

Washington DNR Timber Sales Program

**Updated information is being provided for **Blitzen** timber sale documents as follows:**

**Documents amended:**

<b>Brief Description</b>	<b>DATE</b>
Driving Map – Added Rock Pit information.	3/10/16
Contract – Updates to the following Clauses: G-310, G-370, G-380, C-050, H-140 and H-141	

**TIMBER NOTICE OF SALE**

**SALE NAME:** *BLITZEN*

**AGREEMENT NO:** *30-091190*

**AUCTION:** April 27, 2016 starting at 10:00 a.m., **COUNTY:** Skagit  
Northwest Region Office, Sedro Woolley, WA

**SALE LOCATION:** Sale located approximately 8 miles east of Sedro-Woolley, WA.

**PRODUCTS SOLD  
AND SALE AREA:**

All timber bounded by white timber sale boundary tags and the WS-ML Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #1.

All timber bounded by white timber sale boundary tags, adjacent young stands and the WS-ML Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All timber bounded by white timber sale boundary tags and property lines, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

All timber bounded by orange right of way tags, except that title to the timber within the right of way tags is not conveyed to the Purchaser unless the road segment is actually constructed.

The above described products on part(s) of Sections 2 all in Township 35 North, Range 5 East, Sections 35 and 36 all in Township 36 North, Range 5 East, W.M., containing 94 acres, more or less.

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

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Hemlock	14	8	1,316						434	630	239	13
Red alder	13		565						90	182	263	30
Douglas fir	25	8	451				39		349	50	13	
Red cedar	16		229							179	50	
Silver fir	17		78						50	13	6	9
Birch	12		40							8	27	5
Cottonwood	37		13						13			
Sale Total			2,692									

**MINIMUM BID:** \$591,000.00 **BID METHOD:** Sealed Bids

**PERFORMANCE SECURITY:** \$100,000.00 **SALE TYPE:** Lump Sum

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

## TIMBER NOTICE OF SALE

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**BID DEPOSIT:** \$59,100.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Cable; cable or shovel on sustained slopes 35% or less. Falling and Yarding will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator (THIS PERTAINS TO GROUND-BASED EQUIPMENT ONLY) to reduce soil damage and erosion.

Additional restrictions apply, see Remarks section below.

**ROADS:** 28.10 stations of required construction. 24.22 stations of optional construction. 46.57 stations of optional reconstruction. 6.38 stations of existing road to be abandoned. 24.22 stations of road to be abandoned if built.

Rock may be obtained from the following source(s) on State land at no charge to the Purchaser: Section 2 Rock Pit at station 17+93 of the MJ-03 Road. WS-37 Pit at station 196+86 of the WS-ML Road.

Development of new and existing rock source(s) will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, gravel surface ballast and 6 inch-minus subgrade ballast.

An estimated total quantity of rock needed for this proposal: 230 cubic yards of riprap and 6,323 cubic yards of ballast rock.

Additional restrictions apply, see Remarks section below.

Road construction, road reconstruction, road abandonment, and the hauling of rock will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation. The hauling of forest products will not be permitted from November 1 to March 31 unless authorized in writing by the Contract Administrator to reduce soil damage and siltation.

### ACREAGE DETERMINATION

**CRUISE METHOD:** Acres determined by GPS traverse. 98.4 acres gross. 2.6 acres deducted for green tree retention clumps and 1.4 acres deducted for existing roads. 94.4 acres net. Cruised using variable plot method. Expansion factor used is 40.00 and 62.5. Sighting height is 4.5 feet. A total of 94 plots were taken.

Shapefiles of units are available upon request.

**FEES:** \$47,783.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:**

1. The west half of Unit #2 (below the WS-ML Road) shall have a seasonal restriction from July 1 to September 30, and must be felled by hand and shall be limited to uphill, full suspension cable yarding.
2. The WS-4409 Road in Unit #3 shall have a seasonal restriction, and the crossing at station 17+69 may not overwinter (one season entry).
3. The WS-ML Road in Unit 2 currently contains a water diversion issue from a stream further up the hill that starts to run down an old grade. The proposal plans to reopen the orphaned grade, and place the stream back in its original location.

## TIMBER NOTICE OF SALE

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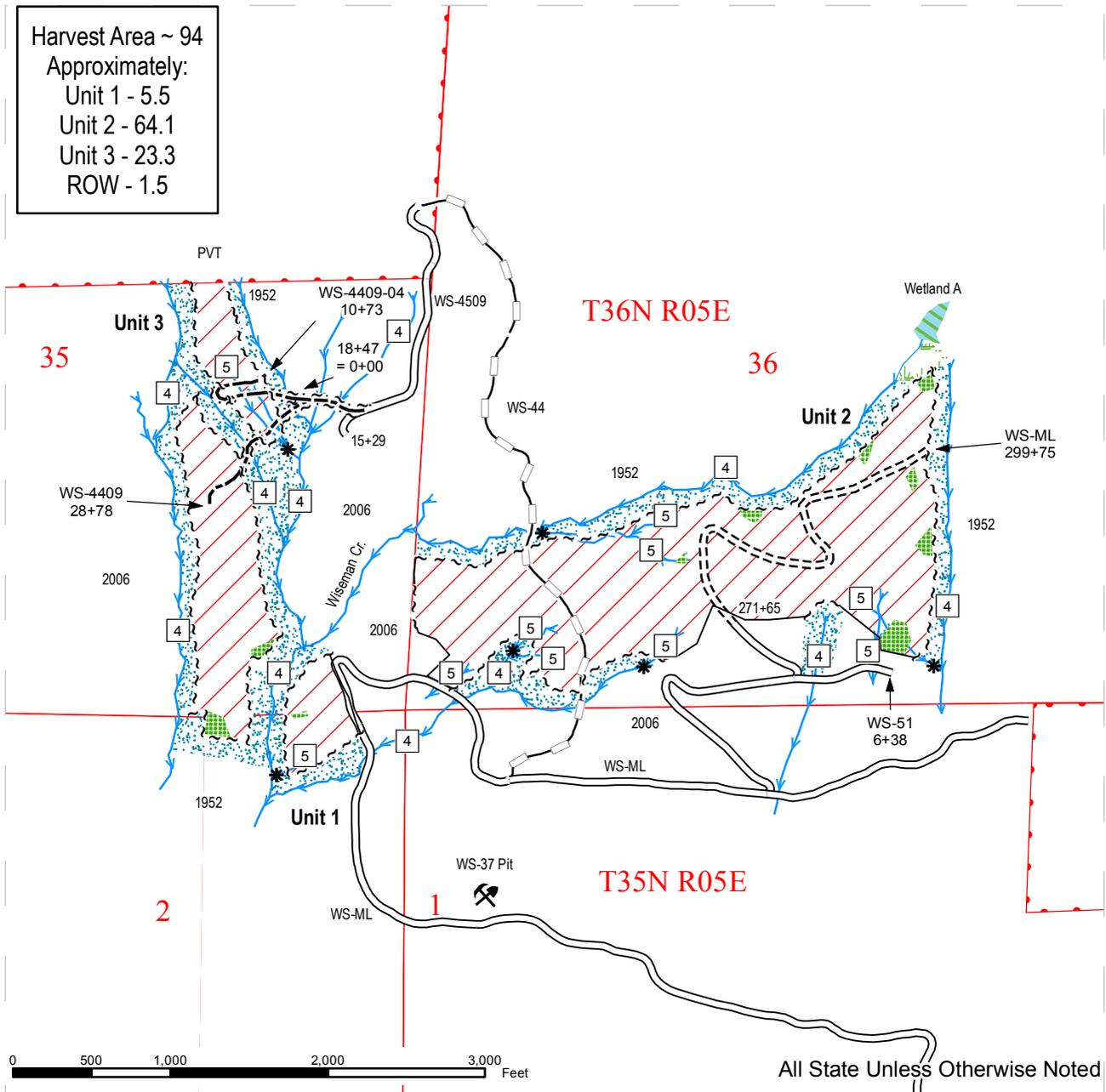
4. HQ DF noted within the sale area. See cruise for further details (approximately 9 mbf of the above listed DF 2S is deemed high quality by the Department).
5. Intermediate supports may be needed in Unit #3.

# TIMBER SALE MAP

**SALE NAME:** BLITZEN  
**AGREEMENT#:** 91190  
**TOWNSHIP(S):** T36R05E, T35R05E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** Northwest Region  
**COUNTY(S):** SKAGIT  
**ELEVATION RGE:** 1791-3361

Harvest Area ~ 94  
 Approximately:  
 Unit 1 - 5.5  
 Unit 2 - 64.1  
 Unit 3 - 23.3  
 ROW - 1.5



All State Unless Otherwise Noted

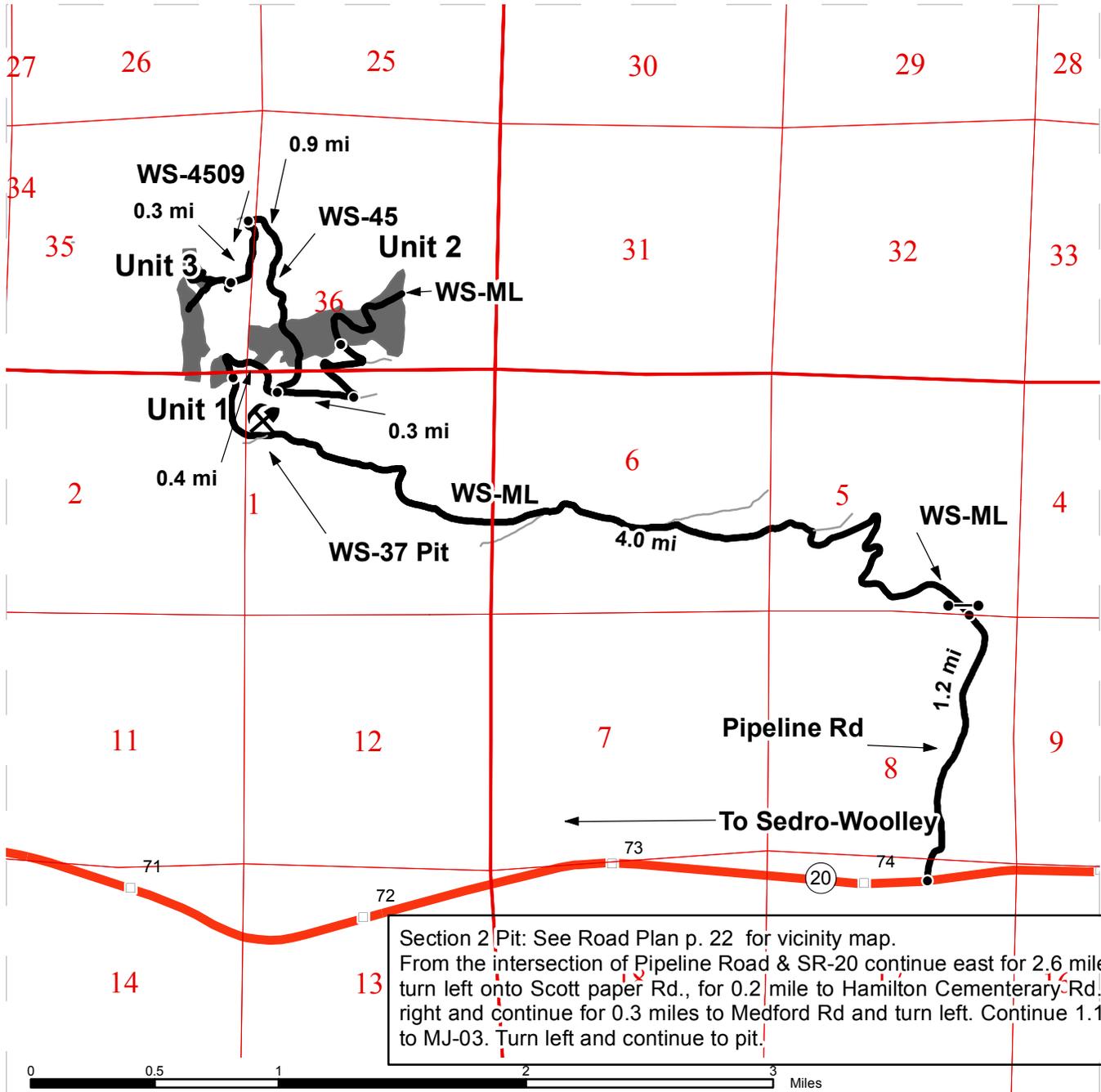
	Sale Area		Sale Boundary Tags		Stream Type
	Riparian Mgt Zone		Sale Boundary (No Tags)		Stream Type Break
	Leave Tree Area		Right of Way Tags		DNR Managed Lands
	Wetland Mgt Zone		Existing Road		
	Wetland		Required Construction		
	Streams		Optional Construction		
			Optional Reconstruction		



# DRIVING MAP

SALE NAME: BLITZEN  
 AGREEMENT#: 91190  
 TOWNSHIP(S): T36R05E, T35R05E  
 TRUST(S): State Forest Transfer(1)

REGION: Northwest Region  
 COUNTY(S): SKAGIT  
 ELEVATION RGE: 1791-3361



Section 2 Pit: See Road Plan p. 22 for vicinity map.  
 From the intersection of Pipeline Road & SR-20 continue east for 2.6 miles and turn left onto Scott paper Rd., for 0.2 mile to Hamilton Cementerary Rd. Turn right and continue for 0.3 miles to Medford Rd and turn left. Continue 1.1 miles to MJ-03. Turn left and continue to pit.

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

**DRIVING DIRECTIONS:**  
 Unit 1:  
 From the Intersection of Hwy 9 & SR-20, head east on SR-20 for 8.2 miles to intersection of Pipeline Rd. & SR-20. Turn left on Pipeline Rd. and continue for 1.2 miles to a gate (F1-3 key). Pipeline Rd. turns into the WS-ML. Continue on the WS-ML for 4 miles to Unit 1 on the left side of the WS-ML.  
 Unit 2:  
 From unit 1, continue on the WS-ML for approximately 0.7 miles until the WS-ML switches back up the hill on the left. Follow the WS-ML to the end of the existing road and the start of the new road construction.  
 Unit 3:  
 From unit 1, continue on the WS-ML for approximately 0.4 miles to the junction of the WS-45. Turn left on the WS-45, and continue for approximately 0.9 miles to the junction of the WS-4509. Follow the WS-4509 to the left and go approximately 0.3 miles to the start of the new road construction on the right.



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Lump Sum AGREEMENT NO. 30-091190**

**SALE NAME: BLITZEN**

**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-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on April 27, 2016 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber bounded by white timber sale boundary tags and the WS-ML Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #1.

All timber bounded by white timber sale boundary tags, adjacent young stands and the WS-ML Road, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #2.

All timber bounded by white timber sale boundary tags and property lines, except trees marked with blue paint on the bole and root collar, forest products tagged out by yellow leave tree area tags and cedar snags, preexisting dead and down cedar trees and cedar logs in Unit #3.

All timber bounded by orange right of way tags, except that title to the timber within the right of way tags is not conveyed to the Purchaser unless the road segment is actually constructed.

The above described products, located on approximately 94 acres on part(s) of Section 2 in Township 35 North, Range 5 East, Sections 35, and 36 all in Township 36 North, Range 5 East W.M. in Skagit County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	NW Ground-Based Equip Specifications (Rev11/05/14)

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to March 31, 2018.

G-040 Contract Term Adjustment - No Payment

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

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

G-051 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 total contract price.

For the second extension, not to exceed 1 year, payment of at least 90 percent of the total contract price.

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 total contract price.

All payments, except the initial deposit, will be deducted from the total contract price to determine the unpaid portion of the contract.

- e. Payment of \$765.00 per acre per annum for the acres on which an operating release has not been issued in the sale area.
- 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-091 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, the added forest products become a part of this contract. The State shall determine the volume added and shall calculate the increase to the total contract price using the rates set forth in clause G-101, G-102, or G-103. If the sale area is reduced, the State shall determine the volume to be reduced. The State shall calculate the reduction to the total contract price using the rates set forth in clause G-101, G-102, or G-103.

G-101 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 the Scribner log scale volume, as defined by the Northwest Log Rules Advisory Group, shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

Contract Item	Appraised Price	Overbid Factor	Price	Fees	Contract Payment Rate
Birch	\$136.34	0	\$0.00	\$9.00	\$9.00
Cottonwood	\$78.33	0	\$0.00	\$9.00	\$9.00
Douglas fir	\$224.89	0	\$0.00	\$9.00	\$9.00
Hemlock	\$167.34	0	\$0.00	\$9.00	\$9.00
Red alder	\$225.36	0	\$0.00	\$9.00	\$9.00
Red cedar	\$534.64	0	\$0.00	\$9.00	\$9.00
Silver fir	\$168.25	0	\$0.00	\$9.00	\$9.00
Other	\$212.65	0	\$0.00	\$9.00	\$9.00

**G-106 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 State's 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 rate set forth in clause G-101, G-102 or G-103.

**G-111 Title and Risk of Loss**

Title to the forest products under this contract passes to the Purchaser after they are removed from the sale area, if adequate advance payment or payment security has been provided to the State under this contract. Purchaser bears all risk of loss of, or damage to, and has an insurable interest in, the forest products described in this contract from the time the sale is confirmed under RCW 79.15.120. Breach of this contract shall have no effect on this provision.

**G-116 Sustainable Forestry Initiative® (SFI) Certification**

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

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

**G-120 Responsibility for Work**

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

**G-121 Exceptions**

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

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

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

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

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

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

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

#### G-140 Indemnity

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

## G-150 Insurance

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

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

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

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

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

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

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

All insurance provided in compliance with this contract shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. Purchaser

waives all rights against State for recovery of damages to the extent these damages are covered by general liability or umbrella insurance maintained pursuant to this contract.

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

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

Commercial General Liability (CGL) Insurance. Purchaser shall maintain general liability (CGL) insurance, and, if necessary, commercial umbrella insurance with a limit of not less than \$1,000,000.00 per each occurrence. If such CGL insurance contains aggregate limits, the General Aggregate limit shall be at least twice the "each occurrence" limit. CGL insurance shall have products-completed operations aggregate limit of at least two times the "each occurrence" limit. CGL coverage shall include a Logging and Lumbering Endorsement (i.e. Logger's Broad-Form) to cover the events that include, but are not limited to, fire suppression expenses, accidental timber trespasses, and wildfire property damage with limits of not less than \$2,000,000.00 each occurrence.

