Washington DNR Timber Sales Program

Updated information is being provided for <u>Pleasant Valley Timber Sale #30-093163</u> documents as follows:

Documents amended:

Brief Description	DATE	Initials
Wildlife timing restrictions associated with the interim Marbled Murrelet strategy have been removed since they do not apply under the Long Term Marbled Murrelet Conservation Strategy implemented December 3, 2019. This change affects the following documents: • Notice of Sale – Special Remarks • Contract – clause H-142 removed • Road Plan Maps • Timber Sale Maps • Logging Plan Maps	12/10/2019	kf

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: PLEASANT VALLEY* ***AGREEMENT NO**: 30-093163*

AUCTION: January 28, 2020 starting at 10:00 a.m., South Puget Sound Region Office, Enumclaw, WA **COUNTY:** Lewis

SALE LOCATION: Sale located approximately 7 miles south of Elbe.

PRODUCTS SOLD AND SALE AREA: All timber, except trees bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white timber sale boundary tags, property line marked with Carsonite posts, timber type change at Peavy Pit and the PV 140 and PV 100 roads in Unit #1; all timber bounded by white timber sale boundary tags and the PV-140 Road in Unit #2;

All timber bounded by orange right of way tags in Unit #3;

All timber marked with one band of orange paint along the PV 140 Road in Unit #4;

All forest products above located on part(s) of Sections 29, 30 and 31 all in Township 15 North, Range 5 East, W.M., containing 118 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513) and FSC 100% raw materials under the Forest Stewardship Council® Standard (cert no: BV-FM/COC-080501).

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	13.7	6	2,189						539	1,185	437	28
Hemlock	12.8	7	358						68	175	91	24
Red alder	9.9		85							8	73	4
Cottonwood	16.3		34					18	13		3	
Red cedar	22		4							3	1	
Sale Total			2,670									

MINIMUM BID: $732,000.00 **BID METHOD:** Sealed Bids

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

EXPIRATION DATE: October 31, 2021 **ALLOCATION:** Export Restricted

BID DEPOSIT: $73,200.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvest activities are estimated to be 24 percent uphill cable and 76 percent ground based harvest. Cable and ground based equipment, with cable-tethered equipment limited to sustained slopes 75 percent or less, self-leveling equipment limited to sustained slopes 65 percent or less, and all other ground based equipment limited to sustained slopes 45 percent or less. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

TIMBER NOTICE OF SALE

ROADS: 6.38 stations of required construction. 4.42 stations of optional construction. 5.48 stations of optional reconstruction. 178.34 stations of required prehaul maintenance. 88.06 stations of required post-haul maintenance. 5.48 stations of required road closure, if reconstructed. Purchaser maintenance on all roads used.

Rock for this proposal can be obtained from the State owned Peavy and RS1 Pits at no cost to the Purchaser or any commercial rock source at the Purchaser's expense. Rock source development will be required per Section 6 in the Road Plan and as specified in the Rock Source Development Plan.

Operation of road construction equipment and rock haul will not be permitted from November 1 to May 15, nor on weekends or State recognized holidays, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1 to May 15, the Purchaser shall comply with a maintenance plan per Road Plan clause 1-26.

ACREAGE DETERMINATION

CRUISE METHOD: Unit acreage was determined by traversing boundaries by GPS. Right of way acreage was determined by multiplying length times width. See cruise narrative for cruise method.

FEES: $45,390.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: See contract clause H-141 for restrictions associated with the non-tradeable leave tree area within Unit #2 and tailhold restriction areas outside the units.

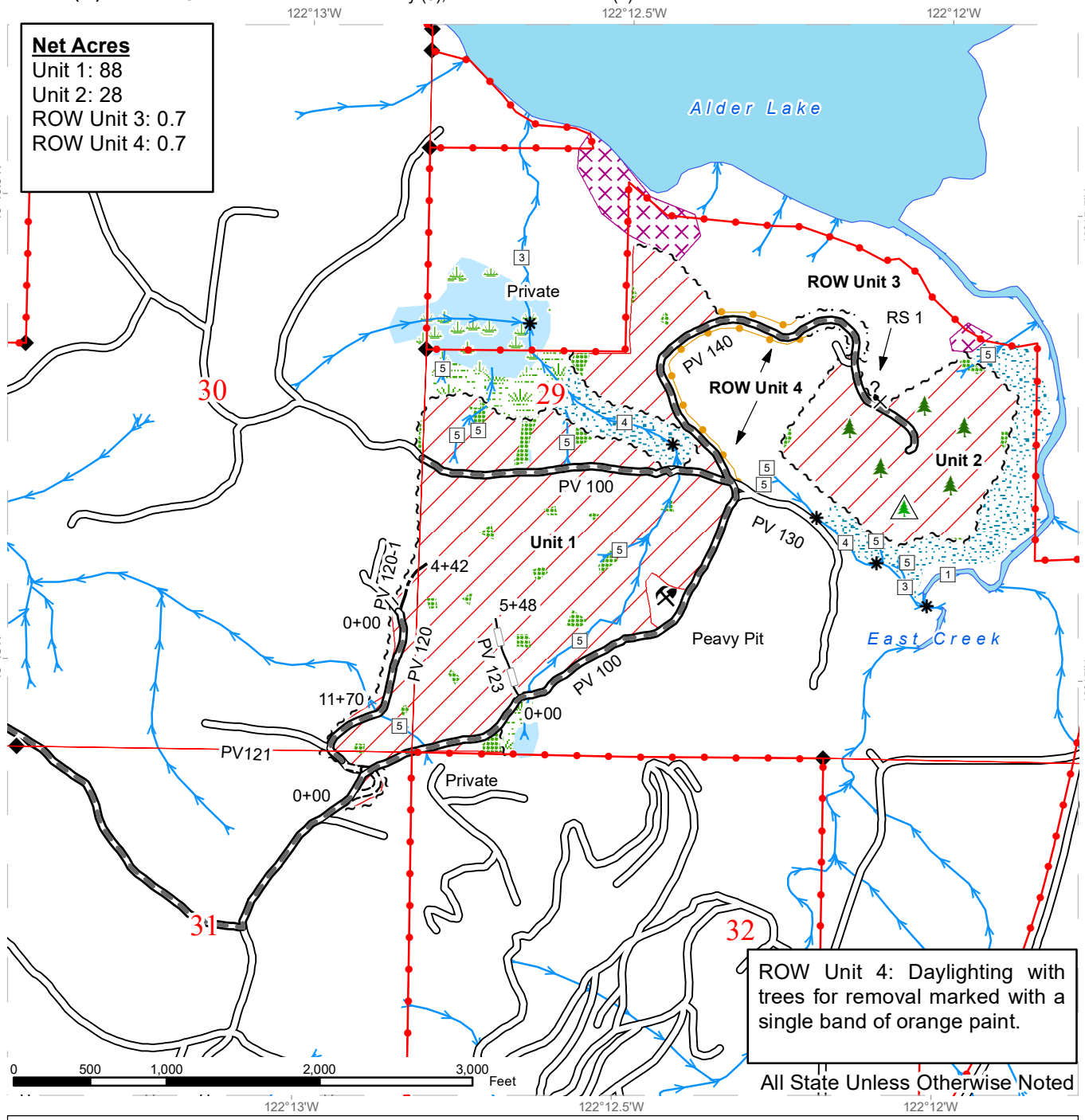
Purchaser will cut all vine maple within the harvest units, leaving a stump no more than 12 inches in height.

See map for gate locations. Gate keys may be obtained by contacting the South Puget Sound Region Office at 360-825-1631 or by contacting Kevin Carlsen at 360-870-4090.

TIMBER SALE MAP

SALE NAME: PLEASANT VALLEY
AGREEMENT #: 30-093163
TOWNSHIP(S): T15R5E
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Lewis
ELEVATION RGE: 1214-1805



Sale Area	Existing Roads	Leave Tree Area <1/4-acre
Leave Tree Area	Required Pre-Haul Maintenance	Non-Tradeable Leave Trees
Riparian Mgt Zone	Required Construction	Potential Rock Source
Wetlands - Non-forested	Optional Construction	Rock Pit
Wetland Mgt Zone	Optional Reconstruction	Public Land Survey Sections
Tailhold Restriction Area	Stream Type	Property Line
Sale Boundary Tags	Stream Type Break	
Right of Way Tags	Streams	
Take / Removal Trees	Survey Monument	

N

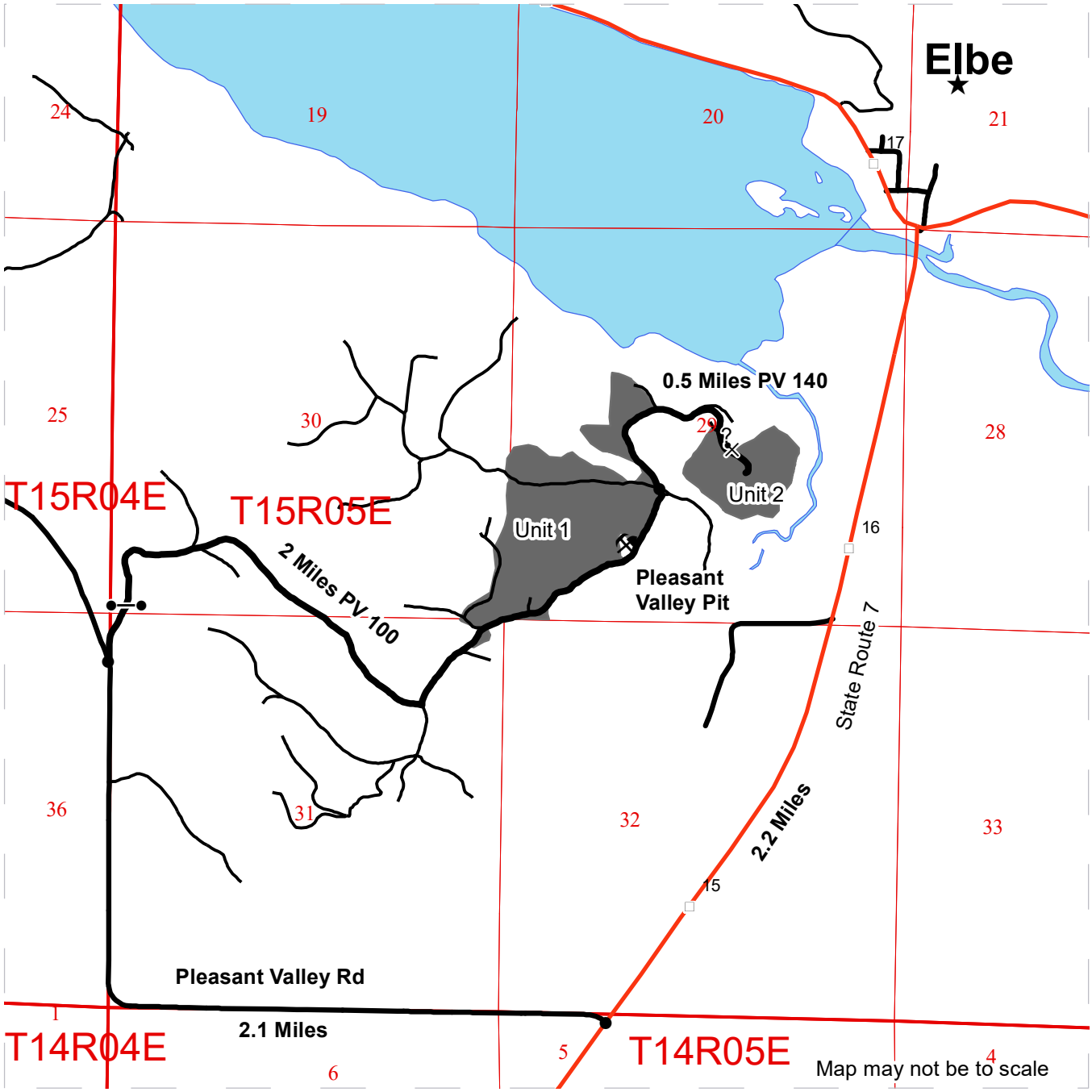
Prepared By: kcar490

Modification Date: astu490 11/19/2019

DRIVING MAP

SALE NAME: PLEASANT VALLEY VRH
AGREEMENT#: 30-093163
TOWNSHIP(S): T15R5E
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Lewis
ELEVATION RGE: 1214-1805



- Timber Sale Unit
- Haul Route
- Active/driveable
- Town
- Distance Indicator
- Gate 383
- Potential Rock Source
- Rock Pit
- Milepost Markers

DRIVING DIRECTIONS:

This proposal is 6.8 miles south of the town of Elbe. From Elbe head south on State Route 7 for 2.2 miles. Turn right onto Pleasant Valley Rd. and follow for 2.1 miles. Turn right onto the PV100 and follow for 2 miles to reach Unit 1 and the Pleasant Valley Pit. Continue straight onto the PV140 and follow for 0.5 miles to reach Unit 2.

All Mileages are approximate.

N

Prepared By: kcar490

Modification Date: kfry490 11/5/2019

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BILL OF SALE AND CONTRACT FOR FOREST PRODUCTS

Export Restricted Lump Sum AGREEMENT NO. 30-093163

SALE NAME: PLEASANT VALLEY

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 into 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 January 28, 2020 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 trees bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white timber sale boundary tags, property line marked with Carsonite posts, timber type change at Peavy Pit and the PV 140 and PV 100 roads in Unit #1; all timber bounded by white timber sale boundary tags and the PV-140 Road in Unit #2;

All timber bounded by orange right of way tags in Unit #3;

All timber marked with one band of orange paint along the PV 140 Road in Unit #4;

All forest products above located, located on approximately 118 acres on part(s) of Sections 29, 30, and 31 all in Township 15 North, Range 5 East W.M. in Lewis 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-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2021.

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 $953.00 per acre per annum for the acres on which an operating release has not been issued within the harvest area.

f. In no event will the extension charge be less than $200.00.

g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.

b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."

c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.

d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.

e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.

f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.

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

h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the Services' Incidental Take Permit Nos. TE812521-1 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, ITP TE812521-1 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-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-115 Forest Stewardship Council® (FSC®) Certification

Forest products purchased under this contract are FSC 100% certified as being in conformance with the Forest Stewardship Council Standard under certificate number: BV-FM/COC-080501.

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 via endorsement 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 Enumclaw, 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 address of record:

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; PV100, PV120, PV120-1, PV123, and PV140 roads. 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-396 Public Hauling Permit

The hauling of forest products, rock or equipment may require a state, county, or city hauling permit. Purchaser is responsible for obtaining any necessary permit and any costs associated with extra maintenance or repair levied by the permitting agency. Purchaser must provide the Contract Administrator with a copy of the executed permit.

G-430 Open Fires

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

G-450 Encumbrances

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

To be determiend approximately one month prior to the day of sale.

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 $69,420.00. The total contract price consists of a $0.00 contract bid price plus $69,420.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of $100,000.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of

credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-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 144 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 unit containing the damaged leave tree, 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-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for harvest operations. The plan shall address the harvest operations, including tailhold and cable corridor locations, logging debris as well as safety, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-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-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable and ground based equipment, with cable-tethered equipment limited to sustained slopes 75 percent or less, self-leveling equipment limited to sustained slopes 65 percent or less, and all other ground based equipment limited to sustained slopes 45 percent or less. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

If Purchaser tailholds on State land, methods to minimize damage to live trees outside the sale area shall be employed and must be approved in writing by the Contract Administrator.

H-127 Tailholds on Private Land

If Purchaser chooses to tailhold on private property, Purchaser shall obtain permit(s) and assumes responsibility for all costs and damages associated with the permit(s). Purchaser must provide the State with a copy of the executed permit(s) or a letter from the landowner indicating that a satisfactory tailhold permit(s) has been consummated between Purchaser and the landowner.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

a. Existing downed trees or logs dead for more than 5 years yarded to the landing will be returned to their original locations.

b. Equipment limitation zones are required within 30 feet of Type 5 streams.

c. Crossing of Type 5 streams may be allowed at locations approved in writing by the Contract Administrator. Place a culvert or log puncheon at crossing locations, when water is present, to protect the stream bank and prevent sedimentation. All materials placed in and/or over the stream at these crossings shall be removed immediately upon completion of yarding on that skid trail.

d. Any and all operations associated with this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the potential for delivery to typed water.

e. No equipment shall operate, or trees felled or damaged, outside the timber sale boundary.

f. Cut all vine maple within the harvest units, leaving a stump no more than 12 inches in height.

g. Notify all employees and contractors working on this sale that any danger tree marked or unmarked may be felled. Any marked danger tree will be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

h. Within shovel logging areas, and when yarding and loading operations are occurring simultaneously, an additional shovel will be required for loading to avoid extra trips to the landing. No more than one round trip per shovel road is allowed.

i. Take measures throughout operations to control soil erosion, water channelization, and prevent sediment delivery to streams or wetlands. Methods may include construction of water bars, "sweeping" with logs, silt traps, or other measures on skid trails, yarding corridors and haul roads.

j. Skid trail closure will occur upon completion of yarding all tributary timber. Closure shall consist of creating plantable spots at approximately 11.5 foot by 11.5 foot spacing to facilitate reforestation and creating water bars or other methods as directed by the Contract Administrator to prevent water accumulation and sediment movement.

k. In the event operations become inactive for long periods of time, skid trails shall be water barred prior to completion of yarding tributary timber to prevent water accumulation and sediment movement, if required by the Contract Administrator.

l. Once a skid trail is closed, the Purchaser shall not reopen a skid trail unless approved in writing by the Contract Administrator.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

a. Leave 2 down logs per acre. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.

b. No equipment may operate within, nor logs yarded through or over the non-tradeable leave tree clump within Unit #2.

c. Tailhold locations outside the timber sale boundary are restricted due to protection of potentially unstable slopes. Locations where trees shall not be used as tailholds due to potentially unstable slopes are identified on the Logging Plan Map.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 6/19/2019 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on all roads used. All work shall be completed to the specifications detailed in the Road Plan.

C-080 Landing Locations Approved Prior to Construction

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

C-140 Water Bars

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

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-050 Cessation of Operations for Low Humidity

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

S-110 Resource Protection

No yarding equipment may operate within the Riparian Management Zones unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any stream, except Type 5 stream crossings as allowed per clause H-140.

