



**DEPARTMENT OF  
NATURAL RESOURCES**

**NORTHWEST REGION**  
919 NORTH TOWNSHIP STREET  
SEDRO-WOOLLEY, WA 98284-9384

**360-856-3500**  
northwest.region@DNR.WA.GOV  
WWW.DNR.WA.GOV

TO: Prospective Contract Harvesters

FROM: RFQ Coordinator-Theresa Klepl *Theresa Klepl*

DATE: September 15, 2020

SUBJECT: Request for Quote for Harvester for  
Madera Timber Sale 100353

Enclosed please find the appropriate documents to submit if you are interested in bidding to become the harvester for the Madera Timber Sale in Northwest Region.

Please contact Theresa Klepl, RFQ Coordinator at (360) 856-3500, if you have any questions.

Prospective Harvester pre-quote candidate harvester questions will be accepted until noon, October 20, 2020.

Harvester Bid Quote is due no later than November 4, 2020, at noon.

The following documents are enclosed:

- Request for Quote (RFQ)
- Timber Sale Notice of Sale
- Draft Harvesting Services Contract
- Cruise Narrative and Summary
- Road Plan
- Timber Sale Map
- Harvesting Services Contract Sealed Bid Form
- Road Proposal Bid Form
- Wage Law Compliance Form



WASHINGTON STATE DEPARTMENT OF  
**NATURAL RESOURCES**

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

**REQUEST FOR QUOTE**  
**RFQ NO. 30-0100353**

PROJECT TITLE: MADERA Sorts

QUOTE DUE DATE: November 4, 2020 12:00 PM

EXPECTED TIME PERIOD FOR CONTRACT: December 17, 2020 to December 12, 2021

CONTRACTOR ELIGIBILITY: This procurement is open to those contractors who have been pre-qualified and are listed in the Department of Natural Resources Contract Harvesting Services Eligible Bidder Pool.

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## **SECTION 1      INTRODUCTION**

### **1.01    Project Summary**

The Washington State Department of Natural Resources, (DNR) solicits Quotes from firms interested in participating on a project described below:

Defined in the Harvesting Services Contract. The selected harvester will be expected to access, cut, yard, load and haul logs from the MADERA Sorts CH Timber Sale to specified delivery points.

### **1.02    Purpose and Background**

This Request for Quotes seeks responses from harvesters, logging firms, operators of logging equipment or any firms, businesses or individuals who have been pre-qualified for DNR's harvester bidding pool and are interested in contract harvesting approximately 4053 MBF of timber in 3 unit(s) for the Department of Natural Resources in the Northwest Region Office.

### **1.03    Minimum Qualifications**

Candidate Harvesters must be licensed to do business in the State of Washington and must demonstrate that they are capable of performing the work and meet the requirements outlined in the attached Harvesting Services Contract and Road Plan.

Candidate Harvesters must participate in a two-part process to bid on the work defined by the Harvesting Contract (Exhibit B) and Road Plan (Exhibit C). First, a Statement of Qualifications (SOQ) must be submitted to DNR for evaluation. The Candidate Harvester must achieve 'eligible-for-bidding' status placing them in the DNR's eligible bidder pool. Second, Eligible Bidders will be requested to submit a bid for the Harvesting Services Contract along with a 'Statement of Available Resources and Work Plan' and any other materials listed as 'required' in section 2.06 of this RFQ. The State will award the contract to the eligible bidder who submits the lowest bid and has provided a 'Statement of Available Resources and Work Plan' that demonstrates to the State that the Candidate Harvester has the ability to complete the project as required.

Proposals from Candidate Harvesters who do not meet these minimum qualifications shall be rejected.

### **1.04    Contract Term**

The period of performance of the Harvesting Service Contract resulting from this Request for Quotes (RFQ) and subsequent bidding process is tentatively scheduled for December 17, 2020 to December 12, 2021. Any amendments extending the period of performance shall be at DNR's sole discretion.

### **1.05    Payment for Work**

The State shall make payments to the Contractor for services required and approved including log hauling and road work calculated according to the terms in the harvesting services contract. The Contractor is responsible for independently negotiating, procuring and paying for all

services provided.

Depending on the project bid structure defined in section 2.06 'Contract Harvesting Services Quote Format' of this RFQ, payment will be calculated using:

- The Contractor's On Board Truck (OBT) bid rate per mbf for logs harvested and delivered for sort(s) 01, 02, 03, 04, 05, 06, 07, 08, 11, 12 and 13.
- And an OBT rate of \$12.00 per Ton for sorts 14 and 15 harvested and delivered.
- The Contractor's OBT bid rate per mbf for Poles harvested and delivered for sort(s) 09 and 10.
- Utility volume scaled in mbf sorts will be determined on an adjusted gross scale basis and paid for at an OBT rate of \$20.00 per mbf.
- Payments to the Contractor for hauling services shall be based upon the tons delivered multiplied by: a base rate, 'A' and 'C mile rates', a fuel index factor and the Contractor's hauling bid factor using the following formula:

Hauling Services Payment Rate per Ton  
= (Base Rate + Mileage Rate) x (Contractor's hauling bid factor)

Base Rate = \$2.35

(based on multiple truck operation fixed cost/ton within 'Report to the Washington State Legislature, The Washington Log Trucking Industry: Costs and Safety Analysis, August 2008')

Mileage Rate = ((\$0.16 x C miles) + (\$0.11 x A miles)) x (Fuel Index Factor)

The Fuel Index Factor will be adjusted quarterly by the State based upon the U.S. Energy Information Administration's Weekly Retail On-Highway Diesel prices for the West Coast region posted at <https://www.eia.gov/petroleum/gasdiesel/> using the following formula;

$$\text{Fuel Index Factor} = 1 + \frac{Q_{(x)} - Q_{(base)}}{Q_{(base)}}$$

Where;  $Q_{(base)}$  = Average fuel price for quarter preceding harvesting services contract bid opening.

$Q_{(x)}$  = Average fuel price for quarter preceding log deliveries.

The fuel index factor will be calculated each;  
January and apply to loads delivered between January 1 and March 31,  
April and apply to loads delivered between April 1 and June 30,  
July and apply to loads delivered between July 1 and September 30,  
October and apply to loads delivered between October 1 and December 31.

*Hauling Rate Example:*

**Base Rate = \$2.35**

*C miles = 10*

*A miles = 100*

*Fuel Index Factor = 1.000*

**Mileage Rate = (( $\$0.16 \times 10$ ) + ( $\$0.11 \times 100$ ))  $\times$  (1.000) = \$12.60**

**Contractor's hauling bid factor = 1.100**

*Hauling Services Payment Rate per Ton*

= (Base Rate + Mileage Rate)  $\times$  (Contractor's hauling bid factor)

= ( $\$2.35 + \$12.60$ )  $\times$  1.100

= \$16.45

For sorts bid on an mbf basis tonnage will be calculated using the State's conversion rate unless actual tonnage is available and approved for use. For tonnage based sorts, actual tonnage shall apply.

- Travel distances to each log sort destination will be determined by the State and will represent the one-way travel distance from the sale area to the purchaser's delivery point.
  - Long-haul surcharge: An additional haul payment of \$25/mbf net scale for mbf scale sorts or \$4.60/ton for tonnage sorts will be added for delivery destinations in excess of 250 total one-way miles (A miles plus C miles).
- With prior approval by the State and toll/ferry receipt provided, reimbursement of toll/ferry costs incurred for transporting logs.
- Payment amounts for fixed-rate road construction elements are based upon the rates established by the State and listed in the Harvesting Services Contract. When applicable, payment amounts for biddable road construction elements will be in accordance with the rates listed in Contractor's road cost proposal provided as an attachment to the official bid form.

## **1.06 RFQ Definitions**

Definitions of terms used in this Request for Statement of Qualifications.

**Contractor** - Individual or company selected to harvest and haul logs for the State. Contractor may also be required to perform roadwork or other services as required in the Harvesting Services Contract and Road Plan.

**DNR** - The State of Washington, Department of Natural Resources.

**Eligible Bidder** - Candidate Harvester who's Statement of Qualifications has scored a pre-determined minimum point total (as determined by the DNR). Only eligible bidders are

requested to submit a bid for the work outlined in the Harvesting Services Contract.

**Harvesting Services Contract** - the agreement between the State and a Contractor that defines the work to be done by the Contractor. The Contractor and the State sign this contract after the timber sale auction where the Purchaser's of the log sorts has been determined.

**Purchaser** - Person or Company that has purchased logs to be delivered by the Contractor of a Contract Harvesting Sale. A Contract Harvesting sale usually has numerous Purchasers.

**Quote** – Official bid form submitted by Eligible Bidders. A complete Quote consists of the bid rate for delivered logs, the bid rates for hauling services, and a completed 'Statement of Available Resources and Work Plan'.

**Request for Quotes (RFQ)** - A formal procurement process used to solicit bids from pre-qualified firms for the right to perform the work defined in the RFQ.

**Request for Statement of Qualifications (RFSOQ)** - A formal procurement process used to pre-qualify firms for inclusion in the DNR's Contract Harvesting Services Eligible Bidder Pool.

**Request for Quotes Coordinator** - DNR employee who oversees the Contractor Selection Process and serves as the main point of contact between the DNR and Candidate Harvesters. The Coordinator may delegate some of the duties, but is responsible for ensuring the process is properly followed and documented.

**Statement of Qualifications (SOQ)** – Document to be filled out by Candidate Harvesters and submitted to the DNR. Lists the Candidate Harvesters experience, qualifications, background information and references. Used by an evaluation team to determine which Candidate Harvesters are qualified to bid for the right to perform the harvesting project.

**Subcontractor** - Individual or company employed by the Contractor to perform a portion or all of the services required by the Harvesting Services Contract. The Contractor is responsible for independently negotiating, procuring and paying for all subcontracted services rendered.

## **SECTION 2            GENERAL INFORMATION FOR HARVESTERS**

### **2.01    RFQ Coordinator**

The RFQ Coordinator is the sole point of contact in the DNR for this eligible bidder selection process. All communication between the Candidate Harvester and the DNR shall be with the RFQ Coordinator.

RFQ Coordinator	<a href="#">Theresa Klepl</a>
Address	<a href="#">919 N. Township Street</a>
City, State, Zip Code	<a href="#">Sedro-Woolley, WA 98284</a>
Phone Number	<a href="#">(360)856-3500</a>
Fax Number	<a href="#">(360)856-2150</a>
E-Mail Address	<a href="mailto:northwest.region@dnr.wa.gov">northwest.region@dnr.wa.gov</a>

## **2.02 Estimated Project Schedule**

As defined in the Project Schedule (**See Exhibit A**)

The DNR reserves the right to revise this schedule.