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

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

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

If Purchaser, subcontractor or sub-subcontractor fails to comply with all State of Washington workers' compensation statutes and regulations and State incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Purchaser

shall indemnify State. Indemnity shall include all fines, payment of benefits to Purchaser or subcontractor employees, or their heirs or legal representatives, and the cost of effecting coverage on behalf of such employees.

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

#### G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Sedro Woolley, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive, modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

Purchaser is required to have a person on site during all operations who is authorized to receive instructions and notices from the State. Purchaser shall inform the State in writing who is authorized to receive instructions and notices from the State, and any limits to this person's authority.

#### G-170 Assignment and Delegation

No rights or interest in this contract shall be assigned by Purchaser without prior written permission of the State. Any attempted assignment shall be void and ineffective for all purposes unless made in conformity with this paragraph. Purchaser may perform any duty through a delegate, but Purchaser is not thereby relieved of any duty to perform or any liability. Any assignee or delegate shall be bound by the terms of the contract in the same manner as Purchaser.

#### G-180 Modifications

Waivers, modifications, or amendments of the terms of this contract must be in writing signed by Purchaser and the State.

#### G-190 Contract Complete

This contract is the final expression of the Parties' agreement. There are no understandings, agreements, or representations, expressed or implied, which are not specified in this contract.

## G-200 Notice

Notices required to be given under the following clauses shall be in writing and shall be delivered to Purchaser's authorized agent or sent by certified mail to Purchaser's post office address:

G-210 Violation of Contract

G-220 State Suspends Operations

All other notices required to be given under this contract shall be in writing and delivered to the authorized agent or mailed to the Party's post office address. Purchaser agrees to notify the State of any change of address.

## G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.
- b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.
- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

## G-220 State Suspends Operation

The Contract Administrator may suspend any operation of Purchaser under this contract when the State is suffering, or there is a reasonable expectation the State will suffer environmental, monetary, or other damage if the operation is allowed to continue.

Purchaser shall be in breach of this contract if the operation continues after the suspension notice or if the operation resumes without prior approval and notice from the Contract Administrator.

Purchaser may request a modification of a suspension within 30 days of the start of suspension through the dispute resolution process in clause G-240. If this process results in a finding that the suspension exceeded the time reasonably necessary to stop or prevent damage to the State, Purchaser is entitled to request a contract term adjustment under clause G-040.

If it reasonably appears that the damage that the State is suffering, or can reasonably be expected to suffer if the operation is allowed to continue, will prevent harvest for a period that will exceed 6 months, and Purchaser has complied with this contract, the provisions of clause G-066 shall govern just as if the harvest was prevented by an applicable foreign or domestic governmental regulation or order.

G-230 Unauthorized Activity

Any cutting, removal, or damage of forest products by Purchaser, its employees, agents, or invitees, including independent contractors, in a manner inconsistent with the terms of this contract or State law, is unauthorized. Such activity may subject Purchaser to liability for triple the value of said forest products under RCW 79.02.320 or RCW 79.02.300 and may result in prosecution under RCW 79.02.330 or other applicable statutes.

G-240 Dispute Resolution

The following procedures apply in the event of a dispute regarding interpretation or administration of this contract and the parties agree that these procedures must be followed before a lawsuit can be initiated.

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.
- c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.
- d. Unless otherwise agreed, a conference will be held by the Deputy Supervisor - Uplands within 30 calendar days of the receipt of Purchaser's request for review of the Region Manager's written decision. Purchaser and the Region Manager will have an opportunity to present their positions. The Deputy Supervisor - Uplands will issue a decision within a reasonable time of being presented with both Parties' positions.

G-250 Compliance with All Laws

Purchaser shall comply with all applicable statutes, regulations and laws, including, but not limited to; chapter 27.53 RCW, chapter 68.50 RCW, WAC 240-15 and WAC 296-54. Failure to comply may result in forfeiture of this contract.

## G-260 Venue

This contract shall be governed by the laws of the State of Washington. In the event of a lawsuit involving this contract, venue shall be proper only in Thurston County Superior Court.

## G-270 Equipment Left on State Land

All equipment owned or in the possession of Purchaser, its employees, agents, or invitees, including independent contractors, shall be removed from the sale area and other State land by the termination date of this contract. Equipment remaining unclaimed on State land 60 days after the expiration of the contract period is subject to disposition as provided by law. Purchaser shall pay to the State all costs of moving, storing, and disposing of such equipment. The State shall not be responsible for any damages to or loss of the equipment or damage caused by the moving, storing or disposal of the equipment.

## G-280 Operating Release

An operating release is a written document, signed by the State and Purchaser, indicating that Purchaser has been relieved of certain rights or responsibilities with regard to the entire or a portion of the timber sales contract. Purchaser and State may agree to an operating release for this sale, or portion of this sale, prior to the contract expiration, when all contract requirements pertaining to the release area have been satisfactorily completed. Upon issuance of a release, Purchaser's right to cut and remove forest products on the released area will terminate.

## G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; WS-ML, WS-44, WS-4409, WS-4409-04, WS-51, MJ-ML, MJ-03. 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 WS-ML and WS-44 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:

Easements with:

Scott Paper Company; #55-000003; dated May 27, 1960.

Crown Pacific Limited Partnership; #55-002669; dated May 7, 1997.

Sierra Pacific Industries, Inc.; #55-002669 (Second Easement Amendment); dated February 10, 2016.

Between Kimberly-Clark Worldwide, Inc. and Sierra Pacific Industries; #55-092866; dated May 28, 2015.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-011 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 Clause P-020, 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-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$72,011.00. The total contract price consists of a \$0.00 contract bid price plus \$72,011.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

THE PURCHASE PRICE SHALL NOT BE AFFECTED BY ANY FACTORS, INCLUDING: the amount of forest products actually present within the contract area, the actual acreage covered by the contract area, the amount or volume of forest products actually cut or removed by purchaser, whether it becomes physically impossible or uneconomic to remove the forest products, and whether the subject forest products have been lost or damaged by fire or any other cause. The only situations Purchaser may not be liable for the full purchase price are governed by clause G-066, concerning governmental regulatory actions taken during the term of the contract.

P-045 Guarantee of Payment

Purchaser will pay for forest products prior to cutting or will guarantee payment by posting an approved payment security. The amount of cash or payment security shall be determined by the State and shall equal or exceed the value of the cutting proposed by Purchaser.

P-050 Billing Procedure

The State will compute and forward to Purchaser statements of charges provided for in the contract. Purchaser shall deliver payment to the State on or before the date shown on the billing statement.

P-080 Payment Account Refund

Advance payments made under P-045 or P-045.2 remaining on account above the value for the charges shall be returned to Purchaser within 30 days following the final report of charges. Refunds not made within the 30 day period will accrue interest at the interest rate, as established by WAC 332-100-030, computed on a daily basis until paid.

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$100,000.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the

performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

The State may reduce the performance security after an operating release has been issued if the State determines that adequate security exists for any remaining obligations of Purchaser.

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

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

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 200 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 4 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require

water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-035 Fall Trees Into Sale Area

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

H-051 Branding and Painting

Purchaser shall provide a State of Washington registered log brand, acceptable to the State, unless the State agrees to furnish the brand. 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-120 Harvesting Equipment

Forest products sold under this contract shall be felled by chainsaw and yarded by cable; felled by chainsaw or feller-buncher and yarded by cable or shovel on sustained slopes 35% or less, 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. Full suspension is required west of the WS-ML Road in Unit #2.

H-130 Hauling Schedule

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- A. An on-site pre-work meeting shall be scheduled with the Contract Administrator, which shall include the operator and fallers, prior to commencement of any activities on site.
- B. A copy of the timber sale map and contract shall be present on site during active operations.
- C. Shovel yarding limited to 400 feet from roads. If ground-based yarding occurs greater than 400 feet from a road, logs must be shovel yarded to designated skid trails and forwarded to roads.

- D. Intermediate support and lift trees located in the harvest units must be marked by Purchaser and approved by the Contract Administrator before felling operations begin.

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:

- A. The west half of Unit #2 (below the WS-ML Road) shall have a seasonal restriction from July 1 to September 30, and must be felled by hand and shall be limited to uphill, full suspension cable yarding. Additionally, fall away and yard away techniques shall apply to all type 5 streams in this location.
- B. The WS-4409 Road in Unit #3 shall have a seasonal restriction, and the crossing at station 17+69 shall not overwinter (one season entry).
- C. If the purchaser determines that tailholds or guy line stumps are needed on private property adjacent to the sale area, the purchaser shall obtain written permission from the landowner and subsequently provide that documentation to the Contract Administrator prior to using them.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 10/22/2014 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on WS-ML (249+53 to 299+75), WS-44, WS-4409, WS-4409-04 roads to prevent damage to subgrade, to maintain proper drainage, and to keep the surface smooth and crowned.

WS-ML (271+65 to 299+75), WS-44 (0+00 to 46+57) shall meet the original construction or reconstruction specifications at contract termination.

WS-ML (233+11 to 271+65) shall be left in the condition that exists at the time the plan of operations is completed.. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the MJ-ML, MJ-03, and WS-ML (0+00 to 233+11) roads. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-030 Landing Debris Clean Up

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

## S-050 Cessation of Operations for Low Humidity

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

## S-060 Pump Truck or Pump Trailer

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

## S-100 Stream Cleanout

Slash or debris which enters any type 5 stream as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

## S-130 Hazardous Materials

## a. Hazardous Materials and Waste - Regulatory Compliance

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

## b. Hazardous Materials Spill Prevention

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

## c. Hazardous Materials Spill Containment, Control and Cleanup

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

## d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

#### S-131 Refuse Disposal

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

#### Section D: Damages

##### D-013 Liquidated Damages or Failure to Perform

The following clauses provide for payments by Purchaser to the State for breaches of the terms of this contract other than failure to perform. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State, which will be 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.

Clause P-020 governs Purchaser’s liability in the event Purchaser fails to perform any of the contract requirements other than the below liquidated damage clauses without written approval by the State. Purchaser’s failure to pay for all or part of the forest products sold in this contract prior to expiration of the contract term results in substantial injury to the State. Therefore, Purchaser agrees to pay the State the full lump sum contract price in P-020 in the event of failure to perform.

D-041 Reserve Tree Excessive Damage

When Purchaser’s operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay the State as liquidated damages at the rate of \$1,000.00 per tree for all damaged reserve trees that are not replaced in the sale area.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Jean Fike  
Northwest Region Manager

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Address:

CORPORATE ACKNOWLEDGEMENT

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_

\_\_\_\_\_ to me known to be the \_\_\_\_\_ of the corporation

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

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

\_\_\_\_\_  
Notary Public in and for the State of

\_\_\_\_\_  
My appointment expires \_\_\_\_\_

**Schedule A**  
**NW Ground-Based Equip Specifications (Rev11/05/14)**

The following types of equipment are considered ground-based equipment: feller-buncher, processor, forwarder, skidder and shovel.

SHOVEL is defined as a low ground pressure track-mounted machine with hydraulic boom and grapple capable of picking up one end of the largest log 25 feet from the center of the machine.

LOG PROCESSOR/DE-LIMBER is defined as a mobile machine with a hydraulic boom capable of simultaneously bucking, delimiting and/or debarking and chipping whole trees while sitting stationary at the landing.

FELLER-BUNCHER/HARVESTER is defined as a track mounted machine with hydraulic boom and cutter head capable of felling, bucking, limbing, and decking logs in one operation.

FORWARDER is defined as a track or rubber tire machine used for transporting logs to a landing by use of a bunk with self loading boom in which logs are carried free of the ground.

RUBBER-TIRED SKIDDER is defined as a skidder mounted on rubber tires used to drag logs to a landing. Logs are generally pulled in groups of six or less, with one end on the ground.

TRACKED SKIDDER is defined as any tracked tractor or skidder, fixed or articulated, used to drag logs to landings. Logs are generally pulled in groups of six or less, with one end on the ground.

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

**FOR ALL YARDING:**

Equipment will remain at least 30 feet from all water courses or areas of wet/soft soils, except as necessary to cross at approved locations. Water course crossing structures must be approved by a HPA or by the Contract Administrator.

Logging debris created by the operation will be removed from water courses concurrently with yarding.

**WHEN SHOVEL YARDING IS AUTHORIZED:**

S1. When yarding and loading operations are occurring simultaneously, an additional shovel will be required for loading to avoid extra trips to the landing.

S2. Shovel yarding will not be allowed to create ruts or soil puddling. Shovel routes should be dispersed to prevent creation of definable trails.

S3. Within shovel logged areas, to facilitate proper reforestation, logging debris will be dispersed as necessary to create clear, plantable spots at approximately a 11 foot x 11 foot spacing. Planting spots will be created concurrently with yarding.

LOG PROCESSORS will be allowed within the sale area only under one of the following conditions:

1. No tops or limbs will be allowed to accumulate on any landings, and all tops and limbs will be re-distributed into the unit, to the satisfaction of the Contract Administrator, and will provide for plantable spots every 11 feet by 11 feet.
2. Harvester must provide a written slash treatment plan, acceptable to the Contract Administrator, to address the additional slash accumulation. The Slash Treatment Plan will be a part of the Plan of Operations.



## WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

### FOREST EXCISE TAX ROAD SUMMARY SHEET

**Region:**

**Timber Sale Name:**

**Application Number:**

#### EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

#### EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

## PRE-CRUISE NARRATIVE

Sale Name: <b>Blitzen</b>	Region: <b>Northwest</b>
Agreement #: <b>30-091190</b>	District: Baker
Contact Forester: Jared Coleman Phone / Location: 360-856-2833, NW Region Office	County(s): Choose a county, Skagit
Alternate Contact: Joel Dryden Phone / Location: <b>360-391-5374</b>	Other information: <a href="#">Click here to enter text.</a>

Type of Sale: Lump Sum	
Harvest System: Ground based <a href="#">Click here to enter text.</a>	40%
Harvest System: Downhill Cable <a href="#">Click here to enter text.</a>	20%
Harvest System: Uphill Cable <a href="#">Click here to enter text.</a>	40%

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination  (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec. 35/ T36N/ R05E & Sec. 2/T35N/ R05E	01	5.6	0	0.1	0	0	5.5	GPS (Garmin)
2	Sec. 36/ T36N/ 06E	01	67.5	0	2	1.4	0	64.1	GPS (Garmin)
3	Sec. 35/ T36N/ R05E & Sec. 2/T35N/ R05E	01	23.8	0	0.5	0	0	23.3	GPS (Garmin)
ROW	Sec. 35/ T36N/ R05E	01	1.5	0	0	0	0	1.5	Laser/compass
<b>TOTAL ACRES</b>			98.4	0	2.6	1.4	0	94.4	

**HARVEST PLAN AND SPECIAL CONDITIONS:**

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Harvest all timber bound by white timber sale boundary tags, existing roads and yellow leave tree tags. Leave all timber marked with a blue ring on the bole.	N/A	Unit 1 has 36 leave trees in one leave tree area and 9 scattered marked with blue paint.
2	Harvest all timber bound by white timber sale boundary tags, yellow leave tree tags, existing roads, and/or timber plantation. Leave all timber marked with a blue ring on the bole.	N/A	Unit 2 has 520 trees in 7 leave tree areas, and 9 scattered marked with blue paint.
3	Harvest all timber bound by white timber sale boundary tags, and yellow leave tree tags. Leave all timber marked with a blue ring on the bole.	N/A	Unit 3 has 174 leave trees in 2 leave tree areas, and 17 scattered marked with blue paint.
ROW	Harvest all timber bound by orange right of way boundary tags, and existing roads.	N/A	N/A