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 10 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. If large quantities of bulk fuel/other hazardous materials are stored on site, Purchaser must be able to effectively control a container leak and contain &

recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

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

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

ECY - Northwest Region:
1-425-649-7000
(Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties)

ECY - Southwest Region:
1-360-407-6300
(Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)

ECY - Central Region:
1-509-575-2490
(Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)

ECY - Eastern Region:
1-509-329-3400
(Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

The following clauses provide for payments by Purchaser to the State for breaches of the terms of this contract other than failure to perform. These payments are agreed to

as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State, which will be caused by Purchaser's breach. These liquidated damages provisions are agreed to by the State and Purchaser with the understanding of the difficulty of proving loss and the inconvenience or infeasibility of obtaining an adequate remedy. These liquidated damages provisions provide greater certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

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

D-041 Reserve Tree Excessive Damage

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

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

_____	_____
Purchaser	Scott Sargent
_____	South Puget Sound Region Manager
Print Name	
Date: _____	Date: _____
Address:	

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 _____

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: South Puget Sound

Timber Sale Name: Pleasant Valley VRH

Application Number: 30- 093163

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 1,080 **linear feet**
Road to be constructed (optional and required) but not abandoned

Reconstruction: 548 **linear feet**
Road to be reconstructed (optional and required) but not abandoned

Abandonment: 0 **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: 17,834 **linear feet**
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: 0 **linear feet**
Roads to be constructed (optional and required) and then abandoned

Temporary Reconstruction: 0 **linear feet**
Roads to be reconstructed (optional and required) and then abandoned

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contact. 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 9/18)

PRE-CRUISE NARRATIVE

Sale Name: **Pleasant Valley**	Region: **South Puget Sound**
Agreement #: **30-0**093163	District: **Rainier**
Contact Forester: **Kevin Carlsen**	Phone/ Location: **(360)-870-4090** Ext: /
Alternate Contact: **Andrew Reed**	Phone/ Location: **(360)-481-9597** Ext: /

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): Lump Sum
Required or Optional removal of utility as pulp: Optional
Evaluated for RFRS Implementation?: Yes
Percentage cable (specify downhill vs uphill): 24% uphill
Percentage ground based: 76%
Species Onsite: ☒RC, ☒DF, ☒WH, ☒RA, ☒BC, ☒BLM, ☐NF, ☐SF, ☒SS, ☐ Other:(Please List)

UNIT ACREAGES* AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Grant	Gross Traversed Acres	Deductions from Gross Acres (No harvest acres) RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)	Net Harvest Acres	Acreage Determination (List method, dimensions and error of closure if applicable)
1	Sec 29,30, 31/ T 15N/ R 05 E	03/01	92.7		3.3	1.4		88	Garmin 64s
2	Sec 29/ T 15N/ R 05 E	03	29.5		0.7	0.3		28.5	Garmin 64s
3	Sec 29/ T 15N/ R 05 E	03	0.7					0.7	Length X Width
4	Sec 29/ T 15N/ R 05 E	03	0.7					0.7	
	Sec / T N/ R E								
	Sec / T N/ R E								
TOTAL ACRES			123.6		4	1.7		117.9	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest- Boundary marked by white "Timber Sale Boundary" tags and pink flashers with the following exceptions the eastern boundary marked by the PV 100 road and part of the southern boundary marked by property line flagged pink.		8 per acre
2	Variable Retention Harvest- Boundary marked by white "Timber Sale Boundary" tags and pink flashers.		8 per acre
3	Right-of-Way Boundary marked by orange "Right-		

	of-Way Boundary" tags and orange flashers.		
4	Trees for removal are marked with a single band of orange paint.		

OTHER PRE-CRUISE INFORMATION:

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See Cruise	Access off PV100 CJ-18 gate #602	

REMARKS:

Prepared By: Kevin Carlsen **Date: 6/12/2019**	**Title: State Lands Forester**	**CC: Audrey Mainwaring, Dan Hohl, Andrew Reed**

Revised 2/23/2007 (PSLD)

Cruise Narrative

Sale Name: Pleasant Valley	**Region: South Puget Sound**
App. #: 30-093163	**District: Rainier**
Lead Cruiser: Aaron Coleman	**Completion Date: 8/6/2019** ***Revised: 11/15/19 - AC**
Other Cruisers: n/a	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
VRH U1	88.0	Yes	
VRH U2	28.5	Yes	
R/W U3	0.7	Yes	
R/W U4	0.7	Yes	
Total	**117.9**	**Yes**	

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (Cru./Tally)	Total number of plots
VRH U1	VP	40.00	4.5 ft	208' x 208'	1:2	88
VRH U2	VP	40.00	4.5 ft	208' x 208'	1:1	29
R/W U3	ITS	RA – 1:7.6 DF – 1:7 WH – 1:1 CW – 1:1	n/a	n/a	n/a	n/a
R/W U4	ITS	DF – 1:1 RA– 1:1	n/a	n/a	n/a	n/a

Sale/Cruise Description:

Minor species cruise intensity:	Cruised on appropriate plots.					
Minimum cruise spec:	40% of Form-Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.					
Avg. ring count by sp:	**DF** =	6	**WH** =	7		
Leave/take tree description:	VRH units 1 & 2 contain leave tree areas bound with yellow "Leave Tree Area" tags and pink flashers/flagging. R/W units 3 & 4 contain trees for removal marked with a single band of orange paint.					
Sort Description:	**HA** - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" 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 1/2" 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. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27") **HB -** Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 11/2" in					

	diameter. May include logs with not more than two larger knots up to 2 1/2" 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. (Intermediate sort. Grades 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27"). **D** - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 5".) **R** - Logs meeting the following criteria: Surface characteristics for a rough log sort will not meet the requirements for a domestic 2S, but still be in limitations for a domestic 3S. Meaning logs will contain excessive knots in excess of 2 1/2" and not exceeding 3" with a recovery of less than 65% of the net scale and greater that 33% of the gross scale. (Rough oversize sort. Grade 3S. Lengths 16ft-40ft, 2ft multiples TDIB 12"+)

Field observations:

This sale consists of 2 variable retention harvest (VRH) units and 2 right-of-way (R/W) units off the PV100 line near Alder Lake.

The primary species breakdown for this sale is as follows:
Douglas-fir (DF): **82%**
Western Hemlock (WH): **13%**
Red Alder (RA): **3%**

The DF throughout this sale averages 13" diameter with 86' bole height, the WH throughout this sale averages 12" diameter with 79' bole height and the RA throughout this sale averages 9" diameter with 53' bole height.

This is mostly shovel ground, with pockets of uphill cable. Some rock was observed, but not much broken ground. Common defect consisted of spike knots, broken/forked tops.

All roads to this sale are in good condition and there are good access points into all units. A CJ-18 key is needed to access the units through gate #602.

Grant(s):01, 03 **Prepared by: Aaron Coleman** **Title: Timber Cruiser**

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T15N R05E S29 Ty00U1
THRU
T15N R05E S29 Ty00U4

Project: **PLEASANT**

Acres **117.90**

Page **1**
Date **11/15/2019**
Time **4:04:14PM**

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
WH		CU	CU														3	6		0.00	10.9
WH	D	2S		18	16.2	686	575	68			89	11		11		89	39	13	203	1.68	2.8
WH	D	3S		49	5.4	1,569	1,484	175	56	44					22	78	38	7	75	0.56	19.9
WH	D	4S		26		771	771	91	100				11	32	10	46	30	5	31	0.29	25.2
WH	D	UT		7		205	205	24	26	74			6	20		74	26	6	49	0.56	4.2
WH	**Totals**			13	6.1	3,231	3,034	358	55	26	17	2	3	12	13	72	28	6	48	0.50	63.0
CW		CU	CU		100.0	0											1	7		0.00	.4
CW	D	1S		53	13.2	179	155	18		18	59	23		16	31	54	35	13	196	1.45	.8
CW	D	2S		37	7.3	116	108	13	30	70				8		92	38	8	73	0.73	1.5
CW	D	4S		9		28	28	3	100					35	30	35	30	5	33	0.26	.8
CW	D	UT		1		0	0	0	100					100			29	5	30	0.40	.0
CW	**Totals**			1	10.1	324	291	34	21	35	32	12		15	19	66	32	8	84	0.80	3.5
DF		CU	CU		100.0	77											3	6		0.00	31.7
DF	HB	2S		22	3.1	4,343	4,207	496			100			2	26	72	36	13	197	1.38	21.3
DF	HB	3S		45	1.4	8,451	8,336	983	0	100			1	1	21	77	37	9	109	0.75	76.4
DF	D	2S		2	6.6	391	366	43			100		15			85	34	13	203	1.62	1.8
DF	D	3S		9	3.9	1,778	1,709	201	70	30			2	9	20	69	36	7	66	0.49	26.1
DF	D	4S		20	.9	3,745	3,710	437	99	1			19	25	21	35	29	5	30	0.28	121.7
DF	D	UT		2		237	237	28	86	14			59			41	19	5	20	0.28	11.7
DF	**Totals**			82	2.4	19,022	18,565	2,189	27	48	25		5	7	22	66	29	7	64	0.57	290.8
RA		CU	CU		100.0	15											4	6		0.00	3.7
RA	D	3S		8	3.6	66	64	8		100				51		49	34	10	119	0.97	.5
RA	D	4S		86	3.7	646	622	73	91	9			11	56	0	32	27	6	33	0.35	18.8
RA	D	UT		6		37	37	4	100				99		1		13	6	13	0.23	2.8
RA	**Totals**			3	5.4	765	723	85	84	16			15	53	0	32	22	6	28	0.35	25.9
RC	D	3S		83	9.1	28	26	3			100					100	36	13	200	1.92	.1
RC	D	4S		17		5	5	1	100					100			24	7	40	0.59	.1
RC	**Totals**			0	7.7	33	31	4	17		83			17		83	30	10	120	1.39	.3
Totals					3.1	23,375	22,645	2,670	33	44	23	0	5	9	20	66	28	7	59	0.55	383.4

TC PSTATS

PROJECT STATISTICS

PROJECT PLEASANT

DATE 11/15/2019

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U1	THR	117.90	119	562	S	W
15N	05E	29	PLEASANTVA	00U4						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	119	562	4.7		
CRUISE	54	241	4.5	22,037	1.1
DBH COUNT					
REFOREST					
COUNT	64	302	4.7		
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	158	138.9	13.7	86	38.4	142.0	19,022	18,565	4,793	4,776
R ALDER	36	16.3	9.9	53	2.8	8.7	765	723	205	204
WHEMLOCK	33	29.9	12.8	79	7.5	26.7	3,231	3,034	878	878
COTWOOD	13	1.7	16.3	67	0.6	2.5	324	291	88	88
WR CEDAR	1	.1	22.0	66	0.1	.3	33	31	11	11
TOTAL	*241*	*186.9*	*13.3*	*82*	*49.4*	*180.3*	*23,375*	*22,645*	*5,975*	*5,956*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	58.2	4.6	172	180	189			
R ALDER	62.5	10.4	49	54	60			
WHEMLOCK	56.9	10.0	130	145	160			
COTWOOD	68.4	19.7	206	257	308			
WR CEDAR								
TOTAL	*69.0*	*4.4*	*154*	*161*	*168*	*190*	*97*	*47*

CL 68.1	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	56.3	4.5	45	47	49			
R ALDER	67.7	11.3	14	16	18			
WHEMLOCK	67.5	11.9	39	45	50			
COTWOOD	61.5	17.7	62	75	89			
WR CEDAR								
TOTAL	*68.2*	*4.4*	*42*	*44*	*45*	*186*	*95*	*46*

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	86.9	8.0	128	139	150			
R ALDER	332.1	30.4	11	16	21			
WHEMLOCK	178.2	16.3	25	30	35			
COTWOOD	761.2	69.7	1	2	3			
WR CEDAR	1090.9	99.9	0	0	0			
TOTAL	*58.8*	*5.4*	*177*	*187*	*197*	*138*	*70*	*35*

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	64.8	5.9	134	142	150			
R ALDER	304.7	27.9	6	9	11			
WHEMLOCK	167.9	15.4	23	27	31			
COTWOOD	648.5	59.4	1	2	4			
WR CEDAR	1090.9	99.9	0	0	1			
TOTAL	*36.5*	*3.3*	*174*	*180*	*186*	*53*	*27*	*13*

PROJECT STATISTICS

PROJECT PLEASANT

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U1	THR	117.90	119	562	S	W
15N	05E	29	PLEASANTVA	00U4						

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	65.9	6.0	17,445	18,565	19,685			
R ALDER	310.7	28.5	518	723	929			
WHEMLOCK	169.6	15.5	2,563	3,034	3,506			
COTWOOD	575.7	52.7	138	291	444			
WR CEDAR	1090.9	99.9	0	31	62			
TOTAL	*41.1*	*3.8*	*21,792*	*22,645*	*23,498*	*68*	*34*	*17*

CL 68.1	COEFF		**NET CUFT FT/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	65.8	6.0	4,488	4,776	5,064			
R ALDER	309.2	28.3	146	204	261			
WHEMLOCK	168.5	15.4	743	878	1,014			
COTWOOD	610.7	55.9	39	88	137			
WR CEDAR	1090.9	99.9	0	11	21			
TOTAL	*39.0*	*3.6*	*5,743*	*5,956*	*6,169*	*61*	*31*	*15*

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			123	131	139			
R ALDER	324.8	29.8	59	83	107			
WHEMLOCK	82.2	7.5	96	113	131			
COTWOOD	620.0	56.8	56	118	180			
WR CEDAR	1090.9	99.9	0	91	182			
TOTAL	*44.7*	*4.1*	*121*	*126*	*130*	*80*	*41*	*20*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: PLEASANT

Date 11/15/2019

Time 4:04:15PM

T15N R05E S29 T00U1 | **T15N R05E S29 T00U1**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U1	88.00	88	145	S	W

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	88											3	6		0.00	30.9
DF		HB	2S	25	3.0	4,922	4,776	420			100			2	31	67	36	13	195	1.37	24.5
DF		HB	3S	47	1.3	8,765	8,648	761		100			1	1	23	74	36	9	109	0.76	79.4
DF		DM	2S	3	6.6	524	490	43			100		15			85	34	13	203	1.62	2.4
DF		DM	3S	10	2.1	1,781	1,743	153	64	36			3	11	21	65	36	7	69	0.51	25.3
DF		DM	4S	14	1.8	2,660	2,612	230	99	1			16	31	20	33	28	5	30	0.30	86.8
DF		DM	UT	1		128	128	11	66	34			66			34	19	6	21	0.30	6.2
DF	**Totals**			81	2.5	18,868	18,397	1,619	21	51	29		4	7	24	66	29	8	72	0.64	255.6
WH		CU	CU														3	5		0.00	13.9
WH		DM	2S	18	15.5	736	621	55			100					100	39	13	205	1.60	3.0
WH		DM	3S	47	6.1	1,712	1,607	141	47	53					19	81	38	8	79	0.60	20.3
WH		DM	4S	27		944	944	83	100				7	31	11	51	31	5	32	0.30	29.4
WH		DM	UT	8		245	245	22	17	83				17		83	33	7	69	0.63	3.5
WH	**Totals**			15	6.0	3,636	3,417	301	51	31	18		2	10	12	76	28	6	49	0.51	70.1
RA		CU	CU														0	6		0.00	3.8
RA		DM	3S	9		44	44	4		100				100			30	10	110	0.89	.4
RA		DM	4S	89	5.8	450	424	37	92	8			16	59		25	26	6	32	0.37	13.1
RA		DM	UT	2		9	9	1	100				100				13	5	10	0.17	.9
RA	**Totals**			2	5.1	503	477	42	84	16			16	62		22	20	6	26	0.38	18.2
CW		CU	CU															7		0.00	.4
CW		DM	1S	49	12.1	183	161	14			72	28			40	60	37	14	255	1.70	.6
CW		DM	2S	39	8.0	140	129	11	23	77						100	40	8	84	0.80	1.5
CW		DM	4S	12		37	37	3	100					35	30	35	30	5	33	0.26	1.1
CW	**Totals**			1	9.3	360	327	29	20	30	36	14		4	23	73	32	8	88	0.82	3.7
RC		DM	3S	83	9.1	38	34	3			100					100	36	13	200	1.92	.2
RC		DM	4S	17		7	7	1	100					100			24	7	40	0.59	.2
RC	**Totals**			0	7.7	45	41	4	17		83			17		83	30	10	120	1.39	.3
Type Totals					3.2	23,412	22,660	1,994	26	47	27	0	4	8	22	66	28	7	65	0.61	348.0

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: PLEASANT

Date 11/15/2019

Time 4:04:15PM

T15N R05E S29 T00U2 | **T15N R05E S29 T00U2**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U2	28.50	29	67	S	W

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	46											1	5		0.00	35.4
DF		HB	2S	13	4.0	2,768	2,658	76			100					100	38	13	213	1.44	12.5
DF		HB	3S	39	1.5	7,817	7,703	220		100					14	86	37	9	110	0.73	70.1
DF		DM	3S	8	9.2	1,834	1,666	47	90	10					20	80	37	6	57	0.45	29.4
DF		DM	4S	37		7,248	7,248	207	100				22	17	23	37	29	5	31	0.26	234.4
DF		DM	UT	3		585	585	17	100				55			45	19	5	20	0.27	29.4
DF	**Totals**			85	2.2	20,297	19,859	566	47	40	13		10	6	16	68	28	6	48	0.43	411.1
WH		CU	CU														1	12		0.00	1.9
WH		DM	2S	23	19.0	567	459	13			45	55		55		45	36	14	196	2.00	2.3
WH		DM	3S	58	2.4	1,202	1,173	33	95	5					31	69	36	6	60	0.40	19.5
WH		DM	4S	14		271	271	8	100				55	45			20	5	20	0.18	13.6
WH		DM	UT	5		91	91	3	100				55	45			15	5	14	0.29	6.4
WH	**Totals**			9	6.4	2,131	1,995	57	74	3	10	13	10	21	18	51	26	6	46	0.46	43.8
RA		CU	CU		100.0	62											15	5		0.00	3.1
RA		DM	3S	9	7.1	138	128	4		100						100	38	10	130	1.06	1.0
RA		DM	4S	82	1.3	1,185	1,170	33	94	6			6	51		43	28	5	33	0.32	35.3
RA		DM	UT	9		125	125	4	100				100				13	6	14	0.25	8.8
RA	**Totals**			6	5.8	1,511	1,423	41	86	14			14	42		45	25	6	30	0.32	48.2
CW		DM	1S	75	18.2	124	101	3		100				100			30	10	90	0.89	1.1
CW		DM	2S	25		34	34	1	100					100			28	6	30	0.37	1.1
CW	**Totals**			1	14.3	157	135	4	25	75				100			29	8	60	0.64	2.2
Type Totals					2.8	24,096	23,412	667	52	35	12	1	10	10	15	65	28	6	46	0.43	505.4

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: PLEASANT

Date 11/15/2019

Time 4:04:15PM

T15N R05E S29 T00U3 | **T15N R05E S29 T00U3**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U3	.70	1	17	S	W

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RA		CU	CU														11	5		0.00	10.9
RA		DM	4S	100	2.9	3,691	3,583	3	42	58			6	85	9		28	7	41	0.50	86.9
RA	**Totals**			33	2.9	3,691	3,583	3	42	58			6	85	9		26	6	37	0.48	97.7
DF		CU	CU														10	5		0.00	20.0
DF		HB	3S	61		2,700	2,700	2	22	78						100	40	8	90	0.59	30.0
DF		DM	3S	14		600	600	0	100							100	40	6	60	0.37	10.0
DF		DM	4S	25		1,100	1,100	1	100						64	36	34	5	37	0.26	30.0
DF	**Totals**			41		4,400	4,400	3	52	48					16	84	31	6	49	0.40	90.0
CW		CU	CU		100.0	57											10	5		0.00	5.7
CW		DM	1S	75	13.4	2,129	1,843	1		26	50	25				100	40	13	215	1.57	8.6
CW		DM	2S	21	5.3	543	514	0	56	44						100	40	7	72	0.58	7.1
CW		DM	4S	2		43	43	0	100					100			28	5	30	0.24	1.4
CW		DM	UT	2		43	43	0	100					100			29	5	30	0.40	1.4
CW	**Totals**			23	13.2	2,814	2,443	2	15	29	37	19		4		96	32	8	101	0.95	24.3
WH		DM	3S	78		214	214	0		100						100	40	10	150	0.89	1.4
WH		DM	4S	22		57	57	0	100							100	39	5	40	0.34	1.4
WH	**Totals**			3		271	271	0	21	79						100	40	8	95	0.62	2.9
Type Totals					4.3	11,177	10,697	7	40	47	9	4	2	29	10	59	29	6	50	0.50	214.9

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: PLEASANT

Date 11/15/2019

Time 4:04:15PM

T15N R05E S29 T00U4 **T15N R05E S29 T00U4**

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U4	.70	1	13	S	W

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 5-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		HB	3S	48		529	529	0		100						100	39	9	123	0.84	4.3
DF		DM	3S	24		257	257	0	100						100		32	7	60	0.53	4.3
DF		DM	4S	28		300	300	0	81	19			19	62	19		24	5	30	0.27	10.0
DF	**Totals**			75		1,086	1,086	1	46	54			5	17	29	49	29	7	58	0.51	18.6
RA		CU	CU														4	7		0.00	2.9
RA		DM	4S	76	5.0	286	271	0	100				11	32	16	42	30	5	32	0.27	8.6
RA		DM	UT	24		86	86	0	100				33		67		28	5	30	0.26	2.9
RA	**Totals**			25	3.8	371	357	0	100				16	24	28	32	24	6	25	0.26	14.3
Type Totals					1.0	1,457	1,443	1	59	41			8	19	29	45	27	6	44	0.41	32.9

