



TIMBER NOTICE OF SALE

SALE NAME: LOOSE ENDS

AGREEMENT NO: 30-094140

AUCTION: December 14, 2016 starting at 10:00 a.m.,
Olympic Region Office, Forks, WA

COUNTY: Jefferson

SALE LOCATION: Sale located approximately 31 miles southeast of Forks WA

**PRODUCTS SOLD
AND SALE AREA:**

All timber, except downed red cedar, timber that has been on the ground five years or more (five years is defined by more than 1.5 inches of sap rot) and trees marked with a band of blue paint or bounded out by leave tree area tags, bounded by timber sale boundary tags, timber type change and the C-1011 Road in Unit 1; timber sale boundary tags in Units 2 and 8; timber sale boundary tags, timber type change and the C-2600 Road in Unit 3; timber type change and the Peterson Pit Road in Unit 4; timber type change in Unit 5; timber sale boundary tags, timber type change and the Hoh Clearwater Mainline in Unit 6; timber sale boundary tags, Peterson Pit Road and timber type change in Unit 7; timber sale boundary tags, timber type change and the C-2501 Road in Unit 9; all timber marked with a band of orange paint along the C-1010 Road; located on part(s) of Sections 13, 14, 23 and 24 all in Township 25 North, Range 12 West, Sections 19 all in Township 25 North, Range 11 West, W.M., containing 68 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg Ring DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Hemlock	13.5	6	1,003						196	579	211	18
Douglas fir	17.5	5	882						417	346	98	22
Spruce	16.7		106						32	62	11	1
Red alder	11.7		53							1	37	15
Silver fir	19		11						8	3		
Red cedar	10.5		3									3
Sale Total			2,058									

MINIMUM BID: \$441,000.00

BID METHOD: Sealed Bids

**PERFORMANCE
SECURITY:**

\$88,200.00

SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2018

ALLOCATION: Export Restricted

BID DEPOSIT: \$44,100.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: 100% - Ground methods. 30 foot Equipment limitation Zones on all Type 5 waters.

ROADS: 5.15 stations of optional construction. 110.45 stations of optional pre-haul maintenance. 35.40 stations of deactivation.

ACREAGE DETERMINATION



TIMBER NOTICE OF SALE

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

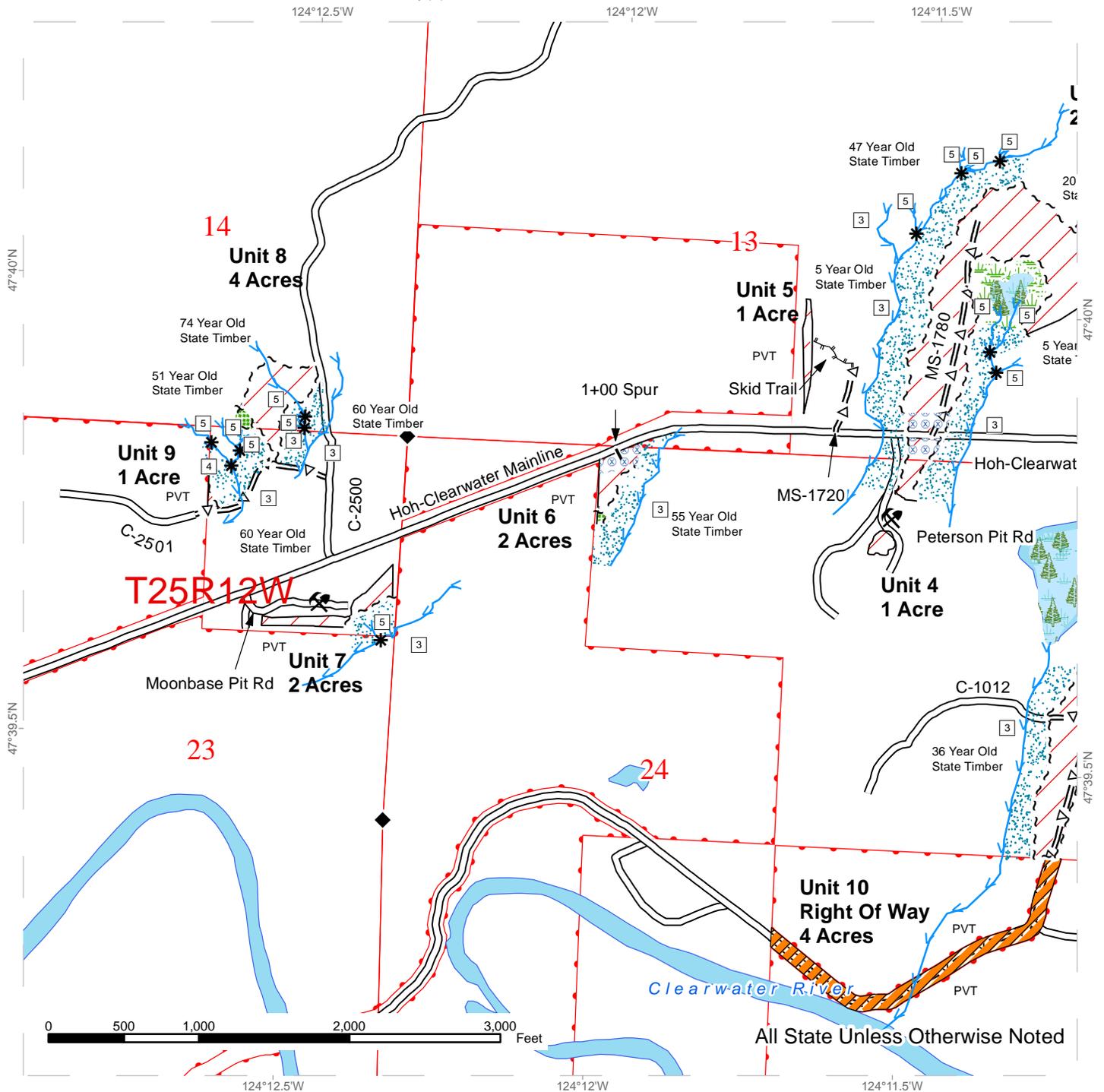
FEES: \$36,530.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: There are hazard abatement requirements along the Hoh-Clearwater Mainline.

TIMBER SALE MAP

SALE NAME: LOOSE ENDS
AGREEMENT #: 30-094140
TOWNSHIP(S): T25R12W, T25R11W
TRUST(S): Common School and Indemnity(3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 280-535



All State Unless Otherwise Noted

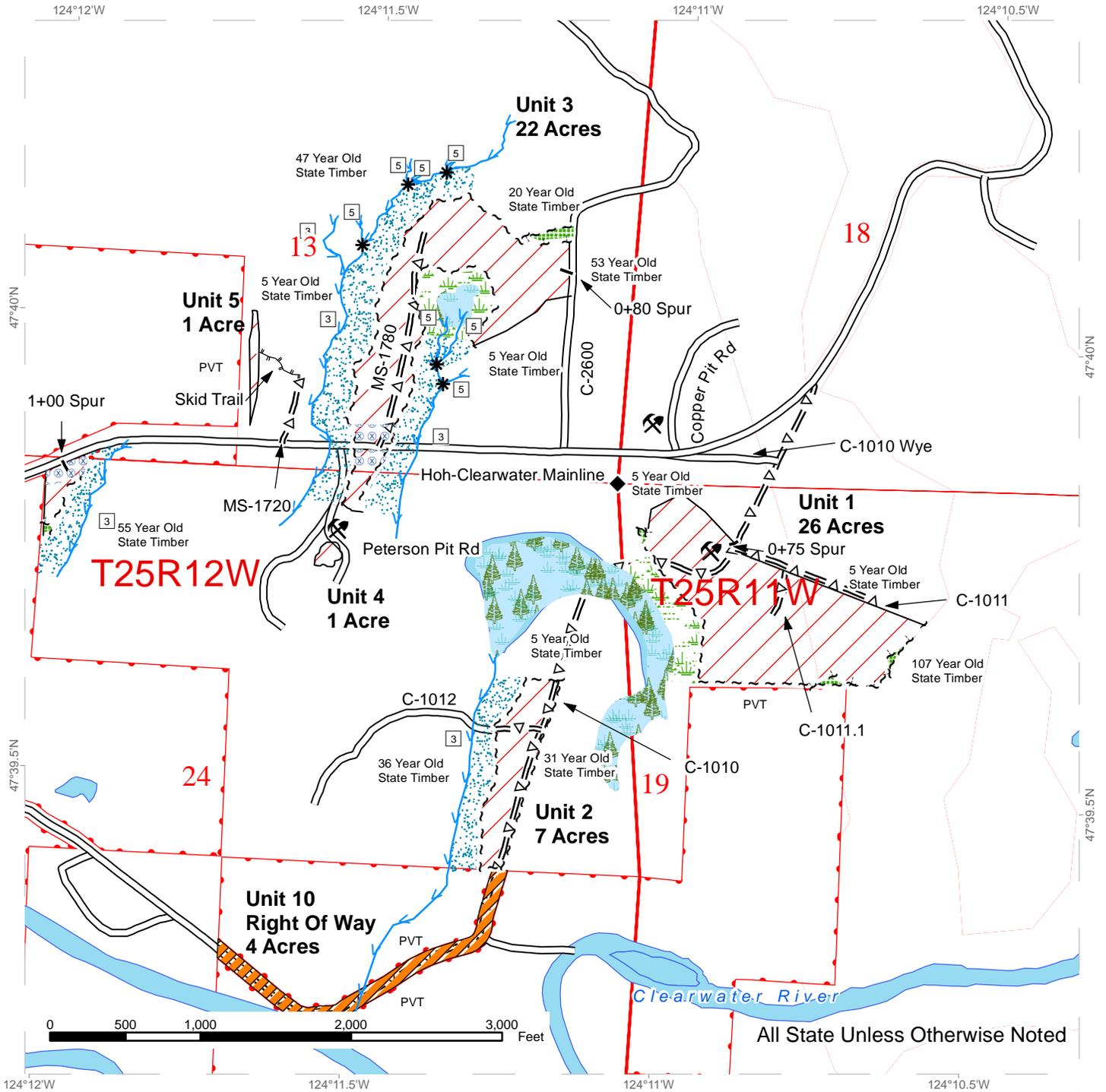
Stream Type	Existing Road	Hazard Abatement
Stream Type Break	Optional Pre-Haul Maintenance	Monumented Corners
Streams	Designated Skid Trail	Ground
Timber Sale Boundary Tags	Leave Tree Area	Section Lines
Leave Tree Tags	Riparian Management Zone	Townships
Timber Type Change	Right-Of-Way Unit	DNR Managed Lands
Optional Construction	Wetland Management Zone	Open Water
	Forested Wetland	



TIMBER SALE MAP

SALE NAME: LOOSE ENDS
AGREEMENT #: 30-094140
TOWNSHIP(S): T25R12W, T25R11W
TRUST(S): Common School and Indemnity(3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 280-535



All State Unless Otherwise Noted

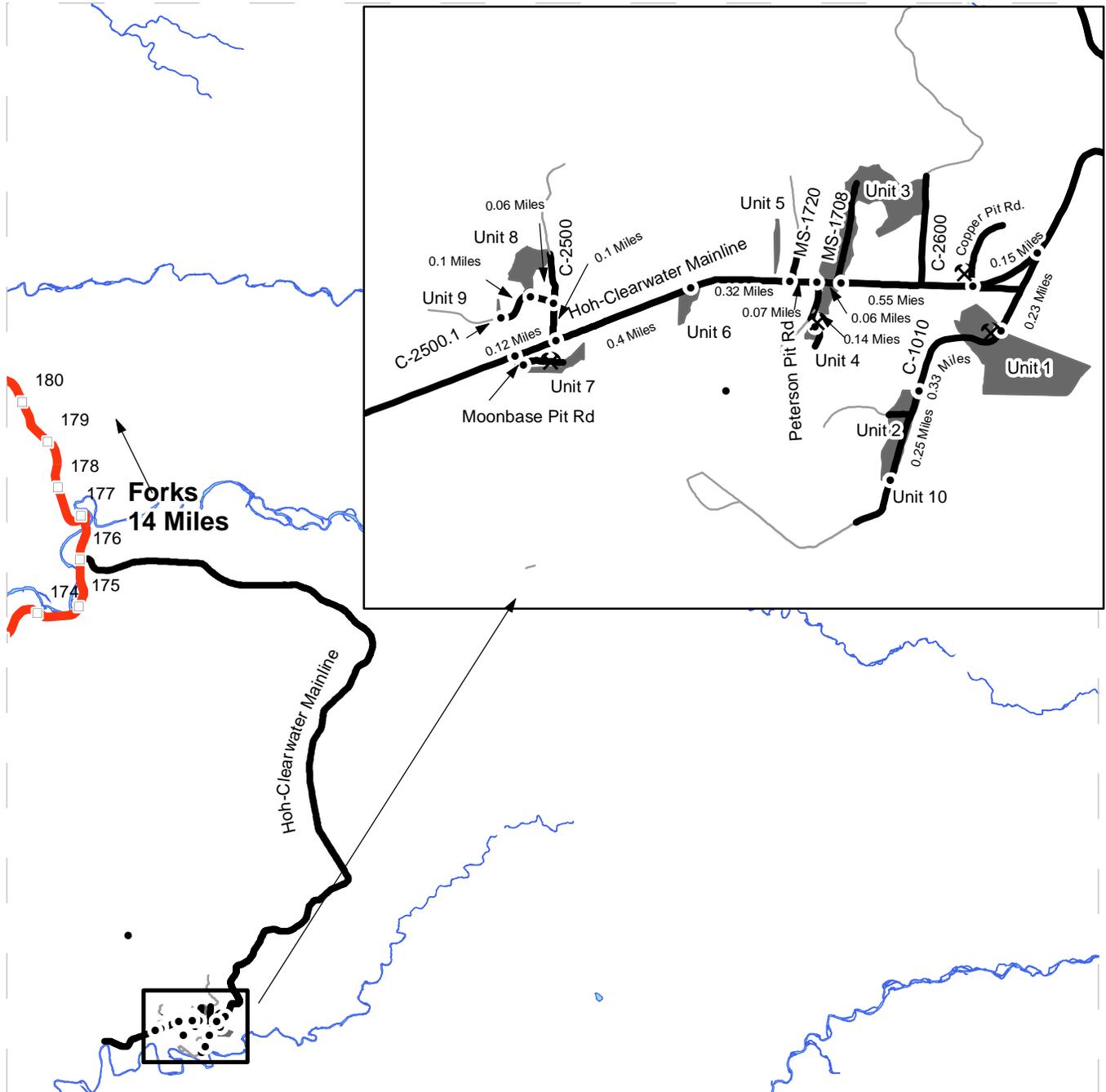
Stream Type	Existing Road	Hazard Abatement
Stream Type Break	Optional Pre-Haul Maintenance	Monumented Corners
Streams	Designated Skid Trail	Ground
Timber Sale Boundary Tags	Leave Tree Area	Section Lines
Leave Tree Tags	Riparian Management Zone	Townships
Timber Type Change	Right-Of-Way Unit	DNR Managed Lands
Optional Construction	Wetland Management Zone	Open Water
	Forested Wetland	



DRIVING MAP

SALE NAME: LOOSE ENDS
AGREEMENT#: 30-094140
TOWNSHIP(S): T25R12W, T25R11W
TRUST(S): Common School and Indemnity(3)

REGION: Olympic Region
COUNTY(S): JEFFERSON
ELEVATION RGE: 280'-535'



- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Milepost Markers
- Distance Indicator
- Rockpit

Unit 1: From Forks drive 14 miles south on HWY 101 then turn left onto the Hoh-Clearwater Mainline. Drive 16.5 miles to the C-1010 and continue 0.23 miles to the unit.
 Unit 2: From Unit 1 continue 0.33 miles to the unit.
 Unit 10: From Unit 2 continue 0.25 miles to the unit.
 Unit 3: From the junction of the Hoh-Clearwater Mainline and C-1010 continue on the mainline for 0.55 miles to the unit.
 Unit 4: From the start of Unit 3 on the mainline continue 0.06 miles to Peterson Pit Rd. Turn left and go 0.14 miles to the unit, which is in the middle of the pit.
 Unit 5: From the Hoh-Clearwater Mainline and Peterson Pit Rd junction continue 0.07 miles to the MS-1720. The unit will be the narrow strip to the Northeast in the regen unit.
 Unit 6: From the Hoh-Clearwater Mainline and MS-1720 junction continue 0.32 miles to the start of the unit.
 Unit 8: From the start of Unit 6 continue on the mainline for 0.4 miles to the C-2500. Turn right on the C-2500 and go for 0.1 miles to the C-2501. Turn left on the C-2501 and go for 0.06 miles to the start of the unit.
 Unit 9: From the start of Unit 8 continue on the C-2501 for 0.1 miles to the start of the unit.
 Unit 7: From the Hoh-Clearwater Mainline and the C-2500 continue on the mainline for 0.12 Miles to Moonbase Pit Rd. Turn left into the pit and the unit will be on the south side of the pit.
 Copper Pit: From the junction of the Hoh-Clearwater Mainline and the C-1010 go 0.15 miles to Copper Pit Rd.

