



TIMBER NOTICE OF SALE

SALE NAME: LIZARD BREATH

AGREEMENT NO: 30-103773

AUCTION: December 13, 2023 starting at 10:00 a.m., COUNTY: Clallam
Olympic Region Office, Forks, WA

SALE LOCATION: Sale located approximately 10 miles Southwest of Clallam Bay, WA

PRODUCTS SOLD AND SALE AREA: All timber excluding downed red cedar, and trees marked with a band of blue paint or bounded out by leave tree area tags; bounded by timber sale boundary tags and the P-1730 road in Unit 1; timber sale boundary tags and timber type change in Units 2,6,7, & 19; bounded by timber sale boundary tags in Units 3 and 4; timber sale boundary tags, timber type change, and the P-1700 road in Unit 5; timber sale boundary tags, timber type change, and flag line in Unit 8; timber sale boundary tags and the P-1700 road in Unit 9.

All timber bounded by right of way boundary tags in Units 10-16 & Unit 18; right of way boundary tags and the P-1700 road in Unit 17.

All forest products above located on part(s) of Sections 10, 11, 14, 15, 16 and 22 all in Township 31 North, Range 13 West, W.M., containing 205 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BVC-SFIFM-018227)

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, Silver fir, Douglas fir, Red alder, Spruce, Redcedar, and Sale Total.

MINIMUM BID: \$90,000.00 BID METHOD: Sealed Bids

PERFORMANCE SECURITY: \$18,000.00 SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2026 ALLOCATION: Export Restricted

BID DEPOSIT: \$9,000.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Ground Based (30%) ,Uphill Cable Based (65%),Downhill Cable Based (5%) Forest products sold under this contract shall be harvested and removed using cable, cable-tethered, and ground based equipment. Cable-tethered equipment is limited to sustained slopes of 75 percent and less. Non-tethered self-leveling tracked equipment is limited to sustained slopes of 65 percent and less. Other ground based equipment is limited to tracked equipment on sustained slopes that are 45 percent and less. Rubber tire skidders



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allowed only if rutting and skidding requirements can be met and a harvest plan is submitted and approved by the Contract Administrator. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

Falling and Yarding will not be permitted from October 16 to March 31 unless authorized in writing by the Contract Administrator.

There is a 30' equipment limitation zone on all typed water unless approved by the Contract Administrator.

ROADS:

8.00 stations of required construction. 27.50 stations of required reconstruction. 1.25 stations of optional construction. 13.20 stations of optional reconstruction. 856.37 stations of required prehaul maintenance. 4.00 stations of optional prehaul maintenance. On portions (see road plan for locations) of the P-1734, RY-6200 east, RY-6220, P-1000, P-1700 any road work, timber falling and yarding, rock pit operations, or operation of heavy equipment performed during Marbled Murrelet nesting season (April 1 - Sept 23) is restricted to two hours after sunrise to two hours before sunset. This restriction does not apply to the haul of timber, rock, or equipment. Road activities, rock haul, and timber haul will not be permitted from October 16 to May 31. See Rayonier Road Use Permit for further restrictions.

ACREAGE DETERMINATION

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

FEES: \$83,810.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

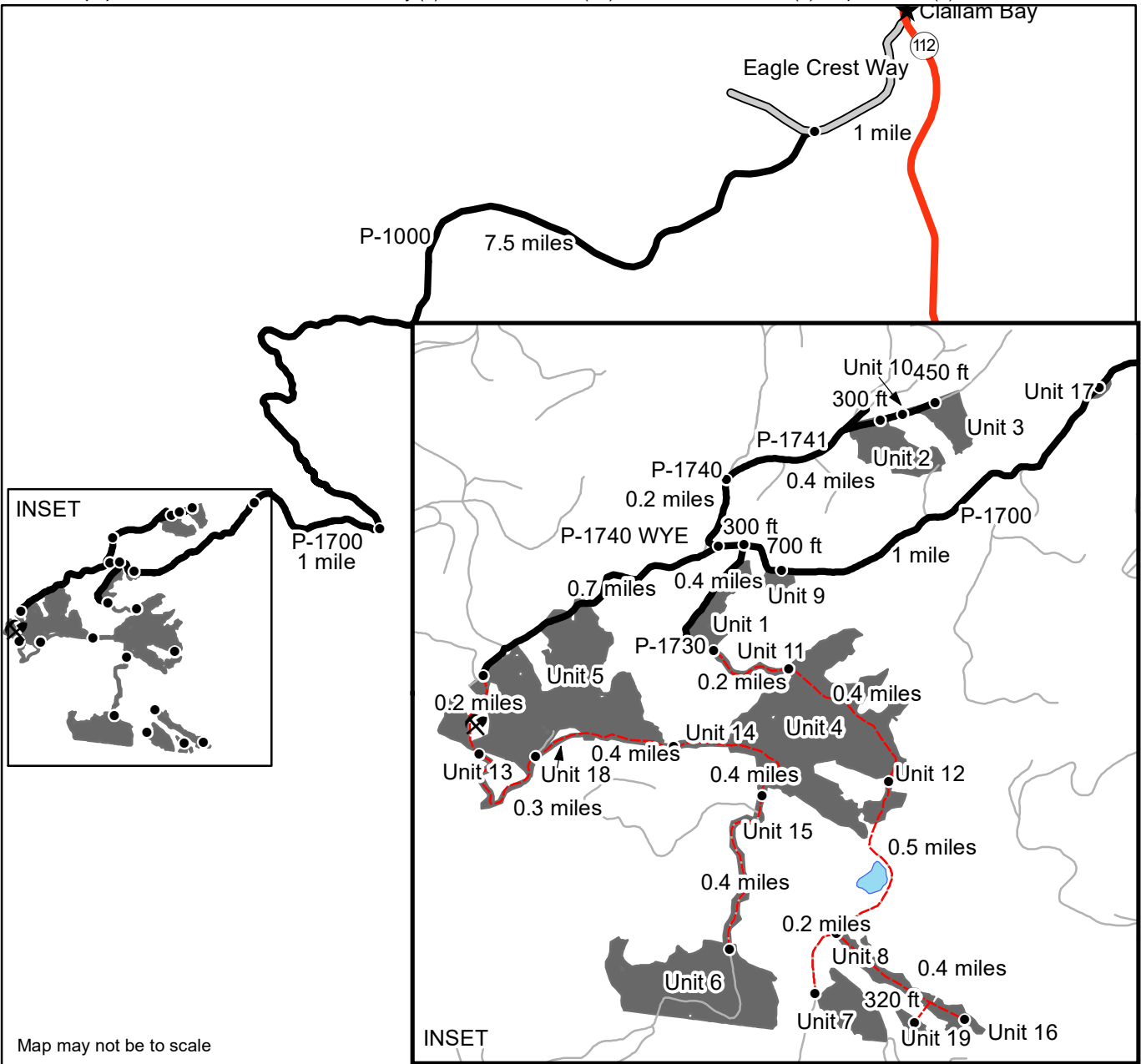
SPECIAL REMARKS: There is a locked gate located on the Mary Clark Pit road. Contact Olympic Region Dispatch center at 360-374-2800 to obtain an AA1 key.

Leave trees within "Leave Tree Area" shall not be traded without Forest Practices approval.

DRIVING MAP

SALE NAME: LIZARD BREATH
 AGREEMENT#: 30-103773
 TOWNSHIP(S): T31R13W
 TRUST(S): Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1), Capital Grant (7)

REGION: Olympic Region
 COUNTY(S): Clallam
 ELEVATION RGE: 540-1750'



Map may not be to scale

- Timber Sale Unit
- Haul Route
- Other Road
- Non-Driveable Route
- Distance Indicator
- X
 Lizard Pit

Units 9 and 17: From Hwy 112, turn southwest onto Eagle Crest Way and drive for 1 mile. Turn left onto P-1000 and drive for 7.5 miles. Turn right onto the P-1700 and proceed for 1 mile. Unit 17 will be on the left. From Unit 17, continue on the P-1700 for 1 mile, Unit 9 will be on the left.

Units 1, 4, 7, 8, 11, 12, 16, 19: From Unit 9, proceed 700 ft and turn left onto the P-1730, drive for 0.4 miles. Unit 1 is on the left. From Unit 1, walk to the end of the drivable road and arrive at Unit 11. Continue walking 0.2 miles and you will arrive at Unit 4. Continue walking for 0.4 miles and you will arrive at Unit 12. Continue for 0.5 miles and Unit 8 will be on the right. Walk to the east through unit 8 for 0.4 miles and arrive at Unit 16. Unit 19 is 320 ft SW of Unit 8. Walk 0.2 miles from Unit 8 and Unit 7 will be on the right.

Unit 2, 3, and 10: From the P-1700/P-1730 junction, proceed 300 ft to the P-1740 WYE and veer right onto the P-1740. Drive for 0.2 miles and veer to the left onto the P-1741. Continue for 0.4 miles, Unit 2 is on the right. Drive 300 ft and you are in Unit 10. Drive another 450 ft and Unit 3 will be on the right.

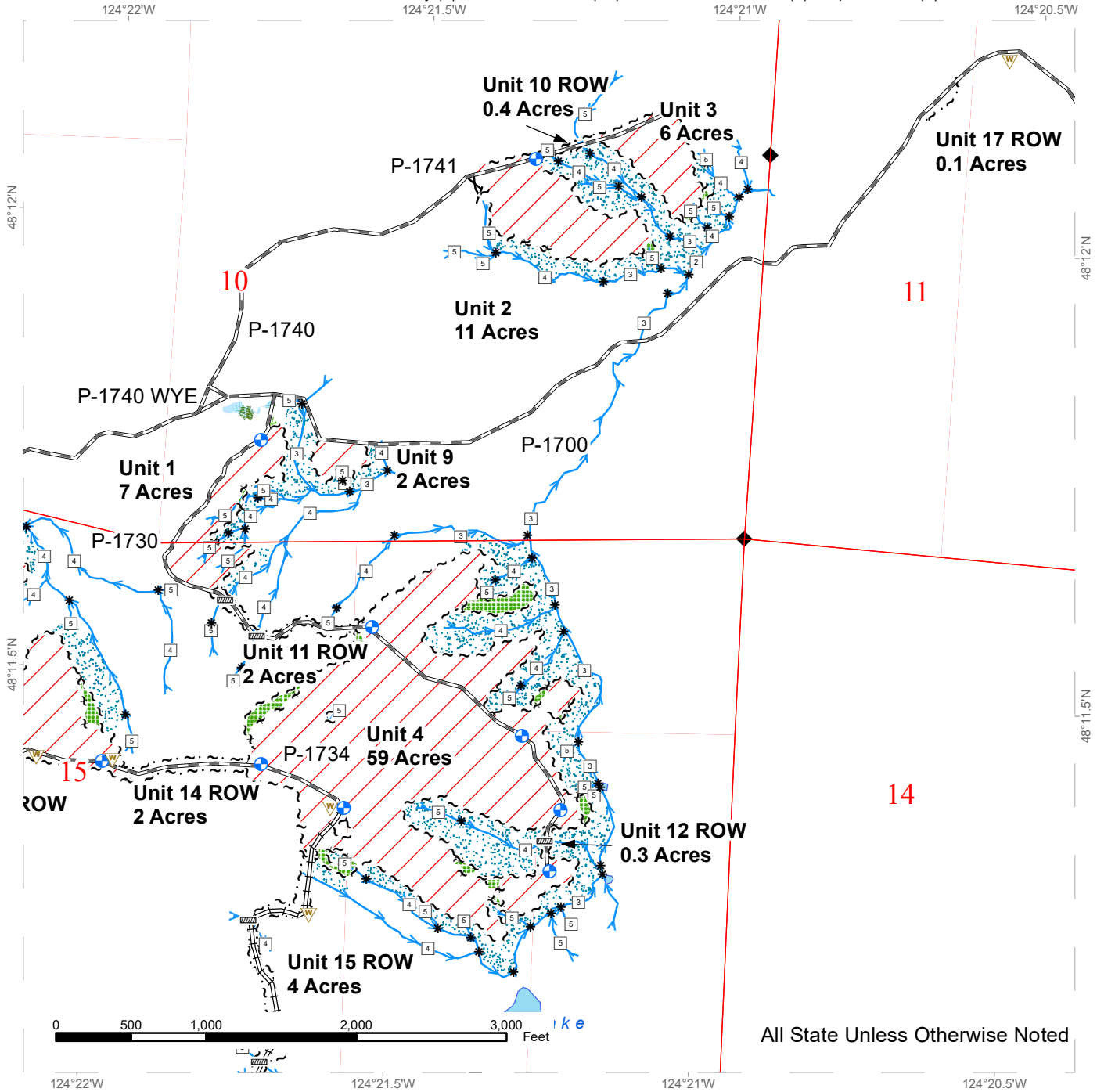
Units 5, 6, 13, 14, 15, 18 : From the P-1740 WYE, drive to the left 0.7 miles. Unit 5 will be on the left. Park and walk 0.2 miles, you have reached Unit 13. Continue walking for 0.3 miles to reach Unit 18. From Unit 18, walk 0.4 miles to reach Unit 14. From Unit 14, continue walking for 0.4 miles through Unit 4 to reach Unit 15. Continue walking through Unit 15 for 0.4 miles to reach Unit 6.



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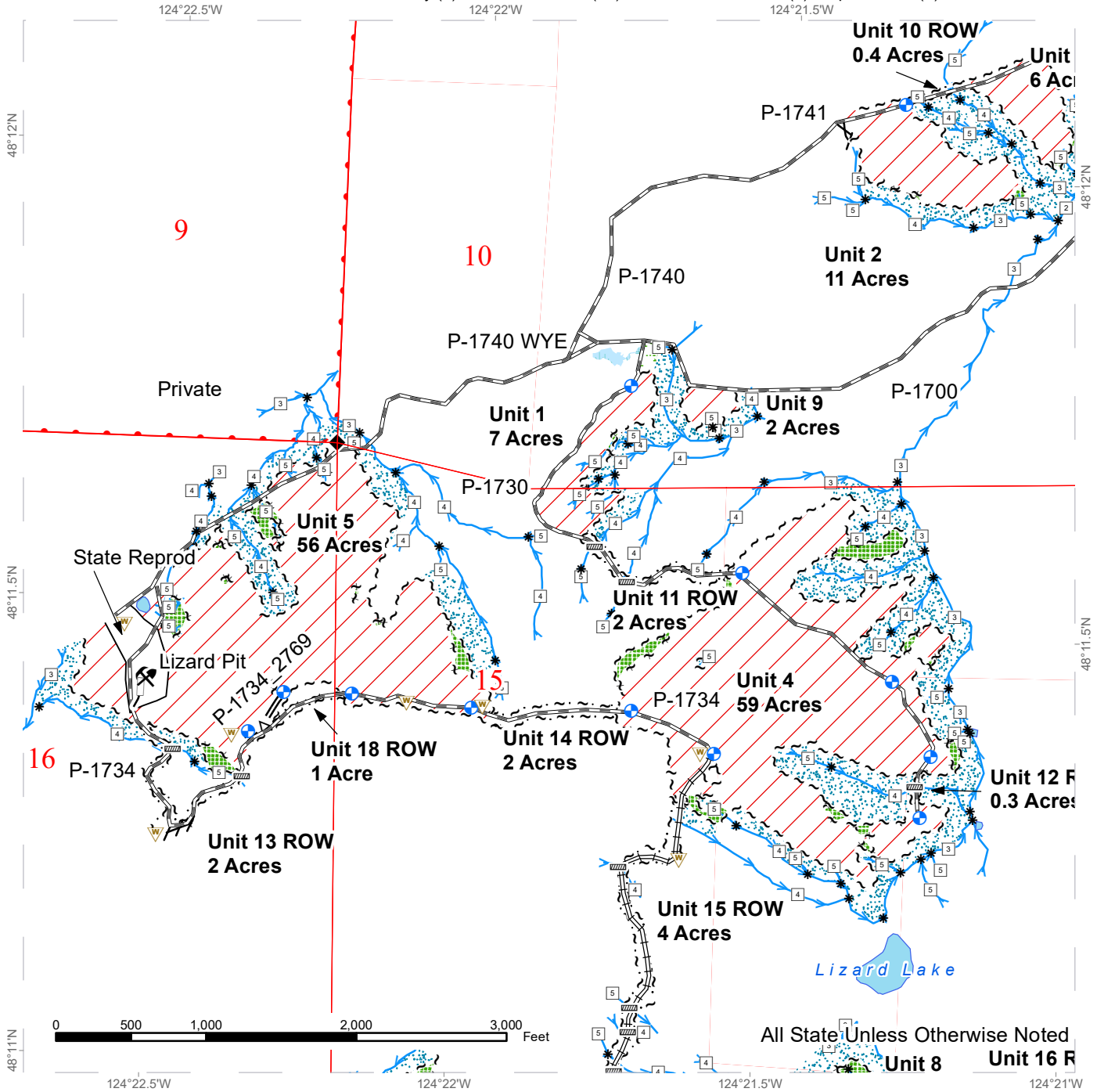
All State Unless Otherwise Noted

Wetland Management Zone	Variable Retention Harvest	Sale Boundary Tags	Survey Monument
Riparian Management Zone	Required Pre-Haul Maintenance	Leave Tree Tags	Culvert
Leave Tree Area	Required Construction	Right of Way Tags	Gate Installation
Forested Wetland	Required Reconstruction	Property Line	Landing - Proposed
DNR Managed Lands	Optional Construction	Flag Line	Lizard Pit
Public Land Survey Townships	Optional Reconstruction	Timber Type Change	Waste Area
Public Land Survey Sections	Streams	Stream Type	Stream Type Break

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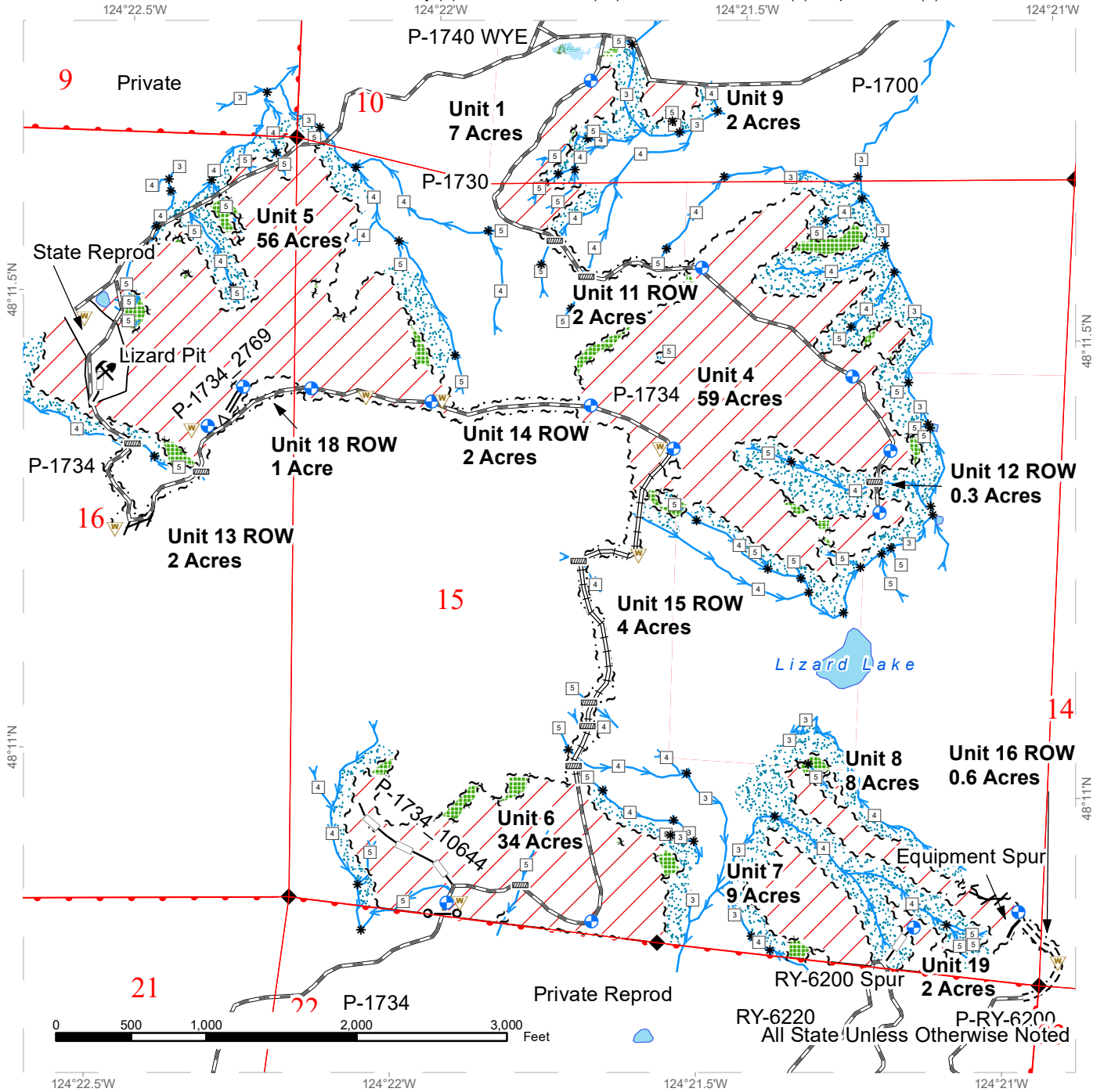
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**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-0103773

SALE NAME: LIZARD BREATH

**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 December 13, 2023 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 excluding downed red cedar, and trees marked with a band of blue paint or bounded out by leave tree area tags; bounded by timber sale boundary tags and the P-1730 road in Unit 1; timber sale boundary tags and timber type change in Units 2,6,7, & 19; bounded by timber sale boundary tags in Units 3 and 4; timber sale boundary tags, timber type change, and the P-1700 road in Unit 5; timber sale boundary tags, timber type change, and flag line in Unit 8; timber sale boundary tags and the P-1700 road in Unit 9.

All timber bounded by right of way boundary tags in Units 10-16 & Unit 18; right of way boundary tags and the P-1700 road in Unit 17.

All forest products above located on approximately 205 acres on part(s) of Sections 10, 11, 14, 15, 16, and 22 all in Township 31 North, Range 13 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 not eligible for removal under the terms of this contract.

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

G-020 Inspection By Purchaser

Purchaser hereby warrants to the State that they have had an opportunity to fully inspect the sale area and the forest products being sold. Purchaser further warrants to the State that they enter this contract based solely upon their own judgment of the value of the forest products, formed after their own examination and inspection of both the

timber sale area and the forest products being sold. Purchaser also warrants to the State that they enter this contract without any reliance upon the volume estimates, acreage estimates, appraisals, pre-bid documentation, or any other representations by the State Department of Natural Resources.

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Slash Piling Specifications
B	Green Tree Retention Plan

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2026.

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 \$1,226.00 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-061 Inadvertent Discovery of Cultural Resources

Purchaser acknowledges that cultural resources as defined in WAC 222-16-010 may exist within the timber sale area and that the existence and location of such resources may be unknown at the time this contract is executed. Purchaser has a duty to exercise due care in its operations and in the event any human skeletal remains are discovered by the Purchaser or the State during the course of operations Purchaser shall immediately halt operations and notify local law enforcement in the most expeditious manner possible then notifying the Contract Administrator. In the event cultural resources are discovered by the Purchaser or the State during the course of operations Purchaser shall immediately halt operations and notify the Contract Administrator. Any potential resources shall not be removed or disturbed. Purchaser shall resume operations as directed in writing by the Contract Administrator.

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 2022 Forest Management Standard under certificate number: BVC-SFIFM-018227.

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 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.

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.

Road is defined as the road bed, including but not limited to its component parts, such as cut and fill slopes, 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.

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 Operations

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; P-1000, P-1700, P-1730, P-1734, P-1741, P-1740, P-1740 Wye, P-1734_10644, P-1734_2769, RY-6220, RY-6200, RY-6200 East, P-RY-6200, Equipment Spur, Eagle Crest Way, Lizard Pit road, Mary Clark Pit access road. 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 RY-6220, RY-6200, RY-6200 East, P-1734 (Sta. 112+10-161+15), or P-1000 Roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

RUP # 55-404617 with Rayonier
Easement # 55-000050 with Rayonier
Easement # 55-2316 with Dept. of Corrections.

G-430 Open Fires

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

G-450 Encumbrances

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

DATA MISSING

Section P: Payments and Securities

P-011 Initial Deposit

Purchaser paid DATA MISSING initial deposit, which will be maintained pursuant to RCW 79.15.100(3). If the operating authority on this contract expires without Purchaser's payment of the full amount specified in Clause P-020, the initial deposit will be immediately forfeited to the State, and will be offset against Purchaser's remaining balance due. Any excess initial deposit funds not needed to ensure full payment of the contract price, or not needed to complete any remaining obligations of the Purchaser existing after contract expiration, will be refunded to the Purchaser.

P-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of \$127,208.00. The total contract price consists of a \$0.00 contract bid price plus \$127,208.00 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 \$18,000.00. 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-001 Operations Outside the Sale Boundaries

No operations shall occur outside the sale boundaries, as described within the contract, unless approved in writing by the State.

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from October 16 to March 31 in all units 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 'Unauthorized Activity' clause. Purchaser is required to leave all cut or damaged reserve trees on site.

H-017 Preventing Excessive Soil Disturbance

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

H-018 Temporary Stream Crossings

A temporary stream crossing is required to access portions of units.

Purchaser shall comply with the following during the yarding operation:

- a. Adhere to the approved Hydraulic Permit Application (HPA) or Forest Practice Application (FPA) with approved hydraulic project work, if required,

amend a current FPA or obtain a new FPA prior to commencing any new stream crossing construction.

- b. Location of the temporary stream crossing must be approved by the Contract Administrator.
- c. A temporary stream crossing shall not exceed 12 feet in width, including rub trees.
- d. Purchaser shall suspend operations during periods of wet weather when a high potential for sediment delivery into typed waters may occur.
- e. Temporary stream crossings shall be removed at the time of completion of yarding as 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-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for utilizing rubber tire skidders in the sale area. The plan shall address the location and timing of desired use, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-051 Branding and Painting

Purchaser shall provide a State of Washington registered log brand, acceptable to the State, unless the State agrees to furnish the brand. All purchased timber shall be branded in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

For pulp loads purchased under a contract designated as export restricted, Purchaser shall brand at least 3 logs with legible brands at one end. Also, 10 logs shall be painted at one end with durable red paint.

H-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable, cable-tethered, and ground based equipment. Cable-tethered equipment is limited to sustained slopes of 75 percent and less. Non-tethered self-leveling tracked equipment is limited to sustained slopes of 65 percent and less. Other ground based equipment is limited to tracked equipment on sustained slopes that are 45 percent and less. Rubber tire skidders allowed only if rutting and skidding requirements can be met and a harvest plan is submitted and approved by the Contract Administrator. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-130 Hauling Schedule

The hauling of forest products will not be permitted on all roads from October 16 to May 31 unless authorized in writing by the Contract Administrator. See Rayonier Road Use Permit for Further restrictions.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. Purchaser shall immediately repair all gate damage resulting from operations to an equal or better condition than existed at the time of the sale.
2. While felling timber warning signs must be posted on the P-1700, RY-6200, RY-6200 Spur, and RY-6220 road(s).
3. Yarding equipment shall not cross live streams without an FPHP.
4. Purchaser shall fully suspend logs over streams during logging operations.
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 P-1000 (stations 158+00 to 178+70) and P-1700 (stations 41+10 to 50+75) roads timber felling, road work or operation of heavy equipment performed during the marbled murrelet nesting season (April 1 through September 23), is restricted to, two hours after sunrise to two hours before sunset. This does not apply to hauling 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 1/23/2023 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on all roads listed in the Road Plan, authorized in clause G-310, and are not listed in clause C-060. All work shall be completed to the specifications detailed in the Road Plan. 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 Mary Clark Pit road, P-1000 MP 0.00 to MP 6.34, P-1734 (stations 112+10 to 161+15), RY-6200 East, and RY-6220. 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-140 Water Bars

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

Section S: Site Preparation and Protection

S-001 Emergency Response Plan

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

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

S-010 Fire Hazardous Conditions

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

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

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

Slash or debris which enters typed waters 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 all live 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 or other releases of hazardous material/waste during operations conducted under this contract.

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 covered in part a., the Purchaser is responsible for immediately notifying all the following:

- Department of Emergency Management at 1-800-258-5990
- National Response Center at 1-800-424-8802
- Appropriate Department of Ecology (ECY) at 1-800-645-7911
- DNR Contract Administrator

S-131 Refuse Disposal

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

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

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

D-041 Reserve Tree Excessive Damage

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

SIGNATURES

This agreement may be executed in any number of counterparts (including by electronic mail in portable document format (.pdf), or by facsimile) each of which shall be deemed an original but all of which, when taken together, shall constitute one and the same Agreement binding on all parties.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Jill DeCianne, Acting
Olympic Region Manager

Print Name

Date: _____

Date: _____

Address: _____

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

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____

Schedule A
Slash Piling Specifications

The 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 burnable material shall be well scattered.
- C. Piles shall not be placed on large stumps or 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, irrigation ditches, natural drainage channels, and access roads concurrent with yarding.
- G. Slash may be placed in skid roads or ahead of machinery. Slash which accumulates on landings and/or roads may be lopped and scattered within the harvest area or as designated by the Contract Administrator.
- H. 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.
- I. Purchaser may remove slash as biofuel.

