

Washington DNR Timber Sales Program

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

**Documents amended:**

<b>Brief Description</b>	<b>DATE</b>	<b>Initials</b>
Within seven days of sale date, Purchaser must provide Department of Natural Resources with a check made payable to R.D. Merrill Company in the amount of \$30,000.00	03/20/2020	kp

Washington DNR Timber Sales Program

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

**Documents amended:**

Brief Description	DATE	Initials
<p><b>Murrelet Timing Restriction language has changed on Notice and Contract Clause H-142</b></p> <p>On the PA-J-3000, stations 30+26 to 179+10 and on the PA-S-4200 stations 43+00 to 48+50, any road work, right-of-way timber falling and yarding, rock pit operation or heavy equipment operation must be performed during the limited operating period of two hours after sunrise to two hours <b>before</b> sunset if done during marbled murrelet nesting season, April 1 through September 23. This restriction does not apply to the hauling of timber, rock, or equipment.</p>	<p>3.9.2020</p>	<p>KP.</p>



TIMBER NOTICE OF SALE

SALE NAME: PYRAMID PEAK

AGREEMENT NO: 30-97938

AUCTION: April 29, 2020 starting at 10:00 a.m., Olympic Region Office, Forks, WA

COUNTY: Clallam

SALE LOCATION: Sale located approximately 32 miles west of Port Angeles, WA

PRODUCTS SOLD AND SALE AREA:

All timber, except trees marked with a band of blue paint or bounded out by leave tree area tags; bounded by timber sale boundary tags and distinct timber type change in Units 1, 2, 4; timber sale boundary tags, the PA-S-4000, distinct timber type change and leave tree areas in Unit 3; all timber bounded by right of way boundary tags and timber sale boundary tags in Unit 5; all timber bounded by right of way boundary tags; on part(s) of Sections 16, 17 and 18 all in Township 30 North, Range 9 West, W.M., containing 288 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: PwC-SFIFM-513)

ESTIMATED SALE VOLUMES AND QUALITY:

Table with columns: Species, Avg DBH, Ring Count, Total MBF, and MBF by Grade (1P, 2P, 3P, SM, 1S, 2S, 3S, 4S, UT). Rows include Hemlock, Douglas fir, Red alder, Red cedar, Silver fir, and Sale Total.

MINIMUM BID: \$1,660,000.00

BID METHOD: Sealed Bids

PERFORMANCE SECURITY:

\$100,000.00

SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2022

ALLOCATION: Export Restricted

BID DEPOSIT: \$166,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable - 70% / Ground- 30%. 30' Equipment limitation zones on all typed water unless approved by the Contract Administrator. Tracked skidders are limited to D-5 or smaller. No rubber tired skidders unless approved by the State. Designated crossings are to be approved by the Contract Administrator. On areas mapped as "Cable" on the logging plan maps, shovels, tether logging and feller-bunchers with self-leveling cabs are allowed on slopes up to 60%. Falling and Yarding will not be permitted from November 1 to April 1 unless authorized in writing by the Contract Administrator on weekends, State recognized holidays and between 8:00 p.m. and 6:00 a.m.

ROADS: 53.55 stations of required reconstruction. 101.37 stations of optional construction. 29.47 stations of optional reconstruction. 476.35 stations of required prehaul maintenance. 7.75 stations of optional prehaul maintenance. No activities including haul will be



## TIMBER NOTICE OF SALE

permitted from November 1 to April 1 Road construction will not be permitted from November 1 to April 1 unless authorized in writing by the Contract Administrator Road construction on the PA-S-4100 and the PA-S-4200, stations 28+00-44+19 and stations 62+90-81+55 and hauling on the PA-S-4000 are restricted November 1 through April 1, on weekends, state recognized holidays and between 8:00 p.m.- 6:00 a.m. and Contract Administrator approval does not apply. For all other roads, road construction pre-haul maintenance and haul are restricted November 1 through April 1, on weekends, State recognized holidays and between 8:00 pm and 6:00 am.

On the PA-J-3000, stations 30+26 to 179+10 and on the PA-S-4200 stations 43+00 to 48+50, any road work, right-of-way timber falling and yarding, rock pit operation or heavy equipment operation must be performed during the limited operational period (two hours after sunrise to two hours before sunset) during the marbled murrelet nesting season, (April 1- September 23). This does not apply to hauling timber, rock or equipment, The hauling of forest products will not be permitted from November 1 to April 1 unless authorized in writing by the Contract Administrator.

### **ACREAGE DETERMINATION**

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

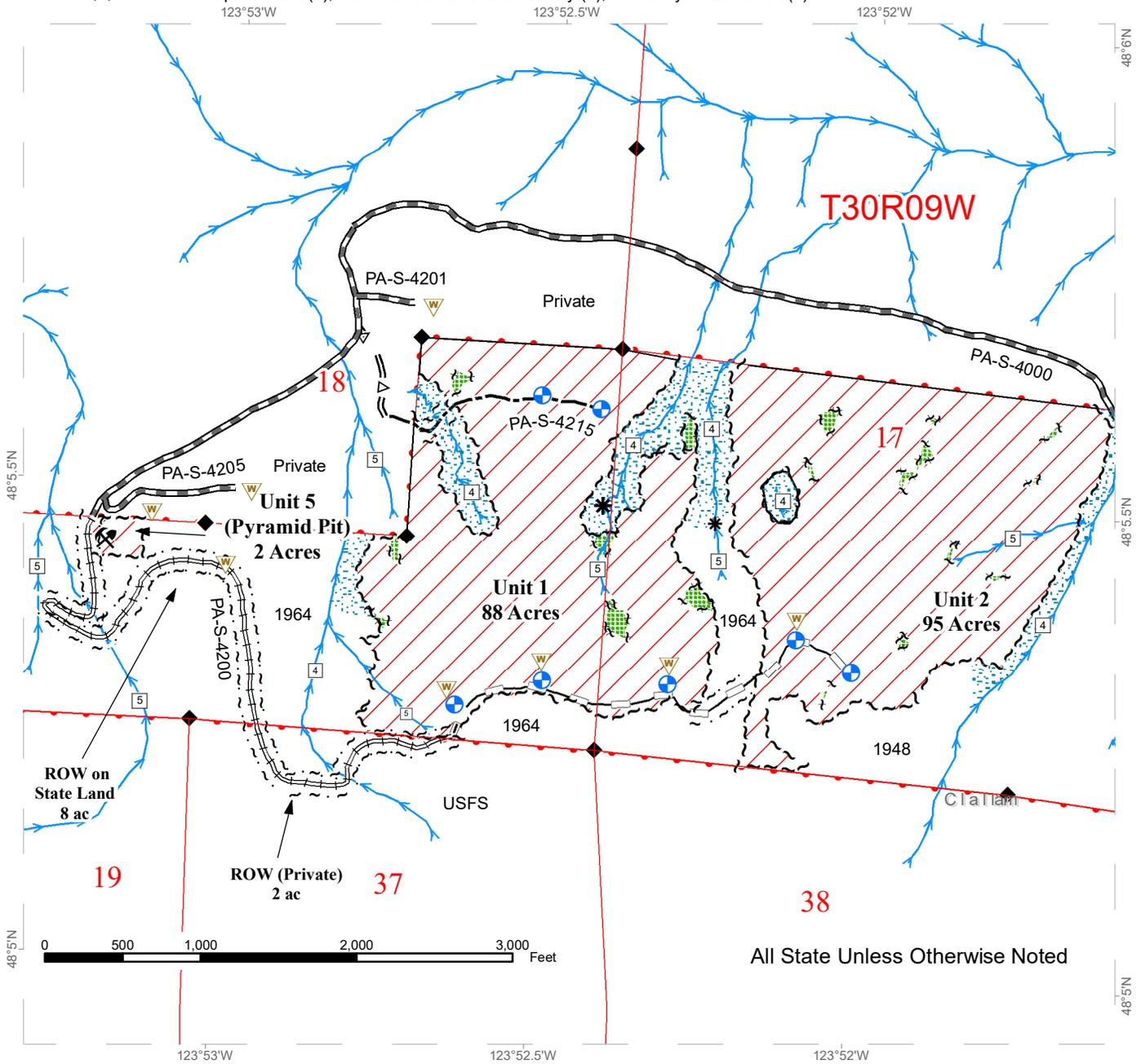
**FEES:** Within seven days of sale date, Purchaser must provide Department of Natural Resources with a check made payable to R.D. Merrill Company in the amount of \$30,000 \$186,286.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

**SPECIAL REMARKS:** There are locked gates on the PA-S-4000 and the PA-J-3000.- Contact the Olympic Region Dispatch Center at 360-374-2811 to obtain a AA-1 key.

# TIMBER SALE MAP

**SALE NAME:** PYRAMID PEAK  
**AGREEMENT #:** 30-097938  
**TOWNSHIP(S):** T30R9W  
**TRUST(S):** Capitol Grant (7), Common School and Indemnity (3), University - Transferred (5)

**REGION:** Olympic Region  
**COUNTY(S):** Clallam  
**ELEVATION RGE:** 785-2785'

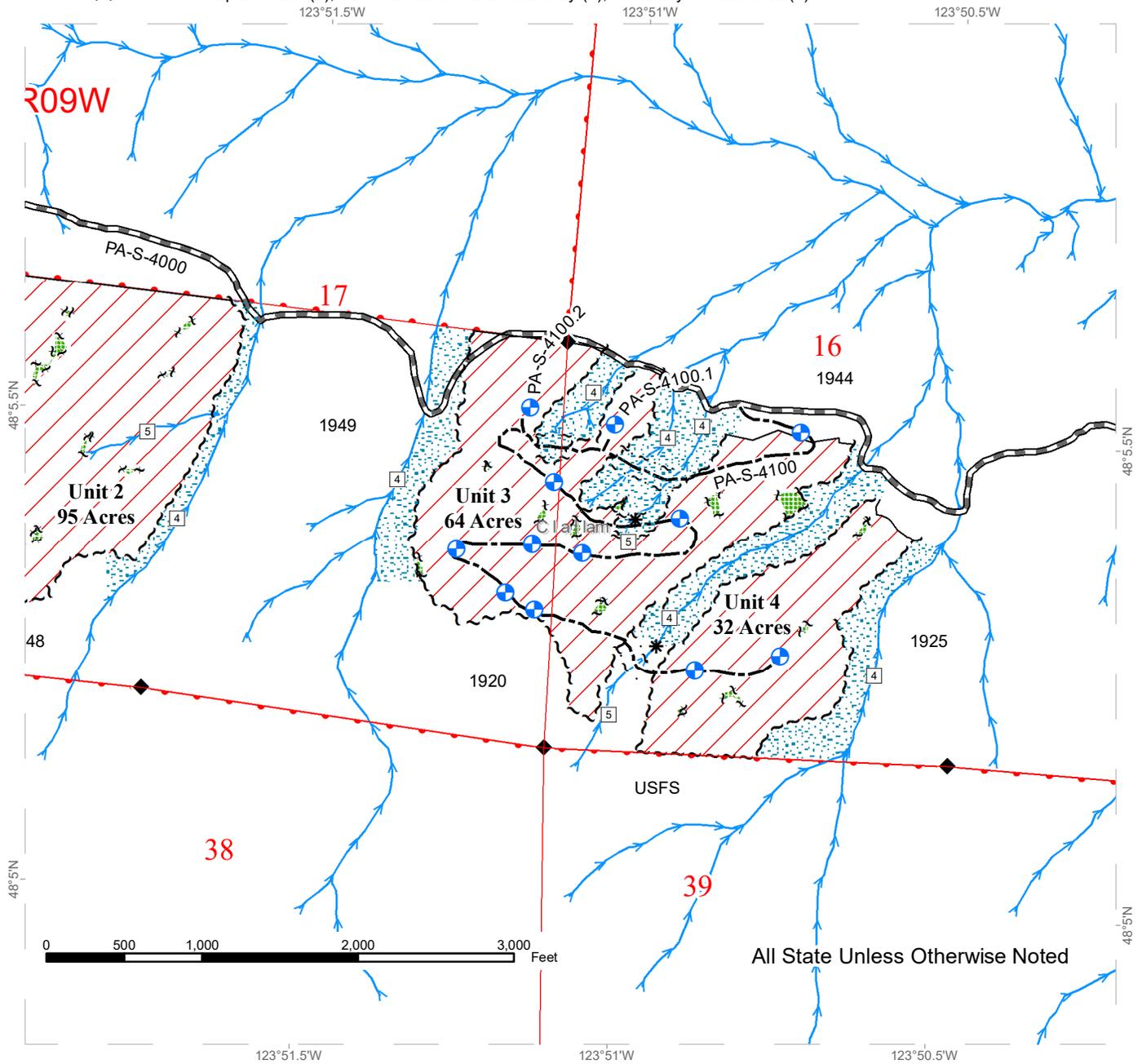


DNR Managed Lands	Existing Roads	Streams
Variable Retention Harvest	Required Pre-Haul Maintenance	Stream Type
Leave Tree Area	Required Reconstruction	Stream Type Break
Riparian Mgt Zone	Optional Pre-Haul Maintenance	Survey Monument
Sale Boundary Tags	Optional Construction	Landing
Right of Way Tags	Optional Reconstruction	Waste Area
Timber Type Change		Rock Pit

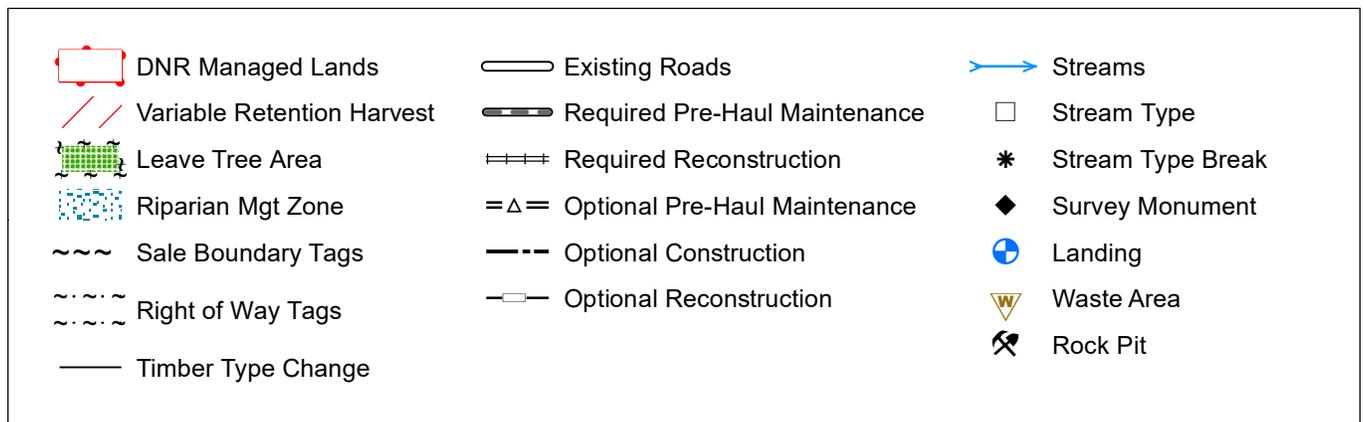
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All State Unless Otherwise Noted



# DRIVING MAP

**SALE NAME:** PYRAMID PEAK VRH  
**AGREEMENT#:** 30-097938  
**TOWNSHIP(S):** T30R9W  
**TRUST(S):** Capitol Grant (7), Common School and Indemnity (3), University-Transferred (5)

**REGION:** Olympic Region  
**COUNTY(S):** Clallam  
**ELEVATION RGE:** 785'-2,785'



Map may not be to scale

Timber Sale Unit	Highway	Bridge	Open Water
Haul Route	Gate	Distance Indicator	
Other Road	Milepost Markers	Rock Pit	



***DRIVING DIRECTIONS:***

See attached directions.

## DRIVING DIRECTIONS

From Port Angeles, head west on Hwy 101. After milepost 243, turn right on Hwy 112. Continue on Hwy 112.

Travel for 14 miles on Hwy 112. After milepost 47, turn left onto PA-J-3000/Waterline Road. Proceed through the gate (AA1 key required) to access the sale area.

Travel 1.3 miles and keep right to stay on Waterline Road. Drive 2.8 miles and proceed through the gate (AA1 key required) and cross the bridge. Follow main road, Waterline Road becomes PA-S-4000.

Units 3 and 4: Travel 2.0 miles past bridge. Park on road and walk to access the Units.

Units 1 and 2: Drive 1.9 miles and turn left on the PA-S-4215 road. Drive 0.25 miles to end of road and park. The units can be reached by walking the rest of the way.

Unit 5: After turning onto the PA-S-4215, continue for 0.3 miles and keep to the right. Continue for 0.5 miles to access Unit 5 and the Pit.

**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted Lump Sum AGREEMENT NO. 30-097938**

**SALE NAME: PYRAMID PEAK**

**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 April 29, 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 marked with a band of blue paint or bounded out by leave tree area tags; bounded by timber sale boundary tags and distinct timber type change in Units 1, 2, 4; timber sale boundary tags, the PA-S-4000, distinct timber type change and leave tree areas in Unit 3; all timber bounded by right of way boundary tags and timber sale boundary tags in Unit 5; all timber bounded by right of way boundary tags; located on approximately 288 acres on part(s) of Sections 16, 17, and 18 all in Township 30 North, Range 9 West W.M. in Clallam 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 eligible for removal under the terms of this contract.

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

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Slash Piling Specifications
B	Green Tree Retention Plan
C	BioMass Removal Schedule

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2022.

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 \$730.00 per acre per annum for the acres on which an operating release has not been issued.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

**G-053 Surveys - Sensitive, Threatened, Endangered Species**

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

**G-060 Exclusion of Warranties**

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

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

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

G-062 Habitat Conservation Plan

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the Services' Incidental Take Permit Nos. 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-106 Adding Naturally Damaged Forest Products

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the State's Contract Administrator. Additions must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. Added forest products become a part of this contract and shall be paid for at the rate set forth in clause G-101, G-102 or G-103.

G-111 Title and Risk of Loss

Title to the forest products under this contract passes to the Purchaser after they are removed from the sale area, if adequate advance payment or payment security has been provided to the State under this contract. Purchaser bears all risk of loss of, or damage to, and has an insurable interest in, the forest products described in this contract from

the time the sale is confirmed under RCW 79.15.120. Breach of this contract shall have no effect on this provision.

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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

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

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

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

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

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

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

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

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

The State of Washington, Department of Natural Resources, its elected and appointed officials, agents and employees shall be named as an additional insured 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 Forks, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive,

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

Notices required to be given under the following clauses shall be in writing and shall be delivered to Purchaser's authorized agent or sent by certified mail to Purchaser's 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; PA-S-4000, PA-S-4200, PA-S-4205, PA-J-3000, PA-S-4201, PA-S-4001, PA-S-4100, PA-S-4100.1, PA-S-4100.2, PA-S-4210 and the PA-S-4215. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

**G-330 Pre-work Conference**

Purchaser shall arrange with the Contract Administrator to review this contract and to examine the sale area before beginning any operations. A plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations. To the extent that the plan of operations is inconsistent with the contract, the terms of the contract shall prevail. State's acceptance and approval of Purchaser's plan of operations shall not be construed as any statement or warranty that the plan of operations is adequate for Purchaser's purposes or complies with applicable laws.

**G-340 Preservation of Markers**

Any legal land subdivision survey corners and witness objects are to be preserved. If such are destroyed or disturbed, the Purchaser shall, at the Purchaser's own expense, re-establish them through a licensed land surveyor in accordance with U.S. General Land Office standards. Corners and/or witness objects that must be disturbed or destroyed in the process of road construction or logging shall be adequately referenced and/or replaced in accordance with RCW 58.24.040(8). Such references must be approved by the Contract Administrator prior to removal of said corners and/or witness objects.

**G-360 Road Use Reservation**

The State shall have the right to use, without charge, all existing roads and any road constructed or reconstructed on State lands by Purchaser under this contract. The State may extend such rights to others. If the State grants such rights to others, the State shall require performance or payment, as directed by the State, for their proportionate share of maintenance based on their use.

**G-370 Blocking Roads**

Purchaser shall not block the PA-J-3000, PA-S-4200, PA-S-4000, PA-S-4205, PA-S-4210, PA-S-4201, PA-S-4001, unless authority is granted in writing by the Contract Administrator.

**G-380 Road Easement and Road Use Permit Requirements**

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

Easement-Merrill & Ring 50-098345/55-098346

Private Road Special Use Permit-Forest Service 55-095115

G-430 Open Fires

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

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,  
For: Road Use Permit  
In Favor of: R D Merrill Company  
Disclosed by Application No.: 50-091818  
Granted: 8/12/2014  
Expires: 10/31/2021

Pending Applications

Easement, including the terms and provisions thereof,  
For: Road  
In Favor of: R D Merrill Company  
Disclosed by Application No.: 50-098345  
Applied: 1/15/2019

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 \$284,908.00. The total contract price consists of a \$0.00 contract bid price plus \$284,908.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

THE PURCHASE PRICE SHALL NOT BE AFFECTED BY ANY FACTORS, INCLUDING: the amount of forest products actually present within the contract area, the actual acreage covered by the contract area, the amount or volume of forest products actually cut or removed by purchaser, whether it becomes physically

impossible or uneconomic to remove the forest products, and whether the subject forest products have been lost or damaged by fire or any other cause. The only situations Purchaser may not be liable for the full purchase price are governed by clause G-066, concerning governmental regulatory actions taken during the term of the contract.

**P-045 Guarantee of Payment**

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

**P-050 Billing Procedure**

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

**P-080 Payment Account Refund**

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

**P-090 Performance Security**

Purchaser agrees to furnish, within 30 days of the confirmation date, security acceptable to the State in the amount of \$100,000.00. The Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by operations under this contract or resulting from Purchaser's noncompliance with any rule or law. Acceptable performance security may be in the form of a performance bond, irrevocable letter of credit, cash, savings or certificate of deposit account assignments, and must name the State as the obligee or beneficiary. A letter of credit must comply with Title 62A RCW, Article 5. Performance security must remain in full force over the duration of the contract length. Surety bonds issued shall conform to the issuance and rating requirements in clause G-150. The State shall retain the performance security pursuant to RCW 79.15.100. Purchaser shall not operate unless the performance security has been accepted by the State. If at any time the State decides that the security document or amount has become unsatisfactory, Purchaser agrees to suspend operations and, within 30 days of notification, to replace the security with one acceptable to the State or to supplement the amount of the existing security.

**P-100 Performance Security Reduction**

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

Section H: Harvesting Operations

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from November 1 to April 1 on weekends, State recognized holidays and between 8:00 p.m. and 6:00 a.m., unless authorized in writing by the Contract Administrator.

H-013 Reserve Tree Damage Definition

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

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

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

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale 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-016 Skid Trail Requirements

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

Purchaser shall comply with the following during the yarding operation:

- a. A skid trail will not exceed 15 feet in width, including rub trees.
- b. Skid trails shall not cover more than 20 percent of the total acreage on one unit.
- c. Location of the skid trails must be marked by Purchaser and approved by the Contract Administrator.

- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Purchaser will not have more than two skid trails open to active skidding at any one time. All other skid trails used for skidding timber will be closed.
- h. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- i. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

**H-017 Preventing Excessive Soil Disturbance**

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

**H-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 tracked skidders limited to a D-5 or smaller. No rubber tired skidders unless approved by the State. In areas mapped as "Cable" on the logging plan maps, shovels, tether logging and feller-bunchers with self-leveling cabs are allowed on slopes up to 60%. 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. Purchaser shall fully suspend both ends of logs over streams during logging operations.

**H-130 Hauling Schedule**

The hauling of forest products will not be permitted in all units from November 1-April 1, on weekends, State recognized holidays and between 8:00 p.m. and 6:00 a.m. All Haul on the PA-S-4000 is restricted from November 1 through April 1 and Contract approval does not apply.

**H-140 Special Harvest Requirements**

Purchaser shall accomplish the following during the harvest operations:

1. Purchaser must have utility lines located before beginning any operations, including road construction or digging next to the PA-J-3000.
2. Purchaser shall immediately repair all gate damage resulting from operations to an equal or better condition than existed at the time of the sale.
3. While falling timber two, Timber Falling Ahead or Logging Operations Ahead warning signs must be posted on the PA-S-4000.
4. Yarding equipment shall not cross live streams without an FPHP.
5. The Purchaser shall notify all employees and contractors working on this sale that any danger tree, marked or unmarked, may be felled. Any felled marked danger tree shall be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

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

**H-142 Wildlife Timing Restrictions**

The following wildlife timing restrictions apply to this contract and shall be in place in the locations shown on the attached timber sale map.

On the PA-J-3000, stations 30+26 to 179+10 and on the PA-S-4200 stations 43+00 to 48+50, any road work, right-of-way timber falling and yarding, rock pit operation or heavy equipment operation must be performed during the limited operating period of two hours after sunrise to two hours before sunset if done during

marbled murrelet nesting season, April 1 through September 23. This restriction does not apply to the hauling of timber, rock, or equipment.

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.

H-240 Lop and Scatter

The tops of all felled trees shall be lopped and slash scattered away from leave trees.

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 1/28/2020 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the PA-S-4000, PA-S-4205, PA-J-3000, PA-S-4210, PA-S-4200, PA-S-4201, PA-S-4001, PA-S-4100, PA-S-4100.1 and the PA-S-4100.2 and the PA-S-4215. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on private stretches of the PA-J-3000 and PA-S-4000 and all other roads not listed in clause C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-080 Landing Locations Approved Prior to Construction

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

**C-130 Dust Abatement**

Purchaser shall abate dust on the PA-S-4000 and the PA-J-3000 as per Contract Administrator.

**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-035 Logging Debris Clean Up**

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

**S-050 Cessation of Operations for Low Humidity**

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-070 Water Supply

Purchaser shall provide, during the "closed season", a water supply with a minimum capacity of 250 gallons for rapid filling of pump trucks or trailers at a location designated by the Contract Administrator.

S-100 Stream Cleanout

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

S-110 Resource Protection

No equipment may operate within 30' of any typed water unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Purchaser shall take immediate action to contain and control all hazardous material spills. Purchaser shall ensure that enough quick response spill kits capable of absorbing 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 \$500.00 per tree for all damaged reserve trees that are not replaced in in all Units.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

\_\_\_\_\_  
Purchaser

\_\_\_\_\_  
Mona Griswold

\_\_\_\_\_  
Print Name

Olympic Region Manager

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 \_\_\_\_\_

**Schedule A**  
**Slash Piling Specifications**

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

- A. Piles shall be a minimum of 12 feet tall by 8 feet wide to a maximum of 30 feet tall and 16 feet wide. Piles shall be cone shaped and stable.
- B. Piles shall be free of topsoil, large rotten logs and large stumps. No material larger than 8 inches in diameter shall be piled. Any unburnable material shall be well scattered.
- C. Piles shall not be placed on large stumps, logs.
- D. Piles shall be stacked a minimum of 50 feet from all unit boundaries, Riparian Management Zones, leave trees, culverts, and any standing timber; a minimum of 100 feet from any public roads and highways; and a minimum of 200 feet from any structures.
- E. Piling shall be completed using an approved hydraulic shovel and grapples.
- F. Slash and displaced soil shall be removed from swales and natural drainage channels concurrent with yarding.
- G. Slash generated during cable yarding shall be stacked in dirt free piles and shall not block roads or interfere with functioning of drainage structures, ditches, or stream channels.
- H. Slash may be removed from State land.

**Schedule B**  
**Green Tree Retention Plan**

Leave the following as directed by the contract administrator:

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

<b>Unit #</b>	<b># of Individually Marked Trees</b>	<b># of Clumps</b>	<b>#of Trees Clumped</b>	<b>Total # of Leave Trees</b>
1	143	8	585	728
2	198	10	562	760
3	166	8	361	527
4	113	4	143	256
5	0	0	0	0

**Schedule C**  
**BioMass Removal Schedule**

Purchaser may remove biomass within 100 feet of roads and landings within the sale area.

Biomass is defined as the 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, and is eligible for removal under the terms of this contract.

## PRE-CRUISE NARRATIVE

Sale Name: <b>Pyramid Peak</b>	Region: <b>Olympic</b>
Agreement #: 30-097938	District: Straits
Contact Forester: Nichole Studevart Phone / Location: 360-640-3308	County(s): Choose a county, Clallam
Alternate Contact: Eric Davis Phone / Location: <b>360-460-1020</b>	Other information:

Type of Sale: Lump Sum	
Harvest System: Uphill Cable	55%
Harvest System: Ground based	30%
Enter % of sale acres	
Harvest System: Downhill Cable	15%

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit #  Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) <b>Sec/Twp/Rng</b>	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination  (List method and error of closure if applicable)
				RMZ/WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	S18 T30 N R9 W S17 T30 N R9 W	07 05	109	15	2.7	3	0	88.3	GPS (Garmin)
2	S17 T30 N R9 W	05 07	114	17	1.6	0.9	0	94.5	GPS (Garmin)
3	S17 T30 N R9 W	07 05 03	89	23	1.7	0.6	0	63.7	GPS (Garmin)
4	S16 T30 N R9 W	03	56	24	0.4	0	0	31.6	GPS (Garmin)
5 Pit	S18 T30 N R9 W	03	2	0	0	0	0	2	GPS (Garmin)
6 ROW	S18 T30 N R9 WS16 T30 N R9 W S17 T30 N R9 W S18 T30 N R9 W	07 03	9	0	0	0.9	0	8.1	GPS (Garmin)
7 ROW	S37 T30 N R9 W	Private	2.0	0	0	0.5	0	1.5	GPS (Garmin)
<b>TOTAL</b>			<b>381</b>	<b>79</b>	<b>6.4</b>	<b>5.9</b>	<b>0</b>	<b>289.</b>	

ACRES							7	
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**HARVEST PLAN AND SPECIAL CONDITIONS:**

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	The northern and most of the western boundary are marked with distinct timber type change. The southern, eastern and remaining portion of the western boundary are marked with white timber sale boundary tags, pink ribbon, and blue paint. Leave trees marked with blue paint, Leave tree area marked with yellow LTA tags.		175 individual leave trees. Eight leave tree areas totaling 585 trees.
2	The northern boundary is marked with a distinct timber type change. The eastern, western and southern boundary are marked with white timber sale boundary tags, pink ribbon, and blue paint. Leave trees marked with blue paint, Leave tree area marked with yellow LTA tags.		198 individual leave trees, 10 leave tree area's totaling 562 trees.
3	The northern boundary is marked with a distinct timber type change. The eastern, western and southern boundary are marked with white timber sale boundary tags, pink ribbon, and blue paint. Leave trees marked with blue paint, Leave tree area marked with yellow LTA tags.		167 individual leave trees, 8 leave tree area's totaling 361 trees.
4	The entire unit is marked with white timber sale boundary tags, pink ribbon, and blue paint. Leave trees marked with blue paint, Leave tree area marked with yellow LTA tags.		113 individual leave trees, 4 leave tree area's totaling 143 trees
5	Pit Development- The western boundary is marked with distinct timber type change, the northern, eastern and		0 Leave trees

	southern boundary are marked with white timber sale boundary tags, pink ribbon, and blue paint.		
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**OTHER PRE-CRUISE INFORMATION:**

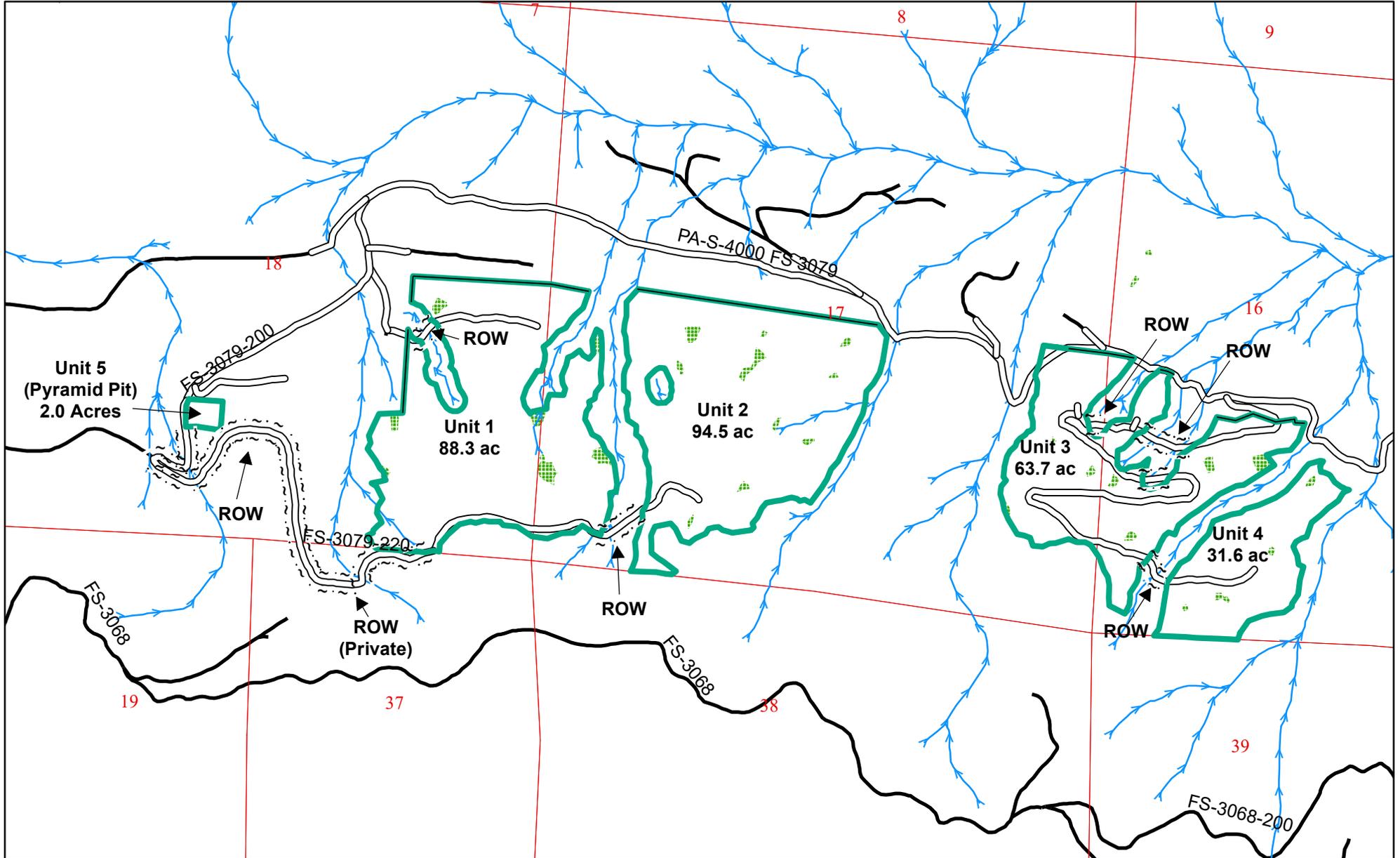
Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, WH, WRC, RA	Located off the PA-S-4000 road on the south end of the road. Gate located east of units. Use the AA-1 key.	Traverse map
2	DF, WH, WRC, RA	Located off the PA-S-4000 road on the south end of the road. Gate located east of units. Use the AA-1 key.	Traverse map
3	DF, WH, WRC, RA	Located off the PA-S-4000 road on the south end of the road. Gate located east of units. Use the AA-1 key.	Traverse map
4	DF, WH, WRC, RA	Located off the PA-S-4000 road on the south end of the road. Gate located east of units. Use the AA-1 key.	Traverse map
5	DF, WH, WRC, RA	Located off the PA-S-4200. Gate located east of units. Use the AA-1 key.	Traverse map
TOTAL MBF			

**REMARKS:**

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Prepared By: Nichole Studevart Date: August 7, 2018	Title: Forester	CC:
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# Pyramid Peak VRH- Precruise Map

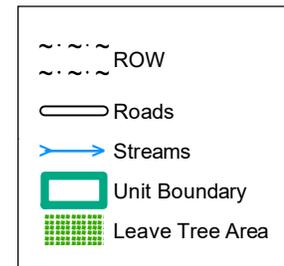


0 1,550 3,100 6,200 Feet



K:\dist\_straits\timber\_sales\Pyramid Peak\_19\Geology Review\PyramidPeakBoundary.shp

K:\dist\_straits\timber\_sales\Pyramid Peak\_19\Engineer\Pyramidroads.shp



## Cruise Narrative

<b>Sale Name:</b> Pyramid Peak	<b>Region:</b> Olympic
<b>Agreement #:</b> 30-097938	<b>District:</b> Straits
<b>Lead Cruiser:</b> Kevin Peterson	<b>Completion Date:</b> 10/31/18
<b>Other Cruisers:</b> none	

### Unit acreage specifications:

Unit #	Cruised Acres	Cruised acres agree with sale acres? Y/N	If acres do not agree explain why.
1	88.3	Y	
2	94.5	Y	
3	63.7	Y	
4	31.6	Y	
5	2	Y	
6RW	5.1	Y	
7RW	3.0	Y	
<b>Total</b>	<b>288.2</b>	<b>Y</b>	

### Unit cruise specifications:

Unit #	Sample Type (VP,FP,ITS,100%)	Expansion Factor (baf,full/half)	Sighting Height (4.5', 16')	Grid Size (plot spacing)	Plot Ratio (cruise/count)	Number of plots
1	VP	62.5/40	4.5'	290 X 290	1:2	43
2	VP	62.5/40	4.5'	290 X 290	1:2	47
3	VP	62.5/40	4.5'	290 X 290	1:2	32
4	VP	62.5/40	4.5'	290 X 290	1:2	16
5	VP	54.44/40	4.5'	290 X 290	ALL CRUISE	1
6RW	VP	20	4.5'	RANDOM	ALL CRUISE	2
7RW	VP	20	4.5'	RANDOM	ALL CRUISE	1

### Sale/Cruise Description:

<b>Minor species cruise intensity</b>	Minor species sampled using same cruise plots. Red Cedar and Red Alder were cruised at a 40 BAF				
<b>Minimum cruise spec:</b>	40% of Form Factor at 16 ft. D.O.B or 5 inch top.				
<b>Average ring count:</b>	<b>DF =</b>	7	<b>WH =</b>	7	
<b>Leave/take tree description:</b>	Leave tree clumps are bounded out with yellow tags, pink flashers and blue paint. Individual leave trees are marked with blue bands and two blue butt marks.				
<b>Other conditions:</b>	Exterior boundaries are marked with white tags and pink flashers				

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

Pyramid Peak is a 5 unit timber sale located off of the PA-S-4000 road system, just South of Joyce. The sale has a total acreage of 288.2 and a total harvest volume of 10,958 MBF.