**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-094140

SALE NAME: LOOSE ENDS

**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 December 14, 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, except downed red cedar, timber that has been on the ground five years or more (five years is defined by more than 1.5 inches of sap rot) and trees marked with a band of blue paint or bounded out by leave tree area tags, bounded by timber sale boundary tags, timber type change and the C-1011 Road in Unit 1; timber sale boundary tags in Units 2 and 8; timber sale boundary tags, timber type change and the C-2600 Road in Unit 3; timber type change and the Peterson Pit Road in Unit 4; timber type change in Unit 5; timber sale boundary tags, timber type change and the Hoh Clearwater Mainline in Unit 6; timber sale boundary tags, Peterson Pit Road and timber type change in Unit 7; timber sale boundary tags, timber type change and the C-2501 Road in Unit 9; all timber marked with a band of orange paint along the C-1010 Road., located on approximately 68 acres on part(s) of Sections 13, 14, 23, and 24 all in Township 25 North, Range 12 West, Section 19 in Township 25 North, Range 11 West W.M. in Jefferson 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	SLASH PILING SPECS
B	GREEN TREE RETENTION PLAN

G-031 Contract Term

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

G-040 Contract Term Adjustment - No Payment

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

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

G-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 \$641.00 per acre per annum for the acres on which an operating release has not been issued.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The

descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.

- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

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

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

G-063 Incidental Take Permit Notification Requirements

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

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

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

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to Purchaser will be limited to a return of the initial deposit, unapplied payments, and credit for unamortized improvements made by Purchaser.

The State shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State Advice

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

G-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.

The pricing schedule has not been set for the sale.

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 Forks, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive,

modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the

State may terminate the rights of Purchaser under this contract and collect damages.

- b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.
- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

An operating release is a written document, signed by the State and Purchaser, indicating that Purchaser has been relieved of certain rights or responsibilities with regard to the entire or a portion of the timber sales contract. Purchaser and State may agree to an operating release for this sale, or portion of this sale, prior to the contract

expiration, when all contract requirements pertaining to the release area have been satisfactorily completed. Upon issuance of a release, Purchaser's right to cut and remove forest products on the released area will terminate.

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; C-1010, C-1011, C-1011.1, C-1012, C-2501, MS-1708, MS-1720, 0+75 Spur, 0+80 Spur, 1+00 Spur, and the Hoh-Clearwater Mainline. 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 Hoh-Clearwater Mainline, C-1010, C-2500, C-2600 and Peterson Pit Roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easement #55-000467 with Bert Cole

G-430 Open Fires

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

Section P: Payments and Securities

P-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 \$55,052.00. The total contract price consists of a \$0.00 contract bid price plus \$55,052.00 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 \$88,200.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

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

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

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

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale area, as approved by the Contract Administrator. Purchaser may

be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

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

H-017 Preventing Excessive Soil Disturbance

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

H-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-080 Snags Not to be Felled

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. Purchaser must have utility lines located before beginning operations, including road construction and digging next to the Hoh-Clearwater Mainline @ MP 17.1 and 17.2.
2. While felling timber, two warning signs must be posted on the Hoh-Clearwater Mainline, C-1010, C-2500, and C-2600 Roads.
3. The Purchaser shall notify all employees and contractors working on this sale that any danger tree, marked or unmarked may be felled. Any felled marked danger tree shall be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

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

H-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 6/30/2016 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the 0+75 Spur, 0+80 Spur, 1+00 Spur, MS-1708, MS-1720, C-1011, C-1011.1, C-1012 and C-2051 Roads. 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 Hoh-Clearwater Mainline, C-1010 Road, and any roads not covered in C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-140 Water Bars

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

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

the State shall be promptly notified whenever an incident occurs requiring an emergency response.

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

S-010 Fire Hazardous Conditions

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

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

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

S-020 Extreme Hazard Abatement

Purchaser shall provide a written Extreme Hazard Abatement plan that meets the requirements of WAC 332-24 prior to the beginning of logging operations. The plan must be acceptable to the Contract Administrator. The plan will identify how Purchaser will accomplish abatement. Purchaser shall also provide, and keep current, a written timetable for completion of all specified work in the plan. The Contract Administrator's acceptance and approval of Purchaser's hazard abatement plan shall not be construed as any statement or warranty that the hazard abatement plan is adequate for Purchaser's purposes or complies with applicable laws.

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

Slash or debris which enters any typed water or wetland 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-120 Stream Protection

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

S-131 Refuse Disposal

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

Section D: Damages

D-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 \$500.00 per tree for all damaged reserve trees that are not replaced in in Units 1 - 9.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Mona Griswold
Olympic Region Manager

Date: _____
Address: _____

Date: _____

CORPORATE ACKNOWLEDGEMENT
(Required for both LLC and Inc. Entities)

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

Schedule A
SLASH PILING SPECS

Specifications for Slash Piling

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

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

Schedule B
GREEN TREE RETENTION PLAN

Leave the following as directed by the Contract Administrator:

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

Unit #	# of Individually Marked Trees	# of Clumps	# of Trees Clumped	Total # of Leave Trees
1	30	3	169	199
2	55	0	0	55
3	0	1	120	120
5	6	0	0	6
6	13	0	0	13
7	22	0	0	22
8	0	1	35	35
9	8	0	0	0



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 4/09)

Cruise Narrative

Sale Name: Loose Ends	Region: Olympic
Agreement #: 30-094140	District: Coast
Lead Cruiser: Kevin Peterson	Completion Date: 5/17/2016
Other Cruisers: None	

Unit acreage specifications:

Unit #	Cruised Acres	Cruised acres agree with sale acres? Y/N	If acres do not agree explain why.
1	26	Y	
2	7	Y	
3	21.5	Y	
4	0.5	Y	
5	0.75	Y	
6	1.5	Y	
7	2	Y	
8	4	Y	
9	1	Y	
10	4	Y	
Total	68.25	Y	

Unit cruise specifications:

Unit #	Sample Type (VP,FP,ITS,100%)	Expansion Factor (baf,full/half)	Sighting Height (4.5', 16')	Grid Size (plot spacing)	Plot Ratio (cruise/count)	Number of plots
1	VP	54.44/40	4.5'	250 X 250	2:1	15
2	VP	54.44/40	4.5'	250 X 250	All Cruise	5
3	VP	54.44/40	4.5'	250 X 250	5:1	13
4	VP	40	4.5'	250 X 250	All Cruise	1
5	VP	54.44/40	4.5'	250 X 250	All Cruise	1
6	VP	54.44/40	4.5'	250 X 250	All Cruise	2
7	VP	54.44/40	4.5'	250 X 250	All Cruise	2
8	VP	54.44/40	4.5'	250 X 250	All Cruise	3
9	VP	54.44/40	4.5'	250 X 250	All Cruise	2
10	VP	20	4.5'	Every 600'	All Cruise	3

Sale/Cruise Description:

Minor species cruise intensity	Minor species sampled using same cruise plots. RA and RC were cruised with 40 BAF.				
Minimum cruise spec:	40% of Form Factor at 16 ft. D.O.B or 5 inch top.				
Average ring count:	DF =	5	WH =	6	SS = n/a
Leave/take tree description:	Leave tree clumps are bounded out with yellow tags, pink flashers and blue paint. Individual leave trees are marked with blue bands and two blue butt marks.				
Other conditions:	Exterior boundaries are marked with white tags and pink flashers				

Sort Description:	<p>HA– Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½” in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½” in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (minimum diameter 8”.)</p> <p>HB – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½” in diameter. May include logs with not more than two larger knots up to 2 ½” in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (minimum diameter 8”.)</p> <p>R – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.</p>
--------------------------	--

Field Observations:

This sale is located off the C-1000 in the Clearwater block. The sale has nine units and one right of way, totaling 68.25 harvestable acres. It is a 100% ground based sale with good access to the units.

The total volume for the sale is 2,058 MBF and is comprised of 49% Western Hemlock and 43% Douglas-fir. Traces of Sitka Spruce, Red Alder, Red Cedar and Silver-fir combine for about 8% of the volume. The average WH has a DBH of 13.5" and a bole height of 64', common defects are sweep and crooks. The average DF has a DBH of 17.5" and a bole height of 73', common defects are spike knots and forked tops.

Units 1 and 3 have 75% of the total sale volume.

Grants: 03

Prepared By: Kevin Peterson – Olympic Region Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T025 R011 S19 Ty00U1 THRU T025 R012 S24 Ty0U10				Project: LOOSE										Page 1								
				Acres 68.25										Date 5/17/2016								
														Time 8:30:15AM								
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99						
DF	D	2S		47	10.4	6,816	6,106	417			90	10		1		8	91	38	13	234	1.80	26.1
DF	D	3S		39	6.9	5,437	5,064	346		100				1	0	43	56	35	9	97	0.79	52.0
DF	D	4S		11	2.2	1,472	1,439	98	80	20			18	20	38	23	28	5	31	0.33	46.0	
DF	D	UT		3		319	319	22	17	83			76	24			12	6	18	0.35	18.1	
DF Totals				43	7.9	14,044	12,928	882	9	43	43	5	5	3	25	68	30	8	91	0.87	142.3	
WH	D	2S		19	.9	2,905	2,879	196			93	7			9	91	39	13	251	1.69	11.5	
WH	D	3S		58	1.7	8,628	8,477	579		100					29	71	37	8	99	0.74	85.3	
WH	D	4S		21	.6	3,108	3,088	211	82	18			14	49	23	13	26	5	29	0.29	107.1	
WH	D	UT		2		258	258	18	74	26			100				13	5	14	0.22	17.9	
WH Totals				49	1.3	14,899	14,703	1,003	18	62	18	1	5	10	24	61	30	7	66	0.60	221.8	
RA	D	3S		1		13	13	1		100				100			20	10	70	0.81	.2	
RA	D	4S		70	10.6	612	548	37		100			19	78		2	28	7	43	0.53	12.7	
RA	D	UT		29		220	220	15	100				83	17			15	5	16	0.25	14.2	
RA Totals				3	7.7	846	781	53	28	72			39	60		2	21	6	29	0.42	27.1	
SS	D	2S		30	42.5	822	473	32			62	38				100	40	15	190	1.39	2.5	
SS	D	3S		58	8.0	981	903	62		100					20	80	38	8	81	0.68	11.2	
SS	D	4S		11		163	163	11	100				100				17	5	19	0.25	8.7	
SS	D	UT		1		13	13	1		100			100				11	6	10	0.27	1.3	
SS Totals				5	21.6	1,978	1,551	106	10	59	19	12	11		12	77	29	7	65	0.69	23.7	
RC	D	4S		100	13.1	51	44	3	100					55		45	32	5	30	0.37	1.5	
RC Totals				0	13.1	51	44	3	100					55		45	32	5	30	0.37	1.5	
SF	D	2S		73	15.0	134	114	8		100						100	40	12	170	1.38	.7	
SF	D	3S		27		40	40	3		100						100	39	6	60	0.49	.7	
SF Totals				1	11.5	174	154	11		26	74				100	40	9	115	0.94	1.3		
Totals					5.7	31,992	30,160	2,058	14	54	29	3	6	8	23	63	29	7	72	0.69	417.7	

PROJECT STATISTICS										
PROJECT LOOSE										PAGE 1
										DATE 5/17/2016
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
025	011	19	ENDS	00U1	THR	68.25	47	235	S	W
025	012	24	ENDS	00U10						
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES			
TOTAL			47	235	5.0					
CRUISE			40	197	4.9	14,706	1.3			
DBH COUNT REFOREST										
COUNT			7	38	5.4					
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE TREES		TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOC		100	123.7	13.5	64	33.4	122.8	14,899	14,703	3,943
DOUG FIR		72	64.2	17.5	73	25.6	107.2	14,044	12,928	3,760
S SPRUCE		8	11.2	16.7	66	4.2	17.0	1,978	1,551	574
R ALDER		14	14.2	11.7	47	3.1	10.7	846	781	241
WR CEDAR		2	1.5	10.5	41	0.3	.9	51	44	18
PS FIR		1	.7	19.0	81	0.3	1.3	174	154	50
TOTAL		197	215.5	14.9	66	67.4	259.9	31,992	30,160	8,585
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		81.8	11.9	109	124	138				
DOUG FIR		113.9	16.6	54	64	75				
S SPRUCE		226.8	33.1	8	11	15				
R ALDER		345.6	50.4	7	14	21				
WR CEDAR		685.6	99.9	0	1	3				
PS FIR		685.6	99.9	0	1	1				
TOTAL		41.0	6.0	203	215	228	67	34	17	
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		74.4	10.8	110	123	136				
DOUG FIR		99.4	14.5	92	107	123				
S SPRUCE		230.1	33.5	11	17	23				
R ALDER		343.1	50.0	5	11	16				
WR CEDAR		685.6	99.9	0	1	2				
PS FIR		685.6	99.9	0	1	3				
TOTAL		41.1	6.0	244	260	275	67	34	17	
CL	68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		77.2	11.2	13,049	14,703	16,356				
DOUG FIR		105.3	15.3	10,945	12,928	14,912				
S SPRUCE		209.5	30.5	1,077	1,551	2,024				
R ALDER		361.9	52.7	369	781	1,192				
WR CEDAR		685.6	99.9	0	44	88				
PS FIR		685.6	99.9	0	154	308				
TOTAL		47.8	7.0	28,060	30,160	32,261	91	47	23	
CL	68.1	COEFF		V_BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		55.2	8.0	106	120	133				
DOUG FIR		73.1	10.7	102	121	139				
S SPRUCE		154.6	22.5	63	91	119				
R ALDER		337.2	49.1	35	73	112				

TC PSTATS		<u>PROJECT STATISTICS</u>							PAGE	2
		PROJECT		LOOSE			DATE		5/17/2016	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
025	011	19	ENDS	00U1	THR	68.25	47	235	S	W
025	012	24	ENDS	0U10						
CL	68.1		COEFF	V_BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	7	10
WR CEDAR			685.6	99.9	0	50	100			
PS FIR			685.6	99.9	0	117	234			
TOTAL			42.8	6.2	108	116	124	73	37	18

T025 R011 S19 T00U1										T025 R011 S19 T00U1				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
025	011	19	ENDS	00U1	26.00	15	53	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
								Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf	
													4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
DF	DM	2S	56	7.8	13,670	12,603	328			91	9			4	96	40	14	255	1.84	49.5					
DF	DM	3S	34	5.1	8,167	7,748	201			100				44	56	36	9	110	0.86	70.4					
DF	DM	4S	7	2.3	1,525	1,490	39	57	43			13	4	60	24	31	6	39	0.39	38.4					
DF	DM	UT	3		536	536	14	21	79			100				11	6	13	0.31	40.0					
DF	Totals		62	6.4	23,898	22,377	582	4	39	51	5	3	0	21	75	31	9	113	1.04	198.2					
WH	DM	2S	26		2,857	2,857	74			100				100		40	13	264	1.66	10.8					
WH	DM	3S	52	.4	5,493	5,470	142			100				14	86	39	9	112	0.77	48.7					
WH	DM	4S	20		2,179	2,179	57	83	17			12	50	19	19	27	5	30	0.28	73.5					
WH	DM	UT	2		169	169	4	44	56			100				13	5	14	0.29	12.2					
WH	Totals		29	.2	10,699	10,675	278	18	56	27		4	10	11	74	31	7	74	0.62	145.2					
SS	DM	2S	31	53.1	1,630	765	20			100				100		40	14	136	0.99	5.6					
SS	DM	3S	58	10.4	1,551	1,389	36			100				17	83	38	8	83	0.70	16.8					
SS	DM	4S	9		222	222	6	100				100				17	5	20	0.27	11.1					
SS	DM	UT	2		33	33	1			100		100				11	6	10	0.27	3.3					
SS	Totals		7	29.9	3,437	2,410	63	9	59	32		11		10	80	30	8	65	0.67	36.8					
RA	DM	4S	74	4.0	715	686	18			100				100		30	7	50	0.53	13.7					
RA	DM	UT	26		234	234	6	100				100				15	5	17	0.21	13.7					
RA	Totals		3	3.0	949	920	24	25	75			25	75			22	6	34	0.43	27.4					
Type Totals				6.7	38,983	36,382	946	9	46	41	3	5	5	17	73	30	8	89	0.83	407.7					