## **2.03 Pre-Quote Candidate Harvester Questions**

Candidate Harvesters may mail, FAX, or email questions about the RFQ to the RFQ Coordinator. The RFQ Coordinator will accept questions until October 20, 2020 at 12:00 PM. Questions received after this date and time will not be answered unless the RFQ Coordinator decides that it is in the DNR’s best interests to answer them. A copy of the question(s) received, along with the DNR’s official answer(s), will be mailed, faxed, or emailed to each Candidate Harvester who received a copy of the RFQ. This copy will become an addendum to the RFQ. The DNR shall be bound only by written answers to questions. Oral responses given on the telephone will be considered unofficial.

## **2.04 Submitting a Quote**

Candidate Harvesters must submit ONE copy of the official Harvesting Services Contract Sealed Bid Form including a ‘Statement of Available Resources and Work Plan’ with original signatures. The Quote, whether mailed, hand delivered, or faxed must arrive at the DNR no later than 12:00 PM, local time, on November 4, 2020.

The Quote is to be sent to the RFQ Coordinator at the address listed in Item 2.01 above. The envelope should be clearly marked “Attention RFQ Coordinator, Contract Harvesting Services Quote Enclosed, Do Not Open Until November 4, 2020.”

Candidate Harvesters who mail Quotes should allow for normal mail delivery time to ensure timely delivery of their Quotes to the RFQ Coordinator. Candidate Harvesters assume the risk for the method of delivery they choose. The DNR assumes no responsibility for delays caused by a delivery service. Quotes may not be transmitted by email.

Late Quotes will not be accepted and will be automatically disqualified from further consideration. All Quotes and any accompanying documentation become the property of the DNR and will not be returned.

### **2.05 Proprietary Information/Public Disclosure.**

Proposals are considered public records as defined in chapter 42.56 RCW. In the event a firm desires to claim portions of its proposal proprietary and exempt from public disclosure, it must clearly identify those portions. Each page of the proposal claimed to be exempt must be clearly identified as “proprietary information.” If a public records request is made for the information that the consultant has marked as “proprietary information,” the firm may seek to obtain a court order from a court of competent jurisdiction enjoining disclosure pursuant to chapter 42.56 RCW, or other state or federal law that provides for nondisclosure. The successful contractor’s proposal generally becomes part of the contract that is subject to public disclosure.

DNR will charge for copying and shipping, as permitted by RCW 42.56.120. No fee shall be charged for inspection of contract files. Twenty-four (24) hours notice to the RFQ Coordinator is required. All requests for information should be directed to the Coordinator.

### **2.06 Contract Harvesting Services Quote Format**

For a responsive bid, the following bid elements are required to be submitted on or attached to an official DNR Harvesting Services bid form;

OBT harvesting rate per MBF	<b>Required</b>
OBT harvesting rate per MBF for Poles	<b>Required</b>
Hauling services bid factor (formatted to 3 decimals i.e. #.###)	<b>Required</b>
Responsible Bidder Criteria – Wage Law Compliance	<b>Required</b>
Road construction cost proposal	<b>Required</b>
Statement of Available Resources and Work Plan	<b>Required</b>
All attachments incorporated by reference	<b>Required</b>

### **2.07 Revisions to the RFQ**

The DNR reserves the right to revise the RFQ and/or to issue addenda to the RFQ. The published questions and answers from the Pre-proposal meeting/questions shall be an addendum to the RFQ.

The DNR also reserves the right to cancel or to reissue the RFQ in whole or in part, prior to execution of a Harvesting Services contract. If DNR finds it necessary to revise any part of the RFQ, addenda will be provided to all those who received the RFQ.

### **2.08 Most Favorable Terms**

The State reserves the right to determine the Successful Bidder without further discussion of the Quote submitted. Therefore, the Quote should be submitted initially on the most favorable terms, which the Candidate Harvester can propose. There will be no best and final offer procedure. The State reserves the right to contact a Candidate Harvester for clarification of a Quote.

## **2.09 Costs to Propose**

The DNR will not be liable for any costs that the Candidate Harvester incurs in preparing a Quote related to this RFQ or any other activities related to responding to this RFQ.

## **SECTION 3 PROJECT SCOPE OF WORK**

### **3.01 Project Scope of Work.**

As defined in the Harvesting Services Contract, Road Plan and Timber Sale Map (See Exhibits B, C and D).

### **3.02 SPECIAL REQUIREMENTS**

\*THIS IS A PROJECT WITH Multiple SIDES THAT WILL NECESSITATE SIMULTANEOUS OPERATIONS FOR THE DURATION OF THE PROJECT. Two road building sides will most likely be necessary due to the length of road construction and geographic distance between units. Multiple rock pits to be developed (4 pits), and 2 existing rock pits available for the project. This proposal has a unit adjacent the Reiter Road, where extreme hazard abatement will be required.

Weighted average C-miles: 4.0 miles.

\*Must demonstrate the ability to have all documentation (performance security, certification of insurance, proof of successful completion of an approved training program per clause G-116, etc.) in place and be ready to begin operations upon approval to commence activity on site as per the project start date. Road work must begin as soon as possible upon approval by Contract Administrator.

\*Must demonstrate the ability to make a consistent flow of deliveries throughout the delivery period without unnecessary delay. No unauthorized shut downs or gaps in deliveries of logs will be allowed.

\* Must begin onsite operations, to include falling of timber, as soon as approval is granted in writing by the State, subsequent to the confirmation of sale of log sorts. This date is tentatively scheduled December 17, 2020.

\*Provide a production plan and log shipment schedule, with deliveries to commence no later than the required date in the G-027.1 clause of the contract, subsequent to falling unit timber.

\*Provide an alternative plan or demonstrate the capability to increase production (if needed) in case of weather and/or regulatory related shut down(s) to meet target completion dates.

\*Operations may occur during the unfavorable weather season. Rain and snow accumulations could occur. In addition, long haul routes to sort delivery destinations are possible.

\*The harvester is required to complete harvest activities according to the harvesting services contract, including requirements as stated in the H-140.1 and the H-141.1 clauses of the Harvesting Services Contract and Schedules attached to the contract and requirements outlined in the Road Plan.

\* The Candidate Harvester is required to submit a Statement of Available Resources and Work Plan explaining how harvest operations will commence by the Expected Time Period start date through the final deliveries (Harvest activity) date; delivering a minimum of 16 loads per day on average (not including weekend and Federal Holidays) on VRH areas and 6 loads per day on VDT areas. The work plan must be consistent with the requirements listed above.

This plan must include:

- Start date and estimated end date for both road construction and logging
- The number and type of logging sides operating
- Number of road work sides operating
- Start date of load deliveries, if earlier than contract required date
- Number of trucks and planned loads to be delivered per day
- Planned harvest sequence to maintain operations during contract period

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The successful harvester's Work Plan must be approved in writing and is subject to modification by the State prior to operation commencement to better fit the DNR's objectives, at no additional cost to the DNR. This project will require the harvest and delivery of a large amount of timber in a relatively short operating window. It is imperative that the successful harvester has the ability and resources available to complete this project within the anticipated work schedule as described in section 1.04 of this RFQ.

This project requires the manufacturing and delivery of poles. Candidate harvesters are required to address their pole harvesting experience and their pole harvesting methodology for this project in the work plan.

## **SECTION 4 QUOTE EVALUATION**

### **4.01 Evaluation Team.**

DNR will designate an evaluation team to evaluate Quotes. The evaluation team will evaluate quotes according to the requirements outlined in this RFQ and any addenda, which are issued.

### **4.02 Administrative Requirements.**

The RFQ Coordinator will review all Quotes to determine compliance with administrative requirements and instructions specified in the RFQ. Only Quotes meeting the minimum requirements will be forwarded to the evaluation team for further review.

### **4.03 Responsibleness.**

When evaluating Quotes, the evaluation team will consider candidate Harvester's responsibleness. A Candidate Harvester is responsible if it:

- Has adequate financial resources to perform the contract, or the ability to obtain them;
- Is able to comply with the required delivery or performance schedule, taking into consideration all existing commercial and governmental business commitments;
- Has a satisfactory performance record. A Candidate Harvester shall not be determined responsible or non-responsible solely on the basis of a lack of relevant performance history, unless the DNR determines special standards are appropriate. A Candidate Harvester that is or recently has been seriously deficient in contract performance shall be presumed to be non-responsible, unless the DNR determines that the circumstances were properly beyond the Candidate Harvester's control, or that the Candidate Harvester has taken appropriate corrective action. Past failure to apply sufficient tenacity and perseverance to perform acceptably is strong evidence of non-responsibility. Failure to meet the quality requirements of the contract is a significant factor to consider in determining satisfactory performance. The DNR shall consider the number of contracts involved and the extent of deficient performance in each contract when making this determination.
- Any special standards will be properly identified in this solicitation and will apply to all Candidate Harvesters and their subcontractors.

#### **4.04 Information Used for Evaluation.**

Evaluators will use the information in the Candidate Harvester's Quote or bid form, their references, their previous Washington DNR performance evaluations, ability to meet special standards, and their Quote or 'Harvesting Services Contract Sealed Bid Form' including their 'Statement of Available Resources and Work Plan'.

#### **4.05 Signatures**

Quotes must be signed and dated by a person authorized to bind the Candidate Harvester to a contractual arrangement, e.g., the President or Executive Director if a corporation, the managing partner if a partnership, or the proprietor if a sole proprietorship.

#### **4.06 Failure to Comply**

If the Candidate Harvester fails to comply with any requirement of the RFQ, DNR will reject the Quote.

#### **4.07 Rejecting Quotes**

The DNR reserves the right at its sole discretion to reject any and all Quotes received without penalty and not to issue a contract from this RFQ. The DNR also reserves the right at its sole discretion to waive minor administrative irregularities contained in any Quote.

#### **4.08 Lowest Responsible Bidder**

Award of this Contract shall be to the lowest responsible bidder as determined by the DNR. In determining the lowest responsible bidder, in addition to price, the following may be considered:

- a. the ability, capacity, and skill of the bidder to perform the contract;
- b. the character, integrity, reputation, judgment, experience, and efficiency of the bidder;
- c. whether the bidder can perform the contract within the time specified;
- d. the quality of performance of previous contracts; and
- e. the previous and existing compliance by the bidder with laws relating to the contract or services. The DNR's determination that a bidder is not qualified shall result in rejection of the bid submitted.

