



TIMBER NOTICE OF SALE

SALE NAME: CROW BAIT

AGREEMENT NO: 30-099066

AUCTION: November 17, 2020 starting at 10:00 a.m., **COUNTY:** Lewis
South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 16 miles southeast of Mineral.

**PRODUCTS SOLD
AND SALE AREA:**

All timber, except trees bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white timber sale boundary tags, and the 1 and 2 roads in Unit #1; white timber sale boundary tags in Unit #2; white timber sale boundary tags and the 2 Road in Unit #3;

All timber marked with orange right of way tags in Right of Way Units #4 and #5;

All forest products above located on part(s) of Sections 26, 27, 34 and 35 all in Township 14 North, Range 6 East, W.M., containing 130 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade								
				1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	18.3	7	2,804						1,357	1,198	233	16
Hemlock	14.4	7	1,297						223	751	233	90
Silver fir	18		93						72	21		
Cottonwood	21.4		63					44	19			
Noble fir	24		50						37	11	2	
Red cedar	14.7		33							24	9	
Red alder	13		2								1	1
Sale Total			4,342									

MINIMUM BID: \$1,728,000.00 **BID METHOD:** Sealed Bids

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

EXPIRATION DATE: October 31, 2023 **ALLOCATION:** Export Restricted

BID DEPOSIT: \$172,800.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvest activities are estimated to be 30 percent ground based harvest and 70 percent cable. Cable and ground based equipment, with cable-tethered equipment limited to sustained slopes 75 percent or less, self-leveling equipment limited to sustained slopes 65 percent or less, and all other ground based equipment limited to sustained slopes 45 percent or less. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.



TIMBER NOTICE OF SALE

Timber haul will not be permitted from November 1 to May 15, unless authority to do so is granted, in writing, by the Contract Administrator. If permission is granted to operate from November 1 to May 15, preventative measures may be required to protect water, soils, roads and other forest assets.

ROADS:

42.85 stations of required reconstruction. 7.06 stations of optional construction. 398.46 stations of required prehaul maintenance. Purchaser maintenance on the 1-23, 1-25, 1-25-1, 2, and 2A roads. Designated maintenance on all other roads used.

Rock for this proposal may be obtained from the State owned Griffin Rock Pit, including from the 2 1/2 inch minus crushed stockpile, at no cost to the Purchaser or a possible onsite rock source, if quality is approved by the Contract Administrator, located within Unit #1 in Section 35, Township 14 North, Range 6 East, W.M.

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

ACREAGE DETERMINATION

CRUISE METHOD:

Unit acreage was determined by traversing boundaries by GPS. Right of way acreage was determined by multiplying length times width. GPS data files are available at DNR's website for timber sale packets. See cruise narrative for cruise method.

FEES:

\$73,814.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS:

Rock exploration using an excavator and rock drill, for up to 8 hours, will be done at Griffin Pit.

Maintenance on two bridges located on the 12 Road will be completed.

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

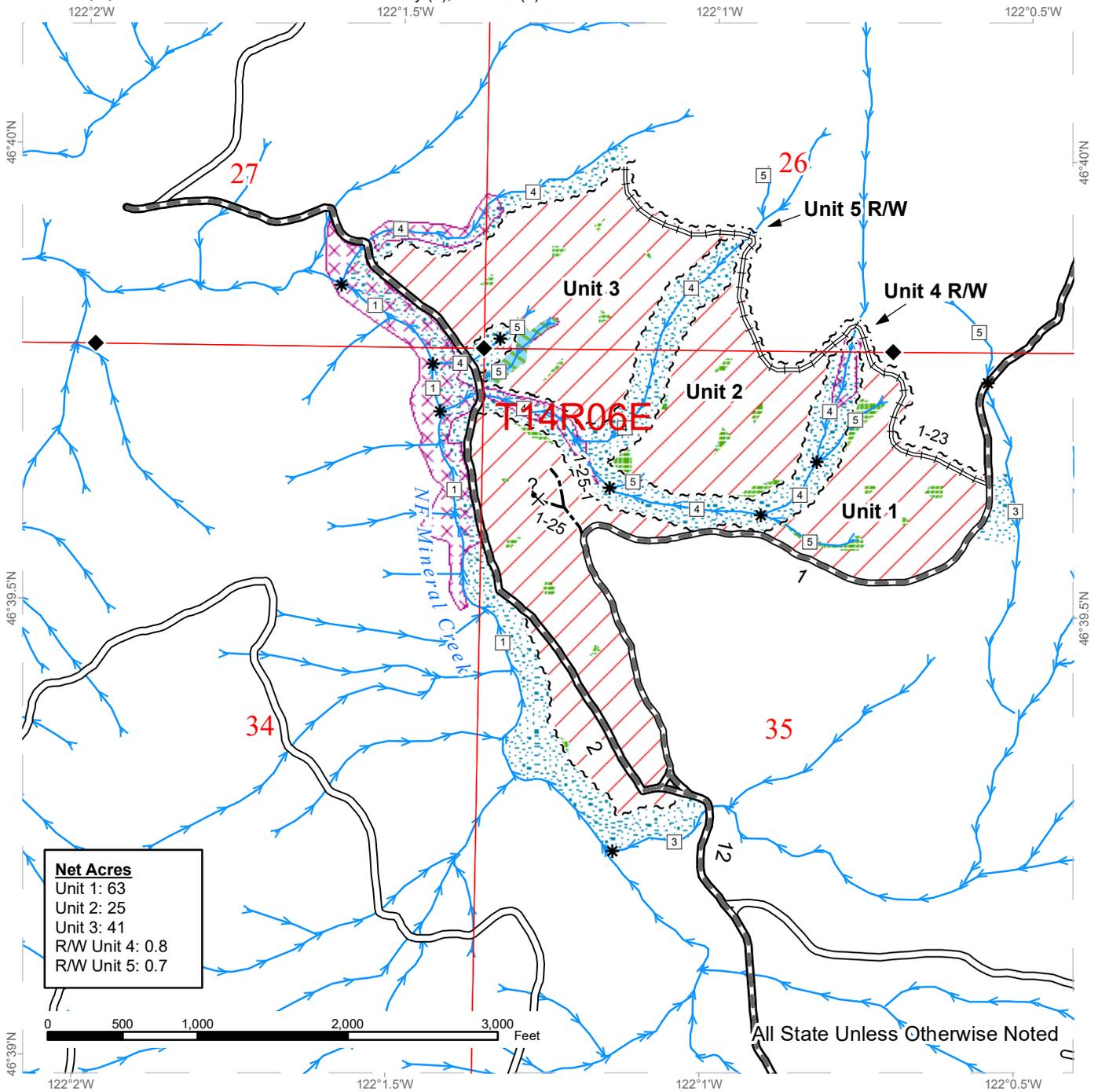
For the safety of the public, please remove from roads and trails all string from string boxes used during appraising or cruising this sale.

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

TIMBER SALE MAP

SALE NAME: CROW BAIT
AGREEMENT #: 30-099066
TOWNSHIP(S): T14R6E
TRUST(S): Common School and Indemnity (3), Escheat (9)

REGION: South Puget Sound Region
COUNTY(S): Lewis
ELEVATION RGE: 2,760 - 3,400



Net Acres	
Unit 1:	63
Unit 2:	25
Unit 3:	41
R/W Unit 4:	0.8
R/W Unit 5:	0.7

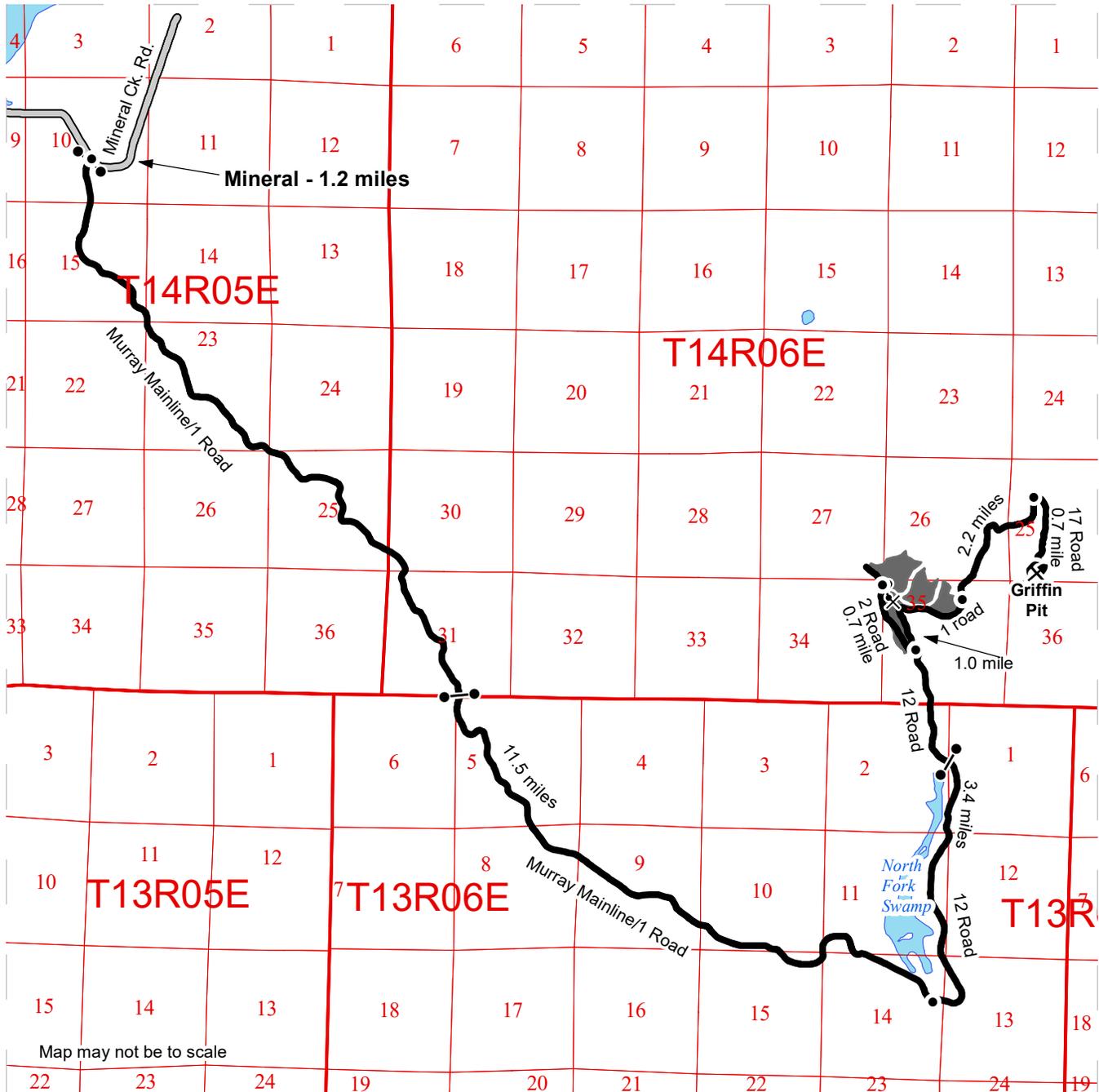
Variable Retention Harvest	Optional Construction	Stream Type
Sale Boundary Tags	Leave Tree Area	Stream Type Break
Right of Way Tags	Riparian Mgt Zone	Survey Monument
Existing Roads	Tailhold Restriction Area	Potential Rock Source
Required Pre-Haul Maintenance	Non-Tradeable Leave Trees	Public Land Survey Sections
Required Reconstruction	Streams	



DRIVING MAP

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Map may not be to scale

- Distance Indicator
- Gate (CJ-18)
- ? Potential Rock Source
- ⊗ Rock Pit
- Haul Route
- Timber Sale Unit

DRIVING DIRECTIONS:

"From Mineral, drive east on Mineral Creek Rd. for 1.2 miles. Turn right onto the Murray Mainline/1 road and follow for 11.5 miles. Turn left onto the 12 road and follow for 3.4 miles to reach Unit 1. To reach Unit 2, bear right onto the DNR 1 road and follow for 1.0 miles to the start of the reconstruction and walk in from there. To reach Unit 3, from the 12 road bear left on the 2 road and follow for 0.7 miles. To reach Griffin Pit, from the 12 road bear right onto the DNR 1 road and follow for 2.2 miles. Turn right onto the 17 road and follow for 0.7 miles to the pit."



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted Lump Sum AGREEMENT NO. 30-099066

SALE NAME: CROW BAIT

**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 November 17, 2020 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber, except trees bounded out by yellow leave tree area tags, snags, and down timber existing more than 5 years from the day of sale, bounded by the following: white timber sale boundary tags, and the 1 and 2 roads in Unit #1; white timber sale boundary tags in Unit #2; white timber sale boundary tags and the 2 Road in Unit #3;

All timber marked with orange right of way tags in Right of Way Units #4 and #5;

All forest products above located on approximately 130 acres on part(s) of Sections 26, 27, 34, and 35 all in Township 14 North, Range 6 East W.M. in Lewis County(s) as designated on the sale area and as shown on the attached timber sale map.

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

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

G-020 Inspection By Purchaser

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

estimates, appraisals, pre-bid documentation, or any other representations by the State Department of Natural Resources.

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2023.

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 \$467.00 per acre per annum for the acres on which an operating release has not been issued within the harvest area.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for

any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.

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

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

G-062 Habitat Conservation Plan

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the Services' Incidental Take Permit Nos. TE812521-1 and 1168 (collectively referred to as ITP), or as amended hereafter by the Services. The ITP authorizes the incidental take of certain federally listed threatened and endangered species, as specified in the ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

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

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

G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and

additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.

- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

G-065 Regulatory Disclaimer

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

G-066 Governmental Regulatory Actions

a. Risk

Purchaser shall be responsible for any increased operational costs arising from any applicable foreign or domestic governmental regulation or order that does not cause contract performance to become commercially impracticable or that does not substantially frustrate the purpose of the contract. If impracticability

or frustration results from Purchaser's failure to comply with this contract, Purchaser shall remain responsible for payment of the total contract price notwithstanding the impracticability or frustration.

b. Sale Area

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

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

c. Adjustment of Price

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

G-070 Limitation on Damage

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to Purchaser will be limited to a return of the initial deposit, unapplied payments, and credit for unamortized improvements made by Purchaser. The State shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State Advice

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

G-091 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, the added forest products become a part of this contract. The State shall determine the volume added and shall calculate the increase to the total contract price using the rates set forth in clause G-101, G-102, or G-103. If the sale area is reduced, the State shall determine the volume to be reduced. The State shall calculate the reduction to the total contract price using the rates set forth in clause G-101, G-102, or G-103.

G-101 Forest Products Not Designated

Any forest products not designated for removal, which must be removed in the course of operations authorized by the State, shall be approved and designated by the Contract Administrator. Added forest products become a part of this contract and the Scribner log scale volume, as defined by the Northwest Log Rules Advisory Group, shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

The pricing schedule has not been set for the sale.

G-111 Title and Risk of Loss

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

G-115 Forest Stewardship Council® (FSC®) Certification

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

G-116 Sustainable Forestry Initiative® (SFI) Certification

Forest products purchased under this contract are certified as being in conformance with the Sustainable Forestry Initiative program Standard under certificate number: PwC-SFIFM-513.

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

G-120 Responsibility for Work

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

G-121 Exceptions

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

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 Purchaser's expense regardless of cost, to remedy deficiencies at any time.

G-140 Indemnity

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

G-150 Insurance

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

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

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

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

Before starting work, Purchaser shall furnish State of Washington, Department of Natural Resources with a certificate(s) of insurance, executed by a duly authorized

representative of each insurer, showing compliance with the insurance requirements specified in the contract. Insurance coverage shall be obtained by the Purchaser prior to operations commencing and continually maintained in full force until all contract obligations have been satisfied or an operating release has been signed by the State.

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

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

All insurance provided in compliance with this contract shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. Purchaser waives all rights against State for recovery of damages to the extent these damages are covered by general liability or umbrella insurance maintained pursuant to this contract.

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

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

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

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

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

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

If Purchaser, subcontractor or sub-subcontractor fails to comply with all State of Washington workers' compensation statutes and regulations and State incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Purchaser shall indemnify State. Indemnity shall include all fines, payment of benefits to Purchaser or subcontractor employees, or their heirs or legal representatives, and the cost of effecting coverage on behalf of such employees.

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

G-160 Agents

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

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

G-170 Assignment and Delegation

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

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.
- b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to

remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.

- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; the SPI 1, 1, 1-123, 1-25, 1-25-1, 2, 12, and 17 roads. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

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

G-340 Preservation of Markers

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

G-360 Road Use Reservation

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

G-370 Blocking Roads

Purchaser shall not block the 1, and 12 roads, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

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

Easement #55-002214 entered into between the State of Washington, Department of Natural Resources and Murray Pacific Corporation, dated February 9, 1987.

G-396 Public Hauling Permit

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

G-430 Open Fires

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

G-450 Encumbrances

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

Lease, including the terms and provisions thereof,
For: Land Use License
In Favor of: Washington Department of Fish & Wildlife
Disclosed by Application No.: 60-095576
Granted: 5/2/2017
Expires: 6/30/2022

Region Encumbrances

Lease, including the terms and provisions thereof,
For: LUL
In Favor of: The Mountaineers
Disclosed by Application No.: 60-WS1023
Granted: 2/15/2019
Expires: 12/31/2028

Special Notations

Located within the Medicine Creek Treaty area. Intergovernmental agreements for vehicle access with Squaxin Island Tribe (92-095269), Puyallup Tribe (92-095272), Muckleshoot Tribe (92-095267), and Nisqually Indian Tribe (92-097198).

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 \$112,892.00. The total contract price consists of a \$0.00 contract bid price plus \$112,892.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

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

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

P-045 Guarantee of Payment

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

P-050 Billing Procedure

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

P-080 Payment Account Refund

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

P-090 Performance Security

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

P-100 Performance Security Reduction

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

Section H: Harvesting Operations

H-013 Reserve Tree Damage Definition

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

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

- a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 144 square inches.
- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

H-017 Preventing Excessive Soil Disturbance

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

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for Units #1, #2, and #3. The plan shall address the harvest requirements including tailhold restriction areas, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-051 Branding and Painting

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

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

H-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

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

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

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

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Existing downed trees or logs dead for more than 5 years yarded to the landing will be returned to their original locations.
- b. Equipment limitation zones are required within 30 feet of Type 5 streams.
- c. Any and all operations associated with this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the potential for delivery to typed water.
- d. Notify all employees and contractors working on this sale that any danger tree marked or unmarked may be felled. Any marked danger tree will be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

- e. Within shovel logging areas, and when yarding and loading operations are occurring simultaneously, an additional shovel will be required for loading to avoid extra trips to the landing. No more than one round trip per shovel road is allowed.
- f. Cut all vine maple within the harvest units, leaving a stump no more than 12 inches in height.
- g. Slash and debris created from harvest activities shall be treated in a manner approved in writing by the Contract Administrator. To facilitate proper reforestation in areas of high slash concentrations, purchaser shall in concurrence with ground based yarding, clear plantable spots at a 11.5 foot by 11.5 foot spacing.
- h. Take measures throughout operations to control soil erosion, water channelization, and prevent sediment delivery to streams or wetlands. Methods may include construction of water bars, “sweeping” with logs, silt traps, or other measures on skid trails, yarding corridors and haul roads.
- i. In the event operations become inactive for long periods of time, skid trails shall be water barred prior to completion of yarding tributary timber to prevent water accumulation and sediment movement, if required by the Contract Administrator.
- j. Once a skid trail is closed, the Purchaser shall not reopen a skid trail unless approved in writing by the Contract Administrator.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Purchaser shall leave 2 down logs per acre. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.
- b. Areas restricting operations due to protection of potentially unstable slopes are located within and outside the sale boundary.
 - Locations inside the boundary are identified as Non-Tradeable Leave Trees marked with yellow Leave Tree Area tags as shown on the Timber Sale and Logging Plan Maps inside which tailholds may not be used within, nor logs yarded through or over.

- Locations outside the sale boundary are identified as Tailhold Restriction Areas on the Logging Plan and Timber Sale Maps. Trees within these areas shall not be used as tailholds.

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

H-190 Completion of Settings

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

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Boundary

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 4/4/2020 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the 1-23, 1-25, 1-25-1, 2, and 2A roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

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

C-080 Landing Locations Approved Prior to Construction

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

C-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-030 Landing Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

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

S-110 Resource Protection

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

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any 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 (DOE). 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 (contact information below).
- National Response Center (contact information below).
- Appropriate Department of Ecology (DOE) regional office (contact information below).
- DNR Contract Administrator

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

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

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

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

Department of Emergency Management 24-hour Number: 1-800-258-5990

National Response Center: 1-800-424-8802

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

Print Name

Scott Sargent
South Puget Sound Region Manager

Date: _____
Address:

Date: _____

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

STATE OF _____)

COUNTY OF _____)

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

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

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

Notary Public in and for the State of

My appointment expires _____



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: South Puget Sound

Timber Sale Name: Crow Bait

Application Number: 30- 099066

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 706 linear feet
Road to be constructed (optional and required) but not abandoned

Reconstruction: 4285 linear feet
Road to be reconstructed (optional and required) but not abandoned

Abandonment: 0 linear feet
Abandonment of existing roads not reconstructed under the contract

Decommission: 0 linear feet
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 39,846 linear feet
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

PRE-CRUISE NARRATIVE

Sale Name: Crow Bait	Region: South Puget Sound
Agreement #: 30-099066	District: Rainier
Contact Forester: Kevin Carlsen	Phone/ Location: (360)-870-4090 Ext: /
Alternate Contact: Andrew Reed	Phone/ Location: (360)-481-9597 Ext: /

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): lump sum
 Required or Optional removal of utility as pulp: Optional
 Evaluated for RFRS Implementation?: No
 Percentage cable (specify downhill vs uphill): Uphill 70%
 Percentage ground based: 30%
 Species Onsite: RC, DF, WH, RA, BC, BLM, NF, SF, SS, Other:(Please List)

UNIT ACREAGES* AND METHOD OF DETERMINATION:

Unit #	Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Grant	Gross Traversed Acres	Deductions from Gross Acres (No harvest acres)			Net Harvest Acres	Acreage Determination (List method, dimensions and error of closure if applicable)
					RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres		
1		Sec 35,34/ T 14N/ R 06 E	09, 03	66.0		2.3	1.2	62.5	Garmin 64s
2		Sec 35,26/ T 14N/ R 06 E	09, 03	26.3		1.3		25.0	Garmin 64s
3		Sec 35,34,27,26/ T 14N/ R 06 E	09, 03	42.8		2		40.8	Garmin 64s
R/W 4		Sec 26/ T 14N/ R 06 E	03	0.8				0.8	Length X Width
R/W 5		Sec 26/ T 14N/ R 06 E	03	0.7				0.7	Length X Width
TOTAL ACRES				136.4		5.6	1.2	129.8	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest-Boundary marked by white "Timber Sale Boundary" tags with pink flashers except southern boundary marked by 2 road.		8 Leave trees per acre marked with yellow "Leave Tree Area" tags and pink flashers
2	Variable Retention Harvest-Boundary marked by white "Timber Sale Boundary" tags with pink flashers.		8 Leave trees per acre marked with yellow "Leave Tree Area" tags and pink flashers
3	Variable Retention Harvest-Boundary marked by white "Timber Sale Boundary" tags with pink flashers except boundary marked by 1 and 2		8 Leave trees per acre marked with yellow "Leave Tree Area" tags and pink

	roads.		flashers
R/W 4	Right-of-Way boundary marked by Orange "Right-of-Way" boundary tags and orange flashers.		
R/W 5	Right-of-Way boundary marked by Orange "Right-of-Way" boundary tags and orange flashers.		

OTHER PRE-CRUISE INFORMATION:

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

REMARKS:

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Prepared By: Kevin Carlsen Date: 11/4/2019	Title: Forester	CC: Andrew Reed, Nick Chicano
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Revised 2/23/2007 (PSLD)

Timber Sale Cruise Report Crow Bait

Sale Name: CROW BAIT

Sale Type: LUMP SUM

Region: SO PUGET

District: RAINIER

Lead Cruiser: Phil Kirner

Other Cruisers: Dave Richards

Cruise Narrative:

Location:

Crow Bait is a three unit timber sale located approximately 15 miles southeast of Mineral, WA. All three units have an southwest aspect. The sale ranges from 2,700 feet to 3,400 feet in elevation. A CJ-18 key is needed to access the sale.

Cruise Design:

Units 1 and 2 were cruised using a 46.95 and a 40 BAF. Unit 3 a 54.44 and a 40 BAF was used. In units 4 and 5 the R/W units, a 40 BAF was used. The smallest merchantable tree cruised in the sale had a DBH of 8.0 inches and 5 inches at 16 feet. Some utility wood was cruised, it's specs are a two inch top and 12 to 16 feet long.

If a plot landed near or in a "Leave Tree Area" the leave trees were recorded as leave. A specie and DBH was obtained. This volume is not included in the sale volume.

Cruise acres are based on FMA acres including leave tree areas.

Timber Quality:

The major specie in the sale is Douglas fir at 65%. It's average DBH is 18 inches. Western Hemlock is also a major specie at 30% of the sale volume. It has a average DBH of 14.4 inches. There are also trace amounts of Silver fir, Noble fir, Red Cedar, Black Cottonwood and a very small component of Red Alder. Approximately 800 mbf of D.fir was cruised at high quality "B". Defect noted in the stands were spike knots, forked tops, frost checks and some butt rot in the Hemlock and Cedar.

Logging and Stand Conditions:

Approximately 70% of the sale is uphill cable harvest. The other 30 percent is ground based and in unit 1. At this elevation, the sale is susceptible to heavy snow in winter.

Revised 6/12/2020 by Dave Richards

- Acreage and log grade changes.

Revised 7/30/2020 by Aaron Coleman

- Small acreage tweaks.