The timber is comprised of 63% Western Hemlock, 23% Douglas-fir and 9% Red Alder, with traces of Western Red Cedar and Pacific Silver-fir. The Average WH has a DBH of 14” and a bole height of 68’ with common defects being sweep and spike knots. The average DF has a DBH of 17.5” and a bole height of 81’ with sweep and butt rot being common defects.

Access to all of the units is good and requires an AA1 key to access the PA-S-4000. The sale is 40% ground based and 60% cable based harvest system.

**Grants:** 03, 05 and 07

**Prepared By:** Kevin Peterson – Olympic Region Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
T000 R000 S00 TyU1 THRU T000 R000 S00 TyU7RW				Project: <b>PYRAMID</b>										Page <b>1</b>								
				Acres <b>288.20</b>										Date <b>10/31/2018</b>			Time <b>12:20:49PM</b>					
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
WH	CU	CU																6		0.00	22.7	
WH	D	2S		27	10.0	7,316	6,582	1,897				79	21			2	98	40	14	249	1.75	26.5
WH	D	3S		55	3.1	13,478	13,064	3,765	38	62				0	3	97	40	8	94	0.70	139.3	
WH	D	4S		17	.1	4,286	4,282	1,234	98	2				22	40	11	27	26	5	29	0.27	149.3
WH	D	UT		1		24	24	7	100					100			11	5	2	0.03	14.7	
<b>WH Totals</b>				63	4.6	25,105	23,952	6,903	38	34	22	6		4	7	4	85	30	7	68	0.63	352.4
DF	CU	CU																6		0.00	9.1	
DF	D	2S		50	3.4	4,576	4,419	1,274			78	22				100	40	13	247	1.73	17.9	
DF	D	3S		42	1.3	3,638	3,591	1,035	34	66					11	89	39	8	93	0.67	38.5	
DF	D	4S		8		680	680	196	100					39	14	6	41	23	5	26	0.30	26.3
DF	D	UT															9	5		0.00	7.9	
<b>DF Totals</b>				23	2.3	8,894	8,690	2,504	22	27	39	11		3	1	5	91	29	8	87	0.84	99.8
RC	CU	CU																3	6		0.00	3.9
RC	D	3S		57	13.6	1,174	1,015	292	17	55	28			2		98	37	8	88	1.07	11.5	
RC	D	4S		43	1.5	750	739	213	100					65	28	7	20	5	22	0.28	34.0	
<b>RC Totals</b>				5	8.9	1,924	1,753	505	52	32	16			27	13	60		23	6	36	0.58	49.4
RA	CU	CU																7	5		0.00	6.8
RA	D	2S		3	5.9	133	125	36		12	88			100			30	12	139	1.17	.9	
RA	D	3S		57	5.2	1,942	1,842	531		100				74		26	32	10	120	1.02	15.3	
RA	D	4S		33	5.3	1,127	1,067	307	100					23	10	68	35	6	44	0.48	24.4	
RA	D	UT		7	.0	209	209	60	100					22	4	59	15	21	5	23	0.35	9.2
<b>RA Totals</b>				9	4.9	3,412	3,243	935	39	57	3			1	53	7	38	28	7	57	0.63	56.5
SF	D	2S		39	20.8	194	154	44			100					100	40	13	190	1.55	.8	
SF	D	3S		52		200	200	58	39	61						100	40	8	93	0.72	2.2	
SF	D	4S		2		6	6	2	100					100			11	5	9	0.15	.7	
SF	D	UT		7		25	25	7	100							100	36	5	40	0.34	.6	
<b>SF Totals</b>				1	9.5	425	384	111	28	32	40			2		98	35	8	89	0.81	4.3	
<b>Totals</b>					4.4	39,759	38,023	10,958	35	34	24	6		5	10	4	81	29	7	68	0.67	562.4

TC PSTATS											<b>PROJECT STATISTICS</b>					PAGE	1
											<b>PROJECT</b>		<b>PYRAMID</b>			DATE	10/31/2018
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt						
000	000	00	PEAK	UI	THR	288.20		142	825	S	W						
000	000	00	PEAK	U7RW													
					TREES		ESTIMATED	PERCENT									
					PER PLOT		TOTAL	SAMPLE									
			PLOTS	TREES			TREES	TREES									
TOTAL			142	825	5.8												
CRUISE			57	271	4.8		83,441	.3									
DBH COUNT																	
REFOREST																	
COUNT			85	533	6.3												
BLANKS																	
100 %																	
<b>STAND SUMMARY</b>																	
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET							
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC							
WHEMLOCK		145	182.6	14.0	68	52.2	195.5	25,105	23,952	6,799	6,789						
DOUG FIR		44	38.9	17.5	81	15.5	64.8	8,894	8,690	2,429	2,429						
WR CEDAR		35	37.2	11.9	37	8.3	28.6	1,924	1,753	660	652						
R ALDER		39	28.7	14.8	60	8.9	34.2	3,412	3,243	1,015	1,015						
PS FIR		8	2.2	17.0	72	0.8	3.4	425	384	121	121						
<b>TOTAL</b>		<b>271</b>	<b>289.5</b>	<b>14.4</b>	<b>65</b>	<b>86.1</b>	<b>326.4</b>	<b>39,759</b>	<b>38,023</b>	<b>11,023</b>	<b>11,006</b>						
CONFIDENCE LIMITS OF THE SAMPLE																	
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR																	
CL	68.1	COEFF	<b>TREES/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10								
WHEMLOCK		61.0	5.1	173	183	192											
DOUG FIR		131.0	11.0	35	39	43											
WR CEDAR		146.2	12.3	33	37	42											
R ALDER		153.9	12.9	25	29	32											
PS FIR		581.5	48.8	1	2	3											
<b>TOTAL</b>		<b>32.7</b>	<b>2.7</b>	<b>282</b>	<b>290</b>	<b>297</b>	<b>43</b>	<b>22</b>	<b>11</b>								
CL	68.1	COEFF	<b>BASAL AREA/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10								
WHEMLOCK		55.7	4.7	186	195	205											
DOUG FIR		122.9	10.3	58	65	71											
WR CEDAR		147.0	12.3	25	29	32											
R ALDER		153.8	12.9	30	34	39											
PS FIR		548.5	46.0	2	3	5											
<b>TOTAL</b>		<b>25.0</b>	<b>2.1</b>	<b>320</b>	<b>326</b>	<b>333</b>	<b>25</b>	<b>13</b>	<b>6</b>								
CL	68.1	COEFF	<b>NET BF/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10								
WHEMLOCK		56.6	4.8	22,814	23,952	25,090											
DOUG FIR		126.0	10.6	7,771	8,690	9,608											
WR CEDAR		151.1	12.7	1,531	1,753	1,976											
R ALDER		153.9	12.9	2,825	3,243	3,662											
PS FIR		559.7	47.0	204	384	565											
<b>TOTAL</b>		<b>31.5</b>	<b>2.6</b>	<b>37,019</b>	<b>38,023</b>	<b>39,027</b>	<b>40</b>	<b>20</b>	<b>10</b>								
CL	68.1	COEFF	<b>V_BAR/ACRE</b>				<b># OF PLOTS REQ.</b>		<b>INF. POP.</b>								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10								
WHEMLOCK				117	123	128											
DOUG FIR				120	134	148											
WR CEDAR		37.1	3.1	54	61	69											
R ALDER				83	95	107											
PS FIR		556.5	46.7	60	113	166											
<b>TOTAL</b>		<b>26.7</b>	<b>2.2</b>	<b>113</b>	<b>116</b>	<b>120</b>	<b>29</b>	<b>15</b>	<b>7</b>								

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
		Project: PYRAMID										Date 10/31/2018										
												Time 12:20:50PM										
T000 R000 S00 TU1										T000 R000 S00 TU1												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
000	000	00	PEAK	U1	88.30	43	67	S	W													
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft				
WH		CU	CU																			18.8
WH		D	2S	27	9.2	6,779	6,158			82	18				100	40	13	246	1.71			25.0
WH		D	3S	53	2.6	12,509	12,183	1,076	51	49					100	40	8	86	0.67			141.1
WH		D	4S	20		4,439	4,439	392	98	2		25	51	4	19	25	5	27	0.26			162.1
WH		D	UT													11	5		0.00			20.6
<b>WH</b>	<b>Totals</b>			63	4.0	23,727	22,780	2,011	47	26	22	5	5	10	1	84	30	7	62	0.60		367.6
DF		CU	CU																			4.9
DF		D	2S	58	2.4	4,273	4,170	368			67	33			100	40	13	260	1.81			16.0
DF		D	3S	37	2.2	2,688	2,629	232	42	58					100	40	8	95	0.67			27.6
DF		D	4S	5	.0	324	324	29	100			49		51	20	6	19	0.29				16.8
DF		D	UT													11	5		0.00			5.9
<b>DF</b>	<b>Totals</b>			20	2.2	7,286	7,123	629	20	21	39	19	2		98	30	8	100	0.93			71.2
RA		CU	CU																			10.8
RA		D	3S	57	3.8	2,481	2,387	211		100			74		26	32	11	125	1.05			19.2
RA		D	4S	36	4.7	1,576	1,502	133	100				19	10	72	36	6	46	0.51			32.5
RA		D	UT	7		272	272	24	100			27		73		20	5	22	0.33			12.4
<b>RA</b>	<b>Totals</b>			11	3.9	4,329	4,161	367	43	57			2	49	8	41	28	7	56	0.63		74.9
RC		CU	CU																			3.3
RC		D	3S	49		789	789	70	25	75					100	39	7	80	0.85			9.9
RC		D	4S	51	.0	810	810	71	100			82	18			18	5	20	0.26			40.5
<b>RC</b>	<b>Totals</b>			4		1,599	1,599	141	63	37			41	9	49	21	5	30	0.46			53.6
SF		D	2S	47	20.8	320	253	22		100					100	40	13	190	1.55			1.3
SF		D	3S	45		236	236	21	34	66					100	40	8	99	0.74			2.4
SF		D	UT	8		42	42	4	100						100	36	5	40	0.34			1.0
<b>SF</b>	<b>Totals</b>			1	11.1	598	531	47	23	29	48				100	39	9	112	0.89			4.7
<b>Type Totals</b>					3.6	37,538	36,194	3,196	41	29	22	7	6	12	1	81	29	7	63	0.64		572.1

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PYRAMID		DATE	10/31/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	PEAK	U1	88.30	43	248	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		43	248	5.8						
CRUISE		15	67	4.5	27,879	.2				
DBH COUNT REFOREST COUNT		28	178	6.4						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	33	204.5	13.3	64	53.9	196.2	23,727	22,780	6,538	6,536
DOUG FIR	9	27.6	18.6	83	12.1	52.3	7,286	7,123	1,998	1,998
R ALDER	13	37.5	14.8	60	11.6	44.8	4,329	4,161	1,317	1,317
WR CEDAR	9	43.8	10.5	33	8.1	26.2	1,599	1,599	515	515
PS FIR	3	2.4	18.4	80	1.0	4.4	598	531	166	166
<b>TOTAL</b>	<i>67</i>	<i>315.7</i>	<i>13.7</i>	<i>61</i>	<i>87.4</i>	<i>323.8</i>	<i>37,538</i>	<i>36,194</i>	<i>10,534</i>	<i>10,531</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	57.2	8.7		187	205	222				
DOUG FIR	131.3	20.0		22	28	33				
R ALDER	134.5	20.5		30	37	45				
WR CEDAR	138.9	21.2		34	44	53				
PS FIR	502.2	76.6		1	2	4				
<b>TOTAL</b>	<i>31.9</i>	<i>4.9</i>		<i>300</i>	<i>316</i>	<i>331</i>	<i>41</i>	<i>21</i>	<i>10</i>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	54.5	8.3		180	196	213				
DOUG FIR	132.7	20.2		42	52	63				
R ALDER	135.1	20.6		36	45	54				
WR CEDAR	144.9	22.1		20	26	32				
PS FIR	484.1	73.8		1	4	8				
<b>TOTAL</b>	<i>27.5</i>	<i>4.2</i>		<i>310</i>	<i>324</i>	<i>337</i>	<i>30</i>	<i>15</i>	<i>8</i>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	55.0	8.4		20,868	22,780	24,692				
DOUG FIR	137.2	20.9		5,632	7,123	8,614				
R ALDER	136.1	20.8		3,298	4,161	5,025				
WR CEDAR	149.8	22.8		1,233	1,599	1,964				
PS FIR	490.3	74.8		134	531	928				
<b>TOTAL</b>	<i>32.8</i>	<i>5.0</i>		<i>34,384</i>	<i>36,194</i>	<i>38,004</i>	<i>43</i>	<i>22</i>	<i>11</i>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				106	116	126				
DOUG FIR				108	136	165				
R ALDER				74	93	112				
WR CEDAR				47	61	75				
PS FIR	490.3	74.8		31	122	213				
<b>TOTAL</b>	<i>383.3</i>	<i>58.5</i>		<i>106</i>	<i>112</i>	<i>117</i>	<i>5,878</i>	<i>2,999</i>	<i>1,470</i>	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1													
		Project: PYRAMID										Date 10/31/2018													
												Time 12:20:50PM													
T000 R000 S00 TU2										T000 R000 S00 TU2															
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt																
000	000	00	PEAK	U2	94.50	47	73	S	W																
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf					
WH	CU	CU																							
WH	D	2S		27	9.6	7,088	6,405	605			85	15					100			40	13	236	1.68		27.1
WH	D	3S		54	3.3	12,915	12,488	1,180	51	49							100			40	8	86	0.67		145.7
WH	D	4S		19		4,397	4,397	415	99	1			25	50	4	21			25	5	28	0.26		159.5	
WH	D	UT																	11	5		0.00		18.3	
<b>WH</b>	<b>Totals</b>			62	4.5	24,400	23,290	2,201	46	27	23	4	5	10	1	85			30	7	63	0.60		369.5	
DF	CU	CU																		7			0.00		7.0
DF	D	2S		66	2.7	5,378	5,233	495			74	26					100			40	13	265	1.85		19.8
DF	D	3S		31	2.4	2,454	2,396	226	52	48							100			40	8	89	0.63		27.0
DF	D	4S		3		210	210	20	100				100							14	6	15	0.27		14.3
DF	D	UT																		11	5		0.00		5.8
<b>DF</b>	<b>Totals</b>			21	2.5	8,042	7,839	741	19	15	50	17	3			97			29	9	106	1.03		73.8	
RA	CU	CU																		7	5		0.00		10.5
RA	D	3S		57	3.8	2,411	2,320	219		100				74		26				32	11	125	1.05		18.6
RA	D	4S		36	4.7	1,532	1,460	138	100					19	10	72				36	6	46	0.51		31.6
RA	D	UT		7		264	264	25	100				27		73					20	5	22	0.33		12.1
<b>RA</b>	<b>Totals</b>			11	3.9	4,207	4,044	382	43	57			2	49	8	41			28	7	56	0.63		72.8	
RC	CU	CU																		6			0.00		3.3
RC	D	3S		49		799	799	75	25	75							100			39	7	80	0.85		10.0
RC	D	4S		51		820	820	77	100				82	18						18	5	20	0.26		41.0
<b>RC</b>	<b>Totals</b>			4		1,619	1,619	153	63	37			41	9		49			21	5	30	0.46		54.3	
SF	D	2S		47	20.8	293	232	22			100						100			40	13	190	1.55		1.2
SF	D	3S		45		216	216	20	34	66							100			40	8	99	0.74		2.2
SF	D	UT		8		38	38	4	100								100			36	5	40	0.34		1.0
<b>SF</b>	<b>Totals</b>			1	11.1	547	486	46	23	29	48					100			39	9	112	0.89		4.3	
<b>Type Totals</b>					4.0	38,814	37,278	3,523	40	28	26	6	5	12	1	81			29	7	65	0.65		574.8	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PYRAMID		DATE	10/31/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	PEAK	U2	94.50	47	277	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		47	277	5.9						
CRUISE		16	73	4.6	29,487	.2				
DBH COUNT										
REFOREST										
COUNT		31	201	6.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	38	202.1	13.5	65	54.7	200.8	24,400	23,290	6,755	6,750
DOUG FIR	10	27.0	19.7	85	12.9	57.2	8,042	7,839	2,206	2,206
R ALDER	13	36.4	14.8	60	11.3	43.5	4,207	4,044	1,280	1,280
WR CEDAR	9	44.3	10.5	33	8.2	26.5	1,619	1,619	522	522
PS FIR	3	2.2	18.4	80	0.9	4.0	547	486	152	152
<b>TOTAL</b>	<b>73</b>	<b>312.0</b>	<b>14.0</b>	<b>62</b>	<b>88.8</b>	<b>332.0</b>	<b>38,814</b>	<b>37,278</b>	<b>10,914</b>	<b>10,909</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	54.1	7.9		186	202	218				
DOUG FIR	123.1	18.0		22	27	32				
R ALDER	137.2	20.0		29	36	44				
WR CEDAR	136.3	19.9		36	44	53				
PS FIR	525.4	76.6		1	2	4				
<b>TOTAL</b>	<b>29.6</b>	<b>4.3</b>		<b>299</b>	<b>312</b>	<b>325</b>	<b>35</b>	<b>18</b>	<b>9</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	51.9	7.6		186	201	216				
DOUG FIR	124.5	18.2		47	57	68				
R ALDER	137.7	20.1		35	44	52				
WR CEDAR	141.7	20.7		21	26	32				
PS FIR	506.5	73.9		1	4	7				
<b>TOTAL</b>	<b>25.8</b>	<b>3.8</b>		<b>319</b>	<b>332</b>	<b>344</b>	<b>27</b>	<b>14</b>	<b>7</b>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	52.3	7.6		21,512	23,290	25,068				
DOUG FIR	129.2	18.9		6,361	7,839	9,317				
R ALDER	138.7	20.2		3,226	4,044	4,863				
WR CEDAR	146.2	21.3		1,273	1,619	1,964				
PS FIR	513.0	74.8		122	486	849				
<b>TOTAL</b>	<b>31.4</b>	<b>4.6</b>		<b>35,573</b>	<b>37,278</b>	<b>38,982</b>	<b>39</b>	<b>20</b>	<b>10</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				107	116	125				
DOUG FIR				111	137	163				
R ALDER				74	93	112				
WR CEDAR				48	61	74				
PS FIR	513.0	74.8		31	122	213				
<b>TOTAL</b>	<b>388.9</b>	<b>56.7</b>		<b>107</b>	<b>112</b>	<b>117</b>	<b>6,051</b>	<b>3,087</b>	<b>1,513</b>	

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1													
		Project: PYRAMID										Date 10/31/2018													
												Time 12:20:50PM													
T000 R000 S00 TU3										T000 R000 S00 TU3															
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt																
000	000	00	PEAK	U3	63.70	32	65	S	W																
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf					
WH	CU	CU																							
WH	D	2S		34	13.3	10,081	8,738	557			67	33			6	94			39	14	284	2.00			30.7
WH	D	3S		52	3.4	13,563	13,102	835	11	89					1	11	88		39	9	115	0.80			114.0
WH	D	4S		14		3,519	3,519	224	100						22		29	49	30	5	32	0.32			108.7
<b>WH</b>	<b>Totals</b>			56	6.6	27,164	25,359	1,615	20	46	23	11			3	1	12	85	31	8	88	0.78			287.6
DF	CU	CU																							
DF	D	2S		38	5.3	6,178	5,852	373			90	10					100		40	13	215	1.54			27.2
DF	D	3S		49		7,357	7,357	469	26	74						24	76		38	8	91	0.65			81.2
DF	D	4S		13		1,894	1,894	121	100					34	19		47		26	5	31	0.30			60.8
DF	D	UT																	8	5		0.00			19.1
<b>DF</b>	<b>Totals</b>			33	2.1	15,429	15,103	962	25	36	35	4			4	2	12	82	28	7	72	0.70			209.4
RC	D	3S		77	22.3	2,391	1,859	118	6	40	54				6	94			35	10	108	1.46			17.1
RC	D	4S		23		541	541	34	100						11	89			25	5	27	0.35			20.2
<b>RC</b>	<b>Totals</b>			5	18.2	2,932	2,400	153	27	31	42				2	25	73		29	7	64	0.96			37.3
RA	D	2S		20	6.7	535	500	32			100				100				30	12	140	1.18			3.6
RA	D	3S		58	8.7	1,578	1,440	92			100				68	32			33	10	109	0.90			13.2
RA	D	4S		16	10.5	436	390	25	100						59	41			31	5	30	0.34			13.2
RA	D	UT		6		143	143	9	100								100		36	5	40	0.46			3.6
<b>RA</b>	<b>Totals</b>			5	8.1	2,692	2,473	158	22	58	20				69	31			32	8	74	0.67			33.5
<b>Type Totals</b>					6.0	48,217	45,335	2,888	22	43	28	8			3	6	10	80	30	7	80	0.76			567.9

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PYRAMID		DATE	10/31/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	PEAK	U3	63.70	32	197	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		32	197	6.2						
CRUISE		13	65	5.0	15,230	.4				
DBH COUNT										
REFOREST										
COUNT		19	120	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
WHEMLOCK	30	117.2	16.8	81	43.9	179.7	27,164	25,359	6,972	6,970
DOUG FIR	18	82.8	15.8	79	28.5	113.3	15,429	15,103	4,154	4,154
WR CEDAR	9	22.3	17.2	55	8.7	36.3	2,932	2,400	1,077	1,059
R ALDER	8	16.8	15.7	67	5.7	22.5	2,692	2,473	725	725
<b>TOTAL</b>	<b>65</b>	<b>239.1</b>	<b>16.4</b>	<b>77</b>	<b>86.8</b>	<b>351.7</b>	<b>48,217</b>	<b>45,335</b>	<b>12,927</b>	<b>12,908</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	76.5	13.5		101	117	133				
DOUG FIR	87.0	15.4		70	83	95				
WR CEDAR	161.9	28.6		16	22	29				
R ALDER	155.4	27.5		12	17	21				
<b>TOTAL</b>	<b>21.1</b>	<b>3.7</b>		<b>230</b>	<b>239</b>	<b>248</b>	<b>18</b>	<b>9</b>	<b>4</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	64.2	11.3		159	180	200				
DOUG FIR	89.1	15.8		95	113	131				
WR CEDAR	151.9	26.8		27	36	46				
R ALDER	156.0	27.6		16	23	29				
<b>TOTAL</b>	<b>2.9</b>	<b>.5</b>		<b>350</b>	<b>352</b>	<b>354</b>	<b>0</b>	<b>0</b>	<b>0</b>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	62.2	11.0		22,570	25,359	28,148				
DOUG FIR	90.7	16.0		12,680	15,103	17,525				
WR CEDAR	147.9	26.2		1,772	2,400	3,028				
R ALDER	155.2	27.4		1,795	2,473	3,152				
<b>TOTAL</b>	<b>16.6</b>	<b>2.9</b>		<b>44,008</b>	<b>45,335</b>	<b>46,662</b>	<b>11</b>	<b>6</b>	<b>3</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				126	141	157				
DOUG FIR				112	133	155				
WR CEDAR				49	66	84				
R ALDER	40.7	7.2		80	110	140				
<b>TOTAL</b>	<b>292.1</b>	<b>51.6</b>		<b>125</b>	<b>129</b>	<b>133</b>	<b>3,412</b>	<b>1,741</b>	<b>853</b>	

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1								
												Date	10/31/2018								
												Time	12:20:50PM								
T000	R000	S00	TU4	Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	T000	R000	S00	TU4					
000	000	00	PEAK	U4	31.60	16	46	S	W												
S	So	Gr	%	Bd. Ft. per Acre	Total	Percent Net Board Foot Volume										Average Log	Logs				
Spp	T	rt	ad	Net BdFt	Def%	Gross	Net	Net MBF	5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ln	Dia	Bd	CF/Lf	Per /Acre
WH	CU	CU															6		0.00		26.1
WH	D	2S	16	3.0	5,065	4,911	155			83	17				100		40	12	213	1.49	23.1
WH	D	3S	64	3.5	19,174	18,511	585	23	77				4	96			39	8	105	0.73	175.6
WH	D	4S	19	.7	5,320	5,283	167	94	6				11	36	22	31	29	5	32	0.31	167.5
WH	D	UT	1		221	221	7	100					100				16	5	13	0.19	17.6
<b>WH</b>	<b>Totals</b>		81	2.9	29,779	28,926	914	33	50	14	3		3	7	6	84	31	7	71	0.62	409.8
DF	CU	CU															5		0.00		4.1
DF	D	2S	13	6.9	715	666	21			100					100		40	14	270	1.85	2.5
DF	D	3S	69	2.8	3,343	3,249	103	15	85						100		40	9	119	0.87	27.3
DF	D	4S	18		849	849	27	100					6	17	41	37	30	5	31	0.31	27.3
<b>DF</b>	<b>Totals</b>		13	2.9	4,907	4,764	151	28	58	14			1	3	7	89	33	7	78	0.69	61.2
RC	CU	CU															5	5		0.00	16.4
RC	D	3S	51	29.4	1,294	913	29	25	18	57					100		36	9	72	1.13	12.6
RC	D	4S	49	10.4	969	868	27	100					38	6		56	26	5	29	0.33	30.5
<b>RC</b>	<b>Totals</b>		5	21.3	2,263	1,781	56	61	9	29			19	3		78	23	6	30	0.58	59.5
RA	D	3S	80	27.3	394	286	9		100					100			30	10	80	1.07	3.6
RA	D	UT	20		72	72	2	100						100			23	5	20	0.34	3.6
<b>RA</b>	<b>Totals</b>		1	23.1	466	358	11	20	80					100			27	8	50	0.75	7.2
<b>Type Totals</b>				4.2	37,415	35,829	1,132	33	50	15	2		3	7	6	84	31	7	67	0.62	537.7

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PYRAMID		DATE	10/31/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	PEAK	U4	31.60	16	83	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		16	83	5.2						
CRUISE		9	46	5.1	8,405	.5				
DBH COUNT										
REFOREST										
COUNT		7	34	4.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	32	198.7	14.4	72	59.3	225.2	29,779	28,926	8,027	7,963
DOUG FIR	6	27.3	16.2	79	9.7	39.1	4,907	4,764	1,385	1,385
WR CEDAR	7	36.4	12.8	45	9.1	32.5	2,263	1,781	818	783
R ALDER	1	3.6	16.0	56	1.2	5.0	466	358	142	143
<b>TOTAL</b>	<b>46</b>	<b>266.0</b>	<b>14.4</b>	<b>69</b>	<b>79.4</b>	<b>301.7</b>	<b>37,415</b>	<b>35,829</b>	<b>10,372</b>	<b>10,273</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	49.2	12.7		173	199	224				
DOUG FIR	162.9	42.0		16	27	39				
WR CEDAR	144.3	37.3		23	36	50				
R ALDER	273.3	70.6		1	4	6				
<b>TOTAL</b>	<b>38.3</b>	<b>9.9</b>		<b>240</b>	<b>266</b>	<b>292</b>	<b>63</b>	<b>32</b>	<b>16</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	46.2	11.9		198	225	252				
DOUG FIR	153.2	39.6		24	39	55				
WR CEDAR	136.5	35.2		21	33	44				
R ALDER	273.3	70.6		1	5	9				
<b>TOTAL</b>	<b>24.7</b>	<b>6.4</b>		<b>282</b>	<b>302</b>	<b>321</b>	<b>26</b>	<b>13</b>	<b>7</b>	
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK	47.5	12.3		25,379	28,926	32,473				
DOUG FIR	150.1	38.7		2,918	4,764	6,609				
WR CEDAR	142.6	36.8		1,125	1,781	2,437				
R ALDER	273.3	70.6		105	358	611				
<b>TOTAL</b>	<b>31.0</b>	<b>8.0</b>		<b>32,957</b>	<b>35,829</b>	<b>38,701</b>	<b>41</b>	<b>21</b>	<b>10</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK				113	128	144				
DOUG FIR	73.8	19.1		75	122	169				
WR CEDAR	101.2	26.1		35	55	75				
R ALDER	178.9	46.2		21	72	122				
<b>TOTAL</b>	<b>163.0</b>	<b>42.1</b>		<b>109</b>	<b>119</b>	<b>128</b>	<b>1,133</b>	<b>578</b>	<b>283</b>	



TC TSTATS				<b>STATISTICS</b>				PAGE	1		
				PROJECT		PYRAMID		DATE	10/31/2018		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>		
<b>000</b>	<b>000</b>	<b>00</b>	<b>PEAK</b>	<b>U5</b>	2.00	1	6	S	W		
				TREES	ESTIMATED			PERCENT			
				PER PLOT	TOTAL			SAMPLE			
				PLOTS	TREES	PER PLOT	TREES	TREES			
TOTAL		1	6	6.0							
CRUISE		1	6	6.0	898		.7				
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
<b>STAND SUMMARY</b>											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
WHEMLOCK	3	294.6	10.1	53	51.4	163.3	14,383	14,383	4,086	4,086	
PS FIR	2	103.4	13.9	56	29.2	108.9	9,014	9,014	2,975	2,975	
WR CEDAR	1	50.9	12.0	22	11.5	40.0	1,019	1,019	446	446	
<b>TOTAL</b>	<b>6</b>	<b>448.9</b>	<b>11.3</b>	<b>50</b>	<b>92.9</b>	<b>312.2</b>	<b>24,416</b>	<b>24,416</b>	<b>7,507</b>	<b>7,507</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											



TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PYRAMID		DATE	10/31/2018		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
000	000	00	PEAK	U6RW	5.10	2	8	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		2	8	4.0						
CRUISE		2	8	4.0	749	1.1				
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	4	66.1	10.5	43	12.3	40.0	3,372	3,188	912	912
WHEMLOCK	4	80.9	9.5	43	13.0	40.0	3,242	3,242	819	819
<b>TOTAL</b>	<b>8</b>	<b>146.9</b>	<b>10.0</b>	<b>43</b>	<b>25.3</b>	<b>80.0</b>	<b>6,614</b>	<b>6,431</b>	<b>1,731</b>	<b>1,731</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	TREES/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER		62.9	59.0	27	66	105				
WHEMLOCK		41.2	38.7	50	81	112				
<b>TOTAL</b>		<b>5.6</b>	<b>5.2</b>	<b>139</b>	<b>147</b>	<b>155</b>	<b>2</b>	<b>1</b>	<b>1</b>	
CL:	68.1 %	COEFF	BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER		70.7	66.3	13	40	67				
WHEMLOCK		70.7	66.3	13	40	67				
<b>TOTAL</b>				<b>80</b>	<b>80</b>	<b>80</b>				
CL:	68.1 %	COEFF	NET BF/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER		92.6	86.8	420	3,188	5,957				
WHEMLOCK		66.4	62.3	1,223	3,242	5,262				
<b>TOTAL</b>		<b>12.4</b>	<b>11.6</b>	<b>5,682</b>	<b>6,431</b>	<b>7,180</b>	<b>11</b>	<b>6</b>	<b>3</b>	
CL:	68.1 %	COEFF	V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
R ALDER		92.6	86.8	10	80	149				
WHEMLOCK		66.4	62.3	31	81	132				
<b>TOTAL</b>		<b>12.4</b>	<b>11.6</b>	<b>71</b>	<b>80</b>	<b>90</b>	<b>11</b>	<b>6</b>	<b>3</b>	



TC TSTATS				<b>STATISTICS</b>				PAGE	1		
				<b>PROJECT</b>		<b>PYRAMID</b>		DATE	10/31/2018		
<b>TWP</b>	<b>RGE</b>	<b>SECT</b>	<b>TRACT</b>	<b>TYPE</b>	<b>ACRES</b>	<b>PLOTS</b>	<b>TREES</b>	<b>CuFt</b>	<b>BdFt</b>		
<b>000</b>	<b>000</b>	<b>00</b>	<b>PEAK</b>	<b>U7RW</b>	3.00	1	6	S	W		
				TREES	ESTIMATED			PERCENT			
				PER PLOT	TOTAL			SAMPLE			
				PLOTS	TREES			TREES			
TOTAL			1	6	6.0						
CRUISE			1	6	6.0	793		.8			
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
<b>STAND SUMMARY</b>											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
WHEMLOCK	5	240.5	15.4	76	79.5	312.5	39,202	38,625	11,197	11,197	
DOUG FIR	1	23.7	22.0	86	13.3	62.5	7,340	7,340	2,249	2,249	
<b>TOTAL</b>	<b>6</b>	<b>264.2</b>	<b>16.1</b>	<b>77</b>	<b>93.4</b>	<b>375.0</b>	<b>46,542</b>	<b>45,964</b>	<b>13,446</b>	<b>13,446</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											

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

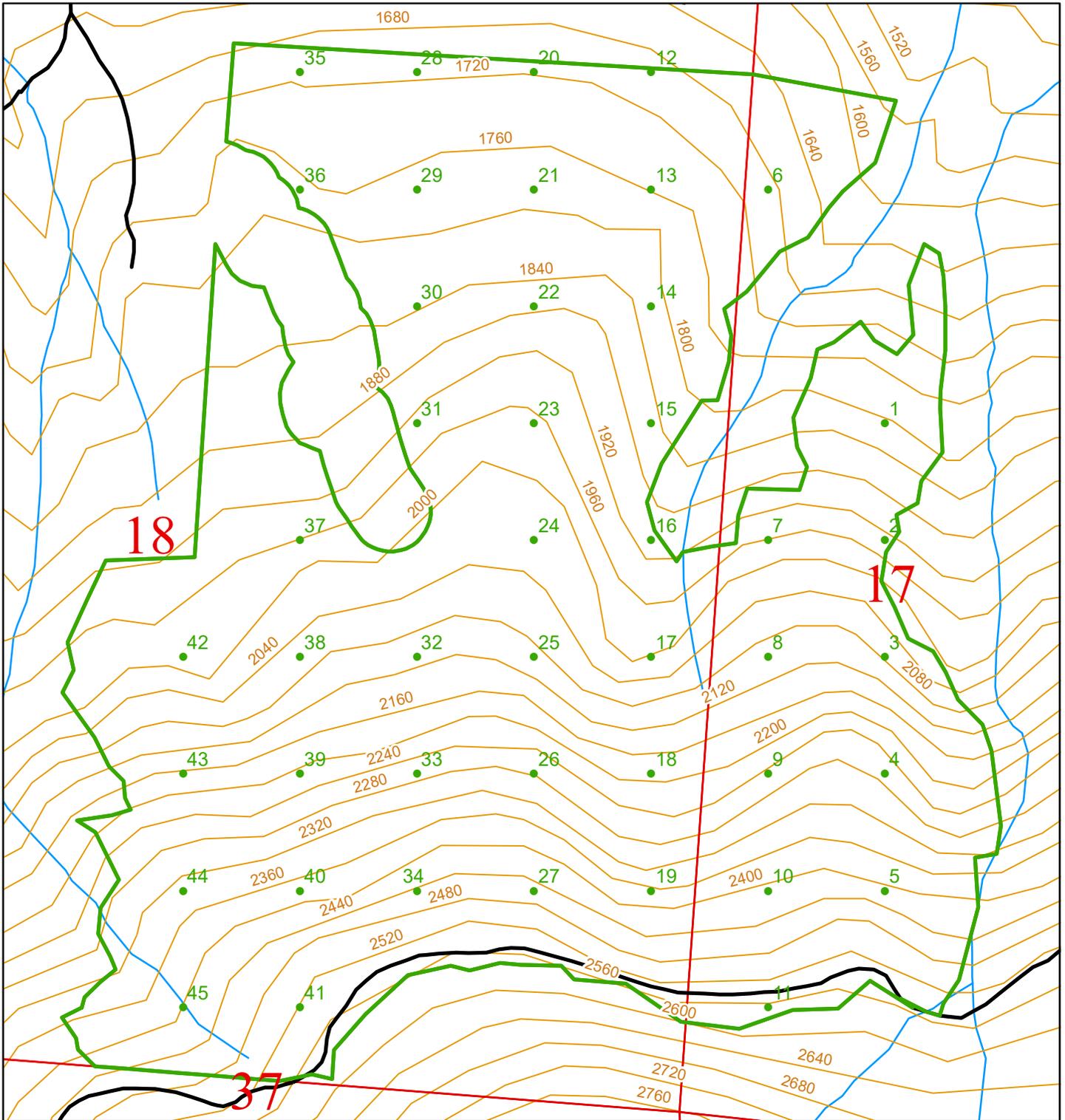
T000 R000 S00 TyU1	88.3
T000 R000 S00 TyU2	94.5
T000 R000 S00 TyU7R	3.0

**Project PYRAMID**  
**Acres 288.20**

**Page No 1**  
**Date: 10/31/2018**  
**Time 12:20:50PM**

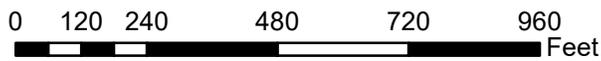
Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
WHEMLOCK	52,627	95,046	62,700	37.18	20.59	0.63	19,594	19,566	7,235	6,903
DOUG FIR	11,197	26,119	19,950	62.51	26.80	0.84	7,000	7,000	2,563	2,504
R ALDER	8,267	14,345	8,044	35.38	20.39	0.64	2,925	2,925	983	935
WR CEDAR	10,727	13,102	4,467	17.51	14.34	0.60	1,901	1,878	554	505
PS FIR	622	1,243	1,000	56.16	28.08	0.81	349	349	122	111
<b>Totals</b>	<b>83,441</b>	<b>149,855</b>	<b>96,160</b>	<b>38.01</b>	<b>21.17</b>	<b>0.67</b>	<b>31,768</b>	<b>31,718</b>	<b>11,458</b>	<b>10,958</b>

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
C	75,173	135,510	88,117	38.30	21.25	0.67	28,843	28,793	10,475	10,023
H	8,267	14,345	8,044	35.38	20.39	0.64	2,925	2,925	983	935
<b>Totals</b>	<b>83,441</b>	<b>149,855</b>	<b>96,160</b>	<b>38.01</b>	<b>21.17</b>	<b>0.67</b>	<b>31,768</b>	<b>31,718</b>	<b>11,458</b>	<b>10,958</b>



**Cruiser Sample Point Locations**

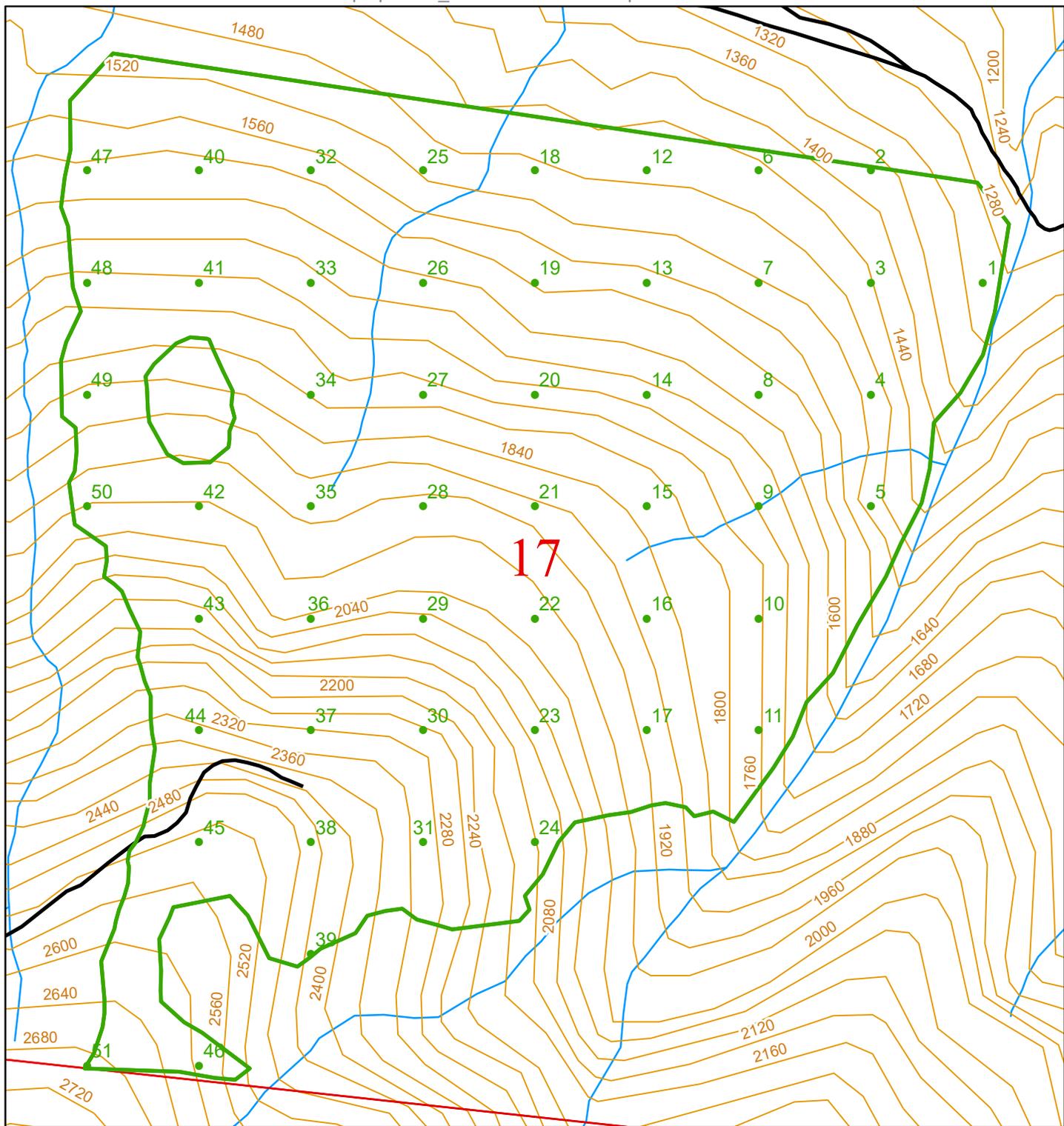
LAYER NAME:	pyramidpeakboundary	Township:	T30R09W
POLY ID:	1	Total Sample Points:	45
Acres:	94	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



Scale 1:4,200

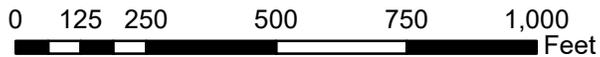
**Legend**

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



**Cruiser Sample Point Locations**

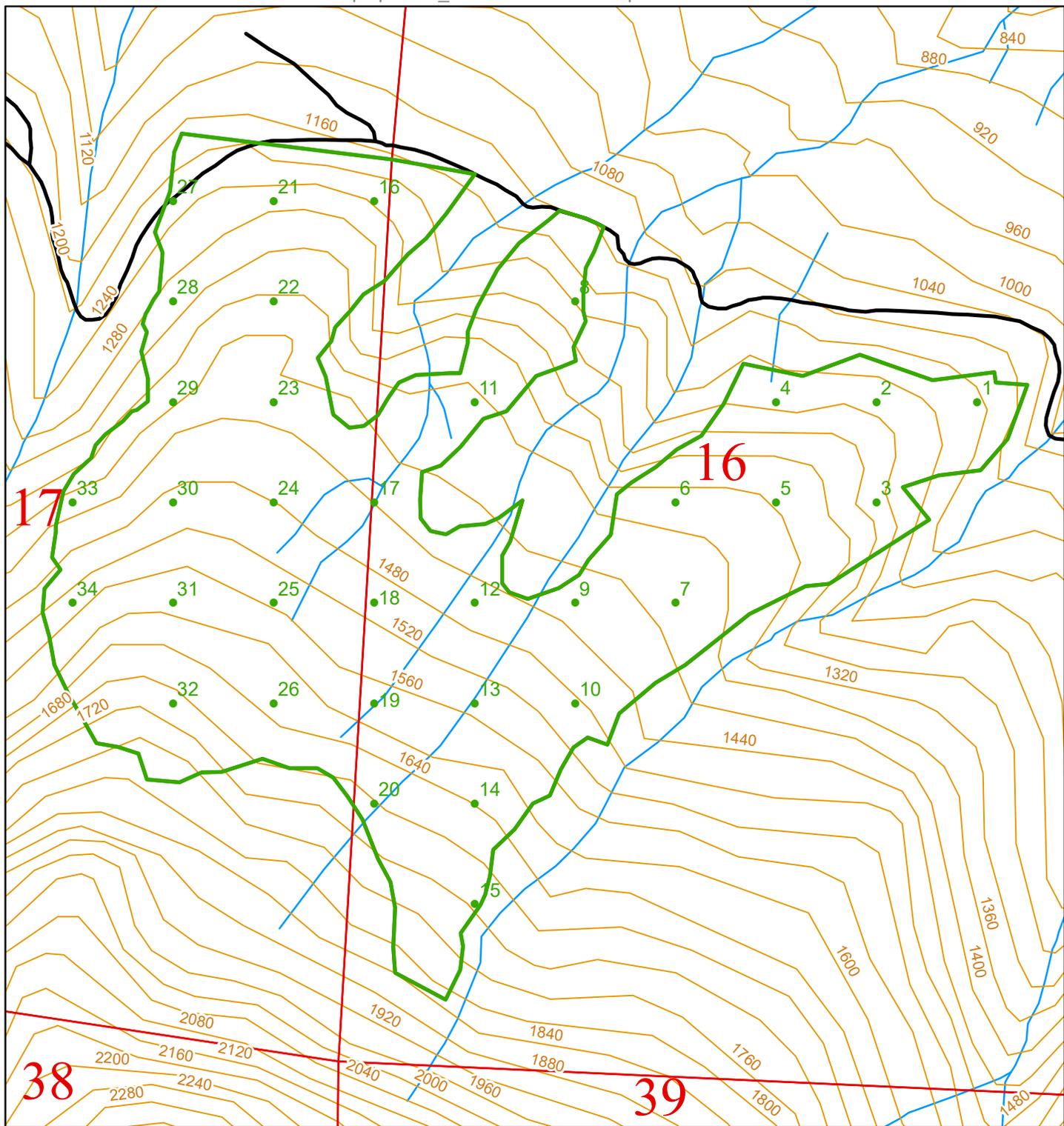
LAYER NAME:	pyramidpeakboundary	Township:	T30R09W
POLY ID:	1	Total Sample Points:	51
Acres:	95	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



Scale 1:4,400

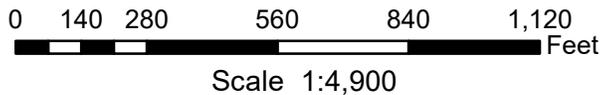
**Legend**

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



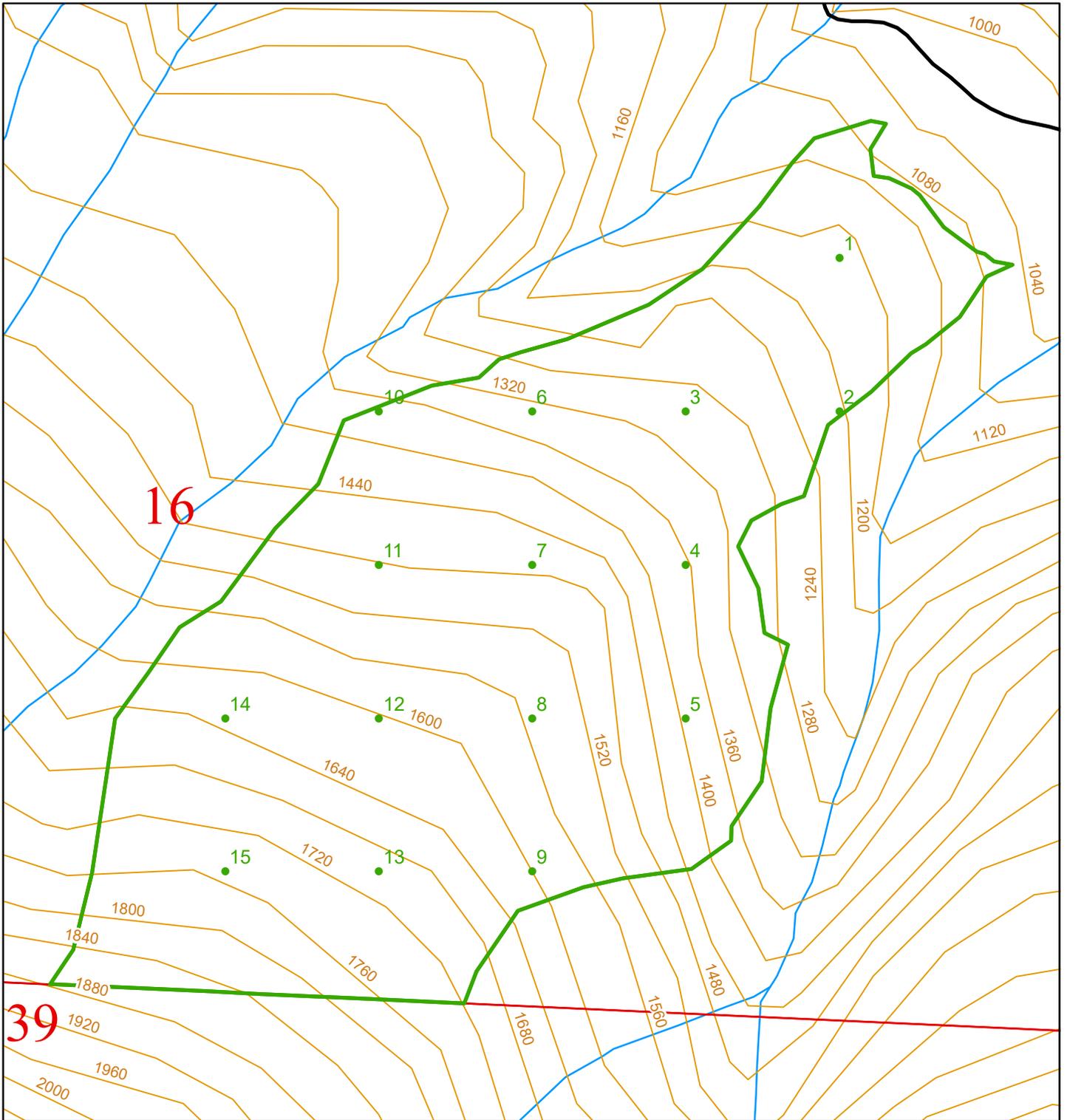
**Cruiser Sample Point Locations**

LAYER NAME:	pyramidpeakboundary	Township:	T30R09W
POLY ID:	1	Total Sample Points:	34
Acres:	66	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



**Legend**

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



### Cruiser Sample Point Locations

LAYER NAME:	pyramidpeakboundary	Township:	T30R09W
POLY ID:	1	Total Sample Points:	15
Acres:	32	Spacing Between Points:	Width: 290 Height: 290
		Point Rotation Degrees:	0



Scale 1:3,200

**Legend**

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



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

FPA/N No: 2615776  
Effective Date: 01/12/2019  
Expiration Date: 01/12/2022  
Shut Down Zone: 652NW  
EARR Tax Credit:  Eligible     Non-eligible  
Reference: DNR - Pyramid Peak

Decision

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

FPA/N Classification

Number of Years Granted on Multi-Year Request

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

Conditions on Approval / Reasons for Disapproval

Issued By: Erik Dukes      Region: Olympic

Title: Forest Practice Forester      Date: 01/12/2019

Copies to:  Landowner, Timber Owner and Operator.

Issued in person:  Landowner  Timber Owner  Operator By:   
Connie L. Sallee

**Appeal Information**

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

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

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

Information regarding the Pollution Control Hearings Board can be found at: <http://www.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  
Olympic Region  
411 Tillicum Ln  
Forks, WA 98331

**Other Applicable Laws**

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

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

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

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

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

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

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

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

**DNR affidavit of mailing:**

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

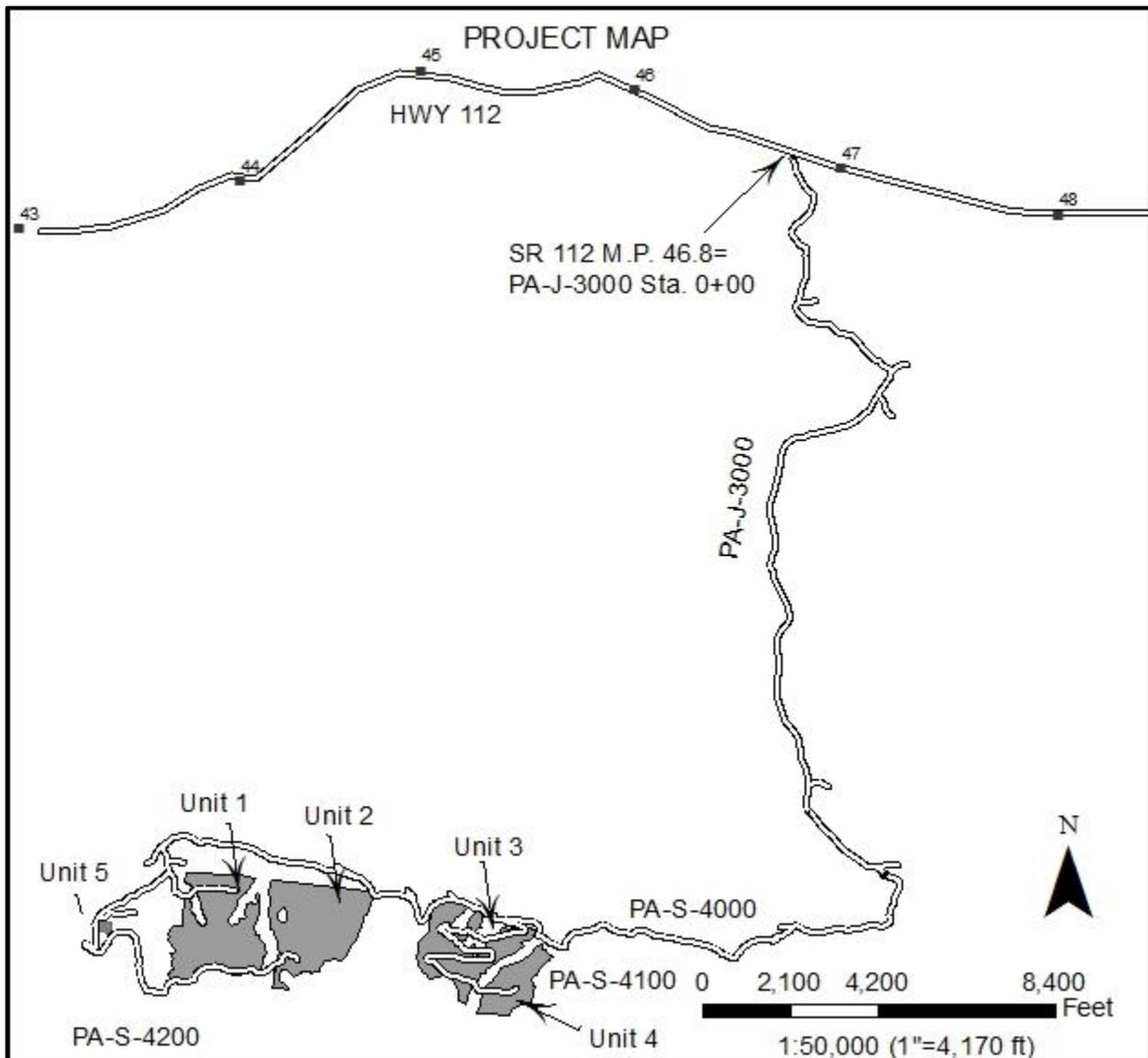
PYRAMID PEAK TIMBER SALE ROAD PLAN  
CLALLAM COUNTY  
STRAITS DISTRICT  
OLYMPIC REGION

AGREEMENT NO.: 30-097938

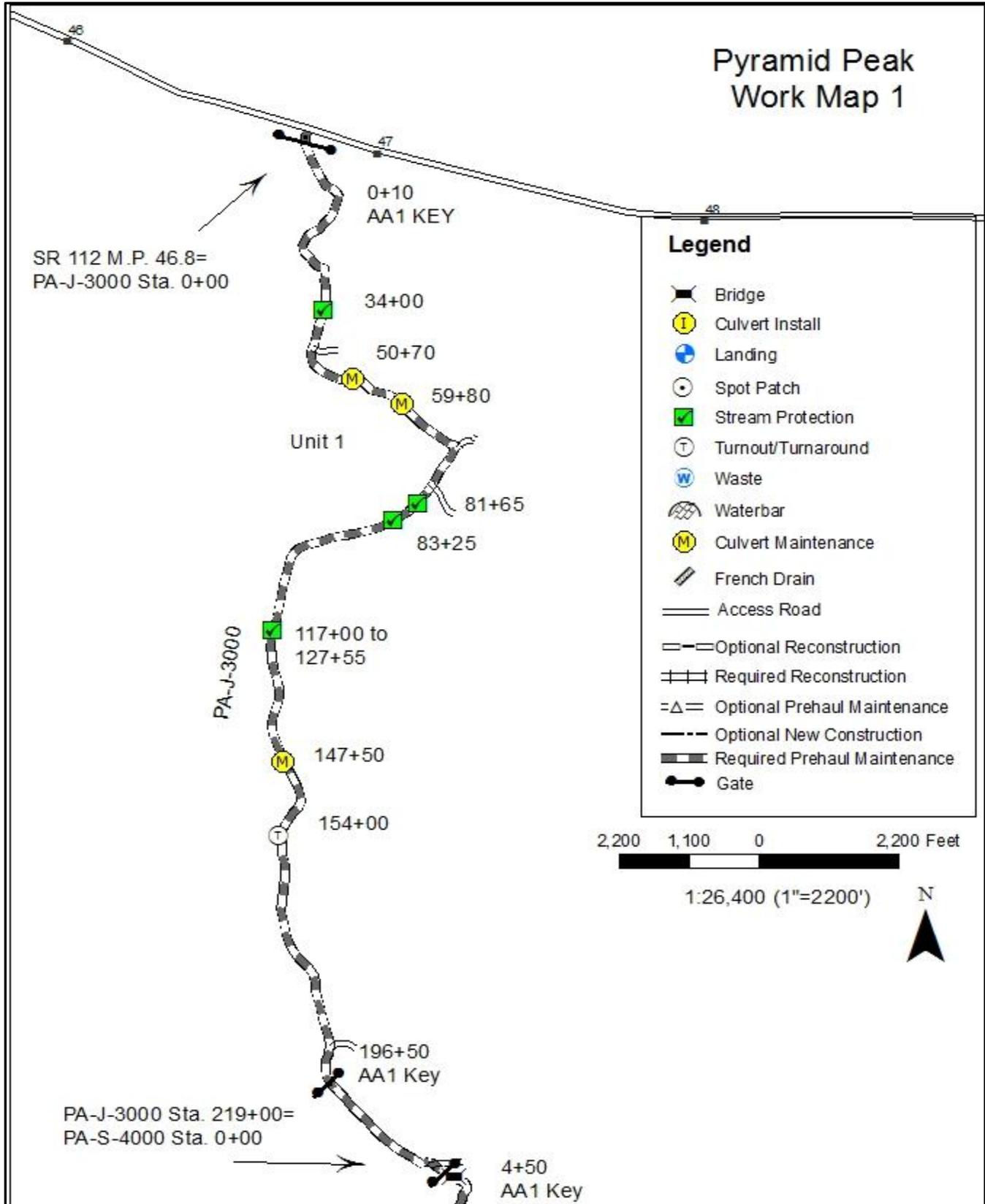
DISTRICT ENGINEER: GREG ELLIS

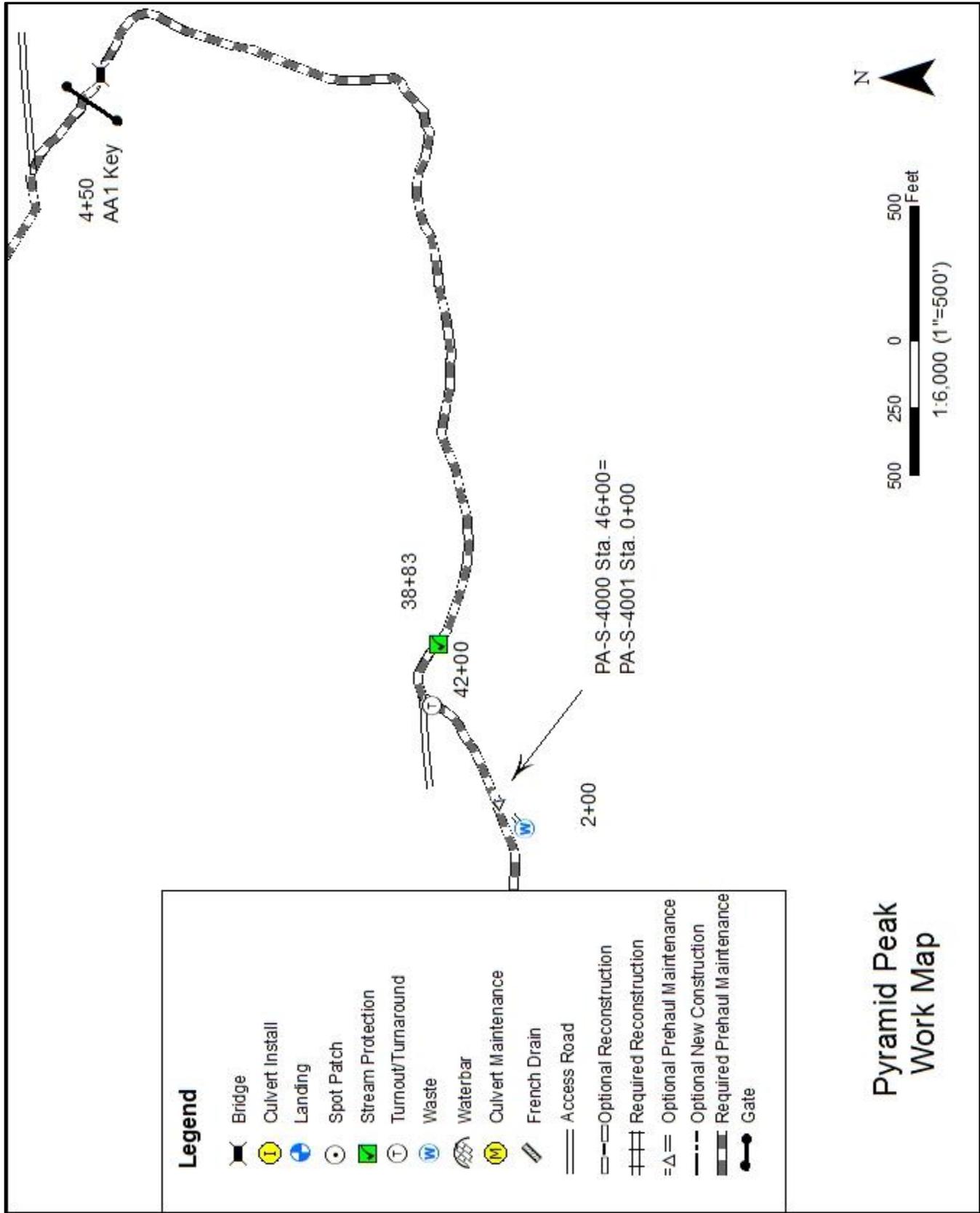
DATE: MARCH 5, 2020

DRAWN & COMPILED BY: SCOTT ROSE



# Pyramid Peak Work Map 1





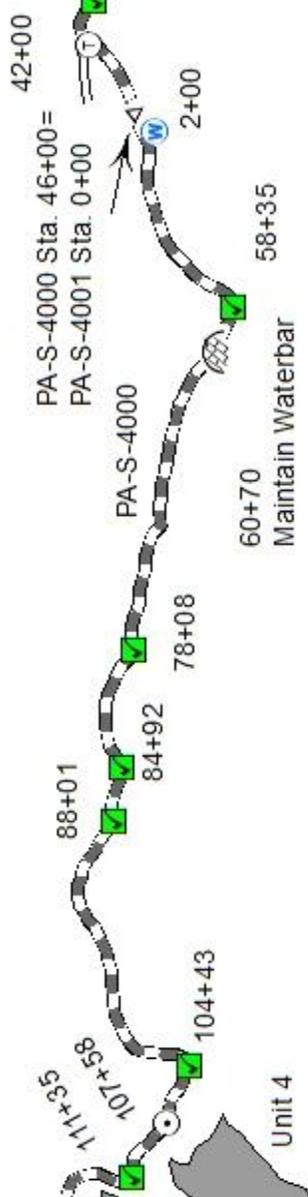
**Legend**

	Bridge
	Culvert Install
	Landing
	Spot Patch
	Stream Protection
	Turnout/Turnaround
	Waste
	Waterbar
	Culvert Maintenance
	French Drain
	Access Road
	Optional Reconstruction
	Required Reconstruction
	Optional Prehaul Maintenance
	Optional New Construction
	Required Prehaul Maintenance
	Gate