**4.09 Challenges to the Apparent Successful Bidder**

- a. An unsuccessful bidder may appeal the bid award if they believe the process used to award the contract was not conducted properly. Please include the reasons why you believe the contract should not be awarded to the successful bidder.
- b. The DNR Region Manager must receive the appeal; in writing no later than 5 days from the date the letter was sent by fax or mail to the bidder notifying them that they were unsuccessful.

The Region Manager shall issue a written decision within 10 days of receipt of the appeal and cite the reasons for approving or disapproving the appeal.

- c. If the appellate is not satisfied with the decision of the Region Manager, the appellant may further appeal to the Deputy Supervisor-Uplands within 5 calendar days from the issuance of the Region Manager's written decision. The Deputy Supervisor-Uplands shall consider all information provided and issue a final decision in writing, citing reasons to approve or disapprove the appellant's appeal.

**SECTION 5      RFQ EXHIBITS**

- Exhibit A      Estimated Harvest Project Schedule
- Exhibit B      Draft Harvesting Services Contract
- Exhibit C      Road Plan
- Exhibit D      Timber Sale Map
- Exhibit E      Harvesting Services Contract Sealed Bid Form
- Exhibit F      Wage Law Compliance Form


**TIMBER NOTICE OF SALE**
**SALE NAME:** *MADERA Sorts*
**AGREEMENT NO:** *30-101137 - 30-101151*
**AUCTION:** **December 16, 2020 starting at 10:00 a.m.**  
 Northwest Region Office, Sedro Woolley, WA

**COUNTY:** **Snohomish**
**SALE LOCATION:** Sale located approximately 7 miles by road northeast of Gold Bar, WA for Unit 1; and 3 miles by road east of Gold Bar, WA for remaining units.

**PRODUCTS SOLD  
 AND SALE AREA:**

All delivered forest products, except trees marked with blue paint on the bole and root collar and forest products tagged out by yellow leave tree area tags, from an area bounded by white timber sale boundary tags, property lines, adjacent young stands, and all delivered forest products bound by orange right-of-way tags meeting the specifications described below; on parts of Sections 2, 3, and 10 all in Township 27 North, Range 9 East, Sections 28, and 29 all in Township 28 North, Range 9 East W.M., containing 106 acres, more or less.

**MINIMUM BID AND ESTIMATED LOG VOLUMES:**

Agreement #	Sort #	Species and Sort Specifications	Average Log Length	Estimated Volume		Tons Per MBF	Minimum Bid Delivered Prices		Total Appraised Value	Bid Deposit
				Mbf	Tons		\$/mbf	\$/Ton		
101137	01	DF HQ 20"+	32	304	1581	5.2	\$0.00		\$0.00	\$0.00
101138	02	DF HQ 12"-19"	32	555	2886	5.2	\$0.00		\$0.00	\$0.00
101139	03	DF Sawlog 20"+	26	602	2950	4.9	\$0.00		\$0.00	\$0.00
101140	04	DF Sawlog 12"-19"	28	752	4211	5.6	\$0.00		\$0.00	\$0.00
101141	05	DF Sawlog 5"-11"	32	435	3132	7.2	\$0.00		\$0.00	\$0.00
101142	06	WW Sawlog 12"+	26	170	986	5.8	\$0.00		\$0.00	\$0.00
101143	07	WW Sawlog 5"-11"	28	342	2497	7.3	\$0.00		\$0.00	\$0.00
101144	08	RC Sawlog 5"+	28	252	1462	5.8	\$0.00		\$0.00	\$0.00
101145	09	DF Pole 45'+	N/A	250	1450	5.8	\$0.00		\$0.00	\$0.00
101146	10	RC Pole 40'+	N/A	40	232	5.8	\$0.00		\$0.00	\$0.00
101147	11	RA Sawlog 8"+	24	103	752	7.3	\$0.00		\$0.00	\$0.00
101148	12	MA Sawlog 8"+	24	138	994	7.2	\$0.00		\$0.00	\$0.00
101149	13	CW Sawlog 8"+	24	24	173	7.2	\$0.00		\$0.00	\$0.00
101150	14	Conifer Utility	N/A	66	594	9		\$0.00	\$0.00	\$0.00



WASHINGTON STATE DEPARTMENT OF  
**NATURAL RESOURCES**

**TIMBER NOTICE OF SALE**

101151	15	Hardwood Utility (except cottonwood)	N/A	20	180	9		\$0.00	\$0.00	\$0.00
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**Totals:** **4053 24080** **\$0.00**

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

**BID METHOD:** Sealed Bids **UNIT OF MEASURE:** MBF Scale/Tonnage Scale

**EXPIRATION DATE:** July 28, 2021 **ALLOCATION:** Export Restricted

**PAYMENT SECURITY:** To be determined by the State as described in Clause P-045.2 of the Purchaser’s Contract.

**BIDDING PROCEDURES:** A separate sealed bid and envelope must be submitted for each log sort. Prospective Purchasers may bid on any or all log sorts. On the day of sale the Purchaser must bring their bid deposit up to 10% of their total bid price. Complete bidding procedures and auction information may be obtained from the Northwest Region Office in Sedro Woolley WA. Phone number (360)856-3500.

**TIMBER EXCISE TAX:** Purchaser must pay the forest excise taxes associated with the log sorts delivered to them. The tax rate for this sale is 4.2 %. Taxable Stumpage = Total Delivered Value – (Harvest Cost + Estimated Haul Cost + ARRF). For more information contact the Department of Revenue, Forest Tax Section at 1-800-548-8829.

Use the following rates for estimating taxable stumpage:

Harvest Cost = \$0.00 per MBF for sorts 09 and 10, \$0.00 per MBF for sorts 01, 02, 03, 04, 05, 06, 07, 08, 11, 12 and 13 and \$12.00 per Ton for sorts 14 and 15.

Hauling Services Payment Rate per Ton  
= (Base Rate + Mileage Rate) x (Contractor's hauling bid factor)

Base Rate = \$2.35 per ton

Mileage Rate = ((\$0.16 x C miles) + (\$0.11 x A miles)) x Fuel Index Factor

ARRF = \$0.00 per MBF for sorts 14 and 15 and \$26.00 per MBF for sorts 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12 and 13.

Note: To calculate ARRF rates per ton use the tons\mbf conversion factor in the table above.

Long-haul surcharge: An additional haul payment of \$25/mbf net scale for mbf scale sorts or \$4.60/ton for tonnage sorts will be added for delivery destinations in excess of 250 total one-way miles (A miles plus C miles).



## TIMBER NOTICE OF SALE

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**CONFIRMATION:** Each sort is subject to confirmation following auction. Sorts will not be confirmed until at least 10 days after auction. Final contract award is contingent upon the State's haul cost analysis. Actual haul route may vary and is subject to change at the State's discretion.

**SPECIAL REMARKS:** The successful Purchaser(s) will be required to purchase logs from the sale area upon delivery to their location specified in the bid submitted. Logs will be delivered to the Purchaser's delivery location by the State's contract harvester. Purchaser is responsible for weighing and scaling costs. All tonnage loads will be weighed and all mbf loads will be scaled at State approved locations. The State reserves the right to determine where logs are authorized to be scaled and weighed.

\*Note: Harvesting services bid opening is tentatively scheduled for 11/04/20, which will establish the Contractor's harvest rate and the Contractor's hauling bid factor. Fuel Index Factor is indexed quarterly by the State.

Weighted average c-miles = 4.0.

Log deliveries are anticipated to be no later than February 17, 2021 through June 30, 2021, but can commence as early as the contract effective date as well as later depending on weather and production of operations.

\*REMINDER\* - The State's auction haul cost analysis, used to determine the apparent high bidder for sort sales, has been updated to include the surcharge for long haul distances, delivery destinations in excess of 250 total one-way miles (A miles plus C miles), as referenced above in the Timber Excise Tax section. Upon further analysis by the State, this rate may be different for future proposals.

Note – cedar bark stripping/pulling has taken place in Unit 1.

For more information regarding this log sort sale visit our web site: <http://www.dnr.wa.gov/programs-and-services/product-sales-and-leasing/timber-sales/timber-auction-packets>. If you have questions call Theresa Klepl at the Northwest Region Office at (360)856-3500 or Dave Richards at the Product Sales and Leasing Division Office in Olympia at (360)902-1365.

**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

**HARVESTING SERVICES CONTRACT**

**AGREEMENT NO. 30-0100353**

**SALE NAME: MADERA Sorts**

**THE STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES, HEREINAFTER ACTING SOLELY, IN ITS PROPRIETARY CAPACITY, STATE, AND CONTRACTOR, AGREE AS FOLLOWS:**

**Section G: General Terms**

**G-001.1 Definitions**

The following definitions apply throughout this contract;

**Contract Administrator:** Region Manager's designee responsible for assuring that the contractual obligations of the Contractor are met.

**Contractor:** State-selected harvester responsible to perform all duties as required by the Harvesting Services Contract, including but not limited to timber harvesting, road construction, debris removal and piling, hauling and delivery of forest products for weighing and/or scaling, to the Purchasers of the timber sales Sorts.

**Delivery:** Occurs when logs or forest products meeting the sorting specifications arrive at the Purchaser's destination, as described in the contract.

**Forest Product:** Any material derived from the forest for commercial use.

**Harvesting:** A general term, referring to the Contractor's various obligations under the Harvesting Services Contract.

Harvesting Services Contract: Contract between the Contractor and the State, which sets forth the procedures and obligations of the Contractor for completing the harvesting of timber, and the delivery of various log sorts to the State's purchasers, and the payment obligations of the State, The Harvesting Services Contract will include a Road Plan for any road construction or reconstruction, where applicable.

Log Sale and Purchase Contract: Purchase Agreement between the State and Purchaser(s) of particular log sorts from the timber sale.

Purchaser: The company or individual that has entered a Log Sale Contract with the State for individual log sorts from the timber sale area. The Contractor must deliver the designated log sorts to this company or individual. Contractor will likely be delivering different log sorts to different purchasers under the Harvesting Services Contract.

Road Construction Services: 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 logs 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 Contractor to perform a portion or all of the services required by the Harvesting Services Contract. The Contractor is responsible for independently negotiating, procuring and paying for all subcontracted services rendered.

### **G-015.1 Harvest Area and Location**

Contractor shall harvest and deliver, All delivered forest products, except trees marked with blue paint on the bole and root collar and forest products tagged out by yellow leave tree area tags, from an area bounded by white timber sale boundary tags, property lines, adjacent young stands, and all delivered forest products bound by orange right-of-way tags located on approximately 106 acres on part(s) of Sections 2, 3, and 10 all in Township 27 North, Range 9 East, Sections 28, and 29 all in Township 28 North, Range 9 East W.M. of Snohomish County as shown on the attached timber sale map.