Timber Sale Notice Volume (MBF)

Sp	QMD	Rings/In	Age	MBF Volume by Grade					
				All	1 Saw	2 Saw	3 Saw	4 Saw	Utility
DF	18.3	7.2	56	2,803.7		1,356.8	1,197.9	233.3	15.8

Sp	QMD	Rings/In	Age	MBF Volume by Grade					
				All	1 Saw	2 Saw	3 Saw	4 Saw	Utility
WH	14.4	7.2	51	1,297.3		223.3	751.6	232.6	89.8
SF	18.0			93.4		72.3	21.0		
BC	21.4			63.0	43.6	19.5			
NF	24.0			49.7		36.6	11.2	1.9	
RC	14.7			33.3			24.2	9.0	
RA	13.0			1.8				1.5	0.3
ALL	16.3	7.4	54	4,342.0	43.6	1,708.3	2,005.9	478.4	105.9

Timber Sale Notice Weight (tons)

Sp	Tons by Grade					
	All	1 Saw	2 Saw	3 Saw	4 Saw	Utility
DF	23,319.6		10,360.8	10,639.8	2,222.5	96.7
WH	13,301.6		2,295.9	7,515.3	2,638.6	851.8
SF	740.2		549.9	190.3		
BC	454.1	295.3	158.8			
RC	384.8			267.3	117.5	
NF	327.8		209.4	100.2	18.2	
RA	18.4				16.7	1.7
ALL	38,546.5	295.3	13,574.7	18,713.0	5,013.4	950.2

Timber Sale Overall Cruise Statistics (Cut + Leave Trees)

BA (sq ft/acre)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR SE (%)	Net Vol (bf/acre)	Vol SE (%)
271.2	3.3	123.2	1.9	33,296	3.8

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
CROW BAIT U1	B2C: VR, 2 BAF (46.94, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	66.0	66.0	38	20	0
CROW BAIT U2	B2C: VR, 2 BAF (46.94, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	26.3	26.3	17	9	0
CROW BAIT U3	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	42.8	42.8	28	15	0

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
CROW BAIT RW 4	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	0.8	0.8	1	1	0
CROW BAIT RW 5	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	0.7	0.7	1	1	0
All		136.6	136.7	85	46	0

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	1 SAW	Domestic	14.2	40.0	319	6.0	295.3	43.6
BC	LIVE	2 SAW	Domestic	10.2	40.0	142	13.5	158.8	19.4
BC	LIVE	CULL	Cull	6.7	31.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	Domestic	13.9	40.0	5,478	3.2	5,894.8	748.3
DF	LIVE	2 SAW	HQ-B	13.8	38.0	4,454	1.0	4,466.0	608.5
DF	LIVE	3 SAW	Domestic	8.4	39.0	6,845	1.9	8,581.2	935.0
DF	LIVE	3 SAW	HQ-B	10.6	37.0	1,924	1.0	2,058.6	262.9
DF	LIVE	4 SAW	Domestic	5.6	26.0	1,708	2.8	2,222.4	233.3
DF	LIVE	CULL	Cull	6.0	8.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	5.7	9.0	116	0.0	96.7	15.8
NF	LIVE	2 SAW	Domestic	17.0	40.0	268	0.0	209.4	36.6
NF	LIVE	3 SAW	Domestic	10.5	40.0	82	7.8	100.2	11.2
NF	LIVE	4 SAW	Domestic	5.0	22.0	14	0.0	18.2	1.9
RA	LIVE	4 SAW	Domestic	7.9	30.0	11	0.0	16.7	1.5
RA	LIVE	UTILITY	Pulp	5.1	10.0	2	0.0	1.7	0.3
RC	LIVE	3 SAW	Domestic	10.1	36.0	177	6.2	267.3	24.2
RC	LIVE	4 SAW	Domestic	5.3	23.0	66	18.5	117.5	9.1
RC	LIVE	CULL	Cull	5.2	15.0	0	100.0	0.0	0.0
SF	LIVE	2 SAW	Domestic	12.2	40.0	530	0.0	549.9	72.3
SF	LIVE	3 SAW	Domestic	6.0	36.0	154	0.0	190.3	21.0
WH	LIVE	2 SAW	Domestic	14.1	37.0	1,634	14.3	2,295.9	223.2
WH	LIVE	3 SAW	Domestic	8.7	40.0	5,394	3.8	7,381.1	736.8
WH	LIVE	3 SAW	HQ-B	10.9	34.0	108	0.0	134.3	14.7
WH	LIVE	4 SAW	Domestic	5.3	30.0	1,703	0.8	2,638.6	232.7
WH	LIVE	CULL	Cull	6.0	6.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.6	21.0	657	0.0	851.7	89.8

Timber Sale Log Grade x Diameter Bin Summary

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	CULL	6.7	29.0	0	100.0	0.0	0.0
BC	5 - 7	LIVE	2 SAW	7.4	40.0	43	9.5	66.1	5.8
BC	8 - 11	LIVE	2 SAW	10.4	40.0	18	50.3	29.4	2.4
BC	12 - 15	LIVE	1 SAW	13.9	40.0	267	2.7	242.1	36.5
BC	12 - 15	LIVE	2 SAW	15.5	40.0	82	0.0	63.3	11.2
BC	16 - 19	LIVE	1 SAW	16.6	40.0	52	20.0	53.2	7.1
DF	5 - 7	LIVE	4 SAW	5.5	26.0	1,684	2.6	2,190.6	230.0
DF	5 - 7	LIVE	UTILITY	5.5	9.0	70	0.0	69.1	9.6
DF	5 - 7	LIVE	CULL	6.0	7.0	0	100.0	0.0	0.0
DF	5 - 7	LIVE	3 SAW	7.0	39.0	2,151	2.5	2,996.3	293.8
DF	8 - 11	LIVE	3 SAW	10.0	39.0	6,618	1.5	7,643.4	904.1
DF	8 - 11	LIVE	4 SAW	10.3	13.0	24	18.5	31.9	3.3
DF	12 - 15	LIVE	2 SAW	13.6	39.0	8,598	2.3	9,203.2	1,174.5
DF	16 - 19	LIVE	2 SAW	17.3	39.0	1,247	0.8	1,090.6	170.4
DF	16 - 19	LIVE	UTILITY	19.7	12.0	46	0.0	27.6	6.2
DF	20+	LIVE	2 SAW	21.5	20.0	86	10.0	66.9	11.8
NF	5 - 7	LIVE	4 SAW	5.0	22.0	14	0.0	18.2	1.9
NF	8 - 11	LIVE	3 SAW	10.5	40.0	82	7.8	100.2	11.2
NF	16 - 19	LIVE	2 SAW	17.0	40.0	268	0.0	209.4	36.6
RA	5 - 7	LIVE	UTILITY	5.1	10.0	2	0.0	1.7	0.3
RA	5 - 7	LIVE	4 SAW	7.9	30.0	11	0.0	16.7	1.5
RC	5 - 7	LIVE	CULL	5.2	15.0	0	100.0	0.0	0.0
RC	5 - 7	LIVE	4 SAW	5.3	23.0	66	18.5	117.5	9.1
RC	5 - 7	LIVE	3 SAW	6.0	40.0	5	50.8	19.9	0.7
RC	8 - 11	LIVE	3 SAW	9.9	36.0	172	3.6	247.4	23.5
SF	5 - 7	LIVE	3 SAW	6.0	36.0	154	0.0	190.3	21.0
SF	12 - 15	LIVE	2 SAW	12.2	40.0	530	0.0	549.9	72.3
WH	5 - 7	LIVE	UTILITY	5.0	19.0	368	0.0	458.3	50.3
WH	5 - 7	LIVE	4 SAW	5.3	30.0	1,703	0.8	2,638.6	232.7
WH	5 - 7	LIVE	CULL	6.0	6.0	0	100.0	0.0	0.0
WH	5 - 7	LIVE	3 SAW	6.8	39.0	1,183	0.8	1,731.6	161.7
WH	8 - 11	LIVE	3 SAW	9.8	40.0	4,318	4.5	5,783.8	589.9
WH	8 - 11	LIVE	UTILITY	9.8	40.0	218	0.0	336.8	29.8
WH	12 - 15	LIVE	UTILITY	13.3	20.0	71	0.0	56.6	9.7
WH	12 - 15	LIVE	2 SAW	13.8	36.0	1,344	12.2	1,906.7	183.6
WH	16 - 19	LIVE	2 SAW	16.8	40.0	290	23.0	389.2	39.6

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	Cull	6.7	29.0	0	100.0	0.0	0.0
BC	5 - 7	LIVE	Domestic	7.4	40.0	43	9.5	66.1	5.8
BC	8 - 11	LIVE	Domestic	10.4	40.0	18	50.3	29.4	2.4
BC	12 - 15	LIVE	Domestic	14.4	40.0	349	2.1	305.4	47.6
BC	16 - 19	LIVE	Domestic	16.6	40.0	52	20.0	53.2	7.1
DF	5 - 7	LIVE	Pulp	5.5	9.0	70	0.0	69.1	9.6
DF	5 - 7	LIVE	Cull	6.0	7.0	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Domestic	6.1	31.0	3,834	2.5	5,186.9	523.8
DF	8 - 11	LIVE	Domestic	9.8	39.0	4,718	1.8	5,616.7	644.5
DF	8 - 11	LIVE	HQ-B	10.6	36.0	1,924	1.0	2,058.6	262.9
DF	12 - 15	LIVE	Domestic	13.6	40.0	4,634	3.5	5,149.6	633.0
DF	12 - 15	LIVE	HQ-B	13.6	38.0	3,964	0.9	4,053.6	541.5
DF	16 - 19	LIVE	HQ-B	17.0	38.0	490	1.5	412.4	66.9
DF	16 - 19	LIVE	Domestic	17.5	40.0	757	0.4	678.2	103.5
DF	16 - 19	LIVE	Pulp	19.7	12.0	46	0.0	27.6	6.2
DF	20+	LIVE	Domestic	21.5	20.0	86	10.0	66.9	11.8
NF	5 - 7	LIVE	Domestic	5.0	22.0	14	0.0	18.2	1.9
NF	8 - 11	LIVE	Domestic	10.5	40.0	82	7.8	100.2	11.2
NF	16 - 19	LIVE	Domestic	17.0	40.0	268	0.0	209.4	36.6
RA	5 - 7	LIVE	Pulp	5.1	10.0	2	0.0	1.7	0.3
RA	5 - 7	LIVE	Domestic	7.9	30.0	11	0.0	16.7	1.5
RC	5 - 7	LIVE	Cull	5.2	15.0	0	100.0	0.0	0.0
RC	5 - 7	LIVE	Domestic	5.4	26.0	72	22.2	137.4	9.8
RC	8 - 11	LIVE	Domestic	9.9	36.0	172	3.6	247.4	23.5
SF	5 - 7	LIVE	Domestic	6.0	36.0	154	0.0	190.3	21.0
SF	12 - 15	LIVE	Domestic	12.2	40.0	530	0.0	549.9	72.3
WH	5 - 7	LIVE	Pulp	5.0	19.0	368	0.0	458.3	50.3
WH	5 - 7	LIVE	Domestic	5.7	33.0	2,887	0.8	4,370.2	394.3
WH	5 - 7	LIVE	Cull	6.0	6.0	0	100.0	0.0	0.0
WH	8 - 11	LIVE	Domestic	9.8	40.0	4,210	4.7	5,649.5	575.1
WH	8 - 11	LIVE	Pulp	9.8	40.0	218	0.0	336.8	29.8
WH	8 - 11	LIVE	HQ-B	10.9	34.0	108	0.0	134.3	14.7
WH	12 - 15	LIVE	Pulp	13.3	20.0	71	0.0	56.6	9.7
WH	12 - 15	LIVE	Domestic	13.8	36.0	1,344	12.2	1,906.7	183.6
WH	16 - 19	LIVE	Domestic	16.8	40.0	290	23.0	389.2	39.6

Cruise Unit Report CROW BAIT U1

Unit Sale Notice Volume (MBF): CROW BAIT U1

Sp	QMD	Rings/In	Age	MBF Volume by Grade					
				All	1 Saw	2 Saw	3 Saw	4 Saw	Utility
DF	18.0	6.5	56	1,244.0		584.6	560.0	93.9	5.5
WH	14.1	7.0	50	848.7		146.8	492.6	156.2	53.1
SF	18.0			93.4		72.3	21.0		
BC	20.5			40.7	36.5	4.3			
RC	16.2			20.5			15.2	5.3	
ALL	15.8	6.7	54	2,247.3	36.5	808.0	1,088.8	255.5	58.6

Unit Sale Notice Weight (tons): CROW BAIT U1

Sp	Tons by Grade					
	All	1 Saw	2 Saw	3 Saw	4 Saw	Utility
DF	10,514.1		4,507.4	5,083.3	890.3	33.1
WH	8,910.7		1,592.3	5,039.3	1,820.1	459.0
SF	740.2		549.9	190.3		
BC	288.6	242.1	46.5			
RC	246.9			172.4	74.5	
ALL	20,700.5	242.1	6,696.1	10,485.4	2,784.9	492.1

Unit Cruise Design: CROW BAIT U1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (46.94, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	66.0	66.0	38	20	0

Unit Cruise Summary: CROW BAIT U1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	53	124	3.3	2
WH	52	105	2.8	1
SF	1	8	0.2	0
BC	2	4	0.1	0
RC	3	7	0.2	0
ALL	111	248	6.5	3

Unit Cruise Statistics (Cut + Leave Trees): CROW BAIT 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 (%)
DF	153.2	69.3	11.2	131.5	27.7	3.8	20,148	74.6	11.9
WH	129.7	71.1	11.5	103.1	32.6	4.5	13,368	78.2	12.4
SF	9.9	334.2	54.2	143.2	0.0	0.0	1,415	334.2	54.2
BC	4.9	368.9	59.8	124.9	15.8	11.2	617	369.2	60.9
RC	7.4	278.1	45.1	49.2	42.1	24.3	363	281.3	51.2
ALL	305.1	30.1	4.9	117.7	32.8	3.1	35,911	44.5	5.8

Unit Summary: CROW BAIT U1

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	LIVE	CUT	2	ALL	20.5	83	103	617	13.5	2.2	4.9	1.1	288.6	40.7
DF	DEAD	CUT	0	ALL	18.0	16	16	162	3.1	0.7	1.2	0.3	90.6	10.7
DF	LIVE	CUT	53	ALL	17.7	78	94	18,686	3.1	83.1	142.1	33.8	10,423.5	1,233.3
DF	LIVE	LEA	0	ALL	17.2			1,300	3.1	6.1	9.9	2.4	725.1	85.8
RC	LIVE	CUT	3	ALL	16.2	41	49	311	11.6	4.4	6.3	1.6	246.9	20.5
RC	LIVE	LEA	0	ALL	25.0			52	11.6	0.3	1.1	0.2	41.2	3.4
SF	LIVE	CUT	1	ALL	18.0	78	99	1,415	0.0	5.6	9.9	2.3	740.2	93.4
WH	LIVE	CUT	52	ALL	14.1	61	71	12,859	5.8	115.1	124.8	33.2	8,910.7	848.7
WH	LIVE	LEA	0	ALL	11.6			509	5.8	6.7	4.9	1.5	352.9	33.6
ALL	LIVE	LEA	0	ALL	14.9			1,861	4.1	13.1	15.9	4.1	1,119.2	122.8
ALL	DEAD	CUT	0	ALL	18.0	16	16	162	3.6	0.7	1.2	0.3	90.6	10.7
ALL	LIVE	CUT	111	ALL	15.8	68	81	33,888	4.3	210.4	288.0	72.0	20,609.9	2,236.6
ALL	ALL	ALL	111	ALL	15.8	64	76	35,911	4.3	224.2	305.1	76.4	21,819.7	2,370.1

Unit Stand Table: CROW BAIT U1

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	20	LIVE	CUT	1	20.0	83	103	274	20.7	1.1	2.5	0.5	120.9	18.1
BC	22	LIVE	CUT	1	21.0	83	103	343	6.7	1.0	2.5	0.5	167.7	22.6
DF	12	LIVE	CUT	3	11.6	56	41	714	1.5	10.4	7.7	2.3	439.0	47.1
DF	14	LIVE	CUT	5	13.5	71	89	1,273	4.4	12.9	12.8	3.5	816.0	84.0
DF	16	LIVE	CUT	6	15.9	79	99	1,938	3.0	11.2	15.4	3.9	1,072.1	127.9
DF	18	LIVE	CUT	9	17.6	84	106	3,090	3.2	13.7	23.0	5.5	1,665.6	204.0
DF	18	DEAD	CUT	1	18.0	16	16	0		1.4	2.6	0.6	187.7	0.0
DF	20	LIVE	CUT	15	19.4	82	97	4,992	2.8	18.7	38.4	8.7	2,828.5	329.5
DF	22	LIVE	CUT	7	21.4	89	113	2,559	3.5	7.2	17.9	3.9	1,400.1	168.9

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	24	LIVE	CUT	6	23.5	92	117	2,372	4.1	5.1	15.4	3.2	1,240.6	156.6
DF	26	LIVE	CUT	2	25.0	100	128	957	2.7	1.5	5.1	1.0	443.3	63.1
DF	28	LIVE	CUT	2	27.5	92	117	951	0.6	1.2	5.1	1.0	421.1	62.8
DF	14	LIVE	LEA	1	13.0			163	3.1	1.3	1.2	0.3	90.6	10.7
DF	16	LIVE	LEA	1	15.0			162	3.1	1.0	1.2	0.3	90.6	10.7
DF	18	LIVE	LEA	2	17.0			325	3.1	1.6	2.5	0.6	181.3	21.4
DF	20	LIVE	LEA	2	19.5			325	3.1	1.2	2.5	0.6	181.3	21.5
DF	22	LIVE	LEA	2	21.5			325	3.1	1.0	2.5	0.5	181.3	21.5
RC	12	LIVE	CUT	1	12.0	33	39	54	35.5	2.7	2.1	0.6	58.2	3.5
RC	22	LIVE	CUT	2	21.0	52	65	257	4.2	1.7	4.2	0.9	188.7	17.0
RC	26	LIVE	LEA	1	25.0			52	11.6	0.3	1.1	0.2	41.2	3.4
SF	18	LIVE	CUT	1	18.0	78	99	1,415	0.0	5.6	9.9	2.3	740.2	93.4
WH	10	LIVE	CUT	3	9.3	42	50	474	0.0	14.7	6.9	2.3	317.2	31.3
WH	12	LIVE	CUT	12	11.3	54	60	2,260	1.0	39.6	27.7	8.2	1,644.0	149.2
WH	14	LIVE	CUT	9	13.3	67	75	2,445	0.8	21.5	20.8	5.7	1,537.1	161.3
WH	16	LIVE	CUT	11	15.5	70	86	2,922	6.5	19.5	25.4	6.5	1,941.4	192.8
WH	18	LIVE	CUT	6	17.6	69	86	1,528	3.8	8.2	13.9	3.3	1,057.2	100.8
WH	20	LIVE	CUT	6	19.3	74	92	1,619	5.2	6.8	13.9	3.2	1,090.4	106.8
WH	22	LIVE	CUT	4	22.0	74	92	969	9.4	3.5	9.2	2.0	733.8	63.9
WH	24	LIVE	CUT	2	24.0	76	95	469	20.5	1.5	4.6	0.9	382.1	31.0
WH	26	LIVE	CUT	1	25.0	87	109	175	50.6	0.7	2.3	0.5	207.6	11.5
WH	10	LIVE	LEA	2	10.0			255	5.8	4.5	2.5	0.8	176.5	16.8
WH	14	LIVE	LEA	1	14.0			127	5.8	1.1	1.2	0.3	88.2	8.4
WH	16	LIVE	LEA	1	15.0			127	5.8	1.0	1.2	0.3	88.2	8.4

Unit Log Grade Summary: CROW BAIT U1

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	1 SAW	13.9	40.0	552	2.7	242.1	36.5
BC	LIVE	2 SAW	7.1	40.0	65	12.5	46.5	4.3
BC	LIVE	CULL	6.5	40.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	13.9	40.0	8,857	3.4	4,507.4	584.6
DF	LIVE	3 SAW	8.7	39.0	8,485	2.2	5,083.3	560.0
DF	LIVE	4 SAW	5.6	26.0	1,423	2.9	890.3	93.9
DF	LIVE	CULL	6.0	14.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	5.1	8.0	83	0.0	33.1	5.5
RC	LIVE	3 SAW	10.9	36.0	230	4.0	172.4	15.2
RC	LIVE	4 SAW	5.4	23.0	81	27.9	74.5	5.3

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
SF	LIVE	2 SAW	12.2	40.0	1,096	0.0	549.9	72.3
SF	LIVE	3 SAW	6.0	36.0	319	0.0	190.3	21.0
WH	LIVE	2 SAW	14.1	37.0	2,224	15.0	1,592.3	146.8
WH	LIVE	3 SAW	8.7	40.0	7,463	4.5	5,039.3	492.6
WH	LIVE	4 SAW	5.3	29.0	2,367	1.0	1,820.1	156.2
WH	LIVE	CULL	6.0	6.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	5.3	20.0	805	0.0	459.0	53.1

Unit Log Sort Summary: CROW BAIT U1

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	Cull	6.5	40.0	0	100.0	0.0	0.0
BC	LIVE	Domestic	11.7	40.0	617	3.8	288.6	40.7
DF	LIVE	Cull	6.0	14.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	8.0	35.0	12,357	3.7	7,300.9	815.6
DF	LIVE	HQ-B	12.4	38.0	6,408	1.1	3,180.1	422.9
DF	LIVE	Pulp	5.1	8.0	83	0.0	33.1	5.5
RC	LIVE	Domestic	7.0	27.0	311	11.6	246.9	20.5
SF	LIVE	Domestic	9.1	38.0	1,415	0.0	740.2	93.4
WH	LIVE	Cull	6.0	6.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	7.4	35.0	11,831	6.1	8,317.4	780.8
WH	LIVE	HQ-B	10.9	34.0	223	0.0	134.3	14.7
WH	LIVE	Pulp	5.3	20.0	805	0.0	459.0	53.1

Unit Log Grade x Sort Summary: CROW BAIT U1

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	1 SAW	Domestic	13.9	40.0	552	2.7	242.1	36.5
BC	LIVE	2 SAW	Domestic	7.1	40.0	65	12.5	46.5	4.3
BC	LIVE	CULL	Cull	6.5	40.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	Domestic	13.9	40.0	4,620	5.3	2,449.1	304.9
DF	LIVE	2 SAW	HQ-B	13.9	39.0	4,237	1.2	2,058.3	279.7
DF	LIVE	3 SAW	Domestic	8.2	39.0	6,314	2.6	3,961.5	416.7
DF	LIVE	3 SAW	HQ-B	10.7	38.0	2,171	0.9	1,121.8	143.3
DF	LIVE	4 SAW	Domestic	5.6	26.0	1,423	2.9	890.3	93.9
DF	LIVE	CULL	Cull	6.0	14.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	5.1	8.0	83	0.0	33.1	5.5
RC	LIVE	3 SAW	Domestic	10.9	36.0	230	4.0	172.4	15.2
RC	LIVE	4 SAW	Domestic	5.4	23.0	81	27.9	74.5	5.3

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
SF	LIVE	2 SAW	Domestic	12.2	40.0	1,096	0.0	549.9	72.3
SF	LIVE	3 SAW	Domestic	6.0	36.0	319	0.0	190.3	21.0
WH	LIVE	2 SAW	Domestic	14.1	37.0	2,224	15.0	1,592.3	146.8
WH	LIVE	3 SAW	Domestic	8.6	40.0	7,240	4.7	4,905.1	477.8
WH	LIVE	3 SAW	HQ-B	10.9	34.0	223	0.0	134.3	14.7
WH	LIVE	4 SAW	Domestic	5.3	29.0	2,367	1.0	1,820.1	156.2
WH	LIVE	CULL	Cull	6.0	6.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.3	20.0	805	0.0	459.0	53.1

Unit Log Grade x Diameter Bin Summary: CROW BAIT U1

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	CULL	6.5	40.0	0	100.0	0.0	0.0
BC	5 - 7	LIVE	2 SAW	7.1	40.0	65	12.5	46.5	4.3
BC	12 - 15	LIVE	1 SAW	13.9	40.0	552	2.7	242.1	36.5
DF	5 - 7	LIVE	UTILITY	5.1	8.0	83	0.0	33.1	5.5
DF	5 - 7	LIVE	4 SAW	5.5	26.0	1,412	2.9	882.0	93.2
DF	5 - 7	LIVE	CULL	6.0	14.0	0	100.0	0.0	0.0
DF	5 - 7	LIVE	3 SAW	6.9	39.0	2,333	3.4	1,586.6	154.0
DF	8 - 11	LIVE	4 SAW	8.8	12.0	11	0.0	8.3	0.8
DF	8 - 11	LIVE	3 SAW	10.0	39.0	6,152	1.7	3,496.7	406.0
DF	12 - 15	LIVE	2 SAW	13.5	39.0	7,350	4.1	3,903.2	485.1
DF	16 - 19	LIVE	2 SAW	18.0	40.0	1,507	0.0	604.2	99.5
RC	5 - 7	LIVE	4 SAW	5.4	23.0	81	27.9	74.5	5.3
RC	8 - 11	LIVE	3 SAW	10.9	36.0	230	4.0	172.4	15.2
SF	5 - 7	LIVE	3 SAW	6.0	36.0	319	0.0	190.3	21.0
SF	12 - 15	LIVE	2 SAW	12.2	40.0	1,096	0.0	549.9	72.3
WH	5 - 7	LIVE	UTILITY	5.0	20.0	657	0.0	402.4	43.4
WH	5 - 7	LIVE	4 SAW	5.3	29.0	2,367	1.0	1,820.1	156.2
WH	5 - 7	LIVE	CULL	6.0	6.0	0	100.0	0.0	0.0
WH	5 - 7	LIVE	3 SAW	6.9	39.0	1,718	0.9	1,250.2	113.4
WH	8 - 11	LIVE	3 SAW	9.7	40.0	5,746	5.5	3,789.2	379.2
WH	12 - 15	LIVE	UTILITY	13.3	20.0	147	0.0	56.6	9.7
WH	12 - 15	LIVE	2 SAW	13.6	37.0	1,778	12.4	1,283.0	117.3
WH	16 - 19	LIVE	2 SAW	16.7	40.0	446	24.0	309.3	29.5

Unit Log Sort x Diameter Bin Summary: CROW BAIT U1

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	Cull	6.5	40.0	0	100.0	0.0	0.0
BC	5 - 7	LIVE	Domestic	7.1	40.0	65	12.5	46.5	4.3
BC	12 - 15	LIVE	Domestic	13.9	40.0	552	2.7	242.1	36.5
DF	5 - 7	LIVE	Pulp	5.1	8.0	83	0.0	33.1	5.5
DF	5 - 7	LIVE	Cull	6.0	14.0	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Domestic	6.1	32.0	3,745	3.2	2,468.6	247.2
DF	8 - 11	LIVE	Domestic	9.7	39.0	3,993	2.1	2,383.2	263.5
DF	8 - 11	LIVE	HQ-B	10.7	38.0	2,171	0.9	1,121.8	143.3
DF	12 - 15	LIVE	Domestic	13.5	40.0	3,878	6.2	2,150.8	256.0
DF	12 - 15	LIVE	HQ-B	13.5	39.0	3,471	1.5	1,752.4	229.1
DF	16 - 19	LIVE	HQ-B	17.5	40.0	766	0.0	305.9	50.6
DF	16 - 19	LIVE	Domestic	18.7	40.0	741	0.0	298.3	48.9
RC	5 - 7	LIVE	Domestic	5.4	23.0	81	27.9	74.5	5.3
RC	8 - 11	LIVE	Domestic	10.9	36.0	230	4.0	172.4	15.2
SF	5 - 7	LIVE	Domestic	6.0	36.0	319	0.0	190.3	21.0
SF	12 - 15	LIVE	Domestic	12.2	40.0	1,096	0.0	549.9	72.3
WH	5 - 7	LIVE	Pulp	5.0	20.0	657	0.0	402.4	43.4
WH	5 - 7	LIVE	Domestic	5.7	32.0	4,084	1.0	3,070.2	269.6
WH	5 - 7	LIVE	Cull	6.0	6.0	0	100.0	0.0	0.0
WH	8 - 11	LIVE	Domestic	9.6	40.0	5,522	5.8	3,654.9	364.5
WH	8 - 11	LIVE	HQ-B	10.9	34.0	223	0.0	134.3	14.7
WH	12 - 15	LIVE	Pulp	13.3	20.0	147	0.0	56.6	9.7
WH	12 - 15	LIVE	Domestic	13.6	37.0	1,778	12.4	1,283.0	117.3
WH	16 - 19	LIVE	Domestic	16.7	40.0	446	24.0	309.3	29.5

Cruise Unit Report CROW BAIT U2

Unit Sale Notice Volume (MBF): CROW BAIT U2

Sp	QMD	Rings/In	Age	MBF Volume by Grade					
				All	1 Saw	2 Saw	3 Saw	4 Saw	Utility
DF	20.1	6.0	55	645.2		375.6	215.7	47.7	6.2
WH	14.2	8.0	54	175.1		47.7	92.3	35.1	
BC	24.5			8.7	7.1	1.6			
ALL	17.4	7.0	55	828.9	7.1	424.8	308.0	82.8	6.2