**OTHER PRE-CRUISE INFORMATION:**

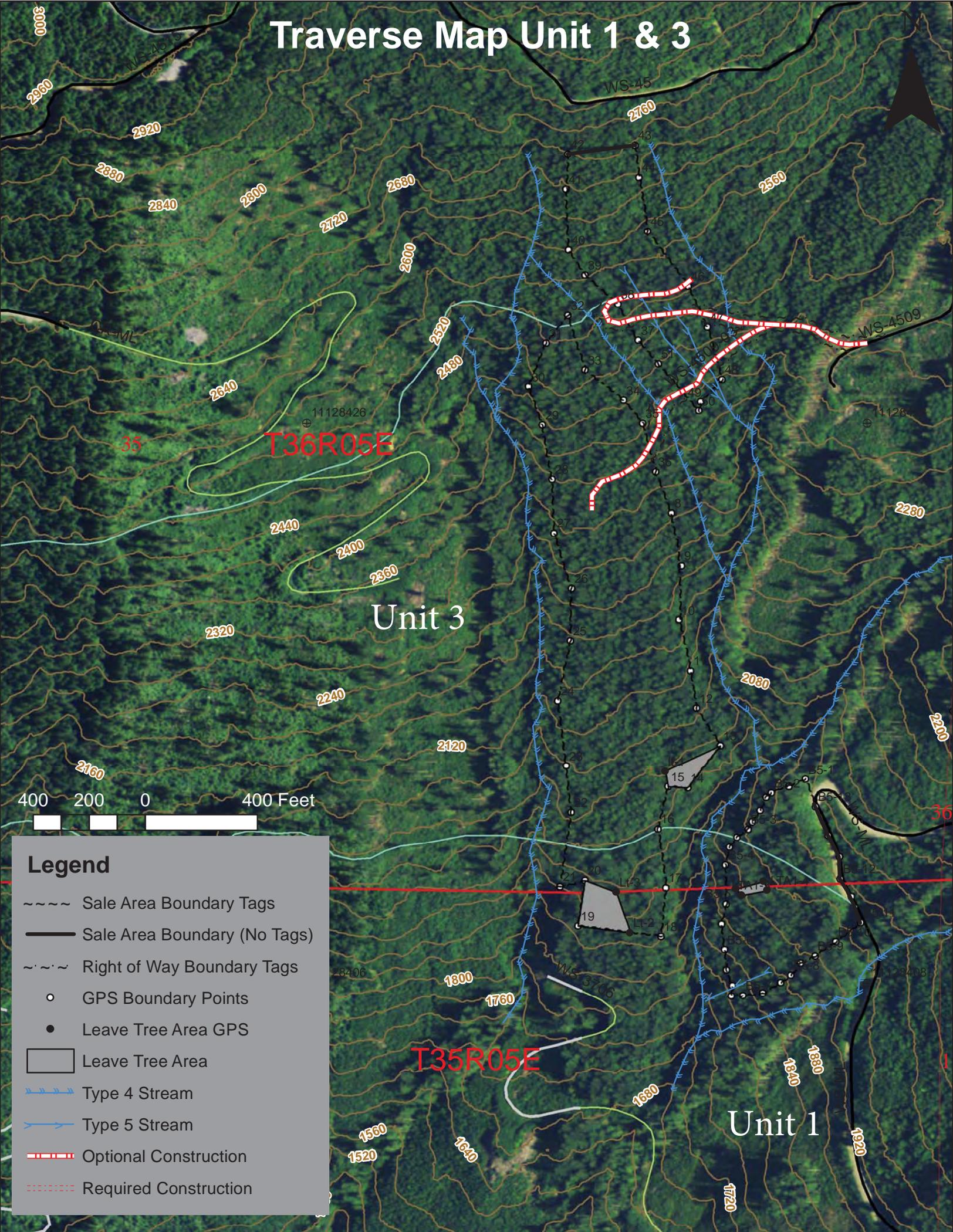
Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	220	From the Intersection of Hwy 9 & SR-20, head east on SR-20 for 8.2 miles to intersection of Pipeline Rd. & SR-20. Turn left on Pipeline Rd. and continue for 1.2 miles to a gate (F1-3 key). Pipeline Rd. turns into the WS-ML. Continue on the WS-ML for 4 miles to Unit 1 on the left side of the WS-ML.	See attached maps
2	2500	From unit 1, continue on the WS-ML for approximately 0.7 miles until the WS-ML switches back up the hill on the left. Follow the WS-ML to the end of the existing road and the start of the new road construction.	See attached maps
3	1000	From unit 1, continue on the WS-ML for approximately 0.4 miles to the junction of the WS-45. Turn left on the WS-45, and continue for approximately 0.9 miles to the junction of the WS-4509. Follow the WS-4509 to the left and go approximately 0.3 miles to the start of the new road construction on the right.	See attached maps
ROW	67		See attached maps
TOTAL MBF	3800		

**REMARKS:**

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Prepared By: Jared Coleman Date: 10/22/14	Title: NRS-1	CC: Region Timber Sale File
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# Traverse Map Unit 1 & 3



### Legend

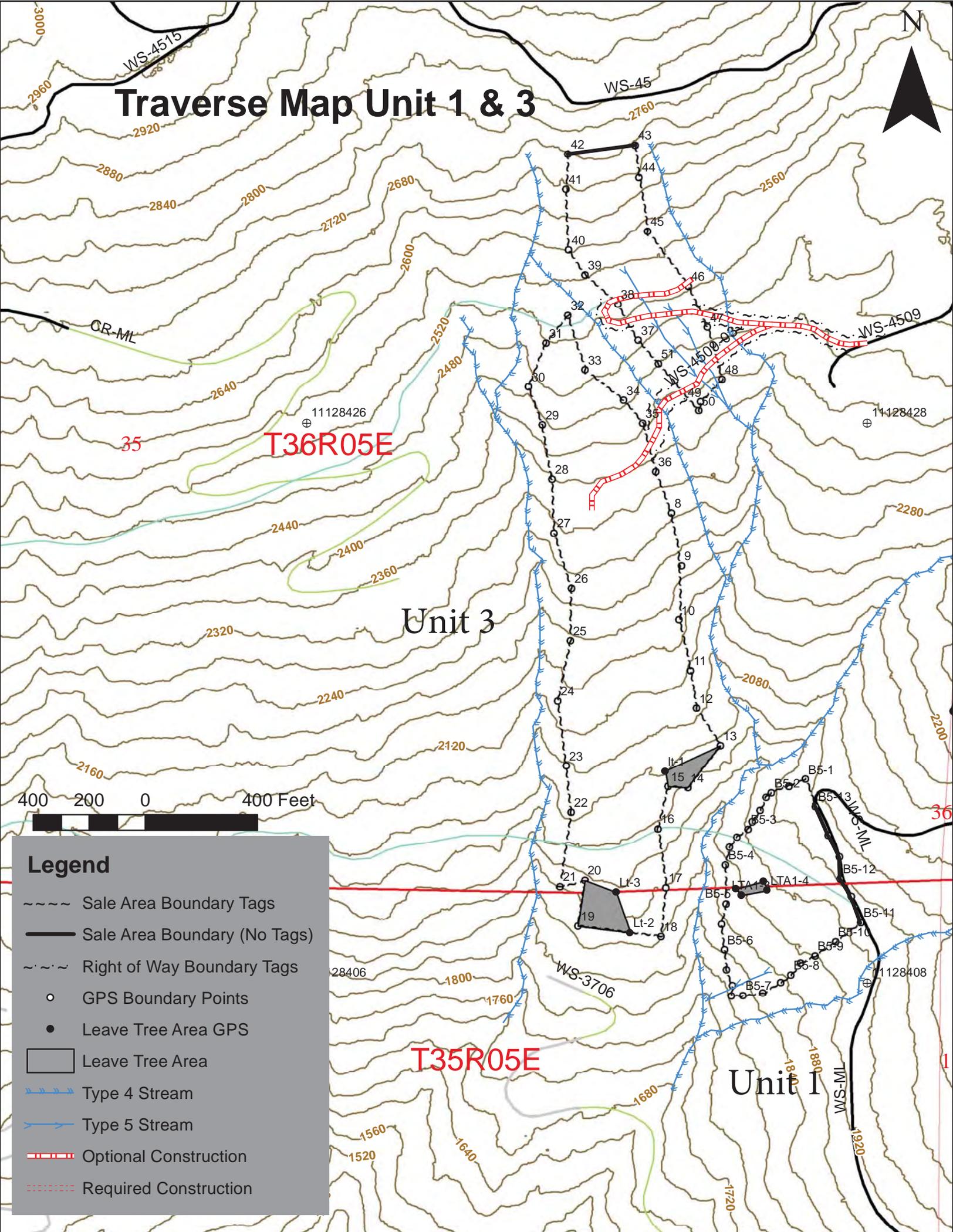
- ~~~~~ Sale Area Boundary Tags
- Sale Area Boundary (No Tags)
- ~~~~~ Right of Way Boundary Tags
- GPS Boundary Points
- Leave Tree Area GPS
- Leave Tree Area
- ➡➡➡ Type 4 Stream
- ➡ Type 5 Stream
- Optional Construction
- ..... Required Construction

# Traverse Map Unit 1 & 3

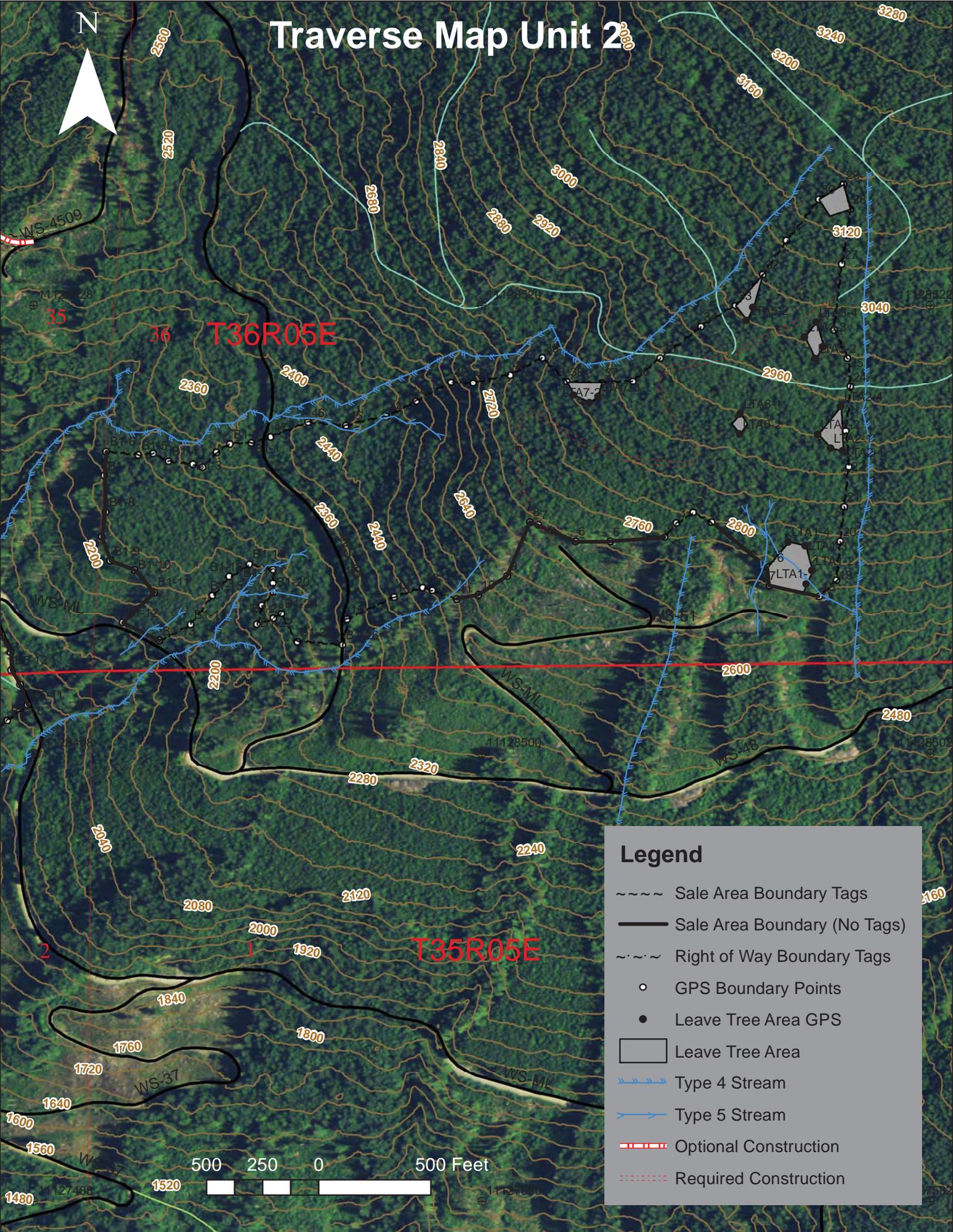


**Legend**

- ~~~~~ Sale Area Boundary Tags
- Sale Area Boundary (No Tags)
- ~~~~~ Right of Way Boundary Tags
- GPS Boundary Points
- Leave Tree Area GPS
- Leave Tree Area
- ▬▬▬ Type 4 Stream
- ▬▬▬ Type 5 Stream
- ▬▬▬ Optional Construction
- ▬▬▬ Required Construction



# Traverse Map Unit 2



T36R05E

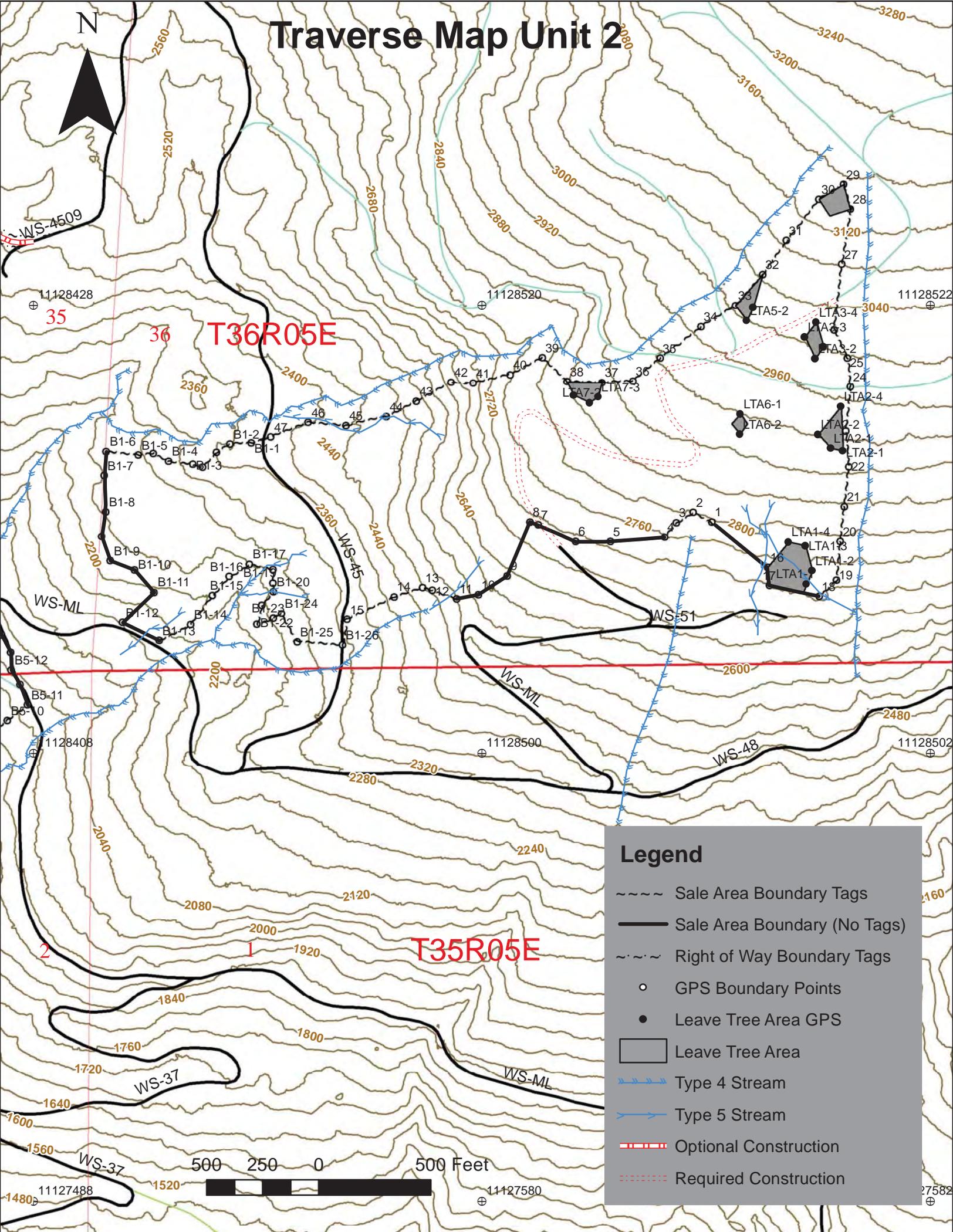
T35R05E

## Legend

- ~~~~ Sale Area Boundary Tags
- Sale Area Boundary (No Tags)
- ~ ~ ~ Right of Way Boundary Tags
- GPS Boundary Points
- Leave Tree Area GPS
- Leave Tree Area
- ▬▬ Type 4 Stream
- ▬ Type 5 Stream
- ▬▬▬ Optional Construction
- ▬▬▬ Required Construction

500 250 0 500 Feet

# Traverse Map Unit 2



### Legend