### **G-020.1 Inspection by Contractor**

Contractor hereby warrants to the State that they have had an opportunity to fully inspect the sale area and the forest products to be harvested. Contractor further warrants to the State that they enter this contract based solely upon their own judgment of the harvest and road work, and condition of the forest products, formed after their own examination and inspection of both the timber sale area and the forest products to be harvested. Contractor 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.

**G-022.1 Sorting Specifications**

Contractor is responsible for sorting logs to the specifications listed below and hauling to the appropriate designated locations. Contractor is responsible for determining the highest value of each tree felled and the highest value destination of each log manufactured. The Contract Administrator will provide direction and guidance to Contractor with respect to highest value.

Contractor shall deliver log sorts to the Purchaser(s) location that meet the following specifications:

<b>Agreement No.</b>	<b>Sort #</b>	<b>Species Diameter</b>	<b>Scaling Rule</b>	<b>Preferred Log Lengths</b>	<b>Destination</b>	<b>A Miles</b>	<b>C Miles</b>
101137	1	DF HQ 20"+	WS				4
101138	2	DF HQ 12"- 19"	WS				4
101139	3	DF Sawlog 20"+	WS				4
101140	4	DF Sawlog 12"-19"	WS				4
101141	5	DF Sawlog 5"-11"	WS				4
101142	6	WW Sawlog 12"+	WS				4
101143	7	WW Sawlog 5"-11"	WS				4
101144	8	RC Sawlog 5"+	WS				4
101145	9	DF Pole 45'+	WS				4
101146	10	RC Pole 40'+	WS				4
101147	11	RA Sawlog 8"+	WS				4
101148	12	MA Sawlog 8"+	WS				4
101149	13	CW Sawlog 8"+	WS				4
101150	14	Conifer Utility	WS				4
101151	15	Hardwood Utility (except cottonwood)	WS				4

HQ: Surface characteristics for high quality (HQ) log sorts will have sound tight knots not to exceed 1.5 inches in diameter, may include logs with not more than two larger knots up to 2.5 inches in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third of the top end of the log.

“WS” indicates that west side scaling rules apply. Minimum trim is 10 inches per scaling segment for west side scaling rules. “ES” indicates that east side scaling rules apply. Minimum trim is 6 inches per scaling segment for east side scaling rules.

Logs delivered by Contractor that do not meet the receiving Purchaser’s log sort requirements as described above that have been pre-approved for delivery by the Contract Administrator shall not be considered mis-sorts.

#### **G-024.1 Manufacturing Standards**

Logs produced under this contract will be manufactured by Contractor meeting the individual sort specifications and Purchaser’s preferred log lengths as listed in clause G-022.1, with a minimum length of 16 feet, unless otherwise directed by the Contract Administrator.

For sorts designated as non-utility, Contractor will manufacture and deliver logs with the following minimum specifications:

- a. Sweep will be limited to within the bole of the log as measured using a tape stretched between the centers of each end of the log.
- b. Limbs and knots shall be cut flush, with no more than 15 percent of a log having limbs or knots over 2 inches in diameter extending more than 2 inches above the surface of the log.
- c. Logs in peeler sorts shall be chuckable with no more than a 2 inch diameter area of rot within a 5 inch diameter circle located at the center of either end of the log.

#### **G-025 Schedules**

The following attached schedules are hereby incorporated by reference:

Schedule	Title
C	Harvest Prescription
M	EQUIPMENT RATE
P	POLE SPECIFICATIONS

#### **G-027.1 Log Delivery Schedule and Conditions**

- a. Contractor shall deliver logs to Purchaser’s designated delivery location beginning no later than February 17, 2021 and completed by June 30, 2021.

Failure to begin deliveries by the specified date may result in the State imposing damages per clause D-022.1 unless an alternate start date is agreed upon by the State and Contractor. If a log delivery location is changed during this contract, the Contract Administrator shall notify the Contractor. Once notified, the Contractor shall deliver logs to the new location.

- b. The Contractor may deliver logs to the Purchaser’s delivery location during the Purchaser’s working hours, or at least between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday, except, scheduled closures and legal holidays for the contract term as described in clause G-030.1, unless permission to do otherwise is agreed upon by the State.
- c. The Contractor agrees to deliver said logs on conventional or self-loading logging trucks, properly and legally loaded, bound, branded, and ticketed. Logs in loads shall not be double-ended unless approved in writing by the Contract Administrator. It is understood and agreed that the Purchaser incurs no obligation to accept improperly or illegally loaded trucks in its facility. Any truck so loaded may be directed to vacate the yard and shall remain the responsibility of the Contractor to make the load conform to legal requirements for hauling.
- d. If a receiving Purchaser plans a scheduled closure, the Contract Administrator shall notify the Contractor at least 48 hours before the scheduled closure. Depending on the length of the scheduled closure or delays in log delivery, the Contract Administrator will decide in the best interest of the State on the disposition of the affected log sort(s) or any alternate delivery schedule or location.
- e. Contractor’s daily log delivery to a Purchaser’s location may be limited according to the table below, provided the Contract Administrator notifies the Contractor at least 48 hours prior to the time this truck delivery limit is established.

Sort(s)	Maximum No. Loads/day
01,02,03,04,05,06,07,08,09,10,11,12,13,14,15	10

- f. A truck delivery is all the wood hauled including sorts on super trucks, mule trains and pups brought to the delivery point by a single truck. Contractor shall notify the State’s Contract Administrator if for any reason a Purchaser refuses truck deliveries.

**G-030.1 Contract Term and Expiration Dates**

To ensure the timely completion of activities under this contract, all activities required under this contract are to be completed between the starting date of December 17, 2020 and the expiration date of December 12, 2021.

Contractor shall not have any right to enter the sale area to perform harvesting services after contract expiration unless a contract extension has been granted.

**G-033.1 Notification of Operations**

Contractor shall provide the State with five days advance written notice to the Contract Administrator of its intent to commence or cease any and all operations under this contract. The commencement or cessation of operations must be approved by the Contract Administrator. Failure to comply will be considered a breach.

**G-040.1 Contract Term Adjustment**

A Contract Term Adjustment may be considered based on actual time lost through unforeseeable causes beyond the control and without fault or negligence of the Contractor, including, but not restricted to, acts of the State, closures by government regulatory agencies, mill closures, fires, vandals, and unusually severe weather conditions, provided that the Contractor shall, within seven (7) calendar days of the initiation of such delay, notify the State, in writing, of the cause of delay, upon which notification the State shall ascertain the facts and extent of the delay and notify the Contractor in writing of its decision regarding contract adjustment.

**G-054.1 Early Contract Termination**

The State may terminate this contract prior to the expiration date listed in G-030.1 in whole or in part by giving fifteen (15) days written notice to the Contractor when it is in the best interests of the State. If this contract is so terminated, the State shall be liable to make payments to the Contractor for the sum of the estimated expenditures for road construction, felling, bucking, yarding and decking of products processed but not removed from the sale area due to termination action. Contractor may not seek any other damages from the State for early termination of this harvesting agreement.

**G-060.1 Exclusion of Warranties**

The following specific matters ARE NOT WARRANTED, and are EXCLUDED from this transaction:

- a. The CONDITION of the site or forest products. Any descriptions of the site or forest products in the notice of sale, other pre-contractual documents, or the Harvesting Services Contract are provided solely for administrative and identification purposes.
- b. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the notice of sale, other pre-contractual documents, or the Harvesting Services Contract are estimates only, provided solely for administrative and identification purposes.

- c. The VOLUME, WEIGHT, QUALITY, or GRADE of the forest products to be harvested. The descriptions of the forest products to be harvested are estimates only, made solely for administrative and identification purposes.
- d. 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 informational purposes, but the information contained therein is not warranted. Contractors must make their own assessments of the site.
- e. 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.
- f. 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.
- g. Items contained in any other documents prepared for or by the State.

#### **G-062.1 Habitat Conservation Plan**

The Department 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 Department's HCP area and are subject to the terms and conditions of the HCP and the Services' Incidental Take Permit TE812521-1 and ITP 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 Department's Region Offices and the administrative headquarters in Olympia, Washington.

By signing this contract, Contractor agrees to comply with the terms and conditions of the ITP and the HCP, which shall become terms of this contract. The Department agrees to authorize the lawful activities of the Contractor carried out pursuant to this contract, PROVIDED the Contractor 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 the Contractor to liability for violation of the Endangered Species Act.

Any modifications to the contract shall be proposed in writing by the Contractor, 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-063.1 Incidental Take Permit Notification Requirements**

- a. Contractor shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITPs) 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. Contractor 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 ITPs, Contractor shall immediately notify the Contract Administrator. Contractor shall notify the Contract Administrator, if there is any doubt as to the identification of a discovered permit species. Contractor 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 Contract Administrator can determine the proper disposition of such specimens. The Contract Administrator will explain any such requirements to Contractor during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Contractor 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 ITPs shall be clearly presented and explained to Contractor by Contract Administrator during the Pre-Work Conference as per contract clause G-330.1. All applicable provisions of the ITPs and this schedule must be presented and clearly explained by Contractor to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Contractor may have about the ITPs should be directed to the Contract Administrator.

#### **G-064.1 Permits**

Contractor is responsible for obtaining any permits not already obtained by the State that relate to Contractor's operation. Forest Practice Application / Hydraulic Project

Approval permits obtained by the State shall be transferred to Contractor. Contractor 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-066.1 Governmental Regulatory Actions**

##### **a. Regulatory Risk**

Except as provided in this clause, Contractor assumes all risks associated with governmental regulatory actions, including actions taken pursuant to the Forest Practices Act, Ch. 76.09 RCW, the Endangered Species Act, 16 U.S.C 1531-1544 and any Habitat Conservation Plan between the Department of Natural Resources and the U.S. Fish and Wildlife Service or any other agency now in place and as may be amended, or hereafter created, that may affect the operability of the timber sale.

##### **b. Increased Costs**

Contractor 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 Contractor's failure to comply with this contract or from Contractor's acts or omissions, Contractor shall remain responsible for fulfilling contract obligations notwithstanding the impracticability or frustration.

#### **G-070.1 Limitation on Damage**

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to the Contractor will be limited to a return of the Performance Security, and payment for improvements and other services rendered by the Contractor, which were required by the Harvesting Services Contract. The State shall not be liable for any damages, whether direct, incidental, or consequential.