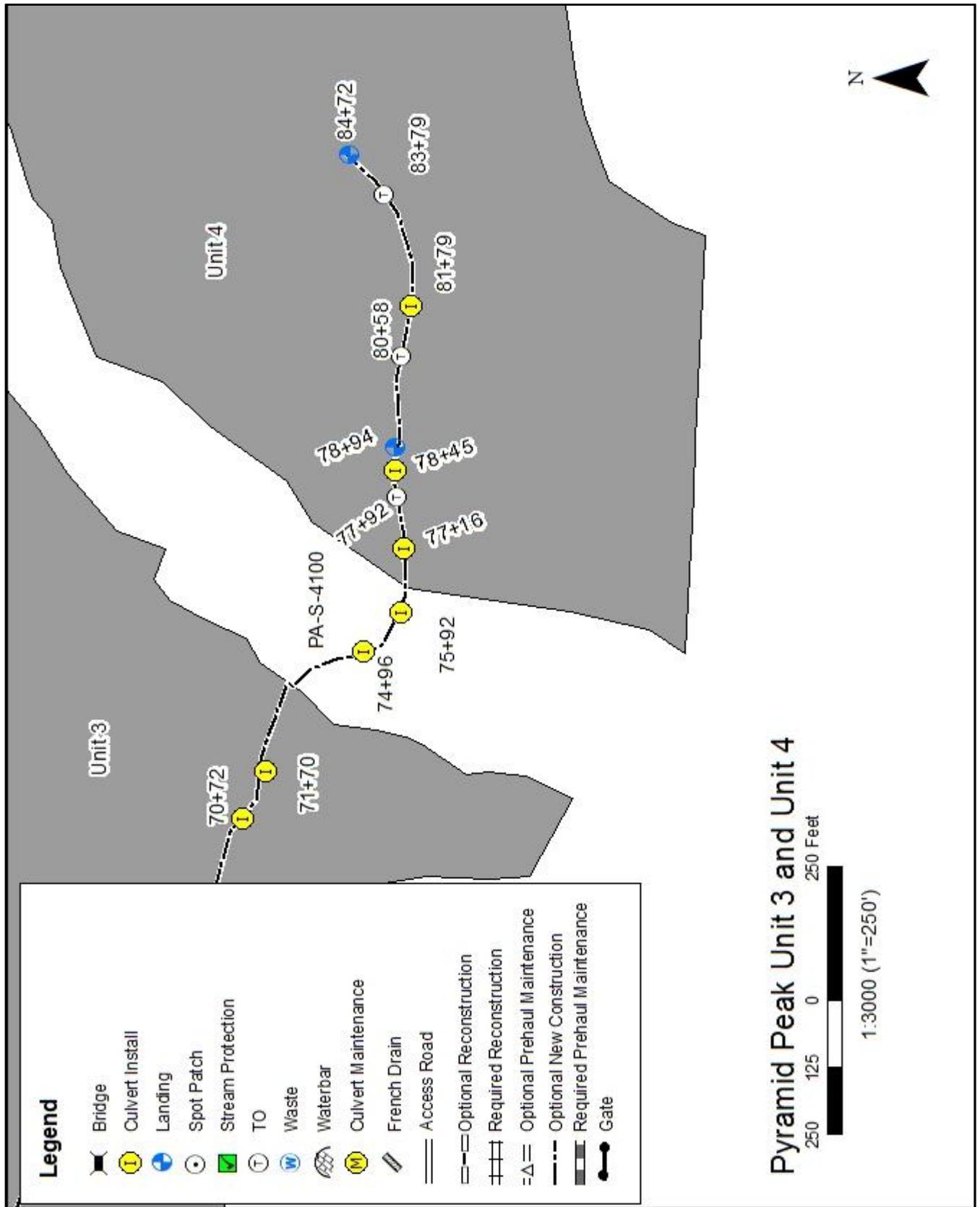
## Pyramid Peak Work Map

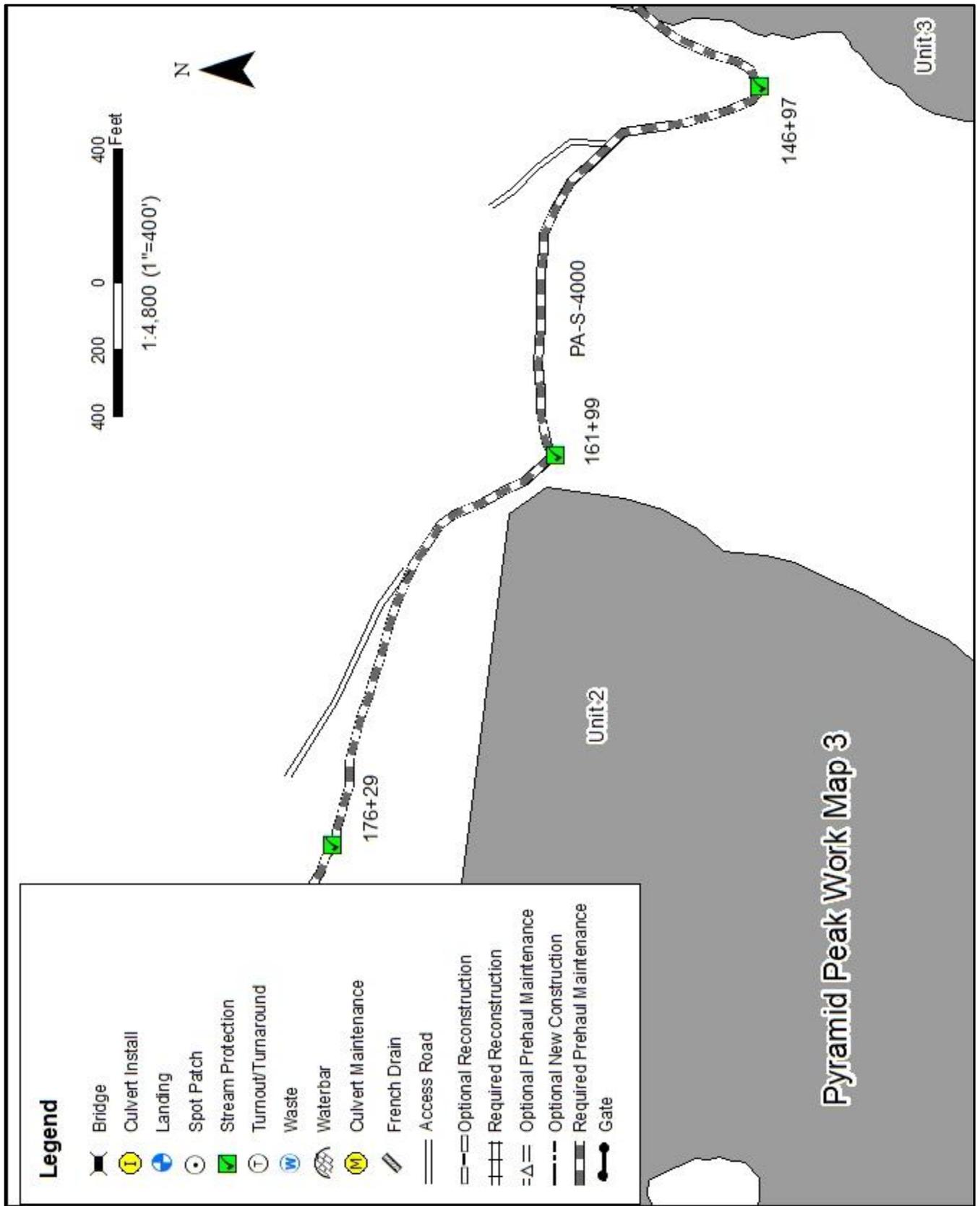
# Pyramid Peak Work Map

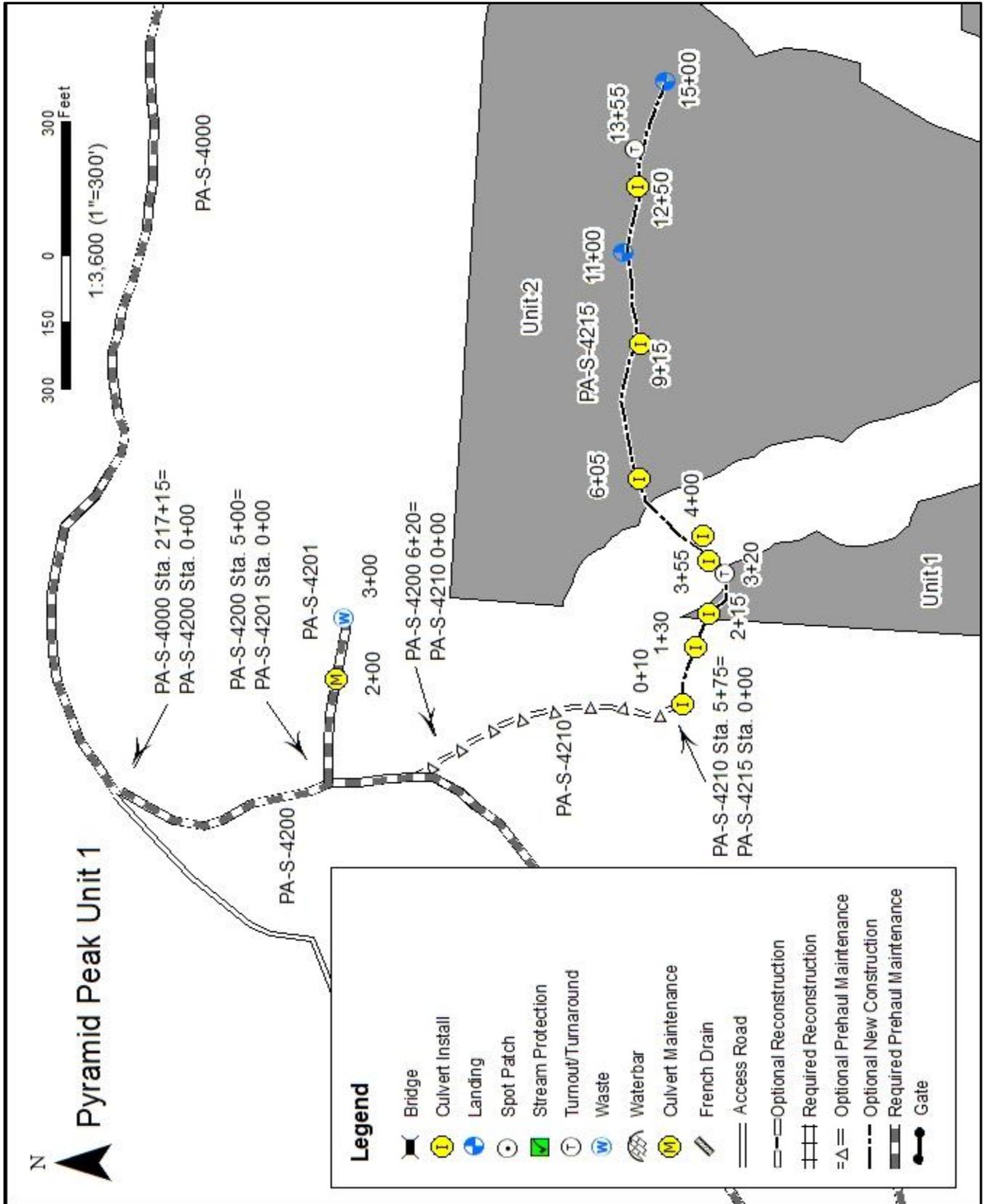
Legend	
	Bridge
	Culvert Install
	Landing
	Spot Patch
	Stream Protection
	Turnout/Turnaround
	Waste
	Waterbar
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	French Drain
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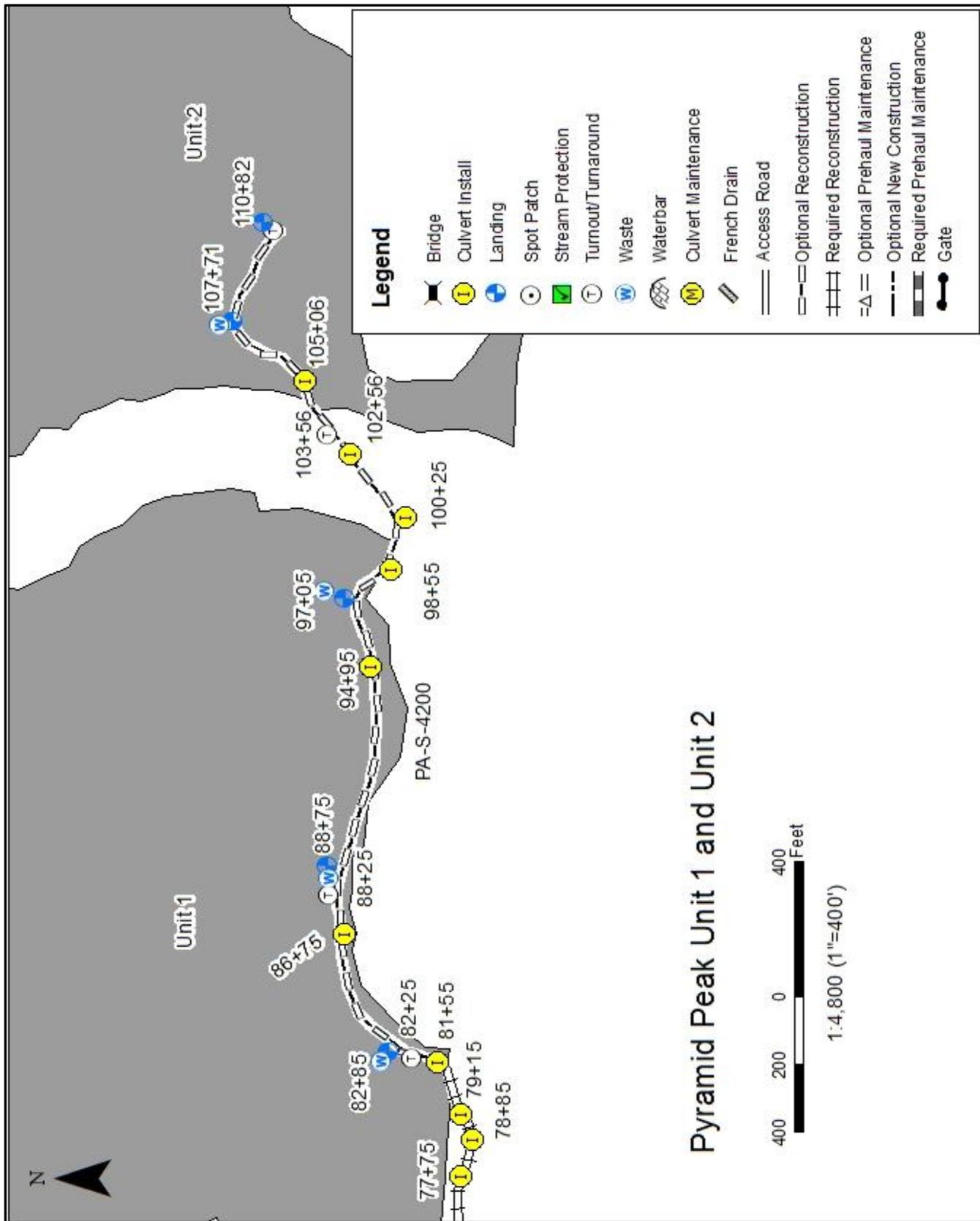


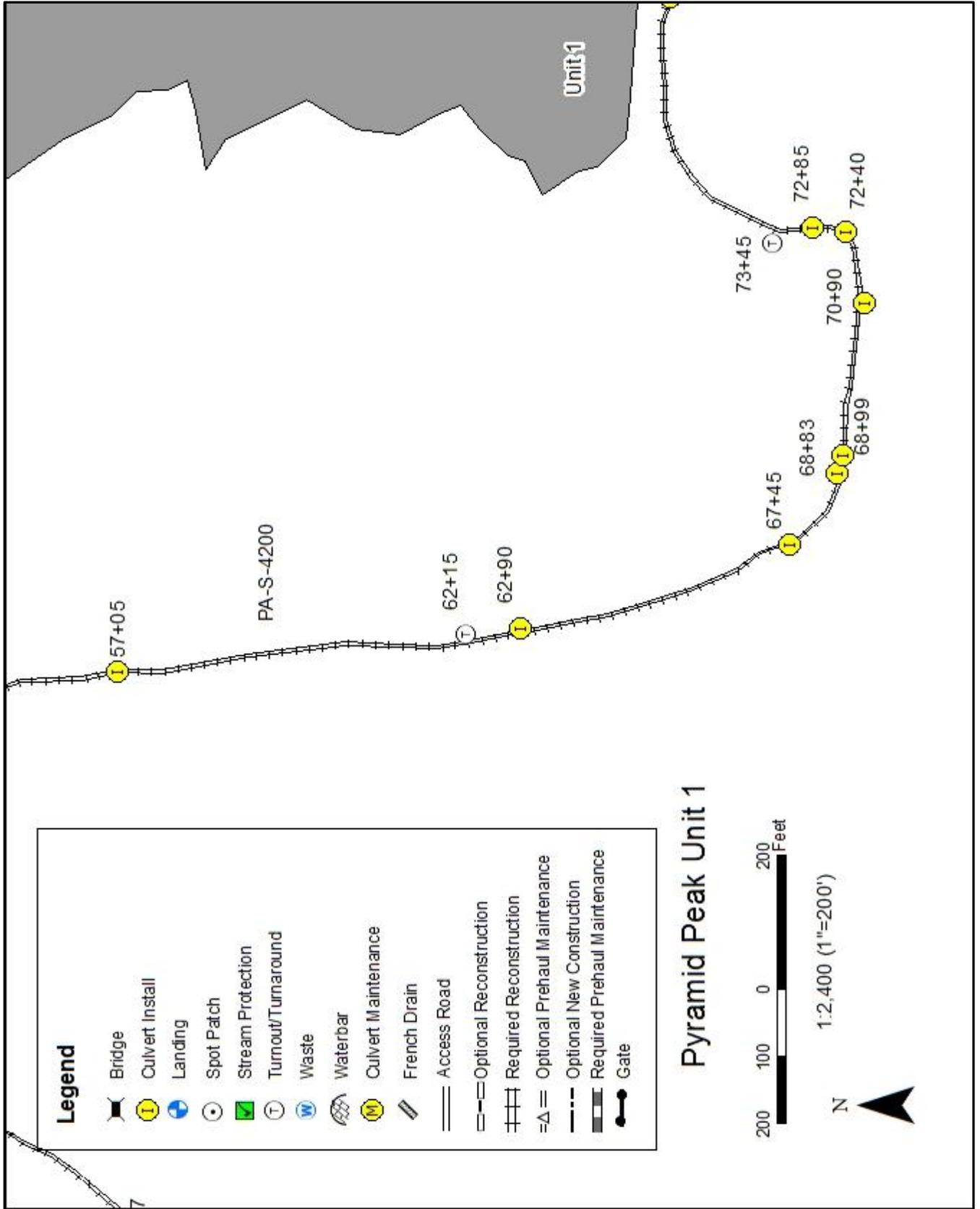


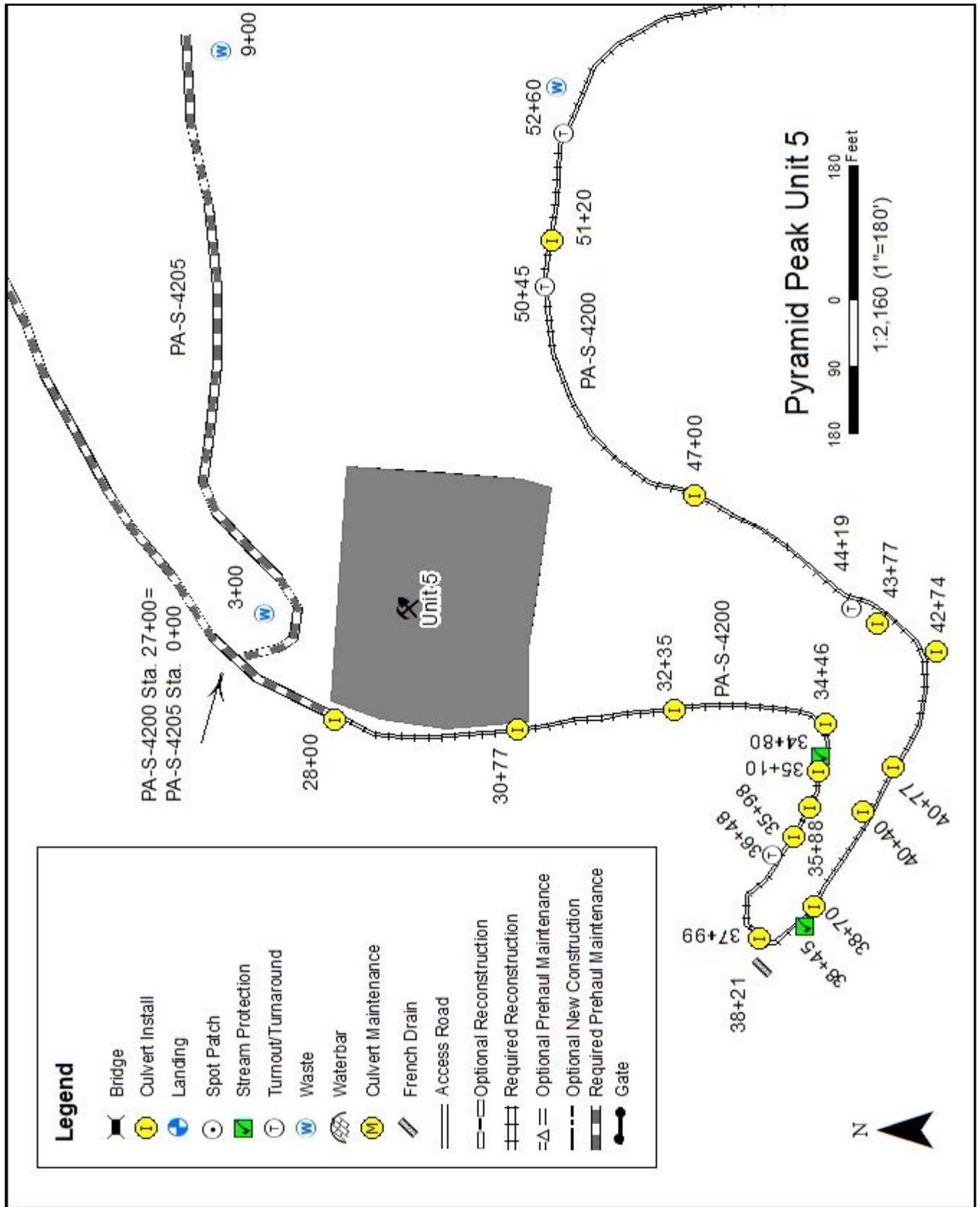












## SECTION 0 – SCOPE OF PROJECT

### 0-1 ROAD PLAN SCOPE

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

### 0-2 REQUIRED ROADS

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PA-J-3000	0+00 to 219+00	Pre-Haul Maintenance
PA-S-4205	0+00 to 9+20	Pre-Haul Maintenance
PA-S-4000	0+00 to 217+15	Pre-Haul Maintenance
PA-S-4200	0+00 to 28+00	Pre-Haul Maintenance
PA-S-4201	0+00 to 3+00	Pre-Haul Maintenance
PA-S-4200	28+00 to 81+55	Reconstruction

### 0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PA-S-4210	0+00 to 5+75	Prehaul Maintenance
PA-S-4001	0+00 to 2+00	Prehaul Maintenance
PA-S-4200	81+55 to 111+02	Reconstruction
PA-S-4215	0+00 to 15+00	Construction
PA-S-4100	0+00 to 84+72	Construction
PA-S-4100.1	0+00 to 0+85	Construction
PA-S-4100.2	0+00 to 0+80	Construction

### 0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-S-4215	0+00 to 15+00	See Below
PA-S-4100	0+00 to 84+72	See Below
PA-S-4100.1	0+00 to 0+85	See Below
PA-S-4100.2	0+00 to 0+80	See Below
Total Stations	101.37 Stations	

Construction includes, but is not limited to: Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, compacting road surfaces, constructing ditchlines, constructing ditchouts, constructing turnouts and turnarounds, curve widening, acquisition and installation of drainage structures, application of rock, spreading grass seed and hay.

**0-5 RECONSTRUCTION**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-S-4200	28+00 to 111+02	Reconstruction includes, but not limited to: Cleaning ditches and constructing ditches, constructing headwalls, installing additional culverts and replacing culverts in accordance with the culvert list, installation of Clean shot rock ballast fill in accordance with Clauses 6-42 and 7-55 at stations 34+46 and 42+74, application of rock in accordance with the rock list. Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, compacting road surfaces.
Total Stations	83.02 Stations	

Reconstruction includes, but is not limited to: Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, compacting road surfaces, constructing ditchlines, constructing ditchouts, constructing turnouts and turnarounds, curve widening, acquisition and installation of drainage structures, application of rock, spreading grass seed and hay.

**0-6 PRE-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-J-3000	0+00 to 219+00	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, install culverts in accordance with culvert list, clean/construct ditch lines in accordance with Clause 2-7. Apply sediment control in accordance with 8-1, add turnouts
PA-S-4000	0+00 to 217+15	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, install sediment controls in accordance with 8-1, clean/construct ditch lines in accordance with Clause 2-7
PA-S-4001	0+00 to 2+00	Grade, shape and compact existing running surface in accordance to Clause 2-5.
PA-S-4200	0+00 to 28+00	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list.
PA-S-4201	0+00 to 3+00	Grade, shape and compact existing running surface in accordance to Clause 2-5, clean/construct ditch lines in accordance with Clause 2-7.
PA-S-4205	0+00 to 9+20	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, remove side cast in accordance with Clause 8-11.
PA-S-4210	0+00 to 5+75	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list. May need tractor assist.

Total Stations	484.1 Stations
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Pre-haul maintenance includes, but is not limited to: Brushing right-of-way, right-of-way debris disposal, cleaning ditches, constructing ditches, installing additional culverts, widening road segments, constructing headwalls, cleaning culvert inlets and outlets, cross drain culvert replacements, installing erosion control materials and sediment removal structures, spot rocking, grading and shaping existing road surface and turnouts, constructing additional turnouts, compaction of road surface, application of rock, acquisition and application of grass seed and hay.

**0-7 POST-HAUL MAINTENANCE**

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

**0-12 DEVELOP ROCK SOURCE**

Purchaser may develop an existing rock source called Pyramid Pit. Rock source development will involve stripping approximately 0.75 acre to useable rock as determined by the Contract Administrator and possible drilling and shooting to obtain ballast material. 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.

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

**1-5 DESIGN DATA**

Road design data is available upon request at the Department of Natural Resources Straits District Office in Port Angeles, WA for a design section of PA-S-4200 and the PA-S-4100.

**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 Plan maps.

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

**1-7 TEMPORARY ROAD CLOSURE**

Purchaser shall notify the Contract Administrator a minimum of 5 calendar business days before the closure of any road. Construction may not close any road without Contract Administrators approval.

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

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

**1-9 DAMAGED METALLIC COATING**

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

**1-10 WSDOT STANDARD SPECIFICATION REFERENCE**

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

**1-12 SURVEY MONUMENTS**

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

**1-13 LOG LOADING**

At no time shall the loading of logs occur on the PA-S-4000 road unless approved by Contract Administrator. In addition, no debris from harvesting operations shall be allowed on this road.

**SUBSECTION ROAD MARKING**

**1-15 ROAD MARKING**

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

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

**1-16 CONSTRUCTION STAKES SET BY STATE**

Purchaser shall perform work on the following road(s) in accordance with the construction stakes and 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.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
PA-S-4100	ALL	Centerline
PA-S-4200	28+00 to 111+02	Centerline

**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, construction and reconstruction road work before the start of timber haul.

**1-21 HAUL APPROVAL**

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

**1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator a minimum of 14 business 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:

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

**SUBSECTION RESTRICTIONS**

**1-25 ACTIVITY TIMING RESTRICTION**

On the following road(s), the specified are not allowed during the listed closure period(s).

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
PA-S-4100	All	Road Construction	November 1 <sup>st</sup> – April 1 <sup>st</sup> Contract Administrator approval does not apply

PA-S-4200	28+00 – 44+19, 62+90 – 81+55	Road Construction	November 1 <sup>st</sup> – April 1 <sup>st</sup> Contract Administrator approval does not apply
PA-S-4000	All	All Haul	November 1 <sup>st</sup> – April 1 <sup>st</sup> Contract Administrator approval does not apply
All other roads not listed above	All	All	November 1 <sup>st</sup> – April 1 <sup>st</sup> unless authorized by Contract Administrator
All	All	All	8:00 PM-6:00 AM (year around)
All	All	All	Weekends and State recognized holidays.

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period listed in Clause 1-25

ACTIVITY TIMING RESTRICTION or Contract Clause H-130 HAULING SCHEDULE, Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan, and shall put preventative measures in place before 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 designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

**1-27 TIMING RESTRICTION FOR MARBLED MURRELET**

On the PA-J-3000, stations 30+26 to 179+10 and on the PA-S-4200 stations 43+00 to 48+50, any road work, right-of-way timber falling and yarding, rock pit operation or heavy equipment operation must be performed during the limited operating period of two hours after sunrise to two hours after sunset if done during marbled murrelet nesting season, April 1 through September 23. This restriction does not apply to the hauling of timber, rock, or equipment.

**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 jaw run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 4 inches on native surface 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 20 mph.

<u>Road</u>	<u>Stations</u>
ALL	ALL

**1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION**

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

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated by the District or Region Engineer or their designee for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser’s expense, as directed by the Contract Administrator.

Purchaser shall have bridges load rated by a Registered Professional Engineer licensed in the State of Washington. All load rating reports, calculations, or drawings must be stamped by the licensed engineer and submitted to the Contract Administrator prior to allowing any work to continue. All damage to the bridge from transporting equipment will be repaired at the Purchaser’s expense.

Purchaser shall have asphalt surfaces reviewed by a third party, specializing in asphalt construction and repair. The third party’s scope of the damage and repairs must be agreed upon between the Purchaser and the Contract Administrator. Damage to the asphalt from transporting equipment will be repaired at the Purchaser’s expense.

**1-33 SNOW PLOWING RESTRICTION**

On the following road(s), 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.

<u>Road</u>	<u>Stations</u>
ALL	ALL

**SUBSECTION OTHER INFRASTRUCTURE**

**1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS**

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

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

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

<u>Road Name</u>
HWY 112

**1-41 REQUIREMENTS FOR PAVED ROAD APPROACHES**

Requirements for the Hwy 112 road approaches:  
Purchaser shall build up approaches to allow a smooth grade transition between the PA-J-3000 and Hwy 112 roads. The top of the PA-J-3000 road surfacing must be kept level with the surface of the Hwy 112 road at all times

**1-42 UTILITY ACCESS ROAD**

The following road(s) intersect(s) existing utility access roads. Purchaser shall conduct road work on the intersecting roads so that the utility access roads are accessible at all times.

<u>Road</u>	<u>Stations</u>
PA-J-3000	ALL

**1-43 ROAD WORK AROUND UTILITIES**

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

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
PA-J-3000	0+00 to 219+00	Buried Waterline, buried electric power	<b>811</b>

**SECTION 2 – MAINTENANCE**

**2-1 GENERAL ROAD MAINTENANCE**

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

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

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

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

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

**2-4 PASSAGE OF LIGHT VEHICLES**

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

**2-5 MAINTENANCE GRADING – EXISTING ROAD**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
PA-J-3000	0+00 to 219+00	Grade, shape, compact and remove shoulder vegetation
PA-S-4000	0+00 to 217+15	Grade, shape, compact and remove shoulder vegetation

PA-S-4001	0+00 to 2+00	Grade, shape, compact and remove shoulder vegetation
PA-S-4200	0+00 to 28+00	Grade, shape, compact and remove shoulder vegetation
PA-S-4201	0+00 to 3+00	Grade, shape, compact and remove shoulder vegetation
PA-S-4205	0+00 to 9+20	Grade, shape, compact and remove shoulder vegetation
PA-S-4210	0+00 to 5+75	Grade, shape, compact and remove shoulder vegetation

**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 start of timber haul.

<u>Road</u>	<u>Stations</u>
PA-J-3000	50+70, 59+80
PA-S-4201	2+00

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

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

<u>Road</u>	<u>Stations</u>	<u>Work</u>	<u>Left and/or Right</u>
PA-S-4201	0+00 to 3+00	Clean ditch	Left and Right

**2-8 MAINTAINING EROSION CONTROL STRUCTURES**

On the following road(s), Purchaser shall clean and maintain all erosion control structures. Work must be completed before the start timber haul and must be done in accordance with the pertaining clauses contained in this Road Plan. Excavated material must be disposed of as specified in Clauses 4-35 through 4-38.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
PA-J-3000	34+00,81+65, 83+25	Sediment trap cleaning/install

PA-J-3000	117+00 to 127+55	Roadside Silt Fence Repair/Replace
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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 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.

<u>Road</u>	<u>Stations</u>
PA-J-3000	0+00 to 219+00
PA-S-4000	0+00 to 217+15

**3-5 CLEARING**

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

**3-7 RIGHT-OF-WAY DECKING**

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

**3-8 PROHIBITED DECKING AREAS**

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

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

## 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. Purchaser shall remove stumps using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator. Grubbing must be completed before starting excavation and embankment.

### 3-12 STUMP PLACEMENT

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

### 3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

## 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 grubbing 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 the application of rock.