TC TSTATS

STATISTICS

PROJECT PLEASANT

DATE 11/15/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U1	88.00	88	382	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	88	382	4.3		
CRUISE	34	145	4.3	12,808	1.1
DBH COUNT					
REFOREST					
COUNT	53	233	4.4		
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	99	99.8	15.7	96	33.8	134.1	18,868	18,397	4,784	4,767
WHEMLOCK	27	33.3	13.0	80	8.5	30.5	3,636	3,417	1,004	1,004
R ALDER	12	10.5	10.2	57	1.9	5.9	503	477	137	137
COTWOOD	6	1.9	16.4	67	0.7	2.7	360	327	98	98
WR CEDAR	1	.2	22.0	66	0.1	.5	45	41	14	14
TOTAL	*145*	*145.5*	*14.8*	*89*	*45.2*	*173.6*	*23,412*	*22,660*	*6,038*	*6,020*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	43.2	4.3	204	213	222			
WHEMLOCK	56.4	11.3	127	143	159			
R ALDER	60.5	18.2	48	59	70			
COTWOOD	89.8	40.0	151	252	352			
WR CEDAR								
TOTAL	*55.9*	*4.7*	*180*	*189*	*198*	*125*	*64*	*31*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	41.4	4.2	53	55	58			
WHEMLOCK	64.7	12.9	38	44	50			
R ALDER	54.7	16.5	14	17	20			
COTWOOD	78.8	35.1	47	72	97			
WR CEDAR								
TOTAL	*54.2*	*4.5*	*49*	*51*	*53*	*117*	*60*	*29*

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	68.7	7.3	92	100	107			
WHEMLOCK	166.5	17.7	27	33	39			
R ALDER	392.0	41.8	6	10	15			
COTWOOD	786.5	83.8	0	2	3			
WR CEDAR	938.1	99.9	0	0	0			
TOTAL	*43.6*	*4.6*	*139*	*146*	*152*	*76*	*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
DOUG FIR	67.5	7.2	124	134	144			
WHEMLOCK	155.5	16.6	25	30	35			
R ALDER	348.7	37.1	4	6	8			
COTWOOD	659.5	70.2	1	3	5			
WR CEDAR	938.1	99.9	0	0	1			
TOTAL	*36.4*	*3.9*	*167*	*174*	*180*	*53*	*27*	*13*

TC TSTATS

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PROJECT PLEASANT

DATE 11/15/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U1	88.00	88	382	S	W

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	68.0	7.2	17,064	18,397	19,731			
WHEMLOCK	157.5	16.8	2,844	3,417	3,991			
R ALDER	360.6	38.4	294	477	660			
COTWOOD	575.7	61.3	126	327	527			
WR CEDAR	938.1	99.9	0	41	83			
TOTAL	*41.0*	*4.4*	*21,670*	*22,660*	*23,650*	*67*	*34*	*17*

CL: 68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	68.0	7.2	4,422	4,767	5,112			
WHEMLOCK	156.0	16.6	837	1,004	1,171			
R ALDER	355.7	37.9	85	137	189			
COTWOOD	613.6	65.4	34	98	162			
WR CEDAR	938.1	99.9	0	14	29			
TOTAL	*38.5*	*4.1*	*5,773*	*6,020*	*6,267*	*59*	*30*	*15*

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			127	137	147			
WHEMLOCK	81.1	8.6	93	112	131			
R ALDER	353.2	37.6	50	81	112			
COTWOOD	575.7	61.3	46	120	193			
WR CEDAR	938.1	99.9	0	91	182			
TOTAL	*276.7*	*29.5*	*125*	*131*	*136*	*3,058*	*1,560*	*764*

TC TSTATS

STATISTICS

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PROJECT **PLEASANT**

DATE 11/15/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U2	28.50	29	150	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	29	150	5.2		
CRUISE	18	66	3.7	9,136	.7
DBH COUNT					
REFOREST COUNT	11	69	6.3		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	48	265.2	10.9	74	52.2	172.4	20,297	19,859	5,020	5,005
R ALDER	12	33.3	9.5	49	5.4	16.6	1,511	1,423	395	387
WHEMLOCK	5	20.9	12.0	73	4.8	16.6	2,131	1,995	531	532
COTWOOD	1	1.1	15.0	60	0.4	1.4	157	135	42	42
TOTAL	*66*	*320.6*	*10.9*	*71*	*62.7*	*206.9*	*24,096*	*23,412*	*5,988*	*5,966*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	86.0	12.4	113	129	145			
R ALDER	72.6	21.9	44	56	68			
WHEMLOCK	73.4	36.5	93	146	199			
COTWOOD								
TOTAL	*88.8*	*10.9*	*104*	*117*	*130*	*315*	*161*	*79*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	82.3	11.9	29	33	37			
R ALDER	83.5	25.1	12	16	20			
WHEMLOCK	91.7	45.6	27	49	71			
COTWOOD								
TOTAL	*88.3*	*10.9*	*28*	*31*	*35*	*311*	*159*	*78*

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	60.1	11.4	235	265	295			
R ALDER	244.5	46.2	18	33	49			
WHEMLOCK	218.8	41.3	12	21	30			
COTWOOD	538.5	101.7		1	2			
TOTAL	*37.0*	*7.0*	*298*	*321*	*343*	*57*	*29*	*14*

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	51.2	9.7	156	172	189			
R ALDER	237.5	44.8	9	17	24			
WHEMLOCK	209.5	39.5	10	17	23			
COTWOOD	538.5	101.7		1	3			
TOTAL	*28.3*	*5.3*	*196*	*207*	*218*	*33*	*17*	*8*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	54.1	10.2	17,832	19,859	21,886			
R ALDER	236.3	44.6	788	1,423	2,059			
WHEMLOCK	212.0	40.0	1,196	1,995	2,793			
COTWOOD	538.5	101.7		135	272			
TOTAL	*35.2*	*6.6*	*21,857*	*23,412*	*24,967*	*51*	*26*	*13*

TC TSTATS

STATISTICS

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PROJECT **PLEASANT**

DATE 11/15/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
15N	**05E**	**29**	**PLEASANTVA**	**00U2**	28.50	29	150	S	W

CL: 68.1 %	COEFF		**NET CUFT FT/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10

CL: 68.1 %	COEFF		**NET CUFT FT/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	53.3	10.1	4,501	5,005	5,509			
R ALDER	240.7	45.4	211	387	563			
WHEMLOCK	209.5	39.6	322	532	742			
COTWOOD	538.5	101.7		42	84			
TOTAL	*34.0*	*6.4*	*5,583*	*5,966*	*6,349*	*48*	*24*	*12*

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			103	115	127			
R ALDER	236.3	44.6	48	86	124			
WHEMLOCK	33.6	6.3	72	121	169			
COTWOOD	538.5	101.7		98	197			
TOTAL	*230.2*	*43.5*	*106*	*113*	*121*	*2,192*	*1,118*	*548*

TC TSTATS

STATISTICS

PROJECT **PLEASANT**

DATE 11/15/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
15N	05E	29	PLEASANTVA	00U3	0.70	1	17	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	17	17.0		
CRUISE	1	17	17.0	80	21.3
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER	5	54.3	12.6	59	13.2	47.0	3,691	3,583	1,203	1,203
DOUG FIR	5	50.0	12.0	84	11.4	39.4	4,400	4,400	1,126	1,126
COTWOOD	6	8.6	19.3	109	4.0	17.4	2,814	2,443	743	730
WHEMLOCK	1	1.4	15.0	103	0.5	1.8	271	271	70	70
TOTAL	*17*	*114.3*	*13.0*	*74*	*29.3*	*105.6*	*11,177*	*10,697*	*3,141*	*3,128*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	46.2	23.0	51	66	81			
DOUG FIR	57.0	28.3	63	88	113			
COTWOOD	47.6	21.2	225	285	345			
WHEMLOCK								
TOTAL	*82.8*	*20.7*	*125*	*157*	*190*	*291*	*148*	*73*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
R ALDER	49.5	24.6	17	22	28			
DOUG FIR	65.0	32.3	15	23	30			
COTWOOD	45.7	20.3	68	85	102			
WHEMLOCK								
TOTAL	*83.6*	*20.9*	*36*	*46*	*56*	*296*	*151*	*74*

TC TSTATS

STATISTICS

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PROJECT **PLEASANT**

DATE 11/15/2019

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
15N	**05E**	**29**	**PLEASANTVA**	**00U4**	0.70	1	13	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	13	13.0		
CRUISE	1	13	13.0	13	100.0
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	6	8.6	13.8	89	2.4	8.9	1,086	1,086	274	274
R ALDER	7	10.0	8.8	69	1.4	4.2	371	357	90	90
TOTAL	*13*	*18.6*	*11.4*	*78*	*3.9*	*13.2*	*1,457*	*1,443*	*365*	*365*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**SAMPLE TREES - BF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	47.3	21.1	100	127	153			
R ALDER	39.1	15.9	30	36	41			
TOTAL	*79.5*	*22.9*	*60*	*78*	*96*	*273*	*139*	*68*

CL: 68.1 %	COEFF		**SAMPLE TREES - CF**			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR	45.1	20.1	26	32	38			
R ALDER	42.1	17.1	7	9	11			
TOTAL	*78.4*	*22.6*	*15*	*20*	*24*	*265*	*135*	*66*

TC PSPCTLTCM

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

T15N R05E S29 Ty00U1	88.0
T15N R05E S29 Ty00U2	28.5
T15N R05E S29 Ty00U	.7

Project PLEASANT
Acres 117.90

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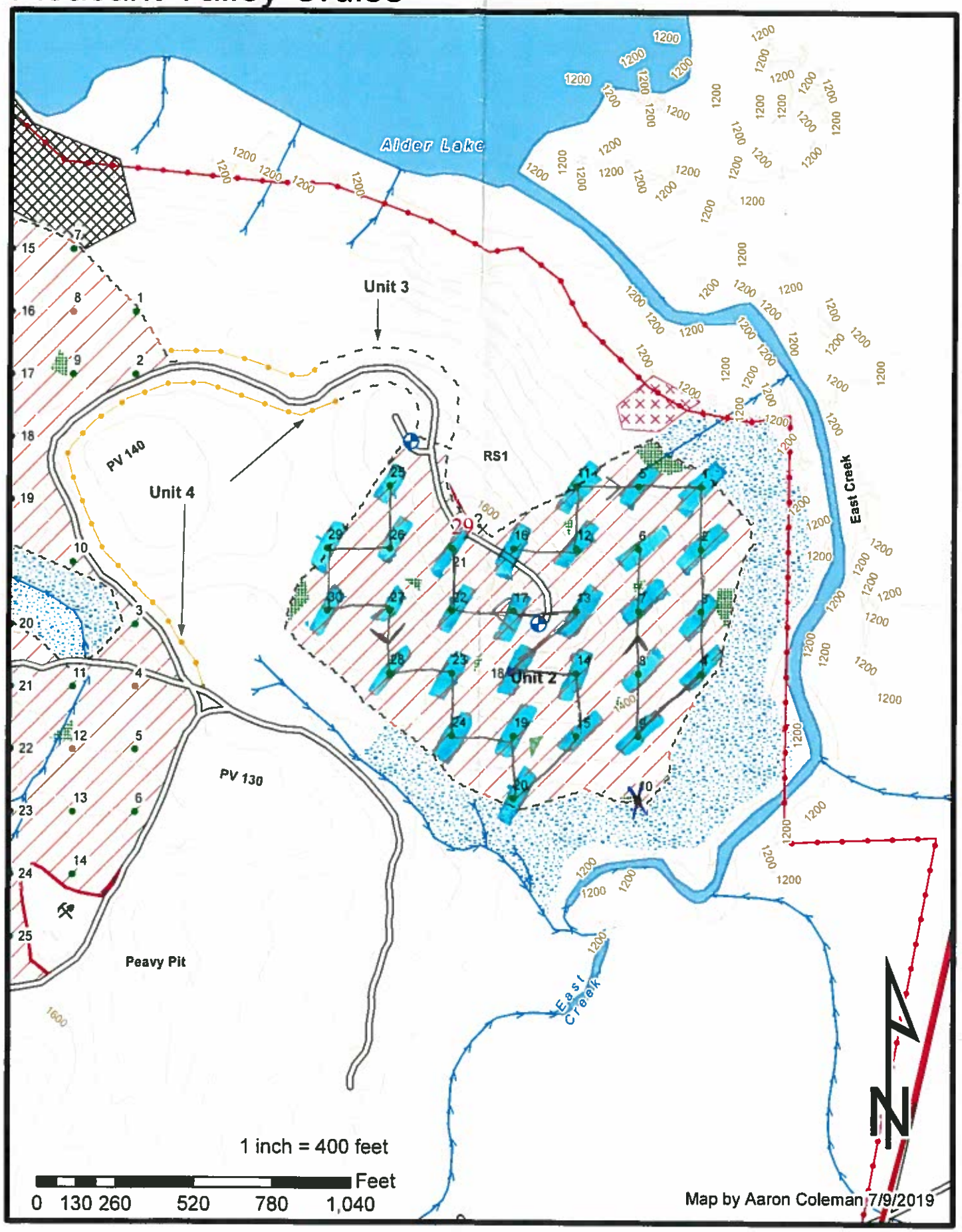
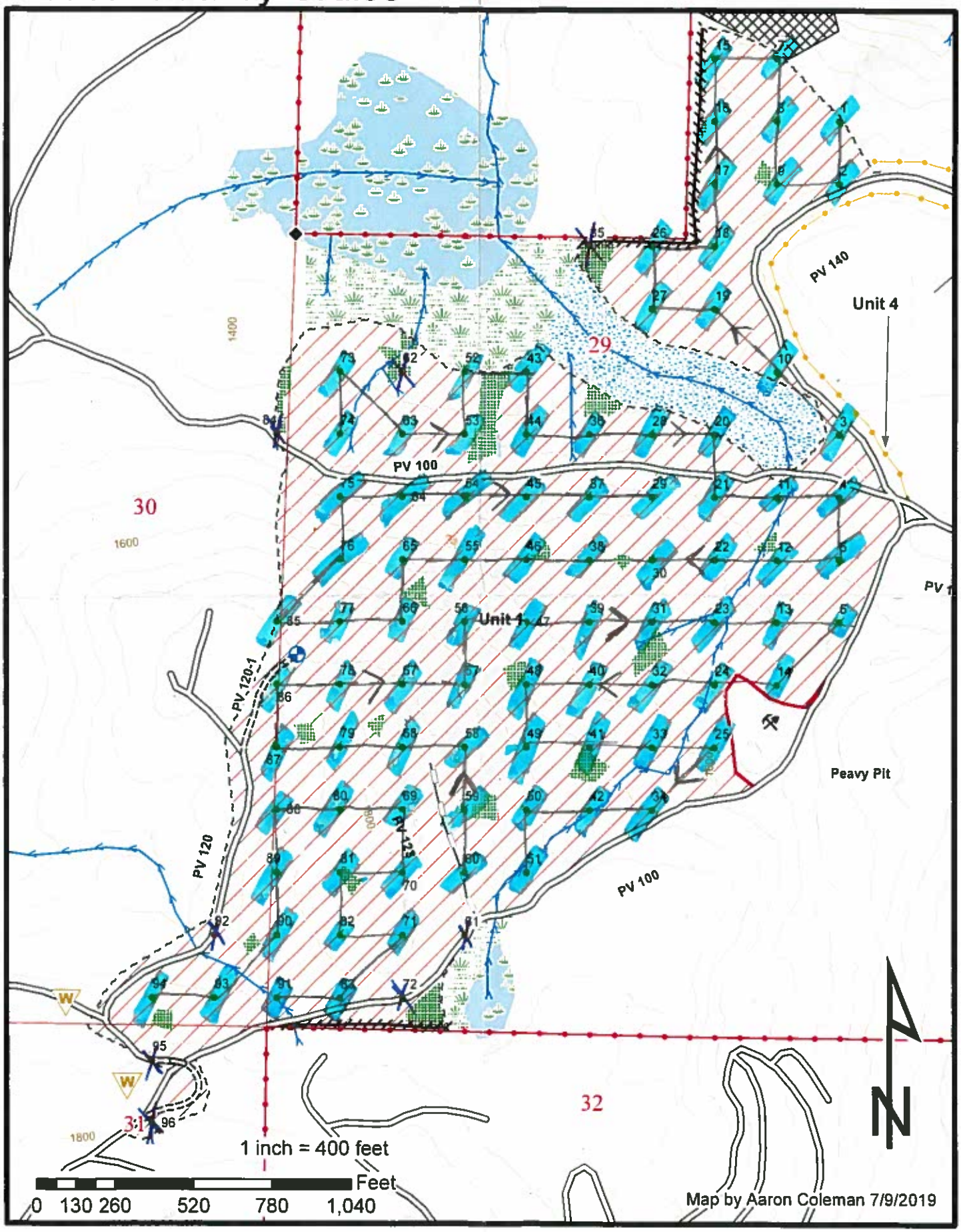
Species	S T	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
DOUG FIR		16,379	30,547	16,104	34.38	18.43	0.58	5,651	5,631	2,243	2,189
WHEMLOCK		3,525	6,141	3,314	29.38	16.86	0.53	1,036	1,035	381	358
R ALDER		1,916	2,616	666	12.52	9.17	0.37	242	240	90	85
COTWOOD		202	367	254	51.20	28.14	0.79	104	103	38	34
WR CEDAR		15	30	29	83.27	41.63	1.39	13	13	4	4
Totals		22,037	39,701	20,368	31.86	17.69	0.56	7,045	7,022	2,756	2,670

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
C	19,919	36,718	19,448	33.53	18.19	0.57	6,699	6,679	2,628	2,550
H	2,118	2,983	920	16.21	11.51	0.44	346	343	128	120
Totals	22,037	39,701	20,368	31.86	17.69	0.56	7,045	7,022	2,756	2,670

Pleasant Valley Cruise



Pleasant Valley Cruise



FPA/N No: 2421282
Effective Date: 10/31/2019
Expiration Date: 10/31/2022
Shut Down Zone: 659 S
EARR Tax Credit: ☒ Eligible ☐ Non-eligible
Reference: Pleasant Valley VRH #30-093163

Forest Practices Application/Notification
Notice of Decision

Decision

☒ **Notification** Operations shall not begin before the effective date.

☒ **Approved** This Forest Practices Application is subject to the conditions listed below.

☐ **Disapproved** This Forest Practices Application is disapproved for the reasons listed below.

☐ **Closed** Applicant has withdrawn FPA/N.

FPA/N Classification

☐ Class II ☒ Class III ☐ Class IVG ☐ Class IVS

Number of Years Granted on Multi-Year Request

☐ 4 years ☐ 5 years

Conditions on Approval / Reasons for Disapproval

Issued By: Bruce Meyer **Region:** South Puget Sound

Title: Resource Protection Forester **Date:** 10/31/2019

Copies to: ☒ Landowner, Timber Owner and Operator.