Unit Sale Notice Weight (tons): CROW BAIT U2

Sp	Tons by Grade					
	All	1 Saw	2 Saw	3 Saw	4 Saw	Utility
DF	5,056.7		2,780.4	1,783.8	465.0	27.6
WH	1,586.1		361.3	852.3	372.5	
BC	72.8	53.2	19.6			
ALL	6,715.6	53.2	3,161.2	2,636.1	837.4	27.6

Unit Cruise Design: CROW BAIT U2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (46.94, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	26.3	26.3	17	9	0

Unit Cruise Summary: CROW BAIT U2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	30	66	3.9	1
WH	16	19	1.1	1
BC	1	1	0.1	0
ALL	47	86	5.1	2

Unit Cruise Statistics (Cut + Leave Trees): CROW BAIT 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 (%)
DF	182.2	46.3	11.2	145.6	16.1	2.9	26,543	49.0	11.6
WH	52.5	126.1	30.6	126.9	17.4	4.4	6,656	127.3	30.9

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 (%)
BC	2.8	412.3	100.0	119.1	0.0	0.0	329	412.3	100.0
ALL	237.5	28.4	6.9	141.2	17.2	2.5	33,528	33.2	7.3

Unit Summary: CROW BAIT U2

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	LIVE	CUT	1	ALL	24.5	81	101	329	17.0	0.8	2.8	0.6	72.8	8.7
DF	LIVE	CUT	30	ALL	20.1	85	108	24,532	1.7	76.4	168.4	37.6	5,056.7	645.2
DF	LIVE	LEA	0	ALL	18.2			2,011	1.7	7.6	13.8	3.2	414.5	52.9
WH	LIVE	CUT	16	ALL	14.2	68	84	6,656	4.5	47.7	52.5	13.9	1,586.1	175.1
ALL	LIVE	LEA	0	ALL	18.2			2,011	1.7	7.6	13.8	3.2	414.5	52.9
ALL	LIVE	CUT	47	ALL	18.1	78	99	31,517	2.5	124.9	223.7	52.1	6,715.6	829.0
ALL	ALL	ALL	47	ALL	18.1	74	93	33,528	2.4	132.5	237.5	55.3	7,130.1	881.9

Unit Stand Table: CROW BAIT U2

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	24	LIVE	CUT	1	24.5	81	101	329	17.0	0.9	2.8	0.6	72.8	8.7
DF	16	LIVE	CUT	2	15.5	80	101	1,582	1.7	8.6	11.2	2.9	323.9	41.6
DF	18	LIVE	CUT	4	17.2	84	107	3,103	2.6	13.9	22.5	5.4	667.1	81.6
DF	20	LIVE	CUT	9	19.4	84	107	6,767	1.0	24.5	50.5	11.5	1,491.2	178.0
DF	22	LIVE	CUT	5	21.4	83	105	3,942	2.4	11.3	28.1	6.1	831.4	103.7
DF	24	LIVE	CUT	7	23.3	91	115	6,450	1.1	13.2	39.3	8.1	1,244.1	169.6
DF	26	LIVE	CUT	2	25.0	87	110	1,766	0.9	3.3	11.2	2.2	349.4	46.4
DF	28	LIVE	CUT	1	28.0	82	104	922	5.1	1.3	5.6	1.1	149.6	24.2
DF	16	LIVE	LEA	1	16.0			402	1.7	2.0	2.8	0.7	82.9	10.6
DF	18	LIVE	LEA	2	17.5			804	1.7	3.3	5.5	1.3	165.8	21.2
DF	20	LIVE	LEA	1	20.0			402	1.7	1.3	2.8	0.6	82.9	10.6
DF	22	LIVE	LEA	1	22.0			402	1.7	1.0	2.8	0.6	82.9	10.6
WH	10	LIVE	CUT	3	9.5	60	74	978	0.7	20.1	9.8	3.2	223.7	25.7
WH	12	LIVE	CUT	1	11.0	65	80	417	0.0	5.0	3.3	1.0	92.0	11.0
WH	16	LIVE	CUT	5	15.8	78	98	2,281	2.5	12.1	16.4	4.1	556.6	60.0
WH	18	LIVE	CUT	2	18.1	70	87	759	1.2	3.7	6.6	1.5	201.0	20.0
WH	20	LIVE	CUT	2	20.0	61	82	750	14.7	3.0	6.6	1.5	175.9	19.7
WH	22	LIVE	CUT	2	21.5	81	102	1,010	1.2	2.6	6.6	1.4	228.9	26.6
WH	24	LIVE	CUT	1	24.0	75	93	461	17.2	1.0	3.3	0.7	108.0	12.1

Unit Log Grade Summary: CROW BAIT U2

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	1 SAW	16.6	40.0	270	20.0	53.2	7.1
BC	LIVE	2 SAW	7.9	39.0	59	0.0	19.6	1.6
DF	LIVE	2 SAW	14.2	38.0	14,282	1.6	2,780.4	375.6
DF	LIVE	3 SAW	9.2	38.0	8,200	1.8	1,783.8	215.7
DF	LIVE	4 SAW	5.9	25.0	1,813	1.8	465.0	47.7
DF	LIVE	UTILITY	19.7	12.0	236	0.0	27.6	6.2
WH	LIVE	2 SAW	15.3	34.0	1,812	11.2	361.3	47.7
WH	LIVE	3 SAW	8.8	39.0	3,510	2.1	852.3	92.3
WH	LIVE	4 SAW	5.4	34.0	1,334	0.8	372.5	35.1

Unit Log Sort Summary: CROW BAIT U2

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	Domestic	12.3	40.0	329	17.0	72.8	8.7
DF	LIVE	Domestic	8.7	33.0	15,963	1.8	3,418.7	419.8
DF	LIVE	HQ-B	13.2	37.0	8,333	1.5	1,610.5	219.2
DF	LIVE	Pulp	19.7	12.0	236	0.0	27.6	6.2
WH	LIVE	Domestic	7.8	36.0	6,656	4.5	1,586.1	175.1

Unit Log Grade x Sort Summary: CROW BAIT U2

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	1 SAW	Domestic	16.6	40.0	270	20.0	53.2	7.1
BC	LIVE	2 SAW	Domestic	7.9	39.0	59	0.0	19.6	1.6
DF	LIVE	2 SAW	Domestic	14.4	39.0	7,797	2.0	1,523.7	205.1
DF	LIVE	2 SAW	HQ-B	14.0	36.0	6,485	1.1	1,256.7	170.6
DF	LIVE	3 SAW	Domestic	8.9	38.0	6,352	1.5	1,430.0	167.1
DF	LIVE	3 SAW	HQ-B	11.1	38.0	1,848	2.6	353.8	48.6
DF	LIVE	4 SAW	Domestic	5.9	25.0	1,813	1.8	465.0	47.7
DF	LIVE	UTILITY	Pulp	19.7	12.0	236	0.0	27.6	6.2
WH	LIVE	2 SAW	Domestic	15.3	34.0	1,812	11.2	361.3	47.7
WH	LIVE	3 SAW	Domestic	8.8	39.0	3,510	2.1	852.3	92.3
WH	LIVE	4 SAW	Domestic	5.4	34.0	1,334	0.8	372.5	35.1

Unit Log Grade x Diameter Bin Summary: CROW BAIT U2

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	2 SAW	7.9	39.0	59	0.0	19.6	1.6
BC	16 - 19	LIVE	1 SAW	16.6	40.0	270	20.0	53.2	7.1
DF	5 - 7	LIVE	4 SAW	5.9	25.0	1,813	1.8	465.0	47.7
DF	5 - 7	LIVE	3 SAW	6.8	39.0	1,330	1.1	343.8	35.0
DF	8 - 11	LIVE	3 SAW	10.2	38.0	6,869	1.9	1,440.0	180.7
DF	12 - 15	LIVE	2 SAW	13.8	38.0	11,809	1.0	2,362.5	310.6
DF	16 - 19	LIVE	2 SAW	16.5	38.0	2,024	2.7	350.9	53.2
DF	16 - 19	LIVE	UTILITY	19.7	12.0	236	0.0	27.6	6.2
DF	20+	LIVE	2 SAW	21.5	20.0	449	10.0	66.9	11.8
WH	5 - 7	LIVE	4 SAW	5.4	34.0	1,334	0.8	372.5	35.1
WH	5 - 7	LIVE	3 SAW	6.8	38.0	972	0.5	246.7	25.6
WH	8 - 11	LIVE	3 SAW	10.6	40.0	2,538	2.6	605.6	66.8
WH	12 - 15	LIVE	2 SAW	15.0	33.0	1,427	8.5	281.4	37.5
WH	16 - 19	LIVE	2 SAW	17.0	40.0	385	20.0	79.9	10.1

Unit Log Sort x Diameter Bin Summary: CROW BAIT U2

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	Domestic	7.9	39.0	59	0.0	19.6	1.6
BC	16 - 19	LIVE	Domestic	16.6	40.0	270	20.0	53.2	7.1
DF	5 - 7	LIVE	Domestic	6.2	28.0	3,144	1.5	808.7	82.7
DF	8 - 11	LIVE	Domestic	9.9	38.0	5,022	1.7	1,086.3	132.1
DF	8 - 11	LIVE	HQ-B	11.1	38.0	1,848	2.6	353.8	48.6
DF	12 - 15	LIVE	Domestic	13.7	40.0	5,946	1.5	1,212.3	156.4
DF	12 - 15	LIVE	HQ-B	13.8	37.0	5,863	0.6	1,150.2	154.2
DF	16 - 19	LIVE	HQ-B	16.2	34.0	623	5.9	106.5	16.4
DF	16 - 19	LIVE	Domestic	16.8	40.0	1,402	1.2	244.4	36.9
DF	16 - 19	LIVE	Pulp	19.7	12.0	236	0.0	27.6	6.2
DF	20+	LIVE	Domestic	21.5	20.0	449	10.0	66.9	11.8
WH	5 - 7	LIVE	Domestic	5.8	35.0	2,306	0.7	619.2	60.6
WH	8 - 11	LIVE	Domestic	10.6	40.0	2,538	2.6	605.6	66.8
WH	12 - 15	LIVE	Domestic	15.0	33.0	1,427	8.5	281.4	37.5
WH	16 - 19	LIVE	Domestic	17.0	40.0	385	20.0	79.9	10.1

Cruise Unit Report CROW BAIT U3

Unit Sale Notice Volume (MBF): CROW BAIT U3

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	17.3	9.0		908.0	393.8	419.0	91.2	4.1
WH	15.5			268.2	28.8	163.0	39.9	36.5
NF	24.0			49.7	36.6	11.2	1.9	
BC	22.0			13.6	13.6			
RC	12.2			12.1		8.3	3.7	
ALL	16.5	9.0		1,251.5	472.7	601.5	136.7	40.6

Unit Sale Notice Weight (tons): CROW BAIT U3

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	7,685.2	3,049.7	3,738.6	860.9	36.0
WH	2,728.1	342.3	1,571.4	423.2	391.2
NF	327.8	209.4	100.2	18.2	
RC	118.0		75.0	43.0	
BC	92.7	92.7			
ALL	10,951.8	3,694.1	5,485.2	1,345.3	427.2

Unit Cruise Design: CROW BAIT 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	42.8	42.8	28	15	0

Unit Cruise Summary: CROW BAIT U3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	43	89	3.2	1
WH	13	29	1.0	0
NF	1	3	0.1	0
BC	1	1	0.0	0
RC	5	5	0.2	0
ALL	63	127	4.5	1

Unit Cruise Statistics (Cut + Leave Trees): CROW BAIT 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 (%)
DF	173.0	43.7	8.3	125.4	18.8	2.9	21,702	47.6	8.7
WH	56.4	89.0	16.8	115.1	12.6	3.5	6,490	89.9	17.2
NF	5.8	388.5	73.4	199.3	0.0	0.0	1,162	388.5	73.4
BC	1.9	529.2	100.0	163.3	0.0	0.0	317	529.2	100.0
RC	7.1	342.6	64.8	39.5	102.0	45.6	282	357.5	79.2
ALL	244.3	29.3	5.5	122.6	28.2	3.6	29,953	40.7	6.6

Unit Summary: CROW BAIT U3

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	LIVE	CUT	1	ALL	22.0	100	125	317	19.4	0.7	1.9	0.4	92.7	13.6
DF	LIVE	CUT	43	ALL	17.3	76	95	21,214	1.6	103.6	169.2	40.7	7,685.2	908.0
DF	LIVE	LEA	0	ALL	21.9			488	1.6	1.5	3.9	0.8	176.7	20.9
NF	LIVE	CUT	1	ALL	24.0	94	120	1,162	1.9	1.9	5.8	1.2	327.8	49.7
RC	LIVE	CUT	5	ALL	12.2	36	42	282	24.9	8.8	7.1	2.0	118.0	12.1
WH	LIVE	CUT	13	ALL	15.5	70	87	6,266	3.4	41.5	54.4	13.8	2,728.1	268.2
WH	LIVE	LEA	1	ALL	14.0	70	87	224	3.4	1.8	1.9	0.5	97.4	9.6
ALL	LIVE	CUT	63	ALL	16.7	72	90	29,241	2.5	156.5	238.4	58.1	10,951.8	1,251.6
ALL	LIVE	LEA	1	ALL	18.0	38	47	712	2.2	3.3	5.8	1.3	274.1	30.5
ALL	ALL	ALL	64	ALL	16.7	72	89	29,953	2.5	159.8	244.2	59.4	11,225.9	1,282.1

Unit Stand Table: CROW BAIT U3

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	22	LIVE	CUT	1	22.0	100	125	317	19.4	0.7	1.9	0.4	92.7	13.6
DF	12	LIVE	CUT	2	11.5	51	62	615	0.0	10.7	7.7	2.3	239.4	26.3
DF	14	LIVE	CUT	4	13.5	70	88	1,558	2.5	15.5	15.4	4.2	628.3	66.7
DF	16	LIVE	CUT	8	15.5	72	91	3,607	0.0	23.6	30.8	7.8	1,285.5	154.4
DF	18	LIVE	CUT	6	17.3	80	102	2,940	2.4	14.1	23.1	5.5	1,052.1	125.8
DF	20	LIVE	CUT	12	19.2	83	105	5,845	2.3	22.9	46.1	10.5	2,177.3	250.2
DF	22	LIVE	CUT	7	21.7	87	110	4,503	1.4	12.0	30.8	6.6	1,530.8	192.7
DF	24	LIVE	CUT	3	23.0	90	114	1,615	0.6	4.0	11.5	2.4	585.6	69.1
DF	26	LIVE	CUT	1	26.0	87	110	532	1.1	1.0	3.8	0.8	186.1	22.8
DF	22	LIVE	LEA	1	21.0			244	1.6	0.8	2.0	0.4	88.3	10.4
DF	24	LIVE	LEA	1	23.0			244	1.6	0.7	2.0	0.4	88.4	10.4
NF	24	LIVE	CUT	1	24.0	94	120	1,162	1.9	1.8	5.8	1.2	327.8	49.7

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
RC	10	LIVE	CUT	2	9.9	28	32	0	100.0	5.3	2.8	0.9	0.0	0.0
RC	14	LIVE	CUT	1	13.0	38	45	53	0.0	1.5	1.4	0.4	32.7	2.3
RC	16	LIVE	CUT	1	15.2	56	69	109	0.0	1.1	1.4	0.4	42.2	4.7
RC	18	LIVE	CUT	1	18.0	56	70	120	4.5	0.8	1.4	0.3	43.1	5.2
WH	12	LIVE	CUT	1	11.0	62	76	470	0.0	6.3	4.2	1.3	182.5	20.1
WH	14	LIVE	CUT	2	13.0	68	85	977	3.2	9.1	8.4	2.3	404.5	41.8
WH	16	LIVE	CUT	4	15.5	72	90	1,969	2.0	12.8	16.7	4.3	846.0	84.3
WH	18	LIVE	CUT	3	17.3	77	95	1,575	1.3	7.7	12.6	3.0	672.4	67.4
WH	20	LIVE	CUT	2	19.5	68	84	869	2.2	4.0	8.4	1.9	403.4	37.2
WH	22	LIVE	CUT	1	21.0	75	93	406	20.7	1.7	4.2	0.9	219.3	17.4
WH	14	LIVE	LEA	1	14.0	70	87	224	0.0	1.8	1.9	0.5	97.4	9.6

Unit Log Grade Summary: CROW BAIT U3

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	13.0	40.0	317	15.2	92.7	13.6
BC	LIVE	CULL	7.0	17.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	13.6	39.0	9,200	1.1	3,049.7	393.8
DF	LIVE	3 SAW	8.7	39.0	9,789	1.1	3,738.6	419.0
DF	LIVE	4 SAW	5.5	26.0	2,130	3.3	860.9	91.2
DF	LIVE	CULL	6.0	4.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	6.4	12.0	95	0.0	36.0	4.1
NF	LIVE	2 SAW	17.0	40.0	856	0.0	209.4	36.6
NF	LIVE	3 SAW	10.5	40.0	262	7.8	100.2	11.2
NF	LIVE	4 SAW	5.0	22.0	45	0.0	18.2	1.9
RC	LIVE	3 SAW	9.4	36.0	195	2.8	75.0	8.3
RC	LIVE	4 SAW	5.1	24.0	87	0.0	43.0	3.7
RC	LIVE	CULL	5.2	15.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	12.5	40.0	672	15.7	342.3	28.8
WH	LIVE	3 SAW	9.0	40.0	3,808	2.4	1,571.4	163.0
WH	LIVE	4 SAW	5.3	28.0	933	0.0	423.2	39.9
WH	LIVE	UTILITY	6.9	25.0	853	0.0	391.2	36.5

Unit Log Sort Summary: CROW BAIT U3

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	Cull	7.0	17.0	0	100.0	0.0	0.0
BC	LIVE	Domestic	13.0	40.0	317	15.2	92.7	13.6
DF	LIVE	Cull	6.0	4.0	0	100.0	0.0	0.0

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	7.9	34.0	15,763	1.7	5,915.2	674.7
DF	LIVE	HQ-B	11.9	36.0	5,356	0.2	1,734.0	229.2
DF	LIVE	Pulp	6.4	12.0	95	0.0	36.0	4.1
NF	LIVE	Domestic	10.8	34.0	1,162	1.9	327.8	49.7
RC	LIVE	Cull	5.2	15.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	6.7	28.0	282	2.0	118.0	12.1
WH	LIVE	Domestic	7.5	34.0	5,413	3.9	2,336.9	231.7
WH	LIVE	Pulp	6.9	25.0	853	0.0	391.2	36.5

Unit Log Grade x Sort Summary: CROW BAIT U3

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	13.0	40.0	317	15.2	92.7	13.6
BC	LIVE	CULL	Cull	7.0	17.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	Domestic	13.6	40.0	5,503	1.6	1,898.7	235.5
DF	LIVE	2 SAW	HQ-B	13.4	37.0	3,697	0.3	1,151.0	158.2
DF	LIVE	3 SAW	Domestic	8.5	40.0	8,130	1.4	3,155.6	348.0
DF	LIVE	3 SAW	HQ-B	10.1	34.0	1,659	0.0	583.0	71.0
DF	LIVE	4 SAW	Domestic	5.5	26.0	2,130	3.3	860.9	91.2
DF	LIVE	CULL	Cull	6.0	4.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	6.4	12.0	95	0.0	36.0	4.1
NF	LIVE	2 SAW	Domestic	17.0	40.0	856	0.0	209.4	36.6
NF	LIVE	3 SAW	Domestic	10.5	40.0	262	7.8	100.2	11.2
NF	LIVE	4 SAW	Domestic	5.0	22.0	45	0.0	18.2	1.9
RC	LIVE	3 SAW	Domestic	9.4	36.0	195	2.8	75.0	8.3
RC	LIVE	4 SAW	Domestic	5.1	24.0	87	0.0	43.0	3.7
RC	LIVE	CULL	Cull	5.2	15.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	12.5	40.0	672	15.7	342.3	28.8
WH	LIVE	3 SAW	Domestic	9.0	40.0	3,808	2.4	1,571.4	163.0
WH	LIVE	4 SAW	Domestic	5.3	28.0	933	0.0	423.2	39.9
WH	LIVE	UTILITY	Pulp	6.9	25.0	853	0.0	391.2	36.5

Unit Log Grade x Diameter Bin Summary: CROW BAIT U3

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5 - 7	LIVE	CULL	7.0	17.0	0	100.0	0.0	0.0
BC	8 - 11	LIVE	2 SAW	10.4	40.0	56	50.3	29.4	2.4
BC	12 - 15	LIVE	2 SAW	15.5	40.0	261	0.0	63.3	11.2
DF	5 - 7	LIVE	4 SAW	5.4	26.0	2,071	2.6	837.4	88.6

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5-7	LIVE	CULL	6.0	4.0	0	100.0	0.0	0.0
DF	5-7	LIVE	UTILITY	6.4	12.0	95	0.0	36.0	4.1
DF	5-7	LIVE	3 SAW	7.0	40.0	2,435	1.7	1,058.2	104.2
DF	8-11	LIVE	3 SAW	9.8	39.0	7,354	0.9	2,680.4	314.8
DF	8-11	LIVE	4 SAW	10.9	14.0	59	22.7	23.5	2.5
DF	12-15	LIVE	2 SAW	13.5	39.0	8,787	1.1	2,914.2	376.1
DF	16-19	LIVE	2 SAW	16.8	40.0	413	0.0	135.5	17.7
NF	5-7	LIVE	4 SAW	5.0	22.0	45	0.0	18.2	1.9
NF	8-11	LIVE	3 SAW	10.5	40.0	262	7.8	100.2	11.2
NF	16-19	LIVE	2 SAW	17.0	40.0	856	0.0	209.4	36.6
RC	5-7	LIVE	4 SAW	5.1	24.0	87	0.0	43.0	3.7
RC	5-7	LIVE	CULL	5.2	15.0	0	100.0	0.0	0.0
RC	8-11	LIVE	3 SAW	9.4	36.0	195	2.8	75.0	8.3
WH	5-7	LIVE	UTILITY	5.0	15.0	157	0.0	54.4	6.7
WH	5-7	LIVE	4 SAW	5.3	28.0	933	0.0	423.2	39.9
WH	5-7	LIVE	3 SAW	6.4	38.0	490	0.0	210.4	21.0
WH	8-11	LIVE	3 SAW	9.8	40.0	3,318	2.8	1,361.0	142.0
WH	8-11	LIVE	UTILITY	9.8	40.0	696	0.0	336.8	29.8
WH	12-15	LIVE	2 SAW	12.5	40.0	672	15.7	342.3	28.8

Unit Log Sort x Diameter Bin Summary: CROW BAIT U3

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	5-7	LIVE	Cull	7.0	17.0	0	100.0	0.0	0.0
BC	8-11	LIVE	Domestic	10.4	40.0	56	50.3	29.4	2.4
BC	12-15	LIVE	Domestic	15.5	40.0	261	0.0	63.3	11.2
DF	5-7	LIVE	Domestic	5.9	31.0	4,505	2.1	1,895.6	192.8
DF	5-7	LIVE	Cull	6.0	4.0	0	100.0	0.0	0.0
DF	5-7	LIVE	Pulp	6.4	12.0	95	0.0	36.0	4.1
DF	8-11	LIVE	Domestic	9.7	39.0	5,754	1.5	2,120.9	246.3
DF	8-11	LIVE	HQ-B	10.1	34.0	1,659	0.0	583.0	71.0
DF	12-15	LIVE	HQ-B	13.4	37.0	3,697	0.3	1,151.0	158.2
DF	12-15	LIVE	Domestic	13.5	40.0	5,090	1.7	1,763.2	217.9
DF	16-19	LIVE	Domestic	16.8	40.0	413	0.0	135.5	17.7
NF	5-7	LIVE	Domestic	5.0	22.0	45	0.0	18.2	1.9
NF	8-11	LIVE	Domestic	10.5	40.0	262	7.8	100.2	11.2
NF	16-19	LIVE	Domestic	17.0	40.0	856	0.0	209.4	36.6
RC	5-7	LIVE	Domestic	5.1	24.0	87	0.0	43.0	3.7

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
RC	5 - 7	LIVE	Cull	5.2	15.0	0	100.0	0.0	0.0
RC	8 - 11	LIVE	Domestic	9.4	36.0	195	2.8	75.0	8.3
WH	5 - 7	LIVE	Pulp	5.0	15.0	157	0.0	54.4	6.7
WH	5 - 7	LIVE	Domestic	5.5	30.0	1,424	0.0	633.6	60.9
WH	8 - 11	LIVE	Domestic	9.8	40.0	3,318	2.8	1,361.0	142.0
WH	8 - 11	LIVE	Pulp	9.8	40.0	696	0.0	336.8	29.8
WH	12 - 15	LIVE	Domestic	12.5	40.0	672	15.7	342.3	28.8

Cruise Unit Report CROW BAIT RW 4

Unit Sale Notice Volume (MBF): CROW BAIT RW 4

Sp	QMD	Rings/In	Age	MBF Volume by Grade			
				All	3 Saw	4 Saw	Utility
DF	20.0			3.1	2.6	0.5	
WH	19.0			2.1	1.9		0.2
RC	16.0			0.7	0.7		
ALL	18.1			5.9	5.2	0.5	0.2

Unit Sale Notice Weight (tons): CROW BAIT RW 4

Sp	Tons by Grade			
	All	3 Saw	4 Saw	Utility
DF	32.6	26.3	6.3	
WH	29.6	28.0		1.6
RC	19.9	19.9		
ALL	82.1	74.3	6.3	1.6

Unit Cruise Design: CROW BAIT RW 4

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	0.8	0.8	1	1	0

Unit Cruise Summary: CROW BAIT RW 4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	1	1	1.0	0
WH	1	1	1.0	0
RC	1	1	1.0	0
ALL	3	3	3.0	0

Unit Cruise Statistics (Cut + Leave Trees): CROW BAIT RW 4

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	40.0	0.0	0.0	98.1	0.0	0.0	3,924	0.0	0.0
WH	40.0	0.0	0.0	64.5	0.0	0.0	2,580	0.0	0.0

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 (%)
RC	40.0	0.0	0.0	22.2	0.0	0.0	888	0.0	0.0
ALL	120.0	0.0	0.0	61.6	61.7	35.6	7,392	61.7	35.6

Unit Summary: CROW BAIT RW 4

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	1	ALL	20.0	74	93	3,924	0.0	18.3	40.0	8.9	32.6	3.1
RC	LIVE	CUT	1	ALL	16.0	45	55	888	50.8	28.6	40.0	10.0	19.9	0.7
WH	LIVE	CUT	1	ALL	19.0	52	63	2,580	0.0	20.3	40.0	9.2	29.6	2.1
ALL	LIVE	CUT	3	ALL	18.1	55	68	7,392	11.0	67.2	120.0	28.1	82.1	5.9
ALL	ALL	ALL	3	ALL	18.1	55	68	7,392	11.0	67.2	120.0	28.1	82.1	5.9

Unit Stand Table: CROW BAIT RW 4

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	20	LIVE	CUT	1	20.0	74	93	3,924	0.0	18.3	40.0	8.9	32.6	3.1
RC	16	LIVE	CUT	1	16.0	45	55	888	50.8	28.6	40.0	10.0	19.9	0.7
WH	20	LIVE	CUT	1	19.0	52	63	2,580	0.0	20.3	40.0	9.2	29.6	2.1

Unit Log Grade Summary: CROW BAIT RW 4

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	11.6	40.0	3,301	0.0	26.3	2.6
DF	LIVE	4 SAW	5.7	32.0	623	0.0	6.3	0.5
RC	LIVE	3 SAW	6.0	40.0	888	50.8	19.9	0.7
WH	LIVE	3 SAW	9.0	40.0	2,357	0.0	28.0	1.9
WH	LIVE	UTILITY	5.5	10.0	223	0.0	1.6	0.2