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	011	19	ENDS	00U1	26.00	15	83	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		15	83	5.5						
CRUISE		10	53	5.3	5,140		1.0			
DBH COUNT										
REFOREST										
COUNT		5	30	6.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	31	75.0	20.4	84	37.7	170.6	23,898	22,377	6,374	6,374
WHEMLOC	14	92.3	13.2	63	24.0	87.1	10,699	10,675	2,779	2,779
S SPRUCE	4	16.8	17.8	68	6.9	29.0	3,437	2,410	1,006	729
R ALDER	4	13.7	11.9	52	3.1	10.7	949	920	262	262
TOTAL	53	197.7	16.6	71	73.0	297.4	38,983	36,382	10,421	10,143
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	56.0	15.0		64	75	86				
WHEMLOC	94.1	25.1		69	92	115				
S SPRUCE	178.2	47.6		9	17	25				
R ALDER	387.3	103.4			14	28				
TOTAL	37.0	9.9		178	198	217	59	30	15	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	52.4	14.0		147	171	194				
WHEMLOC	90.9	24.3		66	87	108				
S SPRUCE	171.7	45.8		16	29	42				
R ALDER	387.3	103.4			11	22				
TOTAL	25.0	6.7		278	297	317	27	14	7	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	50.3	13.4		19,370	22,377	25,384				
WHEMLOC	92.1	24.6		8,049	10,675	13,301				
S SPRUCE	157.7	42.1		1,395	2,410	3,425				
R ALDER	387.3	103.4			920	1,872				
TOTAL	27.9	7.5		33,671	36,382	39,094	33	17	8	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR				114	131	149				
WHEMLOC				92	123	153				
S SPRUCE	99.0	26.4		48	83	118				
R ALDER	387.3	103.4			86	176				
TOTAL	131.1	35.0		113	122	131	735	375	184	

T025 R012 S24 T00U2										T025 R012 S24 T00U2				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
025	012	24	ENDS	00U2	7.00	5	23	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre				Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
				Net BdFt	Def%	Gross	Net		Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft		CF/Lf
										4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH	DM	2S	9		1,972	1,972	14	100				100				32	12	160	1.28	12.3		
WH	DM	3S	61	3.4	13,170	12,716	89	100				92 8				32	8	74	0.62	172.4		
WH	DM	4S	25	2.5	5,451	5,312	37	67	33	15 57 23 5				25	5	28	0.30	187.7				
WH	DM	UT	5		892	892	6	100				100				16	5	20	0.17	44.6		
WH	Totals		79	2.8	21,485	20,892	146	21	69	9	8	14	71	6	27	7	50	0.48	417.0			
DF	DM	2S	64	13.7	4,226	3,646	26	100				13	87				27	13	132	1.47	27.6	
DF	DM	3S	9		499	499	3	100				70	30				21	8	50	0.55	10.0	
DF	DM	4S	13	16.4	884	739	5	61	39	46 20 33				32	5	33	0.47	22.6				
DF	DM	UT	14		760	760	5	100				100				30	10	110	0.73	6.9		
DF	Totals		21	11.4	6,369	5,645	40	8	27	65	15	22	59	4	28	9	84	0.90	67.1			
Type Totals				4.7	27,854	26,537	186	19	60	21	10	16	69	6	27	7	55	0.54	484.1			

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE			DATE	5/17/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	24	ENDS	00U2	7.00	5	23	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		5	23	4.6						
CRUISE		5	23	4.6	1,798		1.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	18	229.3	12.5	63	55.4	196.0	21,485	20,892	5,508	5,508
DOUG FIR	5	27.6	19.0	71	12.5	54.4	6,369	5,645	1,698	1,700
TOTAL	23	256.9	13.4	64	68.5	250.4	27,854	26,537	7,206	7,208
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		57.6	28.6	164	229	295				
DOUG FIR		77.4	38.4	17	28	38				
TOTAL		49.1	24.4	194	257	320	119	61	30	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		42.1	20.9	155	196	237				
DOUG FIR		70.7	35.1	35	54	74				
TOTAL		29.2	14.5	214	250	287	42	21	11	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		48.5	24.1	15,860	20,892	25,924				
DOUG FIR		84.5	42.0	3,275	5,645	8,014				
TOTAL		36.3	18.0	21,756	26,537	31,317	65	33	16	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		48.5	24.1	81	107	132				
DOUG FIR		84.5	42.0	60	104	147				
TOTAL		36.3	18.0	87	106	125	65	33	16	

T025 R012 S13 T00U3 T025 R012 S13 T00U3
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 025 012 13 ENDS 00U3 21.50 13 50 S W

S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99					
WH	DM	2S	25	1.5	4,438	4,373	94			86	14			5	95	39	14	275	1.86	15.9
WH	DM	3S	56	1.6	9,702	9,551	205		100					12	88	39	9	112	0.81	85.2
WH	DM	4S	17		2,860	2,860	62	87	13			13	69	15	4	25	5	27	0.29	105.2
WH	DM	UT	2		238	238	5	58	42			100				12	6	13	0.25	18.8
WH	Totals		63	1.3	17,238	17,022	366	15	59	22	3	4	12	11	74	30	7	76	0.69	225.1
DF	DM	2S	39	22.1	3,304	2,573	55			82	18				100	40	13	213	1.82	12.1
DF	DM	3S	50	10.6	3,573	3,196	69		100					12	88	39	9	110	0.89	29.1
DF	DM	4S	9		614	614	13	100					19	40	42	35	5	36	0.35	17.0
DF	DM	UT	2		78	78	2		100			100				15	7	26	0.44	3.0
DF	Totals		24	14.6	7,569	6,460	139	9	51	33	7	1	2	10	87	37	9	105	0.94	61.3
RA	DM	4S	68	15.9	923	776	17		100			39	61			26	7	38	0.54	20.3
RA	DM	UT	32		363	363	8	100				74	26			15	5	15	0.27	25.0
RA	Totals		4	11.4	1,286	1,140	25	32	68			50	50			20	6	25	0.42	45.3
SS	DM	2S	32	10.0	639	575	12			100					100	40	19	540	3.95	1.1
SS	DM	3S	56	5.0	1,047	994	21		100					11	89	39	8	86	0.75	11.5
SS	DM	4S	12		209	209	4	100				100				18	5	20	0.24	10.4
SS	Totals		7	6.1	1,895	1,779	38	12	56		32	12		6	82	30	7	77	0.81	23.0
SF	DM	2S	73	15.0	425	362	8			100					100	40	12	170	1.38	2.1
SF	DM	3S	27		128	128	3		100						100	39	6	60	0.49	2.1
SF	Totals		2	11.5	553	489	11		26	74					100	40	9	115	0.94	4.3
Type Totals				5.8	28,541	26,890	578	14	56	23	6	5	10	9	75	30	7	75	0.73	359.0

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	13	ENDS	00U3	21.50	13	58	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		13	58	4.5						
CRUISE		11	50	4.5	4,070		1.2			
DBH COUNT										
REFOREST										
COUNT		2	8	4.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	29	121.6	14.4	62	36.4	138.2	17,238	17,022	4,654	4,654
DOUG FIR	11	29.1	19.2	80	13.4	58.6	7,569	6,460	2,119	2,112
R ALDER	6	25.0	11.6	43	5.4	18.5	1,286	1,140	384	384
S SPRUCE	3	11.5	16.3	64	4.1	16.8	1,895	1,779	553	553
PS FIR	1	2.1	19.0	81	1.0	4.2	553	489	158	158
TOTAL	50	189.3	15.1	62	60.7	236.2	28,541	26,890	7,868	7,861
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	66.7	19.2		98	122	145				
DOUG FIR	138.4	39.9		17	29	41				
R ALDER	219.4	63.2		9	25	41				
S SPRUCE	176.8	51.0		6	12	17				
PS FIR	360.6	103.9			2	4				
TOTAL	33.3	9.6		171	189	207	48	24	12	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	49.9	14.4		118	138	158				
DOUG FIR	133.8	38.6		36	59	81				
R ALDER	209.6	60.4		7	18	30				
S SPRUCE	156.1	45.0		9	17	24				
PS FIR	360.6	103.9			4	9				
TOTAL	18.1	5.2		224	236	249	14	7	4	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	53.8	15.5		14,383	17,022	19,661				
DOUG FIR	135.1	38.9		3,945	6,460	8,976				
R ALDER	212.4	61.2		442	1,140	1,837				
S SPRUCE	157.2	45.3		973	1,779	2,584				
PS FIR	360.6	103.9			489	998				
TOTAL	26.8	7.7		24,810	26,890	28,970	31	16	8	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC	43.1	12.4		104	123	142				
DOUG FIR	121.0	34.9		67	110	153				
R ALDER	212.4	61.2		24	62	100				
S SPRUCE	126.1	36.4		58	106	154				
PS FIR	360.6	103.9			117	238				
TOTAL	68.9	19.9		105	114	123	205	105	51	

T025 R012 S24 T00U4	T025 R012 S24 T00U4
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
025 012 24 ENDS 00U4 .50 1 6 S	W

S T	So rt	Gr ad	%	Bd. Ft. per Acre				Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
									Net		Gross		Log Scale Dia.				Log Length					Ln
				BdFt	Def%				4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
WH	DM	3S	56		13,804	13,804	7	100				100				32	8	67	0.55	205.9		
WH	DM	4S	41	6.8	10,800	10,066	5	71	29					16	19	29	36	26	5	27	0.29	369.7
WH	DM	UT	3		733	733	0	100						100				9	5	10	0.17	73.3
WH	Totals		100	2.9	25,338	24,604	12	32	68					10	8	68	15	26	6	38	0.39	648.9
Type	Totals			2.9	25,338	24,604	12	32	68					10	8	68	15	26	6	38	0.39	648.9

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	24	ENDS	00U4	0.50	1	6	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	6	6.0						
CRUISE		1	6	6.0	185		3.2			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	6	369.7	10.9	57	72.7	240.0	25,338	24,604	6,529	6,529
TOTAL	6	369.7	10.9	57	72.7	240.0	25,338	24,604	6,529	6,529
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										

T025 R012 S13 T00U5	T025 R012 S13 T00U5
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
025 012 13 ENDS 00U5 .75 1 4 S	W

S T	So rt	Gr ad	%	Bd. Ft. per Acre				Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
									4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
WH	DM	3S	74	20,571	20,571	15	100					24	76	37	7	68	0.50	300.4			
WH	DM	4S	26	7,190	7,190	5	100	51	25	25				21	5	24	0.21	300.4			
WH	Totals		100	27,761	27,761	21	26	74	13	6	24	56		29	6	46	0.39	600.9			
Type	Totals			27,761	27,761	21	26	74	13	6	24	56		29	6	46	0.39	600.9			

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT		LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
025	012	13	ENDS	00U5	0.75	1	4	S	W		
				TREES	ESTIMATED			PERCENT			
				PER PLOT	TOTAL			SAMPLE			
				PLOTS	TREES	PER PLOT	TREES	TREES			
TOTAL		1	4	4.0							
CRUISE		1	4	4.0	225		1.8				
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
WHEMLOC	4	300.4	11.5	71	64.1	217.8	27,761	27,761	6,906	6,906	
TOTAL	4	300.4	11.5	71	64.1	217.8	27,761	27,761	6,906	6,906	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	24	ENDS	00U6	1.50	2	13	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		2	13	6.5						
CRUISE		2	13	6.5	648		2.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	9	306.2	12.1	65	70.4	245.0	29,527	29,181	7,646	7,646
DOUG FIR	2	58.5	13.1	65	15.1	54.4	6,581	6,168	1,672	1,672
WR CEDAR	2	67.0	10.5	41	12.4	40.0	2,312	2,009	797	797
TOTAL	13	431.7	12.0	61	98.0	339.4	38,420	37,359	10,115	10,115
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		11.1	10.4	274	306	338				
DOUG FIR		141.4	132.4		59	136				
WR CEDAR		141.4	132.4		67	156				
TOTAL		33.2	31.1	297	432	566	77	39	19	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		47.1	44.1	137	245	353				
DOUG FIR		141.4	132.4		54	127				
WR CEDAR		141.4	132.4		40	93				
TOTAL		5.3	5.0	322	339	356	2	1	0	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		51.4	48.1	15,138	29,181	43,224				
DOUG FIR		141.4	132.4		6,168	14,337				
WR CEDAR		141.4	132.4		2,009	4,670				
TOTAL		9.2	8.6	34,145	37,359	40,573	6	3	1	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		51.4	48.1	62	119	176				
DOUG FIR		141.4	132.4		113	263				
WR CEDAR		141.4	132.4		50	117				
TOTAL		6.3	5.9	101	110	120	3	1	1	

T025 R012 S23 T00U7	T025 R012 S23 T00U7
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt	
025 012 23 ENDS 00U7 2.00 2 9 S W	

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/			
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
DF	DM	3S	52	9.1	13,611	12,374	25	100				100				32	7	50	0.45	247.5		
DF		DM 4S	48		11,134	11,134	22	100				44	21	17	18	23	5	25	0.22	437.0		
DF	Totals		100	5.0	24,745	23,507	47	47	53					21	10	61	8	26	6	34	0.32	684.4
Type Totals				5.0	24,745	23,507	47	47	53					21	10	61	8	26	6	34	0.32	684.4

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	23	ENDS	00U7	2.00	2	9	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		2	9	4.5						
CRUISE		2	9	4.5	874		1.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	9	437.0	10.1	55	76.9	245.0	24,745	23,507	5,704	5,704
TOTAL	9	437.0	10.1	55	76.9	245.0	24,745	23,507	5,704	5,704
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	7.9	7.4		405	437	469				
TOTAL	7.9	7.4		405	437	469	4	2	1	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	15.7	14.7		209	245	281				
TOTAL	15.7	14.7		209	245	281	17	9	4	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	32.3	30.2		16,403	23,507	30,611				
TOTAL	32.3	30.2		16,403	23,507	30,611	73	37	18	
CL:	68.1 %	COEFF	V-BAR/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	32.3	30.2		67	96	125				
TOTAL	32.3	30.2		67	96	125	73	37	18	

T025 R012 S14 T00U8	T025 R012 S14 T00U8
Twp 025 Rge 012 Sec 14 Tract ENDS Type 00U8 Acres 4.00 Plots 3 Sample Trees 16 CuFt S BdFt W	

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
									Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf	
														4-5	6-11	12-16	17+	12-20	21-30	31-35						36-99
WH	DM	2S		13	2.5	3,687	3,594	14	100				100				40	12	195	1.38	18.4					
WH	DM	3S		64	2.8	17,913	17,405	70	100				28 72				38	9	108	0.78	161.0					
WH	DM	4S		23		5,970	5,970	24	100				9	17	37	36	31	5	33	0.32	179.4					
WH	Totals			78	2.2	27,570	26,969	108	22	65	13					2	4	26	68	34	7	75	0.61	358.9		
DF	DM	2S		19	10.0	1,664	1,497	6	100				100				40	12	180	1.48	8.3					
DF	DM	3S		64	4.5	5,117	4,887	20	100				34 66				35	8	87	0.69	56.3					
DF	DM	4S		17		1,273	1,273	5	80	20					26	74				19	5	20	0.31	64.6		
DF	Totals			22	4.9	8,054	7,657	31	13	67	20				4	12	22	62	28	7	59	0.63	129.2			
Type Totals					2.8	35,624	34,627	139	20	65	15				3	6	25	67	33	7	71	0.62	488.1			

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	14	ENDS	00U8	4.00	3	16	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		3	16	5.3						
CRUISE		3	16	5.3	976		1.6			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	12	179.4	14.9	74	56.4	217.8	27,570	26,969	7,542	7,542
DOUG FIR	4	64.6	14.4	65	19.2	72.6	8,054	7,657	2,258	2,258
TOTAL	16	244.0	14.8	72	75.5	290.3	35,624	34,627	9,800	9,800
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		52.5	36.3	114	179	245				
DOUG FIR		96.7	66.9	21	65	108				
TOTAL		41.5	28.7	174	244	314	99	51	25	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		50.0	34.6	142	218	293				
DOUG FIR		86.6	59.9	29	73	116				
TOTAL		21.7	15.0	247	290	334	27	14	7	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		52.9	36.6	17,105	26,969	36,834				
DOUG FIR		86.7	60.0	3,066	7,657	12,249				
TOTAL		26.1	18.0	28,382	34,627	40,871	39	20	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	
WHEMLOC		52.9	36.6	79	124	169				
DOUG FIR		86.7	60.0	42	105	169				
TOTAL		26.1	18.0	98	119	141	39	20	10	