- ~~~~~ Sale Area Boundary Tags
- Sale Area Boundary (No Tags)
- ~~~~~ Right of Way Boundary Tags
- GPS Boundary Points
- Leave Tree Area GPS
- Leave Tree Area
- ▬▬▬ Type 4 Stream
- ▬▬▬ Type 5 Stream
- ▬▬▬ Optional Construction
- ▬▬▬ Required Construction

## Cruise Narrative

<b>Sale Name:</b> <b>Blitzen</b>	<b>Region:</b> Northwest
<b>Agree. #:</b> <b>30-091190</b>	<b>District:</b> Baker
<b>Lead cruiser:</b> <b>Matt Llobet</b>	<b>Completion date:</b> <b>11-15-14</b>
<b>Other cruisers on sale:</b> Ian M.	

**Unit acreage specifications:**

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	5.5	Yes	
2	64.1	Yes	
3	23.3	Yes	
ROW	1.5	Yes	
Total	94.4	Yes	

**Unit cruise specifications:**

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Total number of plots
1	V.P.	62.5 BAF 40.0 BAF	4.5'	225' x 225'	Cruise All	5
2	V.P.	40.0 BAF	4.5'	200' x 200'	1:1	68
3	V.P.	62.5 BAF 40.0 BAF	4.5'	200' x 200'	1:1	20
ROW	V.P.	62.5 BAF 40.0 BAF	4.5'	1plot/1.5ac	Cruise All	1

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	-Used a 40 BAF on RC and RA to gather a better sample -Units 1,3, and ROW						
<b>Minimum cruise spec:</b>	Minimum DBH 8 inches, 10 Net Board feet, Minimum Top Diameter 5 inches or 40% of 16-foot form point						
<b>Avg ring count by sp:</b>	<table style="width: 100%; border: none;"> <tr> <td style="border: none;"><b>DF =</b></td> <td style="border: none; text-align: center;">8</td> <td style="border: none;"><b>WH =</b></td> <td style="border: none; text-align: center;">8</td> <td style="border: none;"><b>SS =</b></td> <td style="border: none;"></td> </tr> </table>	<b>DF =</b>	8	<b>WH =</b>	8	<b>SS =</b>	
<b>DF =</b>	8	<b>WH =</b>	8	<b>SS =</b>			
<b>Leave/take tree description:</b>	<b>Blitzen-</b> Harvest all timber bound by white timber sale boundary tags, existing roads						

	and yellow leave tree tags. Leave all timber marked with a blue ring on the bole.
<b>Other conditions</b>	

**Field observations:**

<p>All timber was graded in variable log lengths with the Scaling Bureaus Westside/ Northwest log rules. The utility wood was given a board ft. volume. Blitzen timber Sale was cruised using the variable plot sample method. Blitzen timber sale is 94 acres. Blitzen is 40% ground based logging and 60% cable logging. The species composition of the sale is: Douglas Fir, at 17%, Western Hemlock, at 49%, Red Alder, at 21%. The Douglas Fir has an average diameter of 24 inches and an average bole height of 99 feet, Western Hemlock has an average diameter of 14 inches and an average bole height of 57 feet, and Red Alder has an average diameter of 13 inches and an average bole height of 50 feet.</p> <p><b>Harvest Method-</b> Cable/Ground base equipment  <b>Stand composition-</b> DF-17%, WH-49%, RC-8%, RA-21%,  <b>Stand health/Timber Quality-</b> Good</p>

**Prepared by:** Matt Llobet

**Title: Northwest  
Region Timber  
Cruiser**

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																
T36N R05E S02 Ty00U1 THRU T36N R05E S36 Ty00U2				Project: <b>BLITZEN</b>												Page <b>1</b>				
				Acres <b>94.40</b>												Date <b>12/29/2014</b>		Time <b>9:19:26AM</b>		
S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
								4-7	8-11	12-19	20+	12-20	21-30	31-35	36-99					
DF	D	2S	75	2.6	3,697	3,601	340			66	34			100	40	16	421	2.34	8.6	
DF	D	3S	11	1.7	534	525	50	7	93			5	7	14	74	35	9	106	0.85	5.0
DF	D	4S	3	12.4	158	139	13	68	32			27	63	10		22	7	30	0.49	4.6
DF	D	PU			4	4	0	100				100			10	5	10	0.20	.4	
DF	HQSM		9	3.6	431	415	39		100					100	40	17	430	2.53	1.0	
DF	HQ2S		2		93	93	9		100					100	40	12	200	1.18	.5	
<b>DF Totals</b>			17	2.9	4,916	4,776	451	3	11	60	26	1	3	2	94	34	12	239	1.65	20.0
WH	D	2S	32	2.1	4,690	4,593	434			100		1		2	97	39	13	255	1.64	18.0
WH	D	3S	48	2.3	6,831	6,671	630	30	70				1	1	97	40	8	99	0.74	67.2
WH	D	4S	18	1.7	2,570	2,526	239	99	1			20	21	31	28	26	5	28	0.35	90.0
WH	D	PU	2	.0	147	147	14	100				100			11	5	13	0.24	11.7	
<b>WH Totals</b>			49	2.1	14,238	13,938	1,316	34	34	33		5	4	7	84	31	7	75	0.68	186.9
RC	D	3S	78	5.6	2,013	1,900	179	14	33	53			1	2	97	36	10	126	1.28	15.1
RC	D	4S	22	7.2	564	523	49	100				13	27	29	31	28	5	29	0.43	17.8
<b>RC Totals</b>			8	6.0	2,577	2,423	229	33	26	41		3	7	8	82	31	7	74	0.87	32.9
RA	D	2S	15	5.6	1,010	953	90			100		11	75	14		30	13	175	1.48	5.4
RA	D	3S	33	9.5	2,130	1,927	182		100			5	77	17		30	10	108	1.00	17.9
RA	D	4S	46	6.4	2,980	2,791	263	92	8			5	28	12	54	32	6	38	0.45	73.9
RA	D	PU	6		314	314	30	59	41			48	46	6		15	6	24	0.45	13.2
<b>RA Totals</b>			21	7.0	6,434	5,984	565	46	38	16		8	52	6	33	30	7	54	0.59	110.4
CW	D	2S	100	3.5	140	136	13			17	83			100	40	20	695	3.94	.2	
<b>CW Totals</b>			0	3.5	140	136	13			17	83			100	40	20	695	3.94	.2	
SF	D	2S	63	6.0	560	527	50			100				100	40	13	246	1.57	2.1	
SF	D	3S	17	2.4	143	139	13	72	28					100	39	7	72	0.68	1.9	
SF	D	4S	8		66	66	6	100					14	86	34	5	38	0.32	1.7	
SF	D	PU	12		94	94	9			100				100	40	22	840	4.11	.1	
<b>SF Totals</b>			3	4.3	864	827	78	20	5	64	11		1	7	92	38	9	139	0.99	5.9
BR	D	3S	20		89	89	8		100			100			20	10	70	0.73	1.3	
BR	D	4S	67	6.4	307	288	27	85	15				28	9	63	35	6	41	0.47	7.0
BR	D	PU	13		53	53	5	100				100			17	5	20	0.29	2.6	
<b>BR Totals</b>			2	4.4	449	429	41	69	31			33	19	6	42	29	6	39	0.47	10.9
<b>Totals</b>				3.7	29,618	28,513	2,692	31	29	35	5	5	14	6	75	31	7	78	0.73	367.1

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT BLITZEN							DATE	12/29/2014	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
36N	05E	02	BLITZEN	00U1	THR	94.40	94	577	S	W	
36N	05E	36	BLITZEN	00U2							
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL			94	577	6.1						
CRUISE			48	291	6.1	22,247	1.3				
DBH COUNT											
REFOREST											
COUNT			46	286	6.2						
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	
WHEMLOCK	128	117.5	14.2	57	34.2	128.9	14,238	13,938	3,965	3,966	
WR CEDAR	38	22.0	15.9	53	7.6	30.4	2,577	2,423	898	897	
DOUG FIR	22	7.1	25.4	98	5.0	25.2	4,916	4,776	1,118	1,118	
R ALDER	84	77.1	13.3	50	20.4	74.2	6,434	5,984	1,923	1,922	
PS FIR	8	3.7	17.2	71	1.4	5.9	864	827	223	223	
COTWOOD	1	.1	37.0	90	0.1	.7	140	136	31	31	
BIRCH	10	8.2	12.3	45	1.9	6.8	449	429	148	148	
<b>TOTAL</b>	<b>291</b>	<b>235.7</b>	<b>14.6</b>	<b>56</b>	<b>71.4</b>	<b>272.3</b>	<b>29,618</b>	<b>28,513</b>	<b>8,304</b>	<b>8,305</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		77.4	7.0	164	176	188					
WR CEDAR		76.3	12.5	148	169	190					
DOUG FIR		54.3	12.1	649	739	829					
R ALDER		68.4	7.5	94	102	110					
PS FIR		74.4	28.1	280	389	498					
COTWOOD											
BIRCH		50.6	16.8	48	58	68					
<b>TOTAL</b>		<b>118.3</b>	<b>7.0</b>	<b>187</b>	<b>201</b>	<b>215</b>	<b>559</b>	<b>285</b>	<b>140</b>		
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		106.3	11.0	105	117	130					
WR CEDAR		228.3	23.5	17	22	27					
DOUG FIR		256.2	26.4	5	7	9					
R ALDER		116.0	11.9	68	77	86					
PS FIR		398.9	41.1	2	4	5					
COTWOOD		969.5	99.9	0	0	0					
BIRCH		341.0	35.1	5	8	11					
<b>TOTAL</b>		<b>47.6</b>	<b>4.9</b>	<b>224</b>	<b>236</b>	<b>247</b>	<b>90</b>	<b>46</b>	<b>23</b>		
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK		109.1	11.2	114	129	143					
WR CEDAR		213.4	22.0	24	30	37					
DOUG FIR		257.0	26.5	19	25	32					
R ALDER		103.6	10.7	66	74	82					
PS FIR		347.7	35.8	4	6	8					
COTWOOD		969.5	99.9	0	1	1					
BIRCH		324.0	33.4	5	7	9					
<b>TOTAL</b>		<b>52.1</b>	<b>5.4</b>	<b>258</b>	<b>272</b>	<b>287</b>	<b>108</b>	<b>55</b>	<b>27</b>		

**PROJECT STATISTICS**  
**PROJECT BLITZEN**

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
36N	05E	02	BLITZEN	00U1	THR	94.40	94	577	S	W
36N	05E	36	BLITZEN	00U2						

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		124.4	12.8	12,151	13,938	15,725			
WR CEDAR		223.8	23.1	1,864	2,423	2,982			
DOUG FIR		273.1	28.1	3,432	4,776	6,120			
R ALDER		105.0	10.8	5,337	5,984	6,632			
PS FIR		350.3	36.1	528	827	1,125			
COTWOOD		969.5	99.9	0	136	271			
BIRCH		315.3	32.5	290	429	569			
<b>TOTAL</b>		<b>76.8</b>	<b>7.9</b>	<b>26,256</b>	<b>28,513</b>	<b>30,771</b>	<b>236</b>	<b>120</b>	<b>59</b>

CL	68.1	COEFF	V BAR/ACRE				# OF PLOTS REQ.		INF. POP.
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK		39.2	4.0	94	108	122			
WR CEDAR		168.2	17.3	61	80	98			
DOUG FIR		200.0	20.6	136	189	243			
R ALDER				72	81	89			
PS FIR		313.1	32.3	89	139	190			
COTWOOD		969.5	99.9	0	186	372			
BIRCH		238.0	24.5	43	63	84			
<b>TOTAL</b>		<b>60.3</b>	<b>6.2</b>	<b>96</b>	<b>105</b>	<b>113</b>	<b>145</b>	<b>74</b>	<b>36</b>

<b>T36N R05E S02 T00U1</b>										<b>T36N R05E S02 T00U1</b>				
<b>Twp</b>	<b>Rge</b>	<b>Sec</b>	<b>Tract</b>	<b>Type</b>	<b>Acres</b>	<b>Plots</b>	<b>Sample Trees</b>	<b>CuFt</b>	<b>BdFt</b>					
<b>36N</b>	<b>05E</b>	<b>02</b>	<b>BLITZEN</b>	<b>00U1</b>	<b>5.50</b>	<b>5</b>	<b>24</b>	<b>S</b>	<b>W</b>					

S Sp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf
								4-7	8-11	12-19	20+	12-20	21-30	31-35	36-99					
RC	D	3S	74	4.7	7,708	7,348	40	27	27	46					100	36	9	100	0.96	73.4
RC	D	4S	26	8.8	2,710	2,471	14	100				19	30	19	31	25	5	26	0.48	94.6
<b>RC</b>	<b>Totals</b>		22	5.8	10,418	9,819	54	45	20	35		5	8	5	83	30	7	58	0.73	168.0
DF	D	2S	48	2.4	10,997	10,737	59			82	18				100	40	15	340	1.90	31.6
DF	D	3S	8	3.1	1,813	1,757	10		100			7		13	80	36	9	101	0.74	17.4
DF	D	4S	4	21.5	1,141	895	5	100				9	91			25	6	32	0.48	28.4
DF	HQ	SM	32	3.6	7,398	7,130	39			100					100	40	17	430	2.53	16.6
DF	HQ	2S	8		1,592	1,592	9			100					100	40	12	200	1.18	8.0
<b>DF</b>	<b>Totals</b>		49	3.6	22,940	22,110	122	4	8	79	9	1	4	1	94	35	12	217	1.47	101.9
WH	D	2S	35		2,249	2,249	12			100					100	40	17	460	2.49	4.9
WH	D	3S	55		3,393	3,393	19		100						100	40	8	94	0.75	36.1