Unit Log Sort Summary: CROW BAIT RW 4

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	8.7	36.0	3,924	0.0	32.6	3.1
RC	LIVE	Domestic	6.0	40.0	888	50.8	19.9	0.7
WH	LIVE	Domestic	9.0	40.0	2,357	0.0	28.0	1.9
WH	LIVE	Pulp	5.5	10.0	223	0.0	1.6	0.2

Unit Log Grade x Sort Summary: CROW BAIT RW 4

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	Domestic	11.6	40.0	3,301	0.0	26.3	2.6
DF	LIVE	4 SAW	Domestic	5.7	32.0	623	0.0	6.3	0.5
RC	LIVE	3 SAW	Domestic	6.0	40.0	888	50.8	19.9	0.7
WH	LIVE	3 SAW	Domestic	9.0	40.0	2,357	0.0	28.0	1.9
WH	LIVE	UTILITY	Pulp	5.5	10.0	223	0.0	1.6	0.2

Unit Log Grade x Diameter Bin Summary: CROW BAIT RW 4

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.7	32.0	623	0.0	6.3	0.5
DF	8 - 11	LIVE	3 SAW	11.6	40.0	3,301	0.0	26.3	2.6
RC	5 - 7	LIVE	3 SAW	6.0	40.0	888	50.8	19.9	0.7
WH	5 - 7	LIVE	UTILITY	5.5	10.0	223	0.0	1.6	0.2
WH	8 - 11	LIVE	3 SAW	9.0	40.0	2,357	0.0	28.0	1.9

Unit Log Sort x Diameter Bin Summary: CROW BAIT RW 4

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Domestic	5.7	32.0	623	0.0	6.3	0.5
DF	8 - 11	LIVE	Domestic	11.6	40.0	3,301	0.0	26.3	2.6
RC	5 - 7	LIVE	Domestic	6.0	40.0	888	50.8	19.9	0.7
WH	5 - 7	LIVE	Pulp	5.5	10.0	223	0.0	1.6	0.2
WH	8 - 11	LIVE	Domestic	9.0	40.0	2,357	0.0	28.0	1.9

Cruise Unit Report CROW BAIT RW 5

Unit Sale Notice Volume (MBF): CROW BAIT RW 5

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	23.0			3.4	2.8	0.6		
WH	12.5			3.2		1.8	1.4	
RA	13.0			1.8			1.5	0.3
ALL	13.9			8.4	2.8	2.4	2.9	0.3

Unit Sale Notice Weight (tons): CROW BAIT RW 5

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
WH	47.1		24.3	22.8	
DF	31.0	23.3	7.8		
RA	18.4			16.7	1.7
ALL	96.5	23.3	32.0	39.5	1.7

Unit Cruise Design: CROW BAIT RW 5

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	0.7	0.7	1	1	0

Unit Cruise Summary: CROW BAIT RW 5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	1	1	1.0	0
WH	2	2	2.0	0
RA	1	1	1.0	0
ALL	4	4	4.0	0

Unit Cruise Statistics (Cut + Leave Trees): CROW BAIT RW 5

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	40.0	0.0	0.0	121.0	0.0	0.0	4,839	0.0	0.0
WH	80.0	0.0	0.0	56.9	14.9	10.5	4,554	14.9	10.5

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	40.0	0.0	0.0	64.0	0.0	0.0	2,560	0.0	0.0
ALL	160.0	0.0	0.0	74.7	42.0	21.0	11,953	42.0	21.0

Unit Summary: CROW BAIT RW 5

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	1	ALL	23.0	82	104	4,839	0.0	13.9	40.0	8.3	31.0	3.4
RA	LIVE	CUT	1	ALL	13.0	45	54	2,560	0.0	43.4	40.0	11.1	18.4	1.8
WH	LIVE	CUT	2	ALL	12.5	50	60	4,554	7.5	93.9	80.0	22.6	47.1	3.2
ALL	LIVE	CUT	4	ALL	13.9	52	62	11,953	3.0	151.2	160.0	42.0	96.5	8.4
ALL	ALL	ALL	4	ALL	13.9	52	62	11,953	3.0	151.2	160.0	42.0	96.5	8.4

Unit Stand Table: CROW BAIT RW 5

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	24	LIVE	CUT	1	23.0	82	104	4,839	0.0	13.9	40.0	8.3	31.0	3.4
RA	14	LIVE	CUT	1	13.0	45	54	2,560	0.0	43.4	40.0	11.1	18.4	1.8
WH	12	LIVE	CUT	1	12.0	48	58	2,037	7.0	50.9	40.0	11.5	22.8	1.4
WH	14	LIVE	CUT	1	13.0	52	63	2,517	7.9	43.4	40.0	11.1	24.3	1.8

Unit Log Grade Summary: CROW BAIT RW 5

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	14.5	40.0	3,965	0.0	23.3	2.8
DF	LIVE	3 SAW	6.9	40.0	874	0.0	7.8	0.6
RA	LIVE	4 SAW	7.9	30.0	2,083	0.0	16.7	1.5
RA	LIVE	UTILITY	5.1	10.0	477	0.0	1.7	0.3
WH	LIVE	3 SAW	6.4	40.0	2,517	7.9	24.3	1.8
WH	LIVE	4 SAW	5.3	40.0	2,037	7.0	22.8	1.4

Unit Log Sort Summary: CROW BAIT RW 5

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	10.7	40.0	4,839	0.0	31.0	3.4
RA	LIVE	Domestic	7.9	30.0	2,083	0.0	16.7	1.5
RA	LIVE	Pulp	5.1	10.0	477	0.0	1.7	0.3
WH	LIVE	Domestic	5.8	40.0	4,554	7.5	47.1	3.2

Unit Log Grade x Sort Summary: CROW BAIT RW 5

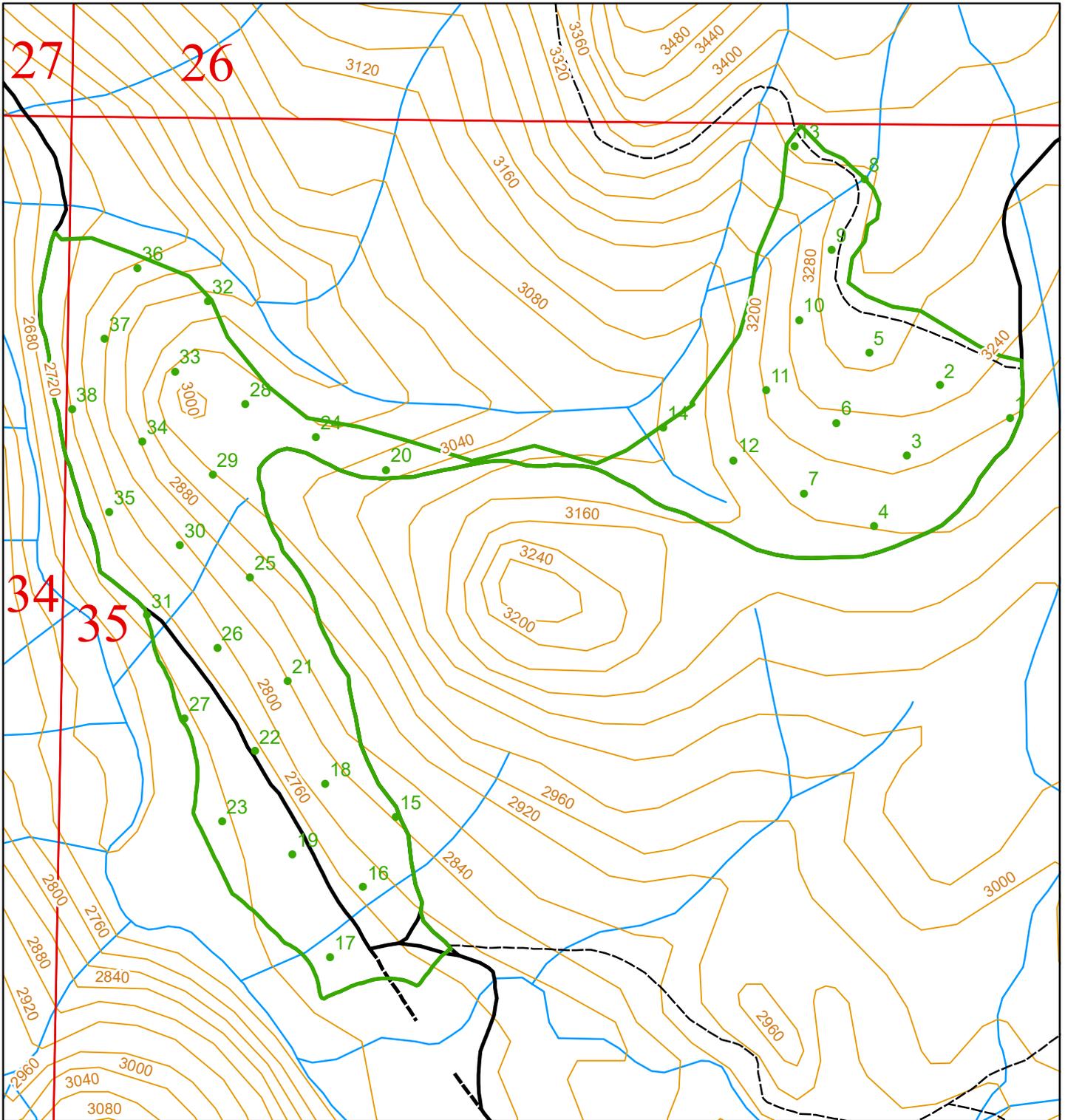
Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	14.5	40.0	3,965	0.0	23.3	2.8
DF	LIVE	3 SAW	Domestic	6.9	40.0	874	0.0	7.8	0.6
RA	LIVE	4 SAW	Domestic	7.9	30.0	2,083	0.0	16.7	1.5
RA	LIVE	UTILITY	Pulp	5.1	10.0	477	0.0	1.7	0.3
WH	LIVE	3 SAW	Domestic	6.4	40.0	2,517	7.9	24.3	1.8
WH	LIVE	4 SAW	Domestic	5.3	40.0	2,037	7.0	22.8	1.4

Unit Log Grade x Diameter Bin Summary: CROW BAIT RW 5

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	3 SAW	6.9	40.0	874	0.0	7.8	0.6
DF	12 - 15	LIVE	2 SAW	14.5	40.0	3,965	0.0	23.3	2.8
RA	5 - 7	LIVE	UTILITY	5.1	10.0	477	0.0	1.7	0.3
RA	5 - 7	LIVE	4 SAW	7.9	30.0	2,083	0.0	16.7	1.5
WH	5 - 7	LIVE	4 SAW	5.3	40.0	2,037	7.0	22.8	1.4
WH	5 - 7	LIVE	3 SAW	6.4	40.0	2,517	7.9	24.3	1.8

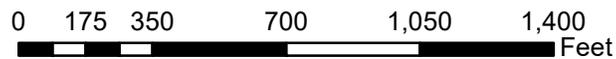
Unit Log Sort x Diameter Bin Summary: CROW BAIT RW 5

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Domestic	6.9	40.0	874	0.0	7.8	0.6
DF	12 - 15	LIVE	Domestic	14.5	40.0	3,965	0.0	23.3	2.8
RA	5 - 7	LIVE	Pulp	5.1	10.0	477	0.0	1.7	0.3
RA	5 - 7	LIVE	Domestic	7.9	30.0	2,083	0.0	16.7	1.5
WH	5 - 7	LIVE	Domestic	5.8	40.0	4,554	7.5	47.1	3.2



FMA POLYGON AND SAMPLE POINT INFORMATION

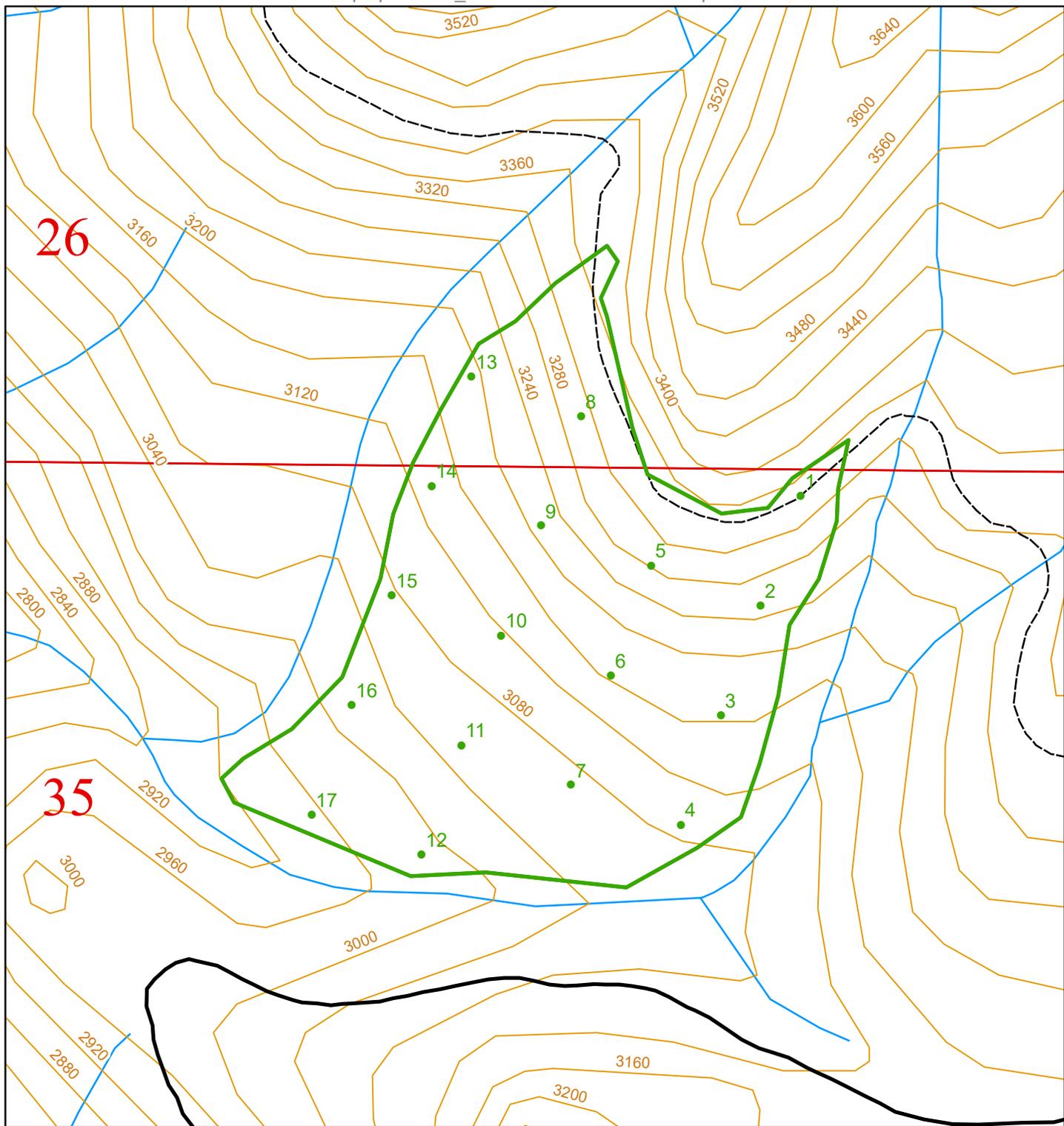
FMA_NM:	CROW BAIT U1	Township:	T14R06E
FMA_ID:	156600	DNR Region:	SO PUGET
Acres:	66	Total Sample Points:	38
County:	LEWIS	Spacing Between Points:	275
		Point Rotation Degrees:	25



Scale 1:6,000

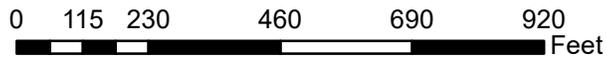
Legend

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



FMA POLYGON AND SAMPLE POINT INFORMATION

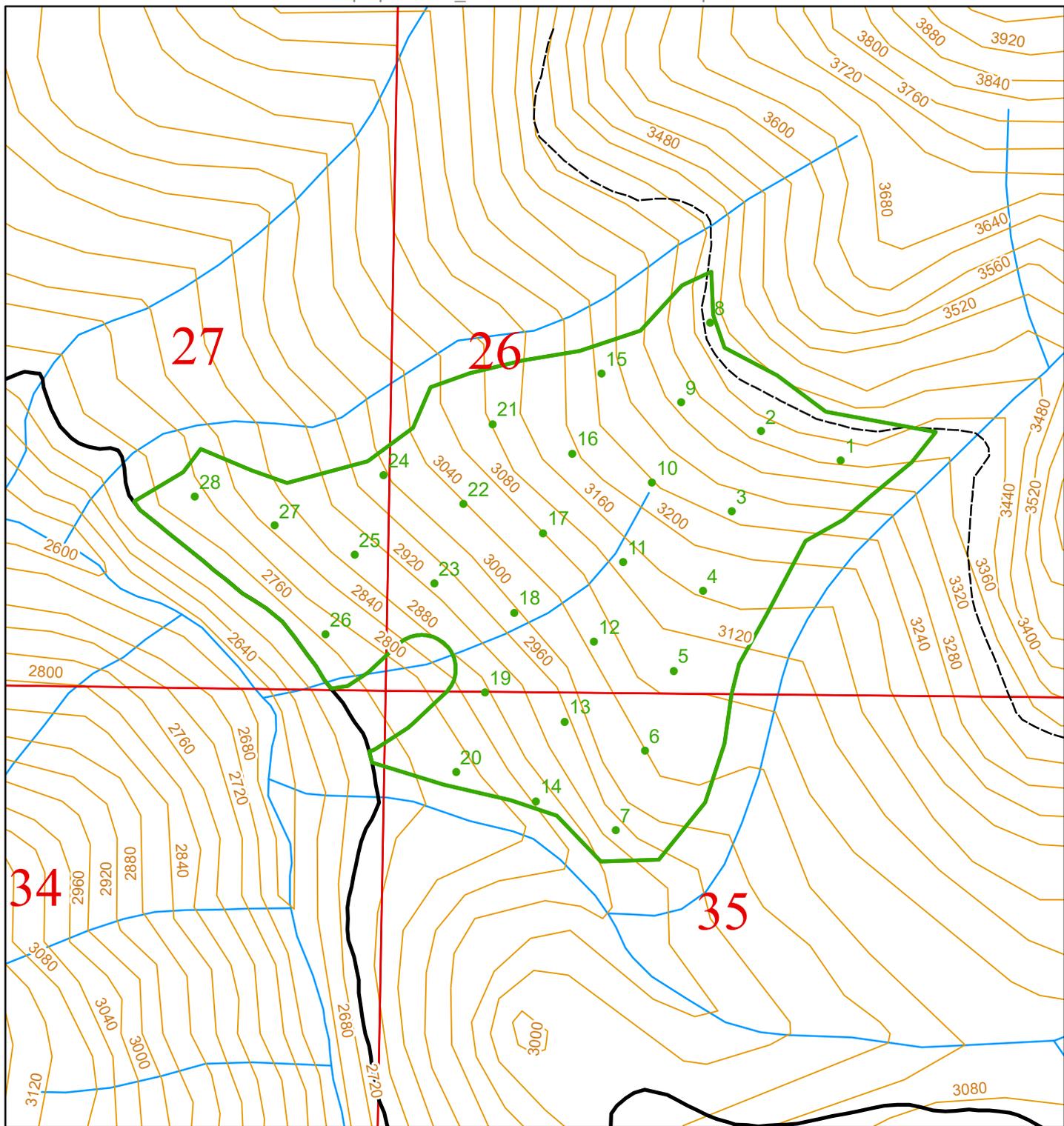
FMA_NM:	CROW BAIT U2	Township:	T14R06E
FMA_ID:	156601	DNR Region:	SO PUGET
Acres:	26	Total Sample Points:	17
County:	LEWIS	Spacing Between Points:	275
		Point Rotation Degrees:	20



Scale 1:4,000

Legend

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



FMA POLYGON AND SAMPLE POINT INFORMATION

FMA_NM:	CROW BAIT U3	Township:	T14R06E
FMA_ID:	156602	DNR Region:	SO PUGET
Acres:	43	Total Sample Points:	28
County:	LEWIS	Spacing Between Points:	250
		Point Rotation Degrees:	20



Scale 1:5,000

Legend

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



Forest Practices Application/Notification Notice of Decision

FPA/N No: 2421790

Effective Date: 8/28/2020

Expiration Date: 8/28/2023

Shut Down Zone 659 S

EARR Tax Credit: Eligible Non-eligible

Reference: Crow Bait #30-099066

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.
- Closed Applicant has withdrawn the FPA/N.

FPA/N Classification

Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

4 yrs 5 yrs

Conditions on Approval/Reasons for Disapproval

Issued By: Bruce Meyer

Region: South Puget Sound

Title: Resource Protection Forester

Date: 8/28/2020

Copies to: Landowner, Timber Owner and Operator

Issued in person: Landowner Timber Owner Operator

By: *mi Jensen*

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 South Puget Sound Region
Physical Address 1111 Israel Road, SW Suite 301 Tumwater, WA 98501	Physical Address 1125 Washington Street, SE Olympia, WA 98504	Physical & Mailing Address 950 Farman Ave N Enumclaw, WA 98022
Mailing address Post Office Box 40903 Olympia, WA 98504-0903	Mailing Address Post Office Box 40100 Olympia, WA 98504-0100	

Information regarding the Pollution Control Hearings Board can be found at: <http://www.eluho.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: <http://www.dnr.wa.gov/businesspermits/forestpractices>. 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 affidavit of mailing:

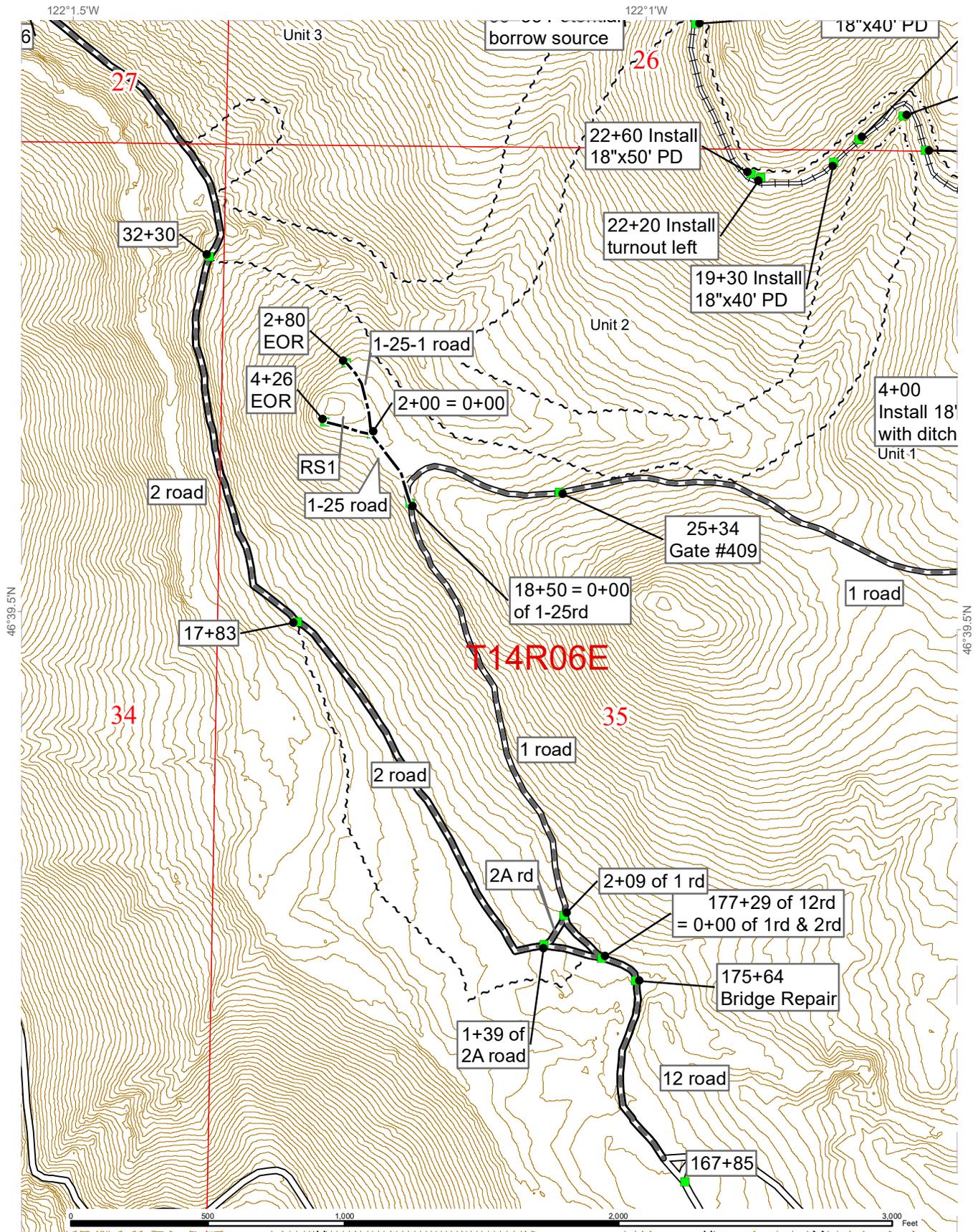
On this day **8/28/2020**, I placed in the United States mail at **Olympia**, WA, postage paid, a true and accurate copy of this document. Notice of Decision FPA #**2421790**.