Schedule B
Green Tree Retention Plan

Leave the following as directed by the Contract Administrator:

1. All trees marked with a blue band of paint and all leave tree area clumps shall remain standing.

The perimeter of the leave tree clumps are designated by Leave Tree Area tags. The tags face outward from the leave tree clumps.

2. Leave trees within "Leave Tree Area" shall not be traded without Forest Practices approval.

Unit #	# of Individually Marked Trees	# of Clumps	# of Trees Clumped	Total # of Leave Trees
1	32	2	36	68
2	70	2	25	95
3	6	2	43	49
4	52	11	531	583
5	86	10	432	518
6	47	6	244	291
7	12	1	64	76
8	3	1	82	85
9	12	0	0	12



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 1/17)

**State of Washington
Department of Natural Resources
Timber Bill of Sale Extension Charges**

Extension Per Acre Charge Worksheet

Agreement No.:

Sale Name:

Region:

Sale Method:

Harvest Type:

Geographic Area:

Site Class (westside only):

- 1. Growth Loss
 - 2. Additional Growth
 - 3. Loss thru Disrupt.
- Per Acre Charge**

Westside PC/Thin		Westside Evenage		Eastside PC/Thin		Eastside Evenage	
scale	lump	scale	lump	scale	lump	scale	lump
			29.00				
			1140.11				
			57.01				
\$0.00	\$0.00	\$0.00	\$1,226.11	\$0.00	\$0.00	\$0.00	\$0.00

Total Per Acre Charge:

This figure to be Input into the G-050 or G051 clause.

PRE-CRUISE NARRATIVE

Sale Name: Lizard Breath	Region: Olympic
Agreement #: 30-103773	District: Coast
Contact Forester: Cody Pagel Phone / Location: 360-640-9996	County(s): Choose a county, Clallam
Alternate Contact: Haley Weir Phone / Location: 360-640-3308	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Ground based Uphill Cable Downhill Cable	30% Ground based 65% Uphill 5% Downhill

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/WMZ Acres	Leave Tree Acres	Existing Road Acres	Wetland Acres		
1	Sec 10 & 15 T31 R13W	01	12	4.4	0.2	0	0.4	7	GPS (Garmin)
2	Sec 10 T31 R13W	01	29.6	8	0.3	0.3	0	11	GPS (Garmin)
3	Sec 10 T31 R13W	01	12.1	5.5	0.2	0.4	0	6	GPS (Garmin)
4	Sec 15 T31 R13W	01	101	29	4	5	0	63	GPS (Garmin)
5	Sec 15 & 16 T31 R13W	01, 03, 10	78	17	3	2	0	56	GPS (Garmin)
6	Sec 15 T31 R13W	01	45.5	7	2	2.5	0	34	GPS (Garmin)
7	Sec 15 T31 R13W	01	15.4	6	0.4	0	0	9	GPS (Garmin)
8	Sec 15 T31 R13W	01	26.5	14	0.5	0	0	12	GPS (Garmin)
9	Sec 10 T31 R13W	01	5	3	0	0	0	2	GPS (Garmin)
10 ROW	Sec 10 T31 R13W	01	0.4	0	0	0	0	0.4	GPS (Garmin)
11 ROW	Sec 15 T31 R13W	01	2	0	0	0	0	2	GPS (Garmin)

12 ROW	Sec 15 T31 R13W	01	0.3	0	0	0	0	0.3	GPS (Garmin)
13 ROW	Sec 16 T31 R13W	03	2	0	0	0	0	2	GPS (Garmin)
14 ROW	Sec 15 T31 R13W	01	2	0	0	0	0	2	GPS (Garmin)
15 ROW	Sec 15 T31 R13W	01	4	0	0	0	0	4	GPS (Garmin)
16 ROW	Sec 15 & 14 T31 R13W	01	0.4	0	0	0	0	0.4	GPS (Garm)
17 ROW	Sec 11 T31 R13W	07	0.1	0	0	0	0	0.1	GPS (Garmin)
18 ROW	Sec 15 & 16 T31 R13W	01, 03	1	0	0	0	0	1	
TOTAL ACRES			327.3	93.5	10.6	10.2	0.4	212.2	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint; or the FR-P-1730 <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint.		Scattered LT's: 32 Clumped LT's: 36 Total LT's: 68
2 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint; or pink flagging <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint.		Scattered LT's: 70 Clumped LT's: 25 Total LT's: 95
3 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint.		Scattered LT's: 6 Clumped LT's: 43 Total LT's: 49
4 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink		Scattered LT's: 52 Clumped LT's: 531

	flagging, pink flashers and blue paint; or timber type change <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint		Total LT's: 583
5 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint; or timber type change; or the FR-P-1700 <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint.		Scattered LT's: 86 Clumped LT's: 432 Total LT's: 518
6 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint; or timber type change <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint.		Scattered LT's: 47 Clumped LT's: 244 Total LT's: 291
7 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint; Or timber type change <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint.		Scattered LT's: 12 Clumped LT's: 64 Total LT's: 76
8 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint; Or timber type change <u>Leave Tree Areas</u> are marked with yellow Leave Tree Area Tags, pink flagging, pink flashers, blue paint.		Scattered LT's: 6 Clumped LT's: 111 Total LT's: 117
9 VRH	<u>Unit Boundaries</u> are marked with white Timber Sale Boundary tags, pink flagging, pink flashers and blue paint; Or timber type change; or FR-P-1700		Scattered LT's: 12 Clumped LT's: 0 Total LT's: 12
10 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		
11 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		
12 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		

13 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		
14 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		
15 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		
16 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		
17 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		
18 ROW	<u>Unit Boundaries</u> are marked with Orange Timber Sale boundary tags, pink flagging, pink flashers, blue paint.		

OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	185	Access via FR-P-1730	
2	273	Access via FR-P-1741	
3	149	Access via FR-P-1741	
4	1642	Access via FR-P-1730, park at end of road and walk in	
5	1510	Access via FR-P-1700	
6	907	Access via OL-RY-6200, then FR-P-1734	
7	223	Access via OL-RY-6200, then OL-RY-6220	
8	266	Access via OL-RY-6200, then OL-RY-6220	
9	40	Access via FR-P-1734 from OL-RY-6200	
10 ROW	4	Access via FR-P-1741	
11 ROW	16	Access via FR-P-1730	
12 ROW	1.5	Access via FR-P-1730, park at end of road and walk in	
13 ROW	19	Access via FR-P-1700, park at end of road and walk in	

14 ROW	16	Access via FR-P-1700, park at end of road and walk in	
15 ROW	42	Access via walking FR-P-1734 through Unit 6	
16 ROW	4	Access via OL-RY-6220	
17 ROW	0.8	Access via FR-P-1700	
18 ROW	10	Access via Unit 5	
TOTAL MBF	5300		

REMARKS:

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Prepared By:	Title:	CC:
Date:		

Timber Sale Cruise Report Lizard Breath

Sale Name: LIZARD BREATH

Sale Type: LUMP SUM

Region: OLYMPIC

District: OZETTE

Lead Cruiser: Kevin Peterson

Other Cruisers:

Cruise Narrative:

Location:

This sale is located on the P-1000 road system. Units 1-5 are accessed via Clallam Bay. Units 6-9 are accessed via West Lake Pleasant Rd.

Cruise Design:

I used a 54.44/40 BAF combo on all units. The 40 was used for RA and RC.

I cruised all logs in 40' lengths. Merch top was determined at 40% of the diameter at 16'.

Timber Quality:

This sale is mostly pretty clean 50 year old WH with some DF and SF mixed throughout the sale. Unit 6 contains the most DF.

Common defects were sweep and forked tops. I found some frost cracks in the the SF near the ridge lines.

Logging and Stand Conditions:

This sale is 30% ground based harvest, 65% uphill cable harvest and 5% downhill cable harvest. All the units are pretty bush free except unit 6

Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	14.6	6.0		3,029	738	1,634	630	28
SF	17.2	6.0		810	316	337	114	43
DF	17.7	6.0		753	280	355	111	7
RA	12.3			86		15	72	
SS	18.6			83	25	46	12	
RC	13.7			61		25	36	
ALL	15.3	6.0		4,822	1,359	2,412	976	77

Timber Sale Notice Weight (tons)

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
WH	34,805	8,131	18,812	7,448	413
SF	8,485	3,369	3,501	1,293	322

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	7,656	2,710	3,662	1,215	69
RA	986		153	832	
SS	813	242	454	117	
RC	688		311	377	
ALL	53,432	14,453	26,893	11,282	804

Timber Sale Overall Cruise Statistics

BA (sq ft/acre)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR SE (%)	Net Vol (bf/acre)	Vol SE (%)
268.8	2.2	87.6	1.4	23,599	2.7

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
LIZARD BREATH U1	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	7.4	7.4	4	4	0
LIZARD BREATH U2	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	10.7	11.0	6	4	0
LIZARD BREATH U3	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	5.3	6.0	3	3	0
LIZARD BREATH U4	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	59.0	65.8	31	14	0
LIZARD BREATH U5	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	56.3	58.4	29	13	0
LIZARD BREATH U6	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	34.1	36.4	18	9	0
LIZARD BREATH U7	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	8.9	8.9	4	4	0
LIZARD BREATH U8	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	7.6	11.8	6	3	0
LIZARD BREATH U9	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	1.6	1.6	1	1	0

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
LIZARD BREATH U10	B2C: VR, 2 BAF (20, 20 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	0.4	0.4	1	1	0
LIZARD BREATH U11	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.5	1.6	1	1	0
LIZARD BREATH U12	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	0.3	0.3	1	1	0
LIZARD BREATH U13	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.9	2.1	1	1	0
LIZARD BREATH U14	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.5	1.6	1	1	0
LIZARD BREATH U15	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	4.2	4.2	2	2	0
LIZARD BREATH U16	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	0.6	0.6	1	1	0
LIZARD BREATH U17	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	0.1	0.6	1	1	0
LIZARD BREATH U18	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.0	0.7	1	1	0
LIZARD BREATH U19	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	2.0		2	2	0
All		204.4	219.4	114	67	0

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	13.6	40	1,479	1,371	7.3	2,710.4	280.3
DF	LIVE	3 SAW	Domestic	9.0	38	1,857	1,736	6.5	3,661.6	354.8
DF	LIVE	4 SAW	Domestic	5.4	28	573	545	5.0	1,215.0	111.4
DF	LIVE	UTILITY	Pulp	6.0	18	32	32	0.0	68.8	6.6
RA	LIVE	3 SAW	Domestic	10.9	40	80	72	10.5	153.3	14.7
RA	LIVE	4 SAW	Domestic	6.0	33	374	351	6.2	832.4	71.7
RC	LIVE	3 SAW	Domestic	9.6	36	151	124	17.7	311.1	25.4
RC	LIVE	4 SAW	Domestic	5.6	26	180	176	2.0	376.7	36.0
SF	LIVE	2 SAW	Domestic	13.6	40	1,843	1,547	16.1	3,369.3	316.1
SF	LIVE	3 SAW	Domestic	8.3	38	1,713	1,649	3.7	3,500.8	337.0
SF	LIVE	4 SAW	Domestic	5.6	27	570	556	2.3	1,292.8	113.7
SF	LIVE	UTILITY	Pulp	15.0	40	210	210	0.0	322.0	42.9
SS	LIVE	2 SAW	Domestic	13.3	40	127	123	3.3	242.1	25.1
SS	LIVE	3 SAW	Domestic	10.6	40	250	224	10.3	454.1	45.8

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
SS	LIVE	4 SAW	Domestic	6.2	22	61	61	0.0	116.9	12.5
WH	LIVE	2 SAW	Domestic	13.1	40	3,872	3,609	6.8	8,130.9	737.6
WH	LIVE	3 SAW	Domestic	8.1	39	8,298	7,994	3.7	18,812.2	1,633.9
WH	LIVE	4 SAW	Domestic	5.5	28	3,099	3,083	0.5	7,448.3	630.2
WH	LIVE	UTILITY	Pulp	5.5	40	136	136	0.0	413.2	27.8

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 8	LIVE	Domestic	5.8	33	957	3.4	2,115.3	195.6
DF	5 - 8	LIVE	Pulp	6.0	18	32	0.0	68.8	6.6
DF	9 - 11	LIVE	Domestic	10.2	39	1,208	7.7	2,513.9	247.0
DF	12 - 14	LIVE	Domestic	13.3	39	1,487	7.7	2,957.9	304.0
RA	5 - 8	LIVE	Domestic	5.5	34	351	6.2	832.4	71.7
RA	9 - 11	LIVE	Domestic	10.9	40	72	10.5	153.3	14.7
RC	5 - 8	LIVE	Domestic	5.7	26	227	1.6	485.4	46.4
RC	9 - 11	LIVE	Domestic	10.8	36	73	26.7	202.3	14.9
SF	5 - 8	LIVE	Domestic	6.3	31	1,455	1.6	3,244.7	297.3
SF	9 - 11	LIVE	Domestic	10.3	40	751	6.7	1,549.0	153.5
SF	12 - 14	LIVE	Domestic	13.0	40	1,161	6.2	2,403.7	237.2
SF	15 - 19	LIVE	Pulp	15.0	40	210	0.0	322.0	42.9
SF	15 - 19	LIVE	Domestic	15.5	40	386	36.2	965.7	78.9
SS	5 - 8	LIVE	Domestic	5.8	22	61	0.0	116.9	12.5
SS	9 - 11	LIVE	Domestic	10.2	40	224	10.3	454.1	45.8
SS	12 - 14	LIVE	Domestic	13.3	40	123	3.3	242.1	25.1
WH	5 - 8	LIVE	Pulp	5.5	40	136	0.0	413.2	27.8
WH	5 - 8	LIVE	Domestic	6.1	32	7,782	1.3	18,816.5	1,590.7
WH	9 - 11	LIVE	Domestic	10.3	40	3,295	6.1	7,444.0	673.5
WH	12 - 14	LIVE	Domestic	12.9	40	3,393	5.8	7,633.5	693.6
WH	15 - 19	LIVE	Domestic	16.8	40	215	20.0	497.4	44.0

Cruise Unit Report LIZARD BREATH U1

Unit Sale Notice Volume (MBF): LIZARD BREATH U1

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	14.0			112	10	80	22
DF	20.9			19	8	7	3
RA	9.5			18			18
SF	18.0			8		6	2
ALL	13.3			157	18	94	45

Unit Cruise Design: LIZARD BREATH U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	7.4	7.4	4	4	0

Unit Cruise Summary: LIZARD BREATH U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	12	12	3.0	0
DF	2	2	0.5	0
RA	4	4	1.0	0
SF	1	1	0.3	0
ALL	19	19	4.8	0

Unit Cruise Statistics: LIZARD BREATH U1

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	163.3	54.4	27.2	93.0	12.7	3.7	15,182	55.9	27.5
DF	27.2	200.0	100.0	92.7	5.9	4.1	2,525	200.1	100.1
RA	40.0	200.0	100.0	62.1	14.4	7.2	2,482	200.5	100.3
SF	13.6	200.0	100.0	77.0	0.0	0.0	1,048	200.0	100.0
ALL	244.2	29.0	14.5	87.0	18.9	4.3	21,236	34.6	15.1

Unit Summary: LIZARD BREATH U1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	2	ALL	20.9	70	87	2,761	2,525	8.5	11.4	27.2	6.0	18.7
RA	LIVE	CUT	4	ALL	9.5	40	47	2,631	2,482	5.7	81.3	40.0	13.0	18.4
SF	LIVE	CUT	1	ALL	18.0	69	87	1,402	1,048	25.3	7.7	13.6	3.2	7.8
WH	LIVE	CUT	12	ALL	14.0	61	75	15,770	15,182	3.7	152.8	163.3	43.6	112.3
ALL	LIVE	CUT	19	ALL	13.3	55	67	22,563	21,236	5.9	253.2	244.2	65.8	157.1
ALL	ALL	ALL	19	ALL	13.3	55	67	22,563	21,236	5.9	253.2	244.2	65.8	157.1

Cruise Unit Report LIZARD BREATH U2

Unit Sale Notice Volume (MBF): LIZARD BREATH U2

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	13.1			193	11	136	45
DF	20.0			30	26		4
SS	16.0			17		14	3
RA	11.5			7			7
RC	10.5			6			6
ALL	13.0			253	38	151	65

Unit Cruise Design: LIZARD BREATH U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	10.7	11.0	6	4	0

Unit Cruise Summary: LIZARD BREATH U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	15	22	3.7	0
DF	1	3	0.5	0
SS	1	2	0.3	0
RA	2	2	0.3	0
RC	2	2	0.3	0
ALL	21	31	5.2	0

Unit Cruise Statistics: LIZARD BREATH U2

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	199.6	37.3	15.2	90.2	10.3	2.7	18,002	38.7	15.4
DF	27.2	167.3	68.3	104.0	0.0	0.0	2,832	167.3	68.3
SS	18.1	154.9	63.2	89.5	0.0	0.0	1,625	154.9	63.2
RA	13.3	244.9	100.0	49.8	0.5	0.3	664	244.9	100.0
RC	13.3	154.9	63.2	40.5	6.9	4.8	540	155.1	63.4
ALL	271.6	13.0	5.3	87.1	23.4	5.1	23,662	26.7	7.4

Unit Summary: LIZARD BREATH U2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	20.0	71	89	2,894	2,832	2.2	12.5	27.2	6.1	30.3
RA	LIVE	CUT	2	ALL	11.5	43	52	739	664	10.1	18.5	13.3	3.9	7.1
RC	LIVE	CUT	2	ALL	10.5	27	31	540	540	0.0	22.2	13.3	4.1	5.8
SS	LIVE	CUT	1	ALL	16.0	62	77	1,781	1,625	8.8	13.0	18.1	4.5	17.4
WH	LIVE	CUT	15	ALL	13.1	57	70	18,633	18,002	3.4	213.3	199.6	55.2	192.6
ALL	LIVE	CUT	21	ALL	13.4	54	67	24,586	23,662	3.8	279.5	271.6	73.8	253.2
ALL	ALL	ALL	21	ALL	13.4	54	67	24,586	23,662	3.8	279.5	271.6	73.8	253.2

Cruise Unit Report LIZARD BREATH U3

Unit Sale Notice Volume (MBF): LIZARD BREATH U3

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	13.0			112	8	76	29
SS	16.0			9		7	1
RC	10.0			3			3
ALL	12.9			124	8	83	33

Unit Cruise Design: LIZARD BREATH U3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	5.3	6.0	3	3	0

Unit Cruise Summary: LIZARD BREATH U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	13	13	4.3	0
SS	1	1	0.3	0
RC	1	1	0.3	0
ALL	15	15	5.0	0

Unit Cruise Statistics: LIZARD BREATH U3

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	235.9	35.3	20.4	89.8	9.6	2.7	21,193	36.5	20.5
SS	18.1	173.2	100.0	89.5	0.0	0.0	1,625	173.2	100.0
RC	13.3	173.2	100.0	38.5	0.0	0.0	513	173.2	100.0
ALL	267.4	20.6	11.9	87.3	17.7	4.6	23,331	27.2	12.7

Unit Summary: LIZARD BREATH U3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RC	LIVE	CUT	1	ALL	10.0	24	27	513	513	0.0	24.4	13.3	4.2	2.7
SS	LIVE	CUT	1	ALL	16.0	62	77	1,781	1,625	8.8	13.0	18.1	4.5	8.6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	13	ALL	13.0	56	69	21,869	21,193	3.1	255.9	235.9	65.4	112.3
ALL	LIVE	CUT	15	ALL	12.9	54	66	24,163	23,331	3.4	293.3	267.4	74.2	123.7
ALL	ALL	ALL	15	ALL	12.9	54	66	24,163	23,331	3.4	293.3	267.4	74.2	123.7

Cruise Unit Report LIZARD BREATH U4

Unit Sale Notice Volume (MBF): LIZARD BREATH U4

Sp	DBH	Rings/In	Age	MBF Volume by Grade				Utility
				All	2 Saw	3 Saw	4 Saw	
WH	15.6	6.0		863	300	395	155	14
SF	17.2	6.0		388	149	164	53	21
DF	19.0			182	70	93	16	3
SS	20.3			28	16	8	4	
RC	14.4			18		9	9	
RA	12.9			11			11	
ALL	16.3	6.0		1,491	535	669	248	38

Unit Cruise Design: LIZARD BREATH U4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	59.0	65.8	31	14	0

Unit Cruise Summary: LIZARD BREATH U4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	39	93	3.0	1
SF	22	40	1.3	1
DF	7	19	0.6	0
SS	3	3	0.1	0
RC	5	6	0.2	0
RA	2	3	0.1	0
ALL	78	164	5.3	2

Unit Cruise Statistics: LIZARD BREATH U4

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	163.3	62.1	11.1	89.5	26.5	4.2	14,625	67.5	11.9
SF	70.2	134.5	24.2	93.7	20.4	4.3	6,579	136.1	24.5
DF	33.4	161.4	29.0	92.5	17.9	6.8	3,086	162.4	29.8
SS	5.3	310.6	55.8	91.0	4.7	2.7	480	310.6	55.8
RC	7.7	246.7	44.3	39.7	34.4	15.4	308	249.1	46.9

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RA	3.9	310.6	55.8	49.5	32.3	22.8	192	312.2	60.3
ALL	283.8	26.2	4.7	89.0	27.8	3.1	25,269	38.2	5.7

Unit Summary: LIZARD BREATH U4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	7	ALL	19.0	66	83	3,344	3,086	7.7	16.9	33.4	7.7	182.1
RA	LIVE	CUT	2	ALL	12.9	43	51	204	192	6.2	4.3	3.9	1.1	11.3
RC	LIVE	CUT	5	ALL	14.4	35	42	334	308	7.8	6.8	7.7	2.0	18.1
SF	LIVE	CUT	22	ALL	17.2	63	79	7,173	6,579	8.3	43.5	70.2	16.9	388.2
SS	LIVE	CUT	3	ALL	20.3	65	82	510	480	6.0	2.3	5.3	1.2	28.3
WH	LIVE	CUT	39	ALL	15.6	59	73	15,250	14,625	4.1	123.0	163.3	41.4	862.9
ALL	LIVE	CUT	78	ALL	16.3	60	74	26,815	25,269	5.8	196.8	283.8	70.2	1,490.9
ALL	ALL	ALL	78	ALL	16.3	60	74	26,815	25,269	5.8	196.8	283.8	70.2	1,490.9

Cruise Unit Report LIZARD BREATH U5

Unit Sale Notice Volume (MBF): LIZARD BREATH U5

Sp	DBH	Rings/In	Age	MBF Volume by Grade				Utility
				All	2 Saw	3 Saw	4 Saw	
WH	15.5	6.0		847	316	364	154	14
SF	17.1	6.0		376	151	151	52	22
DF	19.0			186	71	95	16	3
SS	20.0			20	9	8	3	
RC	14.4			19		9	9	
RA	12.9			12			12	
ALL	16.2	6.0		1,459	547	627	246	39

Unit Cruise Design: LIZARD BREATH U5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	56.3	58.4	29	13	0

Unit Cruise Summary: LIZARD BREATH U5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	37	91	3.1	1
SF	21	38	1.3	1
DF	7	19	0.7	0
SS	2	2	0.1	0
RC	5	6	0.2	0
RA	2	3	0.1	0
ALL	74	159	5.5	2

Unit Cruise Statistics: LIZARD BREATH U5

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	170.8	58.2	10.8	88.1	26.6	4.4	15,045	64.0	11.7
SF	71.3	137.0	25.4	93.7	20.9	4.6	6,685	138.6	25.8
DF	35.7	154.1	28.6	92.6	17.7	6.7	3,302	155.1	29.4
SS	3.8	373.9	69.4	93.3	2.5	1.8	350	373.9	69.5
RC	8.3	237.5	44.1	39.7	34.4	15.4	329	239.9	46.7

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RA	4.1	299.6	55.6	49.5	32.3	22.8	205	301.3	60.1
ALL	294.0	24.1	4.5	88.1	28.3	3.3	25,916	37.2	5.6

Unit Summary: LIZARD BREATH U5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	7	ALL	19.0	66	83	3,577	3,302	7.7	18.1	35.7	8.2	185.9
RA	LIVE	CUT	2	ALL	12.9	43	51	218	205	6.2	4.6	4.1	1.2	11.5
RC	LIVE	CUT	5	ALL	14.4	35	42	357	329	7.8	7.3	8.3	2.2	18.5
SF	LIVE	CUT	21	ALL	17.1	63	79	7,316	6,685	8.6	44.7	71.3	17.3	376.4
SS	LIVE	CUT	2	ALL	20.0	64	80	367	350	4.6	1.7	3.8	0.8	19.7
WH	LIVE	CUT	37	ALL	15.5	59	72	15,734	15,045	4.4	130.4	170.8	43.4	847.0
ALL	LIVE	CUT	74	ALL	16.1	59	73	27,571	25,916	6.0	206.8	294.0	73.0	1,459.1
ALL	ALL	ALL	74	ALL	16.1	59	73	27,571	25,916	6.0	206.8	294.0	73.0	1,459.1

Cruise Unit Report LIZARD BREATH U6

Unit Sale Notice Volume (MBF): LIZARD BREATH U6

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	13.9	6.0		432	50	304	78
DF	15.3	6.0		243	77	117	50
RA	14.1			27		15	13
RC	13.9			16		7	9
SF	21.0			9	7		2
ALL	14.4	6.0		727	134	442	151

Unit Cruise Design: LIZARD BREATH U6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	34.1	36.4	18	9	0

Unit Cruise Summary: LIZARD BREATH U6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	23	45	2.5	1
DF	12	27	1.5	1
RA	2	5	0.3	0
RC	2	4	0.2	0
SF	1	1	0.1	0
ALL	40	82	4.6	2

Unit Cruise Statistics: LIZARD BREATH U6

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	136.1	83.7	19.7	93.0	13.4	2.8	12,656	84.8	19.9
DF	80.9	114.1	26.9	88.2	16.0	4.6	7,134	115.2	27.3
RA	11.1	206.8	48.7	71.8	33.6	23.7	798	209.5	54.2
RC	8.9	246.7	58.2	53.4	9.9	7.0	474	246.9	58.6
SF	3.0	424.3	100.0	84.4	0.0	0.0	255	424.3	100.0
ALL	240.0	21.3	5.0	88.8	17.8	2.8	21,317	27.7	5.8

Unit Summary: LIZARD BREATH U6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	12	ALL	15.3	59	73	7,523	7,134	5.2	63.3	80.9	20.7	243.3
RA	LIVE	CUT	2	ALL	14.1	52	63	864	798	7.6	10.2	11.1	3.0	27.2
RC	LIVE	CUT	2	ALL	13.9	49	60	565	474	16.0	8.4	8.9	2.4	16.2
SF	LIVE	CUT	1	ALL	21.0	71	90	292	255	12.5	1.3	3.0	0.7	8.7
WH	LIVE	CUT	23	ALL	13.9	60	74	13,089	12,656	3.3	129.2	136.1	36.5	431.6
ALL	LIVE	CUT	40	ALL	14.4	59	72	22,332	21,317	4.5	212.4	240.0	63.2	726.9
ALL	ALL	ALL	40	ALL	14.4	59	72	22,332	21,317	4.5	212.4	240.0	63.2	726.9

Cruise Unit Report LIZARD BREATH U7

Unit Sale Notice Volume (MBF): LIZARD BREATH U7

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	14.1	6.0		139	30	76	32
DF	19.7	6.0		57	19	32	6
SF	21.0			10	8		2
ALL	15.4	6.0		206	58	108	40

Unit Cruise Design: LIZARD BREATH U7

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	8.9	8.9	4	4	0

Unit Cruise Summary: LIZARD BREATH U7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	13	13	3.3	1
DF	5	5	1.3	1
SF	1	1	0.3	0
ALL	19	19	4.8	2

Unit Cruise Statistics: LIZARD BREATH U7

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	176.9	46.2	23.1	88.0	13.1	3.6	15,564	48.0	23.4
DF	68.1	120.0	60.0	94.4	7.4	3.3	6,426	120.2	60.1
SF	13.6	200.0	100.0	84.4	0.0	0.0	1,148	200.0	100.0
ALL	258.6	10.5	5.3	89.5	11.7	2.7	23,139	15.7	5.9

Unit Summary: LIZARD BREATH U7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	5	ALL	19.7	71	89	7,090	6,426	9.4	32.1	68.0	15.3	57.2
SF	LIVE	CUT	1	ALL	21.0	71	90	1,313	1,148	12.5	5.7	13.6	3.0	10.2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	13	ALL	14.1	59	73	16,194	15,564	3.9	163.2	176.9	47.1	138.5
ALL	LIVE	CUT	19	ALL	15.4	61	76	24,596	23,139	5.9	201.0	258.6	65.4	205.9
ALL	ALL	ALL	19	ALL	15.4	61	76	24,596	23,139	5.9	201.0	258.6	65.4	205.9