Issued in person: ☑ Landowner ☑ Timber Owner ☑ Operator By: BL

AEM 11-16

Appeal Information

You have thirty (30) days to appeal this Decision and any related State Environmental Policy Act determinations to the Pollution Control Hearings Board in writing at the following addresses:/
Physical address: 1111 Israel Rd. SW, Ste 301, Tumwater, WA 98501
Mailing address: P.O. BOX 40903, OLYMPIA, WA 98504-0903
Information regarding the Pollution Control Hearings Board can be found at: http://www.eluho.wa.gov/
At the same time you file an appeal with the Pollution Control Hearings Board, also send a copy of the appeal to the Department of Natural Resources' region office and the Office of the Attorney General at the following addresses:

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

And

Department Of Natural Resources
South Puget Sound Region
950 Farman Ave N
Enumclaw, WA 98022

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:

hand delivered

On this day 10/31/2019, I ~~placed in the United States mail~~ at Enumclaw, WA,
(date) (post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA #2421282
Betty Burton
(Printed name)
Betty Burton
(Signature)

Pleasant Valley VRH Timber Sale Road Work Maps, page 1 of 2

132+52
Section 30
PV U2
111+
PV U1
Section 29
4+42
18+66
Install 18"x40' PD
(possible replacement)
17+96=0+00
PV120-1
104+20
End rock
lift.
12+16
Install 18"x30' relief pipe
5+48
103+67
Peavy Pit
11+70
Clean inlet of stream
culvert. Remove trees and
brush within 5 feet of inlet.
T15R05E
PV100
PV100
100+45
Begin rock
lift.
11+05
Install 18"x40' relief pipe
90+00 = 0+00
7+53
Rock turnout
left at rd jct
80+00
End rock
lift.
6+38
End new construction
78+10
Install
18"x40' PD
74+00
Begin
rock lift.
Section 31
Section 32
PV100

Legend

- Road Stationing
- Existing Roads
- Required Pre-Haul Maintenance
- Required Construction
- Optional Construction
- Optional Reconstruction
- Take / Removal Trees
- Survey - Township Lines
- Survey - Section Lines
- Contours 40 ft
- Contours 10 ft
- Pleasant Valley VRH

N

0 250 500 1,000 Feet

1 inch = 500 feet

Pleasant Valley VRH Timber Sale Road Work Maps, page 2 of 2

21+78
Fix rd. Remove berm, plastic pipes, & wood

22+17
Install 18"x40' PD

20+45
Rock turnout left

23+71
Install 18"x30' PD

25+87
Rock turnout and landing left

28+32
Possible rock source (RS1)

30+00
Clean and rock turnout left

PV140

Section 29

T15R05E

PV U2

33+54

PV U1

111+76 = 0+00

104+20
End rock lift.

103+67
Peavy Pit

PV100

PV100

100+45
Begin rock lift.

90+00 = 0+00

LUTKINS ROAD

PV130

SR-7

Section 32

Legend

- Road Stationing
- Existing Roads
- Required Pre-Haul Maintenance
- Right of Way Tags
- Take / Removal Trees
- Murrelet Timing Restriction
- Survey - Township Lines
- Survey - Section Lines
- Contours 40 ft
- Contours 10 ft
- Pleasant Valley VRH

N

0 250 500 1,000 Feet

1 inch = 500 feet

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

PLEASANT VALLEY VRH TIMBER SALE
ROAD PLAN
LEWIS COUNTY
RAINIER DISTRICT
ELBE UNIT

AGREEMENT NO.: 30-093163 STAFF ENGINEER: M. BELL

DATE: 6/19/19

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

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

0-2 REQUIRED ROADS

The specified work on the following roads is required.

Road	Stations	Type
PV100	0+00 to 132+52	Pre-haul maintenance
PV120	0+00 to 6+38	Construction
PV120	6+38 to 18+66	Pre-haul maintenance
PV140	0+00 to 33+54	Pre-haul maintenance
PV123	0+00 to 5+48	Closure, if reconstructed
PV100	78+00 to 132+52	Post-haul maintenance
PV140	0+00 to 33+54	Post-haul maintenance

0-3 OPTIONAL ROADS

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

Road	Stations	Type
PV120-1	0+00 to 4+42	Construction
PV123	0+00 to 5+48	Reconstruction

0-4 CONSTRUCTION

Construction includes, but is not limited to:

- Clearing.
- Grubbing.
- Right of way debris disposal.
- Excavation and/or embankment to subgrade.
- Landing construction.
- Acquisition and installation of drainage structures.
- Manufacture and application of rock.

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to:

- Clearing.
- Grading and compacting.
- Right of way debis disposal.
- Ditch cleaning and reconstruction.
- Installation of turnarounds.
- Landing construction.
- Manufacture and application of rock.

0-6 PRE-HAUL MAINTENANCE

Pre-haul maintenance includes, but is not limited to:

- Cleaning roadway and cutslopes of fallen debris.
- Grading and compacting.
- Brushing.
- Ditch cleaning and reconstruction.
- Culvert cleaning and headwall reconstruction.
- Acquisition, installation, and replacement of drainage structures.
- Stockpile creation.
- Acquisition and application of rock.

0-7 POST-HAUL MAINTENANCE

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

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop a new or an existing rock sources. Rock source development will involve manufacture of 5000 cubic yard crushed rock stockpile. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

Purchaser shall perform road work within the tolerances listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET.

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

1-6 ORDER OF PRECEDENCE

Any conflict or inconsistency in the road plan will be resolved by giving the documents precedence in the following order:

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

- Centerline is marked with orange pin flags and orange flagging for new construction.
- Centerline is referenced using metal tags on trees with horizontal and vertical offsets to designed subgrade elevation at centerline for new construction.

1-16 CONSTRUCTION STAKES SET BY STATE

Purchaser shall perform work on the following road(s) in accordance with the reference points set in the field for grade and alignment. Reconstruction of existing road grades must conform to the original location except where construction staked or designed.

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete pre-haul road work before the start of timber haul, unless approved in writing by the Contract Administrator.

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 7 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

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

- Drainage installation.
- Subgrade compaction.
- Rock compaction.

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

No operation of road construction equipment or rock haul will be allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator.

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

Activity	Closure Period
Operation of road construction equipment or rock haul	November 1 to May 15

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a seasonal closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, the Purchaser shall comply with a maintenance plan to include further protection of water, soil, roads, and other forest assets at the Purchaser's expense. Preventative measures shall be in place prior to operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these roads, a joint operating plan must be developed. All parties shall follow this plan.

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 will suspend road work or hauling right-of-way timber, forest products, or rock under the following conditions:

- Wheel track rutting exceeds 6 inches on new construction rocked roads.
- Wheel track rutting exceeds 3 inches on crushed rock roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, 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, Purchaser shall cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

1-31 SPEED LIMITS

On the following road(s), speeds are limited to 15 mph.

Road
PV100
PV120
PV123
PV140

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact Administrator upon request. Purchaser shall request a SNOW PLOWING AGREEMENT each time plowing occurs. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

The following county road(s) are affected by this sale:

Road Name
Pleasant Valley Road

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.

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface before timber haul unless an alternative time is approved in writing by the Contract Administrator.

Road	Stations
PV100	0+00 to 132+52
PV120	6+38 to 18+66
PV140	0+00 to 33+54

2-6 CLEANING CULVERTS

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before timber haul.

Road	Stations
PV120	6+38 to 18+66
PV140	0+00 to 33+54

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

On the following road(s), Purchaser shall clean and reconstruct ditches, headwalls, and catchbasins. Work must be completed before timber haul and must be done in accordance with the TYPICAL SECTION SHEET. Ditch cleaning and reconstruction shall be accomplished using a hydraulic excavator unless approved in writing by the Contract Administrator. Pulling ditch material across the road or mixing in with the road surface is not allowed. Excavated material must be scattered outside the clearing limits.

Road	Stations
PV120	6+38 to 18+66
PV140	0+00 to 33+54

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION CLEARING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 5 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by manual or mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

Road	Stations
PV120	6+38 to 18+66
PV140	0+00 to 33+54

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 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.

3-8 PROHIBITED DECKING AREAS

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

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

SUBSECTION GRUBBING

3-10 GRUBBING

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Grubbing must be completed before starting excavation and embankment.

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditchlines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris before application of rock or timber haul.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 20 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 55%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.
- In location that would impede drainage.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside the clearing limits.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment except as designed:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 6% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-5 CUT SLOPE RATIO

Purchaser shall construct excavation slopes no steeper than shown on the following table, unless construction staked or designed:

Material Type	Excavation Slope Ratio	Excavation Slope Percent
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
Common Earth (on slopes over 70%)	½:1	200
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

4-6 EMBANKMENT SLOPE RATIO

Purchaser shall construct embankment slopes no steeper than shown on the following table, unless construction staked or designed:

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

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.

Purchaser shall apply embankment widening equally to both sides of the road to achieve the required width.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

Purchaser shall construct turnouts as designated on the TURNOUT LIST. Locations may be adjusted to fit the final subgrade alignment and sight distances. Location changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

4-22 TURNAROUNDS

Purchaser shall construct turnouts as designated on the TURNAROUND LIST. Turnarounds shall be 30 feet long and 30 feet wide. Location changes are subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as needed and as directed by the Contract Administrator. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

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 55% if the waste material is compacted and free of organic debris.

4-37 WASTE AREA LOCATION

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

Road	Waste Area Location	Volume
PV100	Adjacent to the PV100 road at station 76+10	500
PV120	Adjacent to the PV120 road from station 6+40 to 10+00	1000

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas, except as otherwise specified in this plan:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 55%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

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 for embankment and waste area segments too narrow to accommodate equipment. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed 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 rock application.

4-62 DRY WEATHER COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

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

SECTION 5 – DRAINAGE

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-11 UNUSED MATERIALS STATE PROPERTY

On required roads or as listed in Clause 5-10, any materials listed on the CULVERT AND DRAINAGE LIST that are not installed will become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL, the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures" and the the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover recommended by the culvert manufacturer for the type and size of the pipe.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT LIST. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Rock must be set in place by machine. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

Purchaser shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long.

5-26 HEADWALLS FOR CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts. Rock used for headwalls must be QUARRY SPALLS. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. QUARRY SPALLS shall meet the specifications in CLAUSE 6-43 QUARRY SPALLS.

SUBSECTION SURFACE DRAINAGE

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

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. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before starting any operations in the listed locations.

Source	Location	Rock Type
Peavy Pit	SE ¼ SW ¼ Section 29 Township 15 North Range 05 East	4 Inch Jaw Run 2 Inch Minus Crushed Quarry Spalls
RS1	E½ Section 29 Township 15 North Range 05 East	4 Inch In Place Quarry Spalls

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 are subject to written approval by the Contract Administrator before their use.

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written ROCK SOURCE DEVELOPMENT PLAN prepared by the state included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before starting any operations in the rock source.

Source
Peavy Pit

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

Purchaser shall conduct rock source development and use at the following sources, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before starting any operations in the rock source.

Source
RS1

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

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

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT PLAN:

- Pit walls may not be undermined or over steepened. The maximum slope of the walls must 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 must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient except as approved by the Contract Administrator.
- All operations must 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.
- All vehicle access to the top of the pit faces must be blocked.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Additional oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments larger than two feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 3 working days before any drilling.
- All operations must be carried out in compliance with 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 the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

SUBSECTION ROCK MANUFACTURE

6-20 ROCK GRADATION TYPES

Purchaser shall manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles or during manufacture and placement into a stockpile. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

6-23 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- If a smooth roll crusher is used, the maximum size of material fed into it shall be equal to the largest size of the material coming out of it plus 8.5 percent of the roll radius.
- The crushing operation per pit must be concluded within 20 working days from the time it begins in that pit unless approved in writing by the Contract Administrator.
- Purchaser is required to produce sieve analysis for crushing operations every 1000 yards for each rock gradation type.

SUBSECTION ROCK GRADATIONS

6-30 2-INCH MINUS CRUSHED ROCK

% Passing 2” 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 may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

6-37 4-INCH JAW RUN ROCK

% Passing 4” square sieve	95%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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

6-38 4-INCH IN-PLACE ROCK

Purchaser shall manufacture 4-inch in-place rock. In-place processing such as grid rolling, jaw crushing, or other such method as demonstrated by the Purchaser to be effective, shall be required if necessary to achieve the following requirements:

4-inch in-place rock shall have a minimum of 90 percent of the top 4 inches of the running surface pass a 4-inch square opening.

In-place rock shall contain no more than 5 percent by weight of organic debris and trash. No more than 50 percent of rock shall be larger than 8 inches in any dimension and no rock shall be larger than 12 inches in any dimension.

6-43 QUARRY SPALLS

% Passing 8" square sieve	100%
% Passing 3" square sieve	40% maximum
% Passing 3/4" square sieve	10% maximum

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

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

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

6-56 ROCK MEASUREMENT BY TRUCK VOLUME

Measurement of 2 INCH MINUS CRUSHED, and QUARRY SPALLS rock is on a cubic yard truck measure basis. The Contract Administrator will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets for each truck as shown in ROCK ACCOUNTABILITY DETAIL and shall give them to the Contract Administrator on a weekly basis during rocking operations.

6-65 ROCK STOCKPILE LOCATION

Purchaser shall stockpile rock as listed below.

Rock Source	Rock Type	Quantity (c.y.)	Stockpile Location
Peavy Pit	2 Inch Minus Crushed	5000	Stockpile Site

6-67 ROCK STOCKPILE SPECIFICATIONS

Rock stockpiles listed in Clause 6-65 ROCK STOCKPILE LOCATION must meet the following specifications:

Before placing aggregates upon the stockpile site, the site must be cleared of vegetation, trees, stumps, brush, rocks, or other debris and the ground leveled to a smooth, firm, uniform surface. 2-1/2 Inch Minus Crushed remaining in stockpile area shall be pushed to the far end of the stockpile area.

When completed, the stockpile must be neat and regular in shape. The stockpile height is limited to a maximum of 25 feet. Stockpiles in excess of 500 cubic yards must be built up in layers of not more than 4 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Pushing aggregates into piles with a bulldozer shall not be permitted. Each layer must be completed over the entire area of the pile before depositing aggregates

in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile. The method of dropping from a bucket or spout in one location to form a cone shaped pile is not allowed.

No equipment other than pneumatic tired equipment may be used on stockpiles. Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade including: ditches, headwalls, catch basins, culverts, energy dissipaters, ditch-outs, subgrade shaping and compacting before rock application.

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 7 – STRUCTURES

SUBSECTION GATE CLOSURE

7-70 GATE CLOSURE

On the following road(s), Purchaser shall keep gates closed and locked except during periods of haul. All gates that remain open during haul must be locked or securely fastened in the open position. All gates that remain open during haul must be signed ROAD CLOSED and LOGGING OPERATIONS AHEAD. All gates must be closed at termination of use.

Road	Station	Gate No.	Comment
PV100	2+00	602	During periods of haul, gate shall be closed and locked nightly. PV road system shall be cleared of public vehicles prior to locking gate.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

Purchaser shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS and as specified below.

Road	Stations	Additional Requirements
PV100	78+00 to 132+52	Clean road surface, ditches, culvert inlets and culvert outlets as per clause 11-3 EXISTING ROAD CLEAN-UP. Grade, shape, and compact road surface prior to rock application. Replace lost, contaminated, or worn away surface material per clause 11-2 EXISTING ROAD CLEAN-UP. Compact rock per COMPACTION LIST.
PV140	0+00 to 33+54	

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

SUBSECTION CLOSURE

9-15 ROAD CLOSURE

Purchaser shall close the following roads at the termination of use.

Road	Stations
PV123	0+00 to 5+48

9-16 CLOSURE

At a minimum, closure consists of:

- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 30 feet between waterbars or between natural drainage paths and with a maximum spacing of 300 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must drain onto stable locations.
- Install road barricade at beginning of road according to the attached ROAD BARRICADE DETAIL.

SECTION 10 MATERIALS

SUBSECTION CULVERTS

10-17 CORRUGATED PLASTIC CULVERT

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

10-22 PLASTIC BAND

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

SECTION 11 SPECIAL NOTES

11-1 DITCH MAINTENANCE

The Purchaser shall maintain ditches in accordance with Forest Access Road Maintenance Specifications. Any landing construction shall provide for drainage, as approved by the Contract Administrator.

11-2 LANDING DEBRIS

Purchaser shall reduce or relocate debris generated by road and landing construction, in a manner approved, in writing, by the Contract Administrator, to avoid landing failures and potential debris slides.

11-3 EXISTING ROAD CLEAN-UP

If Purchaser elects to use the following roads as a landing or loading location the road shall be cleaned of all organic debris; all lost, contaminated or worn away surface material will be replaced; and all ditches and drainage channels at culvert outlet and inlets shall be cleaned and cleared of obstructions.

Road
PV100
PV140

11-4 ORANGE PAINTED TREES

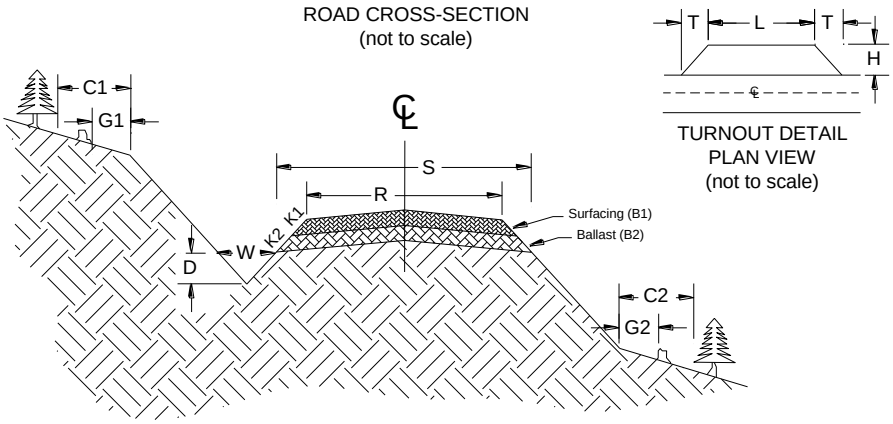
On the following road, trees marked with orange paint shall be cut and removed.

Road	Station
PV140	0+00 to 20+45

11-5 STOCKPILE ROCK MEASUREMENT

Measurement of the 2-1/2 INCH MINUS CRUSHED Stockpile is on an in-pile basis. The Contract Administrator, or their designee, will measure the stockpile to determine if it meets the quantity listed in the ROCK LIST.

TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch Width (feet)	Ditch Depth (feet)	Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits* (feet)	
				S	R	W	D		G1	G2	C1	C2
PV100	0+00	132+52	A	15	12	4	2	4	-	-	5	5
PV120	0+00	18+66	A	15	12	4	2	4	2	2	5	5
PV120-1	0+00	4+42	C	15	12	4	2	4	2	2	5	5
PV123	0+00	5+48	C	15	12	2	1	4	2	2	5	5
PV140	0+00	20+45	A	15	12	2	1	4	2	2	5**	5**
PV140	20+45	25+00	A	15	12	2	1	4	2	2	tags	tags
PV140	25+00	33+54	A	15	12	2	1	4	2	2	5	5

*Tags are Right of Way Tags

**Trees painted with orange paint shall be cut as part of the timber sale.

TURNOUT LIST

Road Number	Begin Station	End Station	Turnout Width (H)	Full Width Length (L)	Taper Length (T)	Comments
PV120	7+53	8+53	10’	50’	25’	Construct turnout left at road junction
PV140	19+45	20+45	10’	50’	25’	Construct turnout left at road junction
PV140	25+87	26+27	10’	30’	5’	Construct turnout right using road junction
PV140	30+00	31+00	10’	50’	25’	Construct turnout left at existing wide spot

TURNAROUND LIST

Road Number	Station	Min. Width (ft)	Min. Length (ft)	Comments
PV120-1	4+42	30	30	

COMPACTION LIST

Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
All new construction and reconstruction			Culvert Installations	12	Vibratory Smooth Drum	14,000	4	3
			Embankment	12				
			Fill	12				
			Subgrade					
			Rock	12				
			Waste Area	12				
All pre-haul and post haul			After grading existing road surface and prior to rocking					
			Culvert Installations	12				
			Rock	9				

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Sub-total	Rock Source
			K2	B2	4 Inch Jaw Run			
PV120	0+00	18+66	1.5:1	12”	50	19	950	Peavy Pit
PV120-1	0+00	4+42	1.5:1	12”	50	5	250	
PV123	0+00	5+48	1.5:1	12”	50	6	300	
P140	0+00	20+45	1.5:1	12”	50	21	1050	
PV140	20+45	33+54	1.5:1	12”	50	13	650	
Turnouts on PV120			1.5:1	12”	36 cyd/ per turnout	1 turnout	36	
Turnouts on PV140			1.5:1	12”	36 cyd/ per turnout	3 turnout	108	
Turnarounds			1.5:1	12”	26 cyd/ per turn-around	1	26	
Quarry Spalls for culvert Installations. See Culvert List for locations							9	Peavy Pit or RS1
4 Inch In Place for Landings *							200	

*Optional Rock

BALLAST TOTAL: 3579 Cubic yards

SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Subtotal	Rock Source
			K2	B2	2 Inch Minus Crushed			
PV100	74+00	80+00	1.5:1	6”	25	6	150	Peavy Pit
PV100	100+45	104+20	1.5:1	6”	25	4	100	
PV100	78+00	132+52	1.5:1	Exact stationing and depth to be determined by Contract Administrator. Compliance of rock will be by truck volume per Clause 6-56.			400	Peavy Pit
PV140	0+00	33+54	1.5:1				200	
2 Inch Minus Crushed Stockpile in Peavy Pit							5000	Peavy Pit

SURFACE TOTAL: 5850 Cubic yards

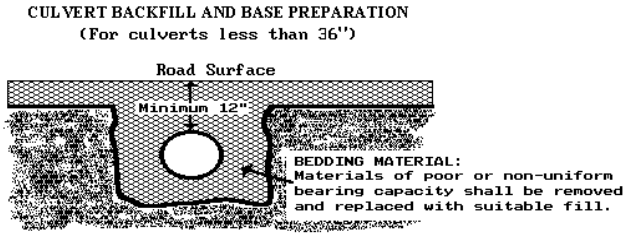
NOTE: Yardages are estimated on a compacted (In-Place) basis. Compliance of required rock, except as listed in Clause 5-56 and Clause 11-5, will be based on compacted depth measurement. Apply appropriate factors to determine loose amounts for estimating purposes. Roads and rock quantities are designed for dry weather use. If Purchaser elects to haul in wet weather additional rock may be obtained from the rock pits listed in Section 6 at the Purchaser’s expense and with prior written approval from the Contract Administrator.

CULVERT AND DRAINAGE LIST

Road Number	Location	Culvert Dia. (in)	Culvert Type	Length (ft) Culvert	Length (ft) Downspt	Length (ft) Flume	Riprap (C.Y.) Inlet	Riprap (C.Y.) Outlet	Riprap (C.Y.) Type	Backfill Material*	Placement Method*	Const. Staked*	Remarks
PV100	78+10	18	PD	40			0.5	0.5	QS				Install uphill from PV120 road
PV120	1+26	18	PD	40			0.5	0.5	QS				Install across the PV100 road
PV120	5+42	18	PD	30			0.5	0.5	QS				
PV120	11+05	18	PD	40			0.5	0.5	QS				
PV120	11+70	-	-	-			-	-	-				Clean inlet of stream culvert. Remove trees, stumps and brush within 5 ft of culvert inlet.
PV120	12+16	18	PD	30			0.5	0.5	QS				
PV120	17+96	18	PD	30			0.5	0.5	QS				
PV120	18+66	18	PD	40			0.5	0.5	QS				
PV140	22+17	18	PD	40			0.5	0.5	QS				
PV140	23+71	18	PD	30			0.5	0.5	QS				

* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

PD = Polyethylene Pipe Dual Wall AASHTO No. M294 Type S or ASTM F2648

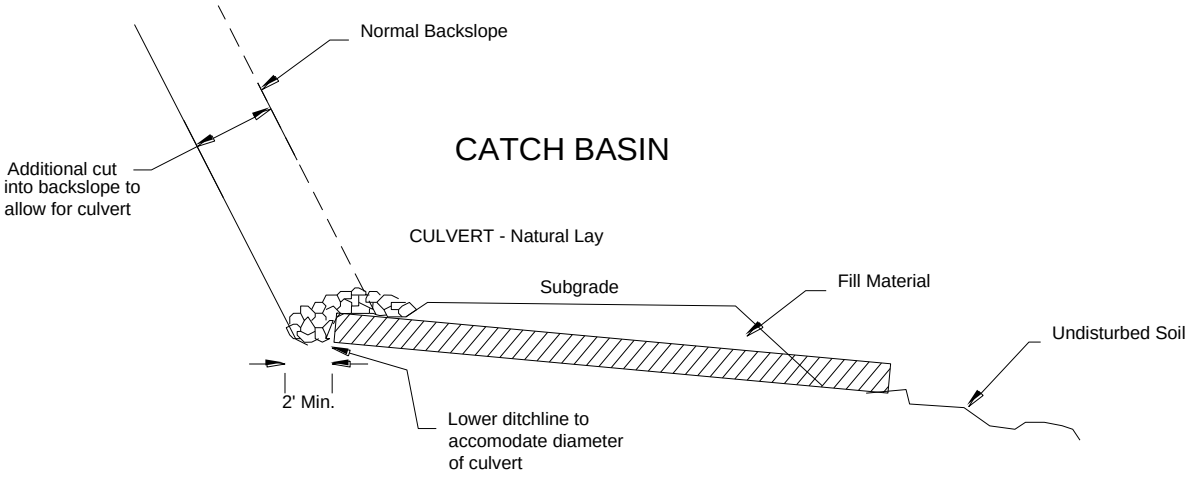


Key:

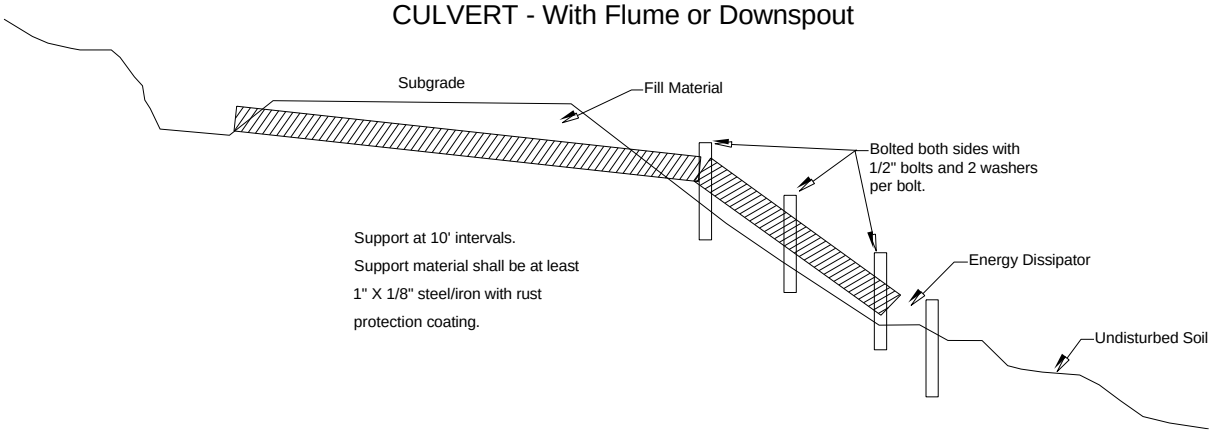
QS - Quarry Spalls
LL - Light Loose Riprap
SR - Shot Rock
NT - Native (bank run)
SL - Select Fill
HL - Heavy Loose Riprap
Flume - Half round pipe
Downspout - Full round pipe

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 1 of 3)



CULVERT - With Flume or Downspout

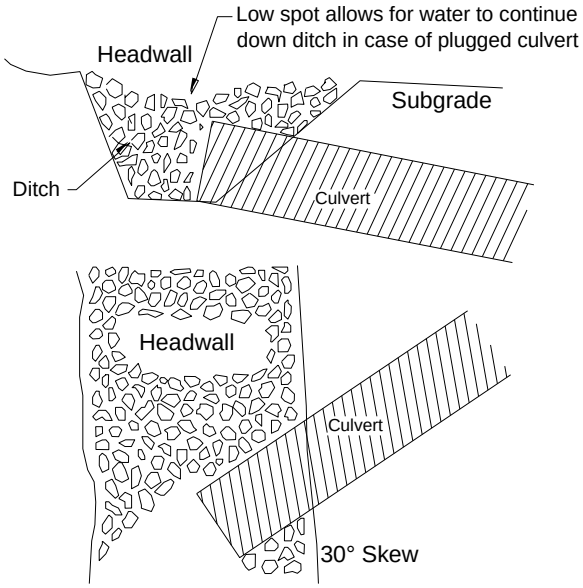


CULVERT AND DRAINAGE SPECIFICATION DETAIL

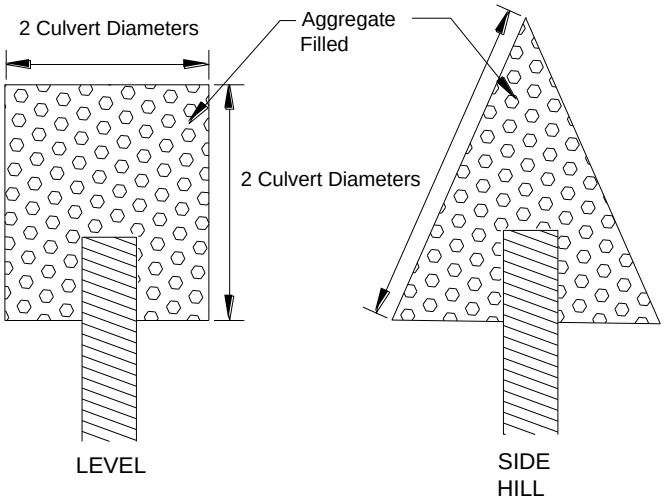
(Page 2 of 3)

Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense unyielding base. The backfill material shall be placed so that the pipe is uniformly supported along the barrel.

HEADWALLS



ENERGY DISSIPATORS



Headwalls to be constructed of material that will resist erosion.

Dissipator Specifications:
Depth: 1 culvert diameter
Aggregate: as specified in the CULVERT LIST.

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 3 of 3)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

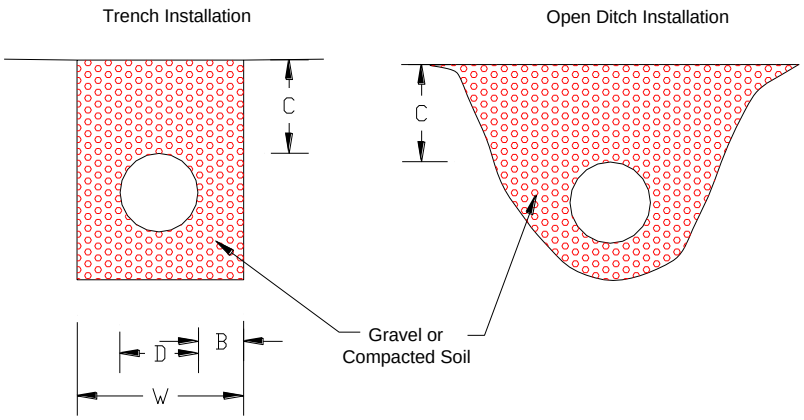
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.

2. The corrugated pipe shall be laid on grade, on a layer of bedding material as shown for the two types of installations. If native soil is used as the bedding and backfill material, it shall be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.

3. Either crushed aggregate or flexible (asphalt) pavement may be laid as part of the minimum cover requirements.

4. Site conditions and availability of bedding materials often dictate the type of installation method used.

5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.



MINIMUM DIMENSIONS

Trench or Open Ditch Installation

Nominal Diameter	Minimum Thickness	Minimum Cover	Min. Trench Width
D	B	C	W
18"	6"	12"	36"
24"	6"	12"	42"
30"	6"	12"	48"
36"	6"	12"	54"

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 1of 2

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, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

- Grade and shape the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET 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.

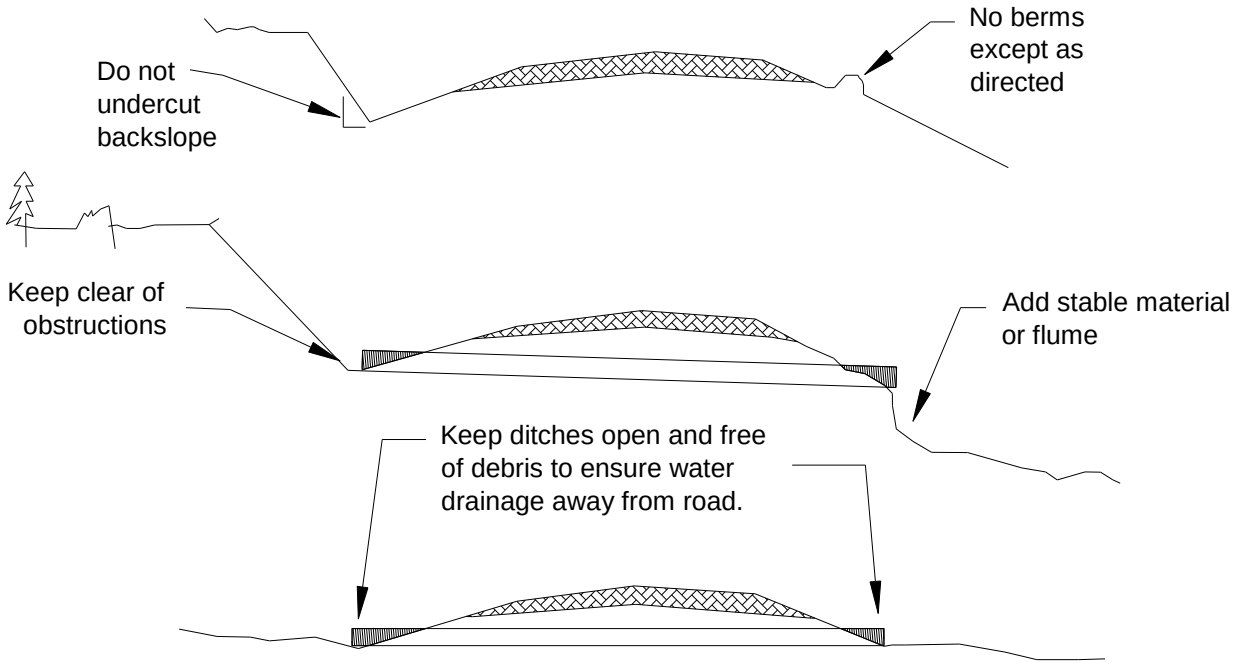
FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 2 of 2

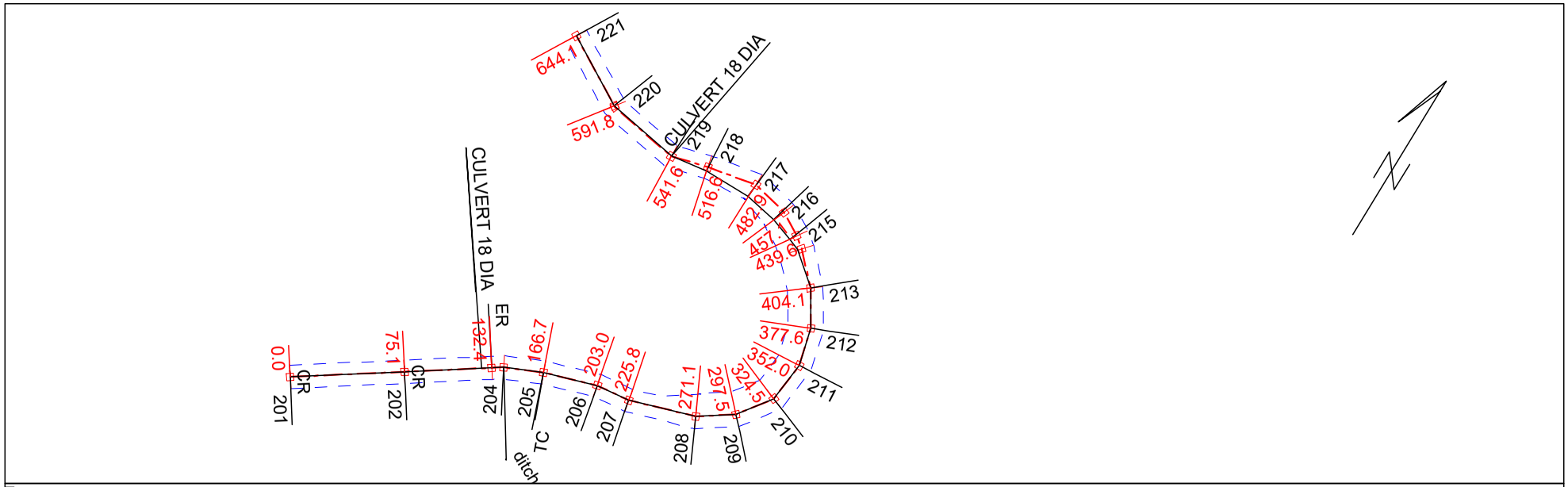
Termination of Use or End of Season

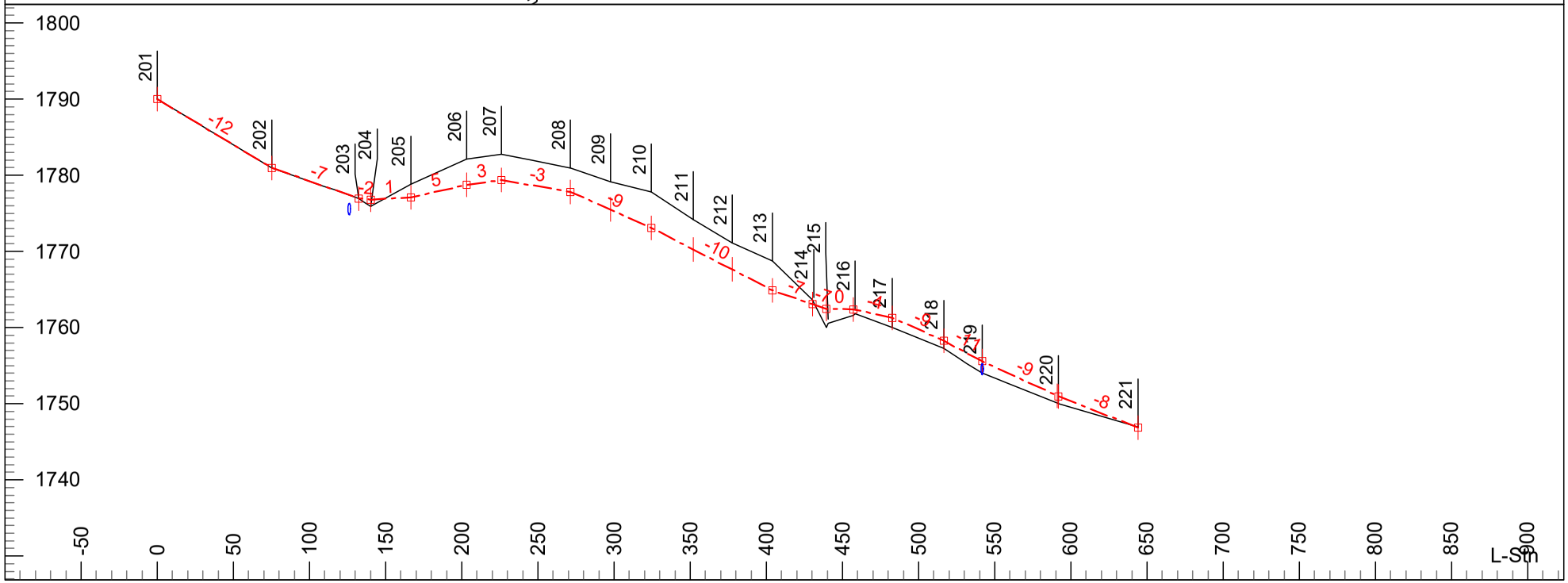
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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