Meredith Dessens

(Printed Name)

(Signature)

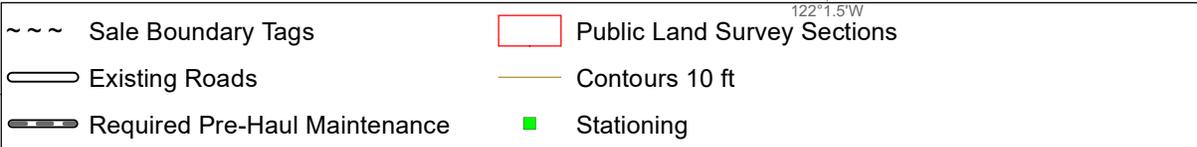
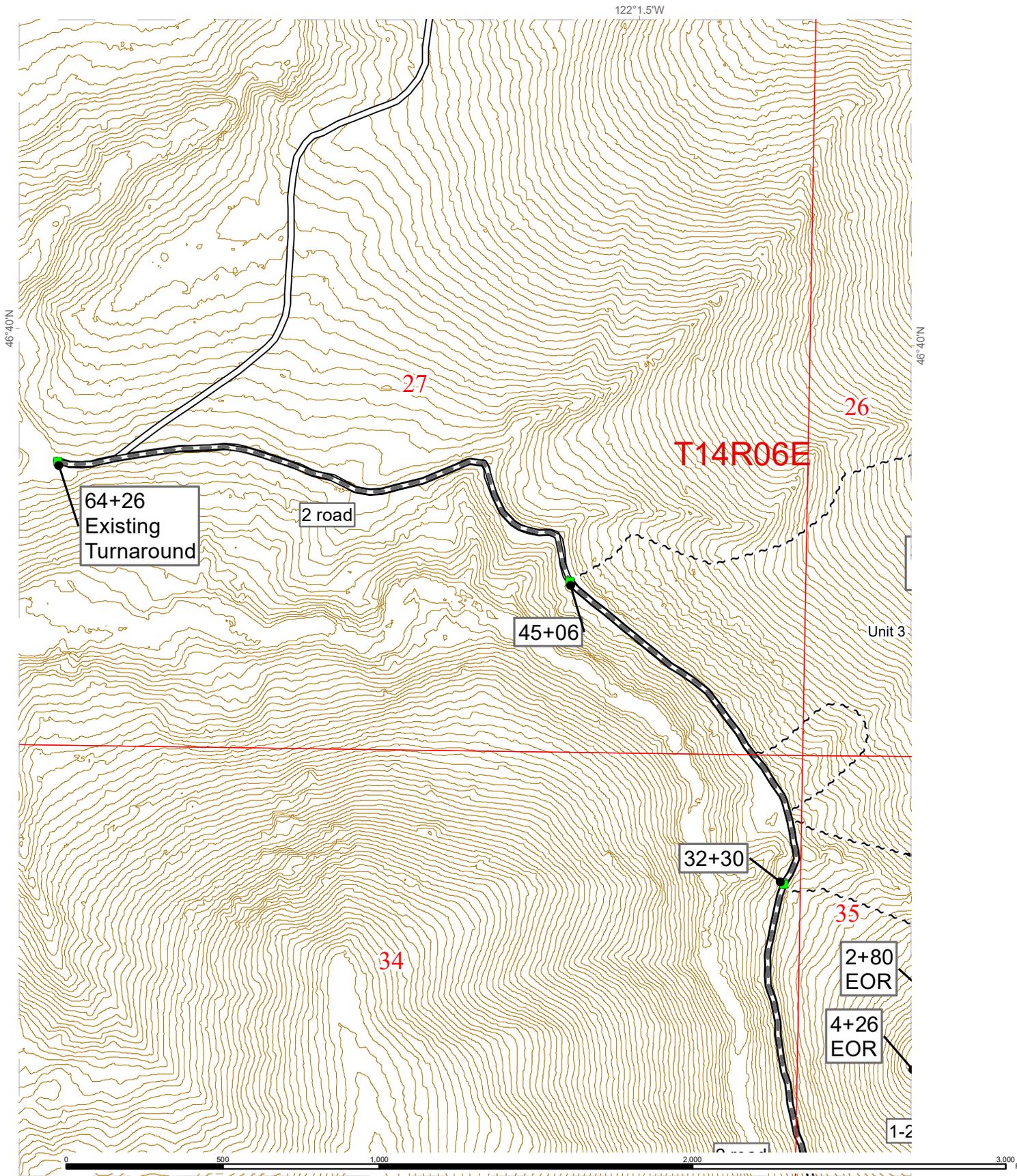
CROW BAIT ROAD WORK MAPS



- | | | |
|-------------------------|-----------------------------------|-------------------------------|
| --- Sale Boundary Tags | ▬▬▬ Required Pre-Haul Maintenance | ▭ Public Land Survey Sections |
| ~ ~ ~ Right of Way Tags | ▬▬▬ Required Reconstruction | — Contours 10 ft |
| ▭ Existing Roads | ▬▬▬ Optional Construction | ■ Stationing |

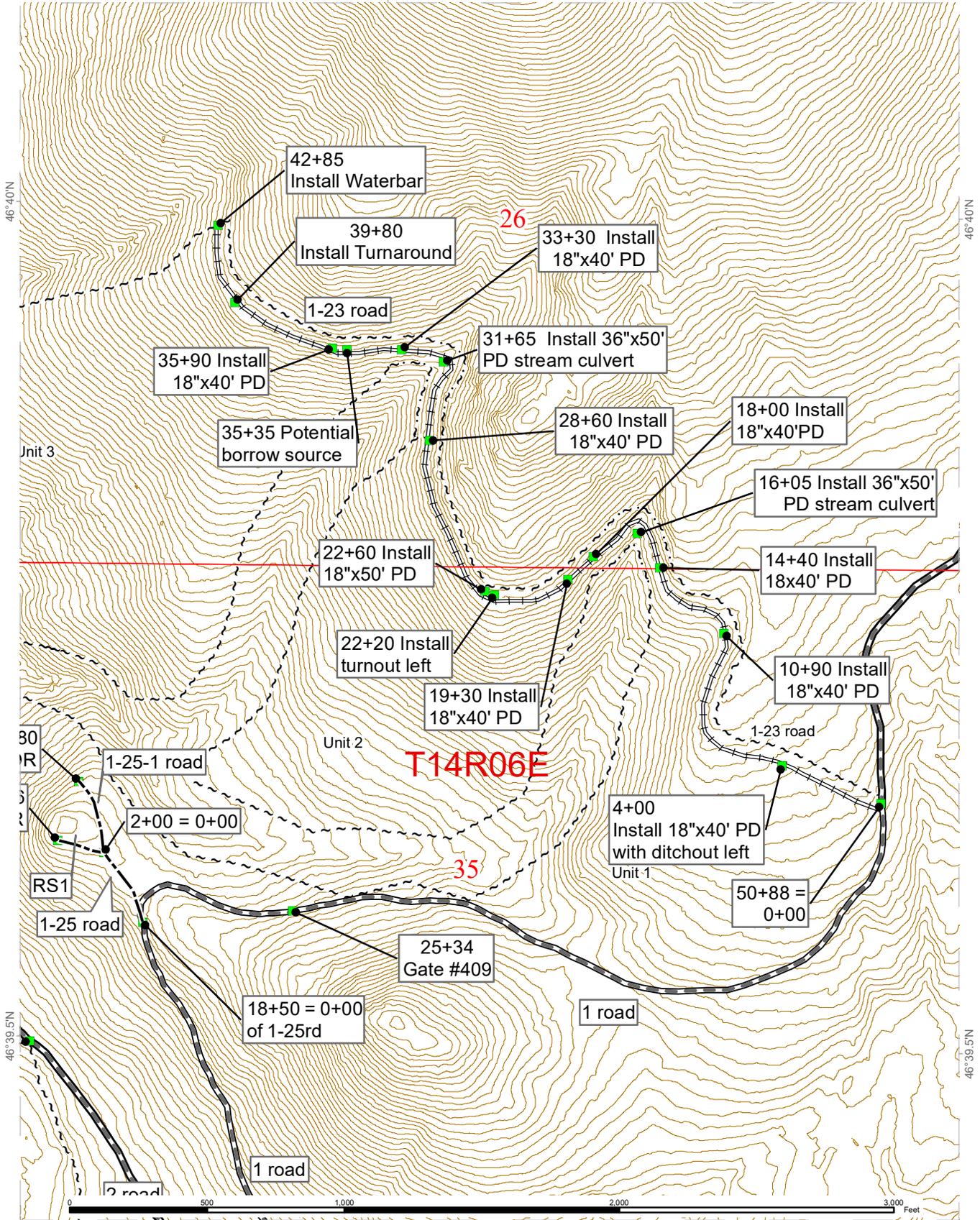


CROW BAIT ROAD WORK MAPS



CROW BAIT ROAD WORK MAPS

122°1'W



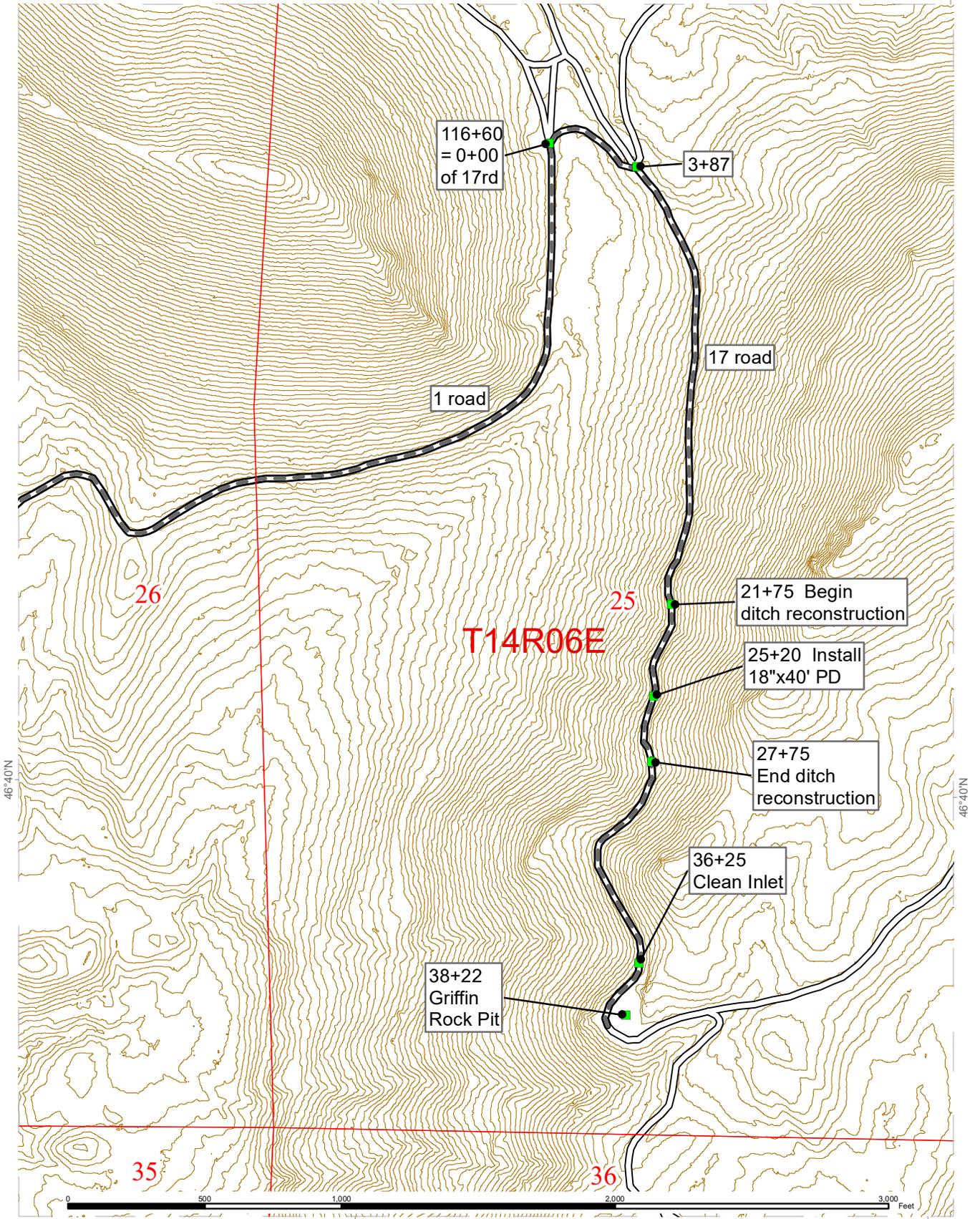
- Sale Boundary Tags
- Right of Way Tags
- Existing Roads
- Required Pre-Haul Maintenance
- Required Reconstruction
- Optional Construction
- Public Land Survey Sections
- Contours 10 ft
- Stationing



CROW BAIT ROAD WORK MAPS

122°0'W

121°59.5'W



T14R06E

-  Existing Roads
-  Required Pre-Haul Maintenance
-  Public Land Survey Sections

-  Contours 10 ft
-  Stationing



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

CROW BAIT TIMBER SALE ROAD PLAN
LEWIS COUNTY
RAINIER DISTRICT
SPS REGION

AGREEMENT NO.: 30-099066

STAFF ENGINEER: MICHELLE BELL

DATE: 4/4/2020

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>
1	0+00 to 116+60	Pre-haul maintenance
2	0+00 to 64+26	Pre-haul maintenance
2A	0+00 to 2+09	Pre-haul maintenance
12	0+00 to 177+29	Pre-haul maintenance
17	0+00 to 38+22	Pre-haul maintenance
1-23	0+00 to 42+85	Reconstruction

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
1-25	0+00 to 4+26	Construction
1-25-1	0+00 to 2+80	Construction

0-4 CONSTRUCTION

Construction includes, but is not limited to:

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

0-5 RECONSTRUCTION

Reconstruction includes, but is not limited to:

- Clearing.
- Grubbing.
- Grading.
- Ditch cleaning and reconstruction.
- Acquisition and installation of drainage structures.
- Landing construction.
- Road widening.
- Manufacture or acquisition and application of rock.

0-6 PRE-HAUL MAINTENANCE

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

- Ditch cleaning and reconstruction.
- Culvert cleaning.
- Brushing.
- Acquisition and installation of drainage structures.
- Manufacture or acquisition and application of rock.
- Bridge maintenance.

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 may develop a new or an existing rock source. Rock source development may involve Clearing, Stripping, Drilling, Blasting, and Crushing. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

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

1-16 CONSTRUCTION STAKES SET BY STATE

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

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 road work before the start of timber haul.

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator before work begins.

1-23 ROAD WORK PHASE APPROVAL

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

- Drainage installation
- Subgrade compaction

- Rock compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

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

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

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

1-26 OPERATING DURING CLOSURE PERIOD

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

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

In accordance with Contract Clause G-220 STATE SUSPENDS OPERATION, the Contract Administrator will suspend road work or hauling right-of-way timber, forest products, or rock under the following conditions:

- Wheel track rutting exceeds 6 inches on new construction rocked roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator, excessive road damage or rutting may occur.

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

1-32 BRIDGE SURFACE RESTRICTION

Metal tracked equipment shall not be used on bridge surfaces at any time. If equipment must be run on bridge surfaces, then rubber tired equipment or other methods, as approved in writing by Contract Administrator, shall be used.

Any dirt, rock, or other material tracked or spilled on the bridge surface shall be removed immediately. Any damage to the surface(s) shall be repaired at the Purchaser’s expense as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

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.

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.

2-5 MAINTENANCE GRADING – EXISTING ROAD

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

<u>Road</u>	<u>Stations</u>
1	0+00 to 116+60
12	0+00 to 177+29
17	0+00 to 38+22
2	0+00 to 64+26
2A	0+00 to 2+09

2-6 CLEANING CULVERTS

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts.

<u>Road</u>	<u>Stations</u>
2	0+00 to 64+26
12	123+06 to 177+29
17	0+00 to 38+22

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before 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. Excavated material must be scattered outside the clearing limits.

<u>Road</u>	<u>Stations</u>
2	0+00 to 64+26
2A	0+00 to 2+09
12	123+06 to 177+29
17	0+00 to 38+22

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by manual or mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

<u>Road</u>	<u>Stations</u>
2	0+00 to 64+26
12	0+00 to 177+29
17	0+00 to 38+22

SUBSECTION CLEARING

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.

- In locations that impede drainage.
- Against standing trees unless approved by the Contract Administrator.

SUBSECTION GRUBBING

3-10 GRUBBING

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

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

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

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SECTION 4 – EXCAVATION

4-2 PIONEERING

The following actions must be taken as pioneering progresses:

- Drainage must be provided on all uncompleted construction.
- Road pioneering operations may not undercut the final cut slope or restrict drainage.

- Culverts at live stream crossings must be installed during pioneering operations prior to embankment.

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

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

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-10 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. On the 17 road, pulling excavation material across the road or mixing in with the existing road surface is not allowed.

<u>Road</u>	<u>Stations</u>
17	21+75 to 27+75
1-23	0+00 to 42+85

4-12 FULL BENCH CONSTRUCTION

Where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

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

4-22 TURNAROUNDS

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

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 55% if the waste material is compacted and free of organic debris.

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

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

SUBSECTION BORROW

4-45 SELECT BORROW

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

4-49 BORROW SOURCE

Purchaser may be obtain borrow material from the listed borrow source(s).

<u>Source</u>	<u>Location</u>	<u>Type</u>
Potential Borrow Source (PBS)	1-23 Road @ 35+35	Select Borrow

4-50 BORROW APPLICATION

Purchaser shall apply borrow in accordance with quantities as needed. Borrow must be spread, shaped, and compacted full width concurrent with hauling operations.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
1-23	16+05	Stream culvert installation
1-23	31+65	Stream culvert installation

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.

SUBSECTION COMPACTION

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction and for embankment and waste area segments too narrow to accommodate equipment. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

4-61 SUBGRADE COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

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

SECTION 5 – DRAINAGE

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT AND DRAINAGE LIST that are not installed will become the property of the state. Purchaser shall stockpile materials in the 1-17-19-15 roads junction 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.

<u>Road</u>	<u>Size</u>
On any portion of road used for timber or rock haul	<ul style="list-style-type: none"> • 18"x30' culvert • 18"x30' culvert • 18"x30' culvert • One 18" band

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Culverts 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.

5-17 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 12%.

5-18 CULVERT DEPTH OF COVER

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

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts , except for temporary culverts.

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

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CULVERTS

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

SUBSECTION SURFACE DRAINAGE

5-33 NATIVE SURFACE ROADS

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

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(s) on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Griffin Pit	SW1/4 Section 25 Township 14 North Range 6 East	4 Inch in Place Quarry Spalls Light Loose Rip Rap
RS1 (potential new rock source)	NW1/4 Section 35 Township 14 North Range 6 East	

6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Purchaser. Purchaser shall not remove additional yardage without prior written approval from the Contract Administrator. Other stockpiles may not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
Griffin Pit	SW1/4 Section 25 Township 14 North Range 6 East	2-1/2 Inch Minus Crushed

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

<u>Source</u>
Griffin Pit

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

Purchaser shall conduct rock source development and use at the following sources, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

<u>Source</u>
RS1

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

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.
- Rock source plan describing how the area will be left in a condition that will ensure public safety and minimize environmental impacts.

6-12 ROCK SOURCE SPECIFICATIONS

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

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

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

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 25 feet.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient except as approved by the Contract Administrator.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- All vehicle access to the top of the pit faces must be blocked.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- 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 1.5 feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be reduced to a smaller size within the rock source.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 7 working days after drilling.
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- Purchaser shall block access roads before blasting operations.

SUBSECTION ROCK MANUFACTURE

6-21 IN-PLACE PROCESSING

Purchaser may use in-place processing, such as a grid roller or other method, if suitable crushing can be demonstrated to meet the surfacing size-specified in Clause 6-38 4-INCH IN-PLACE ROCK. Purchaser shall remove any existing organic debris before the start of in-place crushing operations. The use of in-place processing methods is subject to written approval by the Contract Administrator.

6-23 ROCK GRADATION TYPES

Purchaser shall manufacture rock in accordance with the types and amounts listed in the ROCK LIST.

SUBSECTION ROCK GRADATIONS

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 clay, organic debris or trash by volume. 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.

6-43 QUARRY SPALLS

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

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

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%	18" - 28"
15% to 80%	8" - 18"
10% to 20%	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 compacted yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction.

6-56 ROCK MEASUREMENT BY TRUCK VOLUME

Measurement of 2-1/2 INCH MINUS CRUSH rock is on a cubic yard truck measure basis. The Purchaser shall measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets for each truck as shown in ROCK ACCOUNTABILITY DETAIL and shall give them to the Contract Administrator or e-mail them to the Contract Administrator on a weekly basis during rocking operations.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

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

6-71 ROCK APPLICATION

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

6-73 ROCK FOR WIDENED PORTIONS

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

SECTION 7 – STRUCTURES

SUBSECTION BRIDGE MAINTENANCE

7-15 PRE-DESIGN WORK MEETING

Prior to any ordering of materials for bridge maintenance work occurring, a pre-work conference call shall occur to review the Road Plan requirements for the maintenance of the structures.

7-30 BRIDGE MAINTENANCE

Purchaser shall conduct bridge maintenance as specified on the BRIDGE MAINTENANCE LIST. Purchaser shall remove all old bridge material from state land before the termination of the contract. All replaced bridge materials are the property of the Purchaser.

<u>Road</u>	<u>Station</u>
12	129+55 to 129+95
12	175+64 to 176+04

7-31 BRIDGE DECK REPAIR

Purchaser shall repair bridge decks using four 4"x12" running planks per wheel track. All deck material must be No. 2 or better treated Douglas fir. All of the pressure treated timber shall be incised and treated by an empty cell process in accordance with AASHTO M133-86 and AWPA standard P8-91. Preservatives utilized will be hydrocarbon solvent, type A, to a minimum net retention of .50lbs/cu.ft, in accordance with AWPA standard C2B-91. The running planks must be installed with a minimum 3-foot stagger. The running planks exposed edge at each end of the bridge deck must have the top 1/3 beveled at a 45 degree angle. Work shall be completed in conjunction with the original bridge design 14'-0" x 40'-0" BRIDGE ASHFORD TREE COOLER Design.

7-33 BRIDGE DECK FASTENING (STEEL BRIDGE)

The running planks must be fastened with galvanized machined grade 8 carriage bolts with nuts and washers per 14'-0" x 40'-0" BRIDGE ASHFORD TREE COOLER Design. The bolt holes must be pre-drilled and treated. Additional holes shall not be drilled into the bridge or corrugated deck without written permission from the Contract Administrator.

7-36 GUARD POST REPAIR

Purchaser shall repair guard post and blocks using shop painted posts and blocks. The height and dimensions of the posts must be consistent with those on the existing structure and per 14'-0" x 40'-0" BRIDGE ASHFORD TREE COOLER Design. Paint must meet the specifications in Clause 10-45 BRIDGE PAINT.

7-37 BRIDGE PREPARATION FOR REPAINTING

Before blast cleaning or grinding, visible deposits of oil or grease must be removed by the methods specified in the Society of Protective Coatings Surface Preparation Specification SSPC-SP1 (solvent cleaning), or other agreed methods.

All previously painted metal surfaces to be primed must be abrasive blast cleaned in accordance with SSPC-SP6 (commercial blast) or cleaned by grinding, and the appearance of the blast cleaned surfaces must be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining must be limited to no more than 33% of each square inch of surface area and may consist of light shadows, slight streaks or minor discoloration caused by stains of rust, stains of mill scale or stains of previously applied paint.

Before being primed, all previously painted metal surfaces must be free of all cleaning residue, supplemented with brushing if necessary. Particular attention must be given to edges, crevices, nuts, bolts, and rivets. All bare metal surfaces must be primed on the same day as cleaning. Any cleaned surface that rusts before the application of the prime coat must be re-cleaned.

The Purchaser shall ensure that no paint or debris enters the stream.

7-38 APPLICATION OF BRIDGE PAINT

Purchaser shall perform all bridge painting in conformance with the best practices of the trade, recommendations of the coating manufacturer, and applicable portions of the Society of Protective Coatings Painting of Steel Surfaces Specification SSPC-PA 1. All metal surfaces must be coated with a three-coat system that consists of a prime coat, intermediate coat, and topcoat. Paint must meet specifications in Clause 10-45 BRIDGE PAINT.

7-52 TECHNICAL SPECIFICATIONS

Design: The bridge superstructure must be designed in accordance with AASHTO LRFD Bridge Design Specifications, latest edition and any subsequent interim specifications. Design details not covered by the AASHTO specifications must be in accordance with other normally accepted structural design standards.

Fabrication: The structural steel fabricating plant of origin must be certified under the AISC Quality Certification Program. Certification categories must include Simple Steel Bridges.

Welding: All welding must be completed by welders certified in accordance with the requirements and qualification tests of the American Welding Society.

SUBSECTION GATE CLOSURE

7-70 GATE CLOSURE

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

<u>Road</u>	<u>Station</u>	<u>Gate No.</u>	<u>Comment</u>
12	123+06	426	Gate shall be closed and locked nightly.
SPI 1 Rd	0+00	SPI	Gate shall be closed and locked nightly.

7-71 GATE CLOSURE DURING HAUL

On the following road(s), Purchaser shall keep gates closed and locked except for passing vehicles.

<u>Road</u>	<u>Station</u>	<u>Gate Owner</u>
SPI 1 Rd - Midway Gate	Approximately Mile Marker 7	Sierra Pacific

SECTION 8 – EROSION CONTROL

SUBSECTION REVEGETATION

8-15 REVEGETATION

On the following road(s), Purchaser shall spread grass seed and straw on all exposed soils within 25 feet of live water within the grubbing limits. Other methods of covering must be approved in writing by the Contract Administrator.

<u>Road</u>	<u>Location</u>	<u>Comment</u>
1-23	16+05	Np stream culvert
1-23	31+65	Np stream culvert

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed mixture.

8-17 REVEGETATION TIMING

Purchaser shall revegetate immediately after road work is completed unless alternative plan approved in writing by the Contract Administrator.

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all soil specified in CLAUSE 8-15 REVEGETATION at a rate of 50 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>
Perennial Rye	35-45
Red Fescue	30-40
Highland Bent	5-15
White Clover	10-20
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.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

SECTION 10 MATERIALS

SUBSECTION CULVERTS

10-17 CORRUGATED PLASTIC CULVERT

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

10-22 PLASTIC BAND

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

SUBSECTION PAINT

10-45 BRIDGE PAINT

All steel coating products provided for each project must be manufactured by the same manufacturer and must be compatible with one another. Existing bridge was painted by Wasser paint.

All the protective coatings in this specification will require certification from the manufacturer that the coating can be applied at a relative humidity up to 85%, temperature down to 20 degrees F, and no restriction on dew point temperature differential if the surface is visibly dry and free from condensation.

All paint must be prepared at the factory ready for application. The addition of thinner or other material to the paint after the paint has been shipped is not allowed, except as recommended by the manufacturer.

All containers must be labeled showing the exact title of the paint, the manufacturer's name, date of manufacture, the manufacturer's batch number and the specification number and lot number if appropriate.

1. Primer

Generic Type: Zinc filled, single component, moisture-cured polyurethane
Vehicle Type: Moisture-cured polyurethane
Volume Solids: 60% minimum
Pigment Type: Zinc dust
Coverage: 3 Mils dry film thickness (DFT) minimum
VOC: Not to exceed 2.8 lbs./gal

2. Intermediate Coat

Generic Type: Refined coal tar/micaceous iron oxide-filled, single component, moisture-cured polyurethane
Vehicle Type: Moisture-cured polyurethane
Volume Solids: 60% minimum

Pigment Type: 4.0 lbs./gal of micaceous iron oxide minimum
Color: Black
Coverage: 4 mils DFT minimum
VOC: Not to exceed 2.8 lbs./gal

3. Shield (Top) Coat

Generic Type: Refined coal tar/micaceous iron oxide-filled, single component, moisture-cured polyurethane
Vehicle Type: Moisture-cured polyurethane
Volume Solids: 60% minimum
Pigment Type: 3.0 lbs./gal of micaceous iron oxide minimum
Color: Bronze. Final color shall match the existing bridge color.
Coverage: 4 mils DFT minimum
VOC: Not to exceed 2.8 lbs./gal

10-46 BRIDGE PAINT PERFORMANCE PROPERTIES

Bridge paint systems must meet or exceed the following test requirements (all proposed equivalents must certify compliance to same requirements):

Corrosion Resistance, ASTM B117, Salt Spray Test: Must pass 4000 hours minimum with less than 2mm creep from scribe. Panels must be 1/8-inch cold-rolled steel minimum, having SSPC-SP10 Near White Blast with 2-3 mils angular profile.

Accelerated Weathering, ASTM G53: Must pass 3000 hours QUV B bulb with no chalking, cracking, or gloss loss greater than 20 percent.

SUBSECTION BRIDGE

10-50 BRIDGE MATERIAL

All materials necessary for assembly must be included with the structure and meet the following requirements:

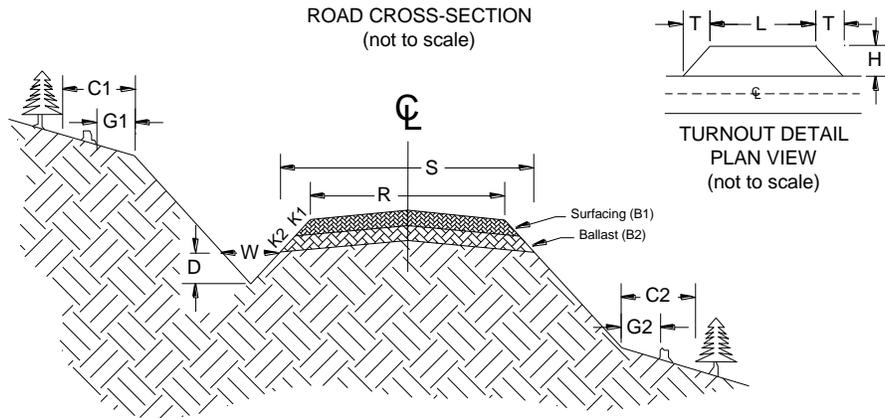
- a. All structural steel must be of domestic (USA) manufacture and conform to the requirements of ASTM Specification A709 grade 50. Minimum yield (Fy) shall be 50,000psi.
- b. All galvanizing must be done after fabrication and must be in accordance with AASHTO Designation section 11.3.7 (ASTM A123 for structural steel and ASTM A 153 for galvanized hardware).
- c. All bolts used to facilitate field assembly will be ASTM F3125 Grade A325 Type 1 galvanized. Bolts to secure deck material shall be carriage head. All materials necessary for assembly must be included with the structure. All hardware connections and fasteners must be in accordance ASTM F3125 Grade A325 Type 1 galvanized .