Cruise Unit Report LIZARD BREATH U8

Unit Sale Notice Volume (MBF): LIZARD BREATH U8

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	11.7			144	85	60
DF	11.6			14	6	8
ALL	11.7			158	90	68

Unit Cruise Design: LIZARD BREATH U8

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	7.6	11.8	6	3	0

Unit Cruise Summary: LIZARD BREATH U8

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	12	26	4.3	0
DF	3	3	0.5	0
ALL	15	29	4.8	0

Unit Cruise Statistics: LIZARD BREATH U8

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	235.9	18.8	7.7	80.5	21.9	6.3	18,998	28.9	9.9
DF	27.2	167.3	68.3	65.8	20.5	11.8	1,791	168.6	69.3
ALL	263.1	8.4	3.4	79.0	22.2	5.7	20,789	23.7	6.7

Unit Summary: LIZARD BREATH U8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	11.6	51	63	1,791	1,791	0.0	37.1	27.2	8.0	13.6
WH	LIVE	CUT	12	ALL	11.7	51	61	19,527	18,998	2.7	316.0	235.9	69.0	144.4
ALL	LIVE	CUT	15	ALL	11.7	51	62	21,318	20,789	2.5	353.1	263.1	77.0	158.0
ALL	ALL	ALL	15	ALL	11.7	51	62	21,318	20,789	2.5	353.1	263.1	77.0	158.0

Cruise Unit Report LIZARD BREATH U9

Unit Sale Notice Volume (MBF): LIZARD BREATH U9

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	14.6			33	7	22	4
SS	18.0			9		8	1
DF	22.0			9	8		1
ALL	15.8			51	15	30	7

Unit Cruise Design: LIZARD BREATH U9

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	1.6	1.6	1	1	0

Unit Cruise Summary: LIZARD BREATH U9

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	4	4	4.0	0
SS	1	1	1.0	0
DF	1	1	1.0	0
ALL	6	6	6.0	0

Unit Cruise Statistics: LIZARD BREATH U9

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	217.8	0.0	0.0	94.4	16.2	8.1	20,549	16.2	8.1
SS	54.4	0.0	0.0	108.1	0.0	0.0	5,885	0.0	0.0
DF	54.4	0.0	0.0	103.8	0.0	0.0	5,650	0.0	0.0
ALL	326.6	0.0	0.0	98.2	13.6	5.5	32,084	13.6	5.5

Unit Summary: LIZARD BREATH U9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	22.0	72	90	5,753	5,650	1.8	20.6	54.4	11.6	9.0
SS	LIVE	CUT	1	ALL	18.0	69	87	6,439	5,885	8.6	30.8	54.4	12.8	9.4
WH	LIVE	CUT	4	ALL	14.6	62	76	21,511	20,549	4.5	187.3	217.8	57.0	32.9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	6	ALL	15.8	63	78	33,704	32,084	4.8	238.7	326.6	81.4	51.3
ALL	ALL	ALL	6	ALL	15.8	63	78	33,704	32,084	4.8	238.7	326.6	81.4	51.3

Cruise Unit Report LIZARD BREATH U10

Unit Sale Notice Volume (MBF): LIZARD BREATH U10

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	11.9			2	1	1
ALL	11.9			2	1	1

Unit Cruise Design: LIZARD BREATH U10

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (20, 20 for some species) Measure/ Count Plots, Sighting Ht = 4.5 ft	0.4	0.4	1	1	0

Unit Cruise Summary: LIZARD BREATH U10

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	3	3	3.0	0
ALL	3	3	3.0	0

Unit Cruise Statistics: LIZARD BREATH U10

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	60.0	0.0	0.0	74.5	10.9	6.3	4,470	10.9	6.3
ALL	60.0	0.0	0.0	74.5	10.9	6.3	4,470	10.9	6.3

Unit Summary: LIZARD BREATH U10

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	3	ALL	11.9	56	68	4,470	4,470	0.0	77.7	60.0	17.4	1.8
ALL	LIVE	CUT	3	ALL	11.9	56	68	4,470	4,470	0.0	77.7	60.0	17.4	1.8
ALL	ALL	ALL	3	ALL	11.9	56	68	4,470	4,470	0.0	77.7	60.0	17.4	1.8

Cruise Unit Report LIZARD BREATH U11

Unit Sale Notice Volume (MBF): LIZARD BREATH U11

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	13.6			22	5	10	7
SF	18.0			6		5	1
ALL	14.3			29	5	15	8

Unit Cruise Design: LIZARD BREATH U11

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.5	1.6	1	1	0

Unit Cruise Summary: LIZARD BREATH U11

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	4	4	4.0	0
SF	1	1	1.0	0
ALL	5	5	5.0	0

Unit Cruise Statistics: LIZARD BREATH U11

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	160.0	0.0	0.0	93.5	15.0	7.5	14,958	15.0	7.5
SF	40.0	0.0	0.0	103.6	0.0	0.0	4,143	0.0	0.0
ALL	200.0	0.0	0.0	95.5	13.6	6.1	19,101	13.6	6.1

Unit Summary: LIZARD BREATH U11

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
SF	LIVE	CUT	1	ALL	18.0	70	88	4,143	4,143	0.0	22.6	40.0	9.4	6.2
WH	LIVE	CUT	4	ALL	13.6	55	68	14,958	14,958	0.0	158.6	160.0	43.4	22.4
ALL	LIVE	CUT	5	ALL	14.2	57	70	19,101	19,101	0.0	181.2	200.0	52.8	28.7
ALL	ALL	ALL	5	ALL	14.2	57	70	19,101	19,101	0.0	181.2	200.0	52.8	28.7

Cruise Unit Report LIZARD BREATH U12

Unit Sale Notice Volume (MBF): LIZARD BREATH U12

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	14.8			3	3	0
SF	17.0			1	1	0
ALL	15.3			4	4	1

Unit Cruise Design: LIZARD BREATH U12

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	0.3	0.3	1	1	0

Unit Cruise Summary: LIZARD BREATH U12

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	3	3	3.0	0
SF	1	1	1.0	0
ALL	4	4	4.0	0

Unit Cruise Statistics: LIZARD BREATH U12

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	120.0	0.0	0.0	95.4	14.0	8.1	11,446	14.0	8.1
SF	40.0	0.0	0.0	88.8	0.0	0.0	3,553	0.0	0.0
ALL	160.0	0.0	0.0	93.7	12.2	6.1	14,999	12.2	6.1

Unit Summary: LIZARD BREATH U12

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
SF	LIVE	CUT	1	ALL	17.0	64	80	3,553	3,553	0.0	25.4	40.0	9.7	1.1
WH	LIVE	CUT	3	ALL	14.8	59	72	11,446	11,446	0.0	100.4	120.0	31.2	3.4
ALL	LIVE	CUT	4	ALL	15.3	60	74	14,999	14,999	0.0	125.8	160.0	40.9	4.5
ALL	ALL	ALL	4	ALL	15.3	60	74	14,999	14,999	0.0	125.8	160.0	40.9	4.5

Cruise Unit Report LIZARD BREATH U13

Unit Sale Notice Volume (MBF): LIZARD BREATH U13

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	13.6			26	22	3
RA	11.0			4		4
ALL	12.9			30	22	8

Unit Cruise Design: LIZARD BREATH U13

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.9	2.0	1	1	0

Unit Cruise Summary: LIZARD BREATH U13

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	4	4	4.0	0
RA	1	1	1.0	0
ALL	5	5	5.0	0

Unit Cruise Statistics: LIZARD BREATH U13

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	160.0	0.0	0.0	84.3	10.4	5.2	13,485	10.4	5.2
RA	40.0	0.0	0.0	59.1	0.0	0.0	2,364	0.0	0.0
ALL	200.0	0.0	0.0	79.2	17.1	7.7	15,849	17.1	7.7

Unit Summary: LIZARD BREATH U13

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	1	ALL	11.0	52	63	2,606	2,364	9.3	60.6	40.0	12.1	4.5
WH	LIVE	CUT	4	ALL	13.6	57	70	13,779	13,485	2.1	158.6	160.0	43.4	25.6
ALL	LIVE	CUT	5	ALL	12.9	56	68	16,385	15,849	3.3	219.2	200.0	55.4	30.1
ALL	ALL	ALL	5	ALL	12.9	56	68	16,385	15,849	3.3	219.2	200.0	55.4	30.1

Cruise Unit Report LIZARD BREATH U14

Unit Sale Notice Volume (MBF): LIZARD BREATH U14

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	11.7			13	4	8
SF	14.0			4	4	1
ALL	12.1			17	8	9

Unit Cruise Design: LIZARD BREATH U14

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.5	1.6	1	1	0

Unit Cruise Summary: LIZARD BREATH U14

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	3	3	3.0	0
SF	1	1	1.0	0
ALL	4	4	4.0	0

Unit Cruise Statistics: LIZARD BREATH U14

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	120.0	0.0	0.0	70.8	25.0	14.4	8,496	25.0	14.4
SF	40.0	0.0	0.0	74.8	0.0	0.0	2,994	0.0	0.0
ALL	160.0	0.0	0.0	71.8	20.3	10.2	11,489	20.3	10.2

Unit Summary: LIZARD BREATH U14

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
SF	LIVE	CUT	1	ALL	14.0	59	73	3,256	2,994	8.0	37.4	40.0	10.7	4.5
WH	LIVE	CUT	3	ALL	11.7	51	61	8,833	8,496	3.8	160.7	120.0	35.1	12.7
ALL	LIVE	CUT	4	ALL	12.2	52	64	12,088	11,489	5.0	198.1	160.0	45.8	17.2
ALL	ALL	ALL	4	ALL	12.2	52	64	12,088	11,489	5.0	198.1	160.0	45.8	17.2

Cruise Unit Report LIZARD BREATH U15

Unit Sale Notice Volume (MBF): LIZARD BREATH U15

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	14.0			40	30	10
SF	14.0			7	6	1
RA	12.0			6		6
ALL	13.7			53	36	18

Unit Cruise Design: LIZARD BREATH U15

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	4.2	4.2	2	2	0

Unit Cruise Summary: LIZARD BREATH U15

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	6	6	3.0	0
SF	1	1	0.5	0
RA	1	1	0.5	0
ALL	8	8	4.0	0

Unit Cruise Statistics: LIZARD BREATH U15

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	120.0	47.1	33.3	79.5	13.5	5.5	9,538	49.0	33.8
SF	20.0	141.4	100.0	81.4	0.0	0.0	1,628	141.4	100.0
RA	20.0	141.4	100.0	76.4	0.0	0.0	1,528	141.4	100.0
ALL	160.0	0.0	0.0	79.3	11.6	4.1	12,693	11.6	4.1

Unit Summary: LIZARD BREATH U15

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	1	ALL	12.0	55	67	1,604	1,528	4.8	25.5	20.0	5.8	6.4
SF	LIVE	CUT	1	ALL	14.0	59	73	1,628	1,628	0.0	18.7	20.0	5.3	6.8
WH	LIVE	CUT	6	ALL	14.0	57	70	9,882	9,538	3.5	112.3	120.0	32.1	40.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	8	ALL	13.7	57	70	13,114	12,693	3.2	156.5	160.0	43.2	53.3
ALL	ALL	ALL	8	ALL	13.7	57	70	13,114	12,693	3.2	156.5	160.0	43.2	53.3

Cruise Unit Report LIZARD BREATH U16

Unit Sale Notice Volume (MBF): LIZARD BREATH U16

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	13.1			11	6	4
ALL	13.1			11	6	4

Unit Cruise Design: LIZARD BREATH U16

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	0.6	0.6	1	1	0

Unit Cruise Summary: LIZARD BREATH U16

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	5	5	5.0	0
ALL	5	5	5.0	0

Unit Cruise Statistics: LIZARD BREATH U16

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	200.0	0.0	0.0	90.9	29.0	13.0	18,181	29.0	13.0
ALL	200.0	0.0	0.0	90.9	29.0	13.0	18,181	29.0	13.0

Unit Summary: LIZARD BREATH U16

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	5	ALL	13.1	54	65	18,181	18,181	0.0	213.7	200.0	55.3	10.9
ALL	LIVE	CUT	5	ALL	13.1	54	65	18,181	18,181	0.0	213.7	200.0	55.3	10.9
ALL	ALL	ALL	5	ALL	13.1	54	65	18,181	18,181	0.0	213.7	200.0	55.3	10.9

Cruise Unit Report LIZARD BREATH U17

Unit Sale Notice Volume (MBF): LIZARD BREATH U17

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	14.5			2	0	1	1
ALL	14.5			2	0	1	1

Unit Cruise Design: LIZARD BREATH U17

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	0.1	0.6	1	1	0

Unit Cruise Summary: LIZARD BREATH U17

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	5	5	5.0	0
ALL	5	5	5.0	0

Unit Cruise Statistics: LIZARD BREATH U17

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	272.2	0.0	0.0	86.1	11.6	5.2	23,423	11.6	5.2
ALL	272.2	0.0	0.0	86.1	11.6	5.2	23,423	11.6	5.2

Unit Summary: LIZARD BREATH U17

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	5	ALL	14.5	57	71	24,411	23,423	4.0	237.4	272.2	71.5	2.3
ALL	LIVE	CUT	5	ALL	14.5	57	71	24,411	23,423	4.0	237.4	272.2	71.5	2.3
ALL	ALL	ALL	5	ALL	14.5	57	71	24,411	23,423	4.0	237.4	272.2	71.5	2.3

Cruise Unit Report LIZARD BREATH U18

Unit Sale Notice Volume (MBF): LIZARD BREATH U18

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	13.5			12	12	1
ALL	13.5			12	12	1

Unit Cruise Design: LIZARD BREATH U18

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	1.0	0.7	1	1	0

Unit Cruise Summary: LIZARD BREATH U18

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	4	4	4.0	0
ALL	4	4	4.0	0

Unit Cruise Statistics: LIZARD BREATH U18

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	160.0	0.0	0.0	76.2	13.5	6.7	12,190	13.5	6.7
ALL	160.0	0.0	0.0	76.2	13.5	6.7	12,190	13.5	6.7

Unit Summary: LIZARD BREATH U18

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	4	ALL	13.5	56	68	12,533	12,190	2.7	161.0	160.0	43.5	12.2
ALL	LIVE	CUT	4	ALL	13.5	56	68	12,533	12,190	2.7	161.0	160.0	43.5	12.2
ALL	ALL	ALL	4	ALL	13.5	56	68	12,533	12,190	2.7	161.0	160.0	43.5	12.2

Cruise Unit Report LIZARD BREATH U19

Unit Sale Notice Volume (MBF): LIZARD BREATH U19

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	10.6			26	8	18
DF	11.6			11	4	6
ALL	10.9			36	12	24

Unit Cruise Design: LIZARD BREATH U19

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	2.0		2	2	0

Unit Cruise Summary: LIZARD BREATH U19

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	7	7	3.5	0
DF	3	3	1.5	0
ALL	10	10	5.0	0

Unit Cruise Statistics: LIZARD BREATH U19

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	190.5	20.2	14.3	67.5	13.4	5.1	12,868	24.3	15.2
DF	81.7	47.1	33.3	65.8	20.5	11.8	5,372	51.4	35.4
ALL	272.2	0.0	0.0	67.0	14.6	4.6	18,240	14.6	4.6

Unit Summary: LIZARD BREATH U19

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	11.6	51	63	5,372	5,372	0.0	111.3	81.7	24.0	10.7
WH	LIVE	CUT	7	ALL	10.6	45	55	12,868	12,868	0.0	310.9	190.5	58.5	25.7
ALL	LIVE	CUT	10	ALL	10.9	47	57	18,240	18,240	0.0	422.2	272.2	82.5	36.5
ALL	ALL	ALL	10	ALL	10.9	47	57	18,240	18,240	0.0	422.2	272.2	82.5	36.5



Forest Practices Application/Notification Notice of Decision

FPA/N No: 2617858

Effective Date: 4/13/2023

Expiration Date: 4/13/2023

Shut Down Zone: 650

EARR Tax Credit: Eligible Non-eligible

Reference: WA Dept. of Natural Resources

Lizard Breath

Decision

- Notification Accepted 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.
- Withdrawn Applicant has withdrawn the Forest Practices Application/Notification (FPA/N).
- Closed All forest practices obligations are met.

FPA/N Classification

- Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

- 4 years 5 years

Conditions on Approval/Reasons for Disapproval

Landowner withdrew application.

Issued By: Krista Pagel

Region: Olympic

Title: Forest Practices Coordinator

Date: 4/13/2023

Copies to: Landowner, Timber Owner and Operator

Issued in person: LO TO OP By: Krista Pagel

Date: 4/13/2023

Appeal Information

You have thirty (30) days to *file* (i.e., *actually deliver*) an appeal in writing of this Decision and any related State Environmental Policy Act (SEPA) determinations to the Pollution Control Hearings Board, the Attorney General's Office, and the Department of Natural Resources' region office. See [RCW 76.09.205](#). The appeal period starts when the applicant receives this decision, which usually happens electronically on the date indicated below.

You must file your appeal at all three addresses below:

Pollution Control Hearings Board	Office of the Attorney General Natural Resources Division	Department Of Natural Resources Olympic Region
<u>Physical Address</u> 1111 Israel Road, SW Suite 301 Tumwater, WA 98501 <u>Mailing address</u> Post Office Box 40903 Olympia, WA 98504-0903	<u>Physical Address</u> 1125 Washington Street, SE Olympia, WA 98504 <u>Mailing Address</u> Post Office Box 40100 Olympia, WA 98504-0100	<u>Physical & Mailing Address</u> 411 Tillicum Lane Forks, WA 98331

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

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 <https://www.dnr.wa.gov/programs-and-services/forest-practices/review-applications-fpars/forest-practices-forms-and>. Notify DNR of new Operators within 48 hours.

Continuing Forestland 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 forestland 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 and 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 forestland obligation, the seller must pay the buyer's costs related to continuing forestland obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forestland obligation against the seller.

Failure by the seller to send the required notice to 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 forestland obligation prior to sale.

DNR Declaration of Mailing

I, Choose an item., caused the Notice of Decision for FPA/N No. Click or tap here to enter text. to be placed in the United States mail at Forks, WA, postage paid. I declare under penalty of perjury of the laws of the State of Washington, that the foregoing is true and correct.

Click or tap to enter
a date.

(Date)

Forks, Washington

(City & State where signed)

(Signature)

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

LIZARD BREATH TIMBER SALE ROAD PLAN
CLALLAM COUNTY
COAST DISTRICT
OLYMPIC REGION

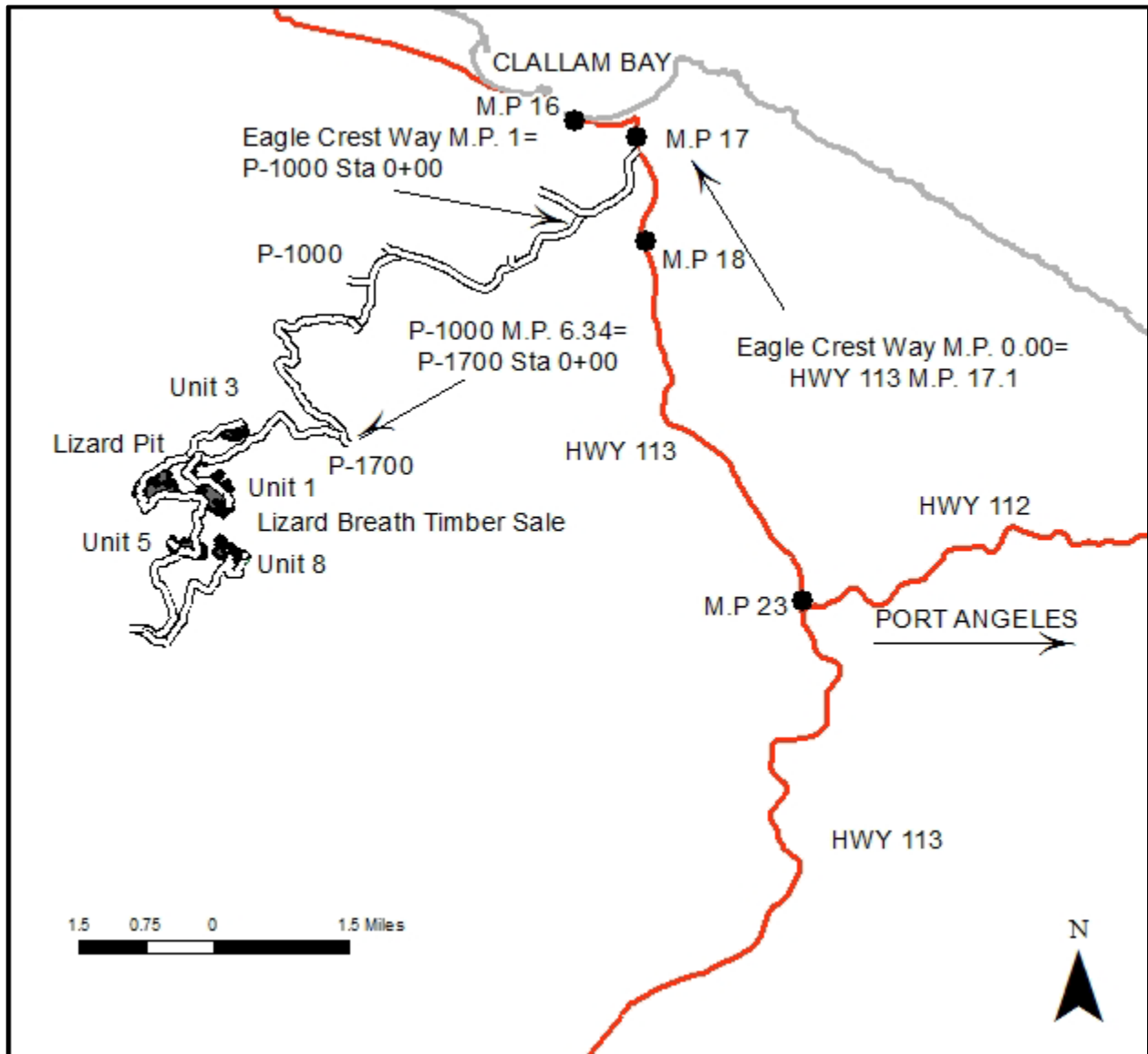
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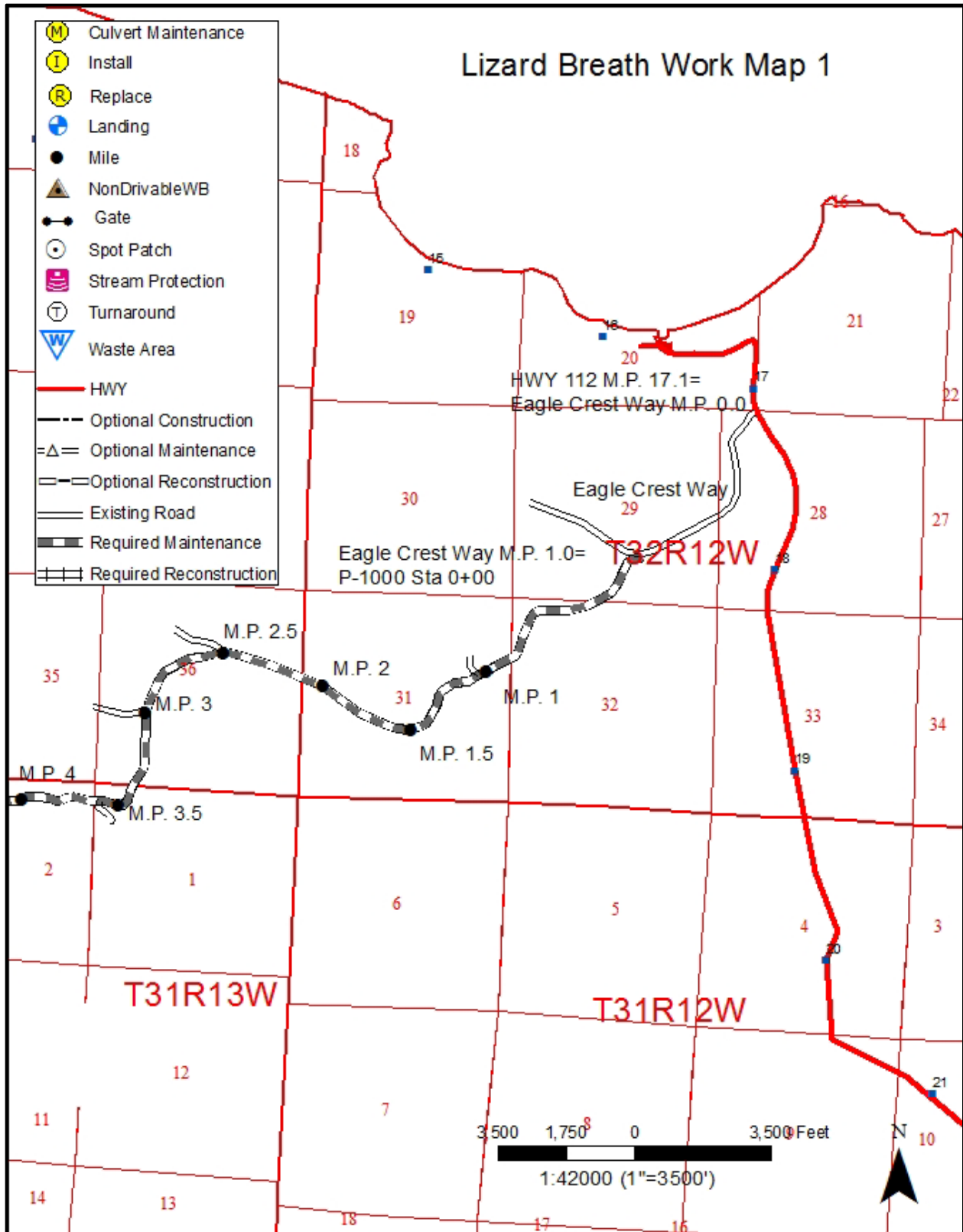
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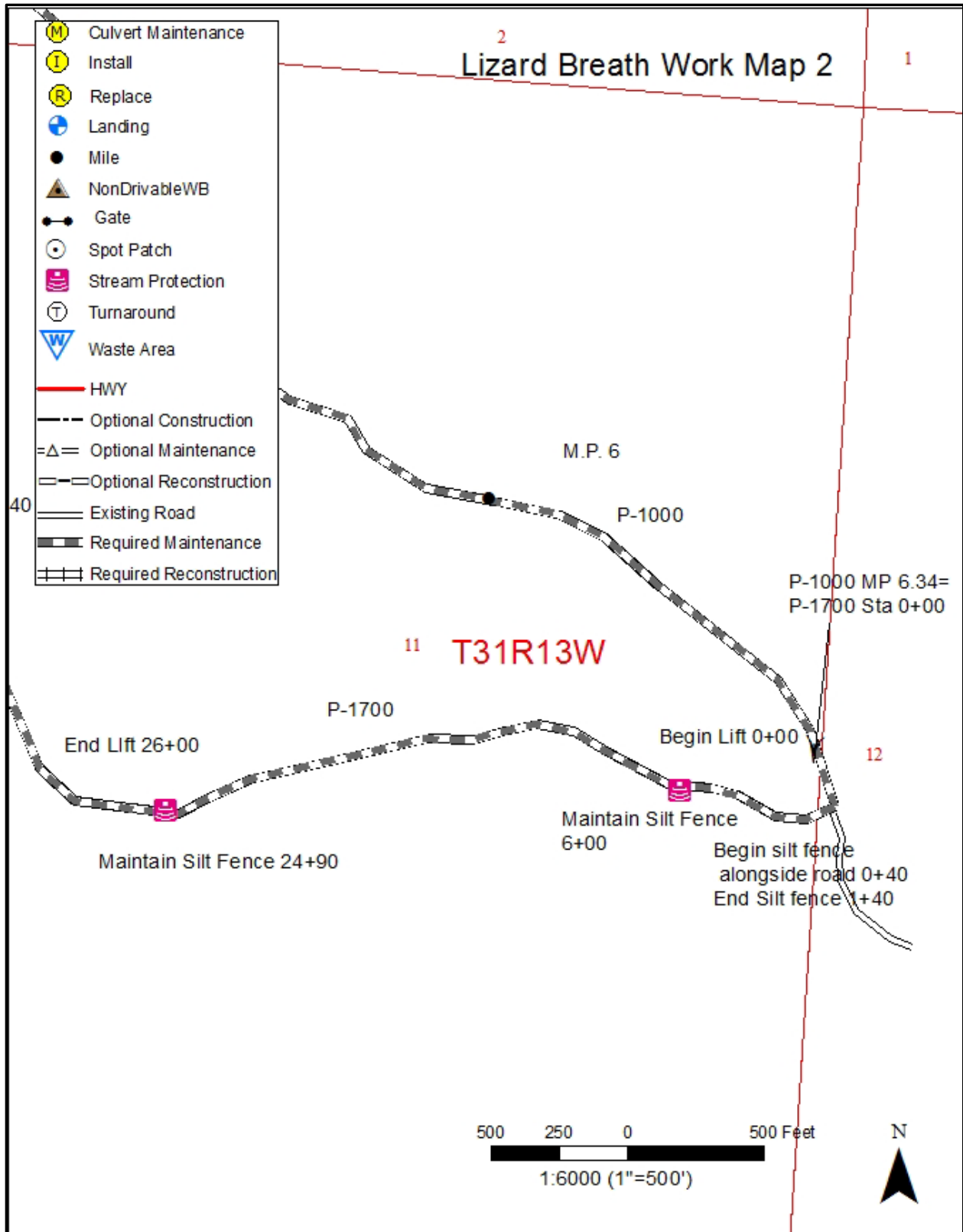
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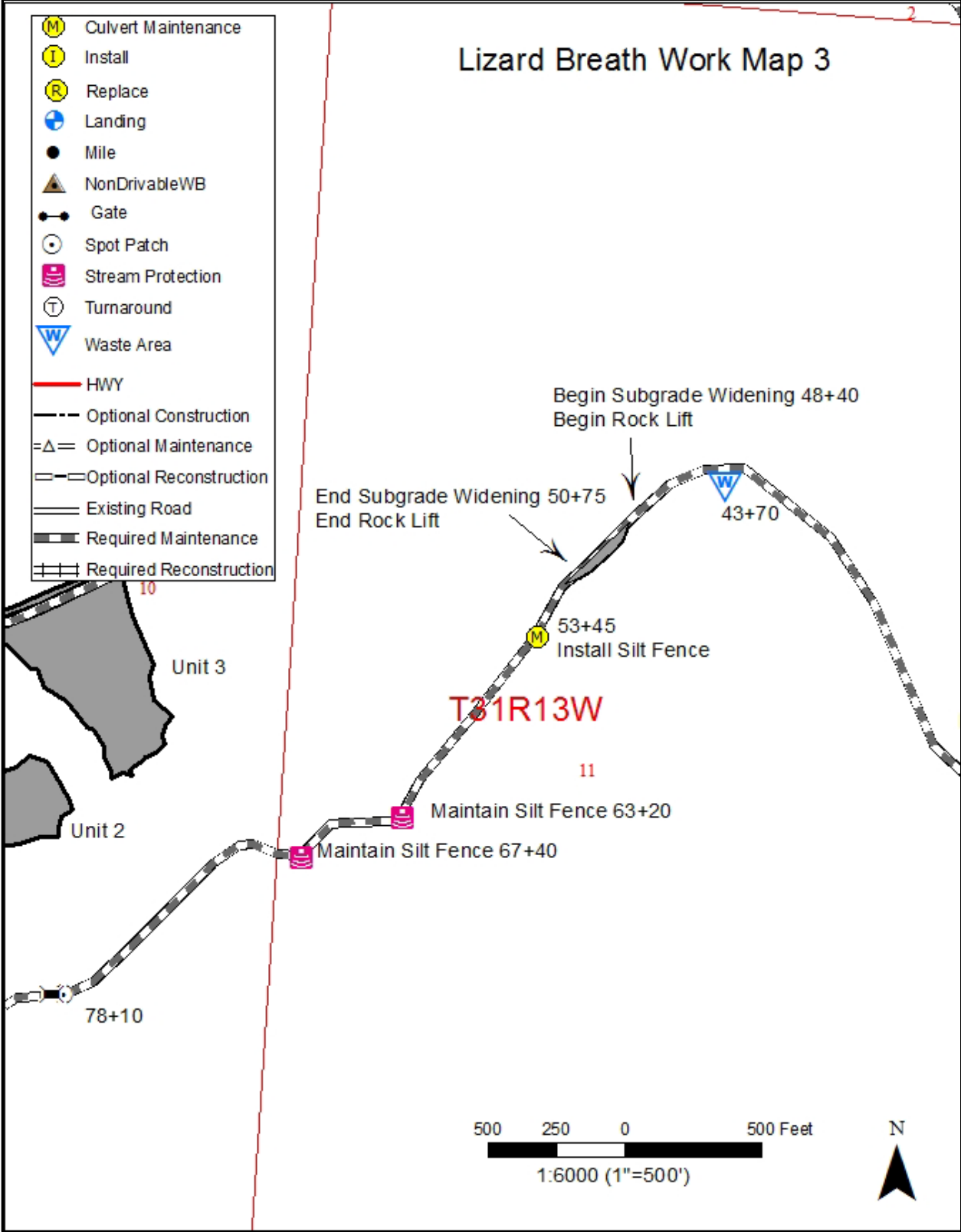
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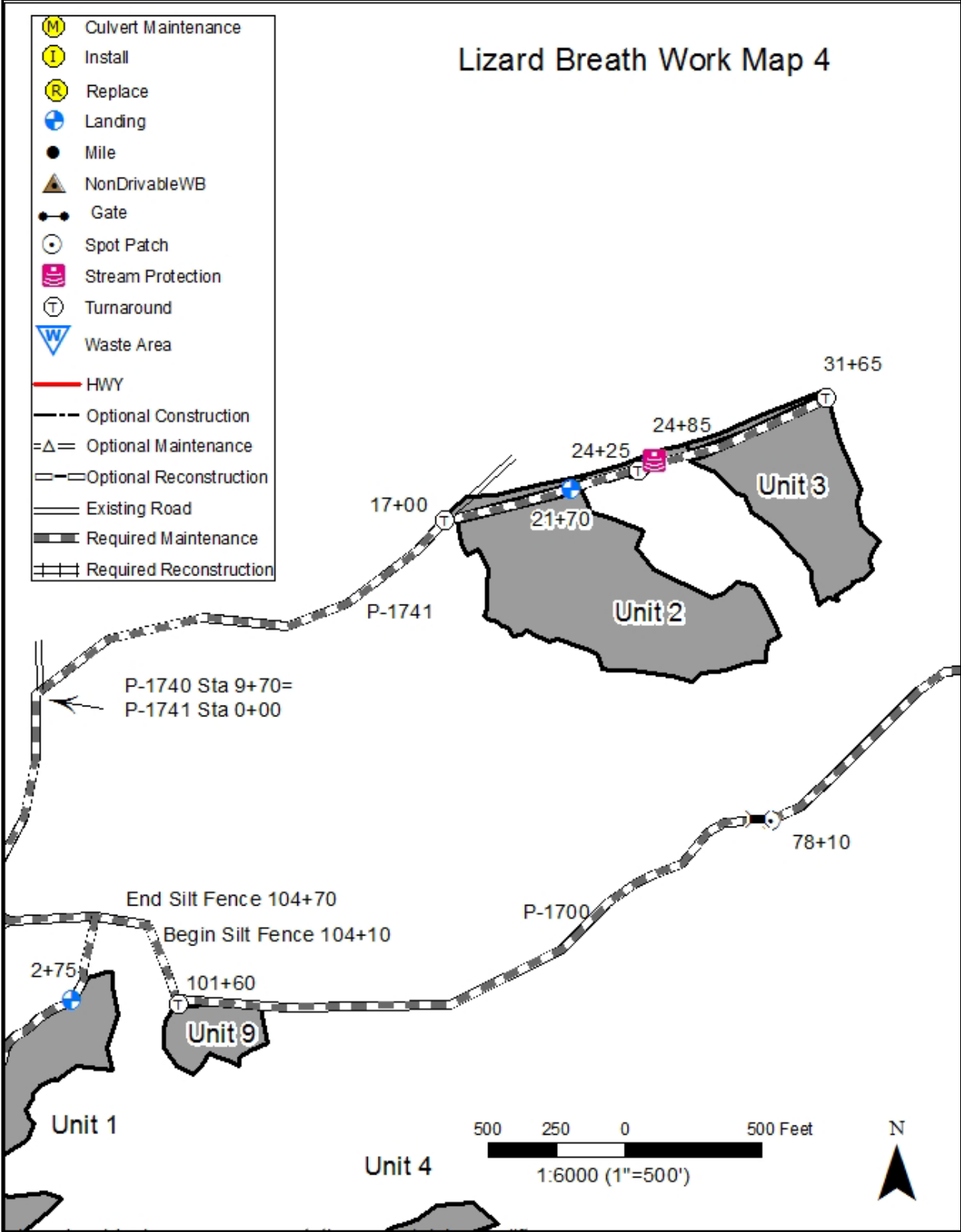
PROJECT MAP