T025 R012 S23 T00U9	T025 R012 S23 T00U9
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
025 012 23 ENDS 00U9 1.00 2 10 S	W

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/			
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
WH	DM	3S	78	4.4	16,080	15,375	15	100				100				40	8	106	0.76	145.4		
WH		DM 4S	22		4,124	4,124	4	100				20	47	16	17	27	5	28	0.29	145.4		
WH	Totals		63	3.5	20,204	19,499	19	21	79					4	10	3	82	34	7	67	0.57	290.9
DF	DM	2S	19	10.0	2,495	2,246	2	100				100				40	12	180	1.48	12.5		
DF		DM 3S	64	4.5	7,676	7,331	7	100				34 66				35	8	87	0.69	84.4		
DF		DM 4S	17		1,910	1,910	2	80	20					26	74			19	5	20	0.31	96.9
DF	Totals		37	4.9	12,081	11,486	11	13	67	20				4	12	22	62	28	7	59	0.63	193.8
Type Totals				4.0	32,285	30,985	31	18	74	7				4	11	10	75	31	7	64	0.59	484.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE			DATE	5/17/2016	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	23	ENDS	00U9	1.00	2	10	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		2	10	5.0						
CRUISE		2	10	5.0	242		4.1			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOC	6	145.4	14.3	74	43.1	163.3	20,204	19,499	5,580	5,580
DOUG FIR	4	96.9	14.4	65	28.7	108.9	12,081	11,486	3,387	3,387
TOTAL	<i>10</i>	<i>242.4</i>	<i>14.3</i>	<i>70</i>	<i>71.9</i>	<i>272.2</i>	<i>32,285</i>	<i>30,985</i>	<i>8,967</i>	<i>8,967</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOC		71.4	66.9	48	145	243				
DOUG FIR		40.6	38.0	60	97	134				
TOTAL		<i>59.1</i>	<i>55.3</i>	<i>108</i>	<i>242</i>	<i>376</i>	<i>245</i>	<i>125</i>	<i>61</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	
WHEMLOC		47.1	44.1	91	163	235				
DOUG FIR				109	109	109				
TOTAL		<i>28.3</i>	<i>26.5</i>	<i>200</i>	<i>272</i>	<i>344</i>	<i>56</i>	<i>29</i>	<i>14</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	
WHEMLOC		56.3	52.7	9,225	19,499	29,772				
DOUG FIR		3.2	3.0	11,146	11,486	11,826				
TOTAL		<i>34.2</i>	<i>32.1</i>	<i>21,051</i>	<i>30,985</i>	<i>40,918</i>	<i>82</i>	<i>42</i>	<i>21</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	
WHEMLOC		56.3	52.7	56	119	182				
DOUG FIR		3.2	3.0	102	105	109				
TOTAL		<i>34.2</i>	<i>32.1</i>	<i>77</i>	<i>114</i>	<i>150</i>	<i>82</i>	<i>42</i>	<i>21</i>	

T025 R012 S24 T0U10										T025 R012 S24 T0U10				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
025	012	24	ENDS	0U10	4.00	3	13	S	W					

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/					
								4-5	6-11	12-16	17+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf					
DF	DM	3S	56	13.5	3,864	3,343	13	100				100				32	10	99	0.93	33.6				
DF	DM	4S	40	3.2	2,473	2,393	10	100					39	36	25	31	5	32	0.33	74.7				
DF	DM	UT	4		205	205	1	100					100					9	5	10	0.14	20.5		
DF	Totals		55	9.2	6,542	5,941	24	44	56					3	16	71	10	27	6	46	0.50	128.9		
WH	DM	3S	76		1,794	1,794	7	100				100				32	8	79	0.69	22.6				
WH	DM	4S	24		557	557	2	100				100				24	5	25	0.27	22.6				
WH	Totals		22		2,352	2,352	9	24	76					24	76					28	7	52	0.51	45.3
RA	DM	3S	17		218	218	1	100				100				20	10	70	0.81	3.1				
RA	DM	4S	59	15.4	837	708	3	100				26	43	31		29	7	37	0.44	19.0				
RA	DM	UT	24		287	287	1	100				57	43					14	5	15	0.20	19.0		
RA	Totals		11	9.6	1,342	1,214	5	24	76					47	35	18		21	6	30	0.39	41.0		
SS	DM	3S	83		1,027	1,027	4	100				100				32	6	50	0.37	20.5				
SS	DM	4S	17		205	205	1	100				100				12	5	10	0.17	20.5				
SS	Totals		11		1,232	1,232	5	17	83					17	83		22	6	30	0.32	41.1			
Type Totals				6.4	11,468	10,738	43	34	66					9	18	65	8	26	6	42	0.46	256.3		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	LOOSE		DATE	5/17/2016		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
025	012	24	ENDS	0U10	4.00	3	13	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		3	13	4.3						
CRUISE		3	13	4.3	547		2.4			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	6	74.7	12.8	56	18.8	67.2	6,542	5,941	1,782	1,782
WHEMLOC	2	22.6	13.5	62	6.1	22.4	2,352	2,352	647	647
R ALDER	4	19.0	11.4	57	4.0	13.3	1,342	1,214	345	345
S SPRUCE	1	20.5	10.0	59	3.5	11.2	1,232	1,232	285	285
TOTAL	<i>13</i>	<i>136.9</i>	<i>12.4</i>	<i>58</i>	<i>32.5</i>	<i>114.2</i>	<i>11,468</i>	<i>10,738</i>	<i>3,059</i>	<i>3,059</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	149.2	103.2			75	152				
WHEMLOC	173.2	119.8			23	50				
R ALDER	173.2	119.8			19	42				
S SPRUCE	173.2	119.8			21	45				
TOTAL	<i>54.1</i>	<i>37.4</i>		<i>86</i>	<i>137</i>	<i>188</i>	<i>168</i>	<i>86</i>	<i>42</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	132.3	91.5		6	67	129				
WHEMLOC	173.2	119.8			22	49				
R ALDER	173.2	119.8			13	29				
S SPRUCE	173.2	119.8			11	25				
TOTAL	<i>58.2</i>	<i>40.2</i>		<i>68</i>	<i>114</i>	<i>160</i>	<i>194</i>	<i>99</i>	<i>49</i>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	124.2	85.9		837	5,941	11,044				
WHEMLOC	173.2	119.8			2,352	5,169				
R ALDER	173.2	119.8			1,214	2,668				
S SPRUCE	173.2	119.8			1,232	2,709				
TOTAL	<i>57.2</i>	<i>39.6</i>		<i>6,485</i>	<i>10,738</i>	<i>14,991</i>	<i>188</i>	<i>96</i>	<i>47</i>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	124.2	85.9		12	88	164				
WHEMLOC	173.2	119.8			105	231				
R ALDER	173.2	119.8			91	200				
S SPRUCE	173.2	119.8			110	242				
TOTAL	<i>8.7</i>	<i>6.0</i>		<i>57</i>	<i>94</i>	<i>131</i>	<i>4</i>	<i>2</i>	<i>1</i>	

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

T025 R011 S19 Ty00U1	26.0
T025 R012 S13 Ty00U3	21.5
T025 R012 S24 Ty0U10	4.0

Project **LOOSE**
Acres **68.25**

Page No **1**
Date: **5/17/2016**
Time **8:30:16AM**

Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
WHEMLOC	8,441	15,136	8,612	31.88	17.78	0.60	2,691	2,691	1,017	1,003
DOUG FIR	4,384	9,712	7,314	58.51	26.41	0.85	2,566	2,565	958	882
S SPRUCE	765	1,617	1,019	41.79	19.78	0.69	392	320	135	106
R ALDER	970	1,852	452	16.95	8.88	0.43	164	164	58	53
PS FIR	46	91	97	74.23	37.12	0.93	34	34	12	11
WR CEDAR	100	100	28	11.90	11.90	0.37	12	12	3	3
Totals	14,706	28,508	17,522	39.35	20.30	0.69	5,860	5,786	2,183	2,058

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	13,736	26,656	17,070	40.93	21.09	0.70	5,695	5,622	2,126	2,005
H	970	1,852	452	16.95	8.88	0.43	164	164	58	53
Totals	14,706	28,508	17,522	39.35	20.30	0.69	5,860	5,786	2,183	2,058



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

FPA/N No: 2614405
 Effective Date: 8/21/2016
 Expiration Date: 8/21/2019
 Shut Down Zone: 650
 EARR Tax Credit: Eligible Non-eligible
 Reference: DNR, Loose Ends
Michelle Helms

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

Decision

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

FPA/N Classification

Number of Years Granted on Multi-Year Request

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

Conditions on Approval / Reasons for Disapproval

Issued By: Jenny Garstang Region: Olympic

Title: Forest Practice Forester Date: 8/21/2016

Copies to: Landowner, Timber Owner and Operator.

Issued in person: Landowner Timber Owner Operator By: Shannon A. Armitage

Appeal Information

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

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

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

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

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

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

And

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

Other Applicable Laws

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

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

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

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

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

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

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

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

DNR affidavit of mailing:

On this day _____, I placed in the United States mail at _____, WA,	
(date)	(post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # <u>2614405</u>	
_____	_____
(Printed name)	(Signature)