SECTION 11 SPECIAL NOTES

11-1 LANDING DEBRIS

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

TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch**		Crown in. @ CL	Grubbing Limits (feet)		Clearing Limits* (feet)	
						Width (feet)	Depth (feet)		G1	G2	C1	C2
				S	R	W	D		G1	G2	C1	C2
1	0+00	116+60	A	-	Road width varies	2	1	4	-	-	5	5
2	0+00	64+26	A	-	12	2	1	4	-	-	5	5
2A	39+80	2+09	A	-	12	2	1	4	-	-	5	5
12	45+00	177+29	A	-	12	2	1	4	-	-	5	5
17	0+00	38+22	A	15	12	2	1	4	-	-	5	5
1-23	0+00	13+87	C	15	12	2	1	4	2	2	5	5
1-23	13+87	18+00	C	15	12	2	2	4	2	2	tags	tags
1-23	18+00	28+60	C	15	12	2	1	4	2	2	5	5
1-23	28+60	33+30	C	15	12	2	2	4	2	2	tags	tags
1-23	33+30	42+85	C	15	12	2	1	4	2	2	5	5
1-25	0+00	4+26	C	15	12	2	1	4	2	2	5	5
1-25-1	0+00	2+80	C	15	12	2	1	4	2	2	5	5

*Tags are Right of Way Tags.

**On pre-haul maintenance roads: Ditch depth will be measured vertically from the bottom of the ditch to the edge of the road surface. Ditch width will be measured horizontally from the closest edge of the road surface to the cut slope.

TURNOUT LIST

Road Number	Begin Station	End Station	Turnout Width (H)	Full Width Length (L)	Taper Length (T)	Comments
1-23	21+70	22+70	10'	50'	25'	Construct turnout left.

TURNAROUND LIST

Road Number	Station	Minimum Width (ft)	Minimum Length (ft)	Comments
1-23	39+80	30	30	Construct turnaround.
1-25	4+26	30	30	Construct turnaround at end of constructed road or at station listed.
1-25-1	2+80	30	30	Construct turnaround at end of constructed road or at station listed.

COMPACTION LIST

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

ROCK LIST

BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Sub-total	Rock Source	
			K2	B2	4 Inch In Place				
1-23*	0+00	42+85	1.5:1	12"	50	42.9	2145	Griffin Pit or RS1	
1-25*	0+00	4+26	1.5:1	12"	50	4.3	215		
1-25-1*	0+00	2+80	1.5:1	12"	50	2.8	140		
Turnouts*			1.5:1	12"	36 cyd/ per turnout	1 turnout	36		
Turnarounds*			1.5:1	12"	26 cyd/ per turn-around	3	78		
Quarry Spalls or light loose for culvert Installations. See Culvert List for locations								14	

*Optional rock

BALLAST TOTAL: 2628 Cubic yards

SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y. Station	# of Stations	C.Y. Subtotal	Comments Rock Source
			K2	B2	2-1/2" Minus Crushed from Stockpile			Griffin Stockpile
1	0+00	116+60	1.5:1		Spot Rock as directed by Contract Administrator		400	
2	0+00	64+26	1.5:1				100	
17	3+87	38+22	1.5:1				200	

SURFACE TOTAL: 700 Cubic yards

NOTE: Except for rock types listed in Clause 6-56, yardages are estimated on a compacted (In-Place) basis. **Apply appropriate factors to determine loose amounts for estimating purposes.** Roads and rock quantities are designed for dry weather use. If Purchaser elects to haul in wet weather additional rock may be obtained from the rock pits listed in Section 6 at the Purchaser's expense and with prior written approval from the Contract Administrator.

CULVERT AND DRAINAGE LIST

Road Number	Location	Culvert		Length (ft)			Riprap (C.Y.)			Backfill Material*	Placemen Method*	Const. Staked*	Remarks
		Dia. (in)	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type				
17	25+20	18	PD	40			0.5	0.5	QS	NT			
	36+25	-	-	-									Clean culvert inlet
1-23	4+00	18	PD	40			0.5	0.5	QS	NT			Install with ditchout left
	10+90	18	PD	40			0.5	0.5	QS	NT			
	14+40	18	PD	40			0.5	0.5	QS	NT			
	16+05	36	PD	50			1	1	LL	SR			Np stream culvert
	18+00	18	PD	40			0.5	0.5	QS	NT			
	19+30	18	PD	40			0.5	0.5	QS	NT			
	22+60	18	PD	50			0.5	0.5	QS	NT			
	28+60	18	PD	40			0.5	0.5	QS	NT			
	31+65	36	PD	50			1	1	LL	SR			Np stream culvert
	33+30	18	PD	40			0.5	0.5	QS	NT			
	35+90	18	PD	40			0.5	0.5	QS	NT			
		42+85	-	-	-								
SEE CLAUSE 5-13	-	18	PD	30			0.5	0.5	QS	NT			Contingency. Install at CA discretion.
	-	18	PD	30			0.5	0.5	QS	NT			
	-	18	PD	30			0.5	0.5	QS	NT			

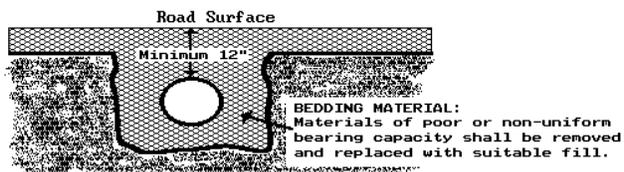
* SEE CULVERT AND DRAINAGE SPECIFICATION DETAIL

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

Key:

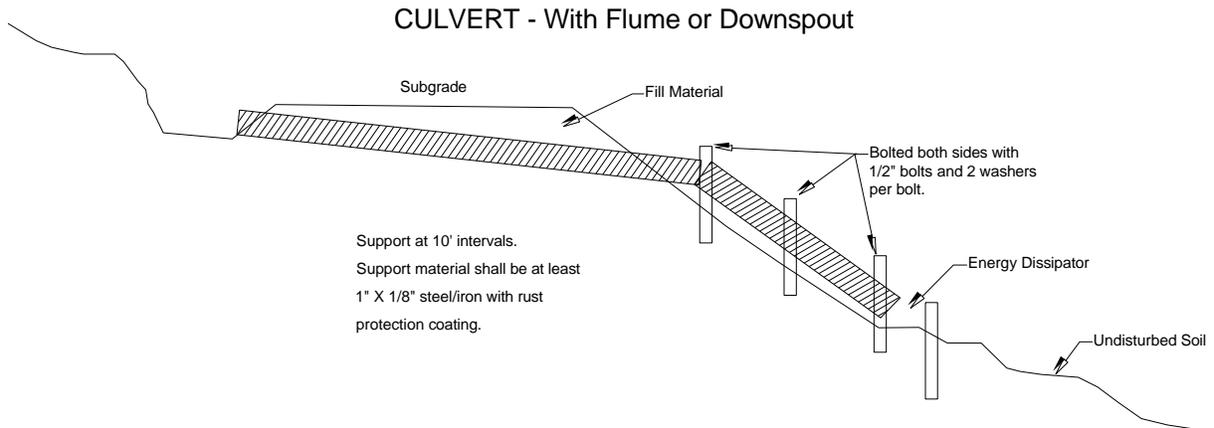
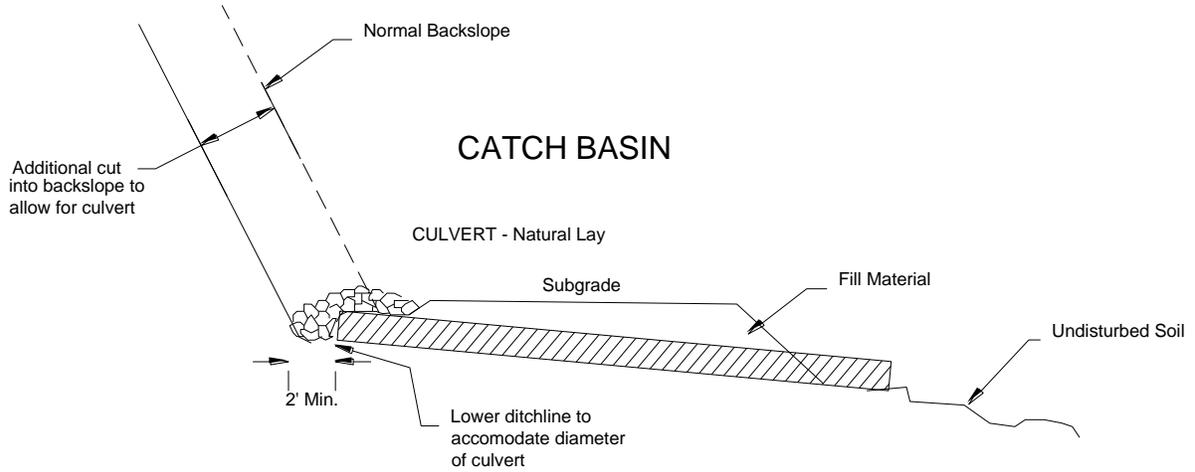
- QS - Quarry Spalls
- LL - Light Loose Riprap
- SR - Shot Rock
- NT - Native (bank run)
- SL - Select Fill
- HL - Heavy Loose Riprap
- Flume - Half round pipe
- Downspout - Full round pipe

CULVERT BACKFILL AND BASE PREPARATION
 (For culverts less than 36")



CULVERT AND DRAINAGE SPECIFICATION DETAIL

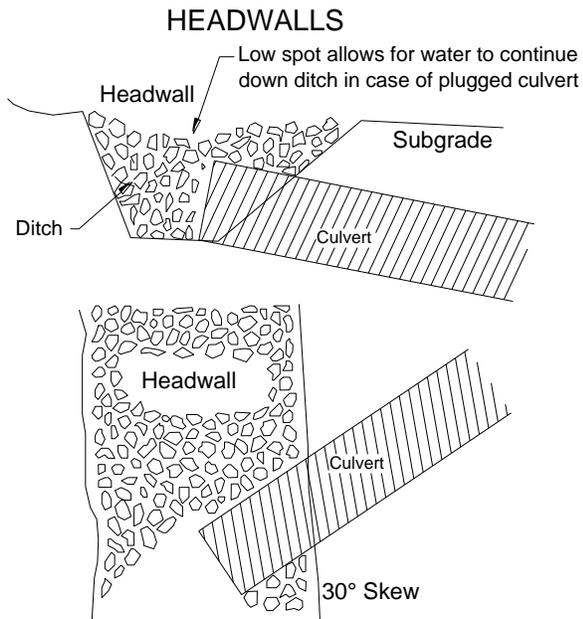
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CULVERT AND DRAINAGE SPECIFICATION DETAIL

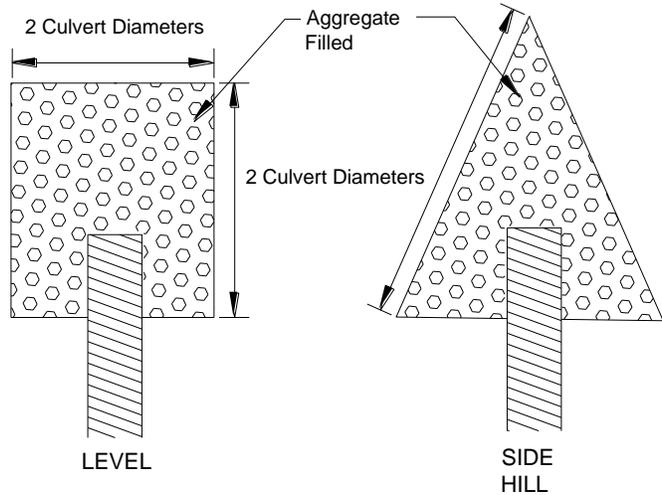
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Proper preparation of foundation and placement of bedding material shall precede the installation of all culvert pipe. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform dense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



Headwalls to be constructed of material that will resist erosion.

ENERGY DISSIPATORS



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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

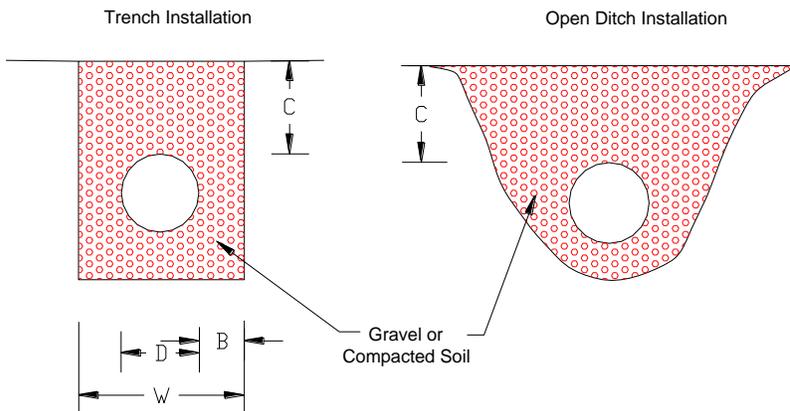
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POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.
2. The corrugated pipe shall be laid on grade, on a layer of bedding material as shown for the two types of installations. If native soil is used as the bedding and backfill material, it shall be well compacted in six inch layers under the haunches, around the sides and above the pipe to the recommended minimum height of cover.
3. Either crushed aggregate or flexible (asphalt) pavement may be laid as part of the minimum cover requirements.
4. Site conditions and availability of bedding materials often dictate the type of installation method used.
5. The load bearing capability of flexible conduits is dependent on the type of backfill material used and the degree of compaction achieved. Crushed stone and gravel backfill materials typically reach a compaction level of 90-95% AASHTO standard density without compaction. When native soils are used as backfill material, a compaction level of 85% is required. This minimum compaction can be achieved by either hand or mechanical tamping.

MINIMUM DIMENSIONS *Trench or Open Ditch Installation*



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

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 1 of 2

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

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

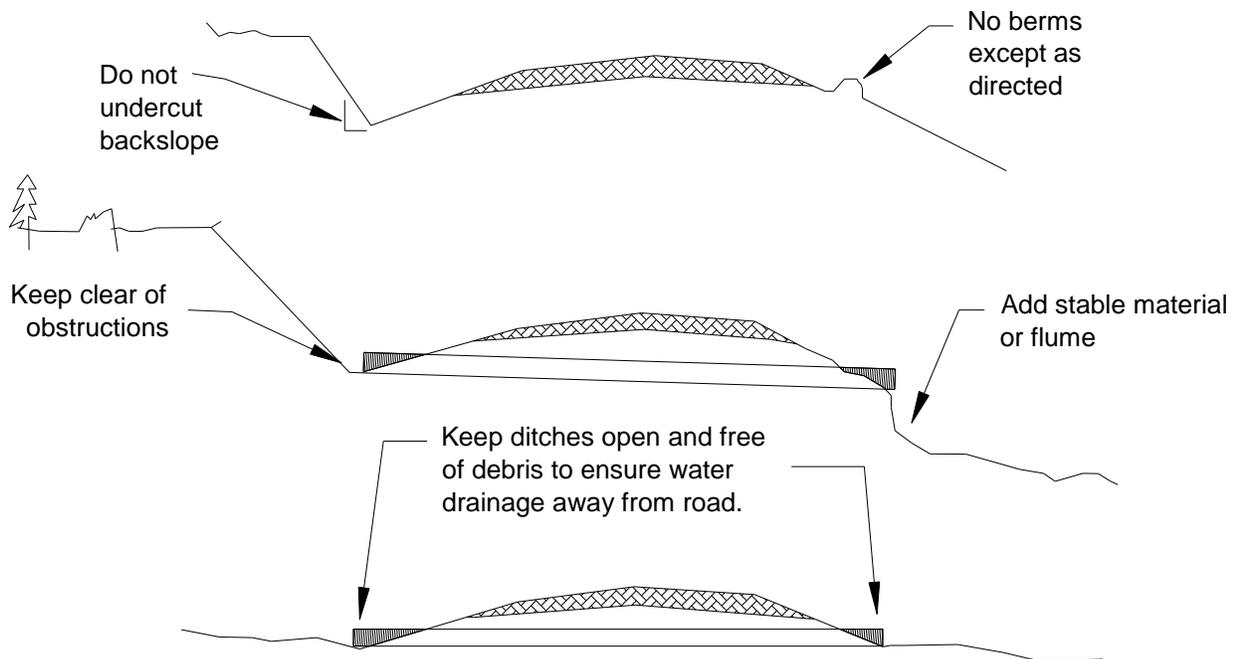
FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, page 2 of 2

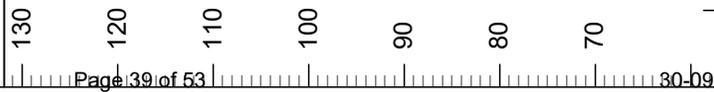
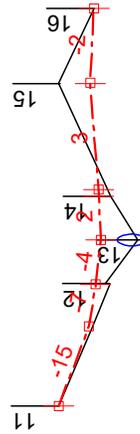
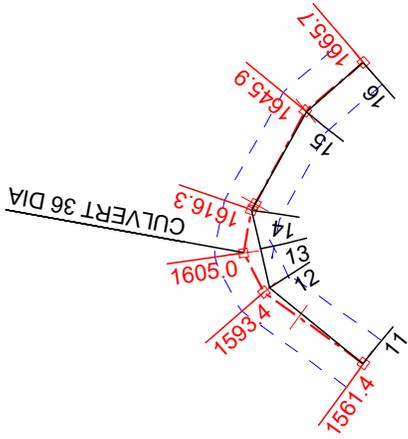
Termination of Use or End of Season

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

Debris

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





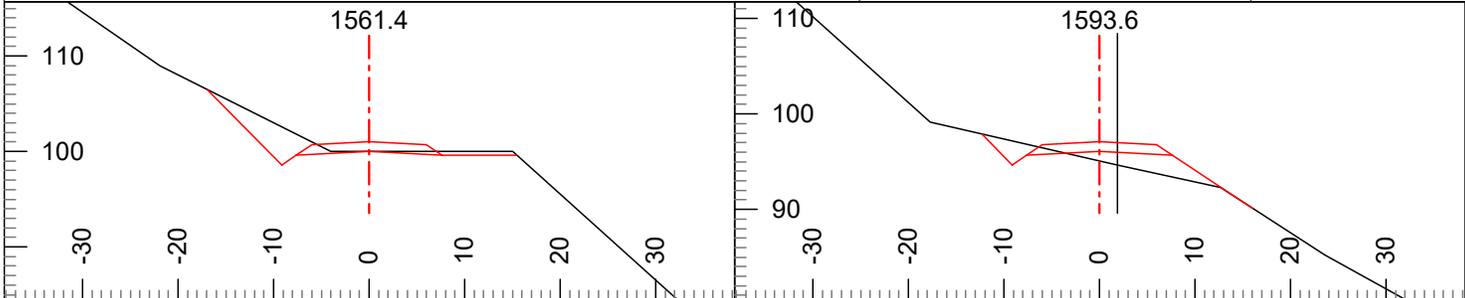
Crow Bait Timber Sale
 1-23 Road Stream Culvert Installation
 April 4, 2020 Contract #: 30-099066



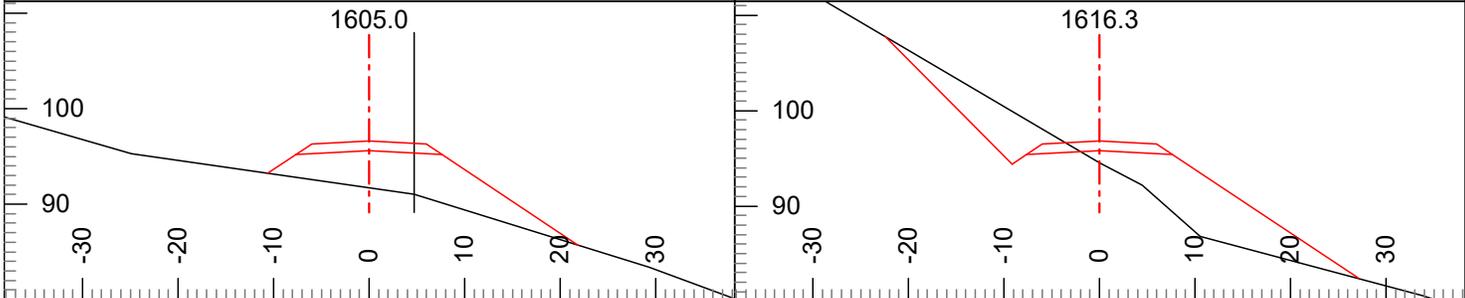
Washington State Department of
 Natural Resources
 South Puget Sound Region

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 Profile Horz Scale 1:600

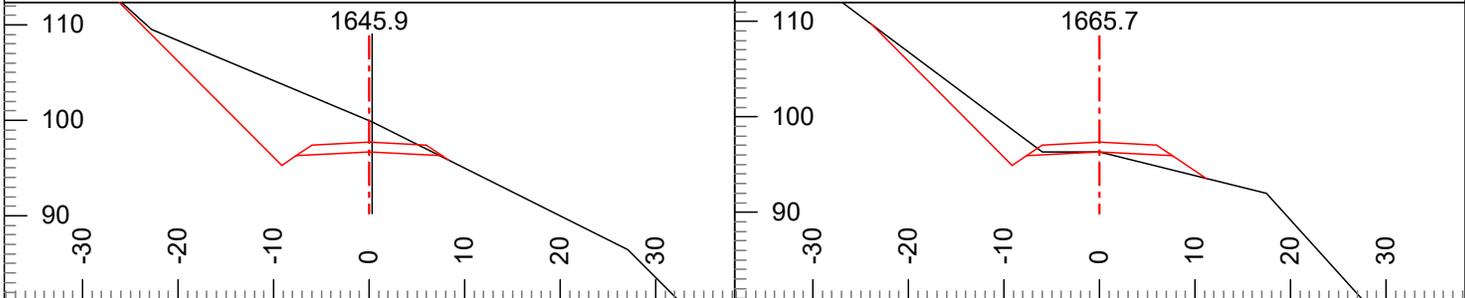
Engineer: M. Bell
 20/05/07
 Page 1 of 1



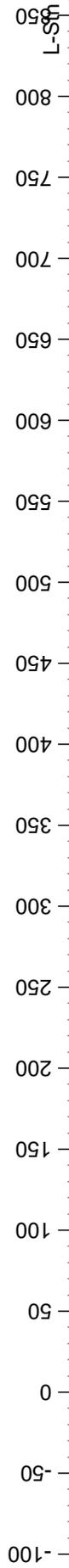
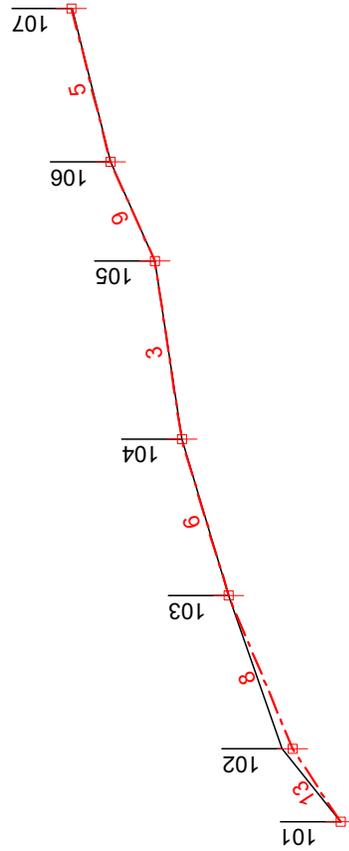
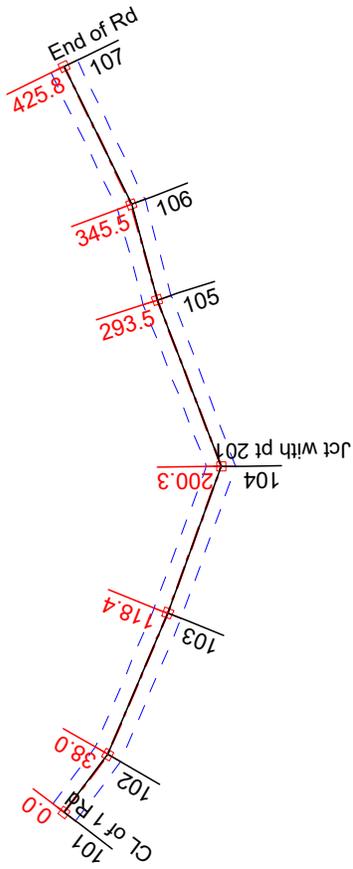
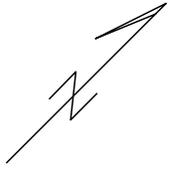
L-Stn:	1561.4	Ssl: (Av)	40.0	CL Elev:	100.0	L-Stn:	1593.6	Ssl: (Av)	24.7	CL Elev:	96.1
Index:	11	Ssr: (Av)	-22.5	Rd. Wd.:	15.2	Index:	12	Ssr: (Av)	-41.9	Rd. Wd.:	15.2
Grd.Nxt.:	-15.1	H. Offset:	0.0	Rd. Wd. L:	7.6	Grd.Nxt.:	-4.3	H. Offset:	-1.9	Rd. Wd. L:	7.6
Grd.Lst:	n/a	Cut Dp:	0.0	Rd. Wd. R:	7.6	Grd.Lst:	-4.3	Cut Dp:	-1.0	Rd. Wd. R:	7.6



L-Stn:	1605.0	Ssl: (Av)	15.0	CL Elev:	95.6	L-Stn:	1616.3	Ssl: (Av)	60.0	CL Elev:	95.8
Index:	13	Ssr: (Av)	-32.0	Rd. Wd.:	15.2	Index:	14	Ssr: (Av)	-51.9	Rd. Wd.:	15.2
Grd.Nxt.:	-4.3	H. Offset:	-4.6	Rd. Wd. L:	7.6	Grd.Nxt.:	1.8	H. Offset:	0.0	Rd. Wd. L:	7.6
Grd.Lst:	-4.3	Cut Dp:	-3.9	Rd. Wd. R:	7.6	Grd.Lst:	1.8	Cut Dp:	-1.2	Rd. Wd. R:	7.6



L-Stn:	1645.9	Ssl: (Av)	42.0	CL Elev:	96.7	L-Stn:	1665.7	Ssl: (Av)	52.5	CL Elev:	96.3
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Engineer: M. Bell