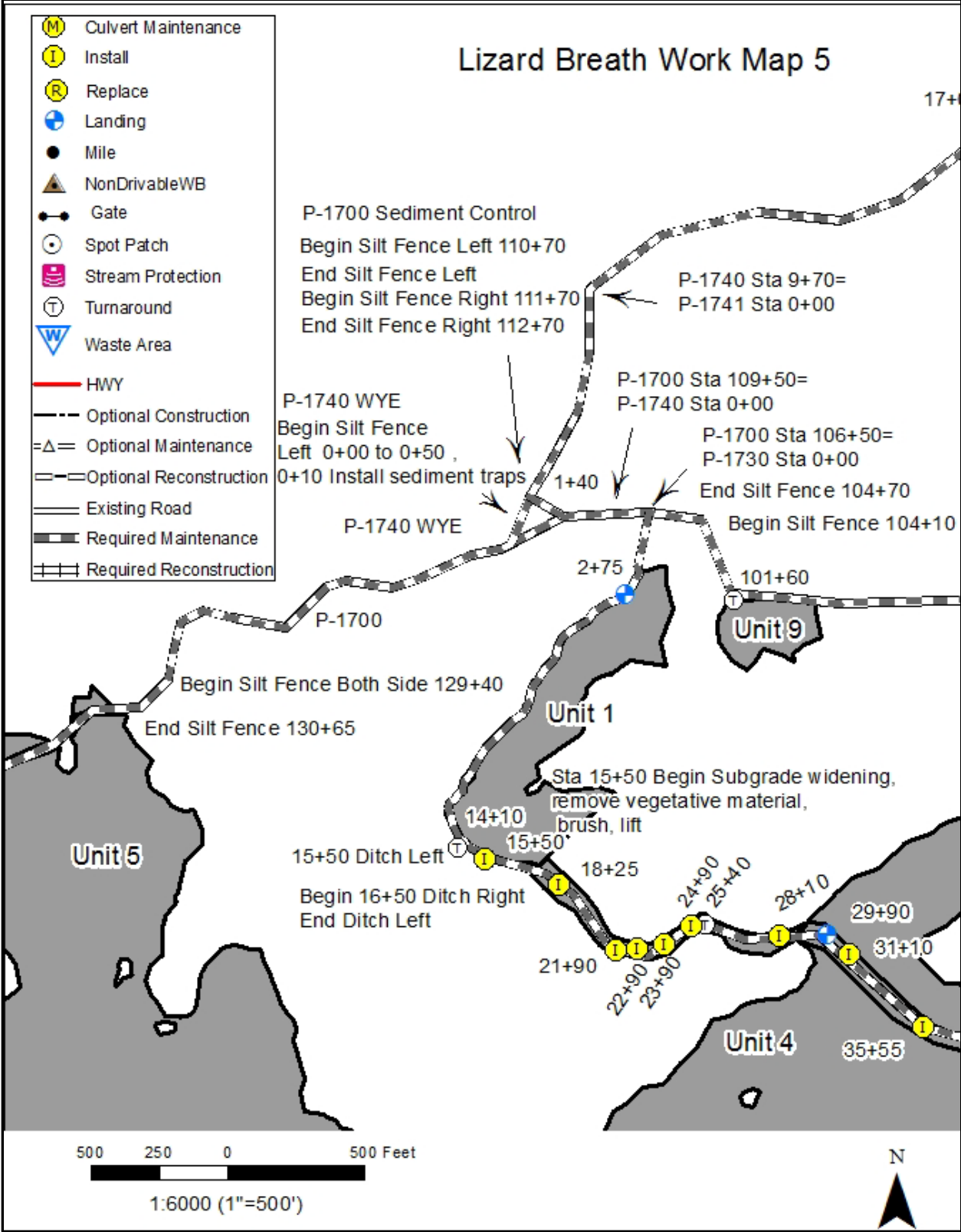


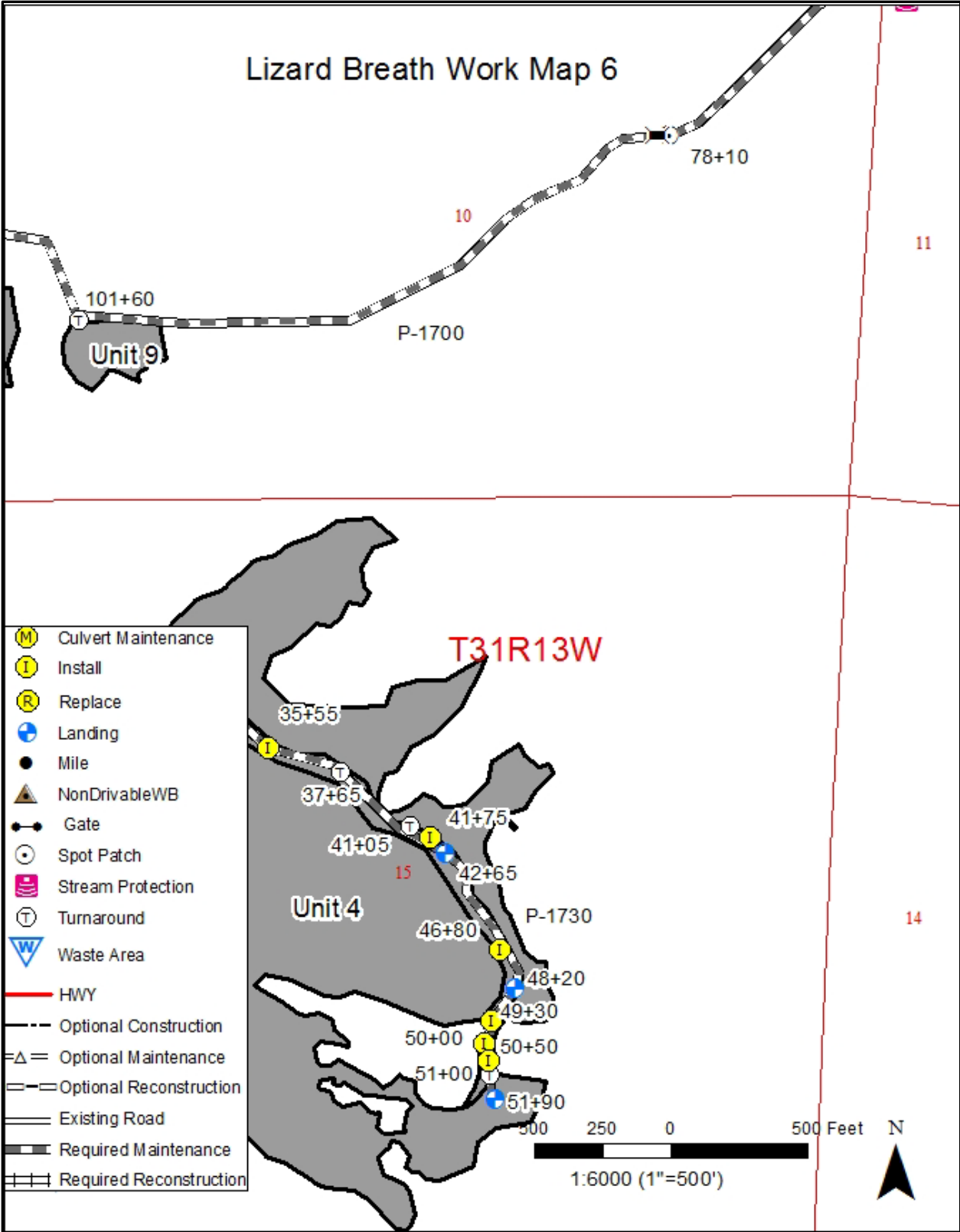




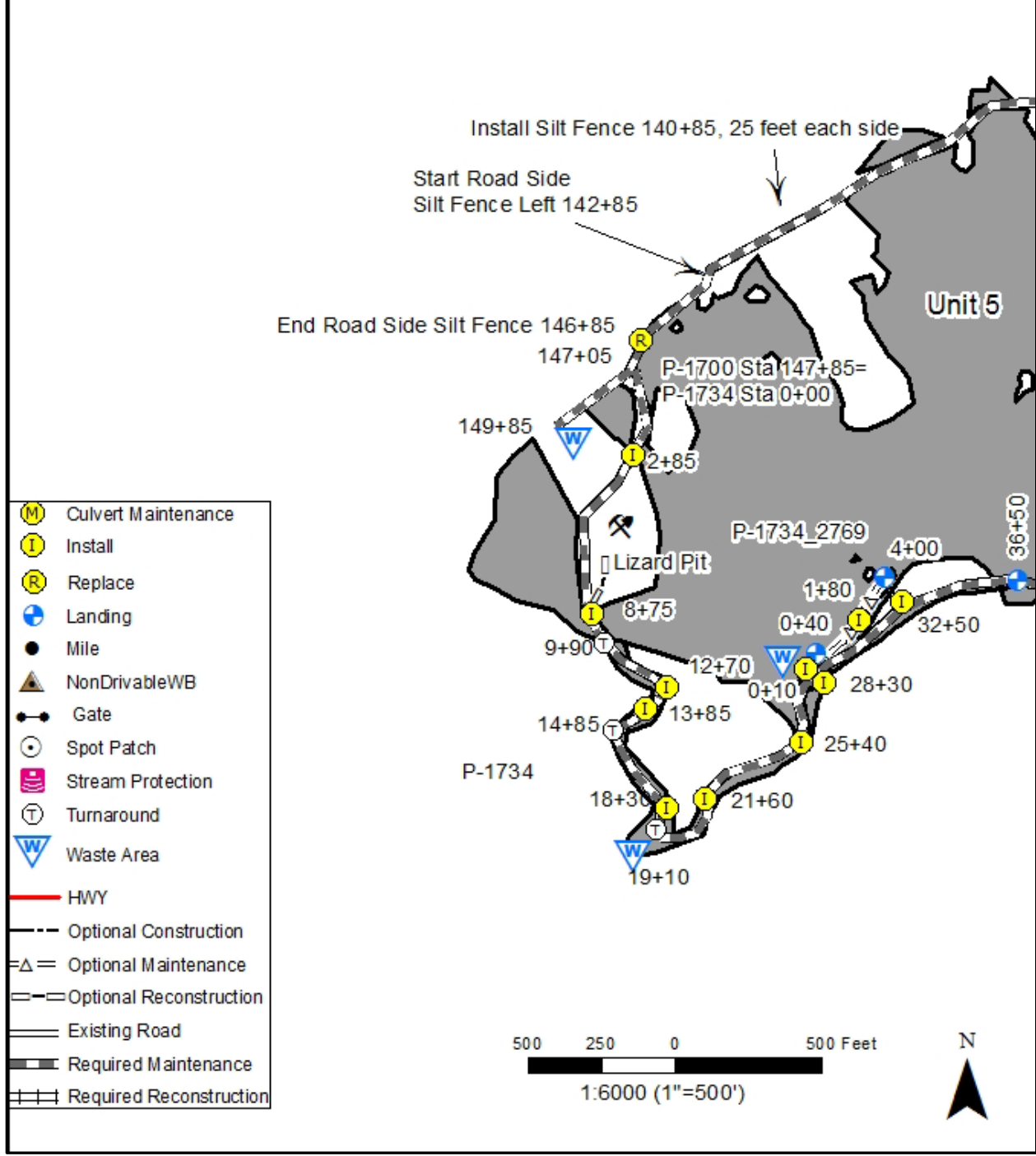


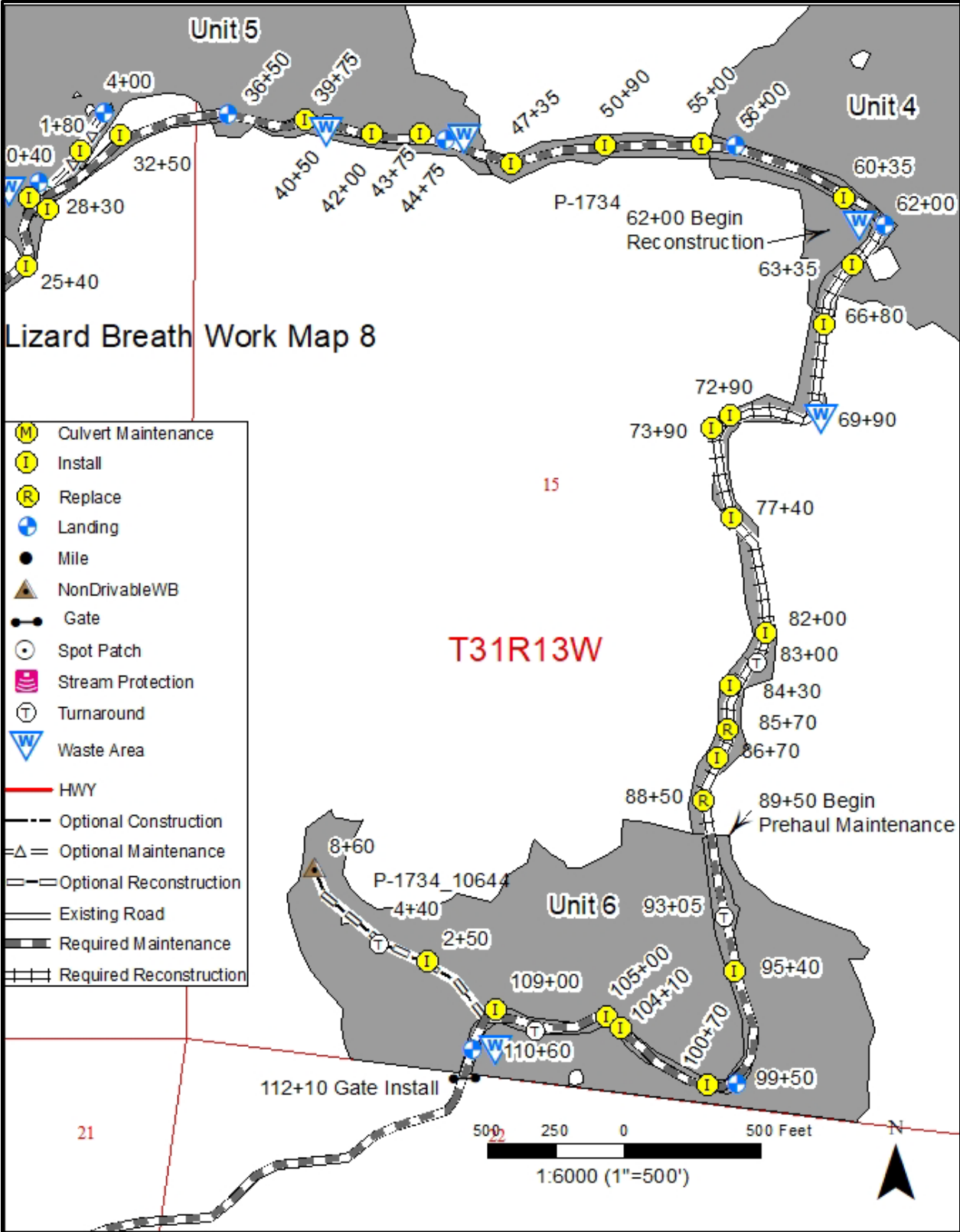


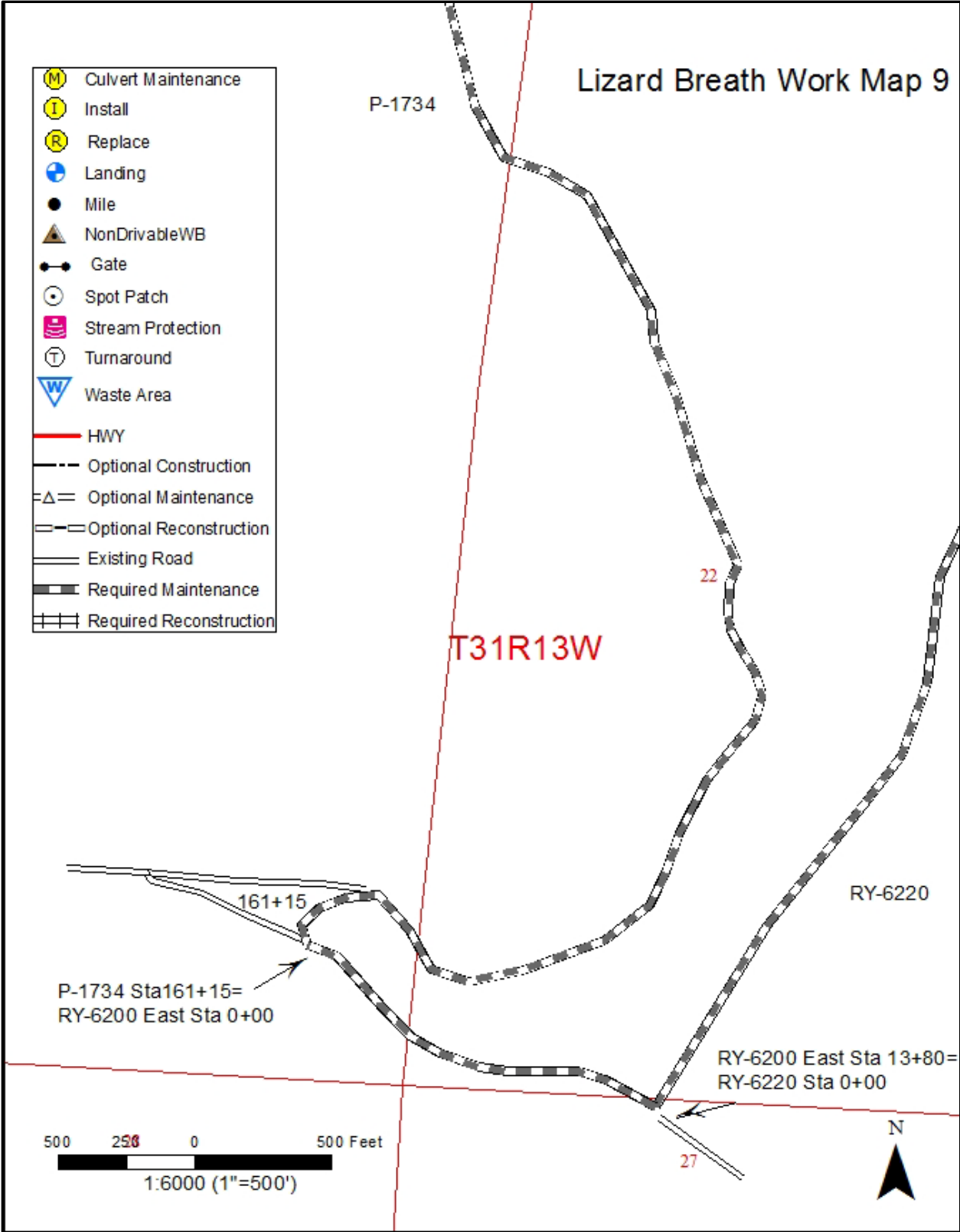


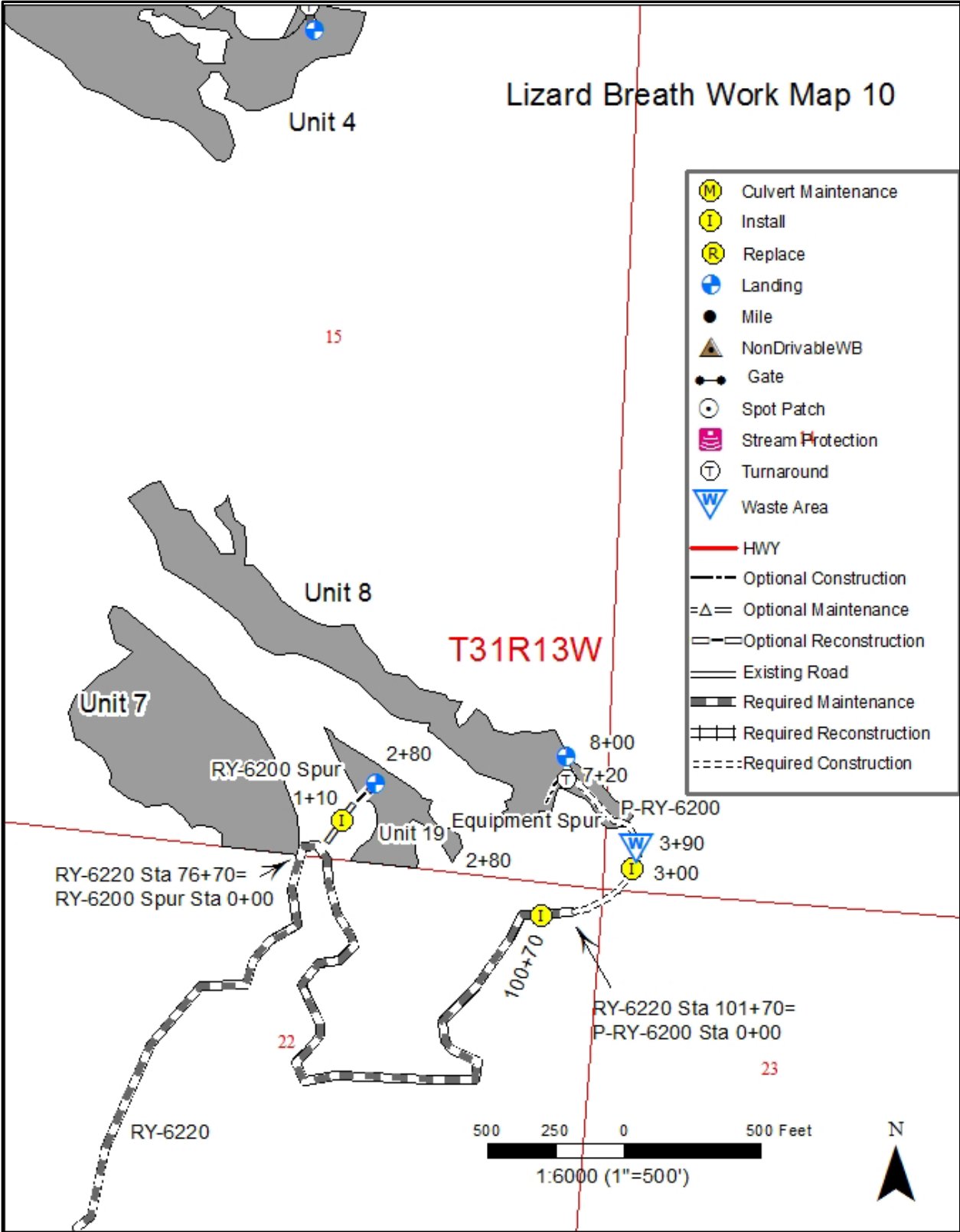


Lizard Breath Work Map 7









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>
P-1000	0+00 to 334+75	Prehaul Maintenance
P-1700	0+00 to 149+32	Prehaul Maintenance
P-1734	0+00 to 62+00	Prehaul Maintenance
P-1734	62+00 to 89+50	Required Reconstruction
P-1734	89+50 to 112+10	Prehaul Maintenance
P-1741	0+00 to 31+65	Prehaul Maintenance
P-1734	112+10 to 161+15	Prehaul Maintenance
P-1730	0+00 to 52+90	Prehaul Maintenance
P-1740	0+00 to 9+70	Prehaul Maintenance
P-1740 WYE	0+00 to 1+40	Prehaul Maintenance
RY-6220	0+00 to 101+70	Prehaul Maintenance
RY-6200 East	0+00 to 13+80	Prehaul Maintenance
P-RY-6200	0+00 to 8+00	Construction

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>
P-1734_2769	0+00 to 4+00	Prehaul Maintenance
P-1734_10644	0+00 to 8+60	Reconstruction
RY-6200 Spur	0+00 to 2+80	Reconstruction
Lizard Pit Road	0+00 to 1+80	Reconstruction
Equipment Spur	0+00 to 1+25	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>
P-RY-6200	0+00 to 8+00	Construction
Equipment Spur	0+00 to 1+25	Construction
Total Stations	9.25 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>
P-1734_10644	0+00 to 8+60	Reconstruction
Lizard Pit Road	0+00 to 1+80	Reconstruction
P-1734	62+00 to 89+50	Required Reconstruction
RY-6200 Spur	0+00 to 2+80	Reconstruction
Total Stations	40.7 Stations	

Reconstruction includes, but is not limited to: Removal of all vegetative material with minimum loss of rock and dispose of in accordance with Clause 2-9 and Clause 3-23. Cleaning ditches and constructing ditches, constructing headwalls, cleaning culvert inlets and outlets in accordance with Clause 2-6 and Clause 2-7. Installing additional culverts and replacing culverts in accordance with the culvert list. Grading, shaping and compacting existing road surface, turnouts and turnaround in accordance with Clause 2-5, realigning road segments, spreading grass seed and hay, and the application of rock in accordance with the Rock List.