WH	D	4S	10		624	624	3	100				100				19	5	20	0.24	31.2
<b>WH</b>	<b>Totals</b>		14		6,266	6,266	34	10	54	36		10			90	31	7	87	0.77	72.1
RA	D	3S	36	18.2	1,891	1,547	9		100			100				30	10	90	1.06	17.2
RA	D	4S	27		1,125	1,125	6	100						46	54	35	5	35	0.37	32.4
RA	D	PU	37		1,523	1,523	8		100			100				24	11	100	1.21	15.2
<b>RA</b>	<b>Totals</b>		9	7.6	4,538	4,194	23	27	73			73	12	15		31	8	65	0.70	64.8
CW	D	2S	100	3.5	2,411	2,327	13			17	83				100	40	20	695	3.94	3.3
<b>CW</b>	<b>Totals</b>		5	3.5	2,411	2,327	13			17	83				100	40	20	695	3.94	3.3
<b>Type Totals</b>				4.0	46,572	44,716	246	16	23	53	9	3	10	3	84	32	8	109	0.97	410.2

**T36N R05E S02 T00U3**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt T36N R05E S02 T00U3  
 36N 05E 02 BLITZEN 00U3 23.30 20 65 S BdFt  
 W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf		
									4-7	8-11	12-19	20+	12-20	21-30	31-35	36-99							
WH	D	2S		41	1.7	10,906	10,726	250	100				100				40	14	273	1.58	39.3		
WH	D	3S		48	2.7	12,639	12,293	286	23	77					2	98	40	9	109	0.75	112.7		
WH	D	4S		10	3.9	2,816	2,706	63	100					18	17	45	21	26	5	27	0.34	101.5	
WH	D	PU		1		122	122	3	100					100					9	7	12	0.37	10.3
<b>WH</b>	<b>Totals</b>			54	2.4	26,483	25,848	602	22	37	41	2	2	6	90	33	8	98	0.77	263.6			
RC	D	3S		83	5.7	5,134	4,840	113	8	36	56					2	96	36	10	144	1.47	33.6	
RC	D	4S		17	7.5	1,017	940	22	100					34	26	40	31	5	33	0.36	28.7		
<b>RC</b>	<b>Totals</b>			12	6.0	6,150	5,781	135	23	30	47					7	6	86	33	8	93	1.00	62.3
DF	D	2S		91	2.3	11,008	10,759	251	58		42	100				40	17	480	2.56	22.4			
DF	D	3S		7	2.6	869	846	20	100				9	14	28	49	31	10	99	0.91	8.5		
DF	D	4S		2	9.1	240	218	5	26	74					26	74	20	8	32	0.57	6.8		
<b>DF</b>	<b>Totals</b>			25	2.4	12,116	11,823	275	0	9	53	38	1	2	2	95	34	14	313	2.01	37.8		
RA	D	2S		38	8.8	1,529	1,395	32	100				30	70					26	13	162	1.43	8.6
RA	D	3S		38	10.7	1,542	1,377	32	100				100				30	11	109	0.94	12.6		
RA	D	4S		23	13.0	957	833	19	78	22					34	36	30	33	6	39	0.49	21.2	
RA	D	PU		1		30	30	1	100					100					11	5	10	0.29	3.0
<b>RA</b>	<b>Totals</b>			8	10.4	4,058	3,635	85	19	43	38	12	72	8	7	30	9	80	0.77	45.5			
SF	D	2S		76		707	707	16	100				100				40	12	200	1.28	3.5		
SF	D	3S		24		212	212	5	100					100				40	6	60	0.49	3.5	
<b>SF</b>	<b>Totals</b>			2		920	920	21	23	77					100				40	9	130	0.88	7.1
<b>Type Totals</b>					3.5	49,727	48,007	1,119	17	29	45	9	2	8	5	85	33	9	115	0.93	416.3		

<b>T36N R05E S35 T0ROW</b>	<b>T36N R05E S35 T0ROW</b>
Twp <b>36N</b> Rge <b>05E</b> Sec <b>35</b> Tract <b>BLITZEN</b> Type <b>0ROW</b> Acres <b>1.50</b> Plots <b>1</b> Sample Trees <b>8</b> CuFt <b>S</b>	BdFt <b>W</b>

Spp	Sp	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre			
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/ Lf		
								4-7	8-11	12-19	20+	12-20	21-30	31-35	36-99							
WH	D	2S	52	2.8	20,673	20,088	30	100				100				40	13	255	1.74	78.6		
WH	D	3S	40		15,717	15,717	24	49	51					100				40	7	86	0.63	182.7
WH	D	4S	8		2,758	2,758	4	100				49	51					30	5	34	0.40	80.1
<b>WH</b>	<b>Totals</b>		81	1.5	39,148	38,563	58	27	21	52					3	4	93	38	8	113	0.86	341.5
RC	D	3S	76	12.2	7,741	6,799	10	12	39	49					12	88	35	10	127	1.28	53.6	
RC	D	4S	24		2,106	2,106	3	100				29	71					33	5	36	0.54	57.7
<b>RC</b>	<b>Totals</b>		19	9.6	9,847	8,905	13	33	30	37					7	9	84	34	7	80	0.91	111.3
<b>Type Totals</b>				3.1	48,994	47,468	71	28	22	49					4	5	91	37	8	105	0.87	452.8

Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
T TSPCSTGR										Date 12/29/2014											
Project: BLITZEN										Time 9:19:27AM											
T36N R05E S36 T00U2										T36N R05E S36 T00U2											
Twp		Rge		Sec		Tract		Type		Acres		Plots		Sample Trees		CuFt		BdFt			
36N		05E		36		BLITZEN		00U2		64.10		68		194		S		W			
Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf
WH	D	2S		22	2.8	2,267	2,203	141	100				3		5	92	38	13	220	1.66	10.0
WH	D	3S		49	2.3	4,807	4,697	301	38	62				3	1	96	40	8	93	0.74	50.6
WH	D	4S		27	.9	2,643	2,619	168	98	2			19	22	27	33	26	5	29	0.35	91.1
WH	D	PU		2		171	171	11	100				100				11	5	13	0.21	13.5
<b>WH Totals</b>				49	2.0	9,888	9,691	621	47	31	23		8	7	9	76	30	7	59	0.61	165.2
RA	D	2S		12	3.8	931	896	57	100						78	22	32	13	183	1.50	4.9
RA	D	3S		31	8.7	2,415	2,205	141	100				7	71		22	30	10	109	1.01	20.3
RA	D	4S		52	5.9	3,944	3,711	238	93	7			6	29	9	56	32	6	38	0.45	98.3
RA	D	PU		5		320	320	21	81	19			66	25		9	15	5	19	0.36	17.0
<b>RA Totals</b>				36	6.3	7,610	7,132	457	52	35	13		8	48	5	39	29	7	51	0.56	140.4
BR	D	3S		20		131	131	8	100				100				20	10	70	0.73	1.9
BR	D	4S		67	6.4	453	424	27	85	15				28	9	63	35	6	41	0.47	10.3
BR	D	PU		13		78	78	5	100				100				17	5	20	0.29	3.9
<b>BR Totals</b>				3	4.4	662	632	41	69	31			33	19	6	42	29	6	39	0.47	16.0
DF	D	2S		56	5.8	499	470	30	100				100				40	14	270	1.97	1.7
DF	D	3S		37		315	315	20	18	82				5		95	38	9	116	0.86	2.7
DF	D	4S		6		48	48	3	89	11			57		43		22	6	25	0.41	1.9
DF	D	PU		1		6	6	0	100				100				10	5	10	0.20	.6
<b>DF Totals</b>				4	3.3	868	839	54	12	32	56		4	2	2	92	32	9	121	1.11	6.9
RC	D	3S		59	2.9	256	249	16	27	22	50					100	36	9	103	1.11	2.4
RC	D	4S		41	6.3	178	167	11	100				37	6	57		25	5	26	0.46	6.3
<b>RC Totals</b>				2	4.3	435	416	27	56	13	30		15	2	23	60	28	6	48	0.69	8.7
SF	D	2S		58	8.7	568	519	33	100				100				40	14	277	1.76	1.9
SF	D	3S		15	3.7	133	128	8	55	45						100	38	7	82	0.84	1.6
SF	D	4S		11		98	98	6	100					14	86		34	5	38	0.32	2.6
SF	D	PU		16		139	139	9	100				100				40	22	840	4.11	.2
<b>SF Totals</b>				5	5.8	938	884	57	19	6	59	16		2	9	89	37	9	143	1.04	6.2
<b>Type Totals</b>					4.0	20,401	19,594	1,256	47	31	22	1	8	22	7	63	30	7	57	0.60	343.5

TC TSTATS		<b>STATISTICS</b>							PAGE	1	
		<b>PROJECT BLITZEN</b>							DATE	12/29/2014	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
36N	05E	02	BLITZEN	00U1	5.50	5	37	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		5	37	7.4							
CRUISE		3	24	8.0	1,150		2.1				
DBH COUNT											
REFOREST											
COUNT		2	13	6.5							
BLANKS											
100 %											
<b>STAND SUMMARY</b>											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
WR CEDAR	10	104.9	15.0	54	33.1	128.0	10,418	9,819	3,668	3,670	
DOUG FIR	8	34.0	24.6	109	22.7	112.5	22,940	22,110	5,255	5,255	
WHEMLOCK	3	36.1	15.9	67	12.5	50.0	6,266	6,266	1,713	1,713	
R ALDER	2	32.4	16.5	65	11.8	48.0	4,538	4,194	1,414	1,414	
COTWOOD	1	1.7	37.0	90	2.1	12.5	2,411	2,327	528	528	
<b>TOTAL</b>	<b>24</b>	<b>209.0</b>	<b>17.5</b>	<b>67</b>	<b>83.8</b>	<b>351.0</b>	<b>46,572</b>	<b>44,716</b>	<b>12,579</b>	<b>12,580</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WR CEDAR	73.3	24.4	89	118	147						
DOUG FIR	27.8	11.3	773	871	970						
WHEMLOCK	50.4	47.2	211	400	589						
R ALDER	10.9	10.2	117	130	143						
COTWOOD											
<b>TOTAL</b>	<b>97.4</b>	<b>21.2</b>	<b>348</b>	<b>442</b>	<b>536</b>	<b>397</b>	<b>202</b>	<b>99</b>			
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WR CEDAR	64.3	32.0	71	105	138						
DOUG FIR	166.8	82.9	6	34	62						
WHEMLOCK	163.0	81.0	7	36	65						
R ALDER	149.1	74.1	8	32	56						
COTWOOD	223.6	111.1	2	2	4						
<b>TOTAL</b>	<b>34.3</b>	<b>17.1</b>	<b>173</b>	<b>209</b>	<b>245</b>	<b>58</b>	<b>30</b>	<b>15</b>			
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WR CEDAR	64.0	31.8	87	128	169						
DOUG FIR	163.9	81.4	21	113	204						
WHEMLOCK	163.0	81.0	10	50	90						
R ALDER	149.1	74.1	12	48	84						
COTWOOD	223.6	111.1	13	13	26						
<b>TOTAL</b>	<b>30.5</b>	<b>15.2</b>	<b>298</b>	<b>351</b>	<b>404</b>	<b>46</b>	<b>23</b>	<b>11</b>			
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
WR CEDAR	65.3	32.5	6,631	9,819	13,007						
DOUG FIR	163.3	81.1	4,172	22,110	40,048						
WHEMLOCK	163.0	81.0	1,191	6,266	11,340						
R ALDER	149.1	74.1	1,087	4,194	7,301						
COTWOOD	223.6	111.1		2,327	4,913						
<b>TOTAL</b>	<b>57.4</b>	<b>28.5</b>	<b>31,957</b>	<b>44,716</b>	<b>57,475</b>	<b>163</b>	<b>83</b>	<b>41</b>			

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT			BLITZEN			
							DATE	12/29/2014		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
36N	05E	02	BLITZEN	00U1	5.50	5	37	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	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WR CEDAR				52	77	102				
DOUG FIR		160.9	79.9	37	197	356				
WHEMLOCK		150.5	74.8	24	125	227				
R ALDER				23	87	152				
COTWOOD		223.6	111.1		186	393				
<b>TOTAL</b>		<i>119.9</i>	<i>59.6</i>	<i>91</i>	<i>127</i>	<i>164</i>	<i>710</i>	<i>362</i>	<i>178</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT BLITZEN				DATE	12/29/2014	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
36N	05E	02	BLITZEN	00U3	23.30	20	126	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	20	126	6.3							
CRUISE	10	65	6.5	4,696			1.4			
DBH COUNT										
REFOREST										
COUNT	10	61	6.1							
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	34	125.2	16.1	74	44.3	178.1	26,483	25,848	6,752	6,752
WR CEDAR	17	38.9	17.6	60	15.7	66.0	6,150	5,781	2,082	2,079
DOUG FIR	7	12.6	28.6	106	10.5	56.3	12,116	11,823	2,616	2,616
R ALDER	6	21.2	16.6	67	7.8	32.0	4,058	3,635	1,039	1,039
PS FIR	1	3.5	18.0	85	1.5	6.3	920	920	250	250
<b>TOTAL</b>	<b>65</b>	<b>201.5</b>	<b>17.6</b>	<b>73</b>	<b>80.8</b>	<b>338.6</b>	<b>49,727</b>	<b>48,007</b>	<b>12,739</b>	<b>12,736</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	46.8	8.7		270	295	321				
WR CEDAR	58.0	15.0		206	243	279				
DOUG FIR	34.9	14.2		880	1,026	1,171				
R ALDER	34.6	15.4		155	183	212				
PS FIR										
<b>TOTAL</b>	<b>84.4</b>	<b>10.9</b>		<b>316</b>	<b>355</b>	<b>393</b>	<b>284</b>	<b>145</b>	<b>71</b>	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	80.7	18.5		102	125	148				
WR CEDAR	123.5	28.3		28	39	50				
DOUG FIR	111.8	25.6		9	13	16				