#### **G-092.1 Harvest Area Boundary Adjustment**

The State may make adjustments in the harvest area boundaries, or may mark timber outside such boundaries. The cumulative changes to the sale area during the term of the contract shall not exceed more than five (5) percent of the original sale area. Such adjustments or marking will be accomplished by the Contract Administrator. The Contractor must remove and deliver all material so designated, prior to the expiration date of the contract. All contract services within such boundary adjustments or so marked shall be paid for at contract rates.

**G-112.1 Title**

All rights, title, and interest in and to any timber shall belong to the State until delivered, at which time the appropriate Purchaser assumes title.

**G-116.1 Sustainable Forestry Initiative® (SFI) Certification**

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

Contractor 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. Contractor 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-120.1 Responsibility for Work**

All work, equipment, personnel, and materials necessary to perform the Harvesting Services Contract shall be the responsibility of the Contractor.

**G-121.1 Exceptions**

Exceptions to Contractor's responsibility in clause G-120.1 shall be limited exclusively to the circumstances described in this clause. These exceptions shall not apply where damages occur due to Contractor's failure to take reasonable precautions or to exercise sound forest engineering and construction practices.

The State shall bear the cost to repair any existing roadway or section of required road completed to the point that an authorization to haul has been issued where such damage was not caused by Contractor, its employees, agents, or invitees, including independent contractors. Contractor shall accomplish repairs promptly as required by the State at the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State may elect to accomplish repairs by means of State provided resources.

Nothing contained in clauses G-120.1 (Responsibility for Work) and G-121.1(Exceptions) shall be construed as relieving Contractor of responsibility for, or damage resulting from, Contractor's operations or negligence, nor shall Contractor be relieved from full responsibility for making good any defective work or materials.

**G-123.1 Operating Authority**

The State has arranged for the Contractor to have full and free license and authority to enter upon said lands with his agents and employees and do all things necessary, within the limitations herein set forth, in harvesting said timber as described in this contract.

**G-124.1 Contractor Not an Employee of State**

Contractor and his or her employees or agents performing under this contract are not employees of the State. The Contractor will not hold itself out as nor claim to be an officer or employee of the State by reason hereof, nor will the Contractor make any

claim or right, privilege or benefits which would accrue to an employee under chapter 41.06 RCW or Chapter 28B.16 RCW.

#### **G-125.1 Use of Subcontractors**

Contractor's use of subcontracted services shall be subject to approval in writing by the Contract Administrator. Approval of subcontracted services may be revoked in accordance with the G-220.1 'State Suspends Operations' clause when the Contract Administrator determines that the Subcontractor's work has been performed in a manner that does not meet contractual requirements, optimize value or otherwise causes damage to the state.

Contractor shall arrange with the Contract Administrator to meet on site at least once a week during active operations to review and inspect subcontractor performance. Contractor shall provide a written plan of operations detailing planned operations for the following week.

#### **G-126.1 Disputes with Subcontractors or Material Providers**

Should Contractor and its subcontractors or materials providers develop disputes affecting the completion of obligations under this contract, Contractor shall resolve any such disputes in a timely and efficient manner that does not involve or adversely affect either the State or its Purchasers.

#### **G-130.1 Prevention of Damage and Consequences of Contractor-Caused Damage**

The Contractor agrees to exercise due care and caution at all times to avoid damage to all special resources including environmentally sensitive areas, research, demonstration, and cultural objects or areas. Additionally, the Contractor agrees to protect all improvements on State property affected by the work of this contract including, but not limited to, roads, culverts, bridges, ditches, fences, utility lines, and buildings.

If damages occur due to the Contractor's operations, the Contractor shall be responsible for damage or restoration costs, or other compensation measures as described in this contract. State may deduct damage or restoration costs from payments to the Contractor. This clause shall not relieve the Contractor from other applicable civil or criminal remedies provided by law.

#### **G-140.1 Indemnity**

To the fullest extent permitted by law, Contractor 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. Contractors' obligations to indemnify, defend, and hold harmless includes any claim by Contractors' agents, employees, representatives, or any subcontractor or its employees. Contractor expressly agrees to indemnify, defend, and hold harmless State for any claim arising out of or incident to Contractors' or any

subcontractors' performance or failure to perform the contract. Contractors' 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. Contractor 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.

In addition to any other remedy authorized by law, the State may retain as much of the performance security, or any money or credits due Contractor necessary to assure indemnification.

### **G-150.1 Insurance**

Contractor 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 also suspend Contractor operations until required insurance has been secured.

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 should issue all insurance and surety bonds. Any exception shall be reviewed and approved by the department's risk manager before the insurance coverage is accepted. 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 Northwest region office 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, Contractor shall furnish State 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. The Contractor shall obtain insurance coverage prior to operations commencing and continually maintain it in full force until all contract obligations have been satisfied or an operating release has been signed by the State.

Contractor 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 Contractor'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. Contractor 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 Contractor and such coverage and limits shall not limit Contractor'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, shall not be less than as follows:

Commercial General Liability (CGL) Insurance. Contractor 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. Contractor 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. Contractor shall comply with all State of Washington workers' compensation statutes and regulations. Workers' compensation coverage shall be provided for all employees of Contractor 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, Contractor 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 Contractor, 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, Contractor shall indemnify State. Indemnity shall include all fines, payment of benefits to Contractor or subcontractor employees, or their heirs or legal representatives, and the cost of effecting coverage on behalf of such employees.

Business Auto Policy (BAP). Contractor 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. Contractor 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-160.1 Agents**

The State's rights and duties will be exercised by the Region Manager. The Region Manager will notify Contractor 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-180.1. 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 harvested beyond the terms of this contract.

Contractor is required to have a person on site during all operations who is authorized to receive instructions and notices from the State. Contractor 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-170.1 Assignment and Delegation**

Contractor shall assign no rights or interest in this contract 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. Contractor may perform any duty through a delegate, but Contractor 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 Contractor.

**G-180.1 Modifications**

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

**G-181.1 Contract Modification for Protection of Resources and Improvements**

The Harvesting Services contract may be unilaterally terminated or modified by the State upon determination that the Contractor's operations would cause serious damage to resources or improvements, or would be significantly inconsistent with State land management plans.

In the event of contract modification under this section and through no fault of Contractor operations, the Contractor shall be reimbursed for any additional operations required, provided that any work or extra protection shall be subject to prior approval of 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-200.1 Notice**

Notices required to be given by the State under the following clauses shall be in writing and shall be delivered to the Contractor's authorized agent or sent by certified mail to the Contractor's address of record, so that their receipt may be acknowledged by Contractor.

- G-092.1 Harvest Area Boundary Adjustment
- G-181.1 Contract Modification for Protection of Resources and Improvements
- G-210.1 Violation of Contract
- G-220.1 State Suspends Operation
- D-015.1 Delivered Mis-sorted Logs and Penalties
- D-016.1 Damages for Delivered Mis-manufactured Logs

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. Contractor agrees to notify the State of any change of address.

**G-210.1 Violation of Contract**

- a. If Contractor 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, the Contractor has fifteen (15) days after receipt of suspension notice to remedy the violation. If the violation cannot be remedied or Contractor fails to remedy the violation within fifteen (15) days after receipt of a suspension notice, the State may terminate the rights of the Contractor and collect liquidated damages under this contract associated with the breach. In the event of such a contract

termination, the State may demand all or part of the Contractor's surety in order to satisfy the State's damages.

- b. The State has the right to remedy a breach if Contractor is unable, as determined by the State, to remedy the breach, or if the Contractor has not remedied the breach within 15 days of a suspension notice. Any expense incurred by the State in remedying Contractor's breach may be charged to Contractor, or State may deduct such expenses from payments to the Contractor.
- c. If the contract expires without the Contractor having performed all their duties under this contract, Contractor's rights and obligations to harvest, deliver forest products, and perform any additional contract-related requirements are terminated. Thus, Contractor cannot remedy any breach once this contract expires. This provision shall not relieve Contractor of any financial obligations and unresolved contractual agreements, including payment to sub-contractors for work performed under this contract.

#### **G-220.1 State Suspends Operations**

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

Contractor shall be in breach of this contract if the operation continues after the suspension notice or if the operation resumes prior to approval and notice from the Contract Administrator.

Contractor may request a modification of suspension within seven (7) calendar days of the start of suspension through the dispute resolution process. If this process results in a finding that the suspension exceeded the time reasonably necessary to stop or prevent damage to the State, Contractor may request a contract term adjustment based on the number of excess days of suspension.

#### **G-230.1 Unauthorized Activity**

Any cutting, removal, or damage of forest products by Contractor, 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 Contractor 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-240.1 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, Contractor 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 Contractor's request within five business days.
- c. Within five business days of receipt of the Region Manager's decision, the contractor may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.
- d. Unless otherwise agreed, the Deputy Supervisor - Uplands will hold a conference within 15 calendar days of the receipt of Contractor's request for review of the Region Manager's written decision. Contractor 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-250.1 Compliance with All Laws**

Contractor 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. Contractor shall provide documentation from Washington State Departments of Labor and Industries and Revenue that all obligations concerning worker compensation and safety will be met. 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-270.1 Equipment Left on State Land**

All equipment owned or in the possession of Contractor, 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 30 days after the expiration of the contract period is subject to disposition as provided by law. Contractor 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-280.1 Operating Release**

An operating release is a written document, signed by the State and the Contractor, indicating that the Contractor has been relieved of certain rights or responsibilities with regard to the entire or a portion of the timber sales contract. Contractor 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, Contractor's right to cut and remove forest products on the released area will terminate.

### **G-310.1 Road Use Authorization**

The Contractor is authorized to use the following State roads, and roads for which the State has acquired easements and road use permits; WF-ML, WF-45, WF-51, WF-5101, WF-58, MY-ML (0+00 to 20+30), MY-04, MY-0419, MY-0419-01, MY-0419-0104, MY-0419-0108, MY-0419-0108-01, CRT-02, CRT-0201. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

### **G-330.1 Pre-work Conference**

Contractor 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 Contractor 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 Contractor's plan of operations shall not be construed as any statement or warranty that the plan of operations is adequate for Contractor's purposes or complies with applicable laws.

Contractor shall arrange with the Contract Administrator to review this contract and work requirements with any and all subcontractors prior to receiving authorization for any subcontractor to begin operations.

### **G-340.1 Preservation of Markers**

Any legal land subdivision survey corners and witness objects are to be preserved. If such are destroyed or disturbed, the Contractor shall, at the Contractor'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-380.1 Road Easement and Road Use Permit Requirements**

The State grants Contractor the right to operate under the following rights of way:

Easements with:

Clarence J. and Hazel M. Mertz; #55-002345; dated October 7, 1989.

Port Blakely; #55-002451; dated March 30, 1993.