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>
P-1734	0+00 to 62+00 And 89+50 to 112+10	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock List and install culverts in accordance with culvert list. Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 2-9 and Clause 3-23. Brush road in accordance with Clause 3-1, widen existing subgrade as per Clause 4-10, apply sediment control in accordance

		with Clause 8-1. Inslope road in accordance to Clause 11-5
P-1734_2769	0+00 to 4+00	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock List and install culverts in accordance with culvert list. Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 2-9 and Clause 3-23. Brush road in accordance with Clause 3-1, widen existing subgrade as per Clause 4-10 Inslope road in accordance to Clause 11-5
P-1000	0+00 to 334+75	Grade, shape and compact existing running surface in accordance to Clause 2-5, Brush road in accordance with Clause 3-1, apply rock in accordance with Rock List
P-1700	0+00 to 149+32	Grade, shape and compact existing running surface in accordance to Clause 2-5, maintenance culverts in accordance to Clause 2-6, , maintain erosion control structures in accordance to Clause 2-8, apply rock in accordance with Rock List and install culverts in accordance with culvert list, clean/construct ditch lines in accordance with Clause 2-7 . Brush road in accordance with Clause 3-1. Widen Existing subgrade as per Clause 4-10. Install erosion control structures in accordance to Clause 8-1
P-1740	0+00 to 9+70	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock List, Brush road in accordance with Clause 3-1
P-1740 WYE	0+00 to 1+40	Grade, shape and compact existing running surface in accordance to Clause 2-5, Brush road in accordance

		with Clause 3-1. Install erosion control structures in accordance to Clause 8-1
P-1741	0+00 to 31+65	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock List and install culverts in accordance with culvert list. Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 2-9. Brush road in accordance with Clause 3-1, install erosion control structures in accordance to Clause 8-1
P-1730	0+00 to 52+90	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock List and install culverts in accordance with culvert list. clean/construct ditch lines in accordance with Clause 2-7, Remove all vegetative material with a minimum loss of rock and dispose of in accordance with Clause 2-9 and Clause 3-23. Brush road in accordance with Clause 3-1, widen existing subgrade as per Clause 4-10, apply sediment control in accordance with Clause 8-1
P-1734	112+10 to 161+15	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, Brush road in accordance with Clause 3-1,
RY-6200 East	0+00 to 13+80	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, Brush road in accordance with Clause 3-1,
RY-6220	0+00 to 101+70	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance

		with Rock list, Brush road in accordance with Clause 3-1,
Total Stations	832.87 Stations	

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.

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop an existing rock source called Lizard Pit. Rock source development will involve stripping approximately 0.5 acre to useable rock as determined by the Contract Administrator and drilling and shooting 20,000 cubic yards of rock with 15,000 cubic yards of 4"jaw material being manufactured. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

In the event that the rock pit(s) listed above cannot meet rock specifications in accordance to specifications listed in Section 6, subsection rock gradations and in the opinion of the Contract Administrator, purchaser shall obtain rock meeting rock specification from a commercial source at their own expense.

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).

1-5 DESIGN DATA

Road design data is available upon request at the Department of Natural Resources Olympic Region Office in Forks, WA.

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 Work maps.

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

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. Construction may not close any road for more than 3 consecutive calendar days.

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 2023 (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.

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 for everything else.

1-16 CONSTRUCTION STAKES SET BY STATE

Purchaser shall perform work on the following road(s) in accordance with the stakes set in the field for grade and alignment. Widening 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>
P-1700	48+40 to 50+75	Slope Stakes
P-1734	25+40 to 28+30	Slope Stakes
P-1734	63+35 to 65+35	Slope Stakes

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 reconstruction, construction and pre-haul 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 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), are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
All	All	All roadwork activities including Timber Haul and rock pit development.	October 16 th –May 31 st
P-1734, RY-6200, and RY-6220	SEE RAYONIER ROAD USE PERMIT FOR DETAILS.	SEE RAYONIER ROAD USE PERMIT FOR DETAILS.	October 16 th –May 31 st (No Contract Administrator approval)

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

On the following road(s), timber felling, road work or operation of heavy equipment performed during the marbled murrelet nesting season (April 1 through September 23), is restricted to, two hours after sunrise to two hours before sunset. This does not apply to hauling timber, rock or equipment.

<u>Road</u>	<u>Stations</u>
P-1000	158+00 to 178+70
P-1700	41+10 to 50+75

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 pit 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.

1-32 BRIDGE SURFACE RESTRICTION

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

If tracked equipment is used on bridge 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 surface(s) and have surface(s) evaluated by the District 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.

1-33 SNOW PLOWING RESTRICTION

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

SUBSECTION OTHER INFRASTRUCTURE

1-41 REQUIREMENTS FOR PAVED ROAD APPROACHES

Requirements for the Eagle Crest road approaches:
Purchaser shall maintain approaches to allow a smooth grade transition between the P-1000 and Eagle Crest roads. Purchaser shall immediately remove any mud, dirt, rock, or other material tracked or spilled onto the road.

<u>Road Name</u>
Eagle Crest Road

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 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>
P-1734	0+00 to 62+00 And 89+50 to 112+10	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1734_2769	0+00 to 4+00	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1000	0+00 to 334+75	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1700	0+00 to 149+32	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1740	0+00 to 9+70	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1740 WYE	0+00 to 1+40	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1741	0+00 to 31+65	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1730	0+00 to 52+90	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
P-1734	112+10 to 161+15	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
RY-6200 East	0+00 to 13+80	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.
RY-6220	0+00 to 101+70	Grade, shape, compact and remove shoulder vegetation as required by contract administrator.

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>
P-1700	53+45

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>Left and/or Right</u>	<u>Comments</u>
P-1700	48+40 to 50+75	Left	Install Ditch concurrently with subgrade widening
P-1730	15+50 to 17+00	Left and Right	Install Ditch concurrently with subgrade widening
P-1730	16+50 to 52+90	Right	Install Ditch concurrently with subgrade widening

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 disposed of as specified in Clauses 4-35 through 4-38.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
P-1700	6+00	Maintain Silt Fence
P-1700	24+90	Maintain Silt Fence
P-1700	63+20	Maintain Silt Fence
P-1700	67+40	Maintain Silt Fence

2-9 REMOVING VEGETATIVE MATERIAL

On the following road(s), Purchaser shall remove all vegetative material, dirt, mud and other debris on the existing road surface with a minimum loss of rock. Material must be disposed of as specified in Clauses 4-35 through 4-38.

<u>Road</u>	<u>Stations</u>
P-1734	0+00 to 112+10
P-1734_2769	0+00 to 4+00
P-1741	24+25 to 31+65
P-1730	15+50 to 52+90

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

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>
P-1734	0+00 to 112+10
P-1734_2769	0+00 to 4+00
P-1000	0+00 to 334+75
P-1700	0+00 to 149+32
P-1740	0+00 to 9+70
P-1740 WYE	0+00 to 1+40
P-1741	0+00 to 31+65
P-1730	0+00 to 52+90
P-1734	112+10 to 161+15
RY-6200 East	0+00 to 13+80
RY-6220	0+00 to 101+70

3-2 BRUSHING RESTRICTION

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal may not be used for brushing. Excavator buckets, log loaders and similar equipment may not be used for brushing unless otherwise approved in writing by the Contract Administrator.

3-3 BRUSH REMOVAL

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

SUBSECTION CLEARING

3-5 CLEARING

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>
P-1700 Sta 43+70	48+40 to 50+75	Sta 43+70	In areas where slope exceeds 45% unless a suitable stable area is located
P-1700 Sta 149+85	0+00 to 28+30, Pit Overburden	Sta 149+85	In areas where slope exceeds 45% unless a suitable stable area is located
P-1700 Sta 149+85	28+30 to 38+00	Sta 149+85	In areas where slope exceeds 45% unless a suitable stable area is located
P-1734 Sta 19+10	28+30 to 38+00	Sta 19+10	In areas where slope exceeds 45% unless a suitable stable area is located
P-1734_2769 Sta 0+40	28+30 to 38+00	Sta 0+40	In areas where slope exceeds 45% unless a suitable stable area is located
P-1734 Sta 40+50	40+50 to 44+75	Sta 40+50	In areas where slope exceeds 45% unless a suitable stable area is located
P-1734 Sta 44+75	44+47 to 56+00	Sta 44+75	In areas where slope exceeds 45% unless a suitable stable area is located

P-1734 Sta 62+00	62+00 to 69+90	Sta 62+00	In areas where slope exceeds 45% unless a suitable stable area is located
P-1734 Sta 69+90	62+00 to 69+90	Sta 69+90	In areas where slope exceeds 45% unless a suitable stable area is located
P-1734	62+00 to 69+90	Sta 110+60	In areas where slope exceeds 45% unless a suitable stable area is located
P-RY-6200	4+60 to 7+50	Sta 3+90	In areas where slope exceeds 45% unless a suitable stable area is located

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, unless used to comply with the specifications detailed in the Riparian Strategy,
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 50%.
- 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>
P-1700 Sta 43+70	48+40 to 50+75
P-1700 Sta 149+85	0+00 to 28+30, Pit Overburden
P-1700 Sta 149+85	28+30 to 38+00
P-1734 Sta 19+10	28+30 to 38+00
P-1734_2769 Sta 0+40	28+30 to 38+00
P-1734 Sta 40+50	40+50 to 44+75
P-1734 Sta 44+75	44+47 to 56+00
P-1734 Sta 62+00	62+00 to 69+90
P-1734 Sta 69+90	62+00 to 69+90
P-1734	62+00 to 69+90
P-RY-6200	4+60 to 7+50
Equipment Spur	0+30 to 1+25

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 22 percent favorable and 16 percent adverse.
- Minimum curve radius is 55 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 15%.
- 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. Embankment widening is modified as follows:

4-10 WIDEN THE EXISTING SUBGRADE

On the following road(s), Purchaser shall widen the subgrade and fill slopes to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Purchaser shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches. Pulling excavation material across the road or mixing in with the existing road surface is not allowed.

<u>Road</u>	<u>Stations</u>	<u>Comment</u>
P-1700	48+40 to 50+75	Add 4 feet of subgrade to Left shoulder
P-1730	15+50 to 52+90	Widen to concur with Typical Section Sheet
P-1734	0+00 to 112+10	Widen to concur with Typical Section Sheet
P-1734_2769	0+00 to 4+00	Widen to concur with Typical Section Sheet

4-12 FULL BENCH CONSTRUCTION

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.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-20 SUBGRADE DIMENSIONS FOR INTERSECTIONS

Purchaser shall construct the subgrade to the dimensions shown on the INTERSECTION DETAIL.

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.

4-23 SUBGRADE FLARE FOR INTERSECTIONS

Intersections shall be constructed/reconstructed to include additional intersection flare.

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.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified in the table below and as needed to fit as built conditions including culvert installs. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio. L or R denotes ditchout left or ditchout right.

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>Waste Area Location</u>	<u>Waste Generated From Road</u>	<u>Waste Generated at Stations</u>	<u>Estimated Volume</u>	<u>Comment</u>
P-1700 Sta 43+70	P-1700	48+40 to 50+75	500	
P-1700 Sta 149+85	Lizard Pit Overburden, P-1734	0+00 to 28+30, Pit Overburden	3300 from road, 3000 from pit	
P-1700 Sta 149+85	P-1734	28+30 to 38+00	1000	
P-1734 Sta 19+10	P-1734	28+30 to 38+00	1200	
P-1734_2769 Sta 0+40	P-1734	28+30 to 38+00	500	Waste as to not hinder future cable yarding operations
P-1734 Sta 40+50	P-1734	40+50 to 44+75	120	Waste as to not hinder future cable yarding operations
P-1734 Sta 44+75	P-1734	44+47 to 56+00	300	Waste as to not hinder future cable yarding operations
P-1734 Sta 62+00	P-1734	62+00 to 69+90	300	Waste as to not hinder future cable yarding operations
P-1734 Sta 69+90	P-1734	62+00 to 69+90	300	
P-1734 Sta 110+60	P-1734	62+00 to 69+90	300	
P-RY-6200 Sta 3+90	P-RY-6200	4+60 to 7+50	1700	

P-RY-6200 Sta 3+90	Equipment Spur	0+30 to 1+25	200	
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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

4-47 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.

SECTION 5 – DRAINAGE

SUBSECTION CULVERTS

5-4 PUNCHEON RESTRICTED

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

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 10-24.

5-6 CULVERT TYPE

Purchaser may install culverts made of steel, aluminum, or plastic in accordance with Clauses 10-15 through 10-23.

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 Forks Work Center.

<u>Road</u>	<u>Size</u>
On any portion of road used for timber or rock haul.	3 - 18" x 30' culverts 3 - 18" bands

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 12 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 DISSIPATORS

5-20 ENERGY DISSIPATORS

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 SURFACE DRAINAGE

5-33 NATIVE SURFACE ROADS

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

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(s) on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the

Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Lizard Pit	T32 R13W Sec 16	4"jaw run
Lizard Pit	T32 R13W Sec 16	Light loose rip rap
Mary Clark	T30N R12W Sec 32	1 1/2"minus crushed

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Other stockpiles may not be used without prior written approval from the Contract Administrator.If the stockpile is exhausted before all of the rock called for has been removed, then the remaining rock may come from Lizard Pit at the Purchaser expense.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Lizard Pit	T32 R13W SEC 16	Light loose rip rap

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. Rock source(s) must be a WSDOT certified source. 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>
Lizard Pit	4"jaw run
Lizard Pit	Light loose rip rap
Mary Clark	1 1/2"minus crushed

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 is require to inform Clallam County Dispatch (PenCom) of a day and approximate time of the pit blasting.
- Purchaser shall block access roads and trails before blasting operations.

6-15 REQUIRED ROCK SOURCE WORK

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

<u>Source</u>	<u>Requirements</u>
Lizard Pit	Strip 0.5 acres to rock
	Drill and Shoot 20,000 cubic yards of rock
	From 20,000 cubic yards of rock, manufacture 15,000 cubic yards of 4”jaw run rock

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.

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 1000 yards 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.

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</u>
Shot Rock	20,000 cubic yards
4"jaw run	15,000 cubic yards manufactured from the shot rock
1 1/2"minus crushed	1040 cubic yards
Light loose rip rap	158 cubic yards

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. Periodic visual inspection required for all rock gradations larger than 2". If in the opinion of the Contract Administrator that gradations are not meeting specifications, Contract Administrator may require testing of material 2" or larger.

SUBSECTION ROCK GRADATIONS

6-29 1 ½-INCH MINUS CRUSHED ROCK

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

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

6-37 4-INCH JAW RUN ROCK

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

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

6-38 4-INCH IN-PLACE ROCK

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

In-place rock may not contain more than 5 percent by weight of organic debris and trash. No more than 50 percent of rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension.

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")

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>
P-1734	112+10 to 161+15	4"jaw run	30 yd ³
RY-6200 East	0+00 to 13+80	1 1/2"	20 yd ³
P-1000	0+00 to 334+75	1 1/2"	100 yd ³
P-1700	0+00 to 149+32	1 1/2"	100 yd ³
RY-6220	0+00 to 101+70	4"jaw run	30 yd ³

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 the following 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.

6-78 ROCK FOR SPOT PATCHING

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

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structure(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 GATE CLOSURE

SUBSECTION GATES AND FENCES

7-76 GATE INSTALLATION

Purchaser shall install the listed gate(s). Gate installations must be completed within 30 days of P-1734 completed road work unless completed road can be blocked with Contract Administrators approval. Gate shall be installed on State Land.

<u>Road</u>	<u>Station</u>	<u>Type*</u>	<u>Provided by</u>
P-1734	112+10	Medium	Purchaser

Tubular gate installation(s) must be in accordance with the METAL GATE DETAIL.

The gate and lock box must be installed plumb and aligned to ensure all mating components match with precision. Each post must be filled with concrete, capped and

set in a minimum of 2 cubic yards of poured-in-place concrete. The gate must be installed with a post and locking device to allow the gate to be locked in an open position. The Contract Administrator will provide Purchaser with a padlock.

If Purchaser wishes to install an alternate design, detailed plans for the construction of the gate must be submitted to the Contract Administrator. Purchaser shall obtain written approval for the plans from the Contract Administrator or their designee, before gate installation begins.

The gate must be primed and painted yellow color using high gloss alkyd enamel paint.

Purchaser shall provide and place 10 cubic yards of stumps to prevent vehicles driving around the gate.

7-78 GATE SUPPLIED BY PURCHASER

Purchaser shall provide all gates specified for installation in Clause 7-76 GATE INSTALLATION. Purchaser shall obtain written approval for the gates from the Contract Administrator before installation.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following road(s), Sediment control shall be accomplished as listed below 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>
P-1700	0+40 to 1+40	Left and Right	Install silt fence along side of road
P-1700	53+45	Left and Right	Install 25 feet of silt fence
P-1700	104+10 to 104+70	Left and Right	Install silt fence along side of road
P-1700	129+40 to 130+65	Left and Right	Install silt fence along side of road
P-1700	110+70 to 111+70	Left	Install silt fence along side of road
P-1700	111+70 112+70	Right	Install silt fence along side of road
P-1700	140+85	Left and Right	Install 25 feet of silt fence
P-1740 Wye	0+00 to 0+50	Left	Install silt fence along side of road
P-1740 Wye	0+10	Left	Install sediment traps
P-1741	24+25	Left	Install sediment traps

P-1700	142+85 to 146+85	Left	Install silt fence along side of road
P-1734	12+70	Left and Right	Install 25 feet of silt fence
P-1734	25+40	Left and Right	Install 25 feet of silt fence
P-1734	73+90	Left and Right	Install 25 feet of silt fence
P-1734	84+30	Left and Right	Install 25 feet of silt fence
P-1734	85+70	Left and Right	Install 25 feet of silt fence
P-1734	87+50	Right	Install sediment traps
P-1734	87+50 to 88+90	Right	Install silt fence along side of road
P-1734	105+00	Left and Right	Install 25 feet of silt fence
P-1730	21+90	Right	Install sediment traps
P-1730	18+25	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 100 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.

8-11 STABILIZE SLOPES – MATERIAL REMOVAL

On the following road(s), Purchaser shall stabilize embankment slopes by removing approximately 10 cubic yards of 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>	<u>Comment</u>
P-1700	48+40 to 50+75	Pull back 1:1 areas in road failure at a depth of 1 foot

SUBSECTION REVEGETATION

8-15 REVEGETATION

As determined by the Contract Administrator, Purchaser shall spread straw and/or 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. Soils shall not be allowed to sit exposed during any rain event.

8-18 PROTECTION FOR SEED

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

8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense crop of 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 the seed and/or mulch at no additional cost to the state.

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil or as directed by the Contract Administrator inside the grubbing limits 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 % pure seed</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		

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.

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.
P-1734	112+10 to 161+15	Apply post haul rock per Clause 6-72.
RY-6200 East	0+00 to 13+80	Apply post haul rock per Clause 6-72.
P-1000	0+00 to 334+75	Apply post haul rock per Clause 6-72.
P-1700	0+00 to 149+32	Apply post haul rock per Clause 6-72.
RY-6220	0+00 to 101+70	Apply post haul rock per Clause 6-72.

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

10-6 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 ⁻¹
Grab tensile strength	D 4632	180 lb in machine direction, 100lb in cross-machine direction
Grab tensile elongation	D 4632	30% max. at 180 lb or more
Ultraviolet stability	D 4355	70% retained after 500 hours of exposure

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

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 gauge 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")	5" X 1"

SECTION 11 SPECIAL NOTES

11-4 NOXIOUS WEED CONTROL

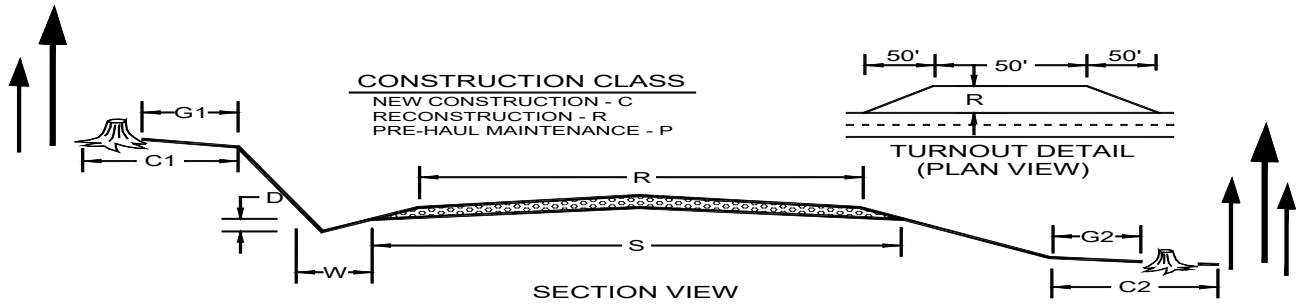
Purchaser shall notify the Contract Administrator in advance of moving equipment into Lizard Pit. Purchaser shall thoroughly clean all off road equipment prior to entry into Lizard Pit to remove contaminated soils and noxious weed seed. If equipment is moved from one DNR project area to Lizard Pit, the Contract Administrator reserves the right to require the cleaning of equipment.

11-5 INSLOPED/OUTSLOPED ROAD SEGMENTS

Purchaser shall inslope/outslope road segments as listed in table below. Inslope/outslope grade shall be in accordance with TYPICAL SECTION SHEET and Typical Inslope Detail Sheet.