R ALDER	150.3	34.5		14	21	29				
PS FIR	307.8	70.6		1	4	6				
<b>TOTAL</b>	<b>42.1</b>	<b>9.7</b>		<b>182</b>	<b>202</b>	<b>221</b>	<b>75</b>	<b>38</b>	<b>19</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	82.3	18.9		145	178	212				
WR CEDAR	116.8	26.8		48	66	84				
DOUG FIR	113.4	26.0		42	56	71				
R ALDER	149.6	34.3		21	32	43				
PS FIR	307.8	70.6		2	6	11				
<b>TOTAL</b>	<b>38.8</b>	<b>8.9</b>		<b>309</b>	<b>339</b>	<b>369</b>	<b>63</b>	<b>32</b>	<b>16</b>	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	80.9	18.5		21,057	25,848	30,640				
WR CEDAR	123.7	28.4		4,141	5,781	7,420				
DOUG FIR	114.6	26.3		8,717	11,823	14,930				
R ALDER	149.6	34.3		2,388	3,635	4,882				
PS FIR	307.8	70.6		271	920	1,568				
<b>TOTAL</b>	<b>40.6</b>	<b>9.3</b>		<b>43,536</b>	<b>48,007</b>	<b>52,478</b>	<b>69</b>	<b>35</b>	<b>17</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				118	145	172				

TC TSTATS				<b>STATISTICS</b>				PAGE	2	
				<b>PROJECT BLITZEN</b>				DATE	12/29/2014	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>36N</b>	<b>05E</b>	<b>02</b>	<b>BLITZEN</b>	<b>00U3</b>	23.30	20	126	S	W	
CL:	68.1 %	COEFF		<b>V-BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E. %	LOW	AVG	HIGH	5	7	10	
WR CEDAR		64.0	14.7	63	88	112				
DOUG FIR				155	210	265				
R ALDER				75	114	153				
PS FIR		205.2	47.0	43	147	251				
<b>TOTAL</b>		<b>187.5</b>	<b>43.0</b>	<b>129</b>	<b>142</b>	<b>155</b>	<b>1,478</b>	<b>754</b>	<b>369</b>	

TC TSTATS				<b>STATISTICS</b>				PAGE	1	
				<b>PROJECT BLITZEN</b>				DATE	12/29/2014	
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>	
<b>36N</b>	<b>05E</b>	<b>35</b>	<b>BLITZEN</b>	<b>ORO</b>	1.50	1	8	S	W	
			TREES	ESTIMATED			PERCENT			
			PER PLOT	TOTAL			SAMPLE			
			PLOTS	TREES			TREES			
TOTAL	1	8	8.0							
CRUISE	1	8	8.0	439			1.8			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	5	218.1	16.2	68	77.6	312.5	39,148	38,563	11,049	11,049
WR CEDAR	3	74.4	17.2	54	28.9	120.0	9,847	8,905	3,465	3,465
<b>TOTAL</b>	<b>8</b>	<b>292.5</b>	<b>16.5</b>	<b>65</b>	<b>106.6</b>	<b>432.5</b>	<b>48,994</b>	<b>47,468</b>	<b>14,514</b>	<b>14,514</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK	64.3	32.0	177	260	343					
WR CEDAR	70.2	48.6	77	150	223					
<b>TOTAL</b>	<b>68.4</b>	<b>25.8</b>	<b>162</b>	<b>219</b>	<b>275</b>	<b>213</b>	<b>109</b>	<b>53</b>		

TC TSTATS		STATISTICS						PAGE	1	
		PROJECT BLITZEN						DATE	12/29/2014	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
36N	05E	36	BLITZEN	00U2	64.10	68	406	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		68	406	6.0						
CRUISE		34	194	5.7	15,963	1.2				
DBH COUNT										
REFOREST										
COUNT		34	212	6.2						
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
WHEMLOCK	86	119.2	13.2	50	31.2	113.5	9,888	9,691	2,979	2,980
R ALDER	76	103.1	12.9	49	26.0	93.5	7,610	7,132	2,333	2,332
BIRCH	10	12.1	12.3	45	2.9	10.0	662	632	217	218
DOUG FIR	7	3.0	20.7	75	1.6	7.1	868	839	244	244
WR CEDAR	8	7.5	13.2	40	1.9	7.1	435	416	170	170
PS FIR	7	4.1	17.0	67	1.6	6.5	938	884	237	237
<b>TOTAL</b>	<i>194</i>	<i>249.0</i>	<i>13.2</i>	<i>49</i>	<i>65.3</i>	<i>237.6</i>	<i>20,401</i>	<i>19,594</i>	<i>6,180</i>	<i>6,182</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	76.3	8.2		114	124	134				
R ALDER	70.9	8.2		87	95	103				
BIRCH	50.6	16.8		48	58	68				
DOUG FIR	53.5	21.8		250	320	390				
WR CEDAR	90.8	34.2		60	91	122				
PS FIR	75.5	30.7		282	407	532				
<b>TOTAL</b>	<i>97.0</i>	<i>7.0</i>		<i>117</i>	<i>125</i>	<i>134</i>	<i>376</i>	<i>192</i>	<i>94</i>	
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	113.5	13.8		103	119	136				
R ALDER	98.7	12.0		91	103	115				
BIRCH	285.8	34.6		8	12	16				
DOUG FIR	264.5	32.0		2	3	4				
WR CEDAR	480.6	58.2		3	7	12				
PS FIR	409.6	49.6		2	4	6				
<b>TOTAL</b>	<i>50.1</i>	<i>6.1</i>		<i>234</i>	<i>249</i>	<i>264</i>	<i>100</i>	<i>51</i>	<i>25</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	112.5	13.6		98	114	129				
R ALDER	90.1	10.9		83	94	104				
BIRCH	271.0	32.8		7	10	13				
DOUG FIR	257.9	31.3		5	7	9				
WR CEDAR	390.9	47.4		4	7	10				
PS FIR	347.9	42.2		4	6	9				
<b>TOTAL</b>	<i>46.4</i>	<i>5.6</i>		<i>224</i>	<i>238</i>	<i>251</i>	<i>86</i>	<i>44</i>	<i>22</i>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	115.5	14.0		8,334	9,691	11,047				
R ALDER	92.8	11.2		6,330	7,132	7,934				
BIRCH	263.4	31.9		431	632	834				
DOUG FIR	259.5	31.4		575	839	1,103				
WR CEDAR	336.4	40.8		247	416	586				

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	BLITZEN		DATE	12/29/2014		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
36N	05E	36	BLITZEN	00U2	64.10	68	406	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
PS FIR		351.8	42.6	507	884	1,260				
<b>TOTAL</b>		<i>51.9</i>	<i>6.3</i>	<i>18,362</i>	<i>19,594</i>	<i>20,826</i>	<i>108</i>	<i>55</i>	<i>27</i>	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				73	85	97				
R ALDER				68	76	85				
BIRCH		195.8	23.7	43	63	83				
DOUG FIR		183.8	22.3	81	119	156				
WR CEDAR		290.6	35.2	35	59	83				
PS FIR		317.7	38.5	78	137	195				
<b>TOTAL</b>		<i>212.9</i>	<i>25.8</i>	<i>77</i>	<i>82</i>	<i>88</i>	<i>1,809</i>	<i>923</i>	<i>452</i>	

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

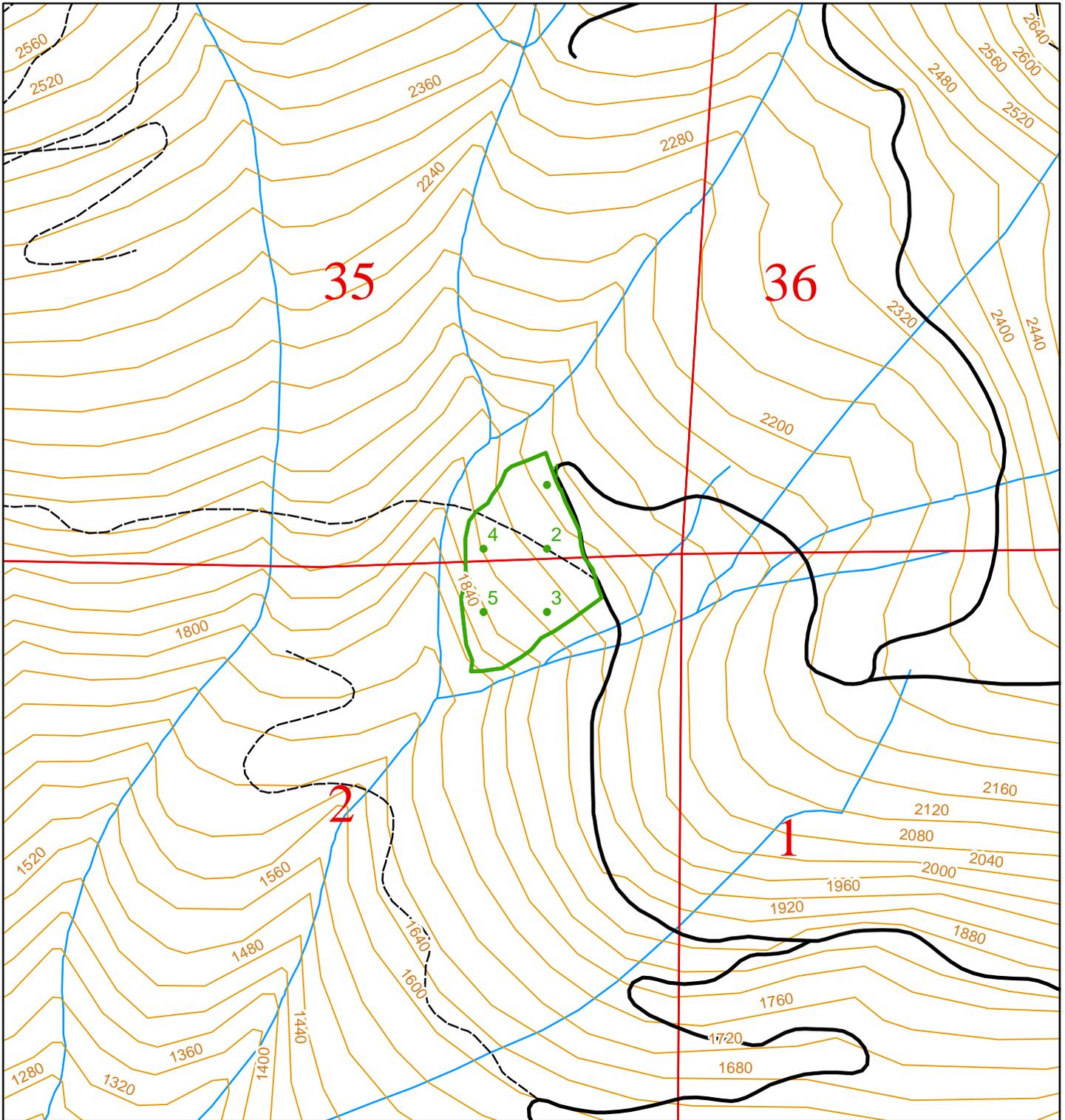
T36N R05E S02 Ty00U1	5.5
T36N R05E S02 Ty00U3	23.3
T36N R05E S36 Ty00U	64.1

**Project BLITZEN**  
**Acres 94.40**

**Page No 1**  
**Date: 12/29/2014**  
**Time 9:19:27AM**

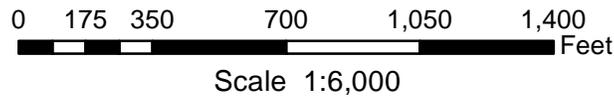
Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
				Tree	Log		Gross	Net	Gross	Net
WHEMLOCK	11,087	17,641	11,977	33.76	21.22	0.69	3,743	3,744	1,344	1,316
R ALDER	7,279	10,419	4,992	24.93	17.42	0.58	1,815	1,815	607	565
DOUG FIR	675	1,883	3,007	156.41	56.02	1.66	1,055	1,055	464	451
WR CEDAR	2,073	3,105	1,992	40.86	27.28	0.87	848	847	243	229
PS FIR	347	560	602	60.61	37.57	0.99	210	210	82	78
BIRCH	777	1,027	383	17.98	13.61	0.47	139	140	42	41
COTWOOD	9	18	71	315.25	157.63	3.94	29	29	13	13
<b>Totals</b>	<b>22,247</b>	<b>34,653</b>	<b>23,024</b>	<b>35.24</b>	<b>22.62</b>	<b>0.73</b>	<b>7,839</b>	<b>7,840</b>	<b>2,796</b>	<b>2,692</b>

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
				Tree	Log		Gross	Net	Gross	Net
C	14,182	23,189	17,578	41.29	25.25	0.81	5,856	5,856	2,133	2,073
H	8,065	11,464	5,446	24.59	17.30	0.58	1,984	1,984	663	618
<b>Totals</b>	<b>22,247</b>	<b>34,653</b>	<b>23,024</b>	<b>35.24</b>	<b>22.62</b>	<b>0.73</b>	<b>7,839</b>	<b>7,840</b>	<b>2,796</b>	<b>2,692</b>



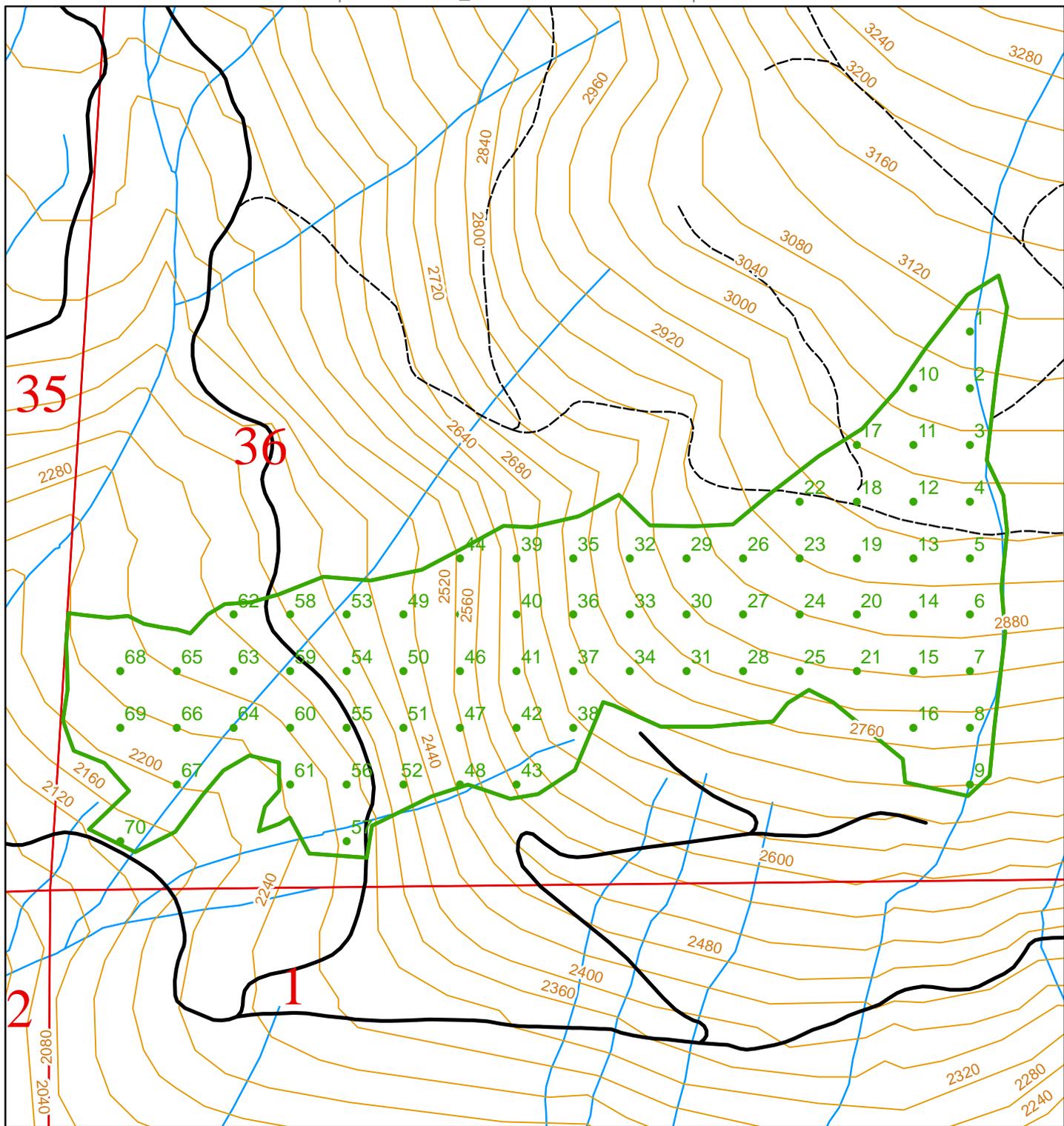
**FMU POLYGON AND SAMPLE POINT INFORMATION**

FMU_NM:	BLITZEN 1	Township: T36R05E, T35R05E
FMU_ID:	45849	DNR Region: NORTHWEST
Acres:	6	Total Sample Points: 5
County:	SKAGIT	Spacing Between Points: 225



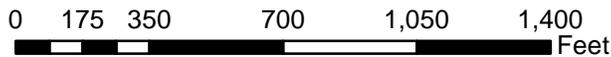
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

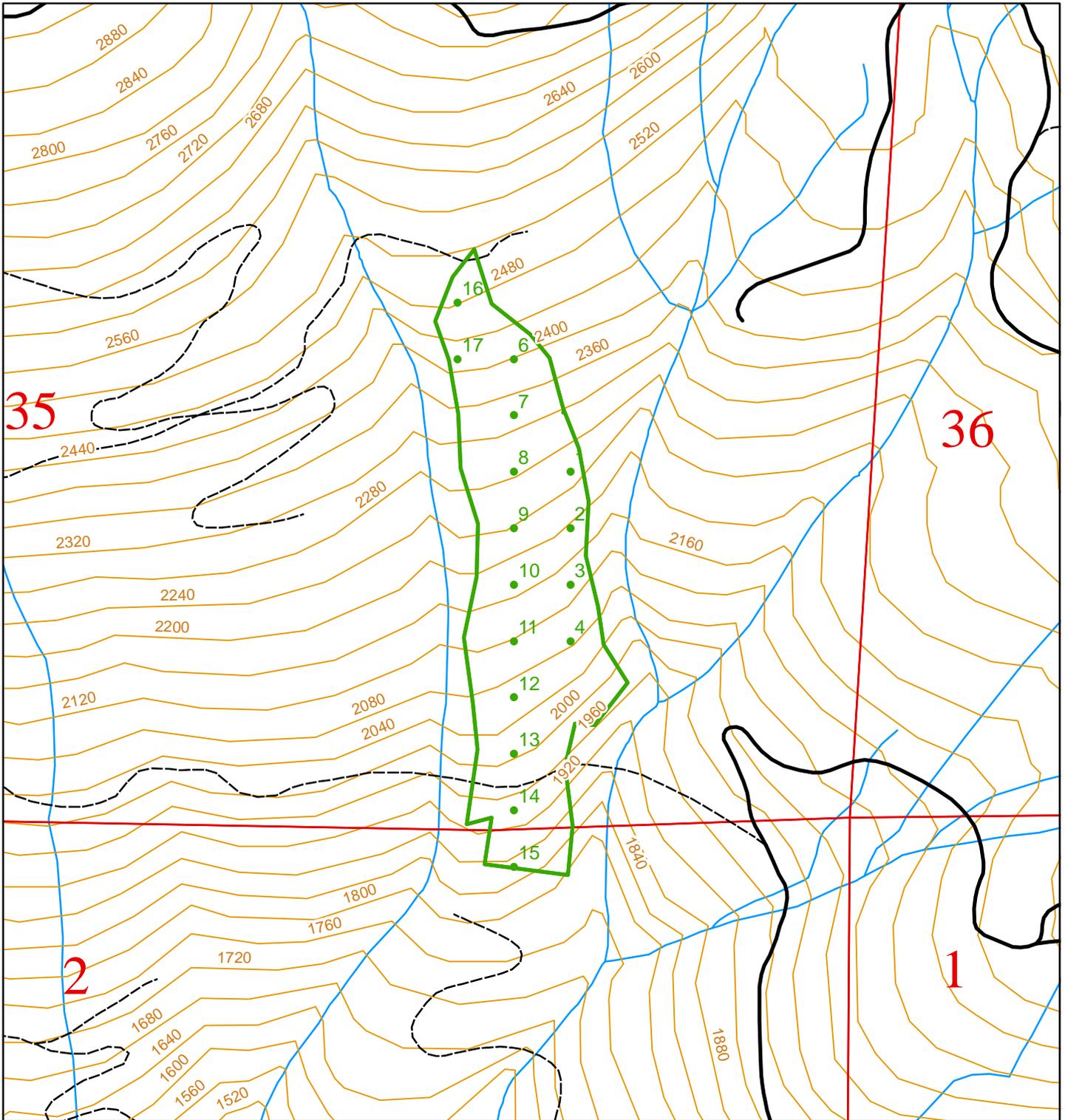
FMU_NM:	BLITZEN 2	Township:	T36R05E
FMU_ID:	45851	DNR Region:	NORTHWEST
Acres:	68	Total Sample Points:	70
County:	SKAGIT	Spacing Between Points:	200



Scale 1:6,000

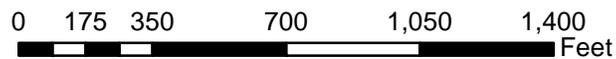
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

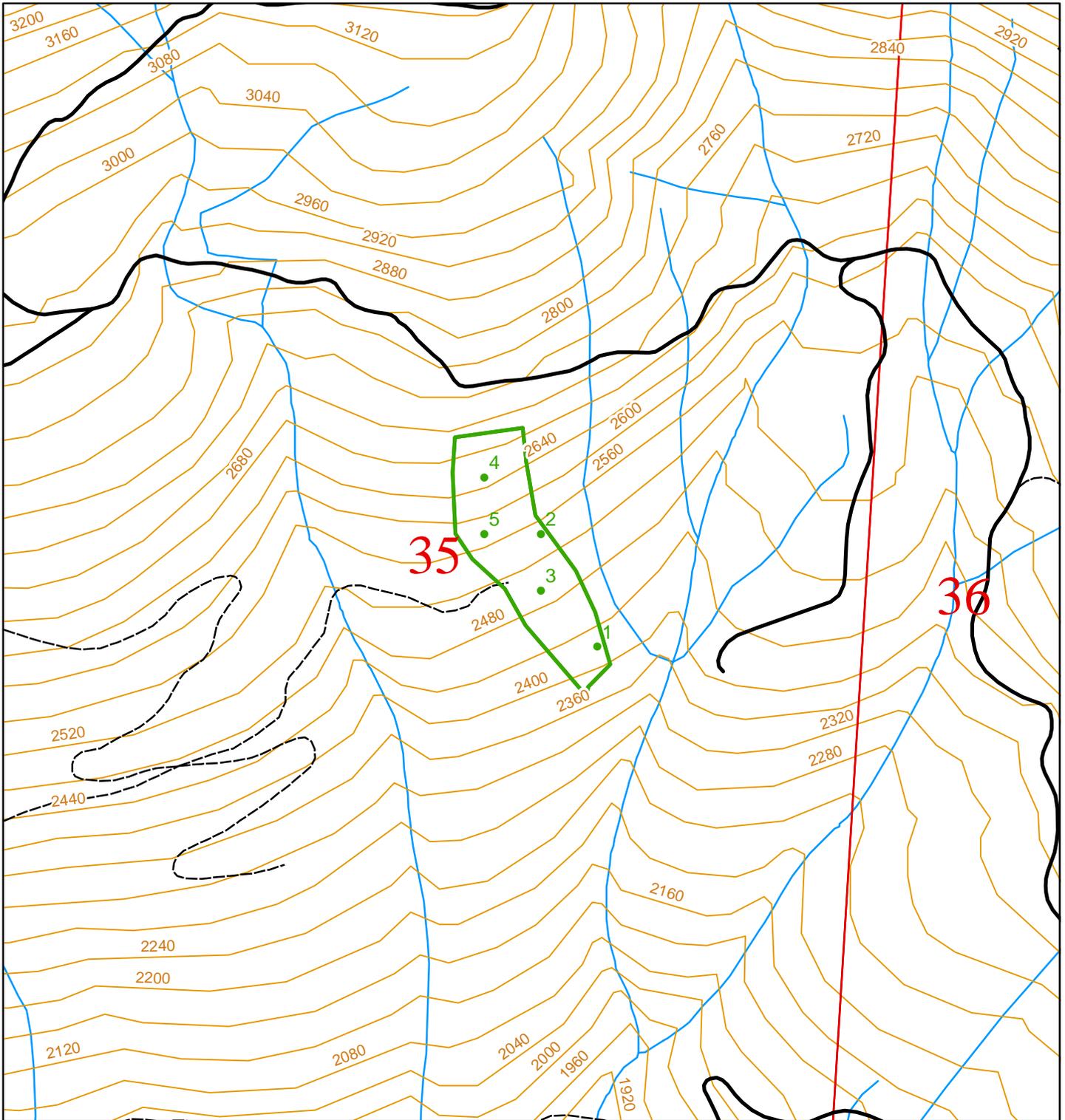
FMU_NM:	BLITZEN 4	Township: T36R05E, T35R05E
FMU_ID:	77622	DNR Region: NORTHWEST
Acres:	18	Total Sample Points: 17
County:	SKAGIT	Spacing Between Points: 200



Scale 1:6,000

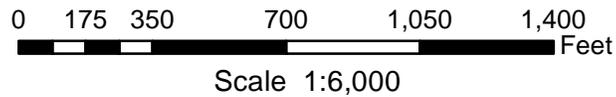
**Legend**

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



**FMU POLYGON AND SAMPLE POINT INFORMATION**

FMU_NM:	BLITZEN 3	Township:	T36R05E
FMU_ID:	45840	DNR Region:	NORTHWEST
Acres:	acres	Total Sample Points:	5
County:	SKAGIT	Spacing Between Points:	200



**Legend**

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



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

FPA/N No: 2814541

Effective Date: 5/6/2015

Expiration Date: 5/6/2018

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

Shut Down Zone: 656

EARR Tax Credit:  Eligible  Non-eligible

Reference: **Blitzen**

**DECISION:**

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

**FPA/N CLASSIFICATION**

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

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

**Conditions on Approval / Reasons for Disapproval**

Issued By: Dave Klingbiel *BAA*

Region: Northwest

Title: Chuckanut Forest Practice Forester

Date: 5/6/2015

Copies to:  Landowner, Timber Owner and Operator

Issued in Person:  Landowner,  Timber Owner  Operator By: *BR*

**Appeal Information**

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

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

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

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

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

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

And

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

**Other Applicable Laws**

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

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

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

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

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

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

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

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

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

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

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

**DNR affidavit of mailing:**

On this day \_\_\_\_\_, I placed in the United States mail at Sedro-Woolley, WA, postage paid, a true and accurate copy of the attached document. Notice of Decision FPA # 2814541