### 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below.

<u>Road</u>	<u>Stations</u>	<u>Disposal Location</u>	<u>Requirements</u>
PA-S-4200	28+00 to 44+20	PA-S-4205 9+00 PA-S-4201 3+00	PA-S-4205 9+00 Fill hole PA-S-4201 Waste in road grade
PA-S-4200	52+60 to 81+55	PA-S-4200 52+60	Waste as not to hinder logging operation
PA-S-4200	81+55 to 97+05	PA-S-4200 81+55, 88+75	Waste as not to hinder logging operation

PA-S-4200	97+05 to 107+71	PA-S-4200 97+05	Waste as not to hinder logging operation
PA-S-4200	107+71 to 110+82	PA-S-4200 107+71	Waste as not to hinder logging operation
PA-S-4100	0+00 to 17+00	PA-S-4001 2+00	Waste
PA-S-4200	Pyramid Pit Development	PA-S-4205 3+00	Waste

**3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

- Within 50 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 45%.
- 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.

**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 of the grubbing limits in accordance with Clause 3-23 unless otherwise detailed in this road plan and as directed by the Contract Administrator.

SUBSECTION PILE

**3-30 EXCLUSION OF DOZER BLADES**

Purchaser shall not use dozer blades for the piling of organic debris.

**3-31 PILING**

Purchaser shall pile organic debris no closer than 20 feet from standing timber and no higher than 20 feet in areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS. Piles must be free of rock and soil.

**3-32 END HAULING ORGANIC DEBRIS**

On the following road(s), and on slopes greater than 45%, Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause 3-22

DESIGNATED WASTE AREA FOR ORGANIC DEBRIS, or to a waste area located by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
PA-S-4200	28+00 to 44+20
PA-S-4200	52+60 to 81+55
PA-S-4200	81+55 to 97+05
PA-S-4200	97+05 to 107+71
PA-S-4200	107+71 to 110+82
PA-S-4100	0+00 to 4+50 to 11+00 to 17+00

**SECTION 4 – EXCAVATION**

**4-1 EXCAVATOR CONSTRUCTION**

Purchaser shall use a track mounted hydraulic excavator for construction, reconstruction and maintenance work unless stated otherwise within this Road Plan or authorized in writing by the Contract Administrator.

**4-2 PIONEERING**

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

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

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 16 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

**4-4 SWITCHBACK STANDARDS**

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees.

Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10%.
- Maximum favorable grades for switchbacks is 14%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

**4-5 CUT SLOPE RATIO**

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

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

**4-6 EMBANKMENT SLOPE RATIO**

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

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

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

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

**4-8 CURVE WIDENING**

The minimum widening placed on the inside of curves is:

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

**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.

**4-12 FULL BENCH CONSTRUCTION**

On the following road(s), and where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width. Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Comments</u>
PA-S-4200	where side slopes exceed 45%,
PA-S-4100	where side slopes exceed 45%,

**SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS**

**4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS**

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

<u>Road</u>
PA-S-4000 and PA-S-4100

**4-21 TURNOUTS**

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

**4-22 TURNAROUNDS**

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

**SUBSECTION DITCH CONSTRUCTION**

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

Purchaser shall construct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Ditches must be constructed concurrently with construction of the subgrade.

**4-27 DITCH WORK – MATERIAL USE PROHIBITED**

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be end hauled to the location specified in Clauses 4-36 through 4-38.

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

SUBSECTION WASTE MATERIAL (DIRT)

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

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

**4-37 WASTE AREA LOCATION**

Purchaser shall deposit waste material in the listed designated areas. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.

Note: All amount values are estimated bank yards.

<u>Road</u>	<u>Stations</u>	<u>Waste Area Location</u>	<u>Comments</u>	<u>Volume cubic yards</u>
PA-S-4200	28+00 to 44+20	PA-S-4205 9+00 PA-S-4201 3+00	PA-S-4205 9+00 Fill hole PA-S-4201 Waste in road grade	3000 from road construction, 5000 from pit work
PA-S-4200	52+60 to 81+55	PA-S-4200 52+60	Waste as not to hinder logging operation	2000

PA-S-4200	81+55 to 97+05	PA-S-4200 81+55, 88+75	Waste as not to hinder logging operation	1000
PA-S-4200	97+05 to 107+71	PA-S-4200 97+05	Waste as not to hinder logging operation	1000
PA-S-4200	107+71 to 110+82	PA-S-4200 107+71	Waste as not to hinder logging operation	300
PA-S-4100	0+00 to 4+50 to 11+00 to 17+00	PA-S-4001 2+00	Waste	7000
PA-S-4200	28+00	PA-S-4205 3+00	Pyramid Pit Development	1000
PA-S-4205	7+00 to 9+00	PA-S-4205 9+00	Waste	200

#### **4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas:

- 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 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

#### **4-39 WASTE AREA COMPACTION**

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

### SUBSECTION BORROW

#### **4-45 SELECT BORROW**

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

**4-46 COMMON BORROW**

Common borrow consists of soil, and/or aggregate that is non-plastic and contains no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines in the sample cannot be rolled, between the hand and a smooth surface, into a thread at any moisture content.

**4-47 NATIVE MATERIAL**

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 12 inches in any dimension.

**4-48 BORROW MATERIAL**

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

SUBSECTION SHAPING

**4-55 ROAD SHAPING**

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

**4-56 DRY WEATHER SHAPING**

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 segments too narrow to accommodate equipment.

**4-61 SUBGRADE COMPACTION**

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

**4-62 DRY WEATHER COMPACTION**

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

**4-63 EXISTING SURFACE COMPACTION**

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

**4-64 WASTE MATERIAL COMPACTION**

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

**4-65 CULVERT BACKFILL COMPACTION**

Culvert backfills shall be accomplished by using a jumping jack compactor, performing at least 2 passes per lift, in lifts not to exceed 8 inches.

**4-66 COMPACTION BY METHOD**

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

**SUBSECTION SUBGRADE REINFORCEMENT**

**4-70 SUBGRADE REINFORCEMENT**

On the following road(s), Purchaser shall provide and install geotextile fabric directed by contract administrator or as specified in the engineer’s design. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade with, including turnouts. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered as specified in the ROCK LIST. Geotextile fabric must meet specifications in CLAUSE 10-3 GEOTEXTILE FOR STABILIZATION. Unused material will remain the property of the state.

<u>Road</u>	<u>Stations</u>
PA-S-4200	34+46 to 42+74

**SECTION 5 – DRAINAGE**

**5-4 PUNCHEON RESTRICTED**

At no time shall puncheon be used in the subgrade, unless approved by the Contract Administrator.

**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 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 material and meet the specifications in Clauses 10-15 through 10-23.

**5-6 CULVERT TYPE**

On the following road(s), Purchaser shall install culverts made of steel or aluminum in accordance with Clauses 10-15 through 10-23. All other culverts may be made of plastic, unless otherwise stated.

<u>Road</u>	<u>Culvert</u>
PA-S-4100	Steel or aluminum

**5-12 UNUSED MATERIALS STATE PROPERTY**

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

**5-13 CONTINGENCY CULVERTS**

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator. In the event that culverts are not used, culverts shall be stockpiled at Port Angeles Work Center.

<u>Road</u>	<u>Size</u>
As directed by Contract Administrator	18" x 30' culvert
	18" x 30' culvert
	24" x 30' culvert
	24" x 30' culvert
	18" culvert band

**SUBSECTION CULVERT INSTALLATION**

**5-15 CULVERT INSTALLATION**

Culvert installation must be in accordance with the TYPICAL CROSS DRAIN CULVERT INSTALLATION DETAIL SHEET, TYPICAL TYPE NS NP CULVERT INSTALLATION DETAIL SHEET, the National Corrugated Metal Pipe Association's "Installation Manual for

Corrugated Steel Drainage Structures"and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations. Culverts over 15 inches diameter shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet. Shorter section of banded culvert shall be installed at the inlet end.

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

Purchaser shall obtain written approval from the District Engineer or his/her designee for the installation of culverts 30 inches in diameter and over before backfilling.

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

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

**5-18 CULVERT DEPTH OF COVER**

Cross drain culverts must be installed with a depth of cover of not less than 18 inches of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover specified in the Engineer's design, TYPICAL TYPE NS NP DETAIL SHEET, or recommended by the culvert manufacturer for the type and size of the pipe, whichever is greater.

SUBSECTION ENERGY DISSIPATERS

**5-20 ENERGY DISSIPATERS**

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

Rock used for energy dissipaters must weigh at least 10 pounds. 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. Placement must be with a zero-drop-height method only.

**5-21 DOWNSPOUTS AND FLUMES**

Downspouts and flumes longer than 10 feet must be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts with No. 10 galvanized smooth wire or 1/2-inch bolts in accordance with the TYPICAL CULVERT INSTALLATION DETAILS SHEET.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

**5-25 CATCH BASINS**

Purchaser shall construct catch basins to resist erosion. Minimum dimensions of catch basins are 1-2 feet wide, 1-2 feet deep and 2-4 feet long.

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

Purchaser shall construct headwalls in accordance with the TYPICAL CROSS DRAIN CULVERT INSTALLATION DETAIL at all cross drain culverts that specify the placement of rock. Rock used for headwalls must consist of oversize or quarry spall material. 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. No placement by end dumping or dropping of rock is allowed.

**5-27 ARMORING FOR STREAM CROSSING CULVERTS**

Purchaser shall place rip rap in conjunction with or immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the TYPICAL TYPE NS NP CULVERT INSTALLION DETAIL or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION SUBSURFACE DRAINAGE

**5-35 SUBSURFACE DRAIN**

On the following road(s), Purchaser shall install subsurface drain(s) in accordance with the FRENCH DRAIN DETAIL.

<u>Road</u>	<u>Stations</u>
PA-S-4200	38+21

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 5 business days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Pyramid Pit	T30 R09W Sec	4"Jaw, 2" crushed, Light Loose Rip Rap, Clean Rock Shot Ballast

**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. Prior to approval, purchaser shall submit a passing sieve test performed by procedure described in WSDOT FOP for WAQTC T 27/11.

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 and 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 5 business calendar days before starting any operations in the rock source.

<u>Source</u>	<u>Rock Type</u>
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Pyramid Pit	4"Jaw, 2" crushed, Light Loose Rip Rap, Clean Rock Shot Ballast
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## 6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT AND RECLAMATION 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.
- 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:

- 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 five feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be shot or broken up.

- 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 10 working days before any drilling (Form #M-126PAC).
- 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 and trails before blasting operations.

#### **6-15 REQUIRED ROCK SOURCE WORK**

Work is to be done according to the approved Rock Source Development And Reclamation Plan and as directed by the Contract Administrator.

#### **6-16 DRILL AND SHOOT TECHNICAL SPECIFICATIONS**

##### **DRILLING**

The Purchaser shall drill in accordance to an approved Shot Plan. Drill depth shall not extend more than 5 feet below existing pit floor. The District Engineer or their designee and Purchaser shall jointly measure and determine drill depths, hole spacing and pattern and must be approved prior to loading explosives. During drilling operation, drill operator shall keep a bore log which includes the depth and location of each hole drilled. The District Engineer or their designee may ask to see the bore log during and after the drilling process has completed.

##### **BLASTING**

The Purchaser shall furnish and load appropriate explosives, detonators, and ignition sources in accordance to all State and Federal laws and in accordance to an approved Shot Plan. **Purchaser shall notify PENCOT, Dispatch and Clallam County Sheriff before blasting.**

##### **DRILLING AND SHOOTING PLAN "SHOT PLAN"**

The Purchaser shall submit a written drilling and shooting plan, including drawings, to the District Engineer or their designee, which must meet the approval of the District Engineer or their designee prior to the start of the drilling operation. The plan and drawing(s) shall include the following proposals: drill hole diameter, drill hole spacing, drill hole pattern, drill hole depth, any stemming depths, type and depth of explosive including amount per drill hole, detonator and ignition type, and proposed delay pattern. Any adjustment or modifications to the proposals during operations must be noted and resubmitted prior to loading of explosives.

**WEATHER LIMITATIONS**

When, in the opinion of the District Engineer or their designee, the weather is such that satisfactory results cannot be obtained in any phase of operation, Purchaser shall suspend operations until the weather is favorable. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

**SUBSECTION ROCK MANUFACTURE**

**6-20 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.
- The crushing operation must be concluded within 30 working days from the time it begins.
- All testing and operations must be performed in accordance with the attached ROCK CRUSHING COMPLIANCE PROCEDURE.
- Purchaser shall produce sieve analysis for crushing operations every 2000 yards for each rock gradation type.
- Purchaser may use a commercial testing lab to produce sieve analyses.
- Sieve analysis for acceptance of aggregate shall be performed by procedure described in WSDOT FOP for WAQTC T 27/11.
- Add in additional information as needed.

**6-22 FRACTURE REQUIREMENT FOR ROCK**

A minimum of 50% visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

**6-23 ROCK GRADATION TYPES**

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

<u>Rock Type</u>	<u>Amount Cubic Yards</u>
4"Jaw	15438
2" crushed minus	9628
Light Loose Rip Rap	356
Clean Rock Shot Ballast	400

**6-24 ROCK CRUSHING COMPLIANCE PROCEDURE**

Phase I. Equipment Adjustment

**Step 1:**

At start up of crushing operations, the Purchaser will notify the Contract Administrator when the rock meets the gradation specifications in the contract. None of the rock crushed during this calibration period will be counted toward the amount required to be crushed, and this rock must be kept separate from accepted rock crushed later.

**Step 2:**

The Purchaser will test the rock. Two samples will be taken. If the rock meets specifications, crushing may begin. If the rock does not meet specifications, return to Step 1.

Phase II. Production

**Step 3:**

The Purchaser will continue periodic testing to ensure that rock stays in spec. Testing will take place according to the following schedule:

- After the first 500 yards
  - After every 2,000 yards thereafter.
- a) Any time a sample is out of spec, but is within 5%\*, the Purchaser will be notified and a second sample will be taken later in the day. If the second sample meets specifications, the rock crushed during that day will be accepted. If the second sample also fails to meet spec, none of the rock crushed since the last acceptable test will be counted toward the amount to be crushed.
- b) Any time a sample is out of spec and is more than 5% off in any category, none of the rock crushed since the last acceptable test will be accepted and that rock must be kept separate from the stockpile. Return to Step 1.
- c) Purchaser is strongly encouraged to take their own samples regularly and keep their operations in spec to avoid unnecessary expenses.
- The 5% will be applied only to sieve specs for 2" to ¼"; rock that is out of spec in larger sizes must be kept separate from the acceptable rock.

SUBSECTION ROCK GRADATIONS

**6-25 FINES**

% Passing U.S. #40 sieve	100%
% Passing U.S. #200 sieve	0%

The portion of aggregate retained on the No. 200 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

**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.

**6-42 CLEAN ROCK, SHOT BALLAST**

No more than 50 percent of the rock by visual inspection may exceed 12 inches in any dimension and no rock may be larger than 24 inches in any dimension. Shot Ballast rock may not contain more than 5 percent by weight of organic debris, dirt, and trash.

**6-50 LIGHT LOOSE RIP RAP**

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

<u>Quantity</u>	<u>Approximate Size Range</u>
20% to 90%	500 lbs. to 1 ton (18" - 28")
15% to 80%	50 lbs. to 500 lbs. (8" - 18")
10% to 20%	3 inch to 50 lbs. (3" - 8")

**6-51 HEAVY LOOSE RIP RAP**

Heavy loose rip rap must consist of angular, hard, sound, and durable stone. It must be free from segregation, seams, cracks, and other defects tending to destroy its resistance to weather. Heavy loose rip rap must be free of rock fines, soil, organic debris or other extraneous material, and must meet the following requirements:

<u>Quantity</u>	<u>Size Range</u>
30% to 90%	1 ton to 2 ton (28" - 36")
30% to 70%	500 lbs. to 1 ton (18" - 28")
20% to 50%	50 lbs. to 500 lbs. (8" - 18")
10% to 20%	3 inch to 50 lbs. (3" - 8")

**6-52 OVERSIZE**

% Passing 8" square sieve	100%
% Passing 4" square sieve	0%

Rock shall 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 estimated truck yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction.

**SUBSECTION ROCK APPLICATION**

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator for subgrade drainage installation included grading and compaction 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 and in lifts not to exceed 6 inches.

**6-72 ROCK APPLICATION AFTER HAULING**

On the following road(s), upon completion of all hauling operations, Purchaser shall apply rock in accordance with the quantities shown on the ROCK LIST.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>	<u>Amount</u>
PA-J-3000	0+00 to 219+00	2" minus crushed	450 yd <sup>3</sup>
PA-S-4000	0+00 to 217+15	2" minus crushed	450 yd <sup>3</sup>
PA-S-4200	0+00 to 81+55	2" minus crushed	250 yd <sup>3</sup>

**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.

**6-76 DRY WEATHER ROCK COMPACTION**

On all roads, the Contract Administrator may require the application of water to facilitate compaction of the rock surfacing. The method of water application is subject to approval by the Contract Administrator.

**6-77 ROCK OVER GEOTEXTILE**

On the following road(s), rock shall be applied over geotextiles in accordance with manufacturer's specifications.

<u>Road</u>	<u>Stations</u>
PA-S-4200	34+50 to 42+75

**6-78 ROCK FOR SPOT PATCHING**

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

SUBSECTION DUST ABATEMENT

**6-80 WATERING FOR DUST ABATEMENT**

Purchaser shall use water for dust abatement as directed by the Contract Administrator.

**6-81 CHEMICAL TREATMENT FOR DUST ABATEMENT**

As directed by the Contract Administrator, Purchaser may treat the following roads with Lignin Sulfonate **or** Magnesium Chloride for dust abatement. No other chemical may be used for dust abatement. The Lignin Sulfonate **or** Magnesium Chloride may not be used for any other purposes.

**6-82 CHEMICAL RESTRICTION**

Purchaser shall not allow chemicals used for dust abatement to enter any streams.

**6-83 LIGNIN SULFONATE APPLICATION RATE**

The "as supplied" liquid Lignin Sulfonate must be diluted with an adequate amount of water to obtain a 25% solids content for application. Purchaser shall apply Lignin Sulfonate to the surface at a rate not less than 0.5 gallons per square yard (approximately 77.8 gallons per station).

**6-84 MAGNESIUM CHLORIDE APPLICATION RATE**

Purchaser shall apply Magnesium Chloride to the surface at a rate not less than 0.5 gallons per square yard (approximately 77.8 gallons per station).

**6-85 CHEMICAL DUST ABATEMENT EQUIPMENT**

Application equipment used to spread dust abatement chemicals must be capable of uniform application. A tanker truck with a “slash pan” or “plate” is not acceptable. Field dilution must be accomplished within the application vehicle.

**6-86 TIMING FOR CHEMICAL APPLICATION**

Purchaser shall obtain prior written approval from the Contract Administrator for the timing of application for dust abatement chemicals. It is intended that dust abatement chemicals be applied during the summer season.

**SUBSECTION STREAM CROSSING STRUCTURES GENERAL**

**7-5 STRUCTURE DEBRIS**

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures(s) must be removed from state land or, as directed in writing, by the Contract Administrator. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream must be removed immediately, and placed in the site(s) designated for stockpiling or disposal. Purchaser shall retrieve all material carried downstream from the jobsite.

**7-6 STREAM CROSSING INSTALLATION**

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

**7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES**

Purchaser shall design and construct bank protection to prevent the undermining of the structure.

SUBSECTION LARGE CULVERTS

**7-55 LARGE CULVERT INSTALLATION**

Purchaser shall provide and install large culverts in accordance with the DETAIL. Culvert designs must meet or exceed the following specifications:

<u>Road</u>	<u>PA-S-4200</u>	<u>PA-S-4200</u>	<u>PA-S-4100</u>
<u>Station</u>	34+46	42+74	16+88
<u>Type</u>	Type 4	Type 4	Type 4
<u>Material and Coating Type*</u>	METAL	METAL	METAL
<u>Diamter (in.)</u>	60	60	36
<u>Length (ft.)</u>	55	55	45
<u>Depth of Cover Material in.</u>	Minimum 18"	Minimum 18"	Minimum 18"
<u>Corrugations</u>	3" X 1"	3" X 1"	2 2/3" X 1/2"
<u>Gauge</u>	12	12	14

\* See Clause 10-15 CORRUGATED STEEL CULVERT **Error! Reference source not found.** for culvert specifications.

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

Purchaser shall install steel pipe, pipe arches, and structural plate culverts in accordance with the National Corrugated Steel Pipe Association "Installation Manual for Corrugated Steel Pipe, Pipe Arches, and Structural Plate." Installation is subject to the inspection and approval of the Contract Administrator before placement and backfill. The latest edition of the NCSA Installation Manual can be found at [www.ncspa.org](http://www.ncspa.org).

**7-57 CULVERT SHAPE CONTROL**

Purchaser shall monitor the culvert shape during backfill and compaction. Special attention must be paid to maintaining the structure's rise dimensions, concentricity, and smooth uniform curvature. If compaction methods are resulting in peaking or deflection of the culvert, Purchaser shall modify the compaction method to achieve the appropriate end result.

**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 must be closed at termination of use.

<u>Road</u>	<u>Station</u>
PA-J-3000	0+10
PA-J-3000	196+50
PA-S-4000	4+50

**7-75 GATE MAINTENANCE**

Purchaser shall conduct gate maintenance as listed.

<u>Road</u>	<u>Station</u>	<u>Requirements</u>
PA-J-3000	0+10	Gate shall be painted Safety Yellow color using high gloss alkyd enamel paint. Prior to painting, surfaces shall be prepared by cleaning, sanding and removing all loose rust and paint. All surfaces shall be dry at the time of painting. Two coats of paint shall be applied, using the procedures described in the product instructions, with a minimum of eight hours drying time between coats.
PA-J-3000	196+50	Gate shall be painted Safety Yellow color using high gloss alkyd enamel paint. Prior to painting, surfaces shall be prepared by cleaning, sanding and removing all loose rust and paint. All surfaces shall be dry at the time of painting.

		Two coats of paint shall be applied, using the procedures described in the product instructions, with a minimum of eight hours drying time between coats.
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**SECTION 8 – EROSION CONTROL**

**8-1 SEDIMENT CONTROL STRUCTURES**

On the following road(s), Purchaser shall install sediment traps, in accordance with the Sediment Trap Detail, silt fencing, or other methods as approved in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Left and/or Right</u>	<u>Comments</u>
PA-J-3000	34+00,81+65, 83+25	Left and Right	Sediment trap cleaning/install along side road
PA-S-4000	38+83, 58+35, 78+08, 84+92, 88+01, 104+43, 111+35, 124+48, 127+67, 131+54, 146+97, 161+99, 176+29	Left and Right	Silt fencing install along side road
PA-S-4200	34+80, 38+45	Left, Right	Sediment trap cleaning/install
PA-S-4100	ALL	Either side of 24 inch culverts	Install sediment traps
PA-S-4100	16+93, 38+33	Left, Right	Install sediment traps

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 3-inch layer of straw or hay to all exposed soils at culvert installations within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**SUBSECTION SLOPE STABILIZATION**

**8-10 STABILIZE SLOPES – ROCK APPLICATION**

On the following road(s), Purchaser shall stabilize excavation and embankment slopes by applying rock as specified below. Rock must be set in place in conjunction with, or immediately following construction of the embankment. Rock must be applied in

quantities specified in the Rock List to exposed soil on the entire embankment to a minimum depth of 12 inches. Rock must be set in place by machine. Placement must with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

<u>Road</u>	<u>Stations</u>	<u>Rock Type</u>	<u>Minimum Depth</u>
PA-S-4200	34+46	Light loose rip rap	12"
PA-S-4200	38+20 TO 38+70	Light loose rip rap	12"
PA-S-4200	41+60 to 42+00	Light loose rip rap	12"
PA-S-4200	42+74	Light loose rip rap	12"

**8-11 STABILIZE SLOPES – MATERIAL REMOVAL**

On the following road(s), Purchaser shall stabilize embankment slopes by removing sidecast material. End haul all material to a waste area designated in Clause 4-37 WASTE AREA LOCATION or by the Contract Administrator. All work is subject to approval by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
PA-S-4200	28+00 to 45+00, 109+30 to 111+00 and as per Contract Administrator
PA-S-4205	7+00 to 9+00

SUBSECTION REVEGETATION

**8-15 REVEGETATION**

On the following road(s), Purchaser shall spread grass seed and hay mulch on all exposed soils including, but not limited to, stream culverts, waste areas, sidecast pullback areas, stream crossing removals, bridge installations, and other areas directed by the Contract Administrator. Revegetation of exposed soils shall be accomplished by manual dispersal of grass seed unless otherwise detailed in this Road Plan. Other methods of covering must be approved in writing by the Contract Administrator

**8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the all seed, mulch, straw and/or hay, matting etc..

**8-17 REVEGETATION TIMING**

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

**8-18 PROTECTION FOR SEED**

Purchaser shall provide a protective cover over the revegetated area. The protective cover may consist of but not be limited to, such items as dispersed hay mulch 3” thick or jute matting. Seed must be covered before the first anticipated storm event. Soil may not be allowed to sit exposed during any rain event.

**8-19 ASSURANCE FOR SEEDED AREA**

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

SUBSECTION SEED, FERTILIZER, AND MULCH

**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 60 pounds per acre of exposed soil. Grass seed must meet the following specifications:

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

<u>Kind and Variety of Seed in Mixture</u>	<u>% by Weight</u>	<u>Minimum % germination</u>
Perennial Rye	35-45	90
Red Fescue	30-40	90

Highland Bent	5-15	85
White Clover	10-20	90
Inert and Other Crop	0.5	

**8-29 HYDROSEED MULCH**

Purchaser shall evenly spread the hydroseed mulch mixture on all exposed soil inside the grubbing limits at a rate of 6334 pounds per acre of exposed soil for the PA-S-4200 stations 28+00 to 42+75. The hydroseed mulch may not contain resin, tannin, or other compounds in quantities that would be detrimental to plant life. Sawdust may not be used as mulch. The hydroseed slurry must be a homogeneous mix in the following proportions and according to the manufacture’s specifications.

<u>Mixture by Weight/Acre</u>
<u>4000 lbs of water</u>
<u>1,800 pounds of wood fiber mulch</u>
<u>400 pounds of 16-16-16 fertilizer</u>
<u>80 pounds of grass seed</u>
<u>54 pounds of silvafiber tackifier or equivalent</u>

**SECTION 9 – POST-HAUL ROAD WORK**

**SUBSECTION STRUCTURES**

**9-3 CULVERT MATERIAL REMOVED FROM STATE LAND**

Culverts removed from roads become the property of the Purchaser and must be removed from state land. If required by the Contract Administrator, designated culverts must be salvaged and delivered to Port Angeles Work Center.

**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.

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
All	All	Clean culverts, clean ditches, grade road shape and compact as directed by the Contract Administrator.
PA-J-3000	0+00 to 219+00	Apply post haul rock per Clause 6-72. Clean bridge surface.
PA-S-4000	0+00 to 217+15	

**SUBSECTION POST-HAUL LANDING MAINTENANCE**

**9-10 LANDING DRAINAGE**

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

**9-11 LANDING EMBANKMENT**

Purchaser shall slope landing embankments to the original construction specifications.

**SECTION 10 MATERIALS**

**SUBSECTION GEOTEXTILES**

**10-1 GEOTEXTILE FOR SUBSURFACE DRAINAGE**

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

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Non-woven
Apparent opening size	D 4751	No. 80 max
Water permittivity	D 4491	0.3 sec <sup>-1</sup>
Grab tensile strength	D 4632	160 lb
Grab tensile elongation	D 4632	>= 50%
Puncture strength	D 6241	310 lb
Tear strength	D 4533	50 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

**10-2 GEOTEXTILE FOR SEPARATION**

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

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

### 10-3 GEOTEXTILE FOR STABILIZATION

Geotextiles must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for stabilization or reinforcement, and filtration. Material must be free of defects, cuts, and tears.

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Woven
Apparent opening size	D 4751	No. 40 max
Water permittivity	D 4491	0.10 sec <sup>-1</sup>
Grab tensile strength	D 4632	315 lb
Grab tensile elongation	D 4632	<50%
Puncture strength	D 6241	620 lb
Tear strength	D 4533	112 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

### 10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

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

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

## SUBSECTION EROSION CONTROL AND REVEGETATION

### 10-10 JUTE EROSION CONTROL MATTING

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

- Mesh size 1 inch max.
- Mesh mass, 0.9 lb/yd<sup>2</sup> ±5%

#### **10-11 COCONUT EROSION CONTROL MATTING**

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

- Mesh size 0.5 to 1 inch.
- Mesh mass, 0.4 lb/yd<sup>2</sup> min.
- Netting must be photodegradable on one side.
- Moisture content may not exceed 20%.

#### **10-12 WOOD EXCELSIOR EROSION CONTROL MATTING**

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

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

### SUBSECTION CULVERTS

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

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be galvanized (zinc coated meeting AASHTO M-218) except culverts over 36 inches must be aluminized (aluminum type 2 coated meeting AASHTO M-274).

#### **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.

#### **10-20 FLUME AND DOWNSPOUT**

Downspouts and flumes must meet the AASHTO specification designated for the culvert. Plastic downspouts and flumes must be Type C – corrugated single walled pipe.

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

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

**10-22 PLASTIC BAND**

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

**10-23 RUBBER CULVERT GASKETS**

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

**10-24 GAUGE AND CORRUGATION**

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

<u>Diameter</u>	<u>Gauge</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 48"	14 (0.079")	2 2/3" X 1/2"
54" to 96"	12 (0.109")	3" X 1"

SUBSECTION CHEMICAL DUST ABATEMENT

**10-30 LIGNIN SULFONATE MATERIALS**

Lignin Sulfonate is the chemical residue produced as a by-product of the acid sulfite pulping process, and supplied as a water solution. The base solution may be ammonia, calcium, or sodium and must be water soluble to allow field dilution. Percent solids must be 50% as supplied. When requested by the Contract Administrator, certification must be provided that shows:

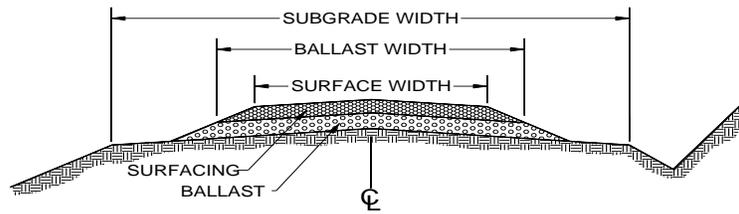
- Solids determination has been made in accordance with the modified Technical Association of the Pulp and Paper Industry Standard T629-M53 or by a specific gravity/percent solids verses temperature graph that correlates with the standard.
- The P<sub>h</sub> of the delivered material is a 4.5 minimum as determined by AASHTO-T200.

**10-31 MAGNESIUM CHLORIDE MATERIALS**

Magnesium Chloride is the chemical residue produced as a by-product of the potash production or natural salt brine, and supplied as a water solution. Percent solids must be 28% magnesium by mass, as supplied.