### **G-430.1 Open Fires**

The Contractor its employees or its subcontractors shall not set or allow to be set any open fire at any time of the year without first obtaining permission in writing from the Contract Administrator.

**G-450.1 Encumbrances**

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

DATA MISSING

**Section P: Payments and Securities****P-030.1 Payment for Harvesting and Hauling Services**

The State shall pay Contractor for harvesting and hauling services at the following rates:

Payment for Harvesting Stump to Truck ('On Board Truck' or OBT): The State's payment to the Contractor for harvesting services will be in accordance with the following table;

Sort Number(s)	Unit of Measure	OBT Rate	OBT Utility Rate
01,02,03,04,05,06,07,08,09,10,11,12,13	MBF	\$0.00	\$20.00
14,15	Ton	\$12.00	N/A

Utility volume for mbf sorts determined on an adjusted gross scale basis.

The State shall not pay for any logs scaled containing metal.

Payment for Hauling: The State's payment to the Contractor for hauling services upon the tons delivered multiplied by: a base rate, 'A' and 'C' mile rates, the 'haul miles' listed in clause G-022.1, a fuel index factor and the Contractor's hauling bid factor using the following formula:

Hauling Services Payment Rate per Ton  
 = (Base Rate + Mileage Rate) x (DATA MISSING: No data found. )

Base Rate = \$2.35

(based on the multiple truck operation fixed cost/ton within 'Report to the Washington State Legislature, The Washington Log Trucking Industry: Costs and Safety Analysis, August 2008'.)

Mileage Rate = ((\$0.16 x C miles) + (\$0.11 x A miles)) x Fuel Index Factor

The Fuel Index Factor will be adjusted quarterly by the State based upon the U.S. Energy Information Administration's Weekly Retail On-Highway Diesel prices for the West Coast region posted at <https://www.eia.gov/petroleum/gasdiesel/> using the following formula;

Fuel Index Factor =  $1 + ((Q(x) - Q(\text{base})) / Q(\text{base}))$

Where;

Q(base) = Average fuel price for quarter preceding harvesting services contract bid opening.

Q(x) = Average fuel price for quarter preceding log deliveries.

The fuel index factor will be calculated each;

January and apply to loads delivered between January 1 and March 31,

April and apply to loads delivered between April 1 and June 30,

July and apply to loads delivered between July 1 and September 30,

October and apply to loads delivered between October 1 and December 31.

Travel distances to each log sort destination will be determined by the State and represents the one-way travel distance from the sale area to the purchaser's delivery point.

Long-haul surcharge: An additional haul payment of \$25/mbf net scale for mbf scale sorts or \$4.60/ton for tonnage sorts will be added for delivery destinations in excess of 250 total one-way miles (A miles plus C miles).

The state must approve all haul routes and will determine travel distances prior to contractor delivery of logs to each specified destination. The State may determine alternate haul routes and delivery destinations during the course of this contract. Upon notification by the State, the Contractor is required to deliver logs: using the alternative route, or to State approved alternative delivery locations. Payment rates for approved alternate routes and delivery destinations shall be set forth by amending this clause in accordance with clause G-180.1.

For sorts bid on an mbf basis tonnage will be calculated using the State's conversion rates in the table below unless actual tonnage is available and approved for use. For tonnage sorts, actual tonnage shall apply.

<b>MBF Sort(s)</b>	<b>MBF/Tons Conversion Factor</b>
01,02	5.2
03	4.9
04	5.6
05,12,13	7.2
06,08,09,10	5.8
07,11	7.3

Contractor is responsible for billing the State for harvesting and hauling services performed using load data collected by State approved third party scaling organizations and reported by the State designated Log and Load Reporting Service. The billing

statement shall include itemized accounts and summaries of harvesting tonnage and hauling mileage charges in a format approved by the State.

The billing schedule shall be the 1st and the 16th of each month with payment due by State within fourteen (14) days. Reporting periods end on the 15th and the end of each month.

No certificate given or payment made shall be evidence of the satisfactory performance of the Contract, either wholly or in part, against the claim of the State to the contrary, and no payment shall be construed to be an acceptance of any defective work, which may before or afterwards appear.

#### **P-031.1 Payment for Hauling Across Ferries and Other Miscellaneous Tolls**

Prior authorization is required for payment of any additional transportation charges incurred by Contractor, including: ferries, toll bridges, and other miscellaneous tolls.

For payment including ferries, toll bridges, or other miscellaneous tolls, the Contractor's billing statement must include an itemized list of loads by trucker name and truck number, DNR load ticket number and date of crossing(s):

- a. Reimbursement for authorized ferry tolls will be at a fixed rate of TBD by State, if needed, for each crossing with a loaded truck and TBD by State, if needed, for each empty return. A 'Wave2Go' statement or equivalent documentation shall be included with the itemized list. For any loads over 80' loaded and 60' empty, the Contractor will be reimbursed the actual cost, Wave2Go or ferry receipts must be provided for reimbursement.
- b. 'Good to Go' regulated bridge tolls will be reimbursed at a fixed rate of \$15.00 per authorized toll crossing. A "Good To Go" statement or equivalent documentation shall be included with the itemized list. This reimbursement is based upon one-way tolling, if a two-way toll is charged, payment receipts must be provided for reimbursement.
- c. Miscellaneous tolls controlled by the Washington State Transportation Commission (WSTC), or other government agencies, will be reimbursed at their posted rates or the actual cost; receipts must be provided.

Requests for payment of ferry and toll charges must be received by the State prior to contract termination. Contractor shall only be reimbursed for the amount of toll approved for payment by the Contract Administrator.

Payment for ferries or tolls incurred for backhauling loaded trucks, in either direction, shall be the responsibility of the Contractor and will not be reimbursed by the State.

Convenience tolling, fines, and/or extra charges will not be reimbursed.

#### **P-032.1 Payment for Road Construction**

The Contractor is responsible for independently negotiating, procuring and paying for road construction services provided.

The State shall pay Contractor for roadwork completed at the following rates:

<i>Madera Sorts</i>		<i>DRAFT-- Final Values TBD from harvester bid – Road Cost Bid Form</i>
<b>Roads or Structures</b>	<b>Number of Stations</b>	<b>Dollars per Station</b>
<b>Pre-Haul Maintenance - Required</b>		
WF-ML (0+00 TO 449+20)	449.20	\$TBD by Bid
MY-ML (0+00 TO 18+70)	18.70	\$TBD by Bid
MY-04 (1+00 TO 156+70)	155.70	\$TBD by Bid
MY-0419 (0+00 TO 3+60)	3.60	\$TBD by Bid
<b>Reconstruction - Required</b>		
MY-ML (18+70 TO 20+30)	1.60	\$TBD by Bid
MY-04 (0+00 TO 1+00)	1.00	\$TBD by Bid
<b>Construction - Required</b>		
WF-51 (0+00 TO 10+00)	10.00	\$TBD by Bid
WF-58 (0+00 TO 14+00)	14.00	\$TBD by Bid
MY-0419-01 (0+00 TO 55+96)	55.96	\$TBD by Bid
MY-0419-0104 (0+00 TO 4+40)	4.40	\$TBD by Bid
<b>Construction - Optional</b>		
WF-45 (0+00 TO 4+50)	4.50	\$TBD by Bid
WF-5101 (0+00 TO 3+30)	3.30	\$TBD by Bid
WF-58 (14+00 TO 43+00)	29.00	\$TBD by Bid
CRT-02 (0+00 TO 11+80)	11.80	\$TBD by Bid
CRT-0201 (0+00 TO 5+20)	5.20	\$TBD by Bid
MY-0419-0108 (0+00 TO 10+52)	10.52	\$TBD by Bid
MY-0419-0108-01 (0+00 TO 5+05)	5.05	\$TBD by Bid
<b>Abandonment – Required if built</b>		
WF-45 (0+00 TO 4+50)	4.50	\$TBD by Bid
WF-5101 (0+00 TO 3+30)	3.30	\$TBD by Bid
WF-58 (14+00 TO 43+00)	29.00	\$TBD by Bid
MY-0419-0108 (0+00 TO 10+52)	10.52	\$TBD by Bid
MY-0419-0108-01 (0+00 TO 5+05)	5.05	\$TBD by Bid
CRT-02 (0+00 TO 11+80)	11.80	\$TBD by Bid
CRT-0201 (0+00 TO 5+20)	5.20	\$TBD by Bid

<b>Additional Work or Materials</b>	<b>Quantity or Hourly</b>	<b>Dollars per Quantity or Hour</b>
Rock Exploration at proposed hardrock pits: WF-46, WF-5802, MY-0419-0104-01, as specified in road plan clause 6-13	24 hours	\$TBD by Bid
Watering for dust abatement of WF-ML (0+00 to 449+20) as specified in road plan clause 6-80	449.20 STA	\$TBD by Bid

One station of road construction is 100 feet. All materials, equipment time, labor, and equipment mobilization costs are included in the total price. Any part of the road plan not covered in the rates above shall be paid for by the Contractor at their own expense.

Upon completion of road construction, the Contractor shall submit a report identifying the road(s), and the number of stations that have been completed to the Contract Administrator. Once the Contract Administrator has approved the roadwork in writing, the Contractor is responsible for billing the State for road construction services performed. The billing statement shall include an itemized account of the road(s), the number of stations and which stations have been completed. The Contract Administrator will verify that road construction described on the billing statement is complete prior to State making payment to Contractor.

The billing schedule shall be the 1st and the 15th of each month with payment due by State within fourteen (14) days. Reporting periods end on the 14th and the end of each month.

No certificate given or payment made shall be evidence of the satisfactory performance of the Contract, either wholly or in part, against the claim of the State to the contrary, and no payment shall be construed to be an acceptance of any defective work, which may before or afterwards appear.

#### **P-033.1 Payment for Additional Road Maintenance Work**

The Contractor is responsible for independently negotiating, procuring and paying for additional road maintenance services provided.

During the course of operations, the State may identify and require additional road maintenance work to be completed by the Contractor. The amount of payment for this additional road maintenance work deemed necessary by the State will be calculated and paid for using the equipment rates in Schedule M 'Additional Road Maintenance Payment Rates'.

Upon completion of any additional road maintenance work, the Contractor shall submit a report identifying the road(s), and the number of stations that have been completed to the Contract Administrator. Once the Contract Administrator has approved the additional road maintenance work in writing, the Contractor is responsible for billing the State for additional road maintenance services performed. The billing statement shall include an itemized account of the road(s), the number of stations and which stations have been completed. The Contractor Administrator will verify that road maintenance described on the billing statement is complete prior to State making payment to Contractor. The billing schedule shall be the 1st and the 15th of each month with payment due by State within fourteen (14) days. Reporting periods end on the 14th and the end of each month.