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

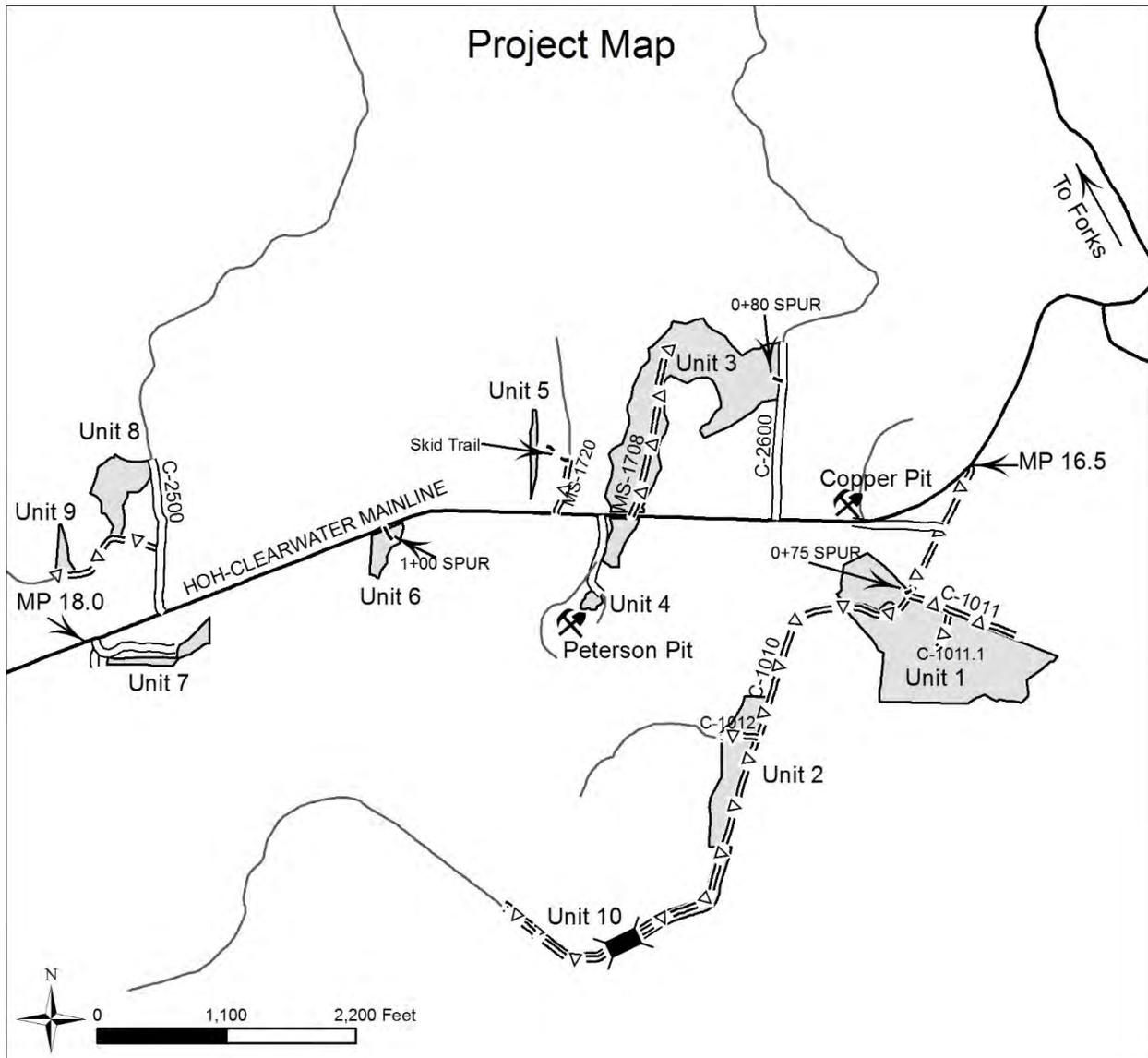
LOOSE ENDS TIMBER SALE ROAD PLAN
JEFFERSON COUNTY
COAST DISTRICT

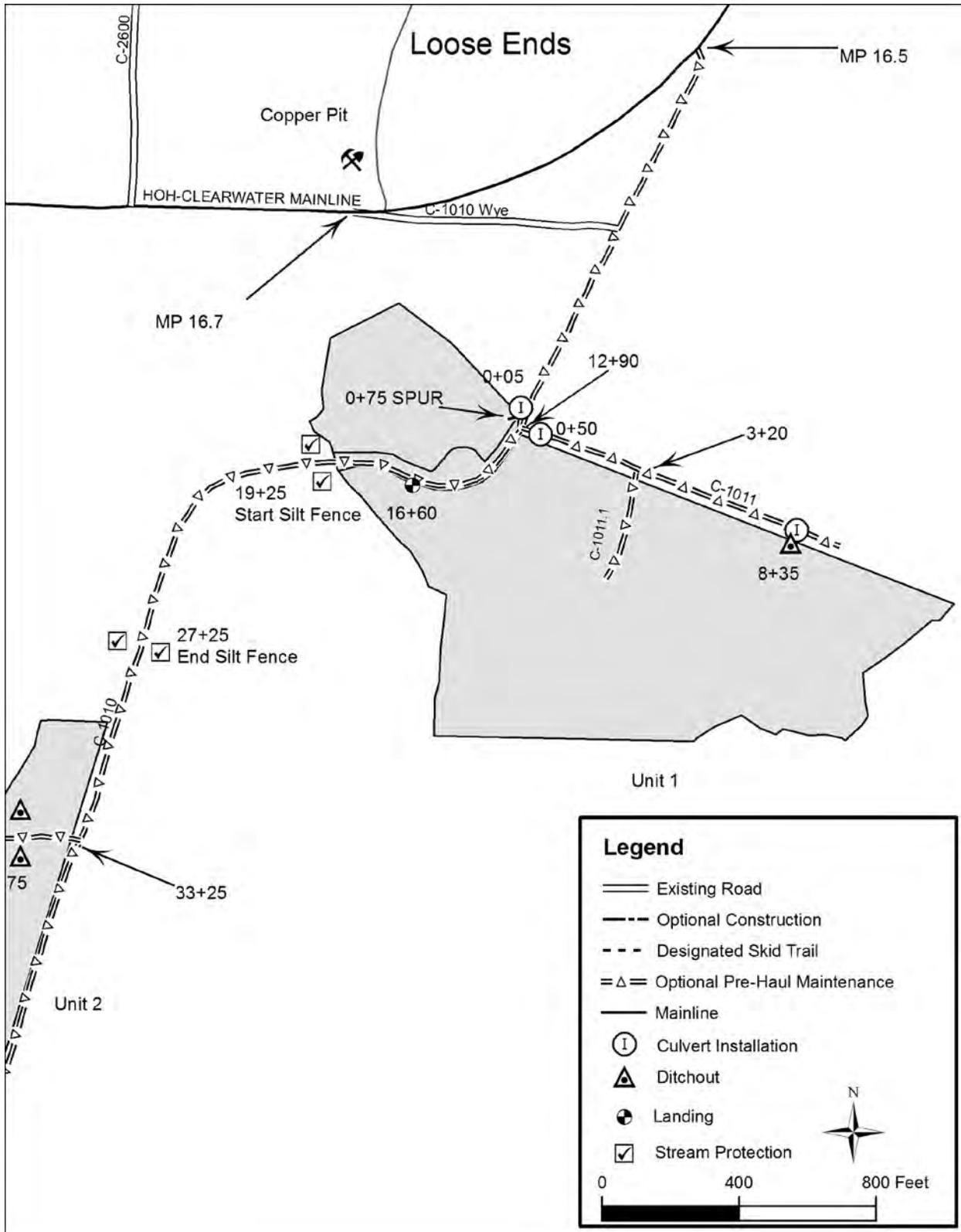
AGREEMENT NO.: 30-094140

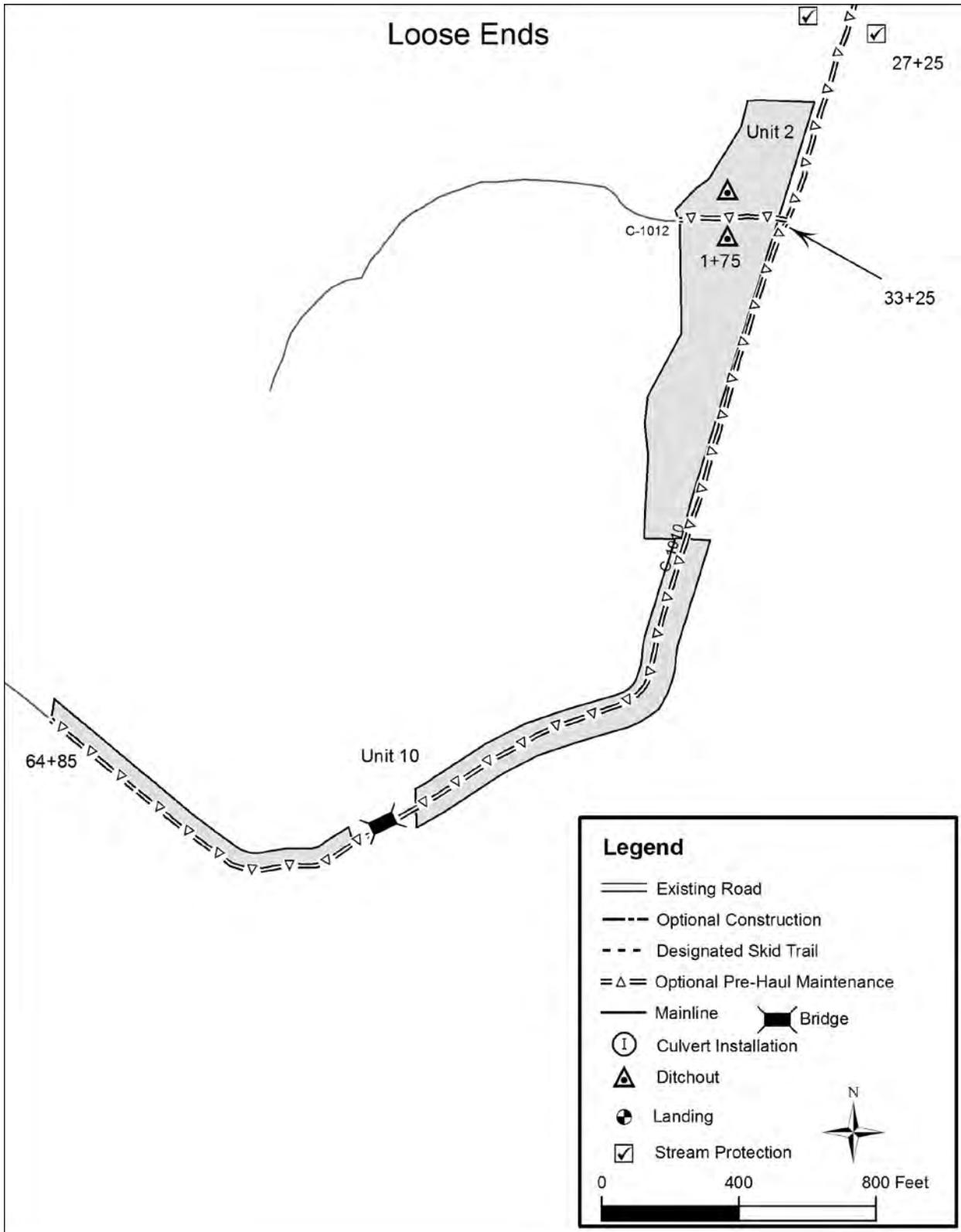
DISTRICT ENGINEER: BILL MEHL

DATE: 03 OCT 2016

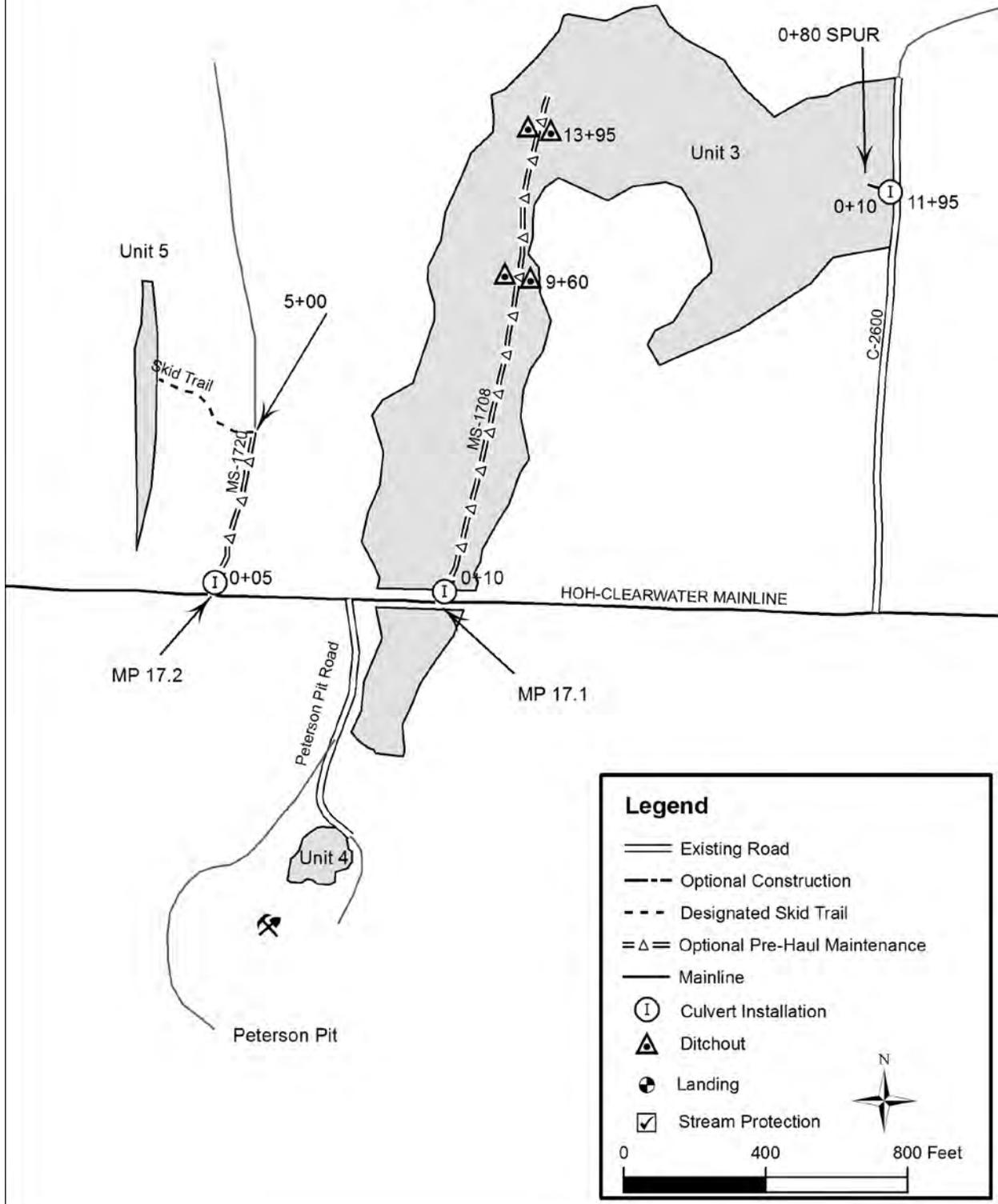
DRAWN & COMPILED BY: JED NOWAK

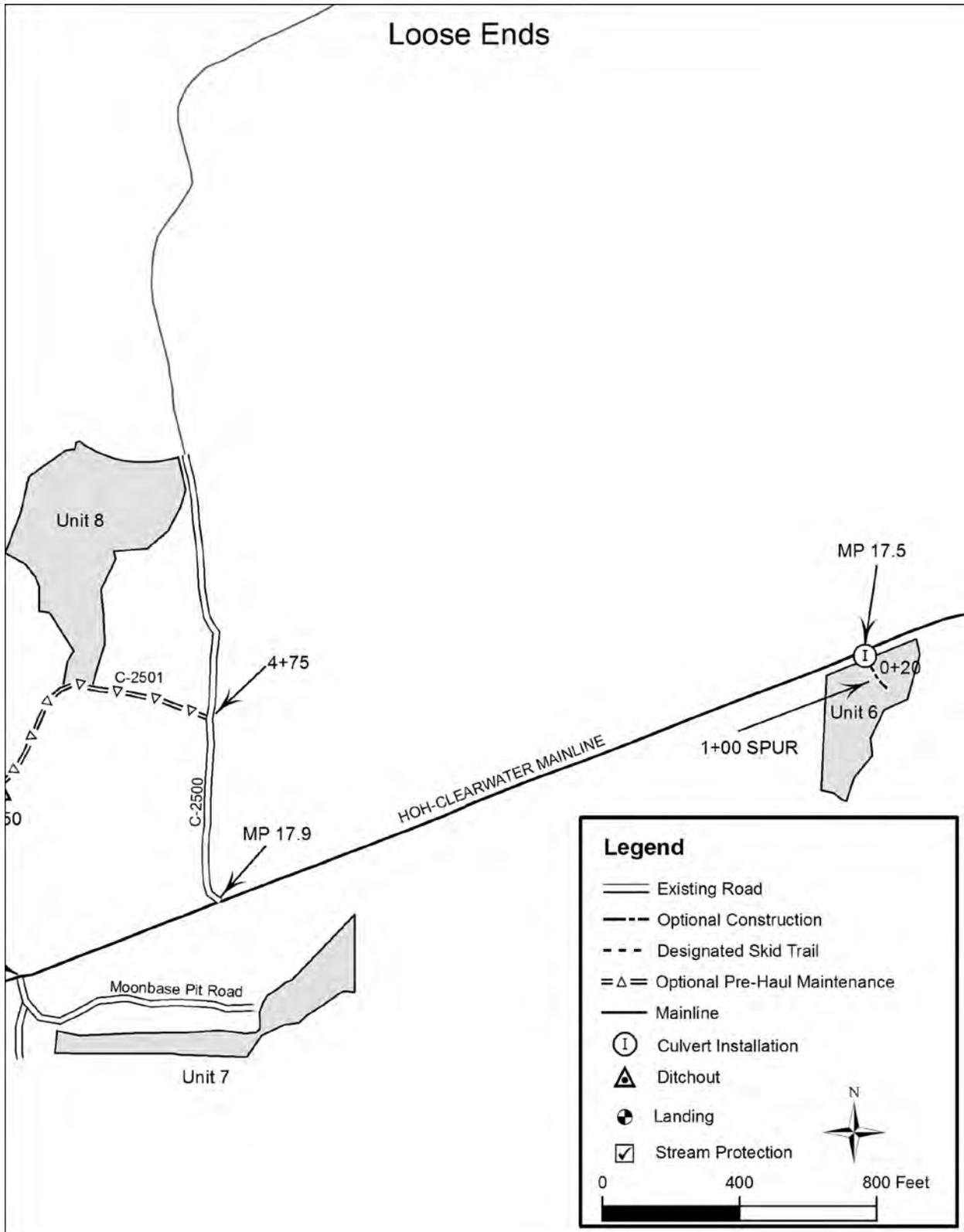


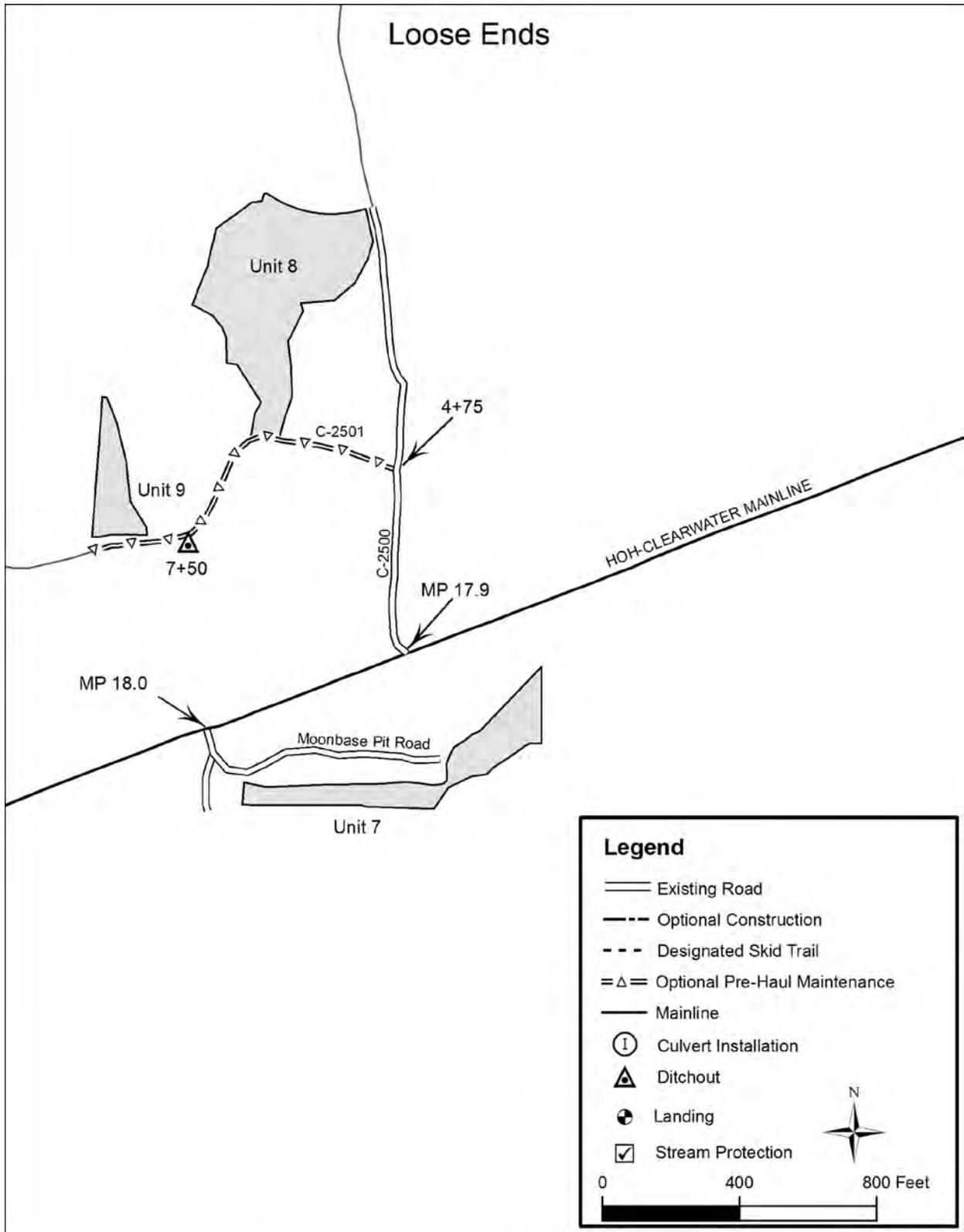


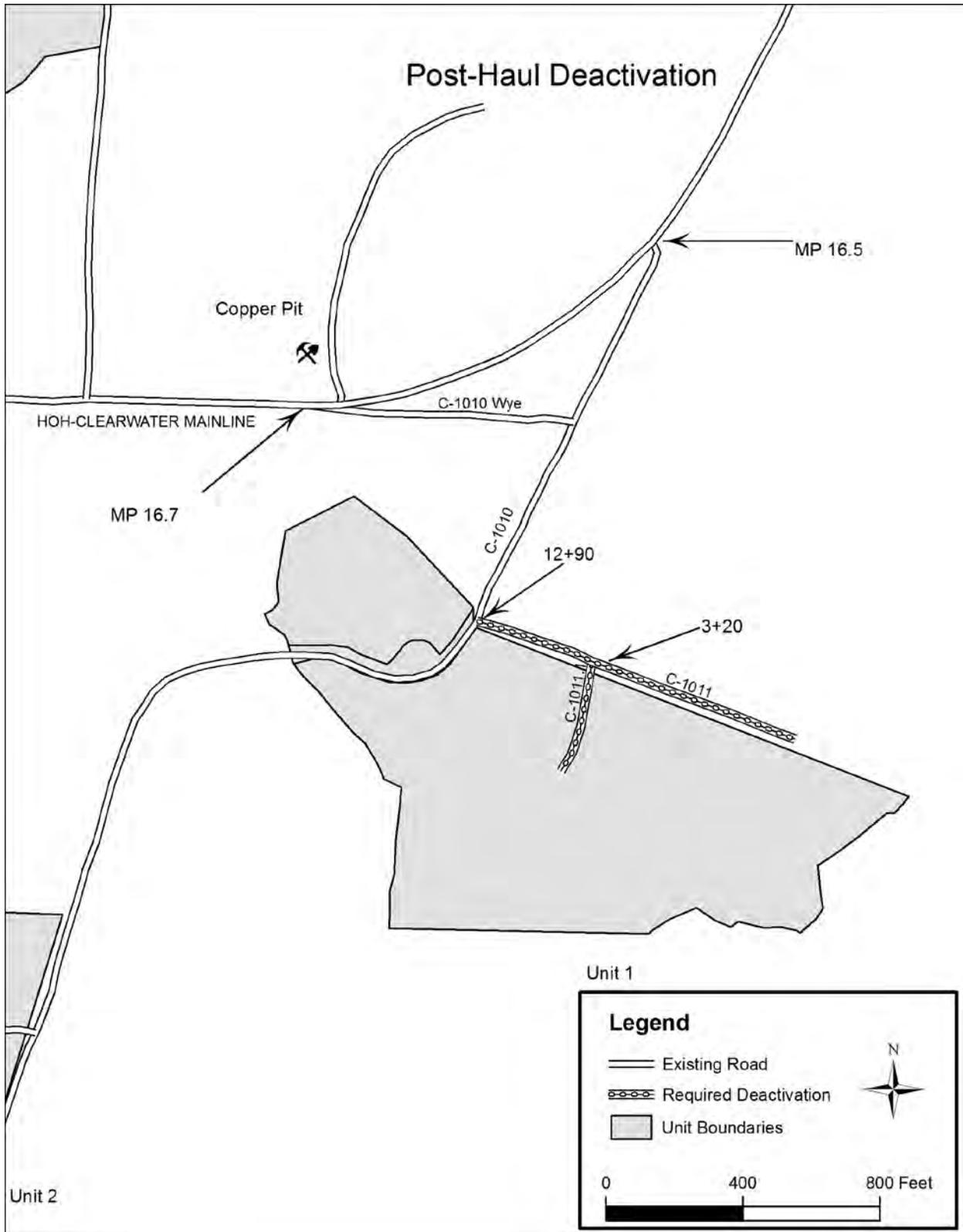


Loose Ends

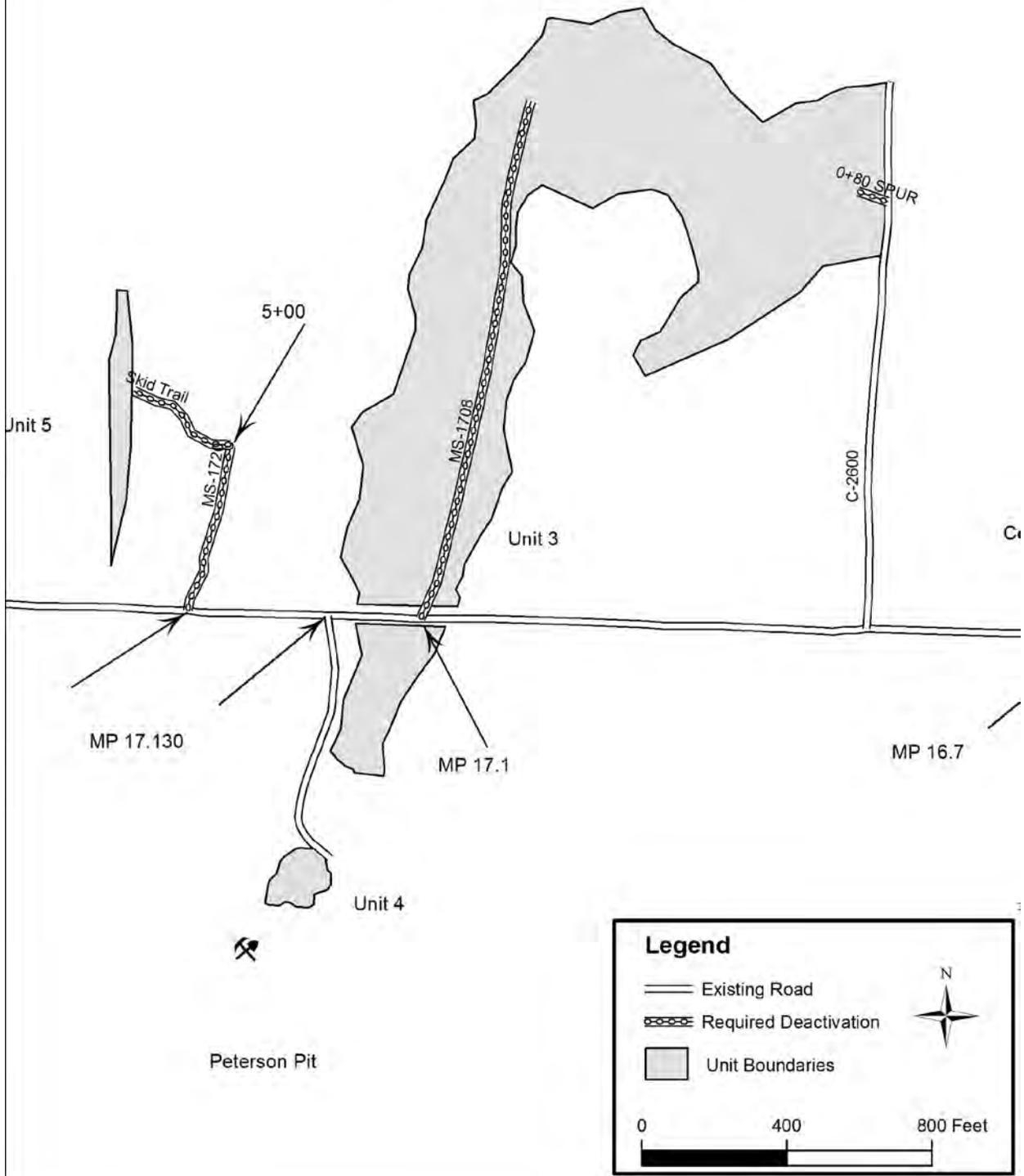








Post-Haul Deactivation



SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

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

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
C-1010	64.85	Pre-Haul Maintenance
0+75 SPUR	0.75	Construction
C-1011	9.50	Pre-Haul Maintenance
C-1011.1	3.00	Pre-Haul Maintenance
C-1012	3.70	Pre-Haul Maintenance
MS-1708	14.50	Pre-Haul Maintenance
MS-1720	5.00	Pre-Haul Maintenance
Skid Trail	2.60	Construction
1+00 SPUR	1.00	Construction
C-2501	9.90	Pre-Haul Maintenance
0+80 SPUR	0.80	Construction

0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
0+75 SPUR	0+00 – 0+75	See below.
1+00 SPUR	0+00 – 1+00	See below.
0+80 SPUR	0+00 – 0+80	See below.
Skid Trail	0+00 – 2+60	See below.

Construction includes, but is not limited to:

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

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
C-1010	0+00 – 64+85	Install sediment control in accordance with Clause 8-1. Apply rock in accordance with

		Rock List. Grade and shape road in accordance with Clause 2-5.
C-1011	0+00 – 9+50	Install culverts in accordance with Culvert List. Construct ditches in accordance with Clause 2-7 and Clause 4-5. Construct ditchout in accordance with Clause 4-29. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5. Compact road surface in accordance with Compaction List.
C-1011.1	0+00 – 3+00	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 3-23. Construct ditches in accordance with Clause 2-7 and Clause 4-5. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5. Compact road surface in accordance with Compaction List.
C-1012	0+00 – 3+70	Construct ditches in accordance with Clause 2-7 and Clause 4-5. Construct ditchouts in accordance with Clause 4-29. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5. Compact road surface in accordance with Compaction List.
MS-1720	0+00 – 5+00	Install culvert in accordance with Culvert List. Construct ditches in accordance with Clause 2-7 and Clause 4-5. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5. Compact road surface in accordance with Compaction List.
MS-1708	0+00 – 14+50	Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 3-23. Install culvert in accordance with Culvert List. Construct ditches in accordance with Clause 2-7 and Clause 4-5. Construct ditchouts in accordance with Clause 4-29. Apply rock in accordance with Rock List. Grade and shape road in accordance with Clause 2-5. Compact road surface in accordance with Compaction List.
C-2501	0+00 – 9+90	Construct ditches in accordance with Clause 2-7 and Clause 4-5. Construct ditchout in accordance with Clause 4-29. Grade and shape road in accordance with Clause 2-5. Compact road surface in accordance with Compaction List.

Maintenance includes, but is not limited to:

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

0-7 POST-HAUL MAINTENANCE

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

0-9 DEACTIVATION

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

0-13 STRUCTURES

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

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-6 ORDER OF PRECEDENCE

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

1. Addenda.
2. Designs or Plans. On designs and plans, figured dimensions shall take precedence over scaled dimensions.
3. Road Plan Clauses.

4. Typical Section Sheet.
5. Standard Lists.
6. Standard Details.

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

1-12 SURVEY MONUMENTS

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

1-13 LOG LOADING

At no time shall the loading of logs occur on the Hoh-Clearwater Mainline road. In addition, no debris from harvesting operations shall be allowed on this road.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

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

1-23 ROAD WORK PHASE APPROVAL

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

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

SUBSECTION RESTRICTIONS

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

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

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

1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION

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

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

1-33 SNOW PLOWING RESTRICTION

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

SUBSECTION OTHER INFRASTRUCTURE

1-43 ROAD WORK AROUND UTILITIES

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

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
MS-1720	0+00	Fiber Optics	Ken Gaydeski Century Link (360-374-2329)

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain the following road(s) in a condition that will allow the passage of light administrative vehicles.

<u>Road</u>	<u>Stations</u>
C-1010	0+00 – 64+85

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
C-1010	0+00 – 64+85	Grade and Shape
C-1011	0+00 – 9+50	Grade, Shape, and Compact
C-1011.1	0+00 – 3+00	Grade, Shape, and Compact
C-1012	0+00 – 3+70	Grade, Shape, and Compact
MS-1708	0+00 – 14+50	Grade, Shape, and Compact
MS-1720	0+00 – 5+00	Grade, Shape, and Compact
C-2501	0+00 – 9+90	Grade, Shape, and Compact

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

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

<u>Road</u>	<u>Stations</u>	<u>Left or Right</u>	<u>Comments</u>
C-1011	0+00 – 9+50	Left	
C-1011.1	0+00 – 3+00	Both Sides	
C-1012	0+00 – 3+70	Both Sides	
MS-1708	0+00 – 14+50	Both Sides	
MS-1720	0+00 – 5+00	Both Sides	
C-2501	7+50 – 8+50	Right	

2-9 REMOVING VEGETATIVE MATERIAL

On the following road(s), Purchaser shall remove all vegetative material, dirt, mud, and other debris on the existing road surface with a minimum loss of rock. Material removed shall be disposed of in accordance with Clause 4-36 through Clause 4-38.

<u>Road</u>	<u>Stations</u>
C-1011.1	0+00 – 3+00
MS-1708	0+00 – 14+50

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 5 inches DBH or over 15 feet high between the marked right-of-way boundaries or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-7 RIGHT-OF-WAY DECKING

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

3-8 PROHIBITED DECKING AREAS

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

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

SUBSECTION GRUBBING

3-10 GRUBBING