Braelyn Hamilton

(Printed name)

\_\_\_\_\_

(Signature)



WASHINGTON STATE  
DEPT. OF NATURAL RESOURCES  
NORTHWEST REGION

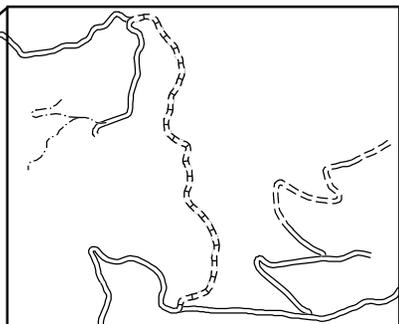
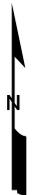
# ROAD PLAN AND SPECIFICATIONS #091190 BLITZEN

BAKER DISTRICT HAMILTON UNIT  
S35, 36 - T36N - R05E

## SHEET INDEX

PROJECT MAP.....	1
ROAD CLAUSES .....	2-16
TYPICAL SECTION.....	17
MATERIAL LIST.....	18
STANDARD DETAILS.....	19-21
PIT VICINITY MAP.....	22

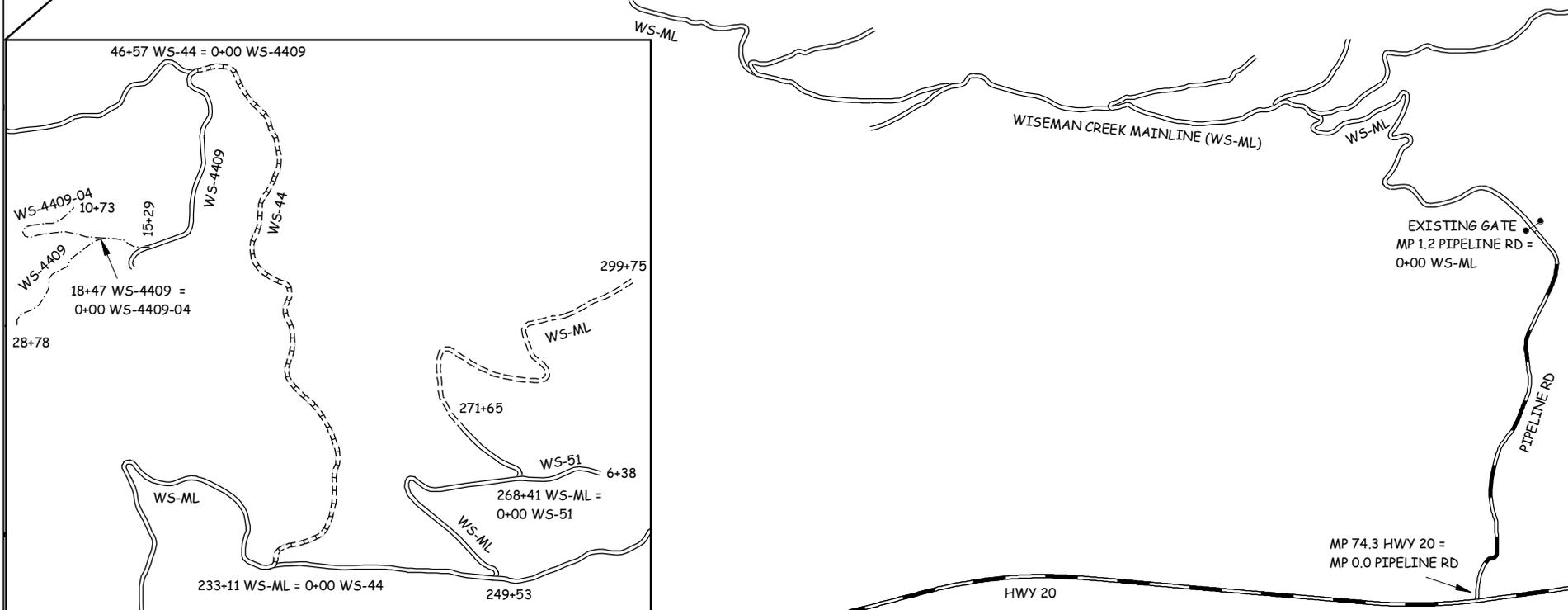
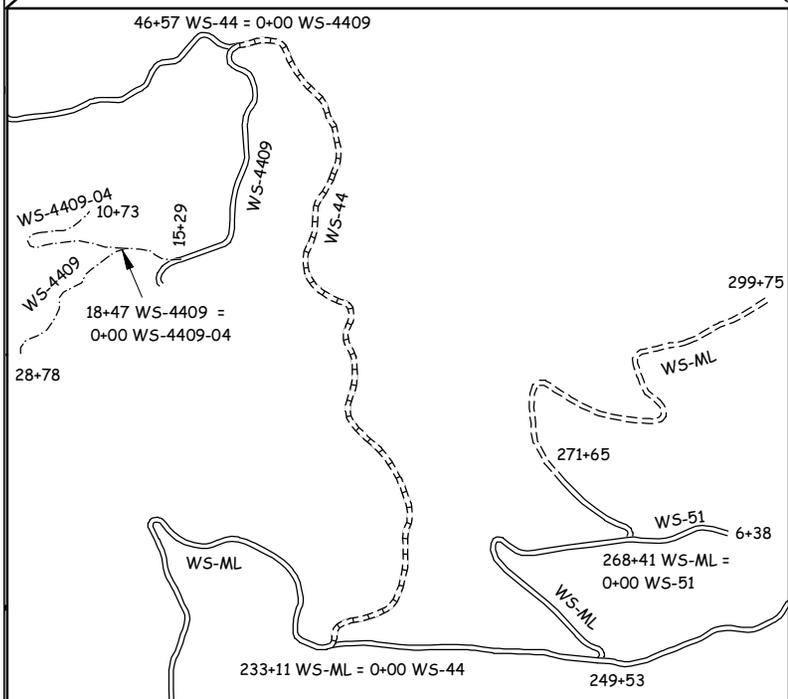
SCALE  
0 1,000



196+86  
WS-37 PIT  
PROPOSED HARD ROCK PIT TO BE DEVELOPED TO  
GENERATE 6-INCH-MINUS SUBGRADE BALLAST AND RIPRAP.

### LEGEND

REQUIRED CONSTRUCTION	=====
OPTIONAL CONSTRUCTION	- - - - -
REQUIRED RECONSTRUCTION	===== =====
OPTIONAL RECONSTRUCTION	- - - - - =====



DESIGNED BY M. CONNELLY	REVIEWED BY Davis 11/14/14	APPROVED BY Fike 11/17/14	PLAN DATE 10/22/2014	SHEET 1 OF 22
----------------------------	----------------------------------	---------------------------------	-------------------------	------------------

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

BLITZEN TIMBER SALE ROAD PLAN  
SKAGIT COUNTY  
BAKER DISTRICT

AGREEMENT NO.: 30-091190

STAFF ENGINEER: M. CONNELLY

DATE: 10/22/14

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>
WS-ML*	271+65 to 299+75	CONSTRUCTION

\* Construction from station 293+19 to 299+75 is on an orphaned grade.

**0-3 OPTIONAL ROADS**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
WS-44	0+00 to 46+57	RECONSTRUCTION
WS-4409	15+29 to 28+78	CONSTRUCTION
WS-4409-04**	0+00 to 10+73	CONSTRUCTION

\*\*Construction from station 7+10 to 10+73 is on an orphaned grade.

**0-4 CONSTRUCTION**

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to sub-grade, landing and turnout construction, culvert installation, application of 6-inch-minus subgrade ballast, and application of gravel surfacing ballast.

**0-5 RECONSTRUCTION**

Reconstruction includes, but is not limited to blading, shaping, and ditching the road surface, existing culvert clean out, and spot application of gravel surfacing ballast.

**0-12 DEVELOP ROCK SOURCE**

The Purchaser shall develop a new and an existing rock source. Development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap, gravel surfacing ballast, and 6-inch-minus subgrade ballast. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING. See pit vicinity map on sheet 22.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

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

**1-3 ROAD DIMENSIONS**

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

**1-4 ROAD TOLERANCES**

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

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

**1-5 DESIGN DATA**

Design data is available at the Department of Natural Resources Northwest Region Office in Sedro Woolley, WA upon request.

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

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

**1-9 DAMAGED METALLIC COATING**

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

**1-18 REFERENCE POINT DAMAGE**

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

**1-21 HAUL APPROVAL**

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

**1-25 ACTIVITY TIMING RESTRICTION**

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

<u>Activity</u>	<u>Activity</u>	<u>Closure Period</u>
All roads.	All activities.	November 1 to March 31

**1-26 OPERATING DURING CLOSURE PERIOD**

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

**1-29 SEDIMENT RESTRICTION**

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

**1-33 SNOW PLOWING RESTRICTION**

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

SECTION 2 – MAINTENANCE

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

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

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

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

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

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

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

**3-5 CLEARING**

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

**3-10 GRUBBING**

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

**3-20 ORGANIC DEBRIS DEFINITION**

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

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

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

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

Organic debris shall not be deposited in the following areas:

- Within 30 feet of a cross drain culvert.
- Within 30 feet of a live stream, or wetland.
- On embankments.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

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

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

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

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

## **SECTION 4 – EXCAVATION**

### **4-2 PIONEERING**

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

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

### **4-3 ROAD GRADE AND ALIGNMENT STANDARDS**

The following road grade and alignment standards shall be followed:

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

#### 4-5 CUT SLOPE RATIO

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

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

#### 4-6 EMBANKMENT SLOPE RATIO

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

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

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

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

#### 4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

#### 4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

#### 4-21 TURNOUTS

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

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

**4-28 DITCH DRAINAGE**

Ditches shall drain to cross-drain culverts and ditchouts.

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

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

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

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

- Within 30 feet of a cross drain culvert.
- Within 30 feet of a live stream or wetland.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

**4-55 ROAD SHAPING**

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

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

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

## SECTION 5 – DRAINAGE

### **5-5 CULVERTS**

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

### **5-11 UNUSED MATERIALS STATE PROPERTY**

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

### **5-15 CULVERT INSTALLATION**

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

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

Installation of culverts 36 inches in diameter and over shall be subject to written approval by the Contract Administrator before making backfill.

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

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

### **5-25 CATCH BASINS**

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

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

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

## SECTION 6 – ROCK AND SURFACING

### 6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following sources 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 sources, a joint operating plan shall be developed. All parties shall follow this plan. Pit vicinity map on sheet 22.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Section 2 Pit	STA 17+93 of the MJ-03 road.	Gravel surfacing ballast
WS-37 Pit	STA 196+86 of the WS-ML road.	Riprap, 6-inch-minus subgrade ballast

### 6-5 ROCK FROM COMMERCIAL SOURCE

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

### 6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

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

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

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

### 6-23 ROCK GRADATION TYPES

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

**6-34 6-INCH MINUS SUBGRADE BALLAST ROCK**

Subgrade ballast rock shall be 100% equal to, or smaller than, 6 inches in at least one dimension.

Rock shall contain no more than 5 percent organic debris, dirt, and 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>
20% / 90%	300 lbs. to 1 ton
80% / --	50 lbs. to ½ ton
10% / 20%	50 lbs. max

**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"

**6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH**

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

**6-70 APPROVAL BEFORE ROCK APPLICATION**

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

**6-71 ROCK APPLICATION**

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

**6-73 ROCK FOR WIDENED PORTIONS**

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

SECTION 8 – EROSION CONTROL

**8-15 REVEGETATION**

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

**8-17 REVEGETATION TIMING**

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

**8-18 PROTECTION FOR SEED**

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