## ROCK LIST SHEET

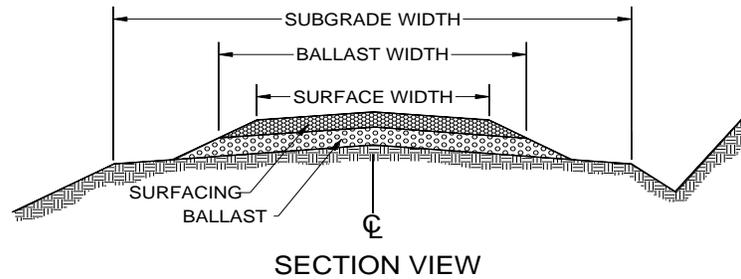


SECTION VIEW

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

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd <sup>3</sup> /sta)	Ballast SUBTOTAL(yd <sup>3</sup> )	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd <sup>3</sup> /sta)	Crushed Subtotal(yd <sup>3</sup> )	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd <sup>3</sup> )
<b>PA-J-3000</b>															
TO	154+00			1				50	2				20		
Misc Prehaul Spot									2				100		
Misc Post Haul Spot									2				450		
<b>PA-S-4000</b>															
Spot Patch	42+00								2				20		
Spot Patch	107+58								2				20		
Turn Around	123+48			1				400							
Misc Prehaul Spot									2				100		
Misc Posthaul Spot									2				450		
<b>PA-S-4100</b>															
Lift	0+00	84+17	17	1	14	12	70	5891	2	12	6	35	2945		
Culvert	0+10								2				50	3	2
Landing	4+42			1				60							
Culvert	12+35								2				20	3	2
Culvert	16+88								2				50	3	5
TO	18+90			1				30							
Culvert	19+82								2				20	3	2
Culvert	20+30								2				20	3	2
TO	21+56			1				40							
Culvert	23+61								2				20	3	2
Totals:								6471					4285		15

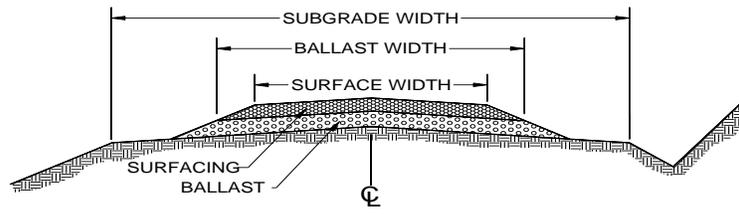
## ROCK LIST SHEET CONTINUED



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

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd <sup>3</sup> /sta)	Ballast SUBTOTAL(yd <sup>3</sup> )	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd <sup>3</sup> /sta)	Crushed Subtotal(yd <sup>3</sup> )	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd <sup>3</sup> )
<b>PA-S-4100</b>															
Culvert	24+73								2				30	3	5
Culvert	26+40								2				20	3	2
Culvert	26+64								2				20	3	2
TO	29+32			1			40								
Culvert	29+99								2				30	3	5
Culvert	31+22								2				30	3	5
Landing	32+69			1			60								
Culvert	33+73								2				25	3	2
Culvert	35+47								2				30	3	5
TO	36+14			1			40								
Culvert	38+43								2				50	3	5
Culvert	41+23								2				20	3	2
Landing	41+66			1			60								
Culvert	42+61								2				30	3	5
Culvert	47+52								2				20	3	2
Culvert	49+33								2				20	3	2
Culvert	51+55								2				20	3	2
Totals:								200					345		45

## ROCK LIST SHEET CONTINUED

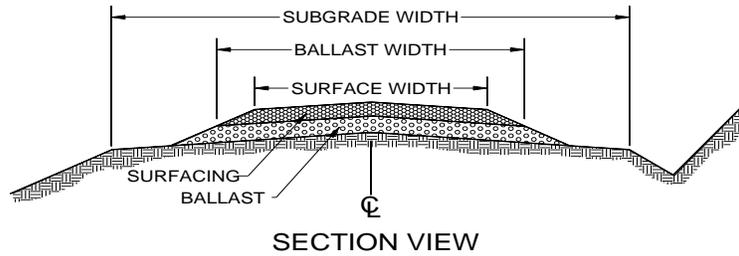


SECTION VIEW

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

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd <sup>3</sup> /sta)	Ballast SUBTOTAL(yd <sup>3</sup> )	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd <sup>3</sup> /sta)	Crushed Subtotal(yd <sup>3</sup> )	Oversize/ Rip rap Source	Oversize/ Rip Rap Quantity(yd <sup>3</sup> )
<b>PA-S-4100</b>															
Landing	52+02			1				50							
Culvert	53+29								2				20	3	2
Culvert	54+37								2				20	3	2
Landing	55+10			1				50							
Culvert	56+02								2				30	3	5
TO	56+52			1				40							
Landing	60+39			1				50							
TO	61+77			1				40							
Culvert	62+97								2				30	3	5
Culvert	64+04								2				20	3	2
Landing	64+76			1				50							
Culvert	66+05								2				30	3	5
Landing	67+30			1				50							
Culvert	68+03								2				30	3	5
TO	69+47			1				40							
Culvert	70+72								2				30	3	5
Culvert	71+70								2				30	3	5
Culvert	74+96								2				40	3	5
Culvert	75+92								2				30	3	5
Culvert	77+16								2				30	3	5
Totals:								370					340		41

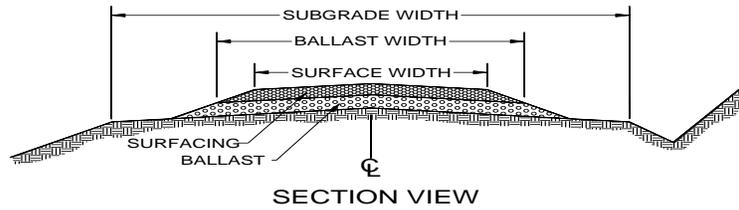
## ROCK LIST SHEET CONTINUED



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

ROAD NAME	START STATION	END STATION	Subgrade WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd <sup>3</sup> /sta)	Ballast SUBTOTAL(yd <sup>3</sup> )	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd <sup>3</sup> /sta)	Crushed Subtotal(yd <sup>3</sup> )	Oversize/ Rip rap Source	Oversize/ Rip Rap Quantity(yd <sup>3</sup> )
<b>PA-S-4100</b>															
TOR	77+92			1				50							
Culvert	78+45								2				20	3	2
Landing	78+94			1				40							
TOR	80+58			1				40							
Culvert	81+79								2				20	3	2
TO	83+79			1				40							
Landing	84+17			1				60							
<b>PA-S-4100.1</b>															
Lift	0+00	0+85	17	1	14	12	70	60	2	12	6	35	30		
Landing								50							
<b>PA-S-4100.2</b>															
Lift	0+00	0+80	17	1	14	12	70	56	2	12	6	35	28		
Culvert	0+10												20	3	1
TO	0+40							40							
Landing	0+80							50							
Totals:								486					118	5	

## ROCK LIST SHEET CONTINUED

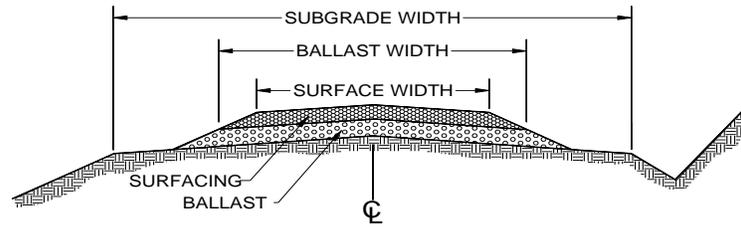


1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. See Previous sheet for 5
6. Rock sources= 1:Pyramid Pit 4 inch minus jaw 2: Pyramid Pit 2 inch minus crushed 3: Pyramid Pit light loose rip rap 4: Pyramid pit Clean Shot Ballast

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd <sup>3</sup> /sta)	Ballast SUBTOTAL(yd <sup>3</sup> )	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd <sup>3</sup> /sta)	Crushed Subtotal(yd <sup>3</sup> )	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd <sup>3</sup> )
<b>PA-S-4200</b>															
Lift	28+00	111+02	17	1	14	12	70	5811	2	12	6	35	2905		
Culvert	28+00								2				20	3	1
Culvert	30+77								2				20	3	1
Culvert	32+35								2				20	3	1
Culvert	34+46			4				200	2				100	3	50
Culvert	35+10								2				20	3	2
Culvert	35+88								2				20	3	2
Culvert	35+98								2				20	3	1
TO	36+48			1				40							
Culvert	37+99								2				20	3	2
French Drain	38+21			1				40							
Embankment Armoring	38+20	38+70												3	50
Culvert	38+70								2				20	3	1
Culvert	40+40								2				20	3	2
Culvert	40+77								2				20	3	2
Embankment Armoring	41+60	42+00													50
Culvert	42+74			4				200	2				100	3	50
Culvert	43+77								2				20	3	1
TO	44+19			1				40							
Culvert	47+00								2				20	3	1
TO	50+45			1				40							
Culvert	51+20								2				20	3	1
<b>Totals:</b>								6371					3365		218

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd <sup>3</sup> /sta)	Ballast SUBTOTAL(yd <sup>3</sup> )	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd <sup>3</sup> /sta)	Crushed Subtotal(yd <sup>3</sup> )	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd <sup>3</sup> )
<b>PA-S-4200</b>															
TO	52+60			1				40							
Culvert	57+05								2				20	3	1
TO	62+15			1				40							
Culvert	62+90								2				20	3	1
Culvert	67+45								2				20	3	1
Culvert	68+83								2				20	3	2
Culvert	68+99								2				20	3	1
Culvert	70+90								2				20	3	2
Culvert	72+45								2				20	3	2
Culvert	72+85								2				20	3	1
TO	73+45			1				40							
Culvert	77+75								2				20	3	1
Culvert	78+85								2				20	3	2
Culvert	79+15								2				20	3	1
Culvert	81+55								2				20	3	1
TO	82+25			1				40							
Landing	82+85			1				70							
Culvert	86+75								2				20	3	1
TO	88+25			1				40							
Landing	88+75			1				70							
Culvert	94+95								2				20	3	1
Landing	97+05			1				70							
Culvert	98+55								2				20	3	1
Culvert	100+25								2				20	3	1
Culvert	102+56								2				20	3	1
TO	103+56			1				40							
Culvert	105+06								2				20	3	1
Landing	107+71			1				70							
Landing	110+82			1				70							
TOR	110+82			1				40							
Misc Post Haul Rock													250		
Totals:								630					610		22

## ROCK LIST SHEET CONTINUED



1. Rock quantities, subtotals and totals are "truck measure" estimates. Rock shall be applied to at least the depths listed.
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6. Rock sources= 1:Pyramid Pit 4 inch minus jaw 2: Pyramid Pit 2 inch minus crushed 3: Pyramid Pit light loose rip rap

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd <sup>3</sup> /sta)	Ballast SUBTOTAL(yd <sup>3</sup> )	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd <sup>3</sup> /sta)	Crushed Subtotal(yd <sup>3</sup> )	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd <sup>3</sup> )
<b>PA-S-4215</b>															
Lift	0+00	15+00	17	1	14	12	70	1050	2	12	6	35	525		
Culvert	0+10								2				20	3	1
Culvert	1+30								2				20	3	1
Culvert	2+15								2				20	3	1
TO	3+20			1				30							
Culvert	3+55								2				20	3	3
Culvert	4+00								2				20	3	1
Culvert	6+05								2				20	3	1
Culvert	9+15								2				20	3	1
Landing	11+00			1				50							
Culvert	12+50								2				20	3	1
TO	13+55			1				30							
Landing	15+00			1				50							
<b>PA-S-4210</b>															
Misc Spot Patch													30		
Totals:								1210					565		10
Grand Totals:								15838					9628		356

### CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
<b>PA-J-3000</b>								
PA-J-3000	50+70							Culvert Maintenance
PA-J-3000	59+80							Culvert Maintenance
PA-J-3000	147+50							Culvert Maintenance, Dig out wate around stand pipe
<b>PA-S-4100</b>								
PA-S-4100	0+10	18	50		.5	.5	CR	Culvert Install, Intersection Pipe
PA-S-4100	4+50	18	30		.5	.5	NT	
PA-S-4100	12+35	18	30		1	1	CR	Culvert Install
PA-S-4100	16+83	36	45		2.5	2.5	CR	Culvert Install
PA-S-4100	19+82	24	30		2.5	2.5	CR	Culvert Install
PA-S-4100	20+30	24	30		1	1	CR	Culvert Install
PA-S-4100	23+61	24	30		1	1	CR	Culvert Install
PA-S-4100	24+73	24	45		2.5	2.5	CR	Culvert Install
PA-S-4100	26+40	24	35		1	1	CR	Culvert Install
PA-S-4100	26+61	18	30		1	1	CR	Culvert Install
PA-S-4100	29+99	24	50		2.5	2.5	CR	Culvert Install
PA-S-4100	31+22	24	45		2.5	2.5	CR	Culvert Install
PA-S-4100	33+73	24	40		1	1	CR	Culvert Install
PA-S-4100	35+47	24	40		1	1	CR	Culvert Install
PA-S-4100	38+43	36	55		2.5	2.5	CR	Culvert Install
PA-S-4100	41+23	24	30		1	1	CR	Culvert Install
PA-S-4100	42+61	24	45		2.5	2.5	CR	Culvert Install
PA-S-4100	47+52	18	30		1	1	CR	Culvert Install
PA-S-4100	49+33	24	30		1	1	CR	Culvert Install
PA-S-4100	51+55	24	30		1	1	CR	Culvert Install
PA-S-4100	53+29	24	30		1	1	CR	Culvert Install

### CULVERT LIST Continued

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-S-4100	54+37	24	30		1	1	CR	Culvert Install
PA-S-4100	56+02	24	40		1.5	1.5	CR	Culvert Install
PA-S-4100	58+20	18	30		1	1	NT	Culvert Install
PA-S-4100	62+97	24	40		2.5	2.5	CR	Culvert Install
PA-S-4100	64+04	24	30		1	1	CR	Culvert Install
PA-S-4100	66+05	24	40		2.5	2.5	CR	Culvert Install
PA-S-4100	68+03	24	50		2.5	2.5	CR	Culvert Install
PA-S-4100	70+72	24	45		2.5	2.5	CR	Culvert Install
PA-S-4100	71+70	24	40		2.5	2.5	CR	Culvert Install
PA-S-4100	74+96	24	50		2.5	2.5	CR	Culvert Install
PA-S-4100	75+92	24	40		2.5	2.5	CR	Culvert Install
PA-S-4100	77+16	24	45		2.5	2.5	CR	Culvert Install
PA-S-4100	78+45	18	30		1	1	CR	Culvert Install
PA-S-4100	81+79	18	35		1	1	CR	Culvert Install
<b>PA-S-4200</b>								
PA-S-4200	28+00	18	30		.5	.5	CR	Culvert Install
PA-S-4200	30+77	18	30	10	.5	.5	CR	Culvert Install
PA-S-4200	32+35	18	30	10	.5	.5	CR	Culvert Install
PA-S-4200	34+46	60	55		25	25	SR	Culvert Intstall, Rock Fill
PA-S-4200	35+10	24	30	10	1	1	CR	Culvert Install
PA-S-4200	35+88	24	30	10	1	1	CR	Culvert Install
PA-S-4200	35+98	18	30	10	.5	.5	CR	Culvert Install
PA-S-4200	37+99	30	80	10	1	1	CR	Culvert Install
PA-S-4200	38+21		70				CR	French Drain

### CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
<b>PA-S-4200</b>									
PA-S-4200	38+70	18	30	10		.5	.5	CR	Culvert Install
PA-S-4200	40+40	24	45	60		1	1	CR	Culvert Install, Flume will empty into lower culvert 35+88
PA-S-4200	40+77	24	45	60		1	1	CR	Culvert Install, Flume will empty into lower culvert 35+10
PA-S-4200	42+74	60	55			25	25	SR	Culvert Install, Rock Fill
PA-S-4200	43+77	18	30	10		.5	.5	CR	Culvert Install
PA-S-4200	47+00	18	30			.5	.5	CR	Culvert Install
PA-S-4200	51+20	18	30			.5	.5	CR	Culvert Install
PA-S-4200	57+05	18	30			.5	.5	CR	Culvert Install
PA-S-4200	62+90	18	30			.5	.5	CR	Culvert Install
PA-S-4200	67+45	18	30			.5	.5	CR	Culvert Install
PA-S-4200	68+83	24	30			1	1	CR	Culvert Install
PA-S-4200	68+99	18	30			.5	.5	CR	Culvert Install
PA-S-4200	70+90	24	30			1	1	CR	Culvert Install
PA-S-4200	72+40	30	30			1	1	CR	Culvert Install
PA-S-4200	72+85	18	30			.5	.5	CR	Culvert Install
PA-S-4200	77+75	18	30			.5	.5	CR	Culvert Install
PA-S-4200	78+85	24	30			1	1	CR	Culvert Install
PA-S-4200	79+15	18	30			.5	.5	CR	Culvert Install
PA-S-4200	81+55	18	30			.5	.5	CR	Culvert Install
PA-S-4200	86+75	18	30			.5	.5	CR	Culvert Install
PA-S-4200	94+95	18	30			.5	.5	CR	Culvert Install
PA-S-4200	98+55	24	30			.5	.5	CR	Culvert Install
PA-S-4200	100+25	24	30			.5	.5	CR	Culvert Install
PA-S-4200	102+56	18	30			.5	.5	CR	Culvert Install
PA-S-4200	105+06	18	30			.5	.5	CR	Culvert Install

### CULVERT LIST Continued

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
<b>PA-S-4201</b>									
PA-S-4201	2+00								Culvert Maintenance
<b>PA-S-4100.2</b>									
PA-S-4100.2	0+10	18	30			.5	.5	CR	Culvert Install
<b>PA-S-4215</b>									
PA-S-4215	0+10	18	30			.5	.5	CR	Culvert Install
PA-S-4215	1+30	18	30			.5	.5	CR	Culvert Install
PA-S-4215	2+15	18	30			.5	.5	CR	Culvert Install
PA-S-4215	3+55	30	40			1.5	1.5	CR	Culvert Install
PA-S-4215	4+00	18	30			.5	.5	CR	Culvert Install
PA-S-4215	6+05	18	30			.5	.5	CR	Culvert Install
PA-S-4215	9+15	18	30			.5	.5	CR	Culvert Install
PA-S-4215	12+50	18	30			.5	.5	CR	Culvert Install
PA-S-4000	123+48								Remove Culvert

## COMPACTION LIST

Road	Stations	Type	Max Depth Per Lift (inches)	Equipment Type	Minimum Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
Pre-haul	All	Culvert Backfill	8"	Jumping Jack		3	
Pre-haul	All	Rock Lifts	6"	Vibratory Smooth Drum	6,000	3	3
Pre-haul	All	Pre-haul Surface		Vibratory Smooth Drum	6,000	3	3
Construction/Re construction	All	Subgrade	6"	Vibratory Smooth Drum	6,000	2	3
Construction/Re construction	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3
Post-haul Maintenance	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3
Waste Area	All	Lifts	24"	Excavation Equipment	Varies	2	



		SUMMARY - Road Development Costs												
SALE NAME:	Pyramid Peak	CONTRACT#:	30497938	REGION:	Olympic	DISTRICT:	Straits							
LEGAL DESCRIPTION:	T30R09W													
ROAD NAME:	PA-S-4201	PA-S-4001	PA-S-4200	PA-J-3000	PA-S-4215	PA-S-4000	PA-S-4210	PA-S-4205	PA-S-4201	PA-S-4001	PA-S-4100	PA-S-4100.1	PA-S-4100.2	TOTAL:
	0	0	0	0	0	0	0	0	0	0	0	0	0	
ROAD TYPE:	Prehaul	Prehaul	Posthaul	Posthaul										
NUMBER OF STATIONS:	3	2	111	219	15	217	6	9	3	2	85	1	1	673
SIDESLOPE:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLEARING AND GRUBBING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD BRUSHING:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
EXCAVATION AND FILL:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ROAD GRADING:	\$20	\$13	\$722	\$1,424	\$98	\$1,411	\$37	\$60	\$20	\$13	\$551	\$6	\$5	\$4,378
DITCH CLEANING/CONSTRUCTION:	\$78	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$78
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ballast:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Surface:	0	0	250	450	0	450	0	0	0	0	0	0	0	1,150
	\$0	\$0	\$3,083	\$3,123	\$0	\$9,941	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,146
Oversize:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CULVERTS AND FLUMES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MISC. EXPENSES:	\$18	\$12	\$649	\$1,281	\$88	\$1,270	\$34	\$54	\$18	\$12	\$496	\$5	\$5	\$3,940
OVERHEAD:	\$10	\$2	\$401	\$524	\$17	\$1,136	\$6	\$10	\$3	\$2	\$94	\$1	\$1	\$2,209
TOTAL COSTS:	\$125	\$27	\$4,854	\$6,352	\$202	\$13,758	\$77	\$124	\$40	\$27	\$1,140	\$11	\$11	\$26,750
COST PER STATION:	\$42	\$13	\$44	\$29	\$13	\$63	\$13	\$13	\$13	\$13	\$13	\$13	\$13	\$299

## **Forest Access Road Maintenance Specifications**

### **Cuts and Fills**

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

### **Drainage**

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

## Forest Access Road Maintenance Specifications

### Preventative Maintenance

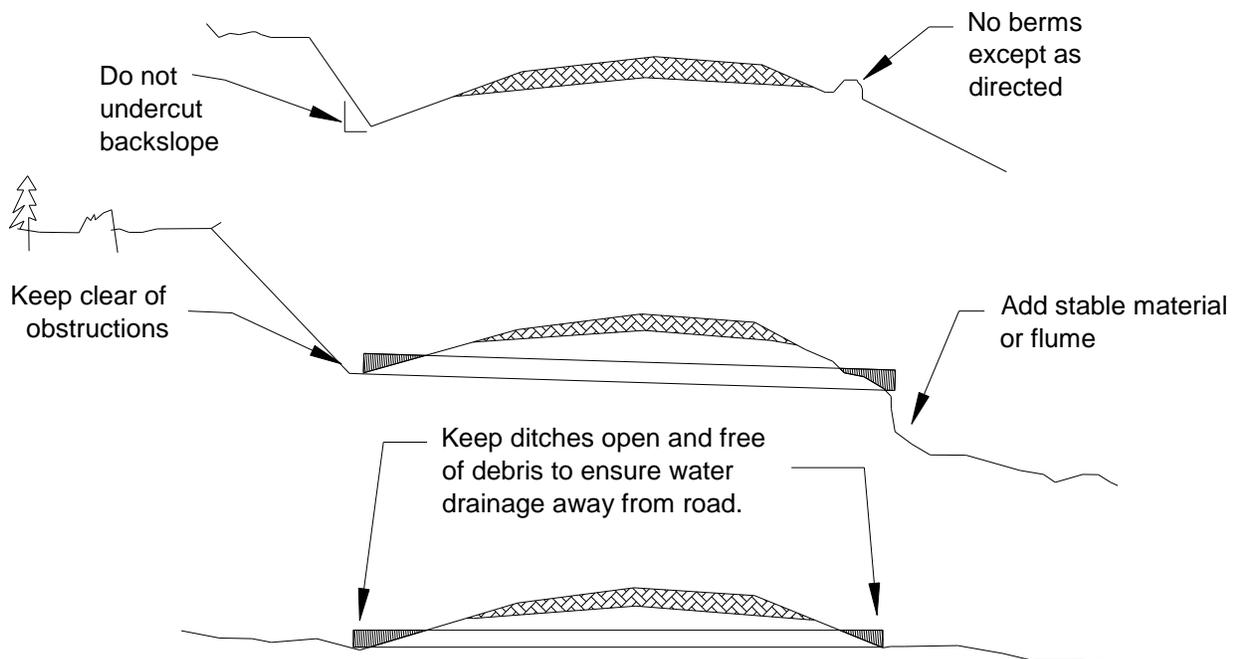
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

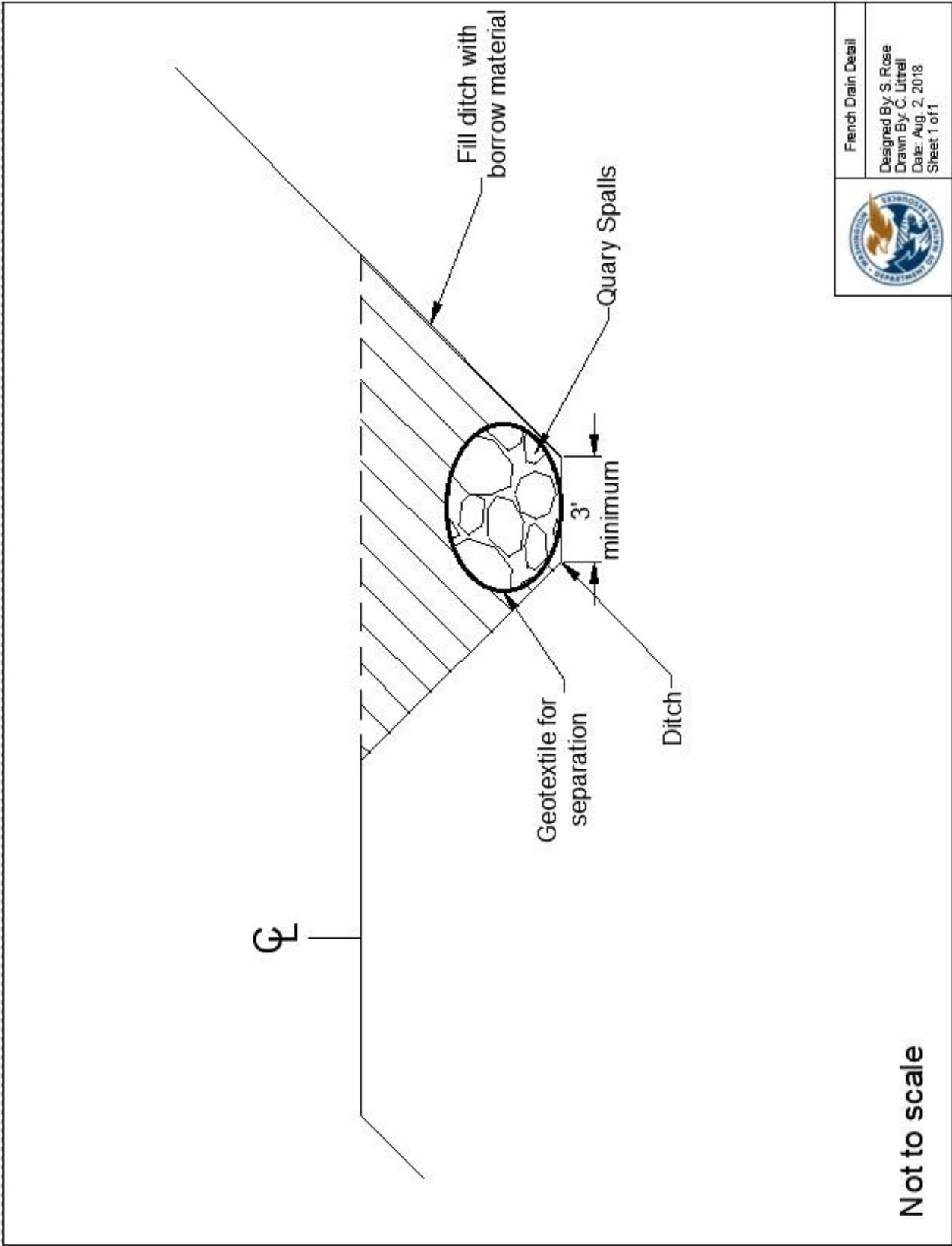
### Termination of Use or End of Season

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

### Debris

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





French Drain Detail

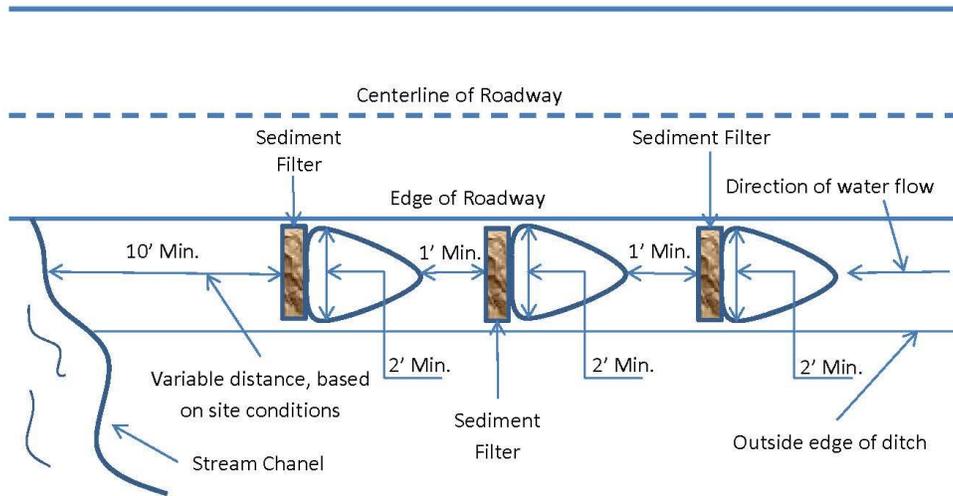
Designed By: S. Rose  
 Drawn By: C. Littrell  
 Date: Aug. 2, 2018  
 Sheet 1 of 1



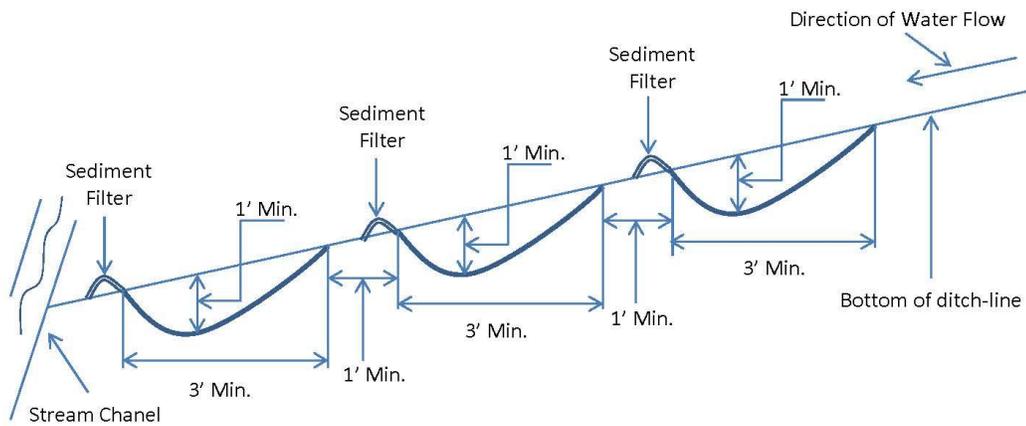
**Not to scale**

## SEDIMENT TRAP DETAIL

### Top View

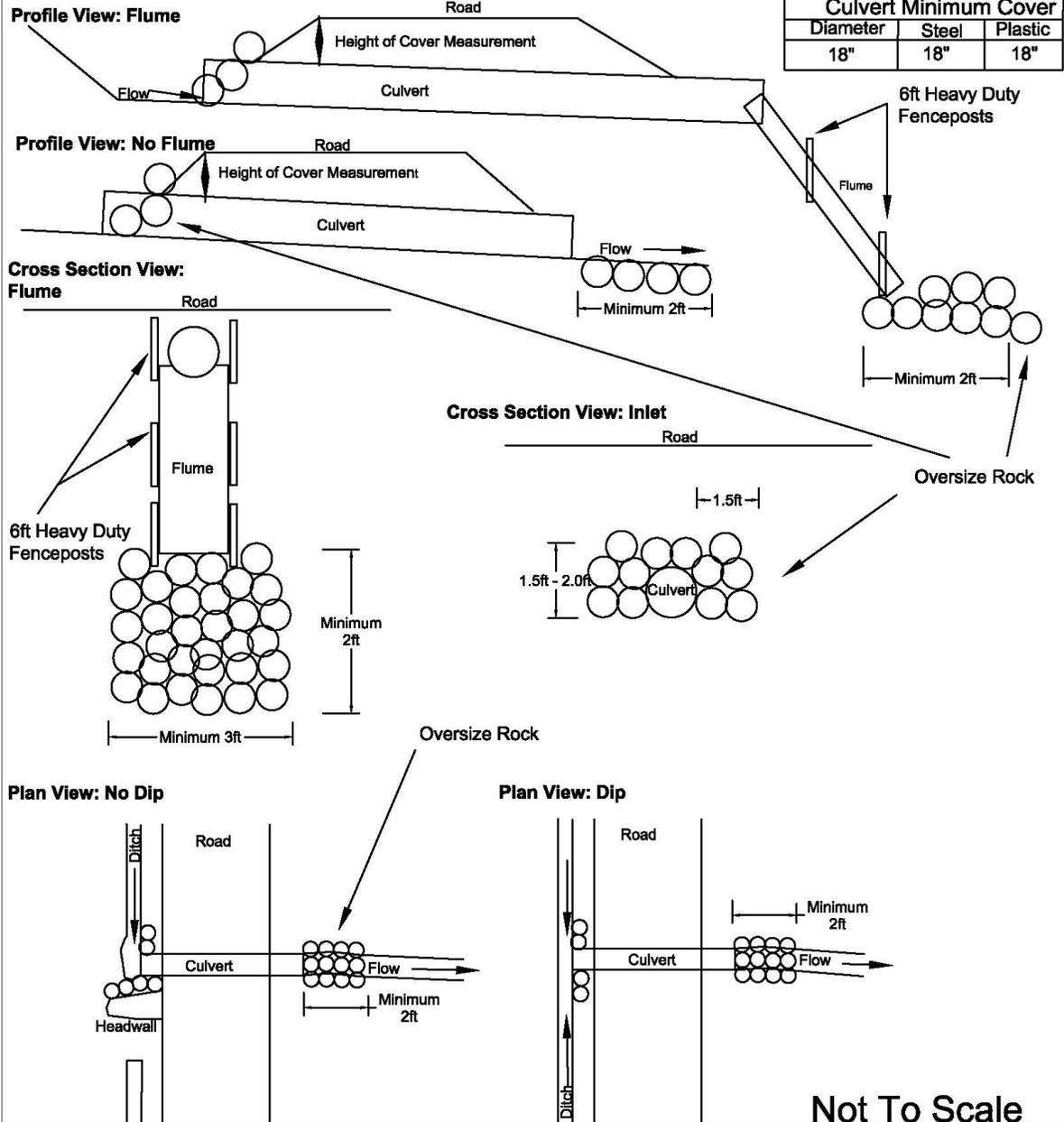


### Profile View



# Typical Cross Drain Culvert Installation Detail Sheet

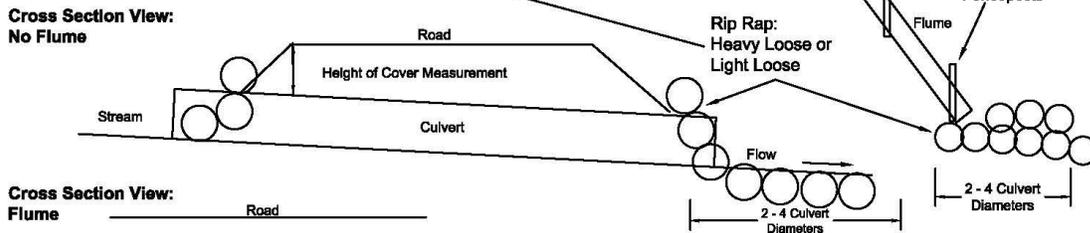
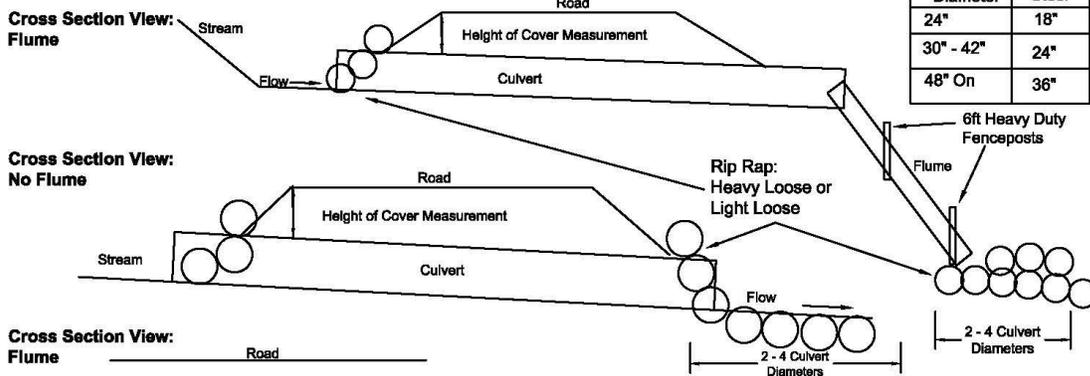
- Culvert lay shall not exceed 10%.
- Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
- Oversize shall be placed using a "zero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



### Typical Type Ns, Np Culvert Installation Detail Sheet.

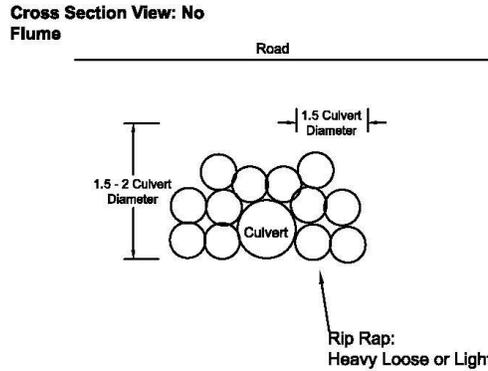
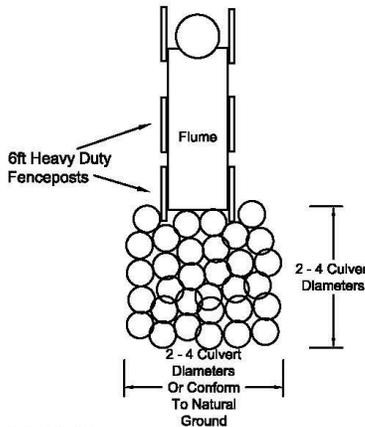
- Water shall be diverted away from the work site before any "in stream" work begins, and shall continue until culvert installation is complete.
- Culvert lay shall match stream gradient up to 5%.
- Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
- Rip rap shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.
- Rip rap shall be placed at headwalls, along the fill at the inlet, and at the end off flumes in accordance with this Detail. On culverts with no flume rip rap shall be placed along the fill at the outlet, unless there is stream drop or it is called for in the Road Plan, at which point it will be installed as an energy dissipater at the end of the culvert as specified in this Detail. All rip rap distance to be determined by the Contract Administrator or the District Engineer.
- Backfill compaction shall be achieved using a jumping jack, walk behind vibratory roller, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus 3 times the width of the compactor footprint used.