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

3-12 STUMP PLACEMENT

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

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all vegetative material not eligible for removal by Contract Clauses G-010 Products Sold And Sale Area or G-011 Right To Remove Forest Products And Contract Area, that is larger than one cubic foot in volume within the grubbing Typical Section Sheet.

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades road prism excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.

- On locations where brush will fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

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

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed:

- Grade and alignment shall have smooth continuity, without abrupt changes in direction.
- Maximum grade shall not exceed 18 percent favorable and 16 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Sag vertical curves shall not have a grade change greater than 5% in 100 feet.
- Crest vertical curves shall not have a grade change greater than 4% in 100 feet.

4-5 CUT SLOPE RATIO

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

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

Hardpan or solid rock

¼:1

400

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

4-12 FULL BENCH CONSTRUCTION

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

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

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

4-22 TURNAROUNDS

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

4-23 SUBGRADE FLARE FOR INTERSECTIONS

The MS-1708 and MS-1720 intersections with the Hoh-Clearwater Mainline shall be constructed/reconstructed to include additional intersection flare.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-27 DITCH WORK – MATERIAL USE PROHIBITED

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Ditchouts shall be constructed at locations shown on the list below, and as needed to fit as built conditions. Ditchouts shall be constructed in a manner that diverts ditch water onto the forest floor and shall have excavation backslopes no steeper than a 1:1 ratio. L or R denotes ditchout left or ditchout right heading in.

<u>Road</u>	<u>Stations</u>
C-1011	8+35 DOR
C-1012	1+75 DO L&R
MS-1708	9+60 DO L&R, 13+95 DO L&R
C-2501	7+50 DOL

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 45%.

- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

4-39 WASTE AREA COMPACTION

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

SUBSECTION BORROW

4-45 SELECT BORROW

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

4-46 COMMON BORROW

Common borrow shall consist of soil, and/or aggregate that is non-plastic and shall contain no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines (passes the U.S. #40 sieve) in the sample cannot be rolled between the hand and a smooth surface into a thread at any moisture content.

4-47 NATIVE MATERIAL

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

4-48 BORROW MATERIAL

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

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

4-56 DRY WEATHER SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

4-62 DRY WEATHER COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

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

4-64 WASTE MATERIAL COMPACTION

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

4-65 CULVERT BACKFILL COMPACTION

Culvert backfills on the 0+75 SPUR, C-1011, MS-1708, MS-1720, 1+00 SPUR, and 0+80 SPUR shall be accomplished by using a jumping jack compactor, performing at least 3 passes per lift, in lifts not to exceed 6 inches.

4-66 COMPACTION BY METHOD

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

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-11 UNUSED MATERIALS STATE PROPERTY

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

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

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

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

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

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

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

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Headwalls shall be constructed in accordance with the Typical Cross Drain Culvert Installation Detail at all cross drain culverts that specify the placement of rock. Rock used for headwalls shall consist of oversize or quarry spall material. Rock shall be placed on shoulders, slopes, and around culvert inlets and outlets. Rock shall not

restrict the flow of water into culvert inlets or catch basins. No end dumping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the Rock List may be obtained from the following source(s) on state land at no charge to the Purchaser. Use of material from any other source must have prior written approval from the Contract Administrator. If other operators are using, or desire to use, the rock source(s), a joint operating plan shall be developed. All parties shall follow this plan. The Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Copper Pit	T25N R11W Sec18	Pit Run, Crushed
Peterson Pit	T25N R12W Sec24	Crushed

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the Rock List may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall remove no more than 710 cubic yards of 1-1/2" minus crushed rock.

<u>Source</u>	<u>Location</u>	<u>Quantity (yd³)</u>
Crushed	Copper Pit	710 yd ³

6-5 ROCK FROM COMMERCIAL SOURCE

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

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources shall be in accordance with the following unless otherwise specified in Rock Source Development and reclamation plan:

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

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

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

6-15 REQUIRED ROCK SOURCE WORK

The following rock source work is required. Work is to be done according to the approved Rock Source Development Plan and as directed by the Contract Administrator.

<u>Site</u>	<u>Requirements</u>
Peterson Pit	4 hours dozer operation to dig and stockpile crushed rock

SUBSECTION ROCK GRADATIONS

6-29 1 ½-INCH MINUS CRUSHED ROCK

% Passing 1 ½" square sieve	100%
% Passing 1" square sieve	50 - 85%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths are defined as the compacted depth(s) using the compaction methods required in this Road Plan. Estimated quantities specified in the Rock List are estimated truck yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

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

6-72 ROCK APPLICATION AFTER HAULING

On the following road(s), upon completion of all hauling operations, Purchaser shall apply 1 1/2" minus crushed rock in accordance with the quantities shown on the Rock List.