Pleasant Valley VRH Timber Sale
PV120 June 19, 2019
Contract #: 30-093163

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200

Profile Vert Scale 1:240
Profile Horz Scale 1:1200

Engineer: M. Bell

19/06/27

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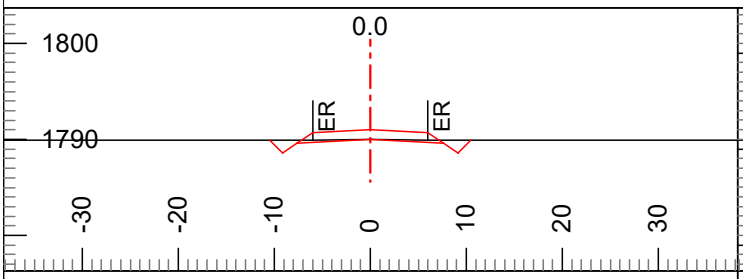
ROADENG Section	Scale 1:240	P. 1
F:\000_FY20_PLEASANT VALLEY CT\Roadeng\PV120		19/06/27



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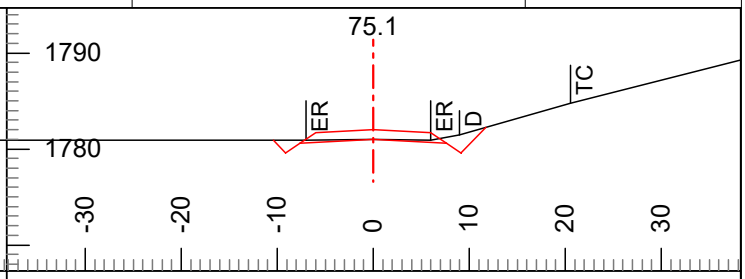

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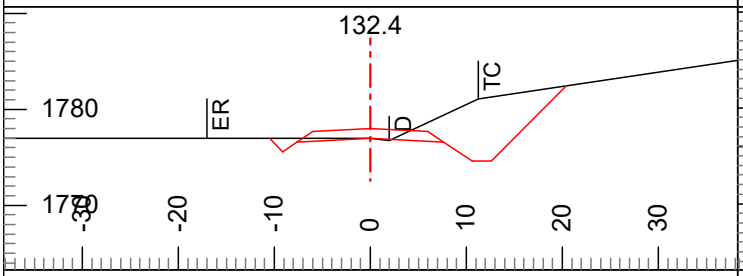

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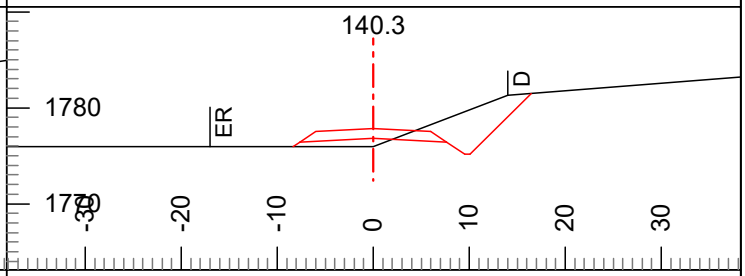

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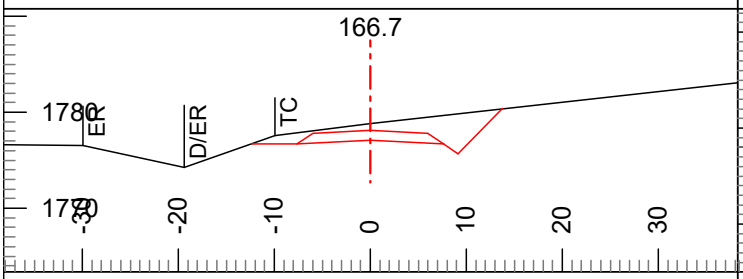

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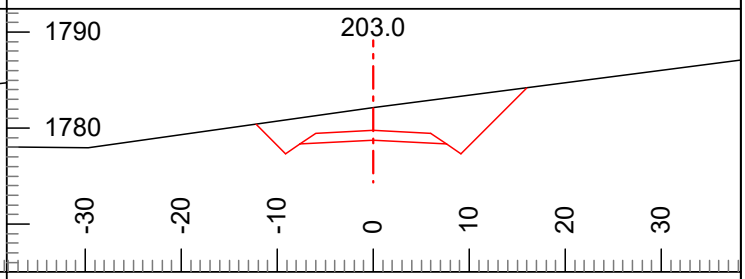

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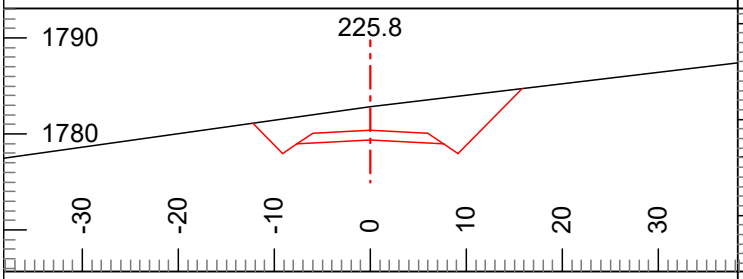

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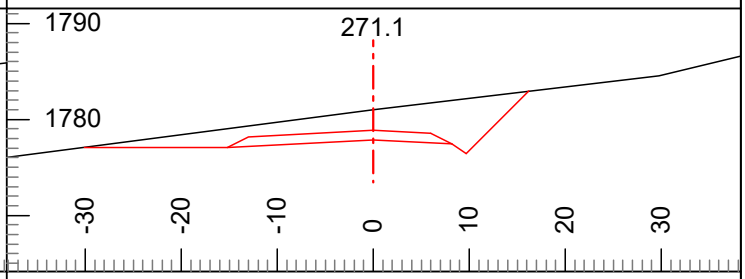

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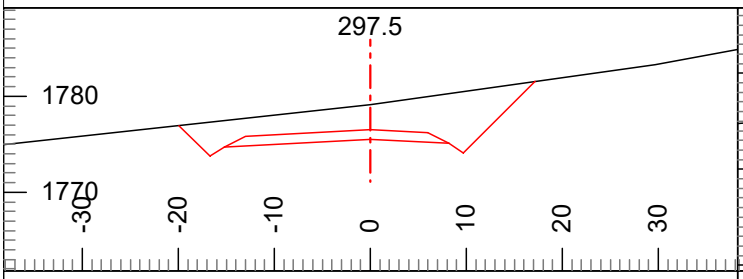
Ssl:	-13.0	Rd. Wd.:	23.4		

ROADENG Section	Scale 1:240	P. 2
F:\000_FY20_PLEASANT VALLEY CT\Roadeng\PV120		19/06/27



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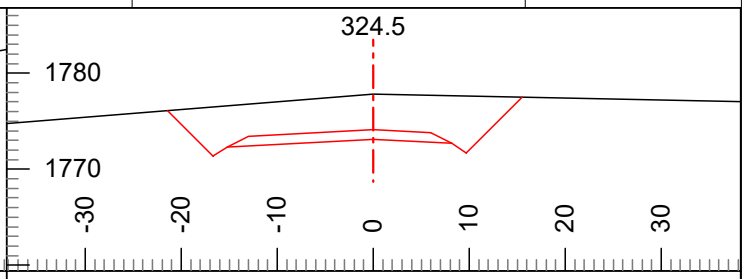
Ssl:	-11.0	Rd. Wd.:	23.4		



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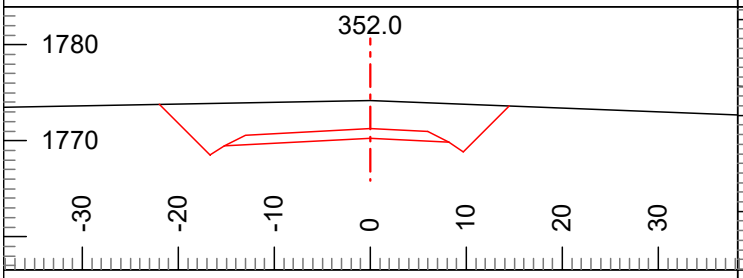

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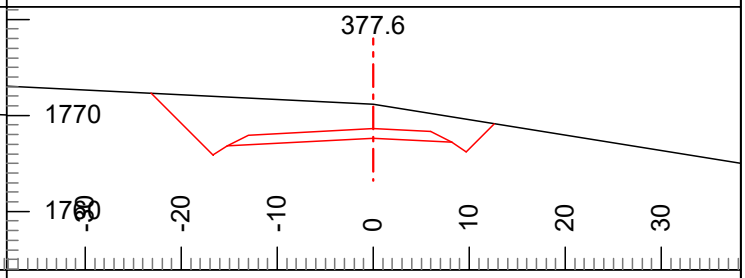

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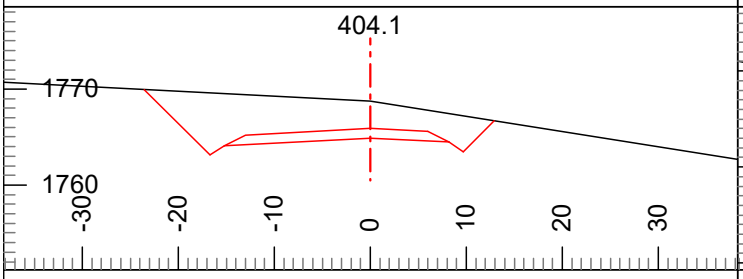

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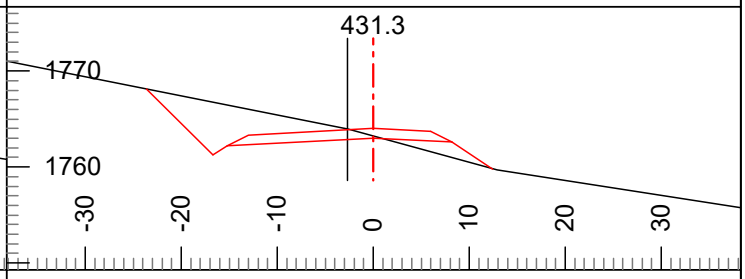

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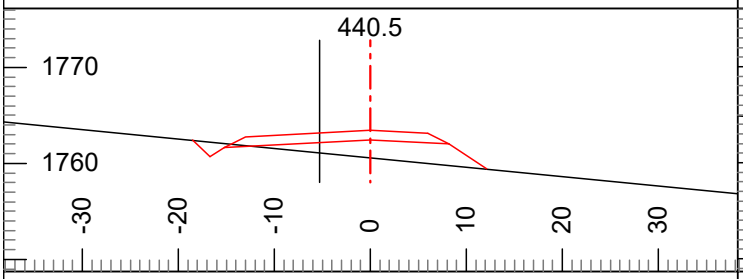
Ssl:	20.0	Rd. Wd.:	23.4		



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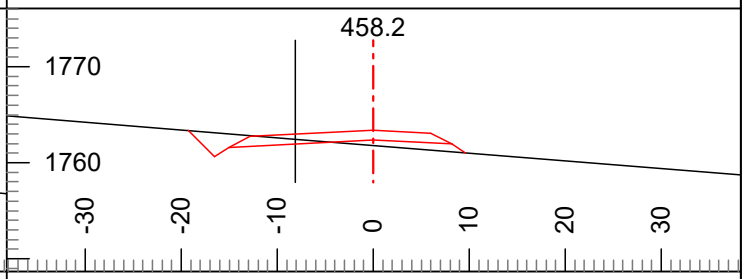
Ssl:	10.0	Rd. Wd.:	23.4		



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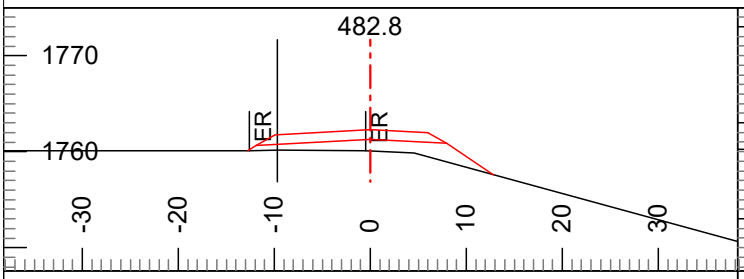
Ssl:	8.0	Rd. Wd.:	23.3		

ROADENG Section	Scale 1:240	P. 3
F:\000_FY20_PLEASANT VALLEY CT\Roadeng\PV120		19/06/27



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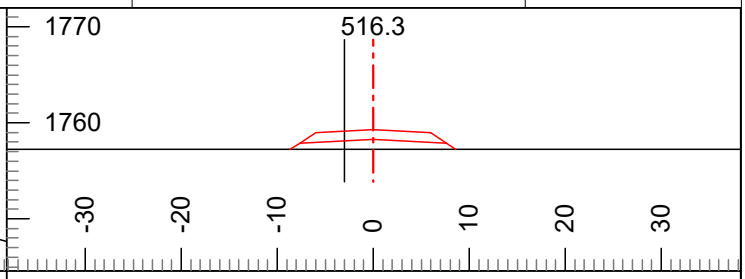

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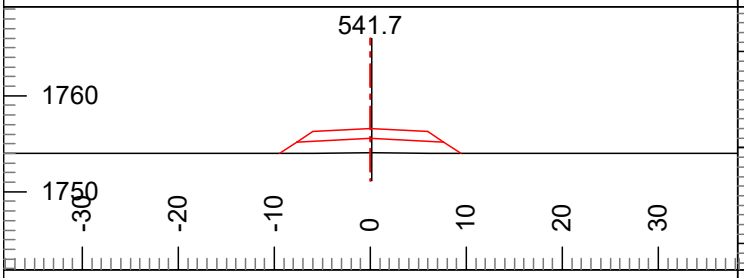

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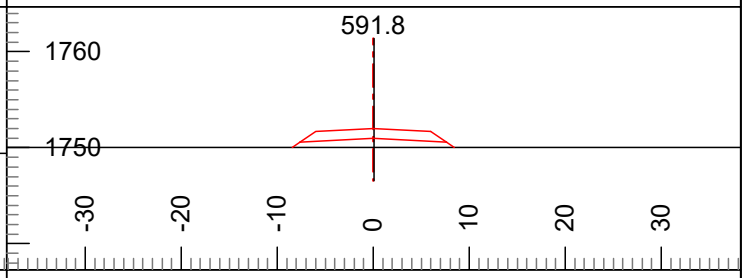

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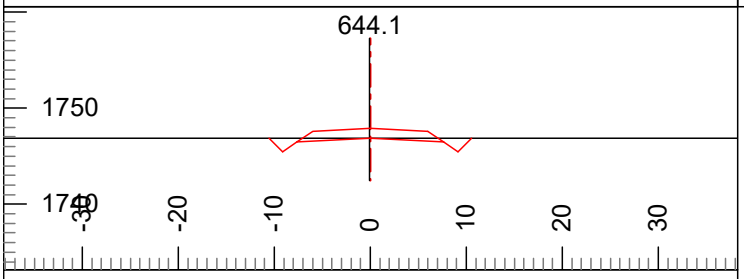

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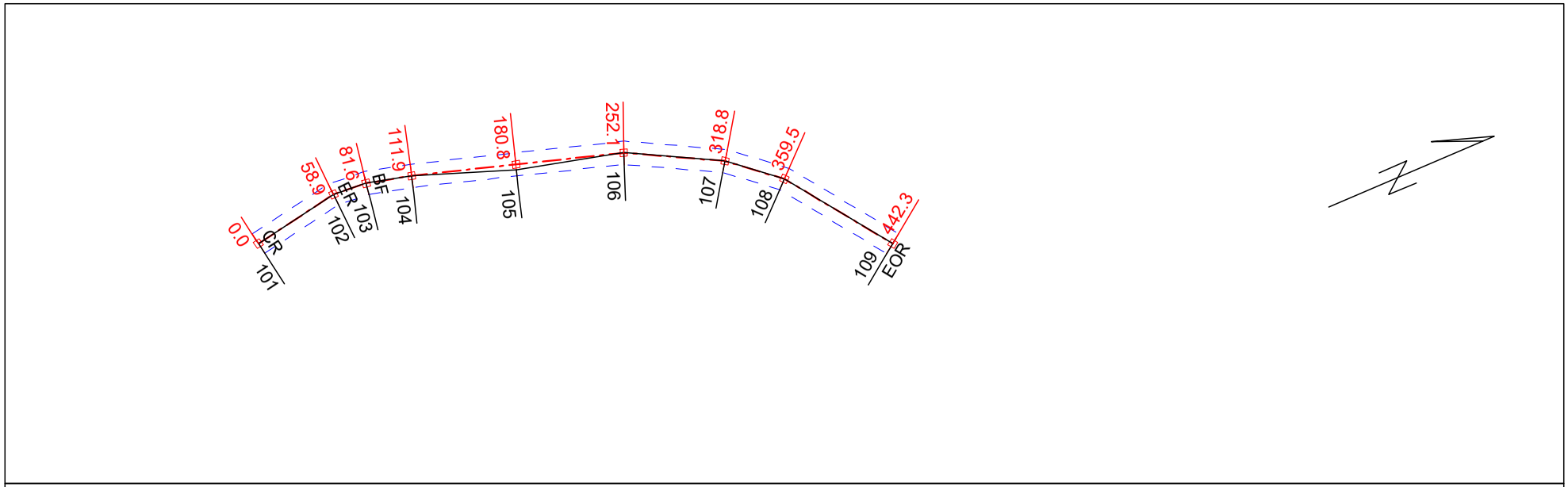

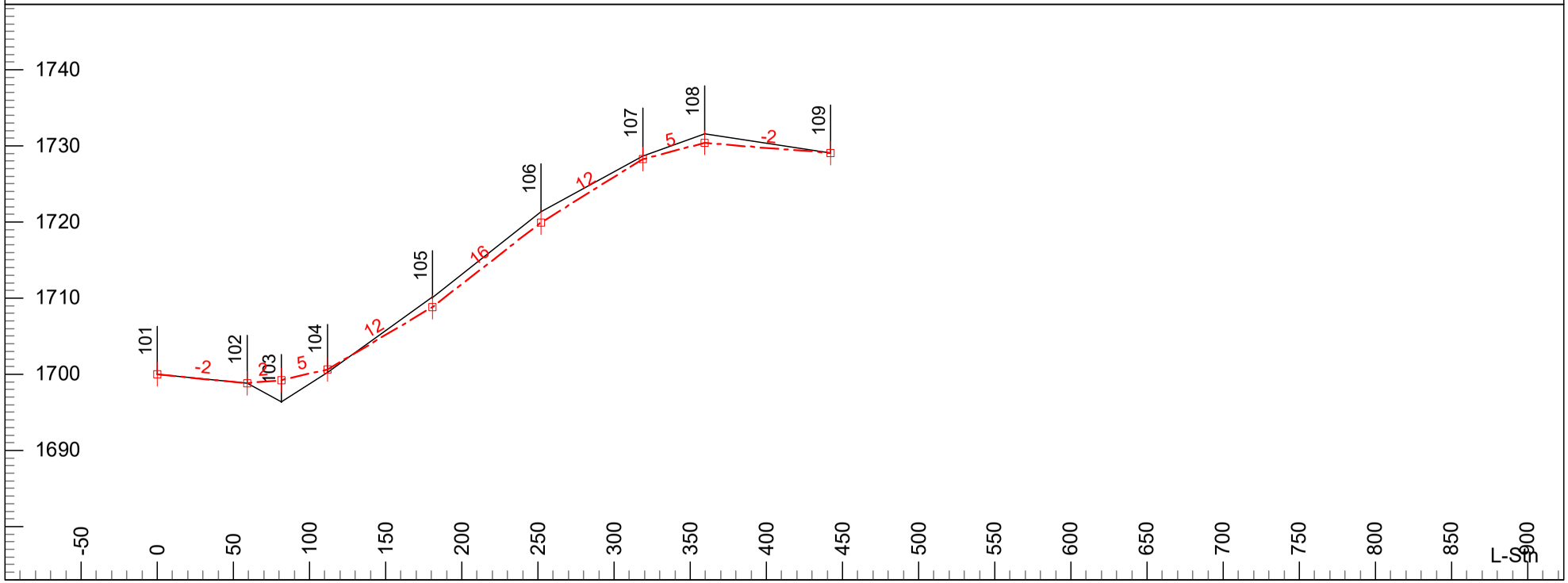

Pleasant Valley VRH Timber Sale
PV120-1 June 19, 2019
Contract #: 30-093163

Washington State Department of Natural Resources
South Puget Sound Region

Plan Scale 1:1200

Profile Vert Scale 1:240
Profile Horz Scale 1:1200

Engineer: M. Bell

19/06/27

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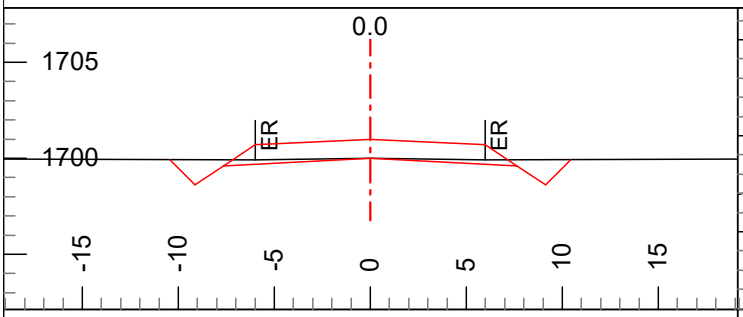
ROADENG Section	Scale 1:120	P. 1
F:\000_FY20_PLEASANT VALLEY CT\Roadeng\PV120-1		19/06/27