Page 1 of 1

20/06/25

Plan Scale 1:1200

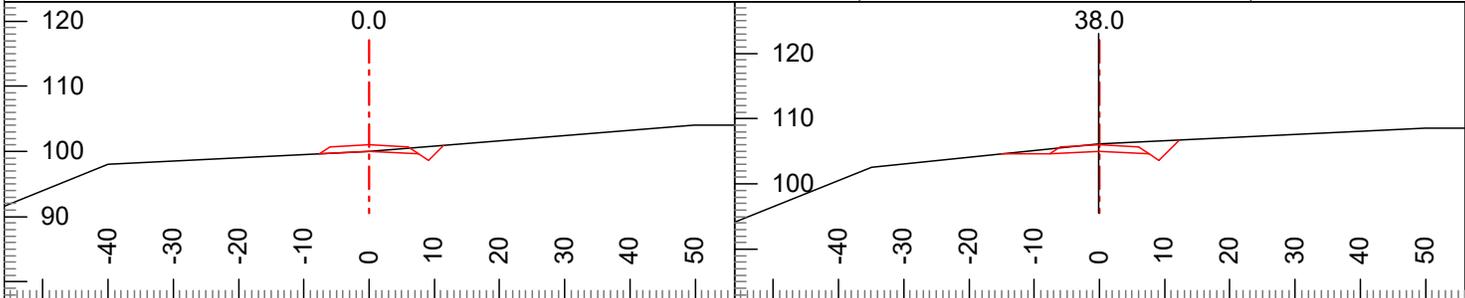
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Profile Horz Scale 1:1200

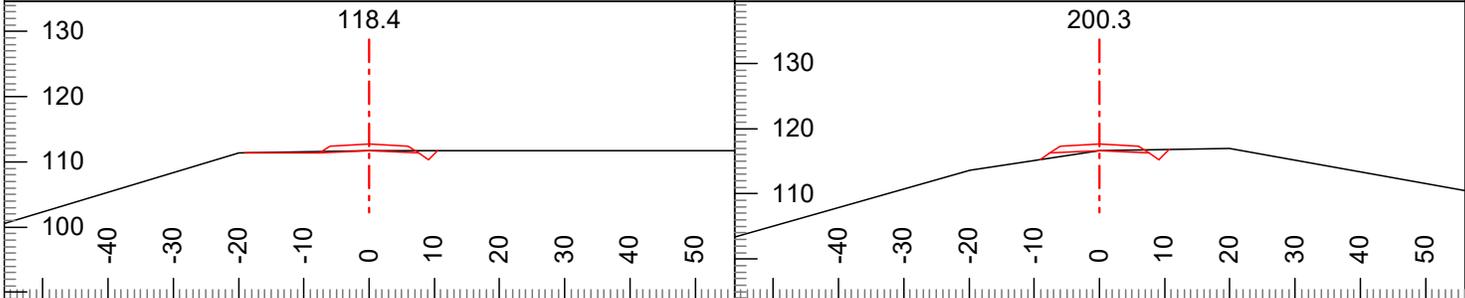
Washington State Department of
Natural Resources
South Puget Sound Region



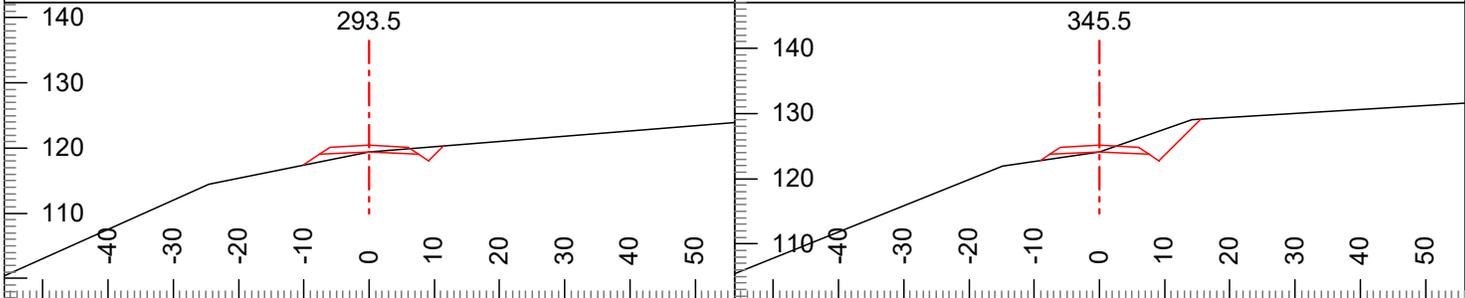
Crow Bait Timber Sale
1-25 Road April 20, 2020
Contract #: 30-099066



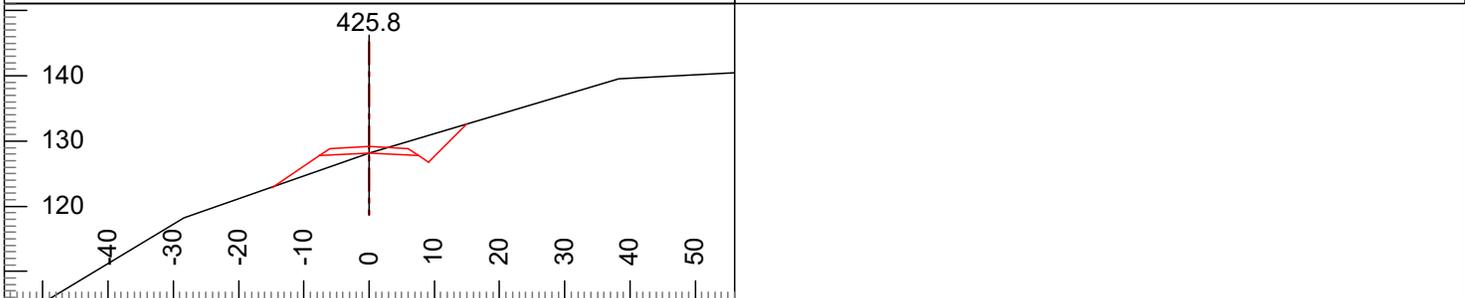
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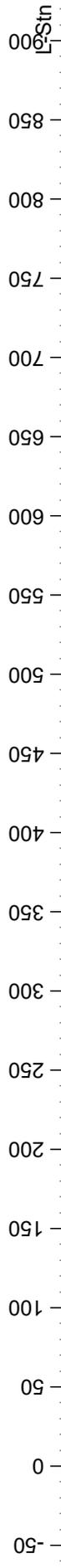
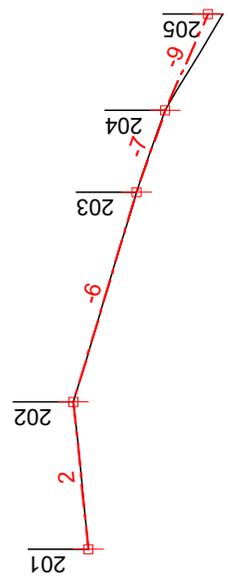
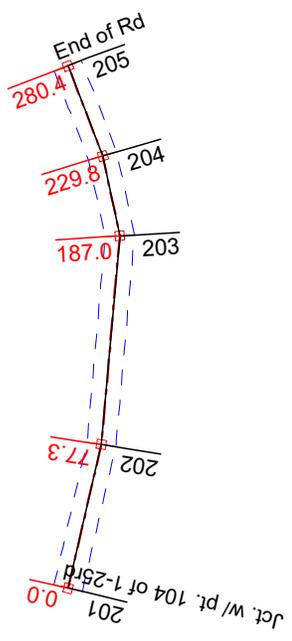
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Grd.Lst:	8.4	Cut Dp:	0.0	Rd. Wd. R:	7.6	Grd.Lst:	6.0	Cut Dp:	0.0	Rd. Wd. R:	7.6



L-Stn:	293.5	Ssl: (Av)	-20.0	CL Elev:	119.4	L-Stn:	345.5	Ssl: (Av)	-21.5	CL Elev:	124.1
Index:	105	Ssr: (Av)	8.0	Rd. Wd.:	15.2	Index:	106	Ssr: (Av)	26.6	Rd. Wd.:	15.2
Grd.Nxt.:	9.0	H. Offset:	0.0	Rd. Wd. L:	7.6	Grd.Nxt.:	5.0	H. Offset:	0.0	Rd. Wd. L:	7.6
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L-Stn:	425.8	Ssl: (Av)	-35.0	CL Elev:	128.1						
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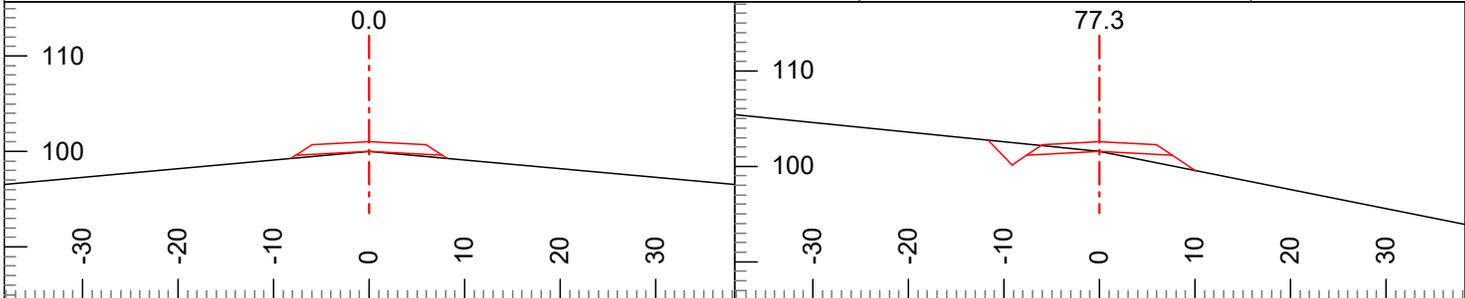
Engineer: M. Bell
 20/06/25
 Page 1 of 1

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

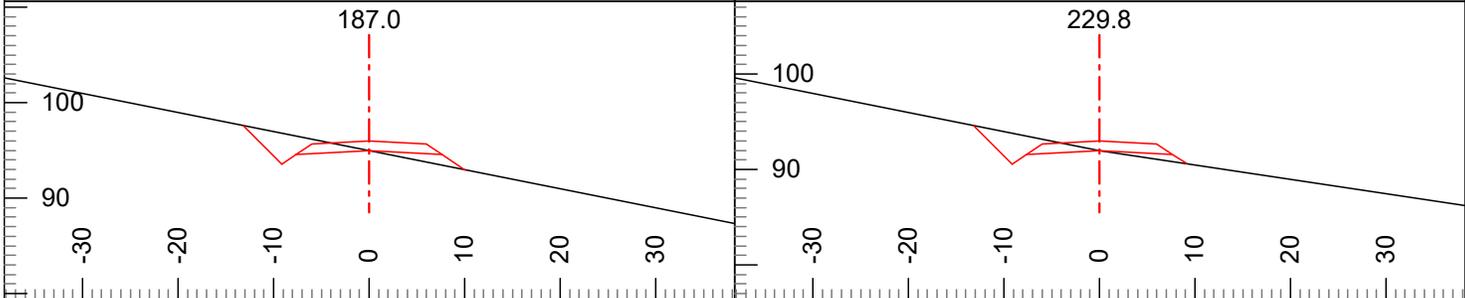
Washington State Department of
 Natural Resources
 South Puget Sound Region



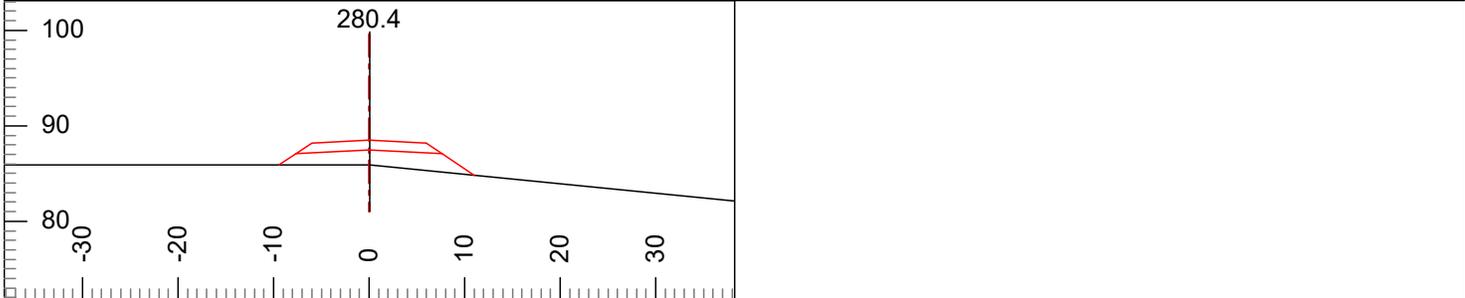
Crow Bait Timber Sale
 1-25-1 Road April 4, 2020
 Contract #: 30-099066



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L-Stn:	187.0	Ssl: (Av)	20.0	CL Elev:	95.0	L-Stn:	229.8	Ssl: (Av)	20.0	CL Elev:	92.0
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Grd.Nxt.:	-7.0	H. Offset:	0.0	Rd. Wd. L:	7.6	Grd.Nxt.:	-8.9	H. Offset:	0.0	Rd. Wd. L:	7.6
Grd.Lst:	-6.0	Cut Dp:	0.0	Rd. Wd. R:	7.6	Grd.Lst:	-7.0	Cut Dp:	0.0	Rd. Wd. R:	7.6



L-Stn:	280.4	Ssl: (Av)	0.0	CL Elev:	87.5
Index:	205	Ssr: (Av)	-10.0	Rd. Wd.:	15.2
Grd.Nxt.:	n/a	H. Offset:	-0.1	Rd. Wd. L:	7.6
Grd.Lst:	-8.9	Cut Dp:	-1.6	Rd. Wd. R:	7.6

Legal Description: NE1/4 SW1/4 SE1/4 SW1/4, Section 25, T14N, R6E, W.M.

Rock Pit Name: Griffin Pit

PIT DEVELOPMENT PLAN, pg 1 of 3

In addition to in Clause 6-12 ROCK SOURCE SPECIFICATIONS, the following specifications apply:

See Griffin Pit Plan, pg 3 of 3 for additional information.

Quantity and Quality of pit is not guaranteed by the State.

Tree Removal:

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

Overburden and Slash:

- Pile root wads and organic debris larger than one cubic foot in volume in clean, burnable piles in designated waste areas as shown as *Pile Stumps and Slash* on the attached map. Additional areas shall be approved by the Contract Administrator.
- Pile all reject rock and overburden away from pit working area as shown in the *Overburden Waste Area*. Waste shall be compact in lifts not to exceed 2 ft by routing equipment over the entire area. Waste shall not be placed against standing timber.
- Overburden and organic debris shall be kept separate.

Oversize:

Oversize material shall not exceed 5% of the total mined for the sale. Oversize material is defined as rock fragments larger than 1.5 feet in any dimension.

Specifications:

- A minimum stripping width of 20 feet must be maintained from all pit faces and at the termination of operations pit shall be left in said condition. No undercutting shall be permitted.
- Pit floor shall not be lowered without written approval from the Contract Administrator.
- Pit floor shall be sloped to allow drainage. No ponding will be allowed.
- Maximum face height shall not exceed 30 feet in height.
- Working bench width shall be a minimum of 25 feet.

Legal Description: NE1/4 SW1/4 SE1/4 SW1/4, Section 25, T14N, R6E, W.M.

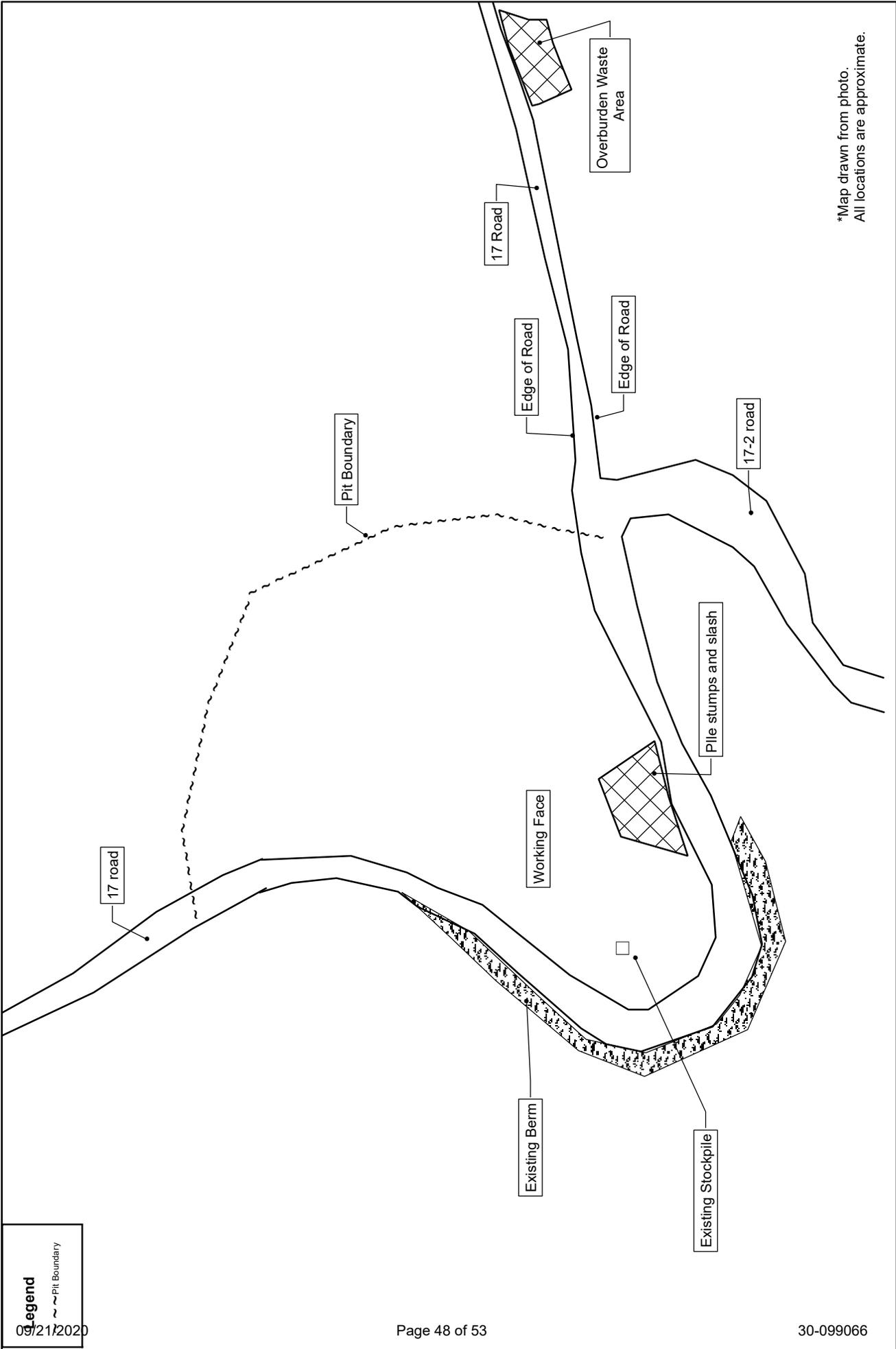
Rock Pit Name: Griffin Pit

PIT DEVELOPMENT PLAN, pg 2 of 3

End of Use:

- At the termination of use, rock pit face shall conform to Clause 6-12 ROCK SOURCE SPECIFICATIONS.
- At the termination of use, all overburden shall have a maximum backslope of 1 ½: 1.
- At the completion of operations, the working rock face shall be scaled to removed loose rock.
- At the completion of operations, the site shall be cleared of all temporary structures, equipment, and rubbish, and shall be left in a neat and presentable condition.
- At the completion of operations, Contractor shall request written approval from the Contract Administrator for final rock source condition and compliance with the terms of this plan.

Griffin Pit Plan, pg 3 of 3



Legend
~ ~ Pit Boundary
09/21/2020

*Map drawn from photo
All locations are approximate.

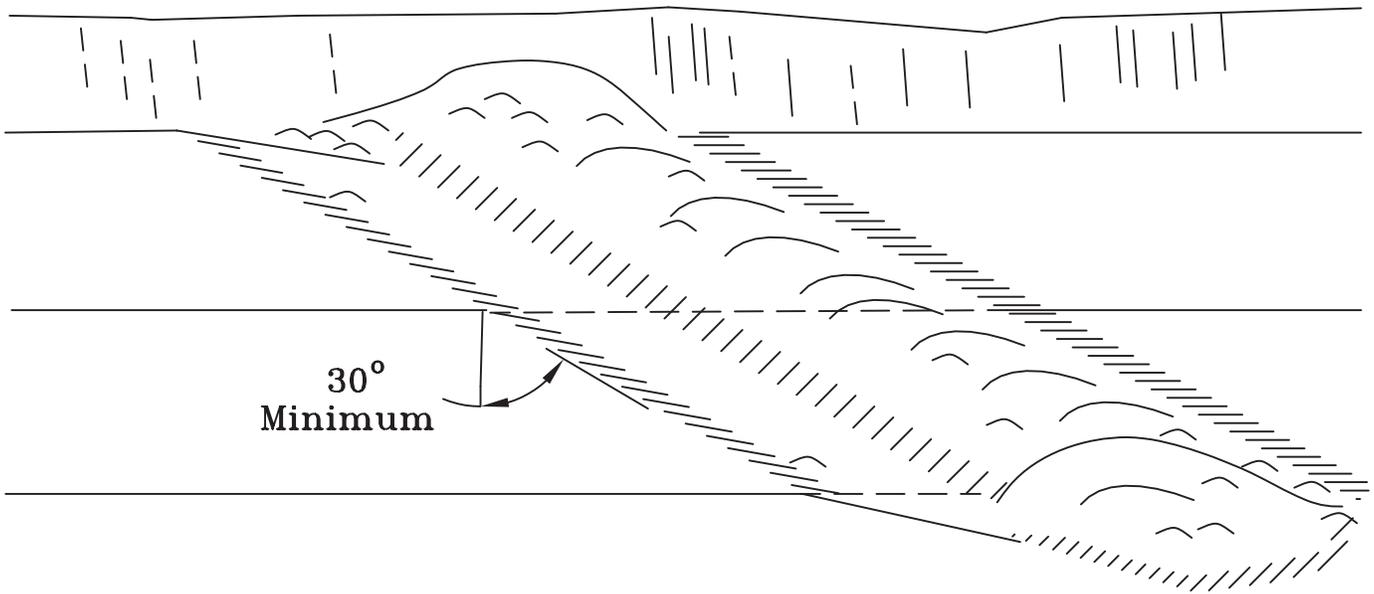


1 inch = 100 feet

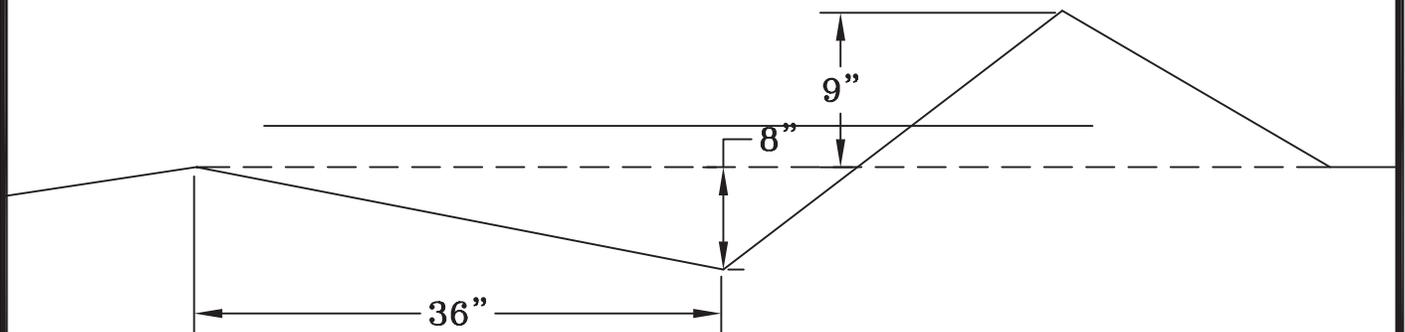
Drawn By: M. Bell
Date: 2/12/19

Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline

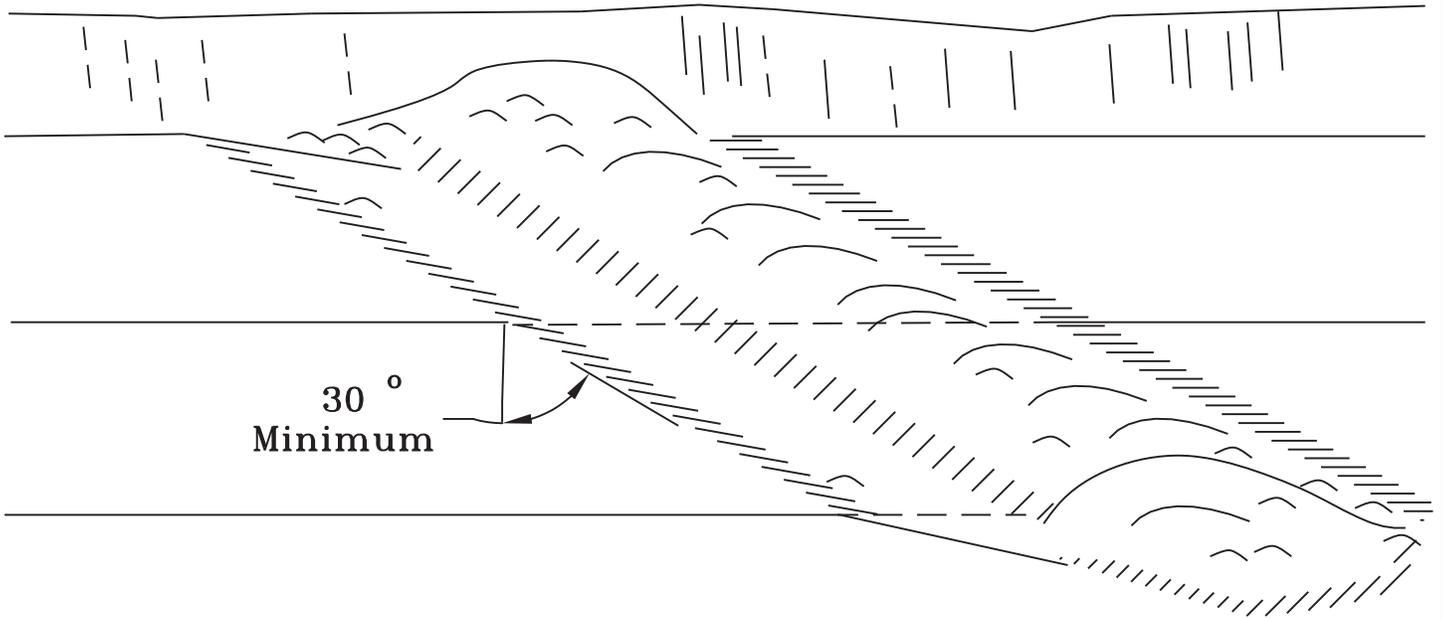


Drivable Water Bar Detail

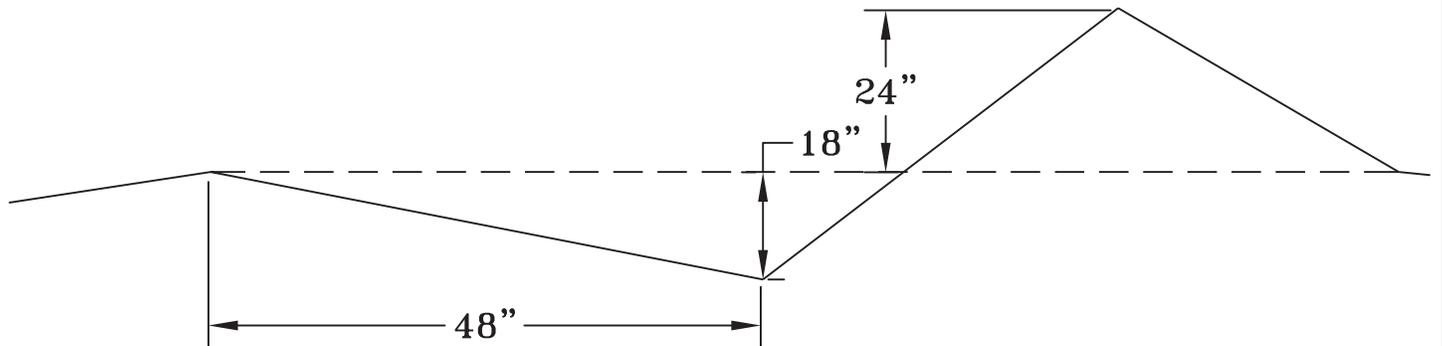
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Non-Drivable Water Bar Detail