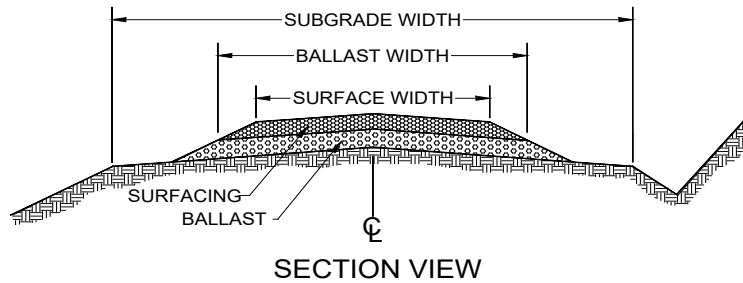
<u>Road</u>	<u>Stations</u>	<u>Inslope/Outslope</u>
P-1734	0+00 to 21+60	Inslope
P-1734	21+60 to 112+10	Inslope
P-1734_2769	0+00 to 4+00	Inslope

TYPICAL SECTION SHEET



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	CROWN AT CL (in)	DITCH WIDTH (W)	DITCH DEPTH (D)	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (C1)	ROAD FILL CLEARING (C2)
P-1000	0+00	334+75	P		12	3	3	1				
P-1700	0+00	149+32	P		12	3	3	1				
P-1700	48+40	50+75	P	20	12	3	3	1	5'	5'	5'	5'
P-1730	0+00	52+90	P	16	12	3	3	1				
P-1740	0+00	9+70	P		12	3	3	1				
P-1740 WYE	0+00	1+40	P		12	3	3	1				
P-1741	0+00	31+65	P		12	3	3	1				
P-1734	0+00	21+60	P	17	12	-3/+3			5'	5'	10'	5'
P-1734	21+60	62+00	P	17	12	+3/-3			5'	5'	10'	5'
P-1734	62+00	89+50	R	17	12	+3/-3			5'	5'	10'	5'
P-1734	89+50	112+10	P	17	12	+3/-3			5'	5'	10'	5'
P-1734	112+10	161+15	P		12		3	1				
P-1734_2769	0+00	4+00	R	15	12	+3/-3			5'	5'	10'	5'
P-1734_10644	0+00	8+60	R	17	12	+3/-3			5'	5'	10'	5'
RY-6200 East	0+00	13+80	P		12		3	1				
RY-6220	0+00	101+70	P		12	3	3					
RY-6200 Spur	0+00	2+80	C	15	12	3	3	1	5'	5'	10'	5'
P-RY-6200	0+00	8+00	C	16	12	3	3	1	5'	5'	10'	5'
Lizard Pit Road	0+00	1+80	R	17	12	3						
Equipment Spur	0+00	1+25	C	16	16	3			5'	5'	10'	5'

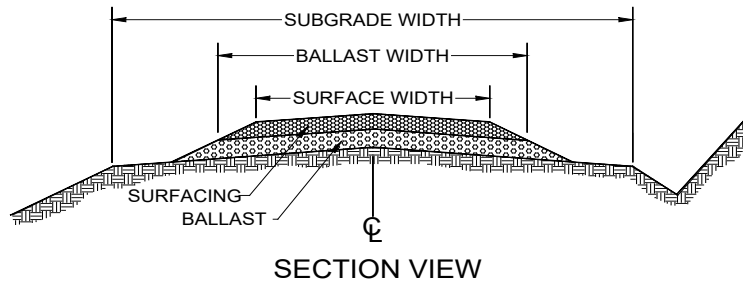
ROCK LIST SHEET



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

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)		
P-1000																	
Prehaul Misc Rock	0+00	334+75							A				100				
Posthaul Misc Rock	0+00	334+75							A				100				
P-1700																	
Prehaul Misc Rock	0+00	149+32							A				100				
Posthaul Misc Rock	0+00	149+32							A				100				
Lift	0+00	26+00							A	12	4	20	520				
Widening Lift	48+40	50+75	+4	B	4	4	10	30	A	4	4	20	30				
Bridge Spot Patch	78+10								A				20				
Spot Patch	101+60								A				20				
Replace Culvert	147+05								A				10		1		
P-1730																	
Prehaul Misc Rock	0+00	52+90		B				30									
Lift	15+50	52+90	16	B	12	8	45	1680									
Landing	2+75			B				50									
Turnaround	14+10			B				30									
Culvert Install	15+50			B				10							1		
Culvert Install	18+25			B				20						C	10		
Culvert Install	21+90			B				20						C	15		
Culvert Install	22+90			B				10						C	1		
Totals:																	
								B:1880					A:1000				

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= A: Mary Clark 1"1/2 crushed B: 4 inch jaw run rock Lizard Pit C: Light loose rip rap Lizard Pit

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
P-1730															
Culvert Install	23+90			B			10							C	1
Culvert Install	24+90			B			10							C	1
Turnaround	25+40			B			30								
Culvert Install	28+10			B			10							C	1
Landing	29+90			B			30								
Culvert Install	31+10			B			10							C	1
Culvert Install	35+55			B			10							C	1
Turnout	37+65			B			30								
Turnout	41+05			B			20								
Culvert Install	41+75			B			10							C	1
Culvert Install	46+80			B			10							B	1
Landing	48+20			B			40								
Culvert Install	49+30			B			10							C	1
Culvert Install	50+00			B			30							C	15
Culvert Install	50+50			B			10							C	1
Totals:								B:270						A:0	C:24

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= A: Mary Clark 1"1/2 crushed B: 4 inch jaw run rock Lizard Pit C: Light loose rip rap Lizard Pit

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
Turnaround	51+00			B				30							
Landing	51+90			B				50							
P-1740															
Prehaul Misc Rock	0+00	9+70		B				20							
P-1740 WYE															
No Rock	0+00	1+40													
P-1741															
Prehaul Misc Rock	0+00	31+65		B				20							
Lift	24+25	31+65		B	12	8	45	330							
Turnaround	17+00														
Landing	21+70			B				20							
Turnaround	24+25			B				30							
Turnaround	31+65			B				20							
P-1734															
Lift	0+00	8+75	17	B	12	8	45	390							
Lift	8+75	40+50	17	B	12	12	70	2230							
Lift	40+50	62+00	17	B	12	8	45	970							
Lift	62+00	112+10	17	B	12	12	70	3510							
Culvert Install	8+75			B				10						C	1
Turnout	9+90			B				20							
Culvert Install	12+70			B				10						C	15
Culvert Install	13+85			B				10						C	1
Turnout	14+85			B				20							
Culvert Install	18+30			B				10						C	1
Turnout	19+10			B				20							
Culvert Install	21+60			B				10						C	1
Culvert Install	25+40			B				10						C	6
Culvert Install	28+30			B				10						C	1
Culvert Install	32+50			B				10						C	1
Landing	36+50			B				30							
Culvert Install	39+75			B				10						C	1
Totals:								B:7800					A:0		C:28

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= A: Mary Clark 1"1/2 crushed B: 4 inch jaw run rock Lizard Pit C: Light loose rip rap Lizard Pit

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd³/sta)	Pitrun SUBTOTAL(yd³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd³/sta)	Crushed Subtotal(yd³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd³)
P-1734															
Turnaround	40+50			B				20							
Culvert Install	42+00			B				10						C	1
Culvert Install	43+75			B				10						C	1
Landing	44+75			B				30							
Culvert Install	47+35			B				10						C	1
Culvert Install	50+90			B				10						C	1
Culvert Install	55+00			B				10						C	1
Landing	56+00			B				30							
Culvert Install	60+35			B				10						C	1
Landing	62+00			B				30							
Culvert Install	63+35			B				10						C	1
Culvert Install	66+80			B				10						C	1
Turnout	69+90			B				20							
Culvert Install	72+90			B				10						C	1
Culvert Install	73+90			B				10						C	15
Culvert Install	77+40			B				10						C	1
Culvert Install	82+00			B				10						C	1
Turnout	83+00			B				20							
Culvert Install	84+30			B				10						C	10
Replace Culvert	85+70			B				10						C	10
Culvert Install	86+70			B				10						C	1
Replace Culvert	88+50			B				10						C	10
Turnout	93+05			B				20							
Culvert Install	95+40			B				10						C	1
Landing	99+50			B				30							
Culvert Install	100+70			B				10						C	1
Culvert Install	104+10			B				10						C	1
Culvert Install	105+00			b				10						C	10
Totals:								B:400					A:0		C:70

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= A: Mary Clark 1"1/2 crushed B: 4 inch jaw run rock Lizard Pit C: Light loose rip rap Lizard Pit

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd ³ /sta)	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
P-1734															
Turnout	107+25			B				20							
Culvert Install	109+00			B				20						C	1
Landing	110+60			B				30							
P-1734															
Prehaul Misc Rock	112+10	161+15		B				30							
Posthaul Misc Rock	112+10	161+15		B				30							
P-1734_2769															
Lift	0+00	4+00	15	B	12	4	20	80							
Culvert Install	0+10			B				10						C	1
Landing	0+40			B				30							
Culvert Install	1+80			B				10						C	1
Landing	4+00			B				30							
P-1734_10644															
Lift	0+00	8+60	17	B	12	8	45	390							
Culvert Install	2+50			B				10						C	1
Turnout	4+40			B				20							
RY-6200 East															
Prehaul Misc Rock	0+00	13+80							A				20		
Posthaul Misc Rock	0+00	13+80							A				20		
Totals:								B:710					A:40		C:4

CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
P-1700	53+45							PR	Clean Inlet and Outlet
P-1700	147+05	18	40				1	PR	Replace Culvert
P-1730	15+50	18	35				1	PR	Culvert Install
P-1730	18+25*	24	40			5	5	PR	Culvert Install, Install Sediment traps in ditch
P-1730	21+90*	36	40			5	10	PR	Culvert Install, Install Sediment traps in ditch
P-1730	22+90	18	30	20			1	PR	Culvert Install
P-1730	23+90	18	30	20			1	PR	Culvert Install
P-1730	24+90	18	30				1	PR	Culvert Install
P-1730	28+10	18	30				1	PR	Culvert Install
P-1730	31+10	18	30				1	PR	Culvert Install
P-1730	35+55	18	30				1	PR	Culvert Install
P-1730	41+75	18	30	10			1	PR	Culvert Install
P-1730	46+80	18	30				1	PR	Culvert Install
P-1730	49+30	18	30				1	PR	Culvert Install
P-1730	50+00*	36	50	10		5	10	PR	Culvert Install
P-1730	50+50	18	30					PR	Culvert Install
P-1734	2+85	18	30					PR	Culvert Install
P-1734	8+75	18	30				1	PR	Culvert Install
P-1734	12+70*	30	45	10		5	10	PR	Culvert Install, Install Sediment traps in ditch
P-1734	13+85	18	30				1	PR	Culvert Install
P-1734	18+30	18	40				1	PR	Culvert Install
P-1734	21+60	18	30				1	PR	Culvert Install
P-1734	25+40*	24	30			1	5	PR	Culvert Install, Install Sediment traps in ditch
P-1734	28+30	18	30				1	PR	Culvert Install
P-1734	32+50	18	30	10			1	PR	Culvert Install
P-1734	39+75	18	30				1	PR	Culvert Install
P-1734	42+00	18	30				1	PR	Culvert Install
P-1734	43+75	18	30				1	PR	Culvert Install
P-1734	47+35	18	30				1	PR	Culvert Install
P-1734	50+90	18	30				1	PR	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
P-1734	55+00	18	30				1	PR	Culvert Install
P-1734	60+35	18	30	10			1	PR	Culvert Install
P-1734	63+35	18	30	10			1	PR	Culvert Install
P-1734	66+80	18	30	10			1	PR	Culvert Install
P-1734	72+90	18	30				1	PR	Culvert Install
P-1734	73+90*	36	45			5	10	PR	Culvert Install, Install Sediment traps in ditch
P-1734	77+40	18	30				1	PR	Culvert Install
P-1734	82+00	18	30				1	PR	Culvert Install
P-1734	84+30*	30	40			5	5	PR	Culvert Install, Install Sediment traps in ditch, Ditchout to reestablish stream bed above and below culvert
P-1734	85+70*	30	40			5	5	PR	Replace Culvert Install Sediment traps in ditch, Ditchout to reestablish stream bed above and below culvert
P-1734	86+70	18	30				1	PR	Culvert Install
P-1734	88+50*	30	35			5	5	PR	Replace Culvert
P-1734	95+40	18	30				1	PR	Culvert Install
P-1734	100+70	18	30				1	PR	Culvert Install
P-1734	104+10	18	30				1	PR	Culvert Install
P-1734	105+00*	24	35			5	5	PR	Culvert Install
P-1734	109+00	18	50				1	PR	Culvert Install
P-1734_2769	0+10	18	50				1	PR	Culvert Install
P-1734_2769	1+80	18	30				1	PR	Culvert Install
P-1734_10644	2+50	18	30	10			1	PR	Culvert Install
RY-6220	100+70	18	30					PR	Culvert Install
P-RY-6200	3+00	18	30					PR	Culvert Install
RY-6200 Spur	1+10	18	40	10		1	5	PR	Culvert Install
Contingency Culverts		18	90						

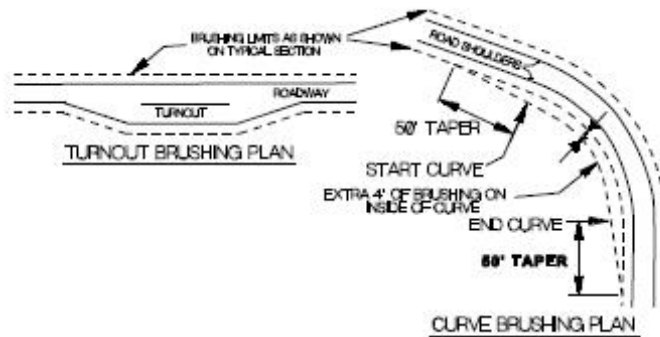
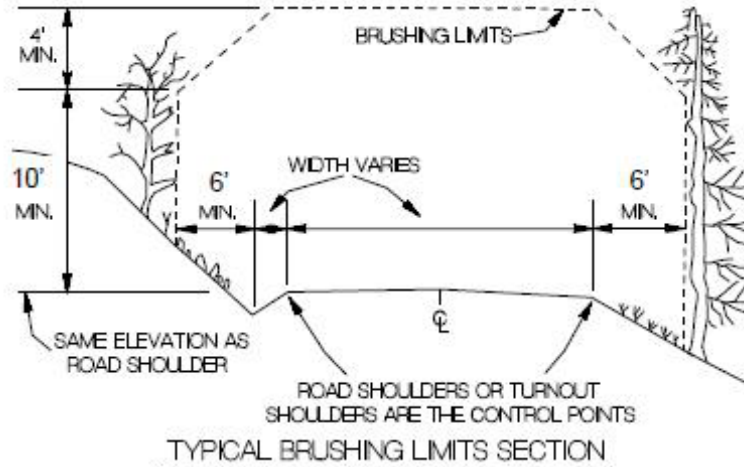
All rip rap shall be Oversize unless specified in the Rock List, or in the field.

All backfill shall be native material (NT) unless specified otherwise. CR= 1 ¼" - crushed rock, PR= Pit Run Rock. * indicates a live stream.

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	All	Subgrade (Except Puncheon)	6"	Vibratory Smooth Drum	6,000	2	3
Construction	All	Culvert Backfill	8"	Jumping Jack		3	
Construction	All	Rock Placement	6"	Vibratory Smooth Drum	6,000	2	3
Reconstruction	All	Subgrade (Except Puncheon)	6"	Vibratory Smooth Drum	6,000	2	3
Reconstruction	All	Culvert Backfill	8"	Jumping Jack		3	
Reconstruction	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

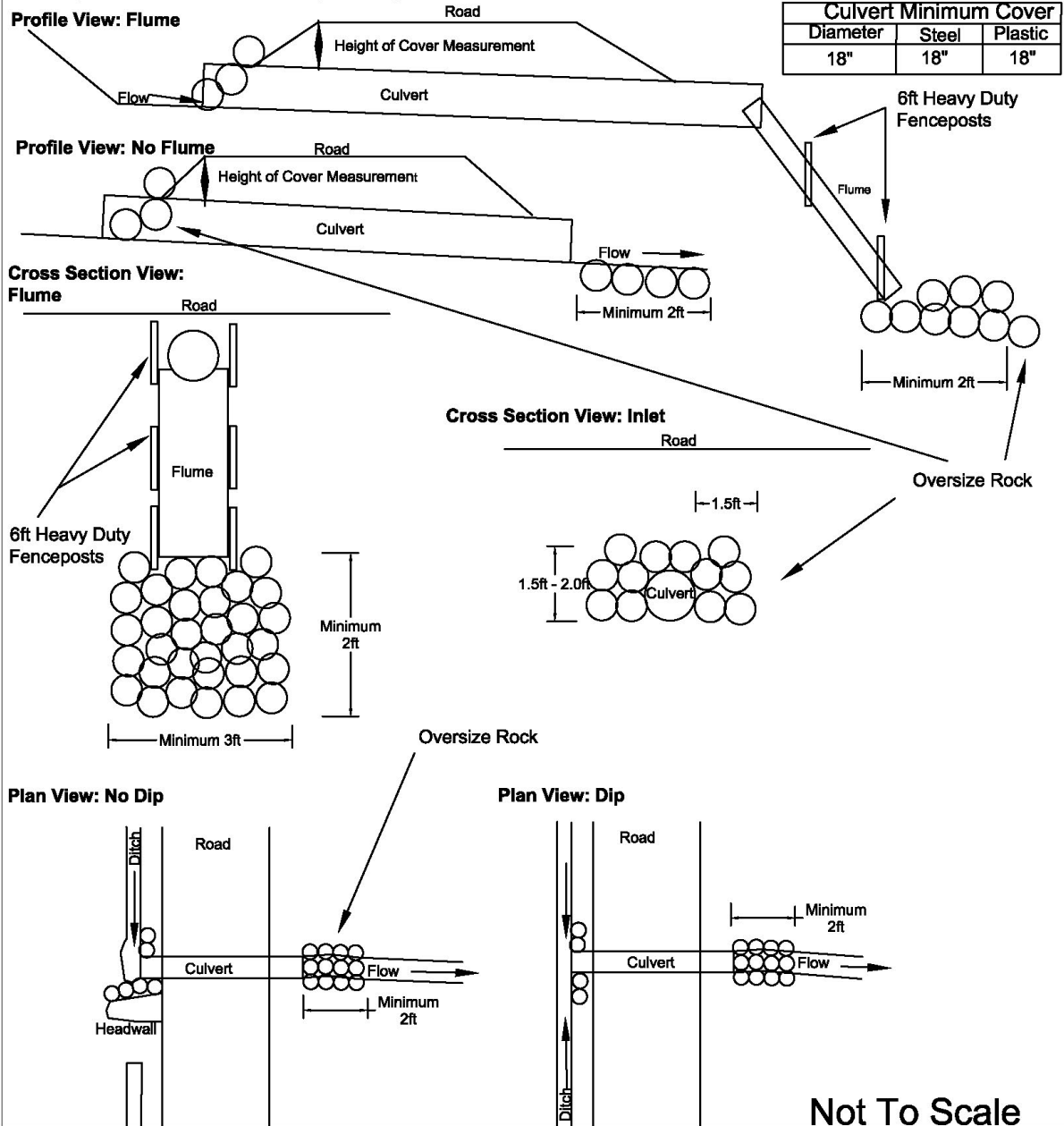
BRUSHING DETAIL



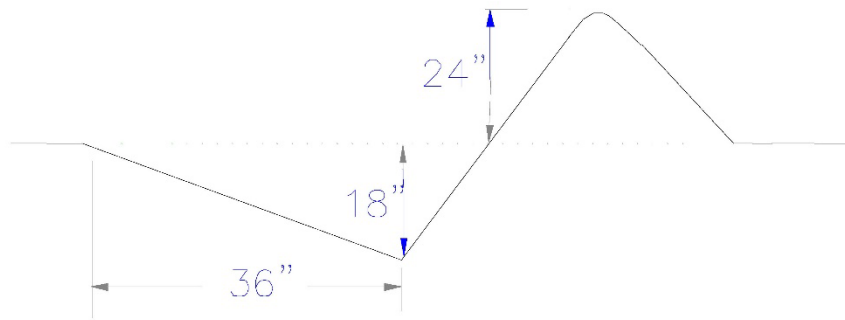
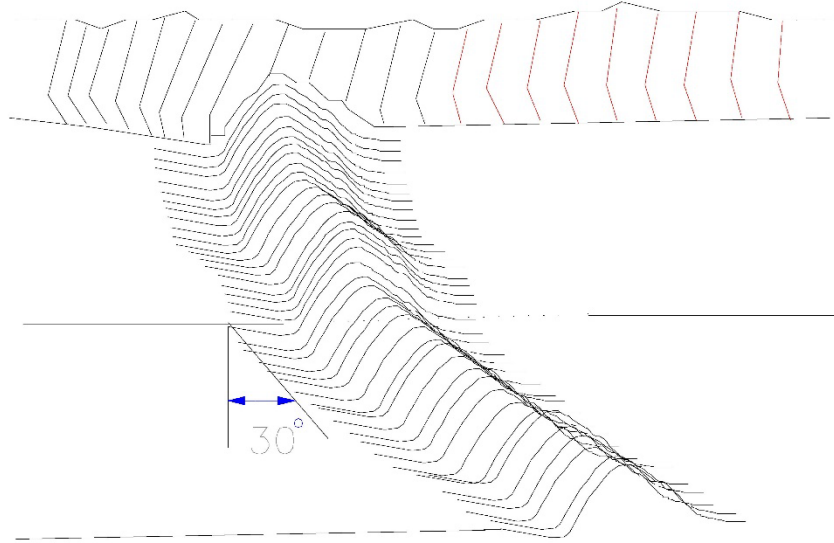
1. All vegetation within the brushing limits shall be cut to within 3 inches of the ground, unless otherwise directed by the Contract Administrator
2. All brush, trees, limbs, etc. shall be removed from the road surface, cut banks, culvert inlets/outlets, and ditch lines
3. All debris that may roll or move into the ditch line shall be removed and placed in a stable location

Typical Cross Drain Culvert Installation Detail Sheet

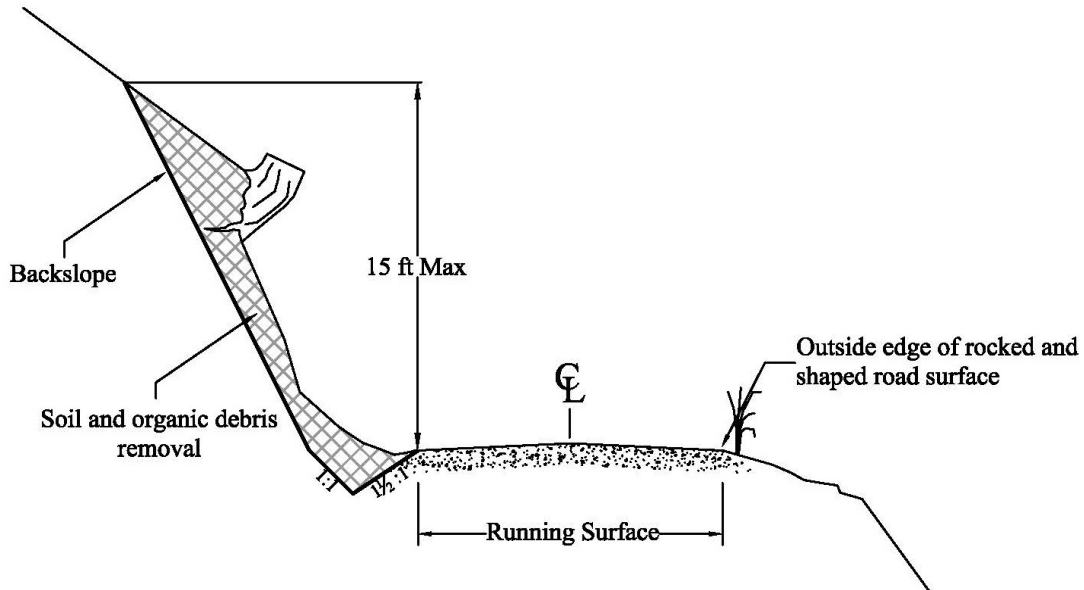
- Culvert lay shall not exceed 10%.
- Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
- Oversize shall be placed using a "zero 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..



NON-DRIVABLE WATER BAR DETAIL



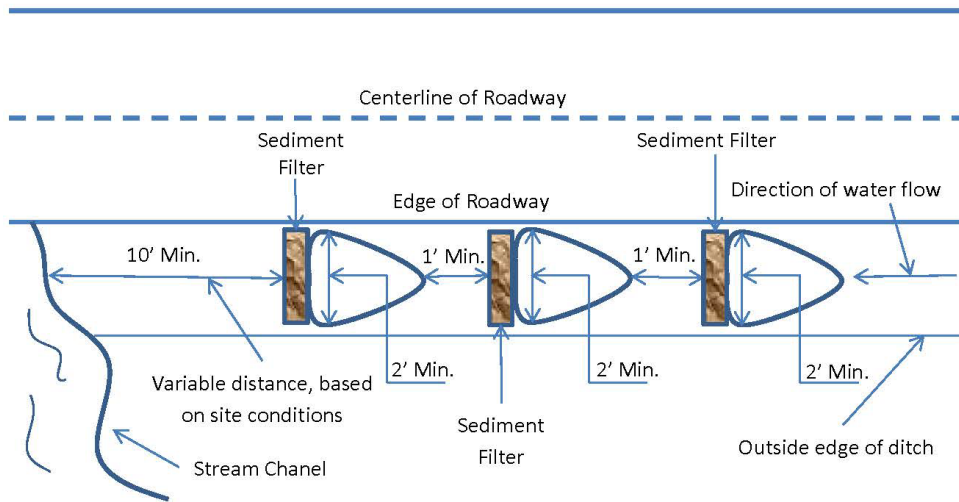
Ditch Cleaning Detail



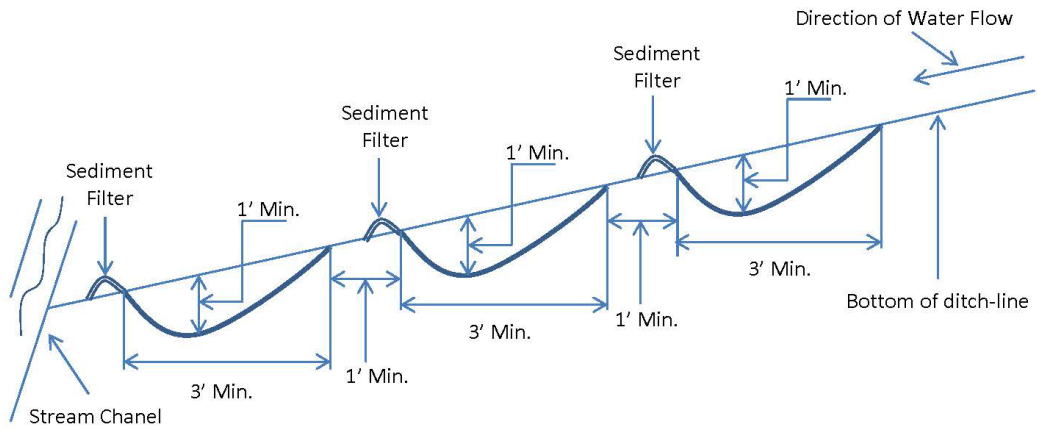
1. The backslope shall be no steeper than $\frac{1}{2}:1$, unless the material is hardpan or solid rock, in which case it may be $\frac{1}{4}:1$.
2. If there is sufficient width for the ditch without affecting the cut bank, then removing bank material is not required.
3. Bank material above the ditch shall be removed to a maximum height of 15 feet, if needed to meet the requirements of this detail.
4. If there is insufficient width to clean or construct a ditch without disturbing more than 15 vertical feet of bank, the Contract Administrator may authorize changes to this plan in order to still meet the intent of having a ditch, while staying within the excavation limits already set.
5. Ditch cleaning or construction shall not shrink the running surface of the road.

SEDIMENT TRAP DETAIL

Top View



Profile View



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%.

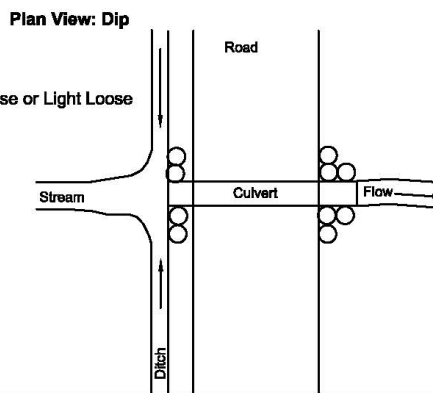
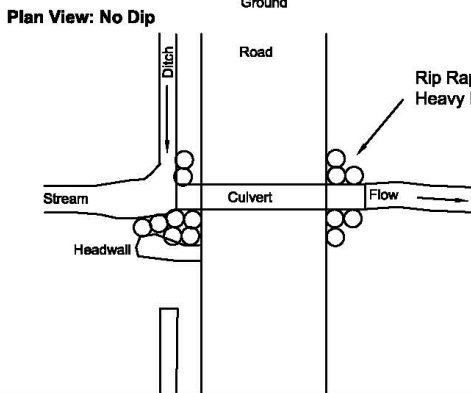
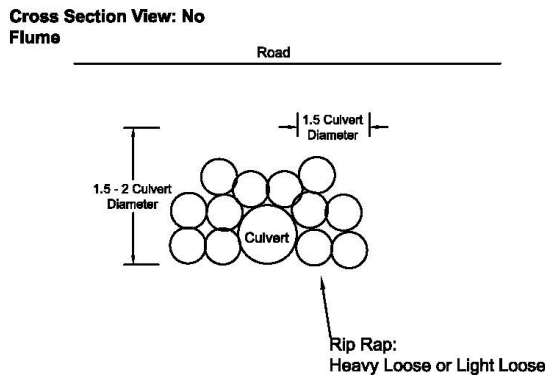
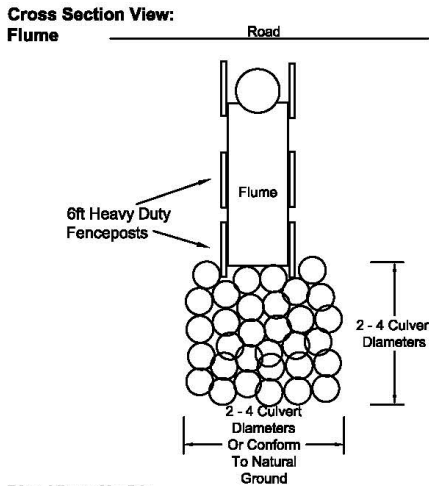
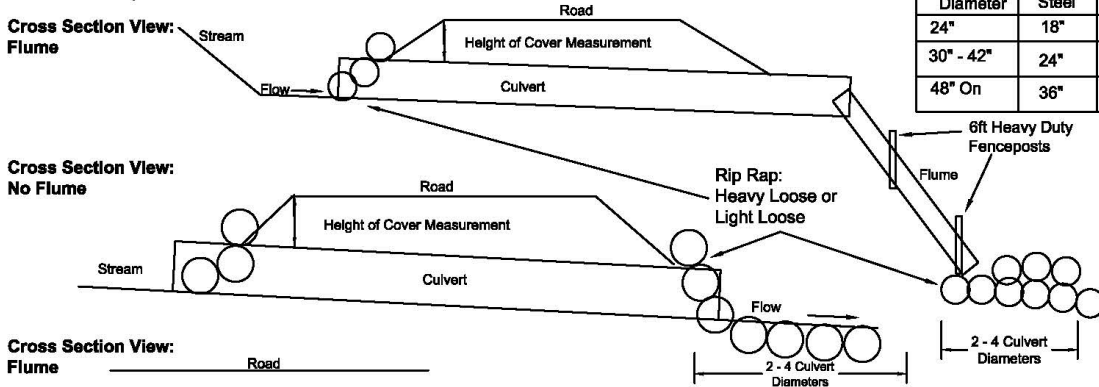
-Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.