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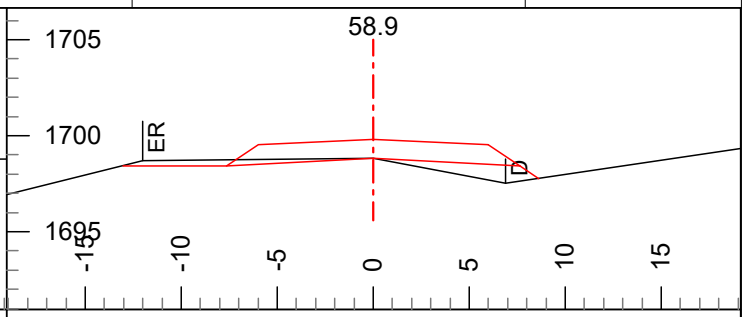

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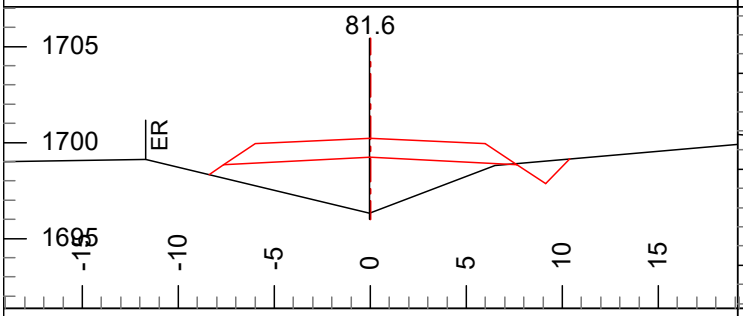

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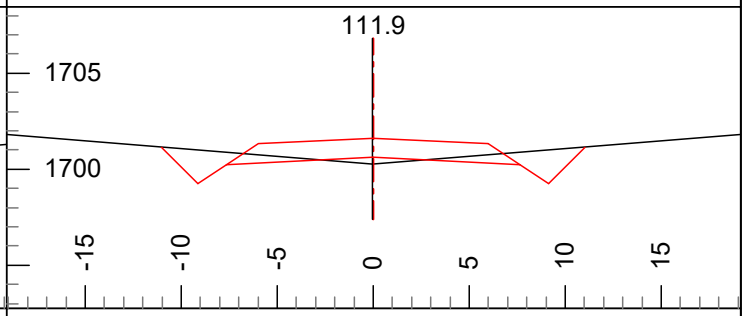

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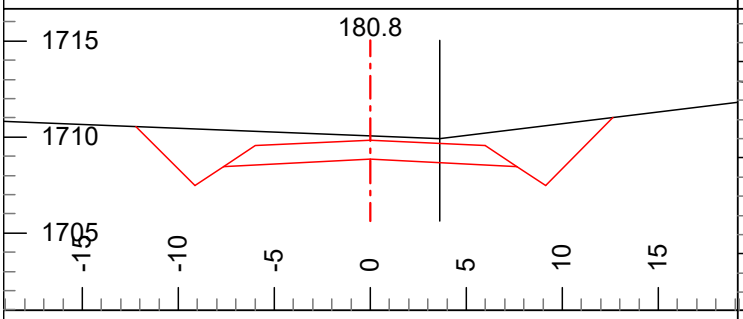

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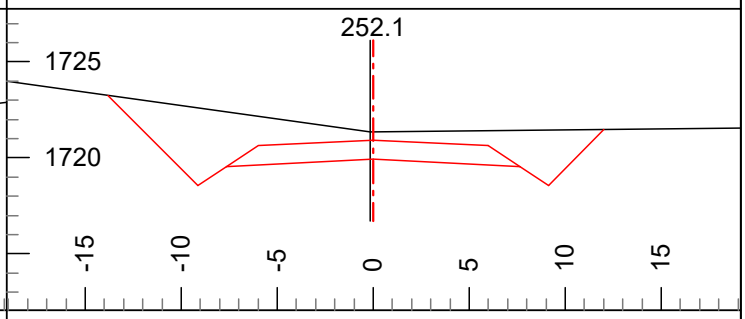
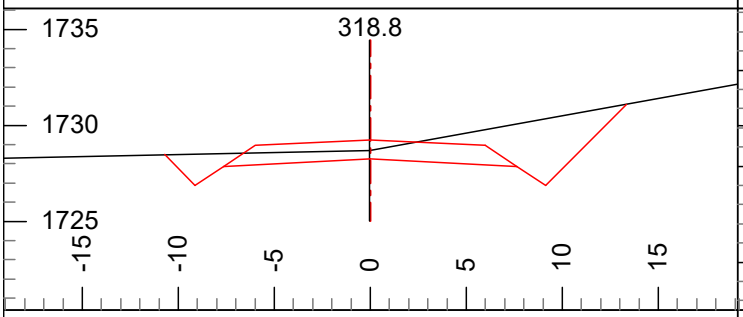
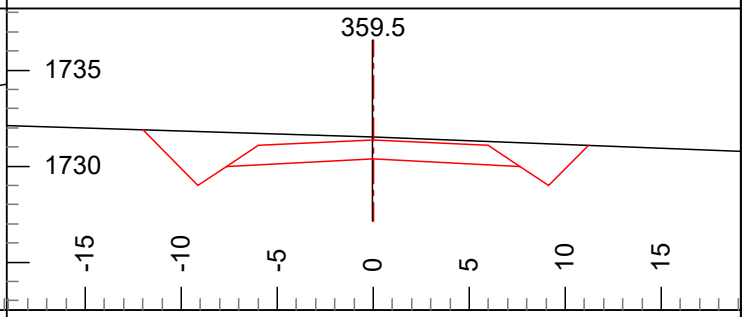
Grd.Lst:	15.6	Cut Dp:	1.2	Rd. Wd. R:	7.6



L-Stn:	252.1	Ssl: (Av)	14.0	Srf Wd.:	12.0
Index:	106	Ssr: (Av)	1.0	Rd. Wd.:	15.2
Grd.Nxt.:	12.5	H. Offset:	0.2	Rd. Wd. L:	7.6
Grd.Lst:	12.5	Cut Dp:	1.4	Rd. Wd. R:	7.6

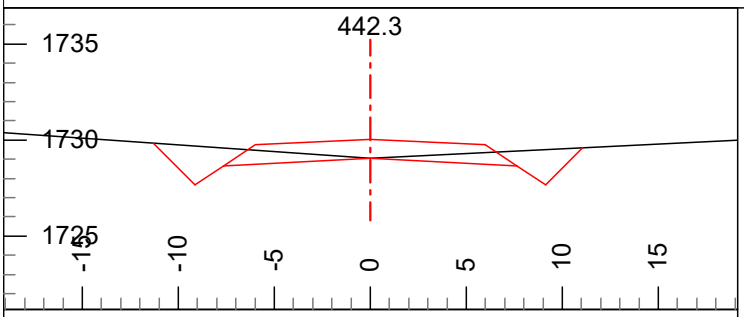


L-Stn:	318.8	Ssl: (Av)	-2.0	Srf Wd.:	12.0
Index:	107	Ssr: (Av)	18.0	Rd. Wd.:	15.2
Grd.Nxt.:	5.2	H. Offset:	0.0	Rd. Wd. L:	7.6
Grd.Lst:	12.5	Cut Dp:	0.4	Rd. Wd. R:	7.6



L-Stn:	359.5	Ssl: (Av)	3.0	Srf Wd.:	12.0
Index:	108	Ssr: (Av)	-4.0	Rd. Wd.:	15.2
Grd.Nxt.:	-1.6	H. Offset:	0.0	Rd. Wd. L:	7.6
Grd.Lst:	5.2	Cut Dp:	1.2	Rd. Wd. R:	7.6

ROADENG Section	Scale 1:120	P. 2
F:\000_FY20_PLEASANT VALLEY CT\Roadeng\PV120-1		19/06/27



L-Stn:	442.3	Ssl: (Av)	7.0	Srf Wd.:	12.0
Index:	109	Ssr: (Av)	5.0	Rd. Wd.:	15.2
Grd.Nxt.:	n/a	H. Offset:	0.0	Rd. Wd. L:	7.6
Grd.Lst:	-1.6	Cut Dp:	0.0	Rd. Wd. R:	7.6

ROCK ACCOUNTABILITY DETAIL

SALE NAME: _____ Purchaser:_____

Agreement #:_____ Contractor:_____

Rock Quarry/Pit: Truck No:_____ Truck No:_____

DAILY ROCK LOAD RECORD					
DATE	LOAD TIME	ROAD NO.	TYPE OF ROCK	QUANTITY	COMMENTS

Truck Driver Signature _____

SIGNATURE DATE

Legal Description: SE ¼ SW ¼ Section 29 Township 15 North Range 5 East, W.M.

Rock Pit Name: Peavy Pit

PIT DEVELOPMENT PLAN, pg 1 of 2

1. Pile root wads and organic debris larger than one cubic foot in volume in clean, burnable piles as directed by the Contract Administrator.

2. A minimum stripping width of 20 feet must be maintained from all pit faces and at the termination of operations pit shall be left in said condition.

3. Pile all reject rock and overburden away from pit working area as shown or as approved by the Contract Administrator. New oversize material shall not exceed 5% of the total mined for the sale. Oversize material is defined as rock fragments larger than 1.5 feet in any dimension.

4. Pit floor shall be sloped to allow drainage as shown. No ponding will be allowed.

5. Maximum face height will be no greater than 30 feet or what can be reached by the excavating equipment, whichever is less.

6. Working bench width shall be a minimum of 20 feet.

7. At the termination of use the pit face shall have a maximum backslope of 1/4:1 for hardpan and solid rock and ½:1 for fractured or loose rock.

8. At the termination of use, all overburden shall have a maximum backslope of 1 ½: 1.

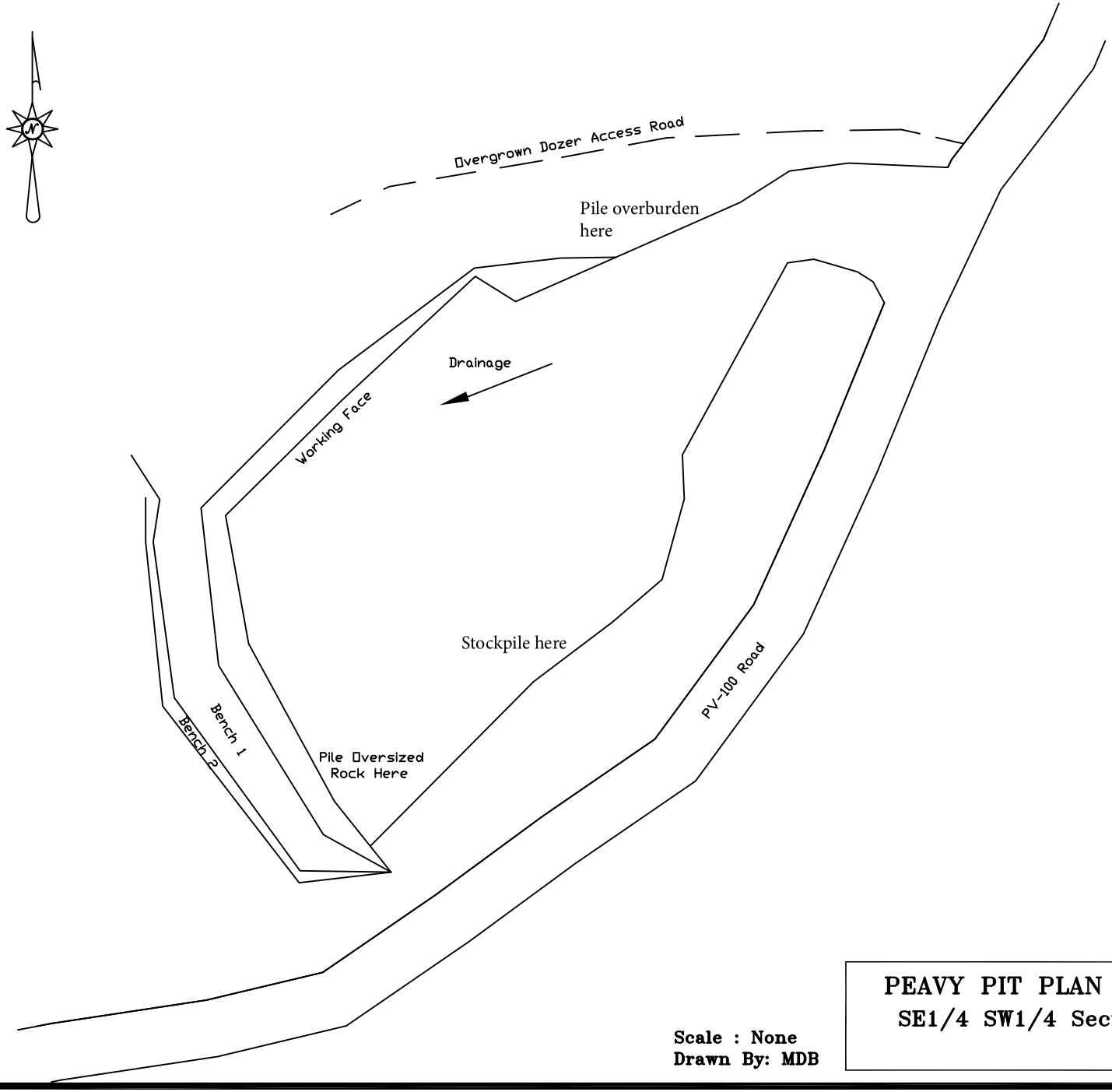
9. At the termination of use and if opened the access road shall be blocked to all motorized traffic.

10. Pit expansion and removal of any timber must be approved by Contract Administrator.

11. At the completion of operations, Contractor shall request written approval from the Contract Administrator for final rock source condition and compliance with the terms of this plan.

12. Quantity and Quality of ballast pit are not guaranteed by the State.

13. See “Peavy Pit Plan View, pg 2 of 2” drawing for additional information.



Scale : None
Drawn By: MDB

PEAVY PIT PLAN VIEW, pg 2 of 2
SE1/4 SW1/4 Section 29 T15N R5E

SPS Region

BRUSHING DETAIL, page 1 of 2

All vegetative material within the cutting zone over six inches tall and less than six inches in diameter at six inches from the ground shall be cut. See BRUSHING SECTION DETAIL, PAGE 2 of 2.

The cutting zone is defined as follows:

A. Fourteen feet vertically from the traveled way of the road
B. On the cut bank side of the road; seven feet horizontally from the edge of the road shoulder.
C. On the embankment slopes; five feet horizontally from the outside edge of the road shoulder.
D. On horizontal curves with radii less than seventy five feet, the cutting zone shall be increased to sixteen feet on the inside of the curve in order to achieve safe sight distance through the curve.

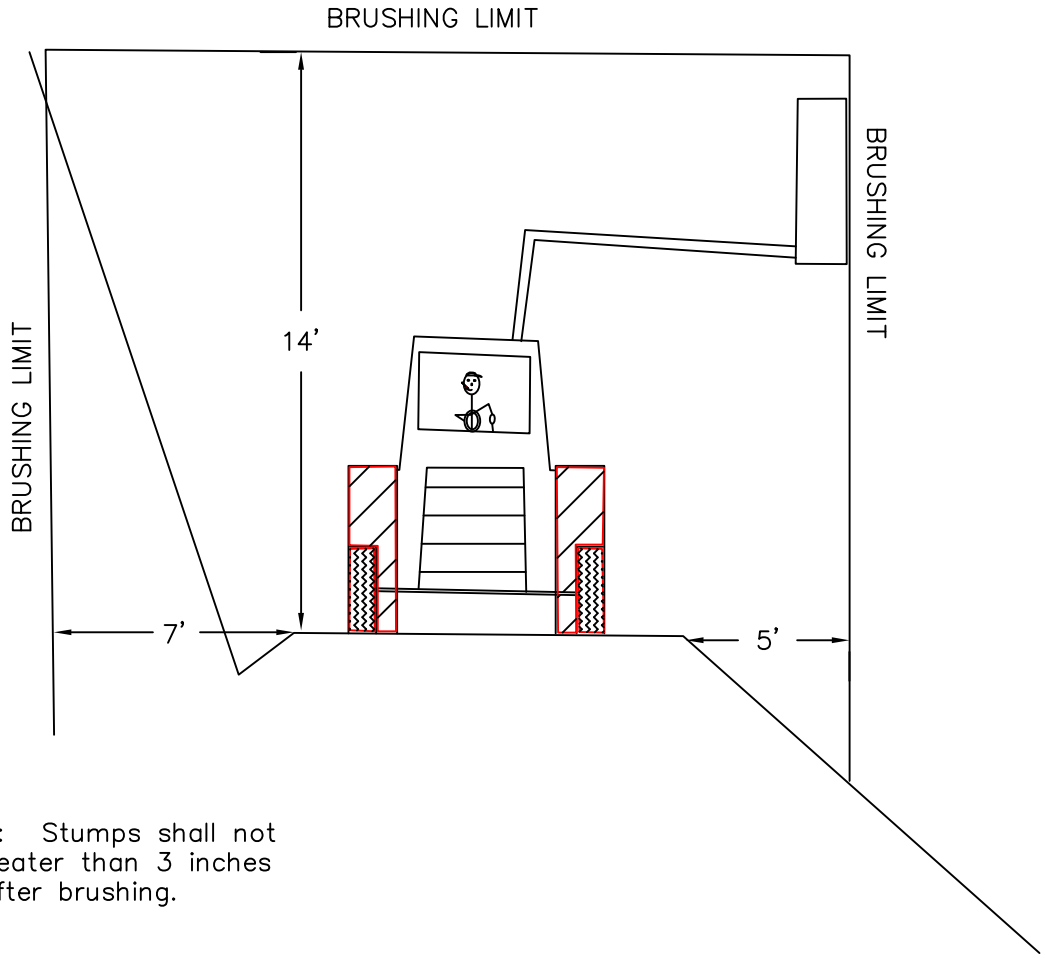
Slash is defined as coarse woody debris both generated by the brushing and coarse woody debris existing on the site before brushing work begins.

Road surfaces and ditches in the area brushed shall be cleared of all slash.