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

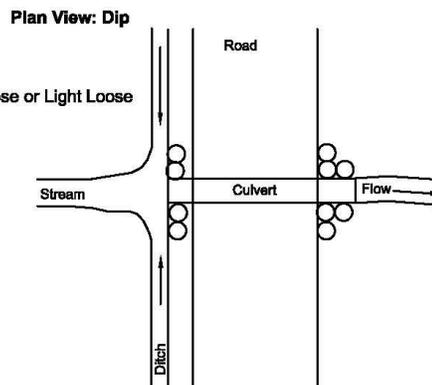
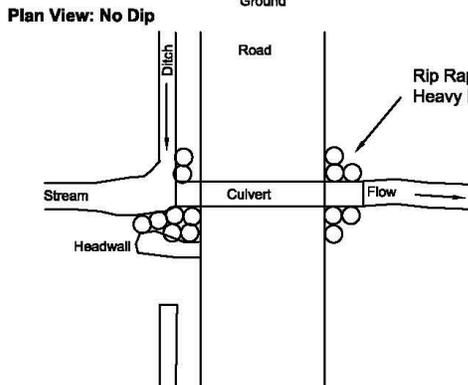


**Cross Section View: Flume**

**Cross Section View: No Flume**



**Cross Section View: No Flume**

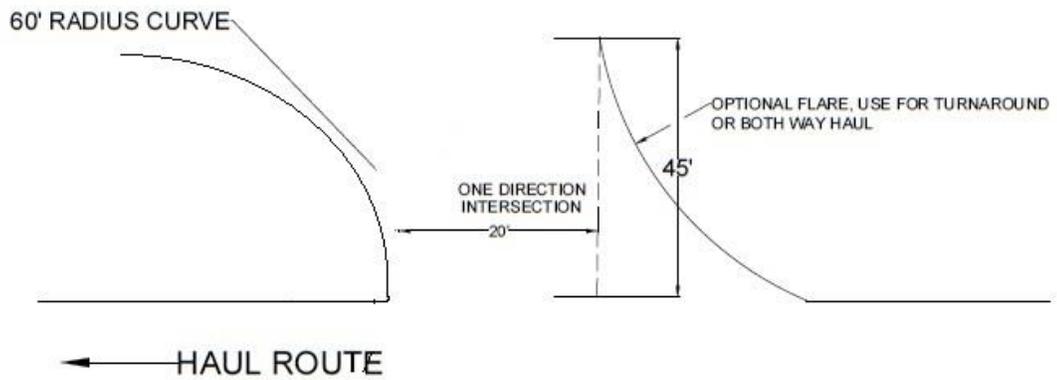


**Plan View: No Dip**

**Plan View: Dip**

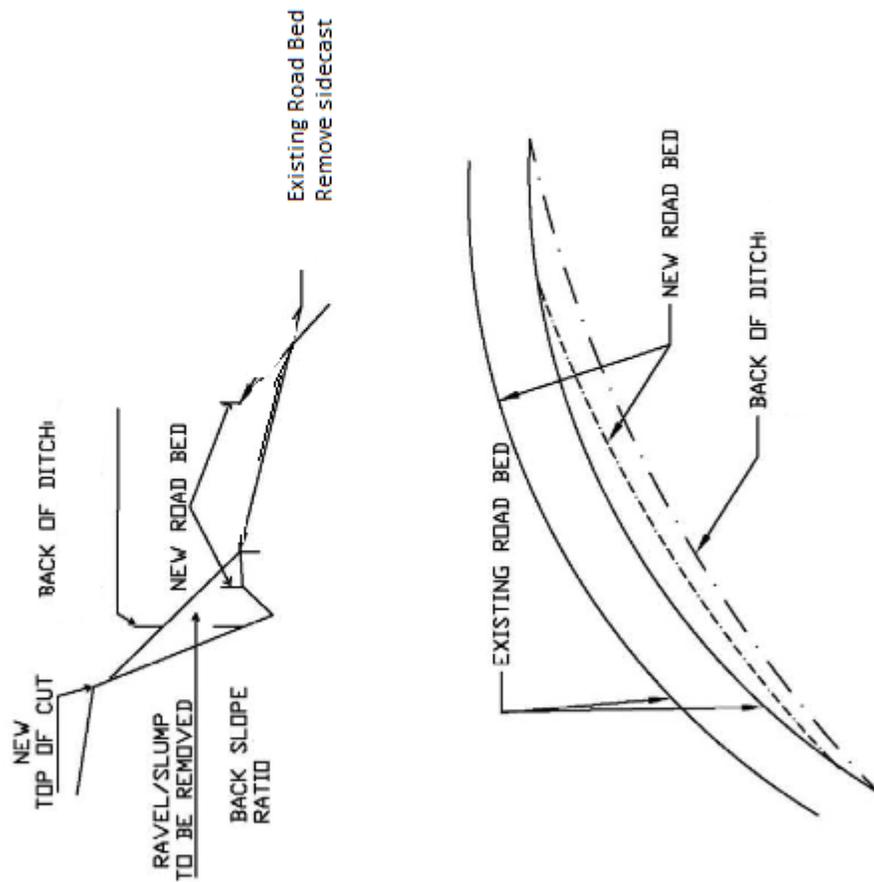
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# TYPICAL INTERSECTION



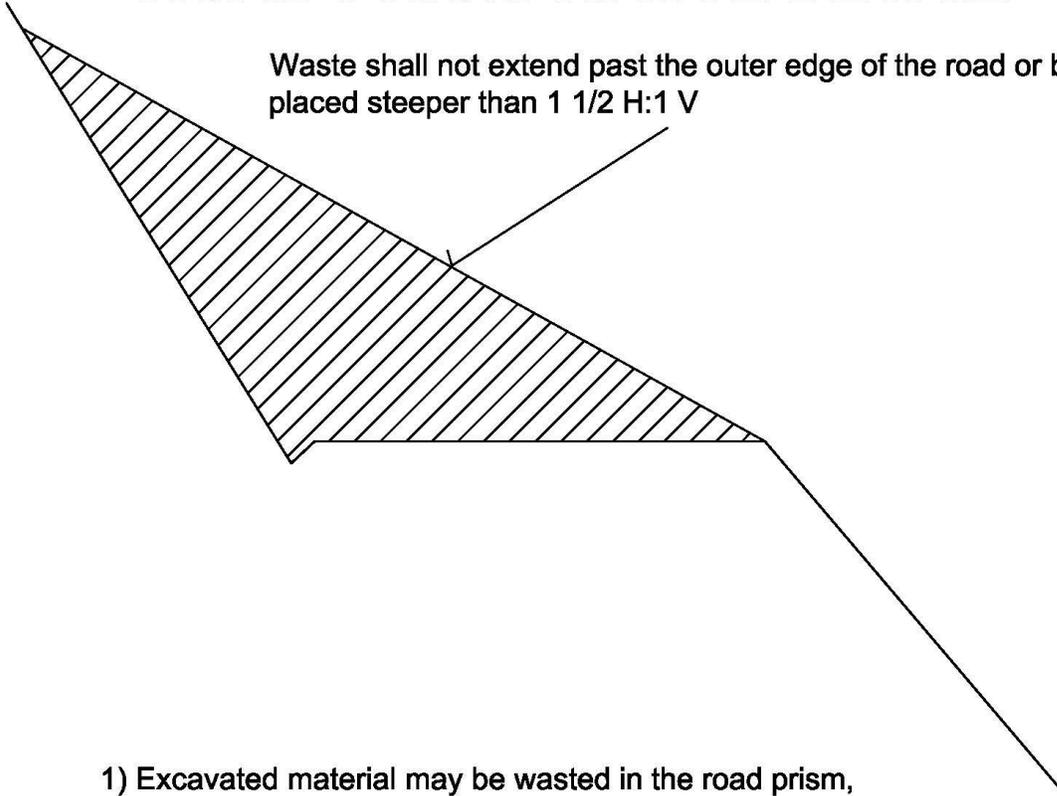
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# TYPICAL RECONSTRUCTION ROAD WIDENING



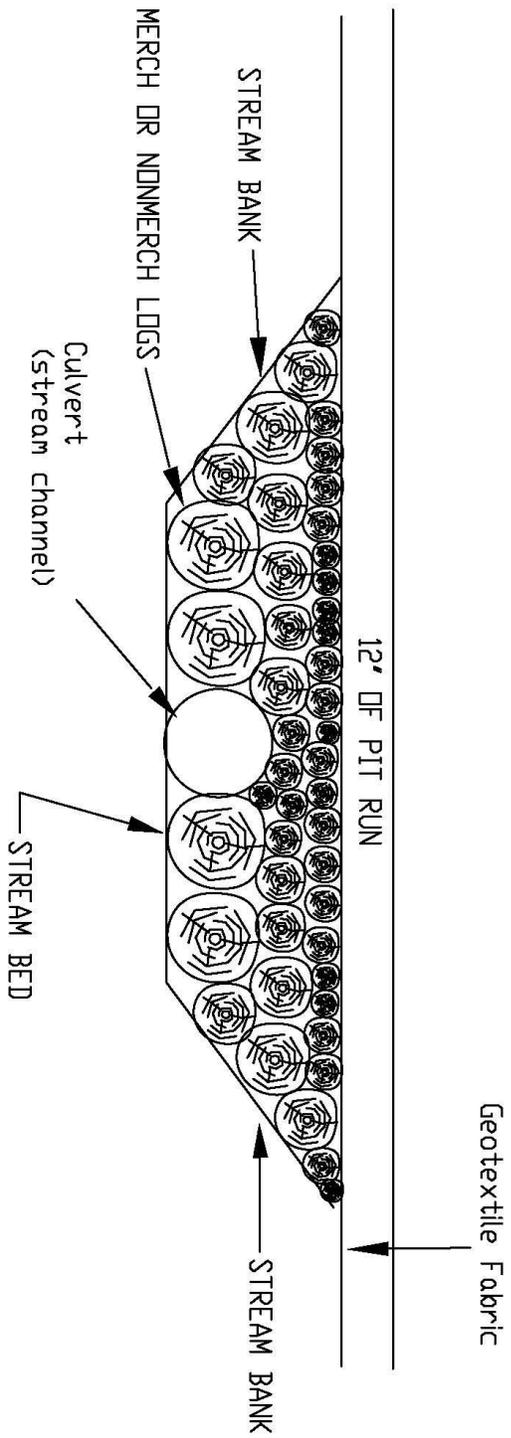
# ROAD PRISM WASTE DETAIL

Waste shall not extend past the outer edge of the road or be placed steeper than 1 1/2 H:1 V



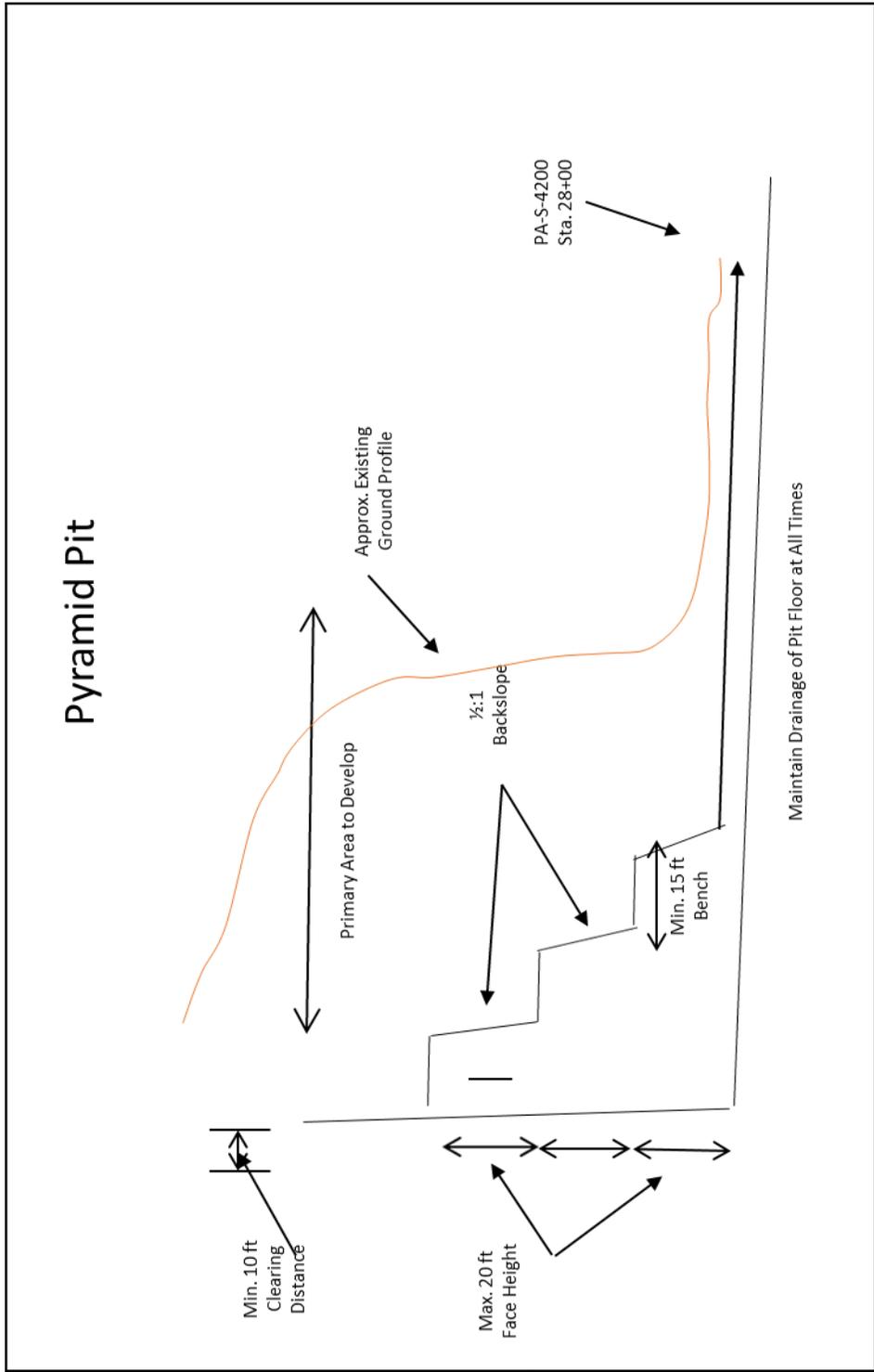
- 1) Excavated material may be wasted in the road prism, including ditchline.
- 2) Waste shall be sloped no steeper than 1 1/2 H : 1 V and placed a minimum of 10 feet from the edge of excavation limits.
- 3) Waste material shall not impede the natural drainage of water.
- 4) Waste shall be placed in 2 foot lifts and compacted by routing tracked excavation equipment over it.
- 5) A water bar shall be constructed immediately above the waste area.
- 6) Woody debris shall not be buried in waste areas. Available woody debris shall be scattered across the top of the waste area.

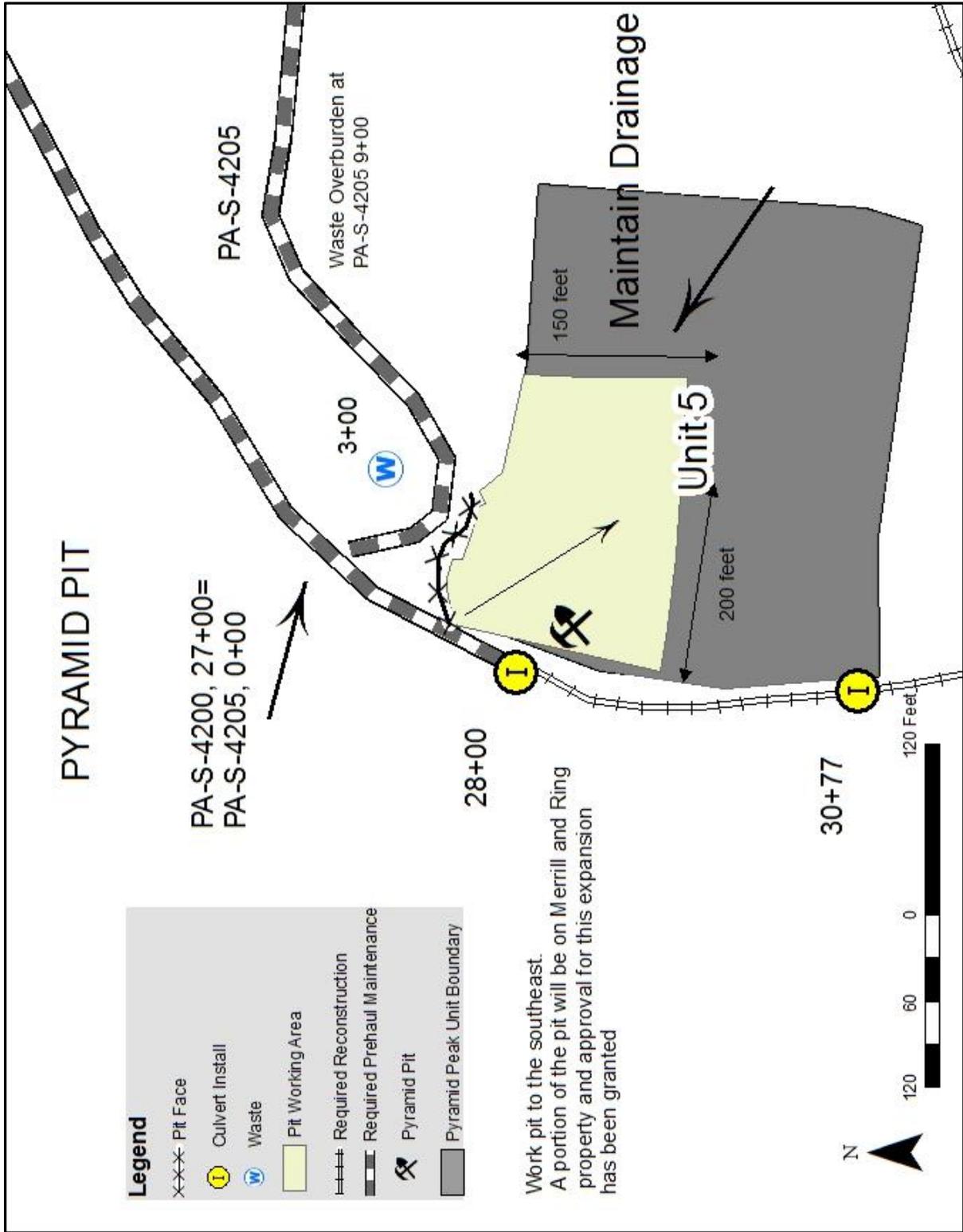
# TEMPORARY LOG FILL STREAM CROSSING



**Pyramid Pit  
ROCK SOURCE DEVELOPMENT PLAN  
SEC. 30, T.31N., R.8W  
PIT USE REQUIREMENTS**

1. Pit expansion shall commence in the until the desired quantity of rock is achieved.
2. Activity restrictions per Clause 1-25.
3. Only the quantities and sorts specified in this road plan for this sale may be used or manufactured, unless otherwise approved by the Contract Administrator in writing.
4. Maintain drainage of the pit floor and all drainage structures within the pit boundaries. The pit floor shall have continuity of slope be left in a smooth and neat condition, providing drainage to the northwest at a minimum of 2 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques.
5. Excavated face height shall not exceed 20 feet and shall be sloped no steeper than 1/4:1.
6. Excavated slopes shall have a 1 1/2:1 backslope or less at the completion of operations.
7. A minimum 4 foot high berm shall be constructed and constantly maintained along the upper edge of excavated pit faces. No pit faces shall be left unblocked at any time.
8. All operations shall be completed prior to the end of each operating season, including but not limited to: drainage maintenance, sloping of the excavated face, and construction of berms, unless otherwise approved in writing by the Contract Administrator.
9. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, benches shall have safety berms constructed or access blocked to highway vehicles. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life. The contractor shall use Light Loose Rip Rap to block the drill trail.
10. All material shall remain the property of the State.
11. At the conclusion of operations, Purchaser shall ask the Contract Administrator for written approval of the final rock source condition and compliance with the terms of this plan.
12. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Administrator.
- 13. Purchaser shall give the Contract Administrator a minimum of 7 days notice prior to commencing any operations.**
- 14. Purchaser is require to inform Clallam County Dispatch (PenCom) of a day and approximate time of the pit blasting at 360-417-4911.**



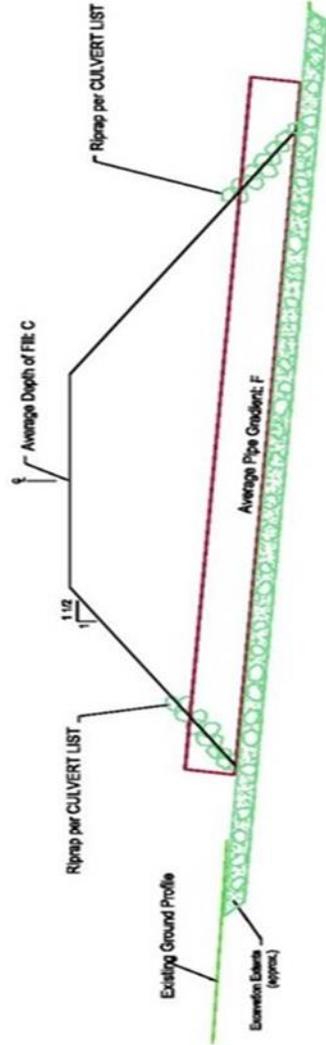


**TYPICAL TYPE 4, TYPE 5 CULVERT  
INSTALL SHEET**

<b>Road</b>	PA-S-4200	PA-S-4200	PA-S-4100
<b>Station</b>	34+46	42+74	16+88
<b>Average Pipe Gradient</b>	18%	18%	18%
<b>Diameter (in.)</b>	60	60	36
<b>Length (ft.)</b>	50	50	45
<b>Depth of Cover Material in. (C)</b>	Minimum 18"	Minimum 18"	Minimum 18"

Note:  
1) Crown at centerline not shown

**PROFILE - CENTERLINE OF  
CULVERT**



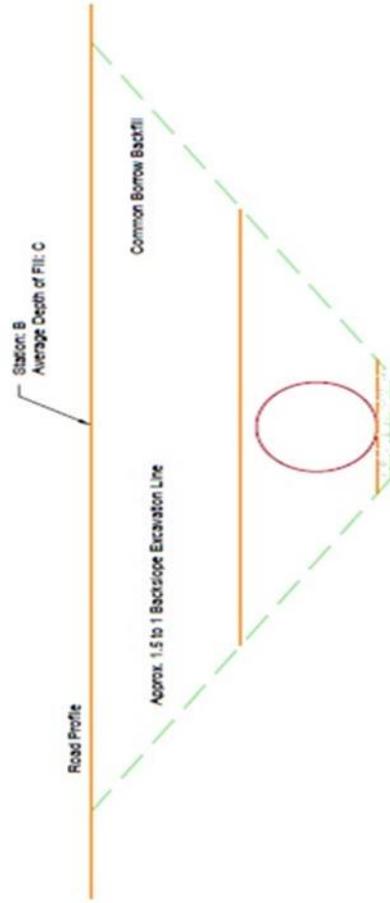
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**OLYMPIC REGION  
SITE LOCATION**  
Drawn By: Madison Wernstedt  
Designed By: Madison Wernstedt



Date: October 2015

PROFILE - CENTERLINE OF ROAD LOOKING UPSTREAM



<u>Road</u>	PA-S-4200	PA-S-4200	PA-S-4100
<u>Station (B)</u>	34+46	42+74	16+88
<u>Material and Coating Type</u>	METAL	METAL	METAL
<u>Diameter (in.)</u>	60	60	36
<u>Length (ft.)</u>	50	50	45
<u>Depth of Cover Material in. (C)</u>	Minimum 18"	Minimum 18"	Minimum 18"

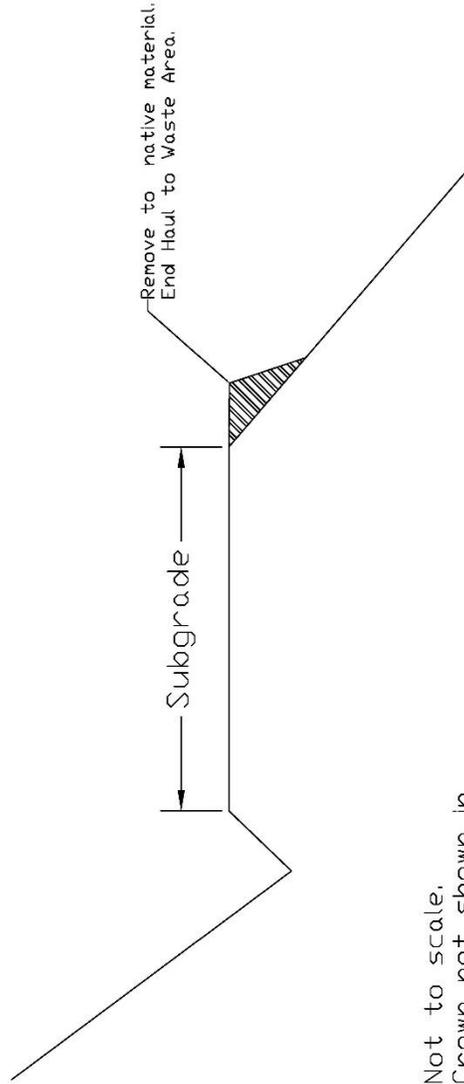
OLYMPIC REGION  
TYPICAL LIVE STREAM CULVERT DETAIL  
Drawn By: Thomas Barnes  
Designed By:



Page 2 of 2  
Not to Scale

Revised 11/02/2015

# SIDECAST PULLBACK DETAIL



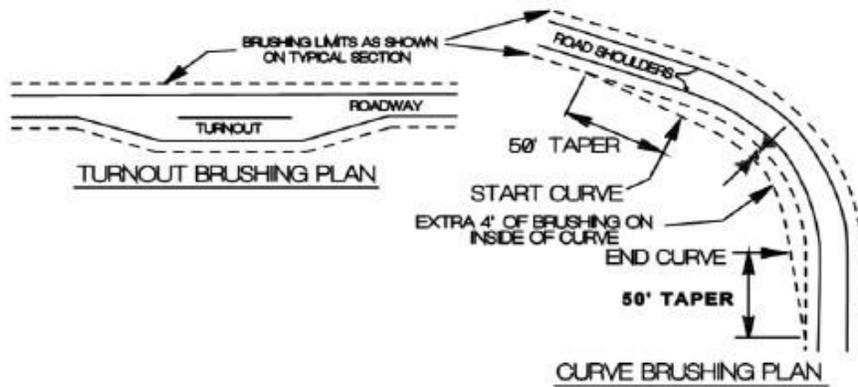
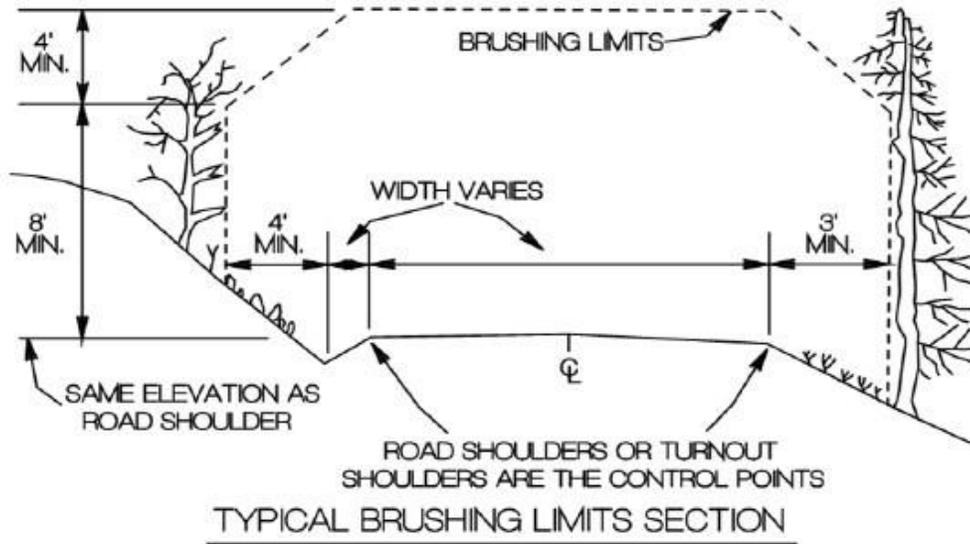
Not to scale.  
Crown not shown in  
drawing.



Pyramid Peak

Section View  
Designed By Rose, S.  
Drawn By Mason, J.  
Date 11/20/2018  
Sheet 1 of 1

## BRUSHING DETAIL



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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
OLYMPIC REGION

**INFORMATIONAL BLASTING PLAN**

Timber Sale/Project Name: \_\_\_\_\_ App./Project No.: \_\_\_\_\_

1. Blaster-in-Charge: Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_
2. Quarry Name/Location: \_\_\_\_\_
3. Total Estimated Cubic Yards in Blast (loose): \_\_\_\_\_
4. Hole Spacing: \_\_\_\_\_
5. Burden: \_\_\_\_\_
6. Hole Diameter: \_\_\_\_\_
7. Hole Depth: \_\_\_\_\_
8. Sub Drill: \_\_\_\_\_
9. Number of Holes: \_\_\_\_\_
10. Stemming Depth: \_\_\_\_\_
11. Explosive (mfg., name, density, %, V.O.D.): \_\_\_\_\_  
\_\_\_\_\_
12. Type and Size of Primer (if applicable): \_\_\_\_\_
13. Total Weight of Primers for Shot: \_\_\_\_\_
14. Calculated Powder Factor/Cubic Yard: \_\_\_\_\_
15. Number of Delays (in M.S.): \_\_\_\_\_  
\_\_\_\_\_
16. Number of Holes Fired on Each Delay: \_\_\_\_\_  
\_\_\_\_\_
17. Total Amount of Explosives Fired on Each Delay: \_\_\_\_\_  
\_\_\_\_\_
18. Type of Blasting Machine: \_\_\_\_\_  
\_\_\_\_\_
19. Date, Start Drilling: \_\_\_\_\_
20. Date and Time, Start Loading: \_\_\_\_\_
21. Date and Time of Blast (approx.): \_\_\_\_\_

22. Detail drawing of delay system (show hole pattern and delays in milliseconds). Attach additional sheets if required:

23. Typical cross-section of hole (show primer, main charge, sub drill, and stemming):

23. Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

24. Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Attach copies of manufacturer=s data sheet(s) for explosive and caps.

Authorization ID: SOL237  
Contact ID: 795223010602  
Expiration Date: 2/19/2023  
Use Code: 753  
DNR# 55-095115

FS-2700-4c (03/06)  
OMB No. 0596-0082

**U. S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE**

**PRIVATE ROAD SPECIAL USE PERMIT  
for WASHINGTON DEPARTMENT OF NATURAL RESOURCES**

**AUTHORITY:**

**THE FEDERAL LAND POLICY AND MANAGEMENT ACT OF OCTOBER 21, 1976, 43 U.S.C. 1761-1771**

WASHINGTON STATE DNR FORKS, 411 TILICUM LANE (the holder) FORKS, WA 98331 (hereafter called the Holder) is hereby authorized to use National Forest lands for the construction, reconstruction, maintenance, and use of a road within the Olympic National Forest for the following purposes:

*Access to Washington State Department of Natural Resources lands for protection, administration, management, and utilization, including timber haul.*

The lands covered by this permit are located in the County of Clallam, State of Washington and are described as follows:  
Sec. 19, T. 30 N., R. 9 W., WILLAMETTE MERIDIAN

This permit covers a right-of-way 1700 feet in length, 50 feet in width, containing approximately 1.95 acres, and is located upon the ground according to the survey line, figures, measurements, widths, and other references shown on the map or plat attached hereto as Exhibit A and made a part hereof.

**This permit is made subject to the following terms, provisions, and conditions:**

1. This permit is subject to all existing easements and valid rights existing on this date.
2. The Holder in exercising the privileges granted by this permit shall comply with all applicable State and Federal laws, Executive Orders, and Federal rules and regulations, and shall comply with all State standards for public health and safety, environmental protection, and siting construction, operation, maintenance of or for rights-of-way for similar purposes if those standards are more stringent than applicable Federal standards.
3. The Holder shall cut no timber except as authorized by construction stipulations or maintenance agreements.
4. The Holder shall provide maintenance so that no damage occurs on adjacent National Forest land. The Holder shall construct and maintain lead-off drainage and water barriers as necessary to prevent erosion.
5. Holder shall pay annually in advance a sum determined by the Forest Service to be the fair market value of the use authorized by this permit. The initial payment is set at \$0 for the remainder of the calendar year. Payments for each subsequent calendar year shall be the amount of adjusted using the Implicit Price Deflator-Gross National Product index (IPD-GNP), or other factor selected by the Forest Service, to reflect more nearly the current fair market value of the use. At intervals to be determined by certain changes in the indexes used to establish the linear rights-of-way fee schedule, the fee shall be reviewed and adjusted as necessary to assure that it is commensurate with the value of the rights and privileges authorized. Failure of the Holder to pay the annual payment, late charges, or other fees or charges shall cause the permit to terminate.
6. Pursuant to 31 U.S.C. 3717, et seq., interest shall be charged on any fee amount not paid within 30 days from the date the fee or fee calculation financial statement specified in this authorization becomes due. The rate of interest assessed shall be the higher of the rate of the current value of funds to the U.S. Treasury (i.e., Treasury tax and loan account rate), as prescribed and published by the Secretary of the Treasury in the Federal Register and the Treasury Fiscal Requirements Manual Bulletins annually or quarterly or at the Prompt Payment Act rate. Interest on the principal shall

accrue from the date the fee or fee calculation financial statement is due.