-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"



Not To Scale

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.): _____

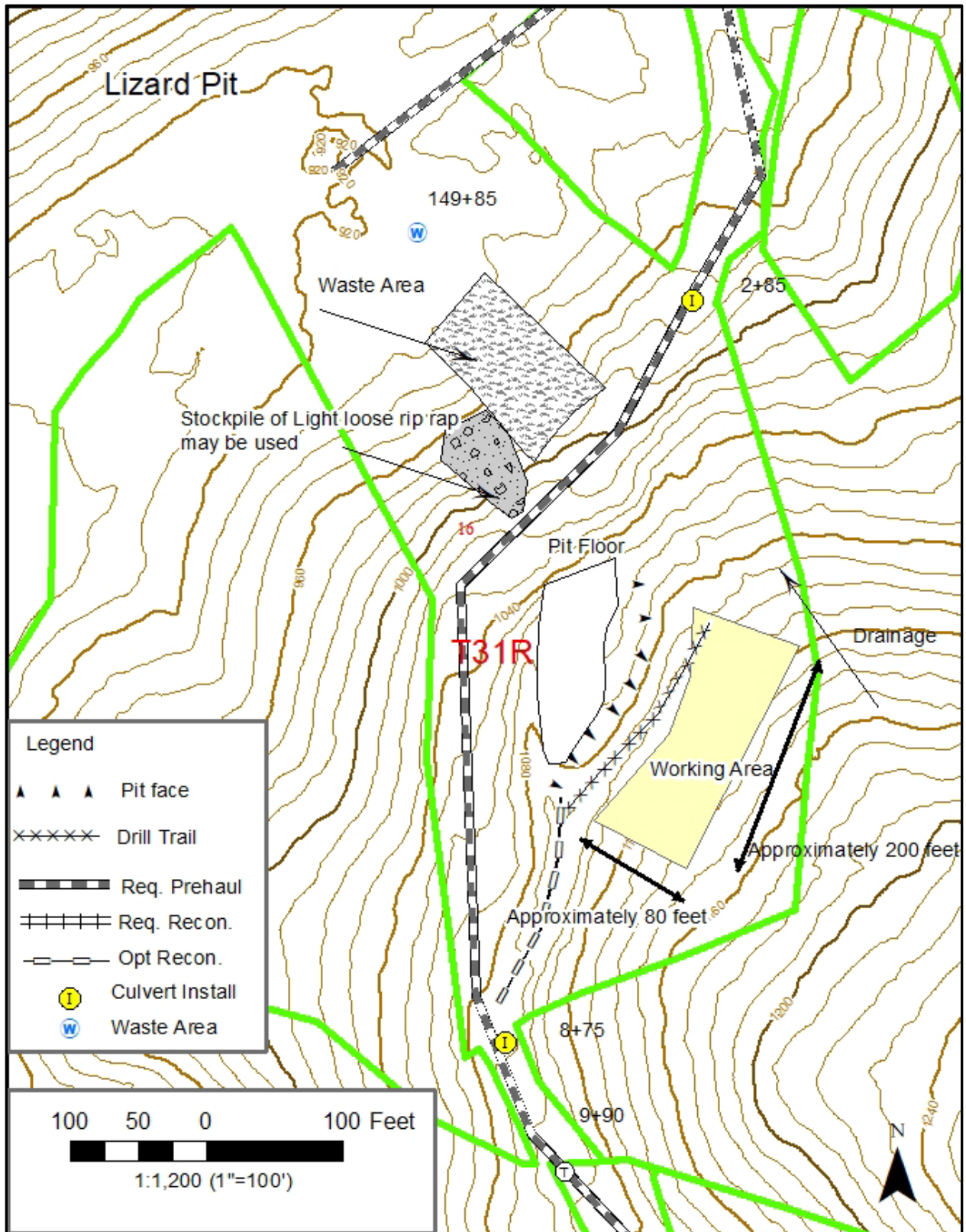
22. Detail drawing of delay system (show hole pattern and delays in milliseconds). Attach additional sheets if required:

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

23. Submitted by: _____ Date: _____

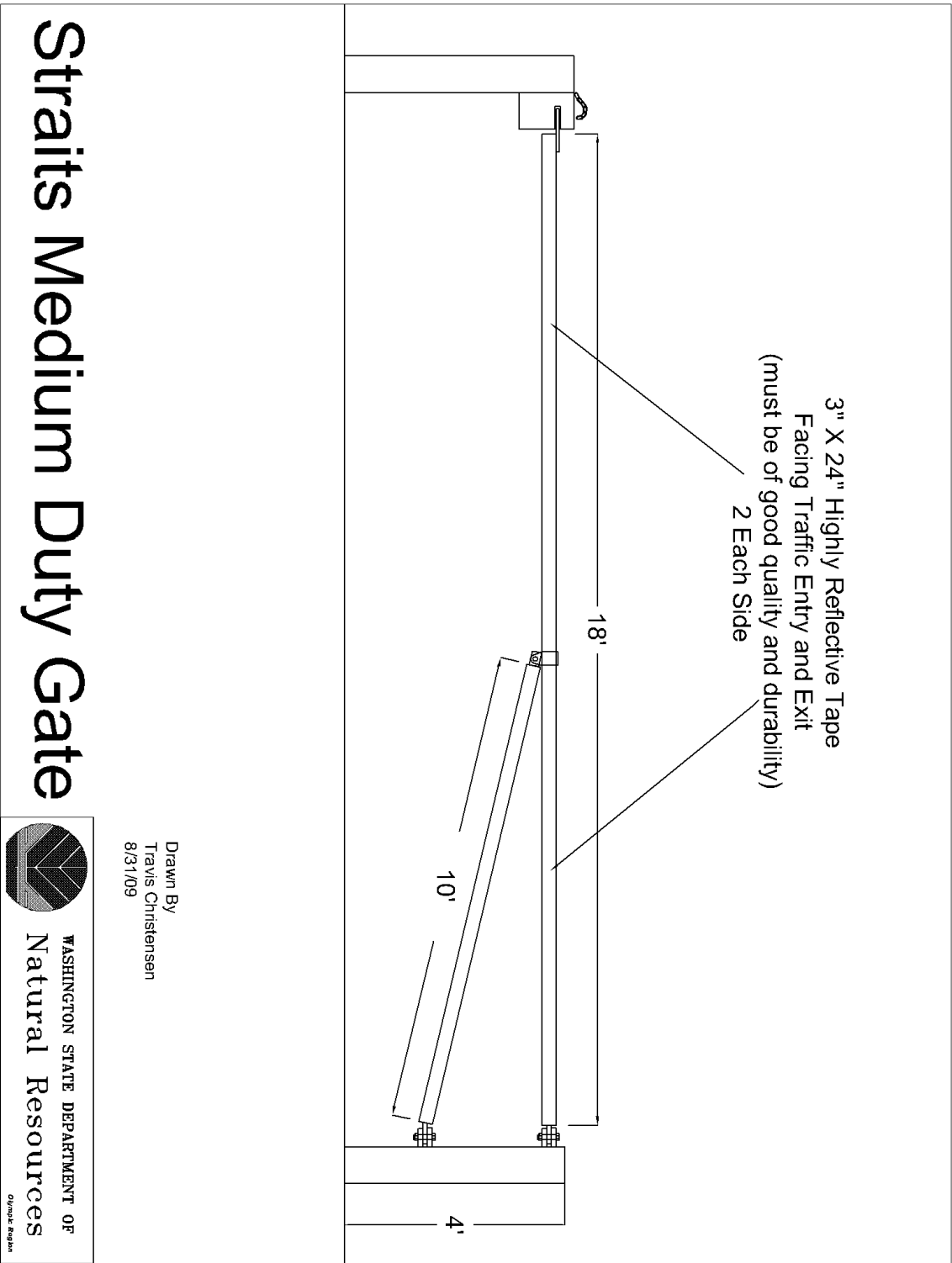
24. Received by: _____ Date: _____

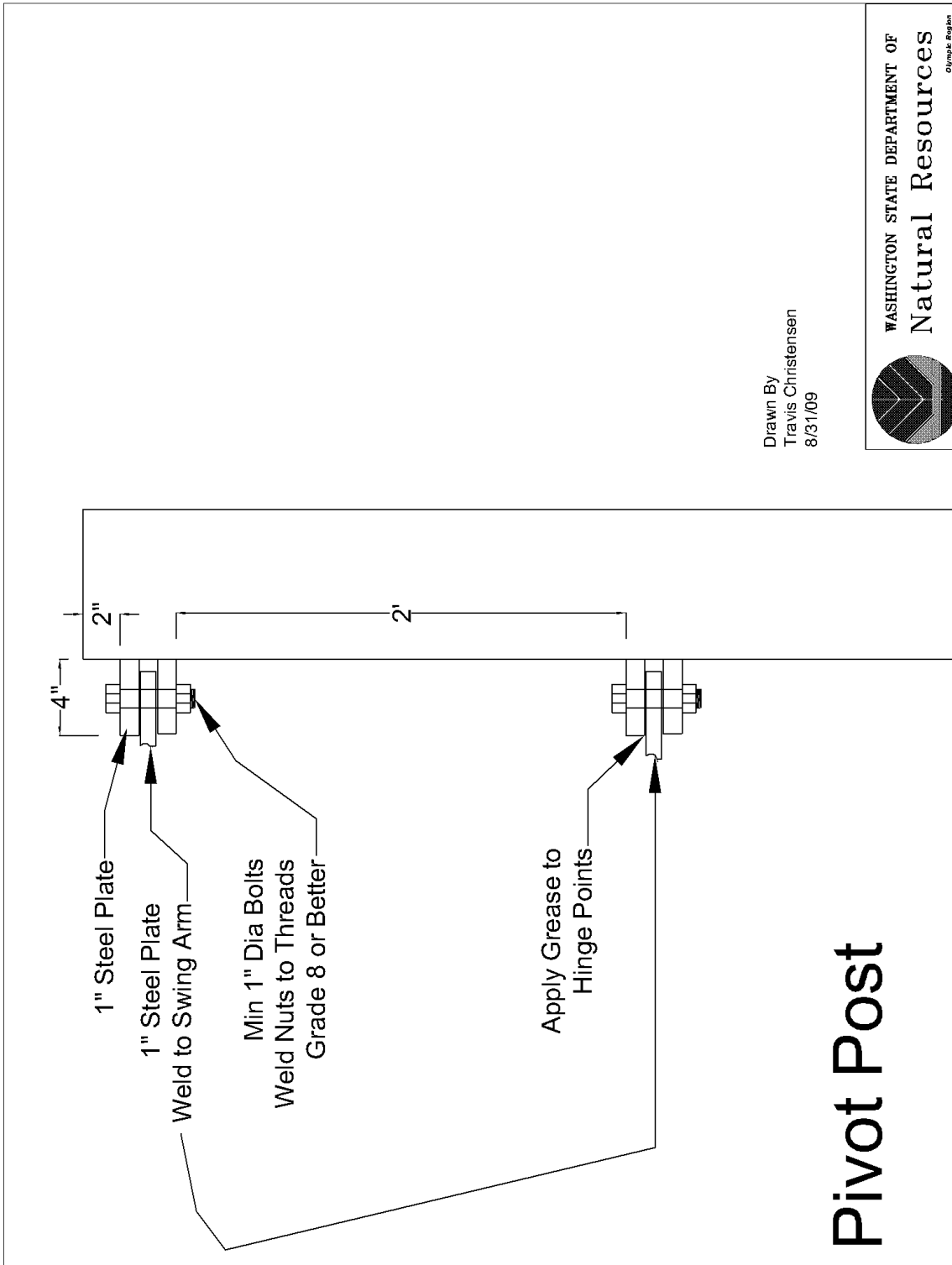
Note: Attach copies of manufacturer=s data sheet(s) for explosive and caps.



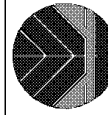
Lizard Pit
ROCK SOURCE DEVELOPMENT AND RECLAMATION PLAN
SEC. 11, T.29N., R.4W
PIT USE REQUIREMENTS

1. Activity restrictions per Clause 1-25.
2. 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.
3. 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 southwest 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.
4. Excavated face height shall not exceed 20 feet and shall be sloped no steeper than 1/4:1.
5. Excavated slopes shall have a 1 1/2:1 backslope or less at the completion of operations.
6. 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.
7. 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.
8. 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 Purchaser shall use Light Loose Rip Rap to block the drill trail.
9. All material shall remain the property of the State.
10. 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.
11. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Administrator.
12. All operations shall be carried out in compliance with the regulation of:
 - a. Regulations and Standards Applicable to "Metal and Nonmetal Mining and Milling Operations" (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration
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.



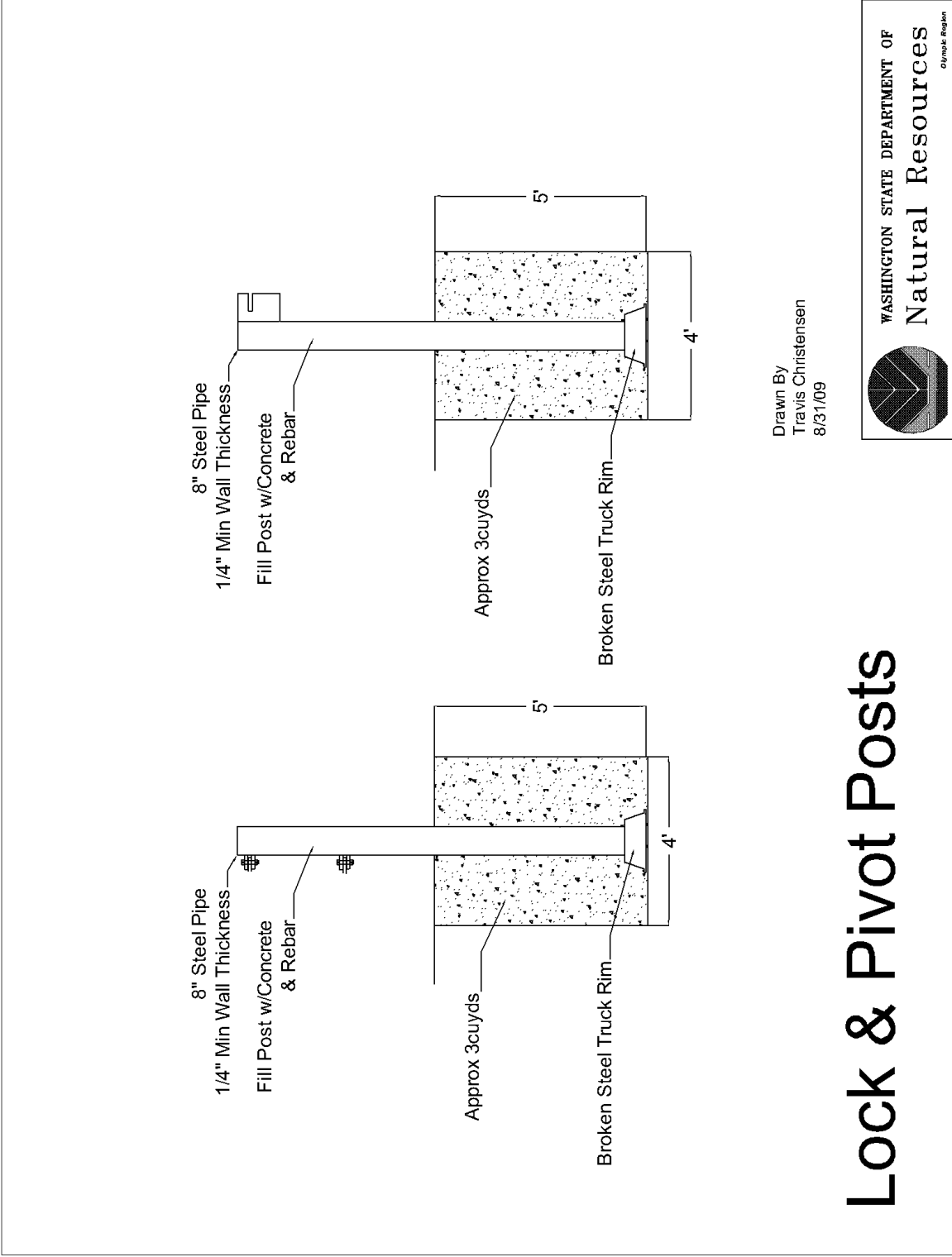


Drawn By
Travis Christensen
8/31/09

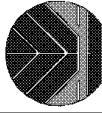


WASHINGTON STATE DEPARTMENT OF
Natural Resources
Olympic Region

Pivot Post

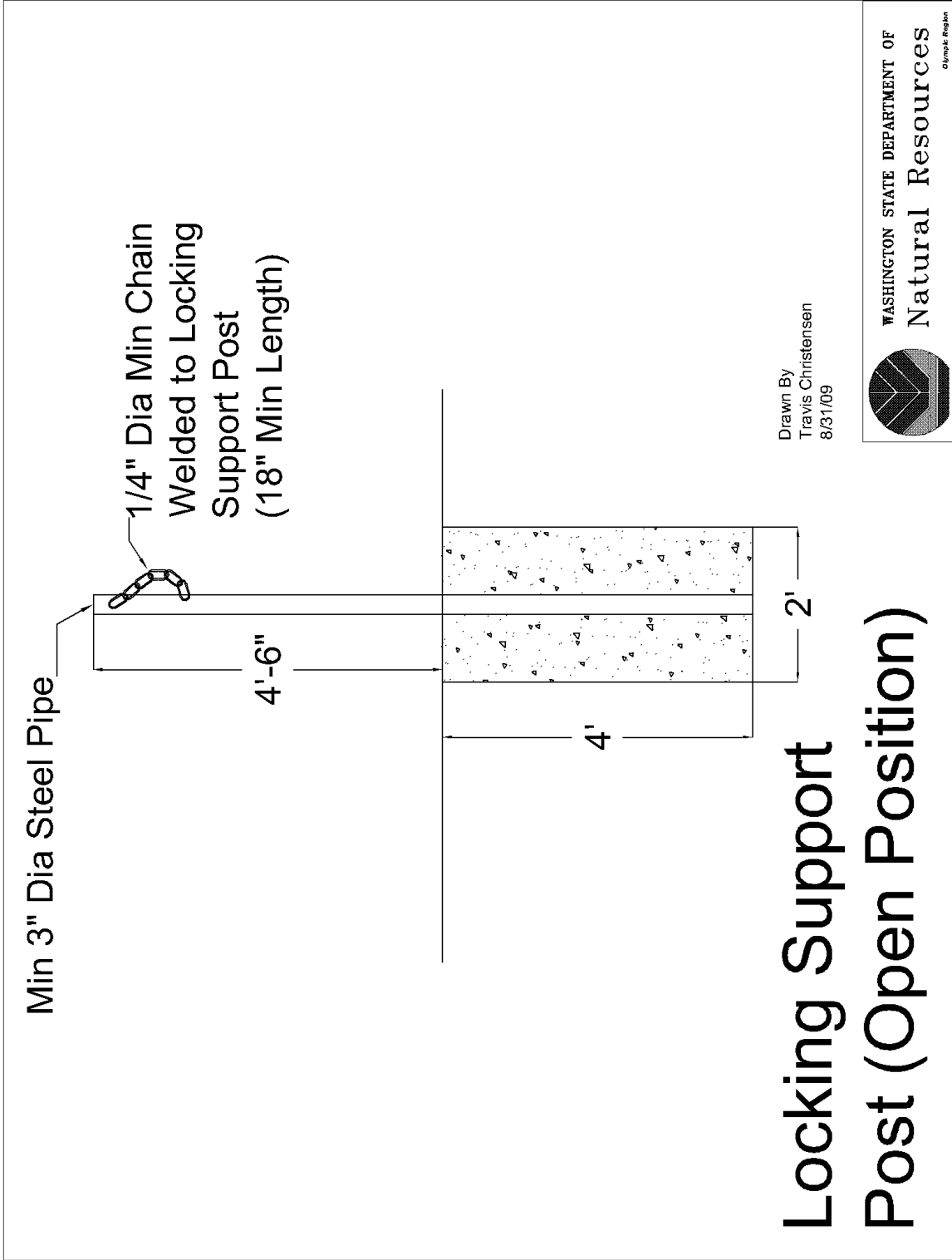


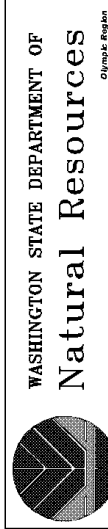
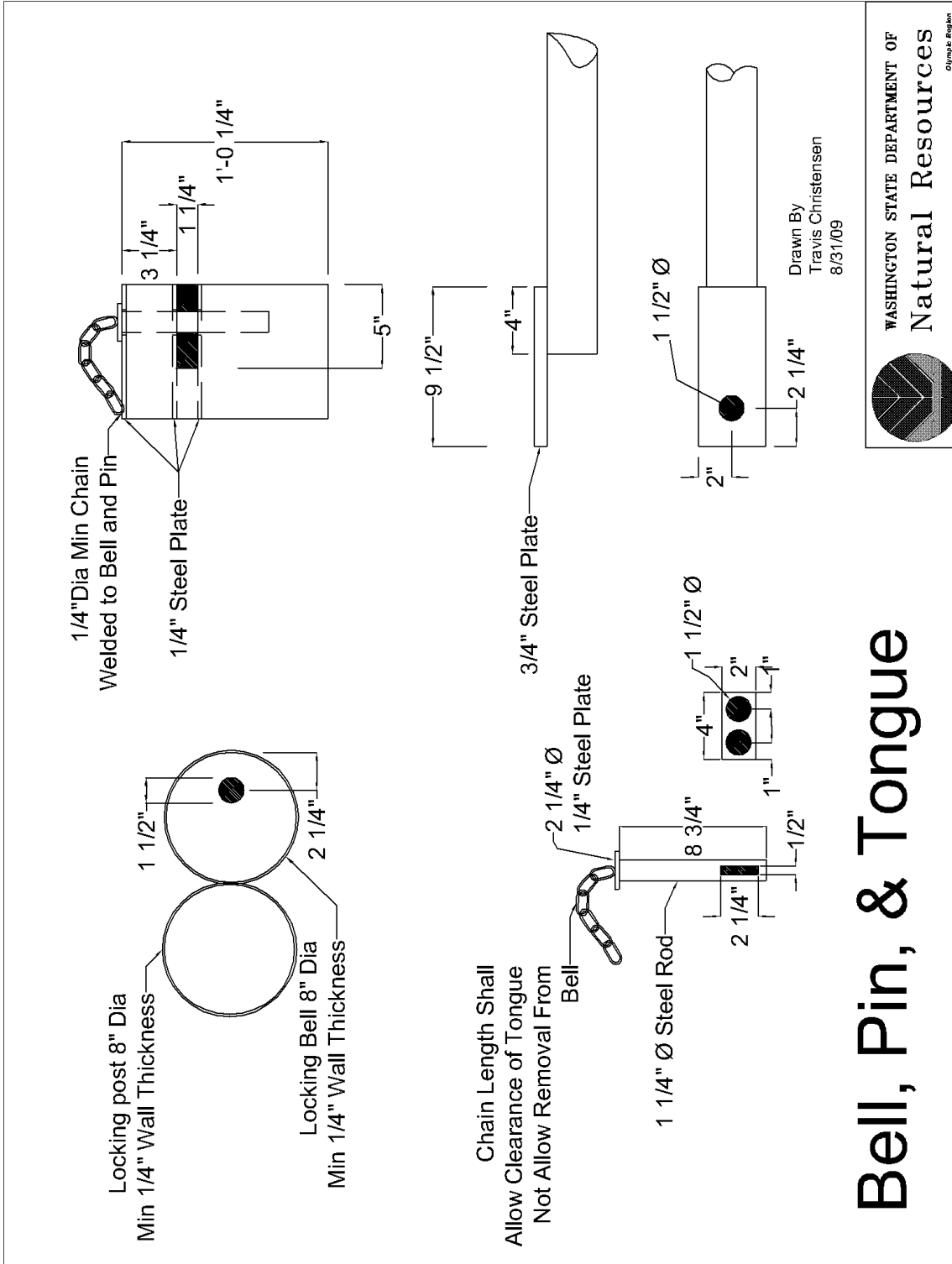
Drawn By
Travis Christensen
8/31/09



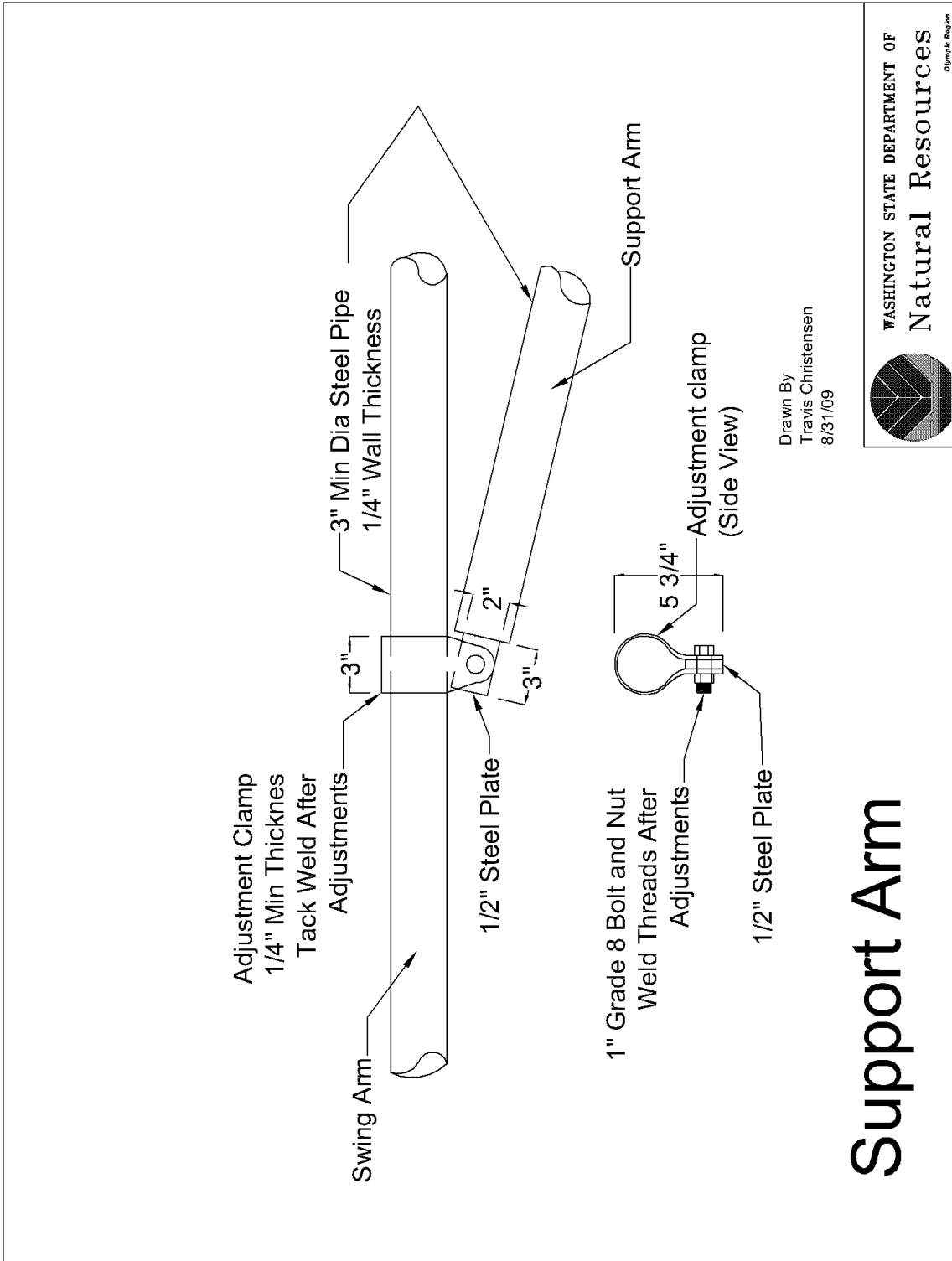
WASHINGTON STATE DEPARTMENT OF
Natural Resources
Olympic Region