**8-19 ASSURANCE FOR SEEDED AREA**

The Purchaser shall be responsible to ensure a uniform and dense crop (at least 50% coverage) of 3-inch tall grass. The Purchaser shall reapply the seed and fertilizer in areas that have failed to germinate or have been damaged through any cause, before approval from the Contract Administrator. The Purchaser shall restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and fertilizer at no addition cost to the state.

**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 50 pounds per acre of exposed soil. Grass seed shall meet the following specifications:

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

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>
Creeping Red Fescue	50
Elf Perennial Rye Grass	25
Highland Colonial Bentgrass	15
White Clover	10
Inert and Other Crop	0.5

**8-27 FERTILIZER**

Purchaser shall evenly spread the fertilizer listed below on all exposed soil inside the grubbing limits at a rate of 200 pounds per acre of exposed soil. Fertilizer shall meet the following specifications:

<u>Chemical Component</u>	<u>% by Weight</u>
Nitrogen	16
Phosphorous	16
Potassium	16
Sulphur	3
Inerts	49

**SECTION 9 – POST-HAUL ROAD WORK**

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

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

**9-10 LANDING DRAINAGE**

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

**9-12 LANDING EMBANKMENT REMOVAL**

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

**9-21 ROAD ABANDONMENT**

The following roads shall be abandoned by the Purchaser before the termination of this contract.

<u>Road</u>	<u>Stations</u>
WS-4409	STA 15+29 to 28+78
WS-4409-04	STA 0+00 to 10+73
WS-51	STA 0+00 to 6+38

**9-22 ABANDONMENT**

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

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

## SECTION 10 MATERIALS

### **10-15 CORRUGATED STEEL CULVERT**

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

### **10-16 CORRUGATED ALUMINUM CULVERT**

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

### **10-17 CORRUGATED PLASTIC CULVERT**

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

### **10-21 METAL BAND**

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

### **10-22 PLASTIC BAND**

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

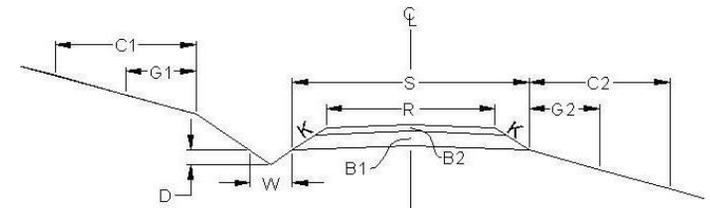
### **10-23 GAGE AND CORRUGATION**

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

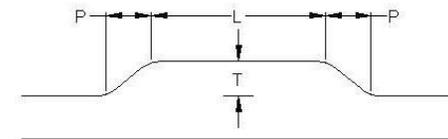
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 48"	14 (0.079")	2 2/3" X 1/2"
54" to 96"	14 (0.079")	3" X 1"

ROAD #		WS-ML*	WS-44	WS-4409	WS-4409-04**
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL
CONSTRUCT / RECONSTRUCT		CONSTRUCT	RECONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C
STATION / MP TO		271+65	0+00	15+29	0+00
STATION / MP		299+75	46+57	28+78	10+73
ROAD WIDTH	R	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3
DITCH WIDTH	W	3	2	2	2
DITCH DEPTH	D	1	1	1	1
TURNOUT LENGTH	L	50	25	25	25
TURNOUT WIDTH	T	10	10	10	10
TURNOUT TAPER	P	25	25	25	25
GRUBBING	G1	5	5	5	5
	G2	5	5	5	5
CLEARING	C1	10	10	10	10
	C2	10	10	10	10
ROCK FILL/SLOPE	K:1	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	12	--	12	12
CUBIC YARDS / STATION		80	--	80	80
➤ TOTAL CY BALLAST		2248 <sup>A</sup>	--	1079 <sup>A</sup>	858 <sup>A</sup>
❖ SURFACING DEPTH	B2	6	--	6	6
CUBIC YARDS / STATION		37	--	37	37
➤ TOTAL CY SURFACING		1040 <sup>B</sup>	200 <sup>B</sup>	500 <sup>B</sup>	398 <sup>B</sup>
➤ TOTAL CUBIC YARDS		3288	200 <sup>C</sup>	1579	1256
SUBGRADE WIDTH	S	16.5	--	16.5	16.5
BRUSHCUT (Y/N)		N	N	N	N
BLADE, SHAPE, & DITCH (Y/N)		Y	Y	Y	Y

TYPICAL SECTION



TURNOUT DETAIL (PLAN VIEW)



**SYMBOL NOTES**

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
- Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.
- A 6-inch-minus subgrade ballast from the WS-37 Pit.
- B Gravel surfacing ballast from the Section 2 Pit.
- C Gravel surfacing ballast for spot patching at locations designated by contract administrator.
- \* Construction from station 293+19 to 299+75 is on an orphaned grade.
- \*\* Construction from station 7+10 to 10+73 is on an orphaned grade.

## MATERIALS LIST

LOCATION		CULVERT			DWSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS										
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			<p><b>Note:</b> Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:</p> <table style="margin-left: auto; margin-right: auto; border: none;"> <tr> <td style="text-align: center;"><u>Diameter</u></td> <td style="text-align: center;"><u>Gage</u></td> <td style="text-align: center;"><u>Corrugation</u></td> </tr> <tr> <td style="text-align: center;">18"</td> <td style="text-align: center;">16</td> <td style="text-align: center;">2 2/3" x 1/2"</td> </tr> <tr> <td style="text-align: center;">24" – 48"</td> <td style="text-align: center;">14</td> <td style="text-align: center;">2 2/3" x 1/2"</td> </tr> <tr> <td style="text-align: center;">54" – 96"</td> <td style="text-align: center;">14</td> <td style="text-align: center;">3" x 1"</td> </tr> </table>	<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>	18"	16	2 2/3" x 1/2"	24" – 48"	14	2 2/3" x 1/2"	54" – 96"
<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>																				
18"	16	2 2/3" x 1/2"																				
24" – 48"	14	2 2/3" x 1/2"																				
54" – 96"	14	3" x 1"																				
WS-ML	273+82	18	30	PD	--	--	2	3	L	NT	C											
	277+03	18	30	PD	--	--	2	3	L	NT	C											
	280+88	18	30	PD	--	--	2	3	L	NT	C											
	283+49	18	30	PD	--	--	2	3	L	NT	C											
	289+37	18	30	PD	--	--	2	3	L	NT	C											
	293+66	18	40	PD	--	--	3	4	L	NT	C											
	295+33	18	32	PD	--	--	2	3	L	NT	C	Ditchout outlet.										
	297+49	18	34	PD	--	--	2	3	L	NT	C	Ditchout outlet.										
	299+75	--	--	--	--	--	--	--	--	--	--	Ditchout end of road to downhill side to re-establish existing stream.										
WS-4409	15+29	18	40	PD	--	--	3	4	L	NT	C											
	16+92	48	40	GM	--	--	10	15	H/L	NT	C											
	17+65	72	50	GM	--	--	15	25	H/L	NT	C											
	18+16	24	34	PD	--	--	3	6	H/L	NT	C											
	18+47	18	36	PD	--	--	3	4	L	NT	C											
	19+98	30	32	PD	--	--	6	10	H/L	NT	C											
	20+94	24	32	PD	--	--	3	6	H/L	NT	C											
	21+45	24	32	PD	--	--	3	6	H/L	NT	C											
	23+26	18	30	PD	--	--	2	3	L	NT	C											
	23+65	36	30	PD	--	--	6	12	H/L	NT	C											
	26+52	18	30	PD	--	--	2	3	L	NT	C											

GM – Galvanized Metal    PS – Polyethylene Pipe Single Wall    PD – Polyethylene Pipe Dual Wall    AM – Aluminized Metal    C – Concrete    XX – PD or GM  
H – Heavy Loose Riprap    L – Light Loose Riprap    SR – Shot Rock    NT – Native (Bank Run)    QS – Quarry Spalls



## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Cuts and Fills

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

### Surface

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

### Drainage

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

### Preventative Maintenance

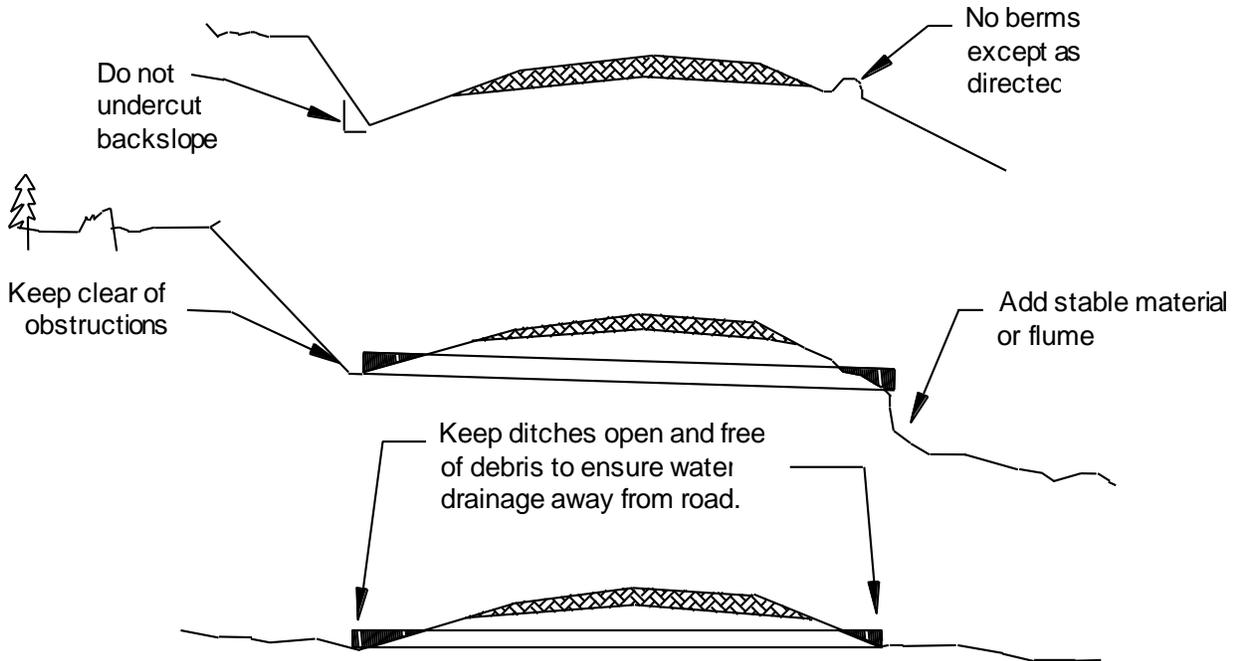
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

**Termination of Use or End of Season**

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

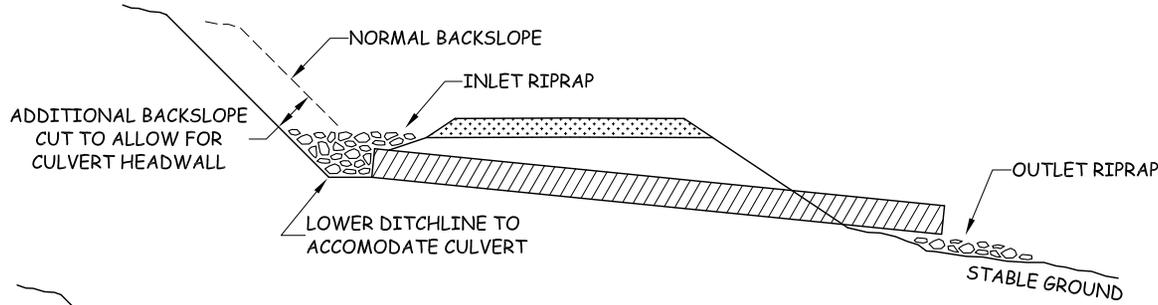
**Debris**

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

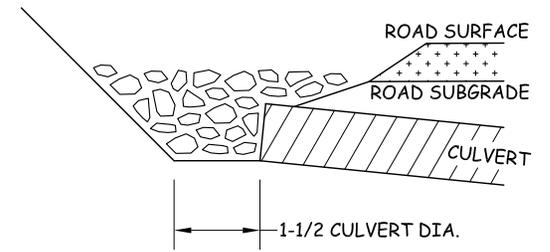


# CULVERT AND DRAINAGE SPECIFICATIONS

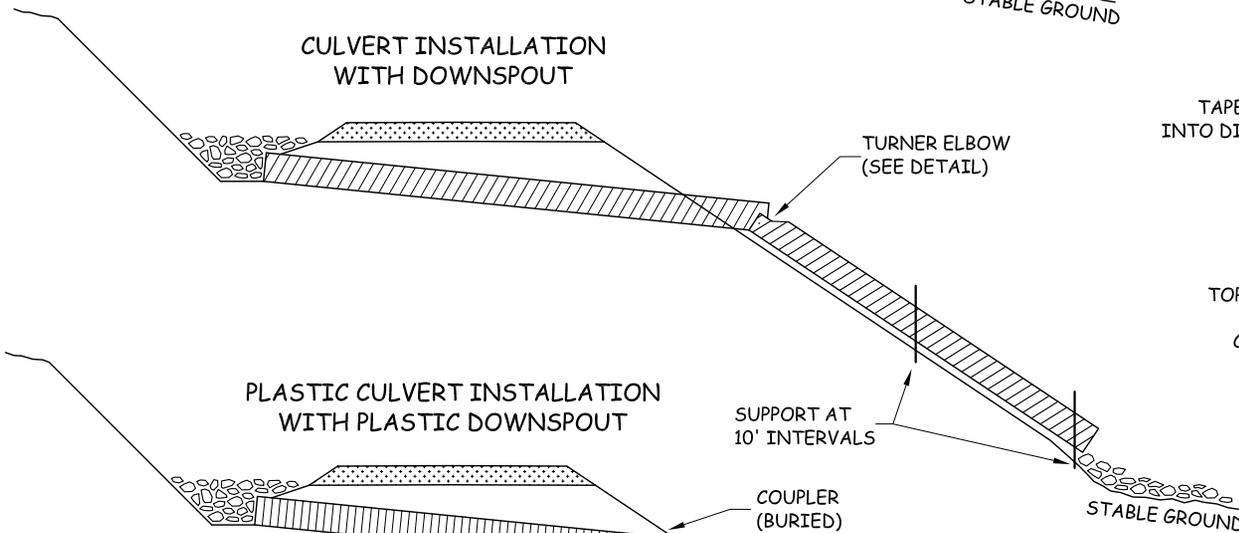
**CULVERT INSTALLATION (TYPICAL)**



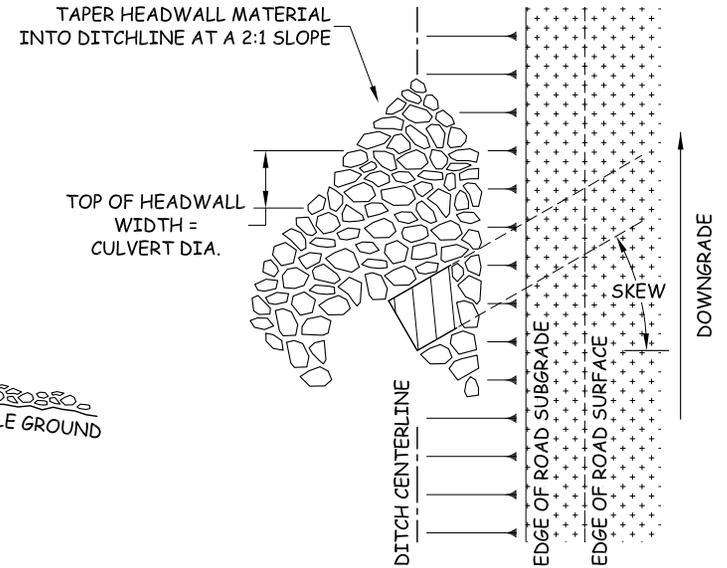
**CULVERT HEADWALL - SECTION VIEW**



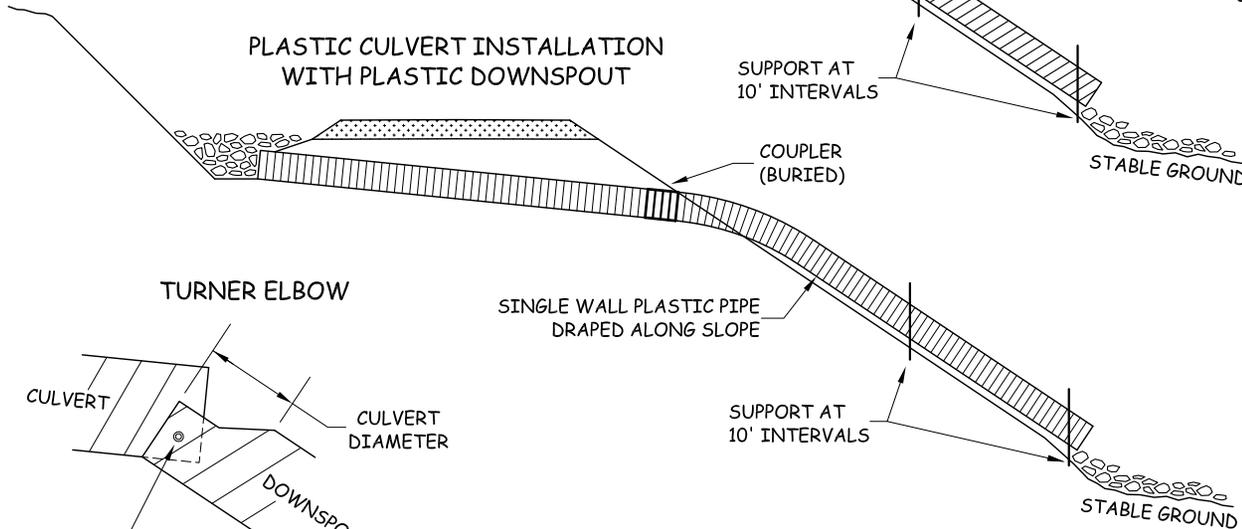
**CULVERT INSTALLATION WITH DOWNSPOUT**



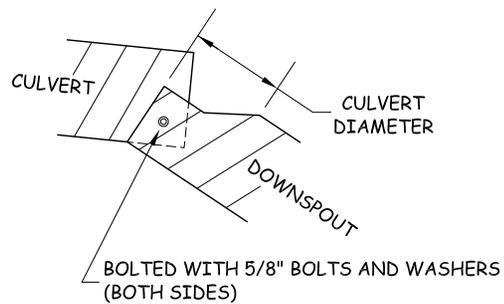
**CULVERT HEADWALL - PLAN VIEW**



**PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT**



**TURNER ELBOW**



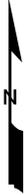
**HEADWALL NOTE:**  
 HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

CONTRACT #	PROJECT	SHEET
30-091190	BLITZEN	21 OF 22



# PIT VICINITY MAP BLITZEN

SCALE  
0 1,000



SALE AREA

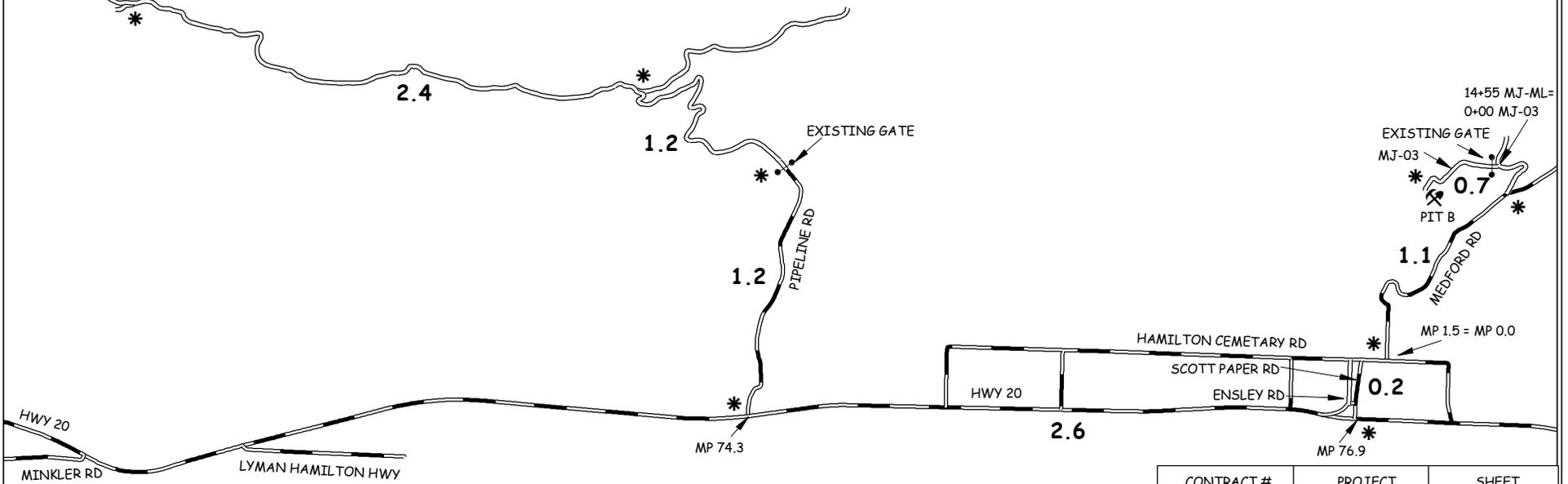


PIT A : WS-37 HARDROCK PIT (WS-ML STA 196+86)

PROPOSED HARDROCK PIT TO BE DEVELOPED  
TO GENERATE SUBGRADE BALLAST AND RIPRAP.

PIT B : SECTION 2 GRAVEL PIT (MJ-03 STA 17+93)

EXISTING GRAVEL PIT TO BE DEVELOPED  
TO GENERATE GRAVEL SURFACING BALLAST.



CONTRACT #	PROJECT	SHEET
30-091190	BLITZEN	22 OF 22

## SUMMARY - Road Development Costs

REGION: NW  
DISTRICT: Cascade

SALE/PROJECT NAME: BLITZEN

CONTRACT #: 30-091190

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ROAD NUMBERS:	WS-ML, WS-4409, WS-4409-04	WS-44	-
ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	52.32	46.57	0
CLEARING & GRUBBING:	\$13,085	\$0	
EXCAVATION AND FILL:	\$32,712	\$0	-
MISC. MAINTENANCE:	\$5,452	\$2,664	-
ROAD ROCK:	\$39,254	\$2,459	-
ROCK STOCKPILE PROD:	\$0	\$0	-
CULVERTS AND FLUMES:	\$10,904	\$0	-
STRUCTURES:	\$0	\$0	-
MOBILIZATION:	\$7,633	\$0	-
TOTAL COSTS:	\$109,040	\$5,123	\$0
COST PER STATION:	\$2,084	\$110	
ROAD DEACTIVATION & ABANDONMENT COSTS:		\$1,206	
		<b>TOTAL (All Roads) =</b>	<b>\$115,369</b>
		<b>SALE VOLUME MBF =</b>	<b>3,800</b>
		<b>TOTAL \$/MBF =</b>	<b>\$30</b>

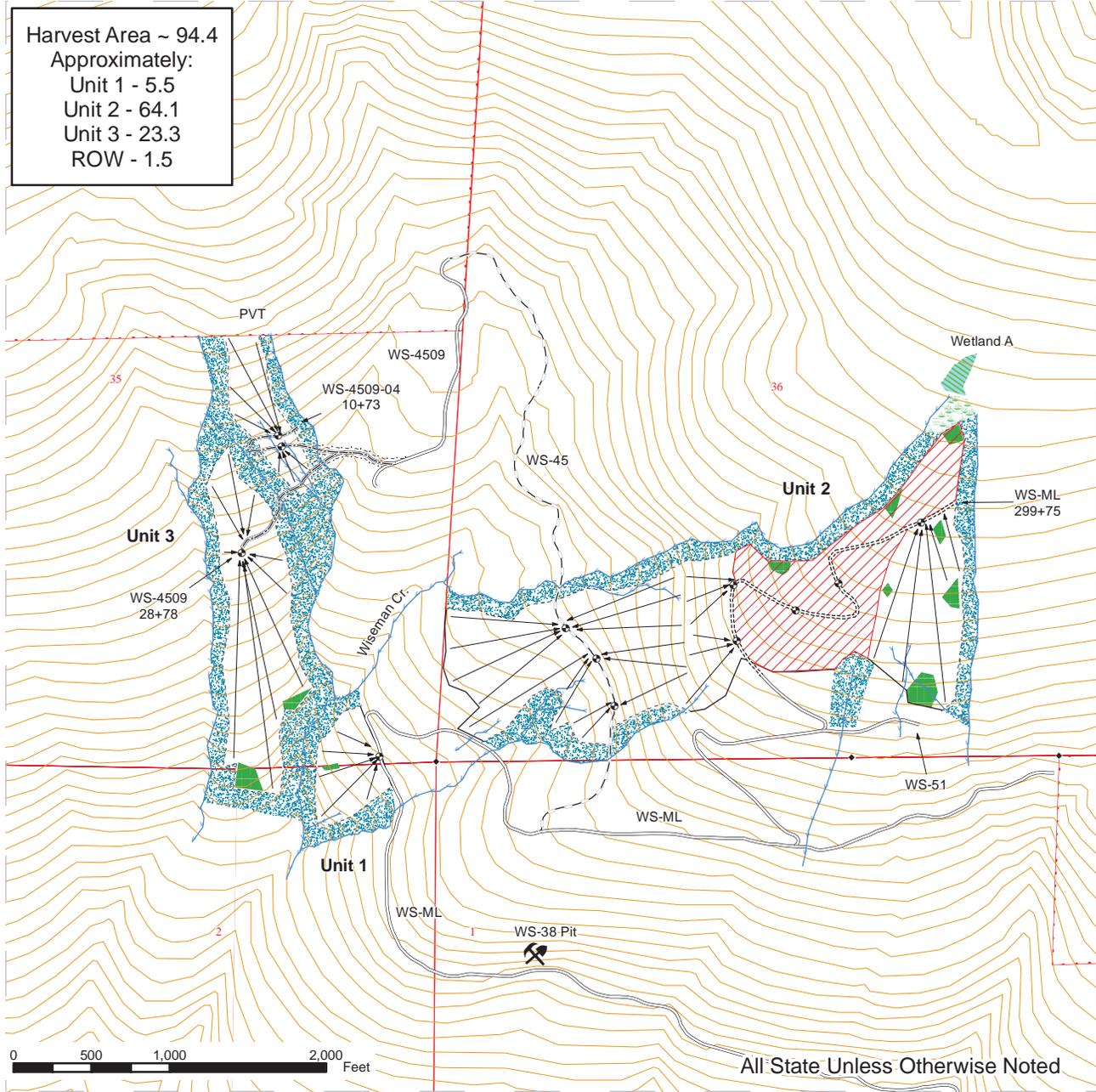
Compiled by: Connelly

Date: 11/14/14

# LOGGING PLAN MAP

SALE NAME: BLITZEN  
 AGREEMENT#: 91190  
 TOWNSHIP(S): T36R05E, T35R05E  
 TRUST(S): State Forest Transfer(1)

REGION: Northwest Region  
 COUNTY(S): SKAGIT  
 ELEVATION RGE: 1791-3361



	Ground Based Yarding		Undefined Construction		DNR Managed Lands
	Cable Yarding		Required Construction		
	Wetland Mgt Zone		Optional Reconstruction		
	Riparian Mgt Zone		Optional Construction		
	Leave Tree Area		Sale Boundary Tags		
	Wetland		Sale Boundary (No Tags)		
	Streams		Proposed Landing		