Cross Ditch



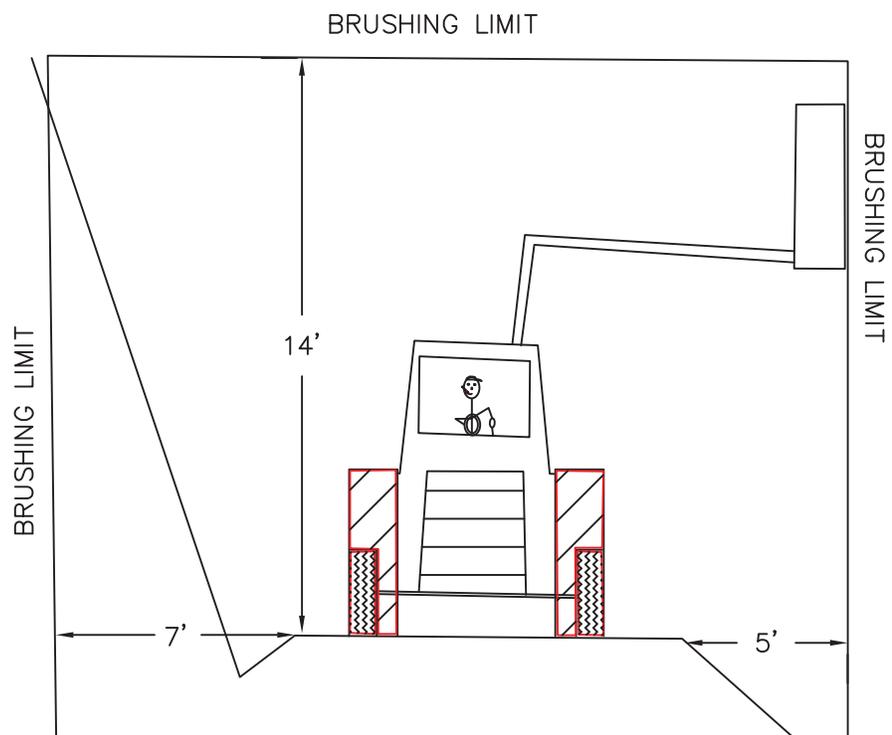
Cross Section at Centerline



Non-Drivable Water Bar Detail

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

Brushing Section Detail

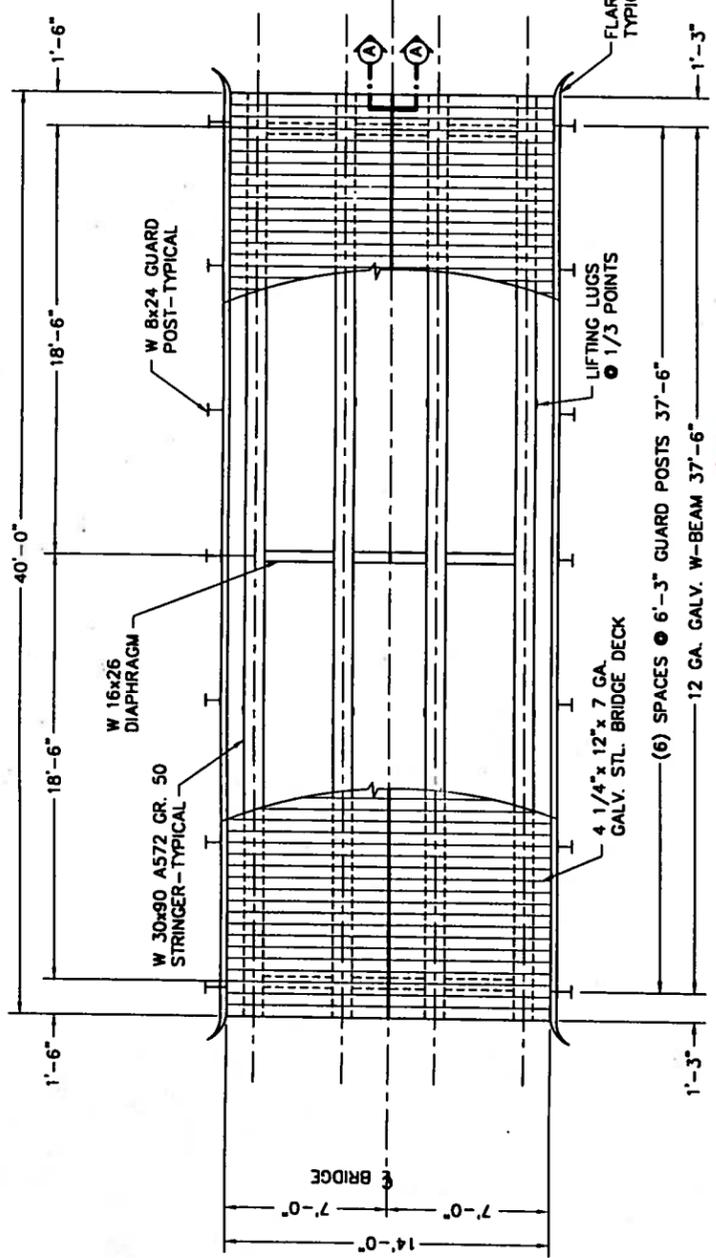


Notes: Stumps shall not be greater than 3 inches tall after brushing.

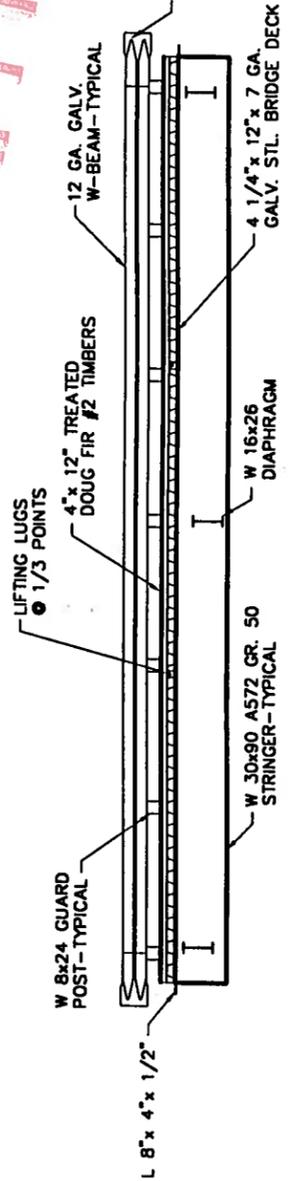
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Drawn by: M.A.D.

Brushing Section Detail

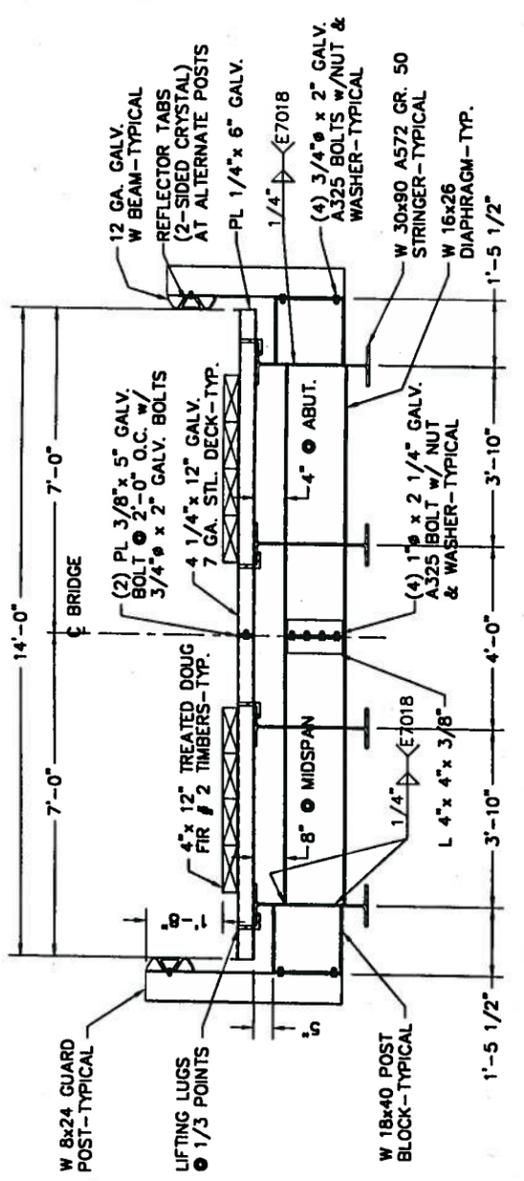
FILE: D:\WORK\Big R\BR3010.DWG AUTOCAD REL 13.04 DATE: JUN 19, 1997 TIME: 4:17 PM



PLAN VIEW SCALE: 1/4" = 1'-0"



ELEVATION VIEW SCALE: 1/4" = 1'-0"



CROSS SECTION SCALE: 1/2" = 1'-0"

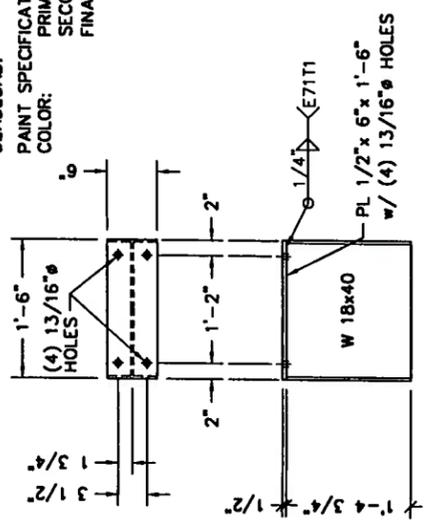
SECTION @ MIDSPAN

SECTION @ ABUTMENT

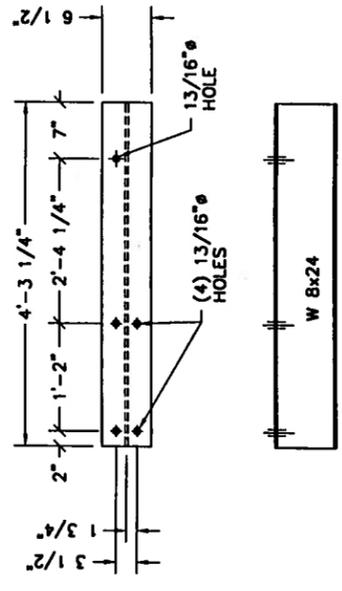
GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY AASHTO, APPLICABLE TO THE PROJECT. ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE AASHTO SPEC. A36. WELDING SHALL CONFORM TO THE LATEST EDITION OF THE A.W.S. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES AS AMENDED. BOLTS SHALL BE FURNISHED IN THE AMOUNT OF TWO PERCENT IN EXCESS OF THE NOMINAL NUMBER REQUIRED FOR EACH SIZE AND LENGTH.

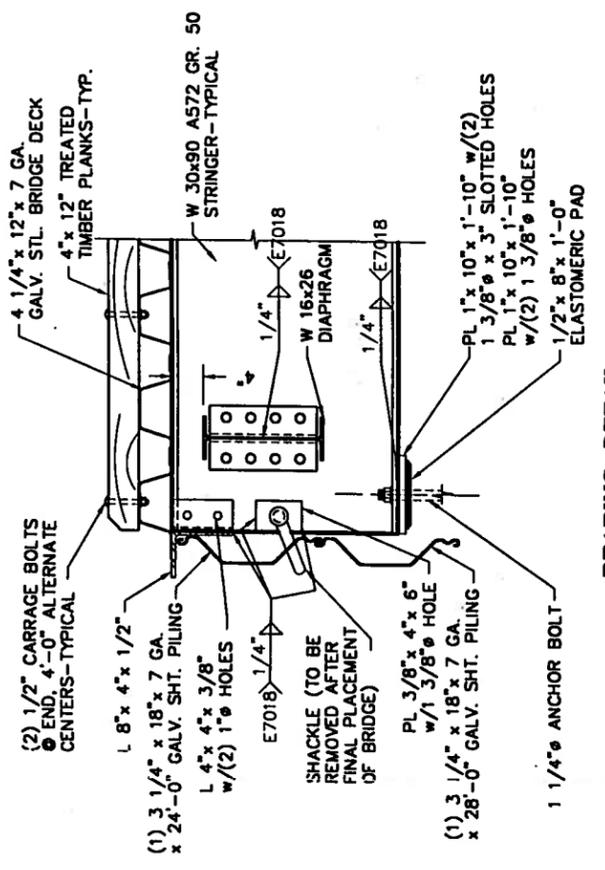
LOADING DATA:
 DEADLOAD: AASHTO HS-30 Δ = L/500
 ASSUMES 20 lbs. PER SQ. FT. ADDITIONAL WEARING SURFACE.
 PAINT SPECIFICATION: WASSER PRIME + 2 COATS
 COLOR: PRIMER = ZINC
 SECOND COAT = BLACK
 FINAL COAT = BRONZE



POST BLOCK DETAIL SCALE: 1" = 1'-0"



GUARDRAIL POST DETAIL NO SCALE



BEARING DETAIL SCALE: 1" = 1'-0"

BR3010

P.O. BOX 1290, GREENEY, COLORADO 80632
 Phone: (970) 356-9600 • In Denver, Phone: 893-8480
 Toll Free: 1-800-234-0734 • Fax: 356-9621

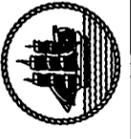
BIG R MANUFACTURING AND DISTRIBUTING, INC.



WASHINGTON DEPT. of NATURAL RESOURCES TAHOMA 97 BRIDGE CONTRACT
ASHFORD TREE COOLER
14'-0" x 40'-0" BRIDGE

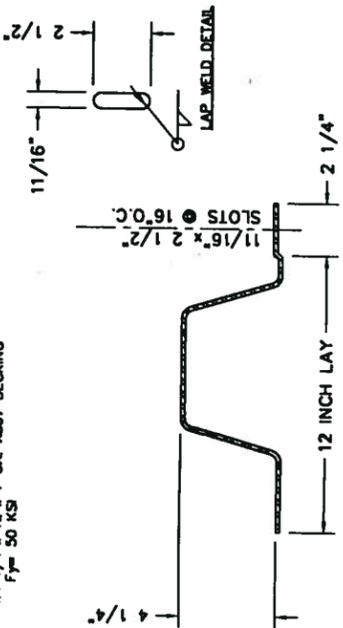
SHEET NO. **2**
 1

Zoyiopoulos and Associates, Inc.
 Engineering Consultants
 1011 42ND STREET EVANS, COLORADO 80620
 PHONE: (970) 352-6000 FAX: (970) 330-8070



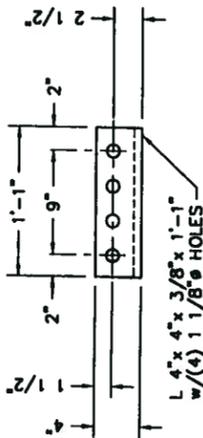
BRIDGE FLOOR FASTENING:

- A. WELDING
- 1. WELD EACH PIECE TO ALL STRINGERS w/ PLATE THICKNESS w/ PLATE THICKNESS x 3" FILLET WELDS.
- 2. WELD BOTH SIDES AND ENDS OF OVERLAPPING SIDE JOINT SLOTS w/ PLATE THICKNESS FILLET WELDS.
- 3. END SPICES ARE TO BE STAGGERED AND LOCATED OVER STRINGERS.
- 4. 4" x 4" x 1/2" x 7 GA. A507 DECKING
- F_y = 50 KSI



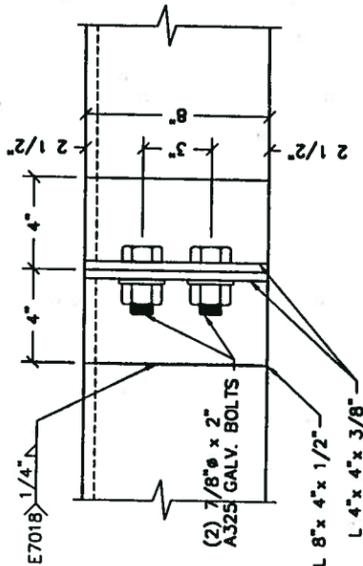
STEEL FLOOR SECTION

SCALE: 3" = 1'-0"



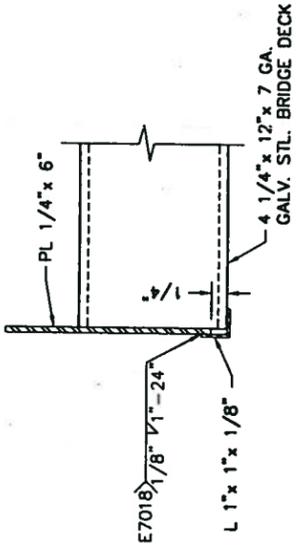
DIAPHRAGM SPLICE ANGLE

SCALE: 1 1/2" = 1'-0"



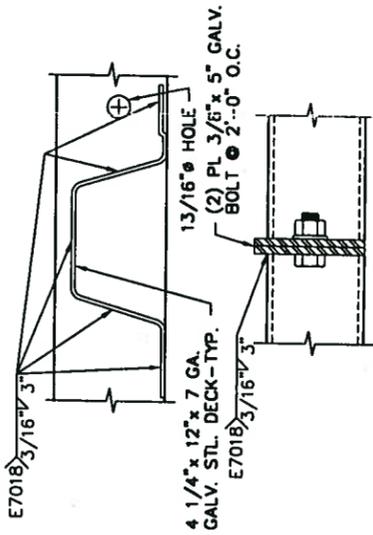
ANGLE SPLICE DETAIL A-A

SCALE: 3" = 1'-0"



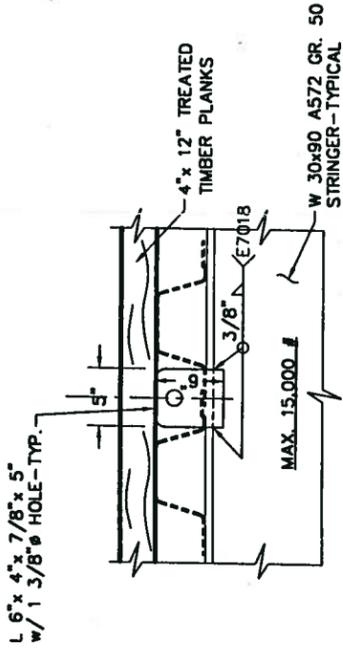
END DAM DETAIL

NO SCALE



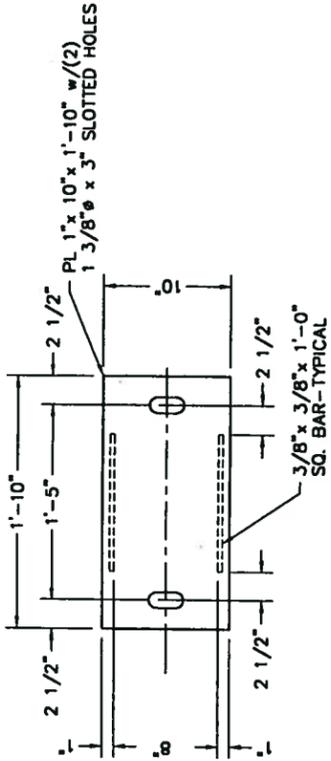
DECK SPLICE BAR

NO SCALE



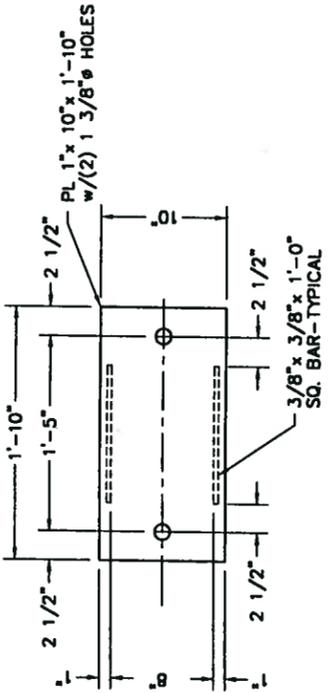
LIFTING LUG DETAIL

SCALE: 1 1/2" = 1'-0"



BEARING PLATE DETAIL

SCALE: 1 1/2" = 1'-0"



BEARING PLATE DETAIL

SCALE: 1 1/2" = 1'-0"

ICC APPROVAL ONLY



Zoyiopoulos and Associates, Inc.

Engineering Consultants
1011 42ND STREET EVANS, COLORADO 80620
PHONE: (970) 352-0000 FAX: (970) 330-6070

SHEET NO.

2

WASHINGTON DEPT. of NATURAL RESOURCES TAHOYA 97 BRIDGE CONTRACT
ASHFORD TREE COOLER
14'-0" x 40'-0" BRIDGE

DATE: 5-19-97
DRAWN BY: R. Hinkle
CHECKED BY: [blank]
PROJECT NO. 07051774
REVISIONS: [blank]

BIG 'R' MANUFACTURING AND DISTRIBUTING, INC.
P.O. BOX 1290, GREELEY, COLORADO 80632
Phone: (970) 356-9600 • In Denver, Phone: 893-8480
Toll Free: 1-800-234-0734 • Fax: 356-9621



BR3010

DEPARTMENT OF NATURAL RESOURCES - SOUTH PUGET SOUND REGION

SUMMARY - ROAD DEVELOPMENT COSTS

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

SALE/PROJECT NAME: **Crow Bait**

CONTRACT NUMBER: **30-099066**

TYPE:	Construction	Reconstruction	Pre-Haul Maintenance
NUMBER OF STATIONS:	7.06	42.85	398.46
AVG. SIDESLOPE:	23	40	
CLEARING AND GRUBBING:	\$621	\$6,376	
EXCAVATION AND FILL:	\$1,336	\$16,026	
MISC. MAINTENANCE:			\$10,179
ROCK TOTALS:			
Required Ballast:	\$5,819	\$29,308	\$4,956
Required Surfacing:	\$0	\$0	\$0
Riprap/Quarry Spalls:	\$14	92	\$7
Optional Rock	\$0	\$0	\$0
CULVERTS AND FLUMES:	\$1,827	\$11,219	\$823
STRUCTURES:	\$0	\$0	\$35,000
GENERAL EXPENSES:	\$1,058	\$5,672	\$4,587
MOBILIZATION:	\$967	\$967	\$967
TOTAL COSTS:	\$11,642	\$69,660	\$56,519
COST PER STATION:	\$1,649	\$1,626	\$142
POST HAUL & ABANDONMENT COSTS:		\$0	

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

TOTAL (All Roads) =	\$137,820
SALE VOLUME MBF =	4,342
TOTAL COST PER MBF =	\$31.74

Plans to be furnished by:

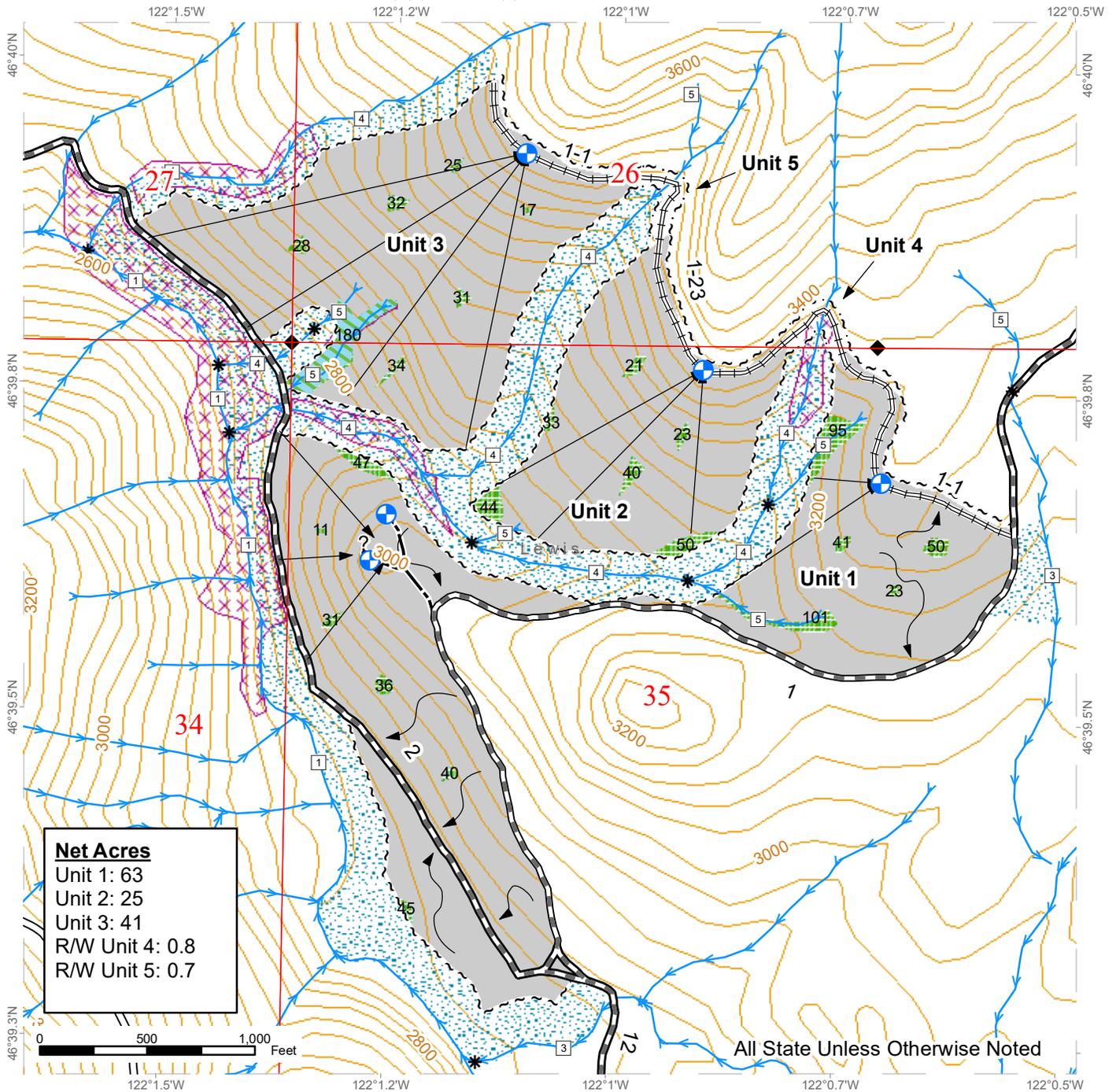
Compiled by: M. Bell

Date: 05/04/20

LOGGING PLAN MAP

SALE NAME: CROW BAIT
AGREEMENT#: 30-099066
TOWNSHIP(S): T14R6E
TRUST(S): Common School and Indemnity (3), Escheat (9)

REGION: South Puget Sound Region
COUNTY(S): Lewis
ELEVATION RGE: 2,760 - 3,400 ft.



All State Unless Otherwise Noted

Variable Retention Harvest	Leave Tree Area	Cable Harvest
Sale Boundary Tags	Riparian Mgt Zone	Ground Harvest
Right of Way Tags	Tailhold Restriction Area	Landing - Proposed
Existing Roads	Non-Tradeable Leave Trees	Potential Rock Source
Required Pre-Haul Maintenance	Streams	Survey Monument
Required Reconstruction	Stream Type	Public Land Survey Sections
Optional Construction	Stream Type Break	