Lock & Pivot Posts





Bell, Pin, & Tongue



SUMMARY - Road Development Costs												
SALE NAME:	Lizard Breath	CONTRACT#: 30-103773	REGION:	Olympic	DISTRICT:	Coast				TOTAL		
LEGAL DESCRIPTION:	0									TOTAL SHEET #2		
ROAD NAME:	RY-620 Spur	P-RY-620	P-1734	P-1734 2769	P-1734 10644	Lizard Pt Road	P-1000	P-1700	P-1740	P-1740 WYE	TOTAL:	
ROAD TYPE:	Construction	Construction	Construction	Prehaul/Recon	Prehaul	Recon.	Recon.	Prehaul	Prehaul	Prehaul		
NUMBER OF STATIONS:	280	800	125	11210	400	860	180	33475	140	63372	113210	
SIDESLOPE:	10%	50%	5%	50%	50%	50%	50%	0%	0%	0%	315%	77.68
CLEARING AND GRUBBING	\$239	\$1,518	\$265	\$19,169	\$684	\$1,471	\$273	\$0	\$0	\$0	\$23,620	\$0
ROAD BRUSHING:				\$2,018	\$72	\$155	\$32	\$6,026	\$2,688	\$175	\$11,190	\$4,484
EXCAVATION AND FILL:	\$475	\$14,111	\$3,661	\$117,604	\$3,051	\$6,560	\$1,375	\$0	\$0	\$0	\$146,835	\$0
ROAD GRADING:				\$729	\$26	\$56	\$12	\$2,176	\$971	\$63	\$4,041	\$7,357
DITCH CLEANING/CONSTRUCTION:				\$4,372	\$156	\$335	\$70	\$0	\$0	\$0	\$4,934	\$10,331
ROCK TOTALS (Ch. Yds.)/ROCK COSTS:												\$0
Ballast:	11720	120	420	7810	160	420	0	0	30	20	8980	2740
	\$2,492	\$8,618	\$0	\$113,666	\$992	\$5,523	\$0	\$0	\$671	\$197	\$35,299	\$35,299
Surface:	1040	0	0	0	0	0	0	200	800	0	1000	40
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,472	\$17,888	\$0	\$0	\$328
Overize:	158	0	6	98	2	1	0	0	0	0	107	50
	\$0	\$126	\$0	\$853	\$17	\$13	\$0	\$0	\$0	\$0	\$1,009	\$659
CLVERTS AND FLUMES:		\$1,272	\$924	\$37,682	\$2,464	\$964	\$0	\$0	\$1,232	\$0	\$44,538	\$12,190
Gate:	\$0	\$0	\$0	\$6,000	\$0	\$0	\$0	\$0	\$0	\$0	\$6,000	\$0
MISC. EXPENSES:	\$16	\$47	\$7	\$11,566	\$413	\$887	\$186	\$0	\$0	\$0	\$13,123	\$10,426
OVERHEAD:	\$405	\$2,281	\$354	\$25,090	\$60	\$1,277	\$156	\$1,014	\$1,876	\$35	\$33,120	\$6,869
TOTAL COSTS:	\$4,899	\$27,626	\$4,288	\$338,719	\$8,505	\$17,241	\$2,102	\$13,687	\$25,325	\$469	\$442,897	\$87,944
COST PER STATION:	\$1,750	\$3,453	\$3,430	\$3,022	\$2,126	\$2,005	\$1,168	\$41	\$170	\$48	\$699	\$1,345
MOBILIZATION:			\$15,500									
ROAD DEACTIVATION AND ABANDONMENT COSTS:			\$0									
Per Work		\$174,500										
NOTE: This appraisal has no allowance for profit and risk.												
Sheet 1 of 2												
Plans to be furnished by:												

SUMMARY - Road Development Costs							DISTRICT:
SALE NAME:	Lizard Breath	CONTRACT#:	0	REGION:	Olympic	DISTRICT:	Coast
LEGAL DESCRIPTION:	0						
ROAD NAME:	P-1741	P-1730	P-1734	RY-6200 EAST	RY-6220	All Roads	
ROAD TYPE:	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Posthaul	
NUMBER OF STATIONS:	31.65	52.90	49.05	13.80	101.70	883.00	
SIDESLOPE:	0%	0%	0%	0%	0%	0%	
CLEARING AND GRUBBING:	\$0	\$0	\$0	\$0	\$0	\$0	
ROAD BRUSHING:	\$570	\$952	\$883	\$248	\$1,831	\$0	
EXCAVATION AND FILL:	\$0	\$0	\$0	\$0	\$0	\$0	
ROAD GRADING:	\$206	\$344	\$319	\$90	\$661	\$5,738	
DITCH CLEANING/CONSTRUCTION:	\$0	\$2,063	\$0	\$0	\$0	\$8,268	
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:							
Ballast:	420	2200	60	0	60	0	
	\$4,137	\$28,446	\$843	\$0	\$1,873	\$0	
Surface:	0	0	0	40	0	0	
	\$0	\$0	\$0	\$328	\$0	\$0	
Oversize:	0	50	0	0	0	0	
	\$0	\$659	\$0	\$0	\$0	\$0	
CULVERTS AND FLUMES:	\$0	\$11,266	\$0	\$0	\$924	\$0	
STRUCTURES:	\$0	\$0	\$0	\$0	\$0	\$0	
MISC. EXPENSES:	\$0	\$5,261	\$0	\$0	\$0	\$5,164	
OVERHEAD:	\$393	\$3,919	\$164	\$53	\$423	\$1,917	
TOTAL COSTS:	\$5,305	\$52,911	\$2,208	\$719	\$5,712	\$21,088	
COST PER STATION:	\$167.63	\$1,000.21	\$45.02	\$52.13	\$56.16	\$23.88	

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 up to 100 cubic yards in volume 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 compact the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET In slope or out slope 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

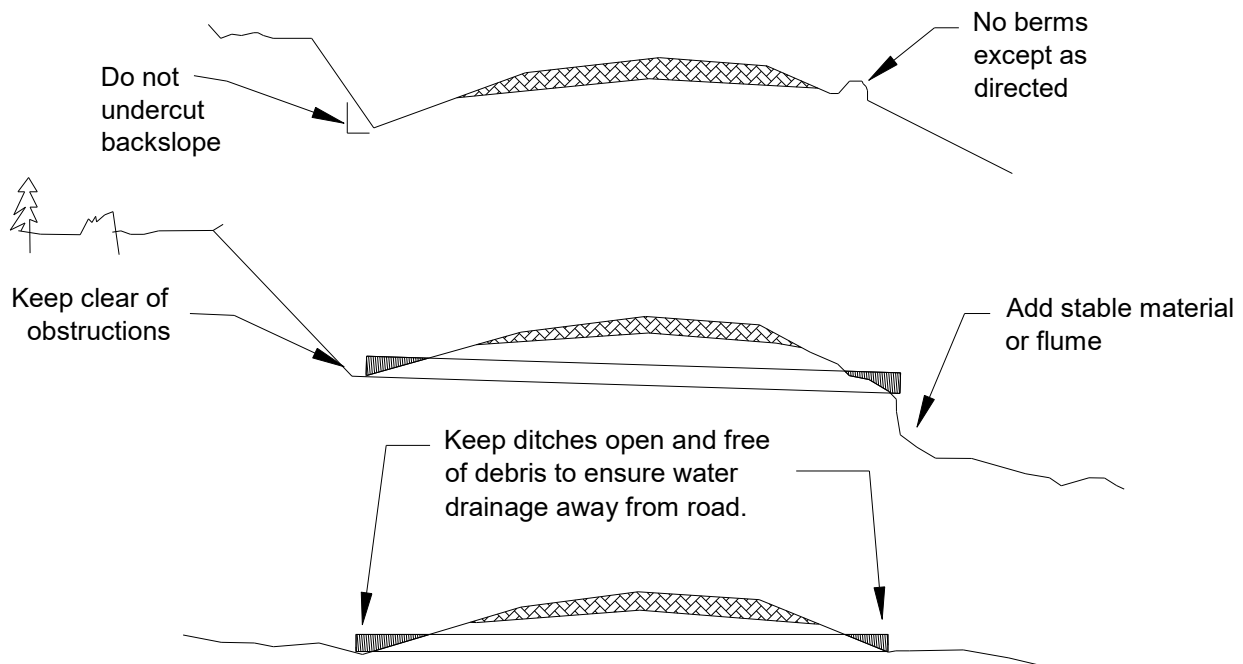
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

Debris

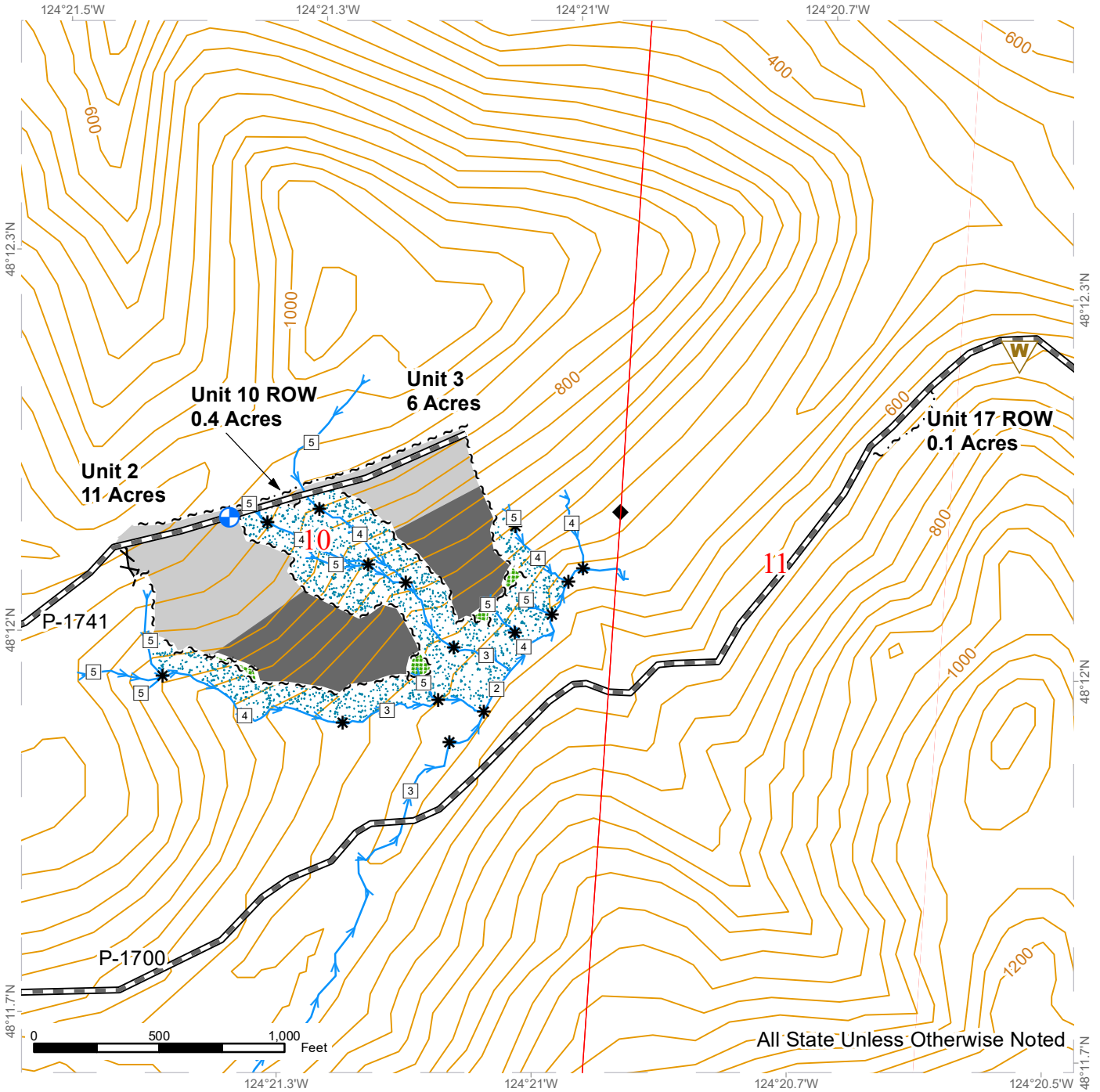
- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.



LOGGING PLAN MAP

SALE NAME: LIZARD BREATH
AGREEMENT#: 30-103773
TOWNSHIP(S): T31R13W
TRUST(S): Common School and Indemnity (3), Scientific School (10), State Forest Transfer (1), Capital Grant (7))

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 540-1750'



All State Unless Otherwise Noted

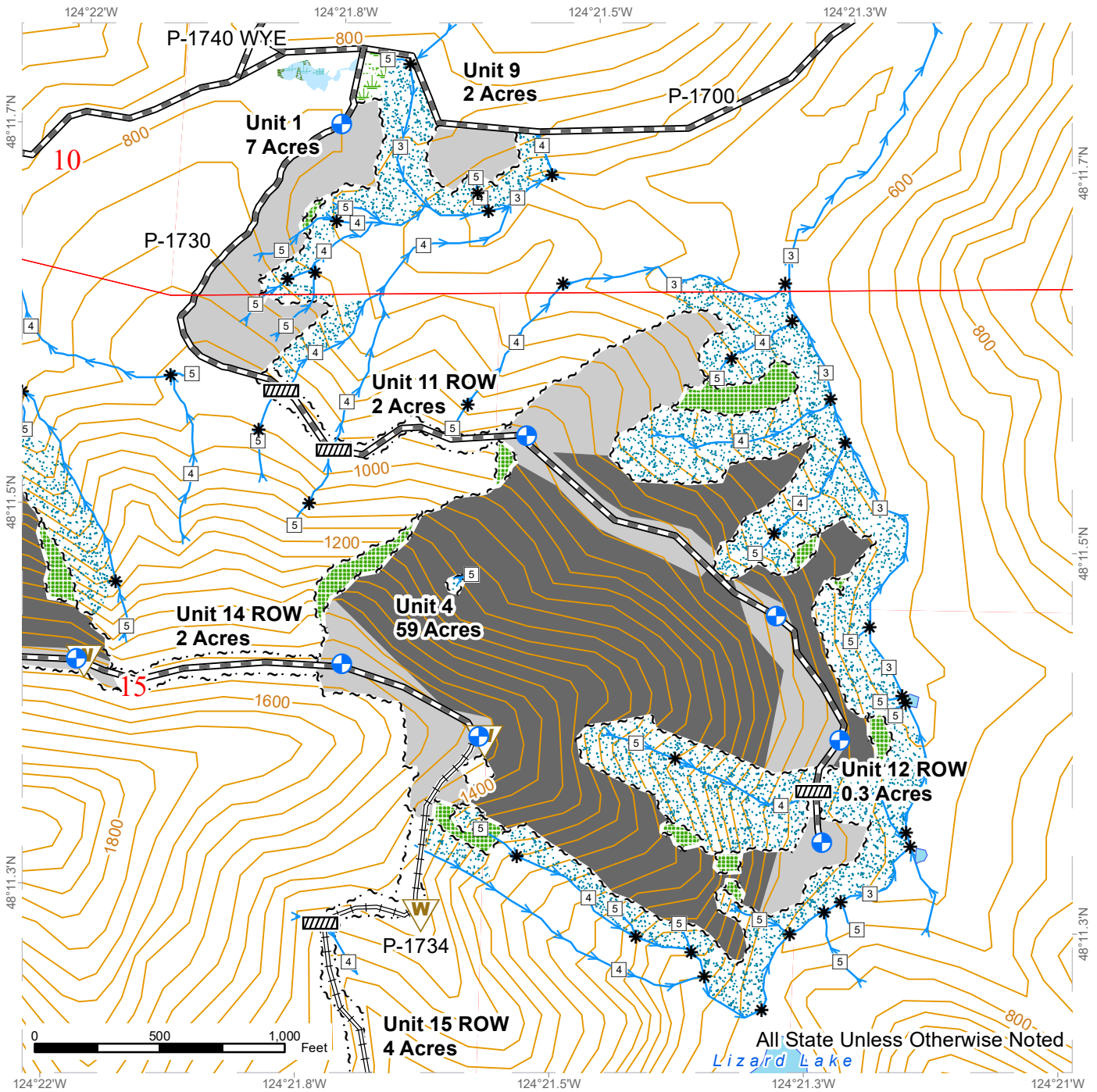
Wetland Management Zone	Public Land Survey Sections	Sale Boundary Tags	Culvert
Riparian Management Zone	DNR Managed Lands	Property Line	Gate Installation
Leave Tree Area	Required Pre-Haul Maintenance	Timber Type Change	Lizard Pit
Forested Wetland	Required Construction	Leave Tree Tags	Waste Area
Cable	Optional Pre-Haul Maintenance	Right of Way Tags	Landing
Ground	Required Reconstruction	Flag Line	Survey Monument
Public Land Survey Townships	Optional Construction	Stream Type	
	Optional Reconstruction	Stream Type Break	
	Streams		



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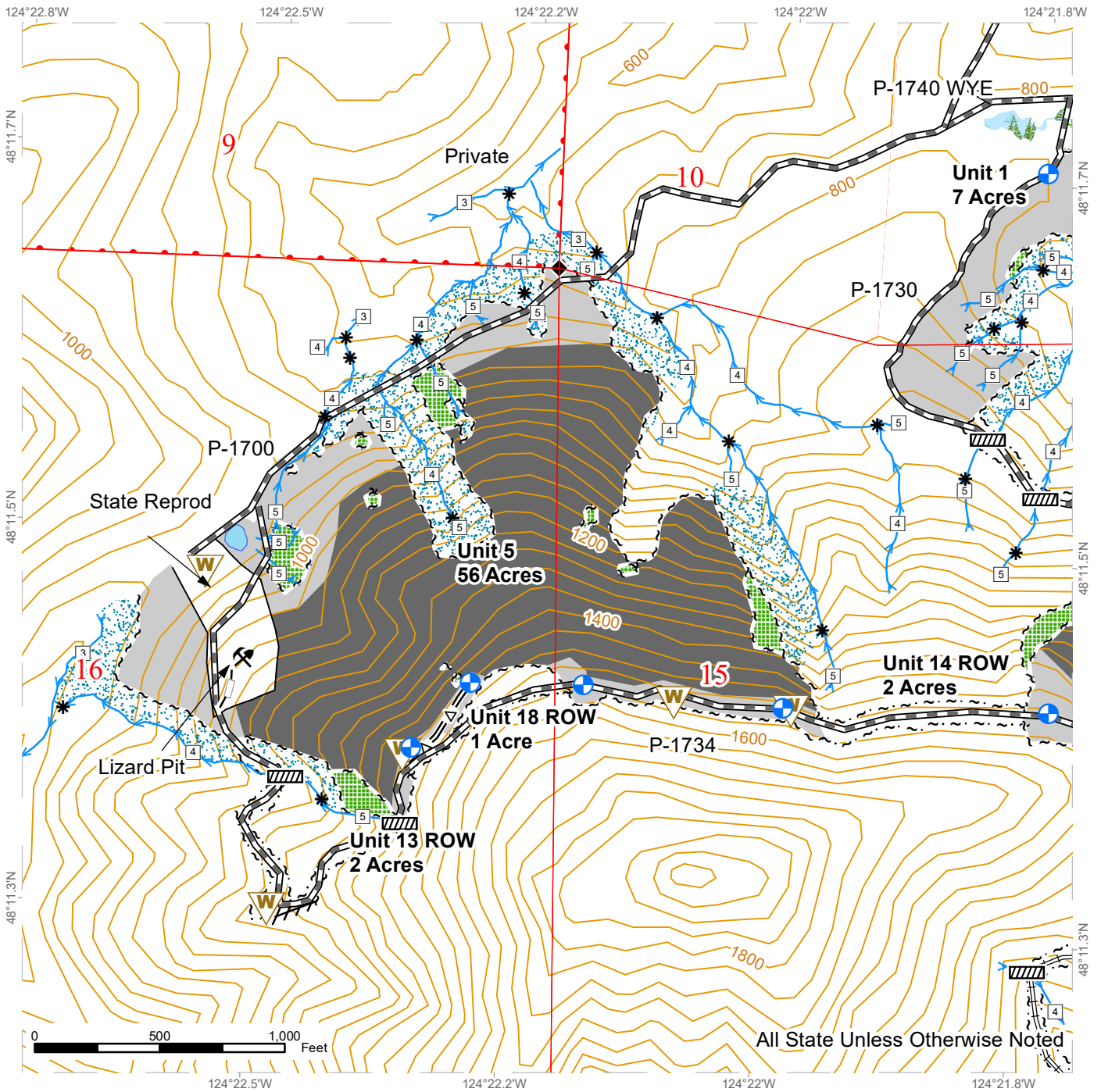


	Wetland Management Zone		Public Land Survey Sections		Sale Boundary Tags		Culvert
	Riparian Management Zone		DNR Managed Lands		Property Line		Gate Installation
	Leave Tree Area		Required Pre-Haul Maintenance		Timber Type Change		Lizard Pit
	Forested Wetland		Required Construction		Leave Tree Tags		Waste Area
	Cable		Optional Pre-Haul Maintenance		Right of Way Tags		Landing
	Ground		Required Reconstruction		Flag Line		Survey Monument
	Public Land Survey Townships		Optional Construction		Stream Type		
			Optional Reconstruction		Stream Type Break		
			Streams				

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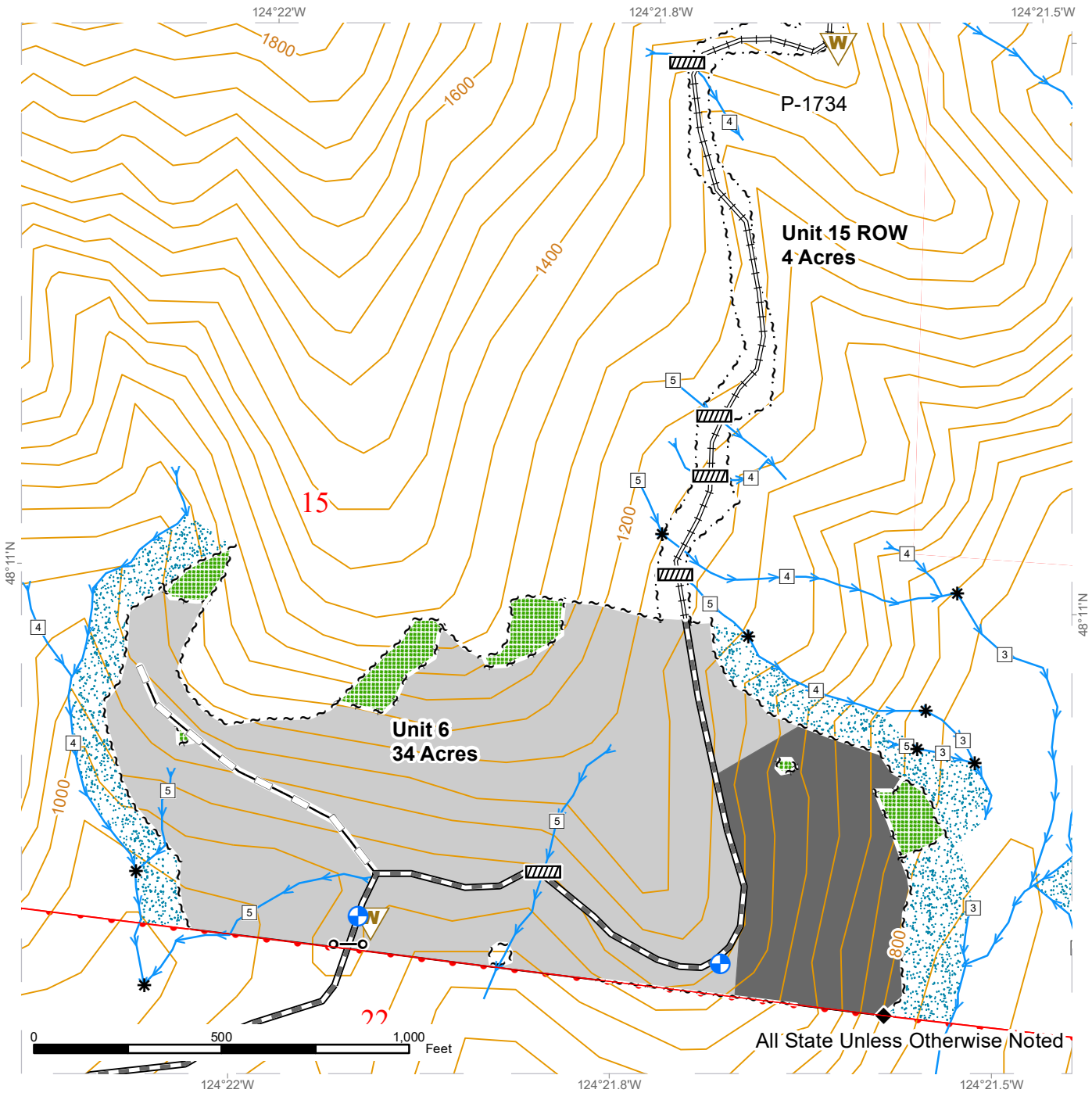


Wetland Management Zone	Public Land Survey Sections	Sale Boundary Tags	Culvert
Riparian Management Zone	DNR Managed Lands	Property Line	Gate Installation
Leave Tree Area	Required Pre-Haul Maintenance	Timber Type Change	Lizard Pit
Forested Wetland	Required Construction	Leave Tree Tags	Waste Area
Cable	Optional Pre-Haul Maintenance	Right of Way Tags	Landing
Ground	Required Reconstruction	Flag Line	Survey Monument
Public Land Survey Townships	Optional Construction	Stream Type	Stream Type Break
Streams	Optional Reconstruction		

LOGGING PLAN MAP

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REGION: Olympic Region
 COUNTY(S): Clallam
 ELEVATION RGE: 540-1750'

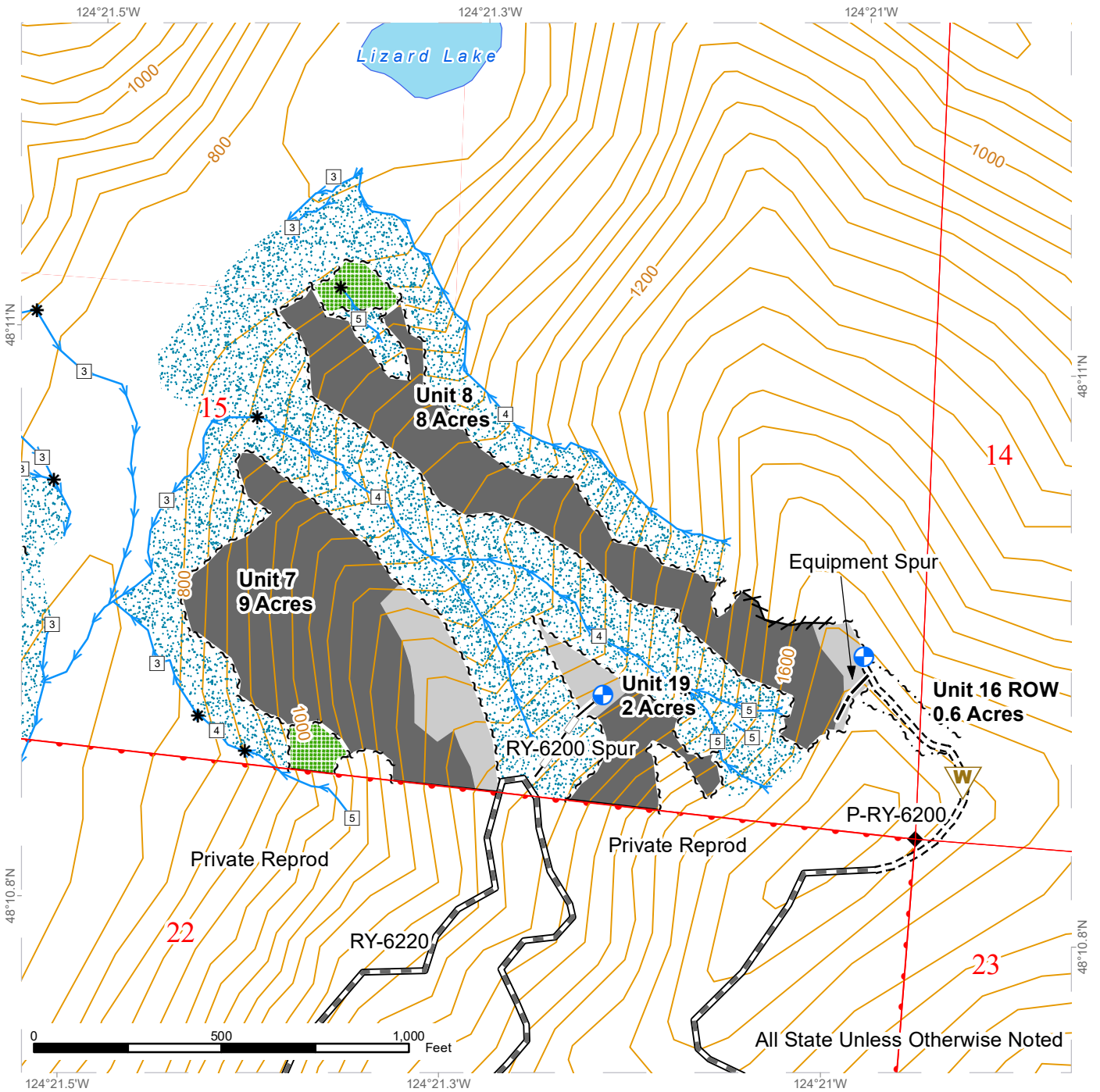


	Wetland Management Zone		Public Land Survey Sections		Sale Boundary Tags		Culvert
	Riparian Management Zone		DNR Managed Lands		Property Line		Gate Installation
	Leave Tree Area		Required Pre-Haul Maintenance		Timber Type Change		Lizard Pit
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	Cable		Optional Pre-Haul Maintenance		Right of Way Tags		Landing
	Ground		Required Reconstruction		Flag Line		Survey Monument
	Public Land Survey Townships		Optional Construction		Stream Type		Stream Type Break
	Optional Reconstruction		Streams				

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	Streams		Optional Reconstruction				