<u>Road</u>	<u>Stations</u>	<u>Amount</u>
C-1010	29+20 – 64+85	710 yd ³

6-78 ROCK FOR SPOT PATCHING

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

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

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

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following road(s), Purchaser shall install silt fence as listed below.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
C-1010	19+25 – 27+25	Both sides of road

8-2 PROTECTION FOR EXPOSED SOIL

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

SUBSECTION REVEGETATION

8-15 REVEGETATION

Purchaser shall grass seed and hay mulch all exposed soils including, but not limited to, stream culverts, waste areas, sidecast pull back areas, stream crossing removals, bridge installations, and other areas directed by the Contract Administrator. Revegetation of exposed soils shall be accomplished by manual dispersal of grass seed unless otherwise detailed in this Road Plan. Other methods of revegetation must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

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

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

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

8-19 ASSURANCE FOR SEEDED AREA

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

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

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

<u>Seed Species</u>	<u>% by Weight</u>
• Perennial Ryegrass	40.00
• Creeping Red Fescue	40.00
• White Dutch Clover	10.00
• Colonial Bentgrass	10.00

Grass seed shall meet the following specifications:

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

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-3 REMOVAL OF CULVERT MATERIAL FROM STATE LAND

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

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
All	All	Clean culverts, clean ditches, grade road, shape and compact as directed by the Contract Administrator
C-1010 Wye	6.25	Clean culverts, clean ditches, grade road, shape and compact as directed by the Contract Administrator
Peterson Pit Road	5.75	Clean culverts, clean ditches, grade road, shape and compact as directed by the Contract Administrator
C-2500	12.60	Clean culverts, clean ditches, grade road, shape and compact as directed by the Contract Administrator

Moonbase Pit Road	9.50	Clean culverts, clean ditches, grade road, shape and compact as directed by the Contract Administrator
C-2600	15.00	Clean culverts, clean ditches, grade road, shape and compact as directed by the Contract Administrator
C-1010	35.65	Apply post haul rock as per Clause 6-72

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

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

SUBSECTION DEACTIVATION AND ABANDONMENT

9-20 ROAD DEACTIVATION

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
MS-1720	0+00 – 5+00	Light
Skid Trail	0+00 – 2+60	Light
MS-1708	0+00 – 14+50	Light
0+80 SPUR	0+00 – 0+80	Light
C-1011	0+00 – 9+50	Light
C-1011.1	0+00 – 3+00	Light

9-22 LIGHT DEACTIVATION

Deactivation shall consist of:

1. Removing all culverts. Resulting back slopes shall be 1:1 or shallower. Material removed shall be placed on the roadbed and compacted, with slopes of 2:1 or shallower. Culverts removed shall become the property of the Purchaser and removed from State land.
2. Construct non-drivable water bars as directed by the Contract Administrator. On grades in excess of 3%, non-drivable water bars shall be skewed 30 degrees from the perpendicular of the road centerline.
3. Restore all ditchouts to drain water.
4. Repair or construct ditchlines.
5. Remove any berms, except as directed.
6. Restoration of natural stream channels across road prism, as directed by the Contract Administrator.
7. Removing all fill material as approved by the Contract Administrator.

8. All material from fill removals, culvert removals, and bridge removals shall be placed on roadbed and compacted, except that material listed in Clause 4-37.

9. Purchaser shall furnish and apply grass seed to all areas of exposed soil, including but not limited to: water bars, waste piles, and culvert removal sites. Grass seed shall be applied at a rate of 60 pounds per acre.

10. Block road to vehicular traffic using logs, slash, and stumps, as directed by the Contract Administrator.

SECTION 10 MATERIALS

SUBSECTION GEOTEXTILES

10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

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

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

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-18 CORRUGATED STEEL STRUCTURAL PLATE

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

10-19 CORRUGATED ALUMINUM STRUCTURAL PLATE

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

10-20 FLUME AND DOWNSPOUT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

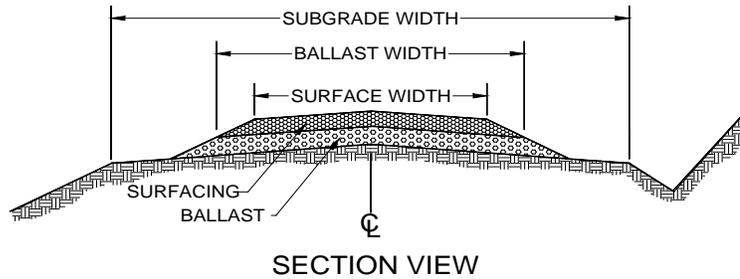
Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

10-24 GAGE AND CORRUGATION

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

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

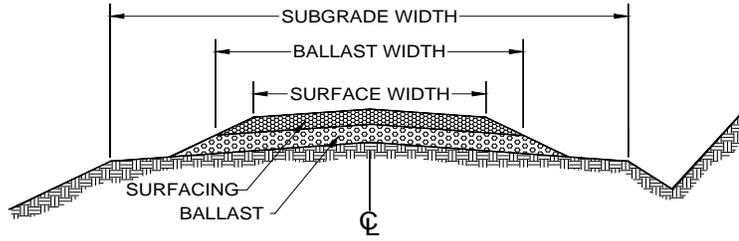
ROCK LIST SHEET



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

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd³/sta)	Pitrun SUBTOTAL(yd³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd³/sta)	Crushed Subtotal(yd³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd³)
C-1010															
Misc				1				30							
Landing	16+60			1				50							
Post-Haul Lift	29+20	64+85							2	12	4	20	710		
0+75 SPUR	0+00	0+75	17	1	12	18	110	80							
Culvert	0+05			1				20							
C-1011	0+00	9+50		1	12	2	10	100							
Culvert	0+50			1				20							
Culvert	8+35			1				20							
C-1011.1	0+00	3+00	17	1	12	18	110	330							
C-1012	0+00	3+70		1	12	6	35	130							
MS-1708	0+00	14+50		1	12	8	45	650							
Flared Approach	0+10			1				40							
Culvert	0+10			1				30							
MS-1720	1+00	5+00		1	12	4	20	80							
Lift	0+00	1+00							3	12	4	20	20		
Flared Approach	0+05								3				40		
Culvert	0+05			1				20							
1+00 SPUR	0+00	1+00	17	1	12	18	110	110							
Culvert	0+20			1				20							
Totals:								1730					710/60		0

ROCK LIST SHEET

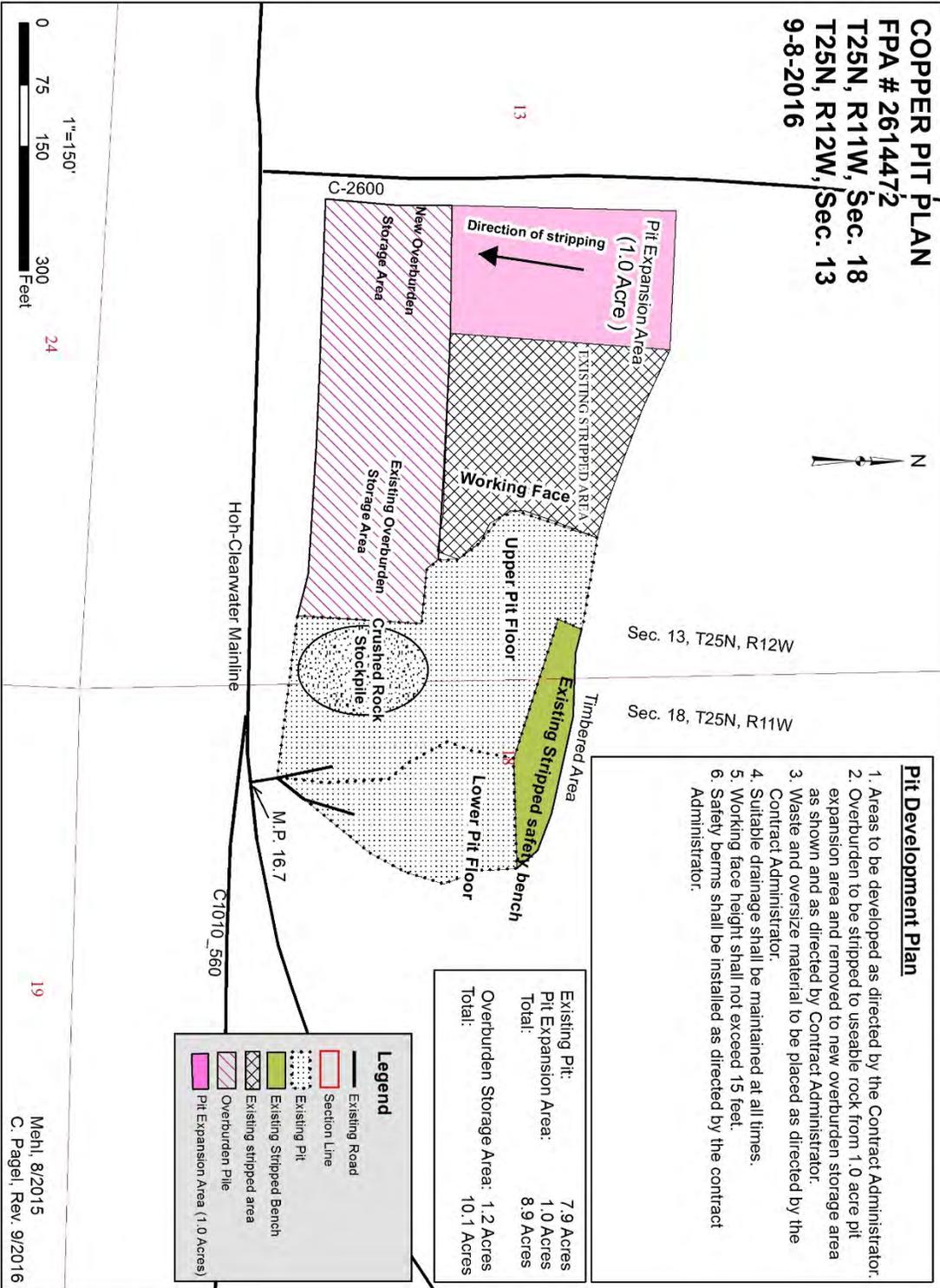


SECTION VIEW

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

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd³/sta)	Pitrun SUBTOTAL(yd³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd³/sta)	Crushed Subtotal(yd³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd³)
0+80 SPUR	0+00	0+80	17'	1	12'	18"	110	90							
Culvert	0+10			1				20							
Totals:							110						0		0
Grand Total:							1840						710/60		0

COPPER PIT PLAN
FPA # 2614472
T25N, R11W, Sec. 18
T25N, R12W, Sec. 13
9-8-2016



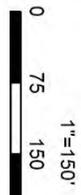
Pit Development Plan

1. Areas to be developed as directed by the Contract Administrator.
2. Overburden to be stripped to useable rock from 1.0 acre pit expansion area and removed to new overburden storage area as shown and as directed by Contract Administrator.
3. Waste and oversize material to be placed as directed by the Contract Administrator.
4. Suitable drainage shall be maintained at all times.
5. Working face height shall not exceed 15 feet.
6. Safety berms shall be installed as directed by the contract Administrator.

Existing Pit:	7.9 Acres
Pit Expansion Area:	1.0 Acres
Total:	8.9 Acres
Overburden Storage Area:	1.2 Acres
Total:	10.1 Acres

Legend

- Existing Road
- Section Line
- Existing Pit
- Existing Stripped Bench
- Existing stripped area
- Overburden Pile
- Pit Expansion Area (1.0 Acres)



24

19

Mehl, 8/2015
 C. Pagel, Rev. 9/2016

**Peterson Pit
T25N R12W Sec24**

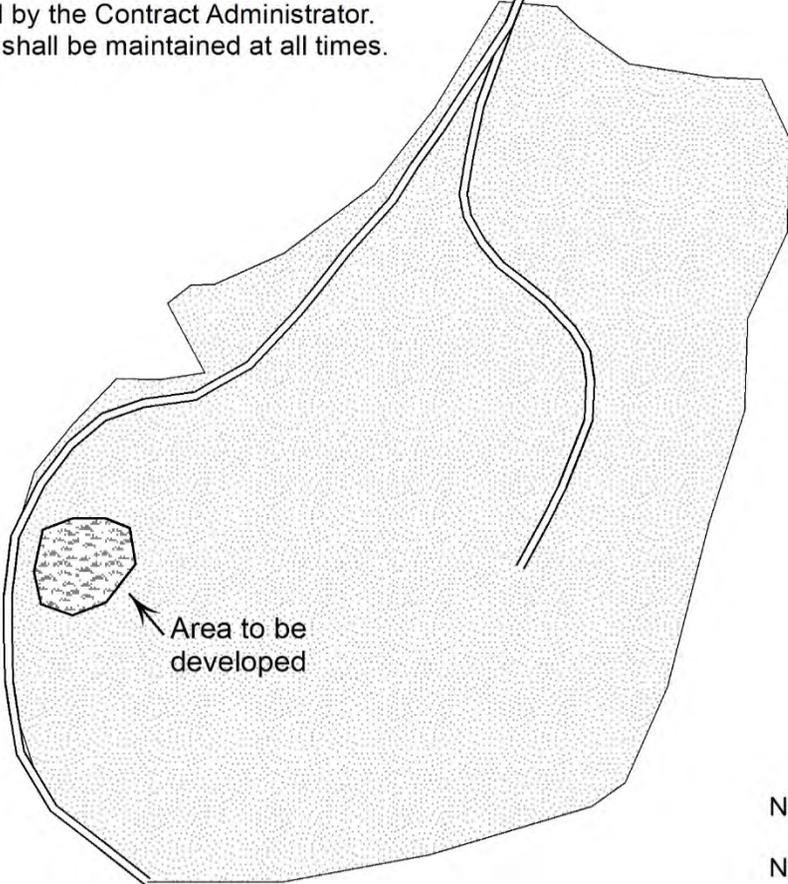
MP 17.130

Hoh-Clearwater Mainline

Pit Access Road

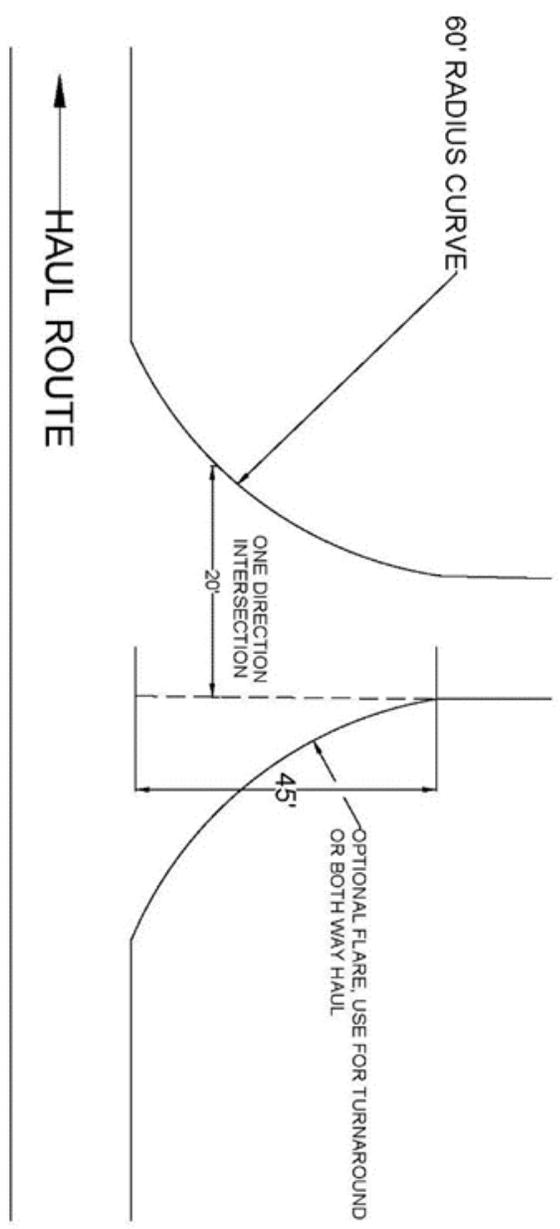
Rock Source Development Plan

- 1. Crushed rock to be dug and stockpiled per the Contract Administrator. 4 hours of dozer operation is required.
- 2. Waste material and oversize material shall be placed as directed by the Contract Administrator.
- 3. Suitable drainage shall be maintained at all times.



N
Not to Scale
Nowak 5/2016

TYPICAL INTERSECTION



NOT TO SCALE

Typical Type Ns, Np Culvert Installation Detail Sheet.