In the event the account becomes delinquent, administrative costs to cover processing and handling of the delinquency will be assessed.

A penalty of 6 percent per annum shall be assessed on the total amount delinquent in excess of 90 days and shall accrue from the same date on which interest charges begin to accrue.

Payments will be credited on the date received by the designated collection officer or deposit location. If the due date for the fee or fee calculation statement falls on a non-workday, the charges shall not apply until the close of business on the next workday.

Disputed fees are due and payable by the due date. No appeal of fees will be considered by the Forest Service without full payment of the disputed amount. Adjustments, if necessary, will be made in accordance with settlement terms or the appeal decision.

If the fees become delinquent, the Forest Service will:

Liquidate any security or collateral provided by the authorization.

If no security or collateral is provided, the authorization will terminate and the holder will be responsible for delinquent fees as well as any other costs of restoring the site to its original condition including hazardous waste cleanup.

Upon termination or revocation of the authorization, delinquent fees and other charges associated with the authorization will be subject to all rights and remedies afforded the United States pursuant to 31 U.S.C. 3711 *et seq.* Delinquencies may be subject to any or all of the following conditions:

Administrative offset of payments due the holder from the Forest Service.

Delinquencies in excess of 60 days shall be referred to United States Department of Treasury for appropriate collection action as provided by 31 U.S.C. 3711 (g), (1).

The Secretary of the Treasury may offset an amount due the debtor for any delinquency as provided by 31 U.S.C. 3720, *et seq.*)

7. All construction or reconstruction of the road shall be in accordance with plans, specifications, and written stipulations approved by the Forest Service prior to beginning such construction or reconstruction.

8. The Holder shall repair fully all damage to National Forest roads and trails caused by the exercise of the privileges granted by this permit.

9. The United States may use the roads without cost for all purposes deemed necessary or desirable in connection with the protection and administration of the lands or resources of the United States, provided that it will use the road for commercial hauling purposes, other than the removal of timber cut in construction or maintenance of the road or other occasional incidental use, only after arranging to pay or perform its pro rata share of road maintenance.

10. The Forest Service alone may extend rights and privileges for use of the road constructed on the premises to other non-Federal users provided that such users shall pay a fair share of the current replacement cost less depreciation of the road to the holder, and reconstruct the road as necessary to accommodate their use.

11. The Forest Service retains the right to occupy and use the right-of-way and to issue or grant rights-of-way for land uses, for other than road purposes, upon, over, under, and through the permit area provided that the occupancy and use do not interfere unreasonably with the rights granted herein.

12. The Forest Service shall have the right to cross and re-cross the premises and road at any place by any reasonable means and for any purpose in such manner as does not interfere unreasonably with use of the road.

13. The Holder shall maintain the right-of-way clearing by means of chemicals only after the Forest Supervisor has given specific written approval. Application for such approval must be in writing and must specify the time, method, chemicals, and the exact portion of the right-of-way to be chemically treated.
16. Unless sooner terminated in accordance with the provisions of the permit, or revoked by the Authorizing Officer, this permit shall expire and terminate on **2/20/2023**. The permit shall not be reissued
17. This permit may be terminated or suspended upon breach of any of the conditions herein, or revoked at the discretion of the Issuing Officer.
18. Upon termination or revocation of this special-use authorization, the Holder shall remove within a reasonable time the structures and improvements and shall restore the site to a condition satisfactory to the authorized officer, unless otherwise waived in writing or in the authorization. If the Holder fails to remove the structures or improvements within a reasonable period, as determined by the authorized officer, they shall become the property of the United States, but this does not relieve the Holder from liability for the removal and site restoration costs.
19. **Nonexclusive Use and Public Access.** Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.
20. **Forest Service Right of Entry and Inspection.** The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.
21. **Liability.** For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.
- A. The holder assumes all risk of loss to the authorized improvements.
- B. **DAMAGE TO UNITED STATES PROPERTY.** The State of Washington has an affirmative duty to protect from damage the land, property, and other interests of the United States. Damage includes but is not limited to fire suppression costs, and all costs and damages associated with or resulting from the release or threatened release of a hazardous material occurring during or as a result of activities of the State of Washington or its heirs, assigns, agents, employees, contractors, or lessees on, or related to, the lands, property, and other interests covered by this permit. For purposes of clauses IV.G "hazardous material" shall mean (a) any hazardous substance under section 101(14) of the Comprehensive Environmental Response, Compensation, and section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any petroleum product or its derivative, including fuel oil, and waste oils; and (d) any hazardous substance, extremely hazardous substance, toxic substance, hazardous waste, ignitable, reactive or corrosive materials, pollutant, contaminant, element, compound, mixture, solution, or substance that may pose a present or potential hazard to human health or the environment under any applicable environmental laws
1. The State of Washington shall avoid damaging or contaminating the environment, including but not limited to the soil, vegetation (such as trees, shrubs, and grass), surface water, and groundwater, during the State of Washington's use and occupancy of the permit area. If the environment or any Government property covered by this permit becomes damaged during the State of Washington's use and occupancy of the permit area, the State of Washington shall immediately repair the damage or replace the damaged items to the satisfaction of the Authorized Officer and at no expense to the United States.
2. Subject only to the limits on the State of Washington's liability under the State of Washington's risk management and tort claims statutes, including RCW Chp. 4.92 and RCW 43.19.760 et seq. , the State of Washington shall be liable for all injury, loss, or damage, including fire suppression or other costs associated with rehabilitation or restoration of natural resources, associated with the holder's use and occupancy of the permit area. Compensation shall include but is not limited to the value of resources damaged or destroyed, the costs of restoration, cleanup, or other mitigation, fire suppression or other types of abatement costs, and all associated administrative, legal (including attorney's fees), and other costs. Such costs may be deducted from a performance bond required under clause III.D.

3. The State of Washington shall be liable for damage caused by use of the State of Washington or the State of Washington's heirs, assigns, agents, employees, contractors, or lessees to all roads and trails of the United States that are open to public use to the same extent as provided under clause IV.E.1, except that liability shall not include reasonable and ordinary wear and tear.

C. INDEMNIFICATION OF THE UNITED STATES. Subject only to the limits on the State of Washington's liability under the State of Washington's risk management and tort claims statutes, including RCW Chp. 4.92 and RCW 43.19.760 et seq., the State of Washington shall indemnify, defend, and hold harmless the United States for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the State of Washington in connection with the use and occupancy authorized by this permit. This indemnification and hold harmless provision includes but is not limited to acts and omissions of the State of Washington or the State of Washington's heirs, assigns, agents, employees, contractors, or lessees in connection with the use and occupancy authorized by this permit which result in (1) violations of any laws and regulations which are now or which may in the future become applicable, including but not limited to those environmental laws listed in this permit; (2) judgments, claims, demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous waste, hazardous substance, pollutant, contaminant, oil in any form, or petroleum product into the environment.

#### D. INSURANCE

The Department of Natural Resources is self-insured against liability claims in accordance with the State of Washington's risk management and tort claims statutes, including RCW Chp. 4.92 and RCW 43.19.760 et seq. The tort claims procedure, RCW 4.92.100 et seq., provides the fundamental remedy for all tort liability claims against the State and its officer, employees, and agents acting as such, and all such claims must be filed and processed as provided therein. It is understood that holder and Forest Service are each responsible for negligence in their own actions or omissions while participating in this permit. Financial responsibility will be incurred by the appropriate party

1. The State of Washington contractors, subcontractors, or any other named third party shall have in force automobile insurance covering losses associated with the use authorized by this permit in at least the amount of \$25,000 for injury or death to one person, \$50,000 for injury or death to two or more persons, and \$10000 for property damage. Minimum amounts of coverage and other insurance requirements are subject to change at the sole discretion of the responsible official on the anniversary date of this permit.

2. Any insurance policies obtained by the State of Washington contractors, subcontractors, or any other named third party pursuant to this clause shall name the United States as an additional insured, and the additional insured provision shall provide for insurance coverage for the United States as required under clause VI.I. The policies also shall specify that the insurance company shall give 30 days prior written notice to the responsible official of cancellation of or any modification to the policies.

3. State of Washington contractors, subcontractors, or any other named third party shall furnish proof of insurance, such as a certificate of insurance, to the responsible official prior to issuance of this permit and each year thereafter that this permit is in effect. The Forest Service reserves the right to review and approve the insurance policy prior to issuance. The holder shall send an authenticated copy of any insurance policy obtained pursuant to clause VI.I to the responsible official immediately upon issuance of the policy. The certificate of insurance, the authenticated copy of the insurance policy, and written notice of cancellation or modification of insurance should be sent to [address of responsible official].

E. In the event of any breach of the conditions of this authorization by the holder, the authorized officer may, on reasonable notice, cure the breach for the account at the expense of the holder. If the Forest Service at any time pays any sum of money or does any act which will require payment of money, or incurs any expense, including reasonable attorney's fees, in instituting, prosecuting, and/or defending any action or proceeding to enforce the United States rights hereunder, the sum or sums so paid by the United States, with all interests, costs and damages shall, at the election of the Forest Service, be deemed to be additional fees hereunder and shall be due from the holder to the Forest Service on the first day of the month following such election.

F. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

G. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty or liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

22. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

23. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

24. Assignability. This authorization is not assignable or transferable. If Holder, through death, voluntary transfer, enforcement of contract, foreclosure, or other valid legal proceeding shall cease to be owner of the above-described real property accessed by the authorized road, this authorization will terminate.

25. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

In Witness Whereof, the parties hereto have caused this authorization to be duly executed on this 2nd day of February 2020.

HOLDER  
WASHINGTON STATE DNR FORKS

USDA  
Forest Service

Signature: Mona Griswold

Signature: Dean Millett

Printed Name: Mona Griswold

Printed Name: Dean Millett

Title: Olympic Region Manager

Title: District Ranger  
*(Authorized Officer)*

Date: 2.20.2020

Date: 2/20/20

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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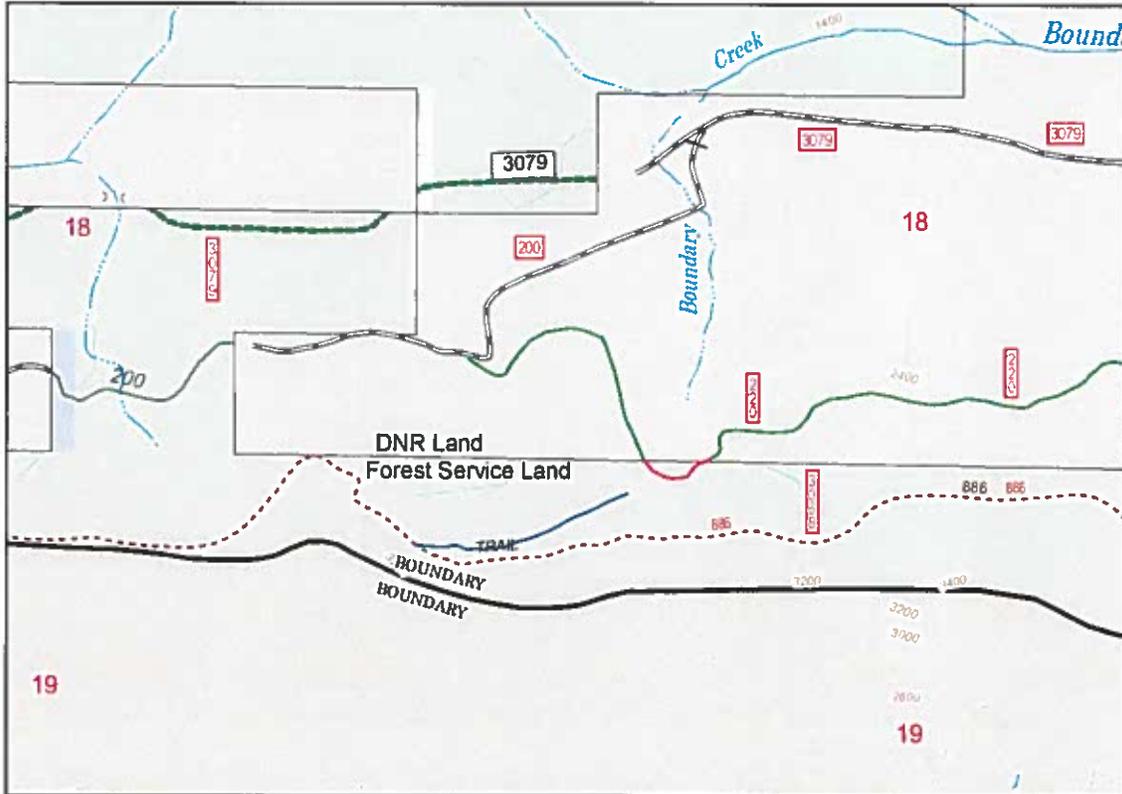
To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (800) 975-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

APPENDIX A



**DNR Access Roads - Pyramid Peak**  
Olympic National Forest/ Pacific Ranger District



**Legend**

0 0.1 0.2 Miles

— NFS Road 3079-220

— Pyramid Peak

WASHINGTON  
Clallam County

↑ N

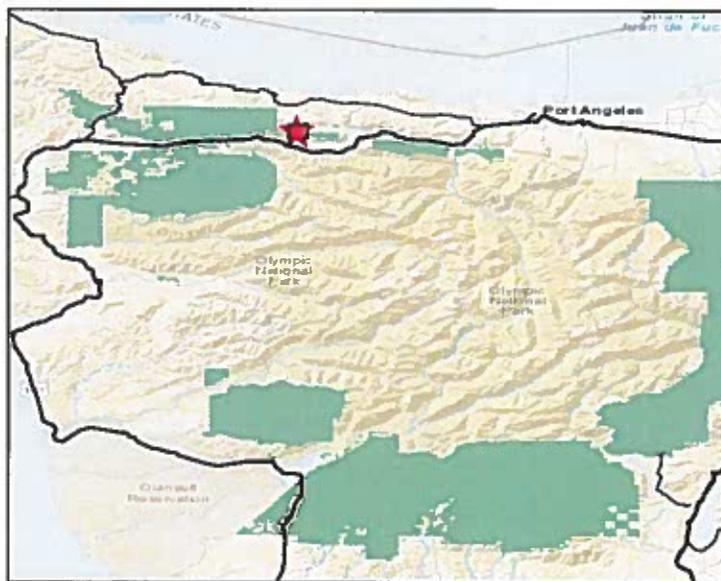
Sec. 19, T30N, R9W

**Authorization Information**

Name: DNR Access Road - Pyramid Peak  
Authorization ID: SOL237  
Primary Use Code: 753  
Use Code Name: FLMPA Road

**Disclaimer**

The USDA Forest Service makes no warranty, expressed or implied, regarding the data displayed on this map, and reserves the right to correct, update, modify, or replace this information without notification.



Map Author: xpfeller Map Creation Date: 8/1/2018

## APPENDIX B

### PROJECT DESIGN CRITERIA FOR DNR PYRAMID PEAK PROJECT

#### GENERAL:

- Final road construction and operation plans must be submitted and approved by the Forest before construction begins.
- The Forest Special Use Administrator must be notified 5 business days in advance of beginning ground disturbing operations.
- Changes and additions to the Plan must be submitted to the authorized officer for approval as a revised or supplemental plan. The revised or supplemental Plan must be approved by the authorized officer before work may begin.

#### WILDLIFE:

- Project activities will be conducted in compliance with applicable requirements of the Endangered Species Act of 1973, as amended.

#### FISHERIES

- Sedimentation during culvert replacement will be minimized with instream timing windows and dewatering, and would be of short duration and low magnitude. Pipes will be designed to meet Q100 with consideration for sediment and woody debris. Construction will meet instream timing windows and other provisions within the HPA for the project.

#### EROSION CONTROL AND WATER QUALITY:

- A Spill Prevention, Control and Containment (SPCC) plan will be prepared by the proponent and approved by the Forest Service before construction starts.
- The contractor shall conduct all activities to prevent soil erosion and sedimentation. Temporary erosion control measures may be required to prevent, control, and mitigate erosion and sedimentation. Temporary and permanent erosion control work must be kept current with ongoing operations, especially when construction occurs outside of the normal operating season.
- To reduce erosion and subsequent sedimentation from staging area include proper drainage and dispersion of water including preventing any road runoff from reaching the staging area and reclaiming by decompacting, revegetating, spreading slash.
- Construct and maintain appropriate cross drainage along road during use period.
- Erosion control measures are applied prior to expected hydrologic events (spring runoff, high-intensity storms, etc.). Contractor must complete and maintain erosion control work as specified by the project administrator or in the special use permit.
- Green Diamond must provide maintenance of soil erosion control structures constructed by the contractor until they become stabilized for up to, but not for more than one year after their construction.
- Keep water from any springs encountered along the road from flowing on and down the road.
- Cease operations promptly during wet conditions that lead to four inch ruts on the road.
- During extremely dry conditions, vehicle traffic and equipment operation may be restricted if native surface roads or other work areas become powdered.

#### CULTURAL/PALEONTOLOGICAL:

- If cultural or paleontological resources are found during implementation of the project, operations will immediately cease at that location and the District Ranger will be notified. Unauthorized excavation, removal, or damage of archaeological resources is subject to fines and other penalties under authority of the Archaeological Resources Protection Act (ARPA) of 1979 (as amended).

#### SOILS:

- A Noxious Weed/Exotic Plant Prevention and Control Plan will be attached to the special use permit and adhered to by the Permittee.
- The contractor will designate the location, size, and use of service refueling areas for the approval of the agency project administrator. Refueling areas will be a minimum of 200 feet from perennial and intermittent stream channels, seeps and springs, wetlands, lakes, and reservoirs, water developments, and other water features. All heavy equipment and service vehicles will have a supply of absorbent and other cleanup materials on hand for initial containment of spills.

- The contractor will adhere to the Hazardous Substance Spill Plan in case of accidents.
- Cross-drain/ditch relief culverts on new roads will be placed, when practicable, where they will drain onto stable, vegetated, low to moderate slopes, allowing for water infiltration and with low probabilities of erosion/soil disturbance and new channel creation.

**FIRE PROTECTION:**

- The Permit Holder is responsible to follow Forest and State mandated fire restrictions. The Forest Service reserves the right to suspend operations during periods of high fire potential.

**TIMBER:**

- All timber removal will follow the “Olympic National Forest Cutting and Decking Standards” attached to the special use permit.

**RECLAMATION (IF APPLICABLE):**

- A reclamation or decommissioning plan, depending on the needs of the Forest at the time, will be developed and submitted to the Forest at least 2 months prior to expected project completion (timber haul complete). The Forest will review and approve the plan prior to decommissioning/reclamation.
- Reclamation or decommissioning will occur within 90 days of project completion if weather and soil moisture conditions are suitable.
- If reclaiming, salvaged topsoil will be spread over areas from which the topsoil was stripped. The surface should be left rough/pitted (with surface variations of 6-12 inches) to limit rilling and to provide for water retention to enhance seed germination. Topsoil will not be spread when the ground or topsoil is frozen, wet, or powdery.
- To encourage vegetation growth, reduce erosion, and discourage illegal motorized use, barriers, including boulders, trees and large pocks, or gates with possible fencing, will be constructed. The contractor will work with the Forest Administrator to determine the best solution.
- If reclamation is chosen, the proponent will seed the entire disturbed area with a Forest approved seed mix (available upon request). The seed mixture must meet or exceed the pure live seed standards containing a maximum allowable weed content of less than 2 percent with no noxious weed species. Independent seed analysis is required on seeds to determine other undesirable weed species. The Permittee is responsible for eradication of presently known noxious weeds or exotic plants and eradication of presently unknown noxious weeds and exotic plants that enter any disturbed areas.
- Post reclamation success would be gaged by seventy percent (70%) vegetation and crown cover over the entire disturbed area and 60% ground cover (vegetation, rock, litter). The site will be monitored for 3 years and will be reseeded as necessary.

**NOXIOUS WEEDS:**

During road construction and maintenance activities, and for the life of the permit, the following PDC’s must be followed to prevent the introduction and spread of invasive plants. These PDC’s are based on Regional and National Forest Service Standards, and on State law.

- Existing infestations of invasive plants listed as Class A, Class B, or Selected Weeds on the Clallam County Noxious Weed list (attached) will be treated in the project area prior to ground disturbance, according to the guidelines outlined in the Olympic NF weed EIS: “Beyond Prevention: Site-Specific Invasive Plant Treatment Project” (2008). Documentation will be provided by the permittee describing how it was determined if any of these species are present, what the qualifications were of the person making this determination, and what was done to control them. All costs incurred during inspection and control activities will be paid for by the permittee.
- Class A, Class B, or Selected Weeds on the most current Clallam County Noxious Weed list will be controlled as they are encountered during the life of the permit, and will follow the guidelines outlined in the Olympic NF weed EIS: “Beyond Prevention: Site-Specific Invasive Plant Treatment Project” (2008), or the most current NEPA document related to treating invasive plants on the Olympic NF. It is highly recommended that road corridors related to this permit are examined by qualified personnel (County, FS, etc.) annually to detect new infestations as they occur. All costs incurred during inspection and control activities will be paid for by the permittee.

- Clean all off-road equipment of dirt/mud, seeds, and other plant parts before it is moved onto National Forest Service land. 'Off-road equipment' includes all machinery other than log trucks, chip vans, pickup trucks or vehicles used to transport personnel on a daily basis.
- All material (e.g. soil, gravel, sand borrow, aggregate, etc.) transported onto National Forest System land or incorporated into the work shall be weed-free. Weed-free status of quarries will be determined and documented by County Noxious Weed Control Board, Forest Service staff, or other qualified personnel (as determined by the Forest Service). Certification of quarries as meeting weed-free standards will be provided to the Forest Service prior to material being brought onto FS land. If weed species are present in the proposed source, appropriate mitigation measures may allow conditional use of the source, as described in the inspection report.
- Fill material generated from the project site, containing or suspected to contain Class A, Class B, or Selected Weeds on the Clallam County Noxious Weed list, shall be stockpiled within the project area and as close to the infested source area as possible. The material shall not be broadcast for disposal.
- Mulch and straw used on the project shall be certified weed-free. Certified straw bales will have a tag and/or purple and yellow twine. See the following website for more details <https://www.nwcb.wa.gov/washington-weed-free-hay-and-mulch-program>
- Seed used in the project shall be weed-free and meet state and local noxious weed laws. Give priority to seed mixes that consist only of local native species. The Olympic NF may be able to provide native seed free of charge – please ask.

## HYDROLOGY

- Forest Service Hydrologist and Fisheries specialists will review and approve project design prior to implementation.

## ENGINEERING

Forest Service engineering specialists will review and approve the road prior to implementation.

Recommended mitigation measures for reconstruction/use include but are not limited to:

- Reconstruction/pullback of sidecast and fills on slopes over 50%; end haul material to stable location; re-establish stable road prism to USFS standards with appropriate drainage structures; reconstruction operations during dry weather only
- No sidecast/fills on slopes over 50%; compaction of subgrade and fills to USFS standards
- Sediment mitigation at stream crossings, such as the use of clean quarry rock on surfacing, sediment traps and filters in ditches, etc.
- Seeding, mulching and stabilization of exposed soil within 15 days of disturbance
- Timely routine maintenance of road surface and drainage structures to mitigate impacts to resources

## APPENDIX C

### Tree Cutting and Log Decking Specifications

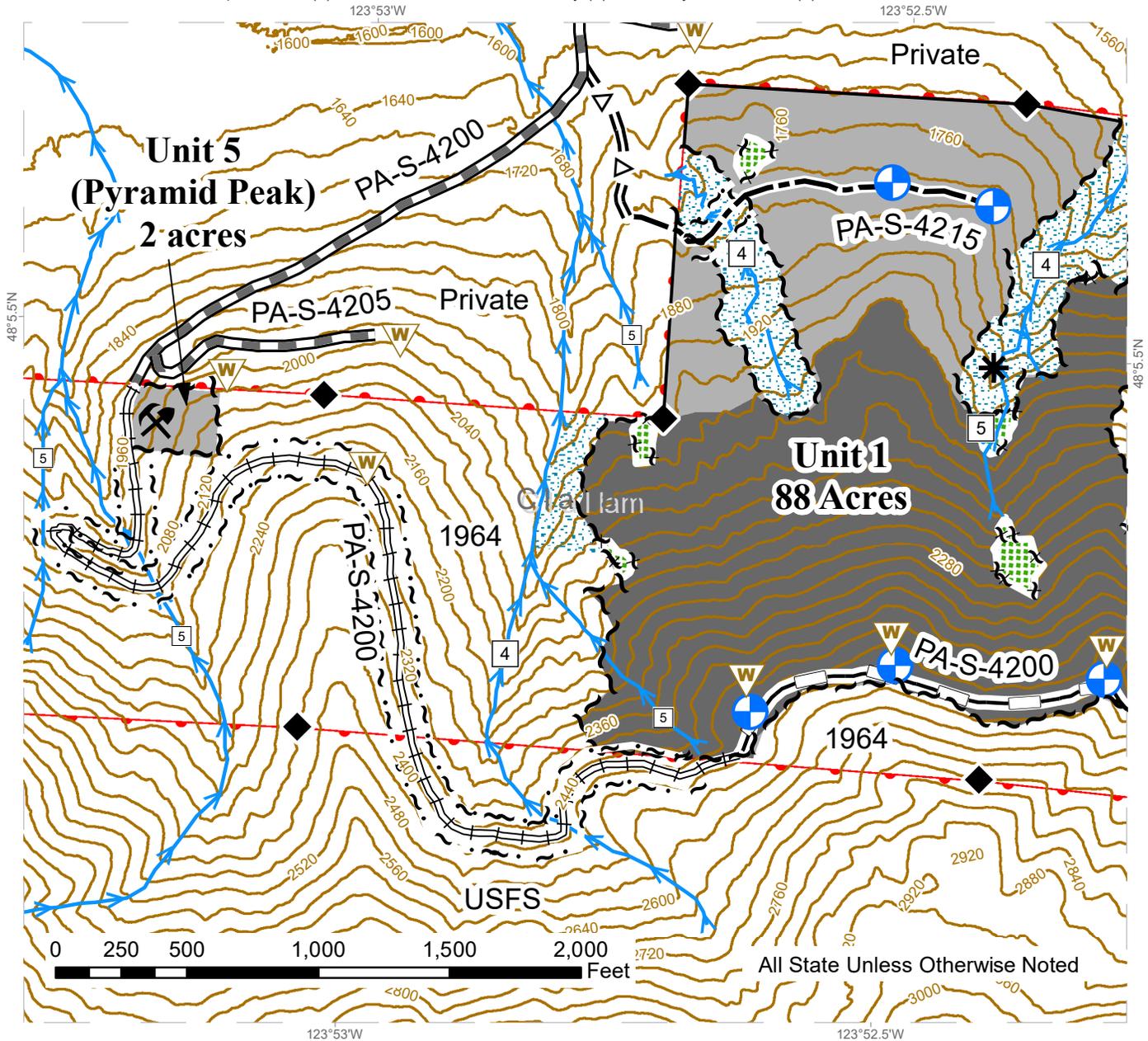
1. Easement holder, Permit holder, Purchaser, Contractor, or other authorized party (Holder) shall provide the Forest Service a 30 day notice of their intent to cut right of way trees so that a timber cruise can be completed and trees designated with tracer paint by the Forest Service (FS).
2. Holder shall pre-mark all trees proposed to be removed that are at least 8.0 inches at breast height with a clearly visible slash of paint at breast height. Paint color shall not be orange, blue, green, pink, or red (yellow is preferred).
3. The Forest Service will review these pre-marked trees and designate them for cutting.
4. Holder shall cut and deck all trees designated by the FS that are at least 8.0 inches in diameter at breast height.
5. Holder shall cut and deck timber according to the following specifications:
  - a. Minimum stump height is 10 inches.
  - b. Minimum log length is 12 feet.
  - c. Remove all tops to 6 inches in diameter inside bark.
  - d. Remove all limbs.
  - e. All logs shall be decked such that they can be accessed safely.
  - f. All logs shall be decked such that both ends of each log can be accessed for scaling.
  - g. Holder shall deck logs along the roadside in a manner conducive to loading into a log truck or other type of truck.
  - h. Holder shall remove all slash from the road prism and clear ditch lines of slash and other debris. Slash may be scattered in the adjacent forest, unless indicated otherwise in the easement, contract, permit, or other relevant documents.
  - i. Implement additional criteria set forth in the easement, contract, permit, or other relevant documents.
6. Wherever feasible, the Holder should secure (via locked gate or other method) log decks to prevent theft or vandalism until the timber is disposed of by the Forest Service.
7. If it is anticipated that Forest Service or public access will be limited, delayed, or prohibited after decking, such that a timber/firewood sale would be delayed to the extent that product value may be lost or a sale precluded, the logs should be moved and decked by the Holder in another location specified by the Forest Service that is reasonably close by. This is to reduce the risk of theft and to facilitate a prompt deck sale.

8. The Holder may be responsible for compensating the Forest Service for any losses in merchantability due to preventable sale delays.

# LOGGING PLAN MAP

**SALE NAME:** PYRAMID PEAK  
**AGREEMENT #:** 30-097938  
**TOWNSHIP(S):** T30R9W  
**TRUST(S):** Capitol Grant (7), Common School and Indemnity (3), University - Transferred (5)

**REGION:** Olympic Region  
**COUNTY(S):** Clallam  
**ELEVATION RGE:** 785-2785



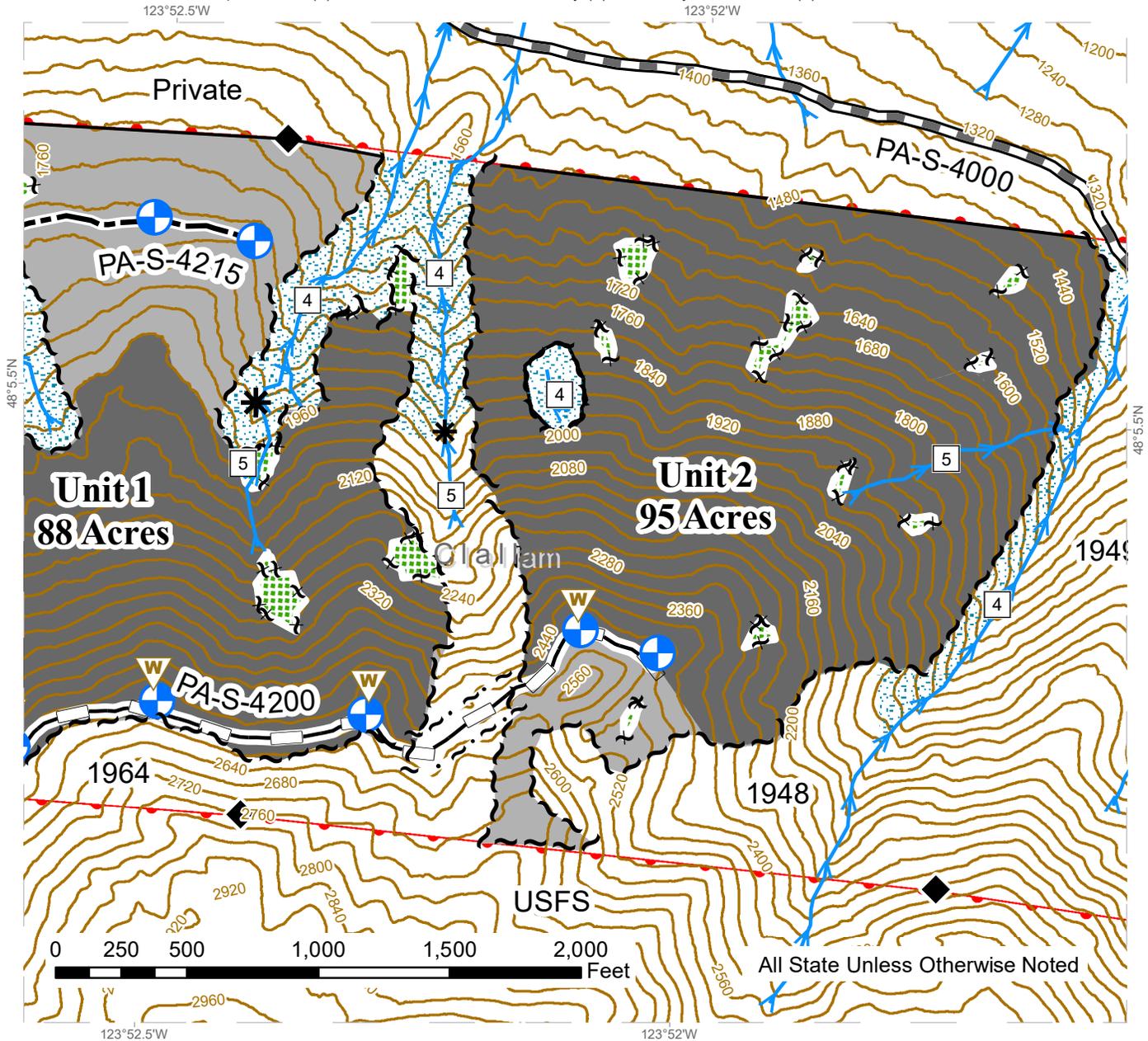
Public Land Survey Sections	Existing Roads	Landing
DNR Managed Lands	Required Pre-Haul Maintenance	Waste Area
Ground	Required Reconstruction	Streams
Cable	Optional Pre-Haul Maintenance	Stream Type
Leave Tree Area	Optional Construction	Stream Type Break
Riparian Mgt Zone	Optional Reconstruction	Survey Monument
	Sale Boundary Tags	
	Right of Way Tags	
	Timber Type Change	



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