No certificate given or payment made shall be evidence of the satisfactory performance of the Contract, either wholly or in part, against the claim of the State to the contrary, and no payment shall be construed to be an acceptance of any defective work, which may before or afterwards appear.

#### **P-034.1 Payment for Additional Miscellaneous Work**

During the course of operations, the State may identify and require additional miscellaneous work to be completed by the Contractor.

A plan for the additional work deemed necessary by the State shall be provided by the Contractor and must be approved in writing by the State prior to commencement of work by the Contractor. After the Contract Administrator has inspected and approved the work in writing, the Contractor is responsible for billing the State for work performed. The billing statement shall include an itemized account of the equipment, labor and materials necessary for the additional work that has been completed and approved.

The State shall reimburse the Contractor for approved costs within thirty (30) days of State's approval of the statement.

No certificate given or payment made shall be evidence of the satisfactory performance of the Contract, either wholly or in part, against the claim of the State to the contrary, and no payment shall be construed to be an acceptance of any defective work, which may before or afterwards appear.

#### **P-090.1 Performance Security**

Prior to start of any operations Contractor agrees to provide one or more of the following State approved performance securities; cash, savings account assignment, certificate of deposit assignment, irrevocable standby letter of credit, or a Miller Act bond, for the amount of \$10,000.00. At least 50% must be in a form other than a bond, unless otherwise agreed to by the State.

The State will also deduct 10% from any contractor payments, as defined by clause P-030.1, derived from the contract up to a maximum of \$40,000.00 for performance security.

Security provided shall guarantee performance of all provisions of this contract and payment of any damages caused by Contractor's operations, failure to perform, or noncompliance with any rule or law. In addition, said security may be used by the State to satisfy any claims or liens made by Contractor's subcontractors, material providers, or other individuals against the State or its Purchasers, which arise from this Harvesting Services Contract.

If at any time the State decides that this security has become unsatisfactory, the Contractor agrees to suspend operations and, within fifteen (15) days of notification, replace the security with one acceptable to the State. The State may also require increases to the existing performance security at any time.

Unapplied performance security will be returned to Contractor after the State issues an operating release and completes the financial closeout.

#### **P-100.1 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 Contractor. Prior to any reduction of the performance security amount, the Contractor must submit a written reduction request. No reduction will be allowed by the State unless such reduction can be made while fully protecting the State's interests.

#### **P-120.1 Contractor Responsibility for Subcontractor Services**

Contractor is responsible for negotiating, procuring, and paying for all services rendered by any subcontractor. Subcontractor services may include, but are not limited to, harvesting logs, hauling logs, and building roads.

### **Section L: Log Definitions and Accountability**

#### **L-010.1 Forest Products Conveyed**

Forest products conveyed are logs or parts of logs delivered meeting the sorting criteria defined by clause G-022.1 and manufacturing standards defined by clause G-024.1 of this contract.

#### **L-013.1 Log Sorts Delivered to Incorrect Destination**

Purchasers have agreed to purchase the log sort (s) as described in the G-022.1 clause. In the event a load of logs from an incorrect sort is delivered to a Purchaser, the Purchaser may reject the load. If Purchaser receives an incorrectly delivered load, Contractor shall notify the State within 24 hours. The Contractor will maintain responsibility for proper disposition and delivery of incorrectly delivered loads.

#### **L-060.1 Load Tickets**

Contractor shall complete and use load tickets as directed by the Contract Administrator and, if required, use other identification as directed by the State to ensure accounting of forest products removed from the sale area. A load ticket must be fixed,

as designated by the Contract Administrator, to each truck and trailer load prior to leaving the landing.

Contractor shall account for all load tickets issued by the Contract Administrator. The State may treat load tickets not accounted for as lost forest products. All costs associated with computing the billings for lost loads shall be borne by Contractor.

#### **L-080 Scaling Rules**

Determination of volume and grade of any forest products shall be conducted by a state approved third party scaling organization and in accordance with the Westside log scaling and grading rules and Scribner Volume Table, revised July 1, 1972, contained in the Northwest Log Rules Eastside and Westside Log Scaling Handbook (developed and produced by the Northwest Log Rules Advisory Group) and in effect on the date of confirmation of this contract.

Special scaling specifications shall be noted on the State's Brand Designation form which is hereby incorporated to this contract by reference.

#### **L-110 State Approval of Log Scaling and Weighing Locations**

Forest Product measurement and weighing facilities required by this contract must be approved by the State. Forest products sold under the contract which require log scaling shall be scaled, measured, or counted by a State approved third party log scaling organization. Forest products sold under the contract which require weighing shall be weighed at a location that meets Washington State Department of Agriculture approval.

Prior to forest products being hauled, the Contract Administrator must authorize in writing the use of State approved measurement and/or weighing facilities that are at or en-route to final destinations. Forest products from this sale shall be measured or weighed at facilities, which are currently approved for use by the State and are currently authorized for this sale. The State reserves the right to verify load volume and weights with State employees or contractors at the State's own expense. The State reserves the right to revoke the authorization of previously approved measurement locations.

#### **L-114.1 State Approval of Haul Route**

Contractor shall file with the Contract Administrator and Contract Administrator shall approve a map showing the haul route, which unscaled and unweighed logs will travel from the harvest area to the weighing/scaling location and approved destinations. The Contractor must notify Contract Administrator within 24 hours of any deviation from the haul route. The route of haul may be changed by prior agreement of the State and the Contractor. The Contract administrator must be notified by the Contractor of any overnight stays of an unscaled or unweighed load of logs.

#### **L-130.1 Conversion Factors**

Forest products harvested and delivered from the sale area that are not measured in units specified in the P-030.1 'Payment for Harvesting and Hauling Services' clause of this contract shall be converted to the contract specified payment units using

Department of Natural Resources conversion factors unless a plan to do otherwise has been pre-approved by the State.

## **Section H: Harvesting Operations**

### **H-011.1 Certification of Fallers and Log Manufacturers**

All persons engaged in the felling of timber and manufacturing or loading of logs or poles must receive certification in writing from the Contract Administrator. Certification may be revoked when the Contract Administrator determines that log utilization, log sorting, or manufacturing has been performed in a manner that does not optimize value or otherwise causes damage to the state.

### **H-012.1 Leave Tree Damage Definition**

Leave trees are trees required for retention within the sale boundary. Contractor shall protect leave trees from being cut, damaged, or removed during operations.

Leave tree damage exists when more than 5 percent of the leave trees are damaged in a unit and when one or more of the following criteria occur as a result of Contractor's operation, as determined by the Contract Administrator:

- a. A leave tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 200 square inches.
- b. A leave tree's top is broken or the live crown ratio is reduced below 30 percent.
- c. A leave 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 leave tree has been cut or damaged, the Contractor may be required to pay liquidated damages for Excessive Leave Tree Damage as detailed in clause D-040.1.

### **H-013.1 Reserve Tree Damage Definition**

Reserve trees are trees required and designated for retention within the sale boundary. Contractor 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 Contractor'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 200 square inches.
- b. A reserve tree's 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 Contractor 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. Contractor may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.1.

Removal of designated reserve trees from the sale area is unauthorized, and may invoke the use of the G-230.1 'Trespass and Unauthorized Activity' clause. Contractor is required to leave all cut or damaged reserve trees on site.

#### **H-014.1 Cable Yarding Corridor Requirements**

Cable yarding corridors are subject to the following requirements:

- a. Location of cable yarding corridors must be marked by Contractor and approved by the Contract Administrator prior to use.
- b. Cable corridor shall not exceed 12 feet in width, including rub trees.
- c. Cable yarding corridors shall be a minimum of 100 feet apart as measured from the center of the corridors.
- d. Excessive soil damage is not permitted within corridors. Excessive soil damage is described in clause H-017.
- e. Avoid cable yarding in, across, adjacent, or parallel to stream channels where possible. When it is necessary to yard across stream channels, crossings need to be as close to perpendicular as possible and cribbing shall be in place when full suspension is not possible.
- f. Corridors shall be located in a manner to minimize the damage to or removal of leave and/or reserve trees. Leave tree damage is described in clause H-012.1. Reserve tree damage is described in clause H-013.1.
- g. Timber in cable yarding corridors shall be felled and yarded prior to the falling of adjacent timber.
- h. Corridors shall be water barred at the time of completion of yarding, if required by the Contract Administrator.
- i. Once a cable yarding corridor is closed, Contractor may not reopen that cable yarding corridor unless approved in writing by the Contract Administrator.

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

#### **H-015.1 Skid Trail Requirements**

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

- a. Skid trail will not exceed 14 feet in width, including rub trees.
- b. Skid trails shall not cover more than 15 percent of the total acreage on each unit.
- c. Skid trails will be pre-approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to falling adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

#### **H-017 Preventing Excessive Soil Disturbance**

Operations may be suspended when soil rutting exceeds 8 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-025 Timing Requirements for Timber Removal**

All timber must be removed within 4 weeks of being felled.

#### **H-030.1 Timber Falling**

Trees shall be felled and logs shall be bucked to obtain the greatest practicable utilization and value of forest products.

**H-035 Fall Trees Into Sale Area**

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

**H-052.1 Branding and Painting**

The State shall provide a State of Washington registered log brand. Contractor must brand and paint all logs removed from the harvest area in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All logs removed from the harvest area 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, Contractor 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-120.1 Harvesting Equipment**

Forest products harvested under this contract shall be harvested and removed using cable; chainsaw or feller-buncher for falling and shovel for yarding on sustained slopes 40% or less; self-leveling equipment on sustained slopes 50% or less; tracked skidder on sustained slopes 40% or less (See H-141 for restrictions); tethered harvester and/or shovel equipment for falling and pre-bunching (See H-141 for restrictions). Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

**H-126.1 Tailholds on State Land**

If Contractor 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-130.1 Hauling Schedule**

The hauling of forest products will not be permitted on any roads from November 1 to March 31, without an approved protection/mitigation plan (Seasonal Hauling Plan Required) in place, unless authorized in writing by the Contract Administrator.

**H-140.1 Special Harvest Requirements**

Contractor shall accomplish the following during the harvest operations:

- A. A copy of the timber sale map and contract shall be present on site during active operations.
- B. The on-site pre-work meeting shall be scheduled with the Contract Administrator and must include DNR recreation staff and slash abatement plan prior to commencement of any activities.