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

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

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

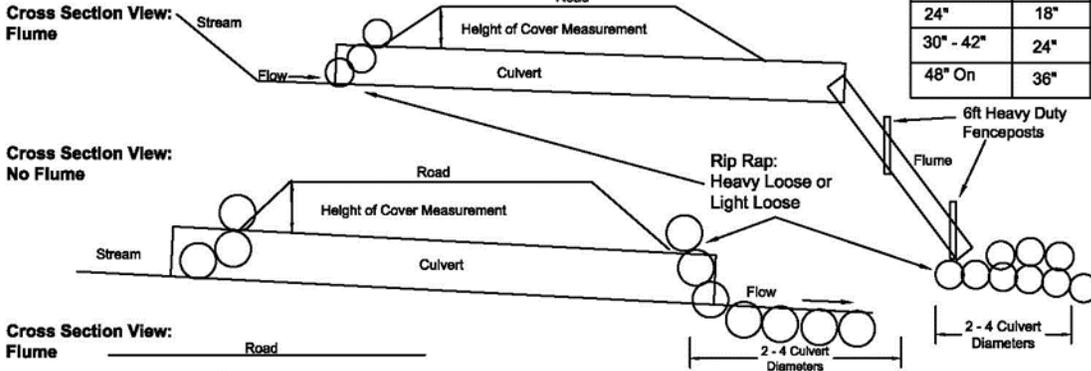
-Rip rap shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.

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

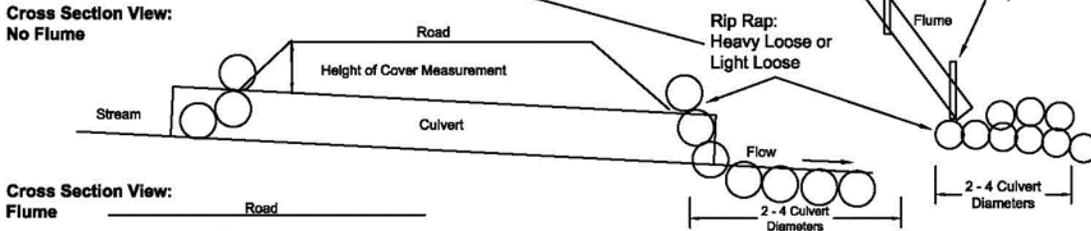
-Backfill compaction shall be achieved using a jumping jack, walk behind vibratory roller, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate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

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

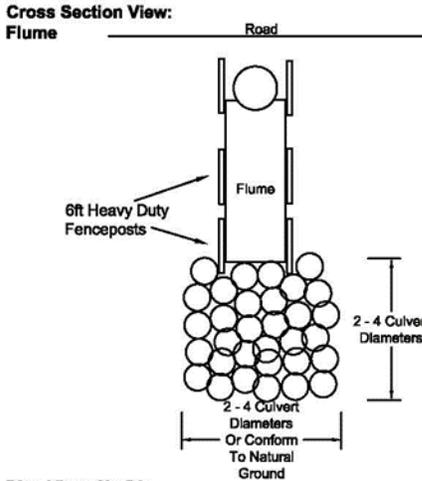
Cross Section View: Flume



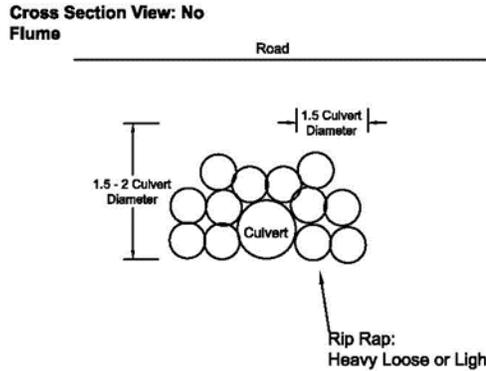
Cross Section View: No Flume



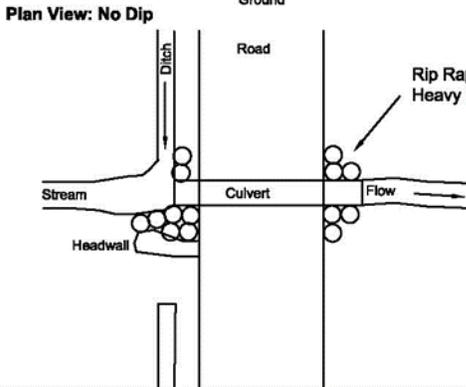
Cross Section View: Flume



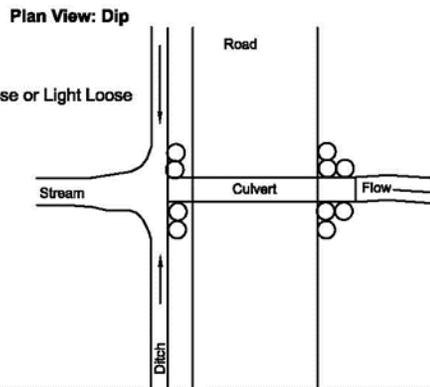
Cross Section View: No Flume



Plan View: No Dip



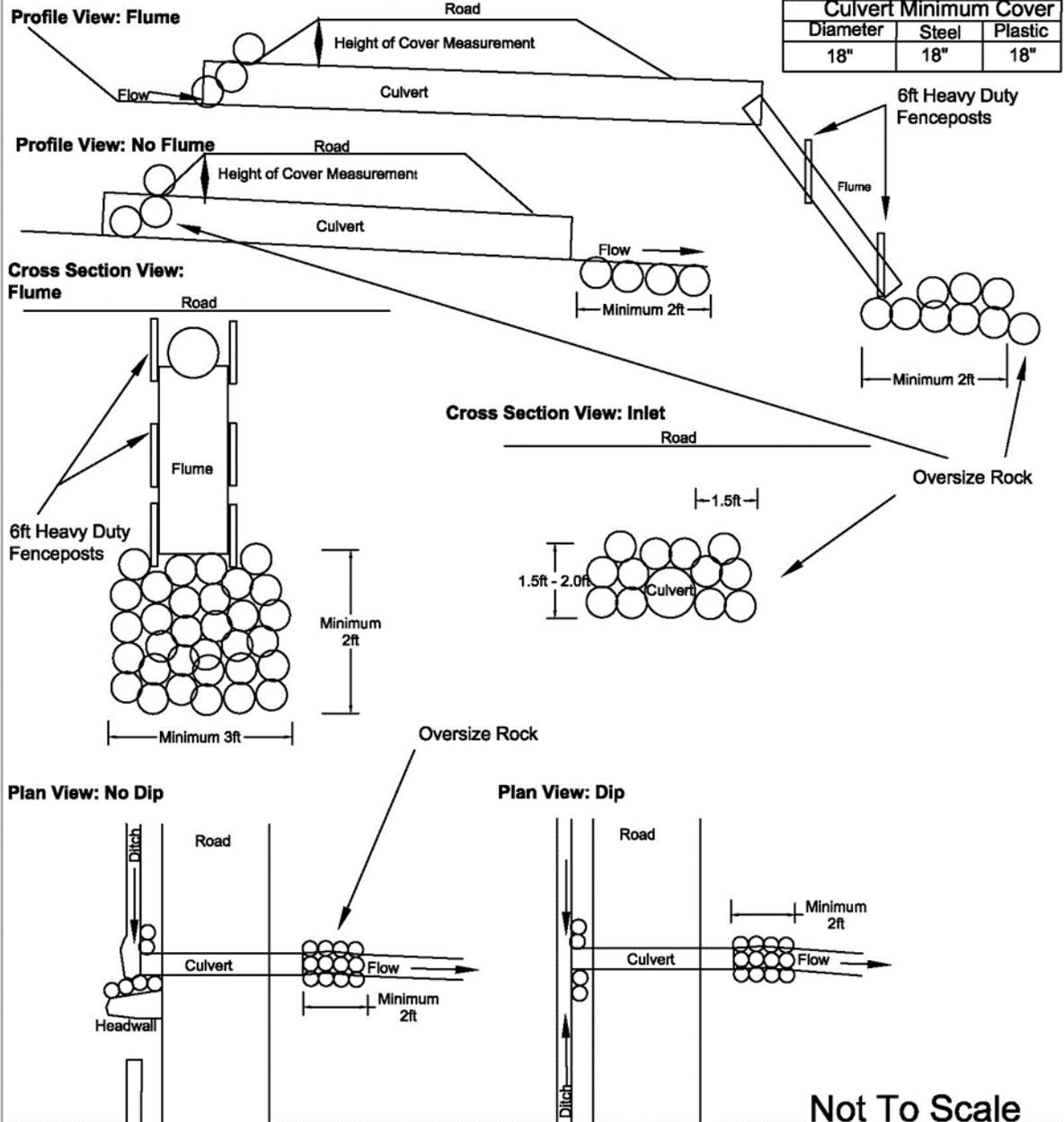
Plan View: Dip



Not To Scale

Typical Cross Drain Culvert Installation Detail Sheet

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



FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

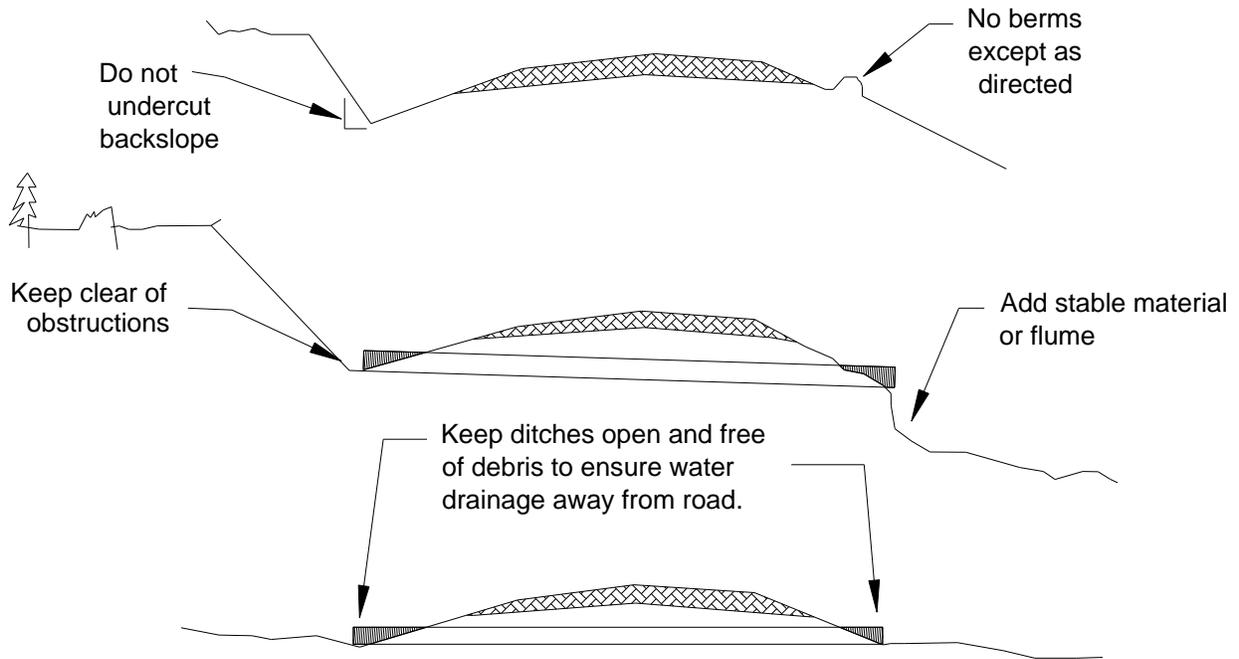
Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

Debris

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



		SUMMARY - Road Development Costs													
SALENAME:	Loose Ends	CONTRACT#:	30-094140	REGION:	Olympic	DISTRICT:	Coast						TOTAL		
LEGAL DESCRIPTION:	See Map											SHEET #2			
ROAD NAME:	0+75 SPUR	1+00 SPUR	Dirt SPUR	0+80 SPUR	C-1010	C-1011	C-1012	MS-1720	C-2501	C-1011.1	MS-1708	TOTAL:			
ROAD TYPE:	Construction	Construction	Construction	Construction	Pre-Haul	Pre-Haul	Pre-Haul	Pre-Haul	Pre-Haul	Pre-Haul	Pre-Haul				
NUMBER OF STATIONS:	0.75	1.00	2.60	0.80	64.85	9.50	3.70	5.00	9.90	3.00	14.50	115.60	129.30		
SIDESLOPE:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
CLEARING AND GRUBBING:	\$86	\$114	\$148	\$91	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$439	\$0		
ROAD BRUSHING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
EXCAVATION AND FILL:	\$85	\$113	\$294	\$90	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$582	\$0		
ROAD GRADING:	\$0	\$0	\$0	\$0	\$422	\$62	\$24	\$33	\$64	\$20	\$94	\$718	\$743		
DITCH CLEANING/CONSTRUCTION:	\$0	\$0	\$0	\$0	\$0	\$371	\$289	\$390	\$39	\$234	\$1,131	\$2,453	\$0		
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:															
Ballast:	1840	1,840	657	935	0	110	80	140	130	100	0	330	720	3200	0
Surface:	770	770	0	0	0	0	0	0	0	60	0	0	0	60	710
Over-size:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CULVERTS AND FLLMIES:	\$880	\$880	\$0	\$880	\$0	\$1,232	\$0	\$880	\$0	\$0	\$1,540	\$6,292	\$0		
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
MISC. EXPENSES:	\$4	\$6	\$15	\$5	\$2,400	\$76	\$62	\$29	\$78	\$235	\$1,216	\$4,126	\$669		
OVERHEAD:	\$188	\$225	\$50	\$197	\$303	\$241	\$114	\$219	\$16	\$272	\$805	\$2,632	\$667		
TOTAL COSTS:	\$1,900	\$2,273	\$508	\$1,989	\$3,668	\$2,919	\$1,382	\$2,658	\$198	\$3,295	\$9,751	\$30,540	\$6,729		
COST PER STATION:	\$2,533	\$2,273	\$195	\$2,487	\$57	\$307	\$374	\$532	\$20	\$1,098	\$672	\$264	\$53.63		
MOBILIZATION:			\$15,600												
ROAD DEACTIVATION AND ABANDONMENT COSTS:			\$4,074												
Pt Work			\$556												
NOTE: This appraisal has no allowance for profit and risk.															
Sheet 1 of 2															
Plans to be furnished by:	Led Nowak														

TOTAL (All Roads) =	\$57,499
SALE VOLUME MBF =	2,058
TOTAL COST PER MBF =	\$27.94
TOTAL COST PER STATION =	\$234.79
Completed by:	Led Nowak
Date:	6/28/2016

SALE NAME:		Loose Ends		CONTRACT#: 30-094140		SUMMARY - Road Development Costs		REGION: Olympic		DISTRICT: Coast					
LEGAL DESCRIPTION:		See Map													
ROAD NAME:		C-1010	2-1010 WY 0+75 SPUR	C-1012	Peterson	I+00 SPUR	C-2500	C-2501	Moonbase	C-2600	0	0	0	0	0
ROAD TYPE:		Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul	Posthaul
NUMBER OF STATIONS:		64.85	6.25	0.75	3.70	5.75	1.00	12.60	9.90	9.50	15.00	0.00	0.00	0.00	0.00
SIDESLOPE:		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CLEARING AND GRUBBING:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROAD BRUSHING:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EXCAVATION AND FILL:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROAD GRADING:		\$421.53	\$40.63	\$4.88	\$24.05	\$37.38	\$6.50	\$81.90	\$64.35	\$61.75	\$97.50	\$0.00	\$0.00	\$0.00	\$0.00
DITCH CLEANING/CONSTRUCTION:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ballast:															
Surface:		710	0	0	0	0	0	0	0	0	0	0	0	0	0
Oversize:		0	0	0	0	0	0	0	0	0	0	0	0	0	0
CULVERTS AND FLUMES:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
STRUCTURES:		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MISC. EXPENSES:		\$379.37	\$36.56	\$4.39	\$21.65	\$33.64	\$5.85	\$73.71	\$57.92	\$55.58	\$87.75	\$0.00	\$0.00	\$0.00	\$0.00
OVERHEAD:		\$599.65	\$8.49	\$1.02	\$5.03	\$7.81	\$1.36	\$17.12	\$13.45	\$12.91	\$20.38	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL COSTS:		\$6,051.05	\$85.68	\$10.28	\$50.72	\$78.82	\$13.71	\$172.73	\$135.71	\$130.23	\$205.63	\$0.00	\$0.00	\$0.00	\$0.00
COST PER STATION:		\$93.31	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71	\$13.71
						Total									
						Costs \$6,935									
						Stations 129.30									
						Cost/station \$53.63									