Culvert inlets and outlets in the area brushed shall be cleared of all vegetative debris a minimum of two culvert diameters away.

Damaged culverts, signs and culvert markers shall be replaced at Purchaser's expense.

Brushing Detail



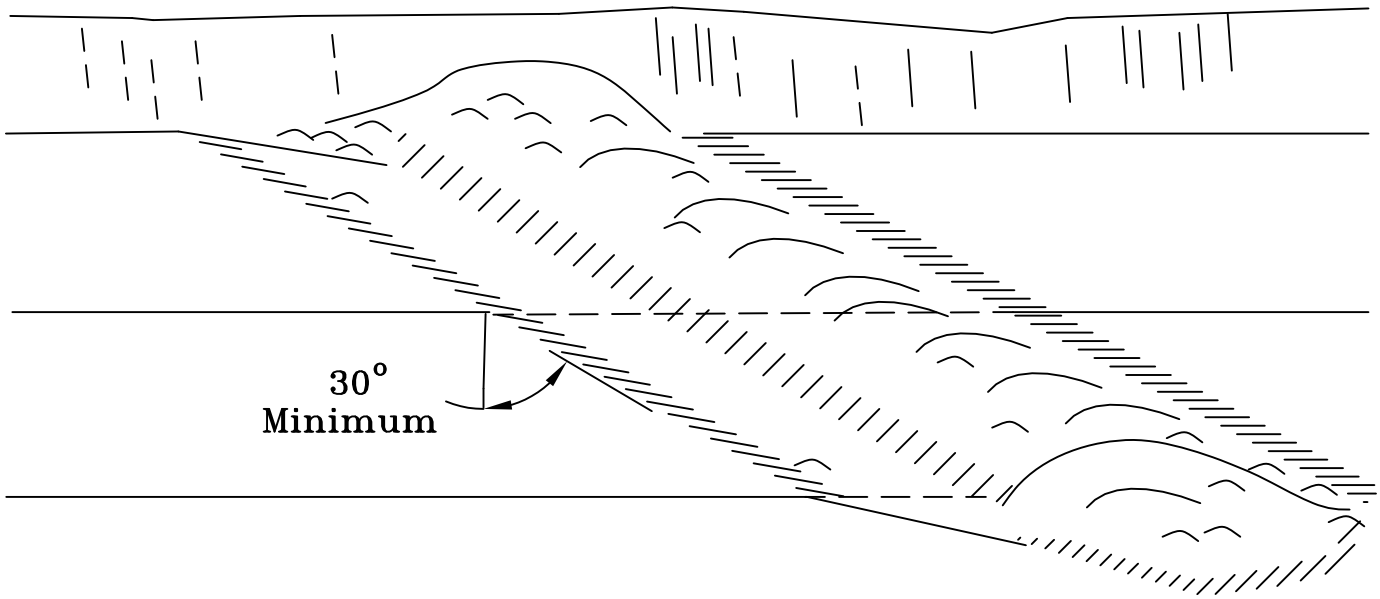
Notes: Stumps shall not be greater than 3 inches tall after brushing.

Brushing Section Detail

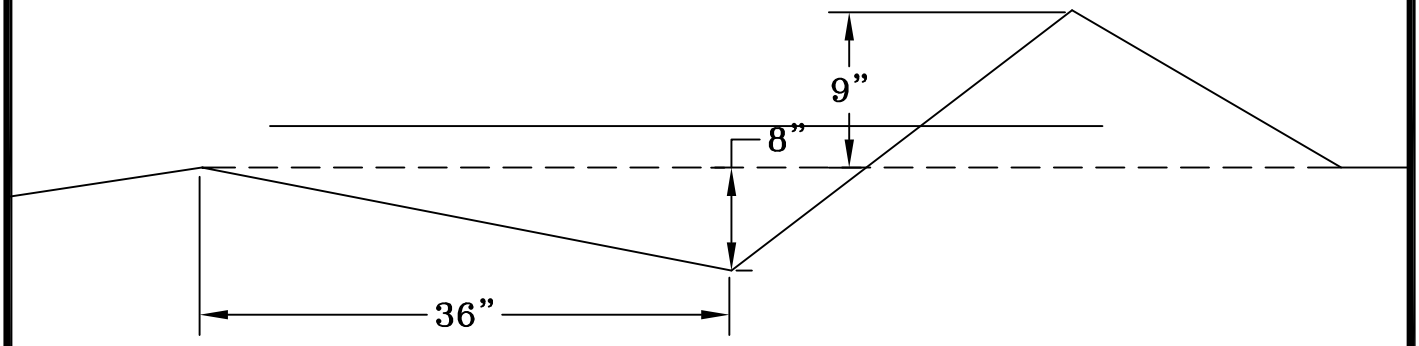
Scale : None
Drawn by: M.A.D.

Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline

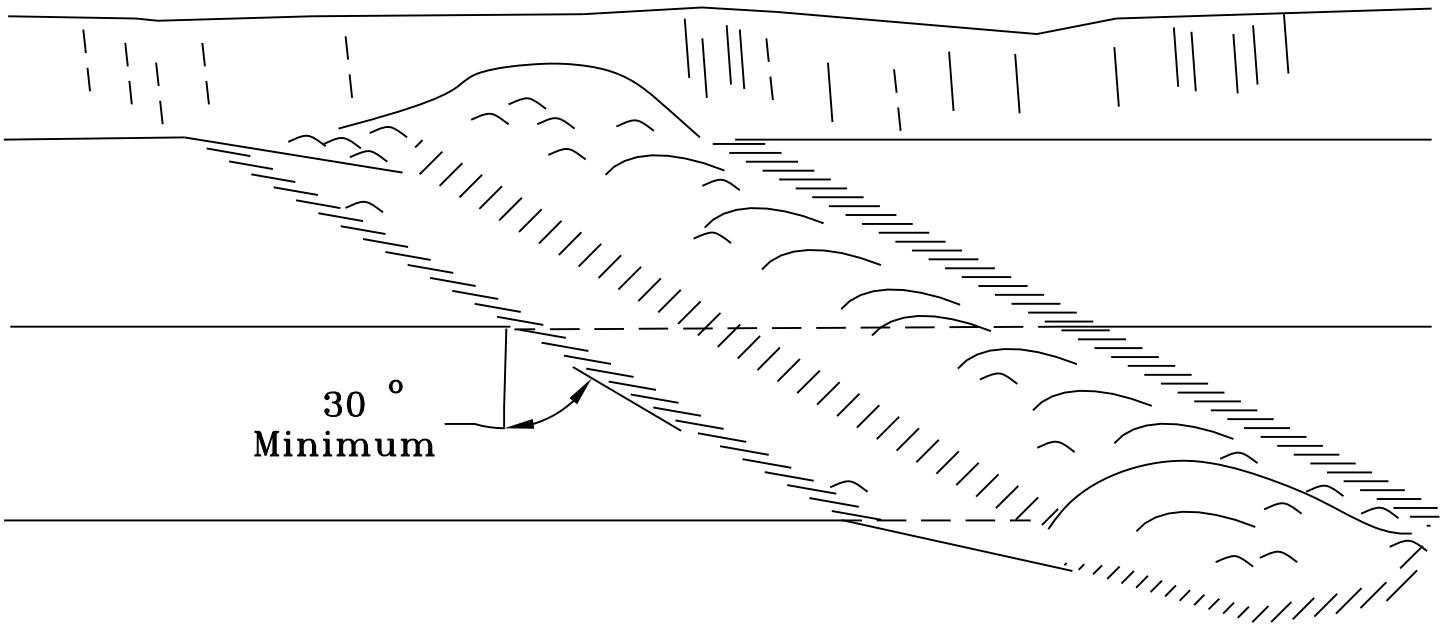


Scale : None
Drawn by: M.A.D.

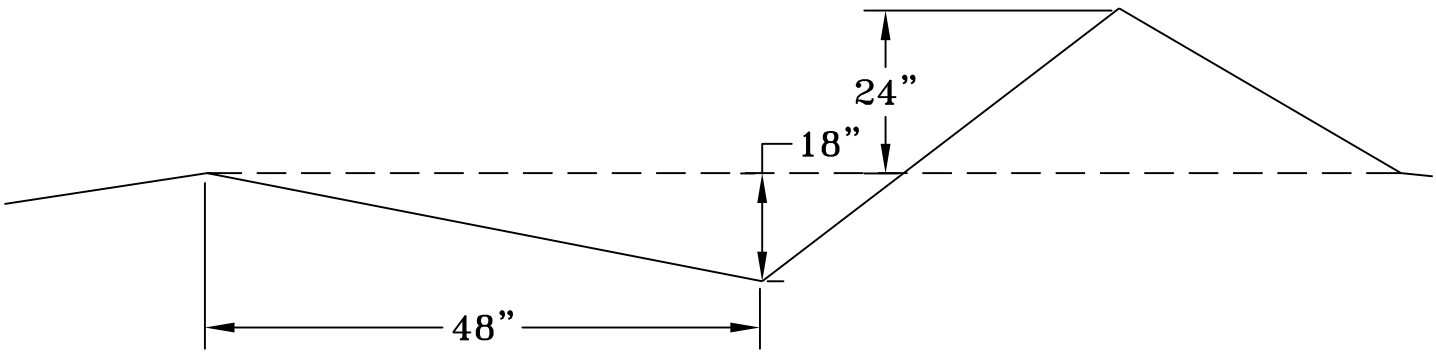
Drivable Water Bar Detail

Non-Drivable Water Bar Detail

Cross Ditch



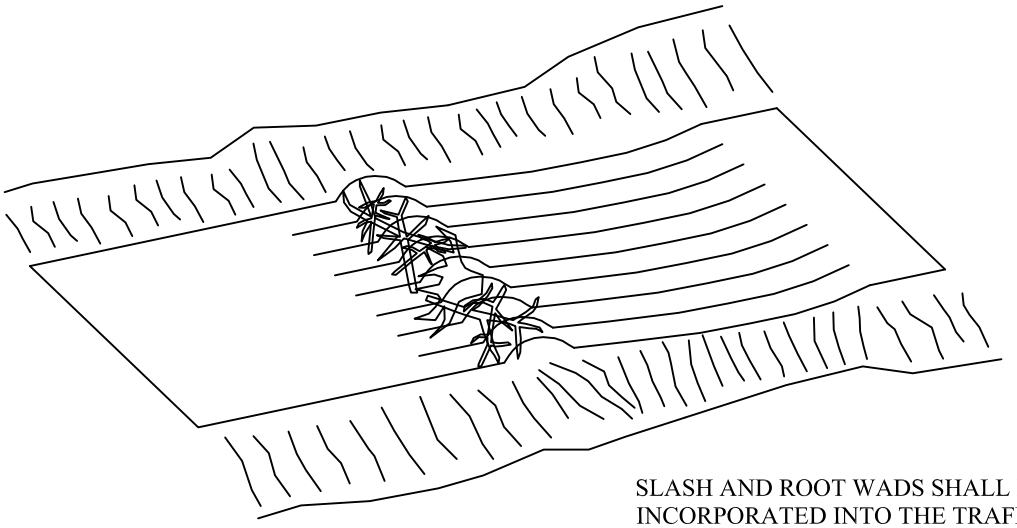
Cross Section at Centerline



Non-Drivable Water Bar Detail

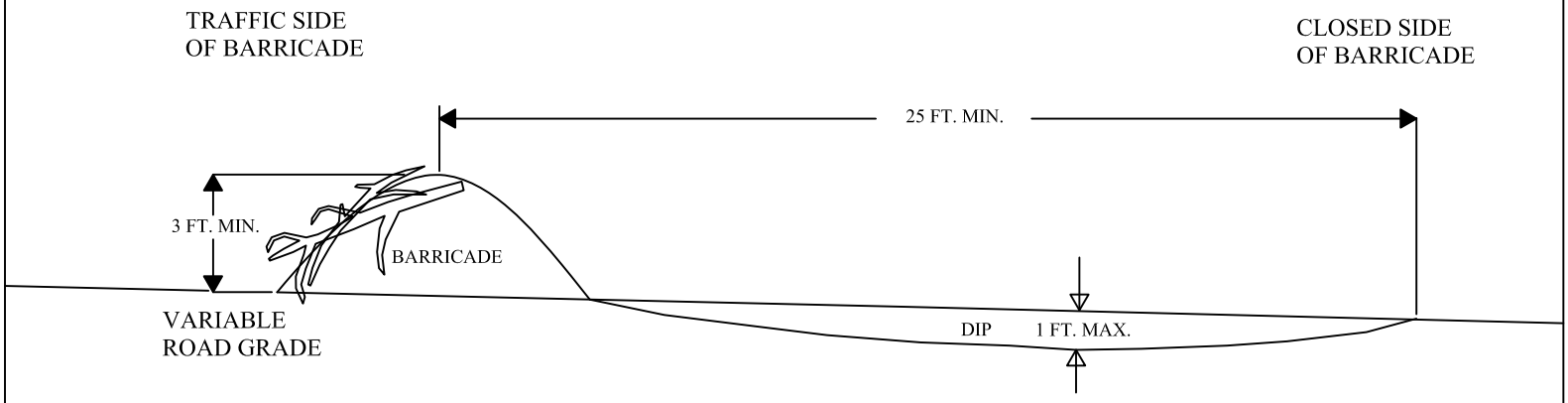
Scale : None
Drawn by: M.A.D.

BARRICADE DETAIL



SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.

PLAN VIEW



BOTTOM OF DIP SHALL BE OUTSLOPED SO AS TO DRAIN FREELY

PROFILE VIEW

SUMMARY - ROAD DEVELOPMENT COSTS

(COSTS ARE ESTIMATES ONLY & ARE NOT GUARANTEED BY THE STATE OR PART OF THE ROAD PLAN.)

SALE/PROJECT NAME: **Pleasant Valley VRH** CONTRACT NUMBER: **30-093163**

TYPE:	Construction	Reconstruction	Pre-Haul Maintenance
NUMBER OF STATIONS:	10.80	5.48	178.34
AVG. SIDESLOPE:	14	12	
CLEARING AND GRUBBING:	$1,244	$329	
EXCAVATION AND FILL:	$1,691	$723	
MISC. MAINTENANCE:			$892
ROCK TOTALS (Cu. Yds.):			
Ballast:	$3,231	$3,877	$36,440
Surfacing:		$0	$11,424
Optional Landing Rock	$1,588		
Riprap/Quarry Spalls:	$54	$0	$38
Stockpiles:			$47,500
CULVERTS AND FLUMES:	$1,426	$0	$5,100
STRUCTURES:	$0	$0	$0
GENERAL EXPENSES:	$1,016	$542	$8,111
MOBILIZATION:	$2,500	$2,500	$2,500
TOTAL COSTS:	**$12,750**	**$7,971**	**$112,005**
COST PER STATION:	$1,181	$1,455	$628

POST HAUL COSTS:	**$1,876**

NOTE1: This appraisal has no allowance for profit and risk.

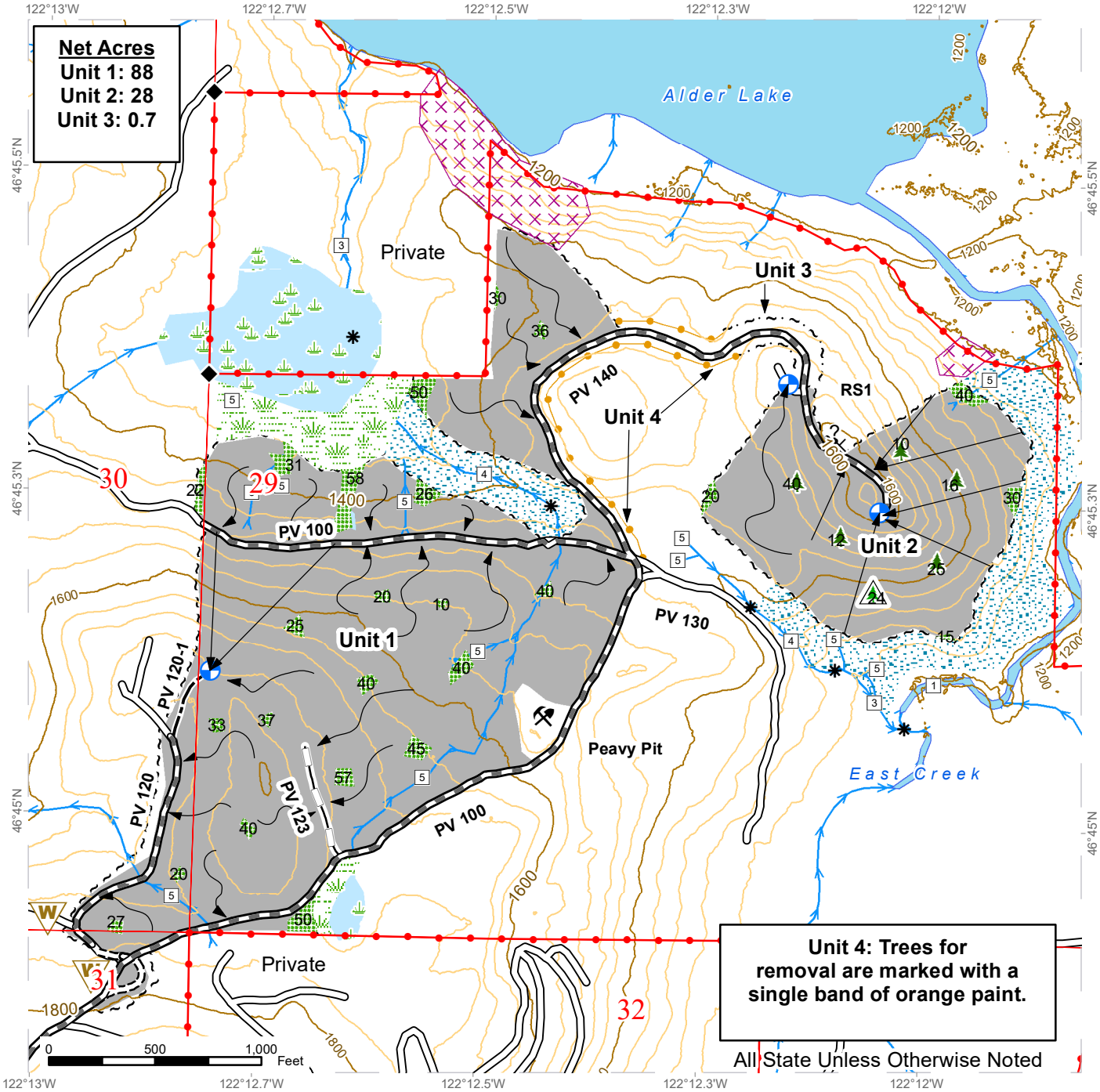
TOTAL (All Roads) =	$134,602
SALE VOLUME MBF =	2,670
TOTAL COST PER MBF =	$50.41

Plans to be furnished by: Compiled by: M. Bell Date: 06/26/19

LOGGING PLAN MAP

SALE NAME: PLEASANT VALLEY VRH
AGREEMENT#: 30-093163
TOWNSHIP(S): T15R5E
TRUST(S): Common School and Indemnity (3), State Forest Transfer (1)

REGION: South Puget Sound Region
COUNTY(S): Lewis
ELEVATION RGE: 1214-1805



Existing Roads
Required Pre-Haul Maintenance
Required Construction
Optional Construction
Optional Reconstruction
Leave Tree Area
Riparian Mgt Zone
Wetlands - Non-forested
Wetland Mgt Zone
Tailhold Restriction Area
Non-Tradeable Leave Trees
Variable Retention Harvest
Ground Harvest
Cable Harvest
Contours 40 ft
Stream Type
Stream Type Break
Survey Monument
Landing - Proposed
Leave Tree Area <1/4-acre
Non-Tradeable Leave Tree Area
Potential Rock Source
Rock Pit
Waste Area
Property Line
Public Land Survey Sections

N

Prepared By: kcar490

Modification Date: astu490 11/19/2019