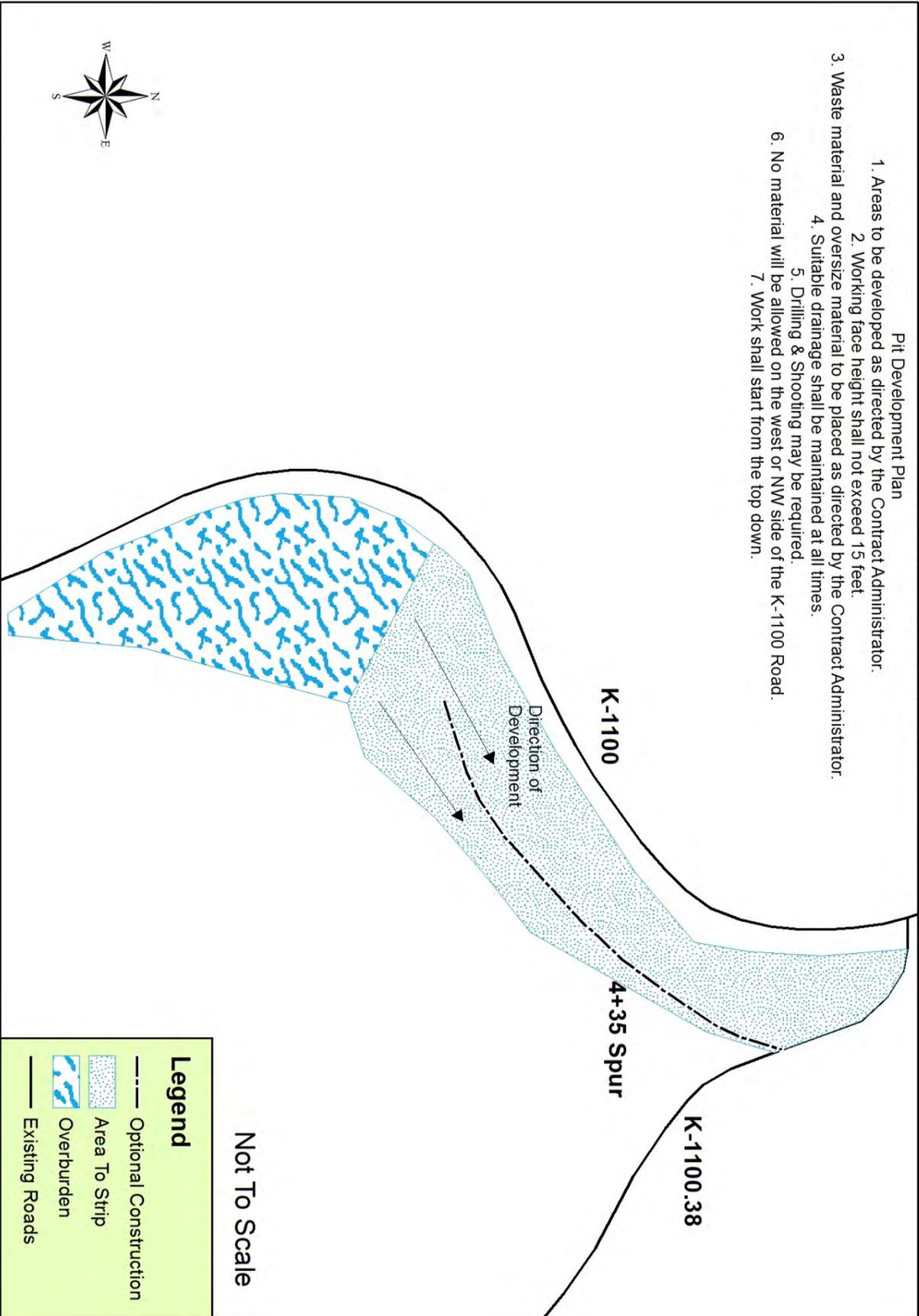
- Pit Development Plan
1. Areas to be developed as directed by the Contract Administrator.
 2. Waste material and oversize material to be placed as directed by the District Engineer or their designee.
 3. Suitable drainage shall be maintained at all times.
 4. Drilling and shooting may be required to obtain Light Loose and Heavy Loose Rip Rap.

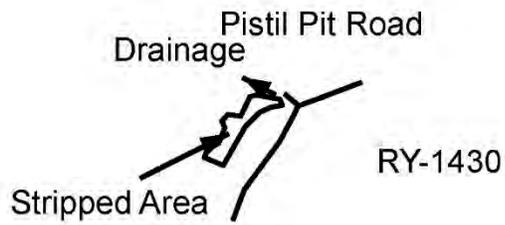
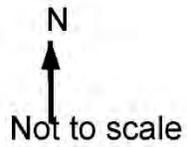


Miser Pit Plan
T25N R12W Sec14

Pit Development Plan

1. Areas to be developed as directed by the Contract Administrator.
2. Working face height shall not exceed 15 feet.
3. Waste material and oversize material to be placed as directed by the Contract Administrator.
4. Suitable drainage shall be maintained at all times.
5. Drilling & Shooting may be required.
6. No material will be allowed on the west or NW side of the K-1100 Road.
7. Work shall start from the top down.





Pit Development Plan April 2015

1. Areas to be developed as directed by the Contract Administrator
2. Working face height shall not exceed 15 feet
3. Waste material and debris to be placed as directed by the Contract Administrator
4. Suitable drainage to be maintained at all times
5. Pit face to be sloped at 1 1/2 : 1 at completion of activities

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.