- C. Maintain a 30-foot equipment limitation zone on both sides of all type-5 streams. In addition, equipment shall remain at least 30 feet from all water courses or areas of wet/soft soils, except as necessary to cross at approved locations. Water course crossing structures must be approved by the Contract Administrator.
- D. Ground-based equipment crossings over type 5 streams shall be located by the Harvester and approved by the Contract Administrator prior to use. The equipment shall cross as close to perpendicular as possible, and may require log cribbing, culvert installation, or other approved methods to protect stream channels.
- E. When yarding and loading operations are occurring simultaneously, an additional shovel shall be required for loading to avoid extra trips to the landing. Shovel yarding shall not be allowed to create ruts or soil puddling. Shovel routes should be dispersed to prevent creation of definable trails.
- F. Harvester must mark tail holds prior to operation and have them approved by the Contract Administrator prior to cable yarding operations.
- G. Leave trees may be exchanged for unmarked trees of similar size and wildlife characteristics upon prior written approval by the Contract Administrator, except those depicted as non-tradeable on the timber sale map.
- H. Ground-based yarding shall not exceed 800 feet from any road unless authorized in writing by the Contract Administrator.
- I. No tops or limbs will be allowed to accumulate on any landings. Tops and limbs will be redistributed in the unit to the satisfaction of the Contract Administrator.
- J. During operations all notification signage relating to logging or road construction activity must be provided and posted, at the Harvester's expense, as approved by the Contract Administrator.
- K. Harvester shall fall trees away from trails, balds, cliffs, and talus fields when feasible.
- L. Harvester shall minimize disturbance to trails, balds, cliffs, and talus fields during yarding operations when feasible.
- M. All gates on the WF-ML and MY-ML road must be closed and locked at the end of each day.

- N. No harvest operations are permitted on weekends or state recognized holidays, unless permission is requested in writing two weeks prior and approval is given by the Contract Administrator.
- O. If harvest operations on weekends or state recognized holidays are approved by the Contract Administrator, Harvester must provide two week notice to DNR Recreation staff and Wallace Falls State Park staff.
- P. Any signs or structures that are damaged or moved shall be repaired or replaced at the Harvester's expense to the satisfaction of the Contract Administrator.
- Q. The Harvester must develop an operating plan to ensure closure of the "Old Railroad Grade Trail" and "Greg Ball Trail" when falling trees within one and a half tree lengths of the trails. The operating plan must include flaggers and signage to be placed on the trails as they approach harvest Units 1A and 1B. No trees may be felled within Units 1A and 1B until the Contract has reviewed and approved this operating plan.
- R. When operating in Units 1A and 1B, the Contract Administrator must be present when falling trees within one and a half tree lengths of the "Old Railroad Grade Trail" and "Greg Ball Trail"
- S. Two-week advanced written notice for trail closure must be given to DNR Recreation staff and Wallace Falls State Park staff.
- T. Falling and yarding in the thinning areas within Units 3B and 3C may occur during the bark slippage season which season is estimated to run from April 1 to July 15 but will vary depending on weather conditions. Prior to operations during the bark slippage season, the Harvester shall provide a plan outlining mitigation measures for review and approval by the Contract Administrator.
- U. Before road or logging operations begin, two-week advance notification shall be given to the Contract Administrator, DNR Recreation Staff and the Wallace Falls State Park Office in Gold Bar, WA.
- V. A DNR representative with familiarity of the cultural resources in the proposal shall be on site during the road pioneering phase of road construction for WF-51 (ROW 4) WF-45, and MY-0419-0108 (ROW 5).

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

#### **H-141.1 Additional Harvest Requirements**

Contractor shall accomplish the following during the harvest operations:

- A. Make a consistent flow of deliveries throughout the delivery period without unnecessary delay. No unauthorized shut downs or gaps in deliveries of logs will be allowed.
- B. Must have all documentation (performance security, certification of insurance, proof of successful completion of an approved training program per clause G-116.1, etc.) in place and be ready to begin operations upon approval to commence activity on site as per the project start date. Road work must begin as soon as possible upon approval by Contract Administrator.
- C. Must begin onsite operations, to include falling of timber, as soon as approval is granted in writing by the State, subsequent to the sale of log sorts. This date is tentatively scheduled December 17, 2020.
- D. Provide a production plan and log shipment schedule (Work Plan), with deliveries to commence no later than the required date in the G-027.1 clause of the contract. The Work Plan must be approved in writing by the Contract Administrator and is subject to modification by the State prior to operation commencement to better fit the DNR's objectives, at no additional cost to the DNR.
- E. Provide an alternative plan or demonstrate the capability to increase production (if needed) in case of weather and/or regulatory related shut down(s) to meet target completion dates.  
  
This project may encounter weather which slows production such as rain and snow accumulations could occur.
- F. All poles shall be marked prior to felling of any unit timber.
- G. Harvester must obtain prior written approval from the Contract Administrator for areas as to where to utilize tethered harvester and/or shovel equipment prior to use.
- H. Harvester must obtain prior written approval from the Contract Administrator for areas as to where to utilize tracked skidder equipment prior to use. If ground disturbance is causing excessive damage, as determined by the Contract Administrator, skidders will no longer be authorized.
- I. Protection measures under clause G-340 shall include: Survey corners shall be protected by high-stumping, falling, and yarding away from them.
- J. In order to achieve adequate deflection, cables may need to be suspended over typed waters. If this occurs, trees cut for corridors in RMZ's, or within the 25-

foot core zone of any RMZ, shall be left on site. Any plans to suspend cable within an RMZ must be approved by the Contract Administrator.

- K. No trees may be cut inside of the inner gorge (mapped as equipment limitation zone) on May Creek.
- L. If during harvest operations, trees fall outside Unit 1A or 1B boundaries onto State Park Property, the trees shall be left where they lay.
- M. Leave tree clumps marked with double leave tree tags are non-tradable. Three non-tradable leave tree clumps are marked in this sale; one in Unit 1A, one in Unit 2A, and one covering the entire area of Unit 2B.
- N. Trees marked with double blue rings shall not be traded.
- O. Cables may be suspended over WF-ML road to yard Unit 1A. If so, Harvester shall develop a safety plan and plan of operations for road closure of the WF-ML road and hanging yarding cables during active yarding operations. If access is needed by other contractors or adjacent landowners on the WF-ML road, a joint operating plan shall be developed. These plans must be approved by the Contract Administrator prior to commencement of operations in Units 1A.
- P. Yarding requirements for working around the recreational trail in Unit 1A and 1B:
  - \*Harvester shall close trail and post trail closure signs when working within a tree length and a half of trails. Signs shall be provided and posted at the Harvester’s expense.
  - \*Ground-based equipment crossings shall be kept to a minimum, located by the Harvester and approved by the Contract Administrator prior to use.
  - \*The trail shall not be used as a yarding corridor.
  - \*Trees adjacent to the trail shall be yarded away from the trail.
  - \*Slash shall not be piled on the trail.
  - \*The trail shall be left in the condition that exists prior to commencement of operations.

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

**H-150.1 Required Removal of Forest Products**

Contractor shall remove from the sale area, present for scaling and deliver to the designated purchaser locations specified in the G-022.1 clause all forest products conveyed that meet the following minimum dimensions unless directed otherwise by the Contract Administrator:

Species	Net Bd Ft	Log Length (ft)	Log dib (in)
Conifer	10	12	5

Hardwood	20	16	5
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The State may treat failure to remove forest products left in the sale area that meet the above specifications as a breach of this contract. The Contractor shall be responsible for forest products not removed. At the State's option, the State or a third party scaling organization may scale forest products, for volume, that meet the above specifications and are left in the sale area. State may deduct the value of forest products not removed from payments to the Contractor for harvesting services rendered. All costs associated with scaling and computing the billing for forest products left in the sale area will be borne by Contractor.

If Contractor's failure to remove all the forest products specified under the contract is due to circumstances beyond the control and without fault or negligence of the Contractor including, but not restricted to, acts of the State, closures by government regulatory agencies, mill closures, fires, vandals, and unusually severe weather conditions, the State may elect to modify the required removal requirements. Contractor is required to request contract removal requirement modifications in writing. The State shall consider such requests and may grant them in part or entirety only when Contractor has demonstrated that they have been endeavoring to complete the project and are otherwise performing with due diligence.

#### **H-161.1 Excessive Timber Breakage**

The Contractor shall be responsible for felling and yarding timber in a manner that shall minimize breakage and maintain stump heights within contract specifications, unless permission to do otherwise is agreed to by the Contract Administrator.

The State may treat excessive timber breakage, as determined by the Contract Administrator as a breach of this contract. At the State's option, the State or a third party scaling organization may scale forest products, for volume. State may deduct the value of forest products damaged through excessive breakage from payments to the Contractor for harvesting services rendered. All costs associated with scaling and computing the billing for forest products damaged through excessive breakage will be borne by Contractor.

#### **H-170 Utility Log Removal**

All utility logs shall be yarded concurrently with the yarding of other logs and shall be removed from the sale area.

#### **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-230.1 Tops and Limbs Outside the Sale Boundary**

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

**H-240 Lop and Scatter**

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

**Section C: Construction and Maintenance****C-040.1 Road Plan**

Road construction and associated work provisions of the Road Plan for this project, dated May 6, 2020 are hereby made a part of this contract.

The State may make modifications to the Road Plan made necessary by unforeseen conditions. Any modifications that create additional work for the Contractor shall be paid in accordance with the payment terms set forth in this contract.

**C-050.1 Contractor Road Maintenance and Repair**

Contractor shall perform work at their own expense on WF-45, WF-51, WF-5101, WF-58, MY-0419, MY-0419-01, MY-0419-0104, MY-0419-0108, and MY-0419-0108-01, CRT-02, CRT-0201 road(s). All work shall be completed to the specifications detailed in the Road Plan.

**C-060.1 Designated Road Maintainer**

If required by the State, the Contractor shall perform maintenance and replacement work as directed by the Contract Administrator on WF-ML, MY-ML, MY-04. The Contractor 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 the Contractor for said costs within thirty (30) days of receipt and approval of the statement.

**C-130.1 Dust Abatement**

Contractor shall abate dust on the WF-ML while hauling.

**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-010.1 Fire Hazardous Conditions**

Contractor acknowledges that operations under this Contract may increase the risk of fire. Contractor 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, Contractor agrees to provide equipment and personnel working at the site to safely and effectively engage in first response fire suppression activity.

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

**S-020.1 Extreme Hazard Abatement**

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

**S-030 Landing Debris Clean Up**

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

**S-035 Logging Debris Clean Up**

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

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

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-060.1 Pump Truck or Pump Trailer**

Contractor 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 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-120 Stream Protection**

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

**S-130.1 Hazardous Materials****a. Hazardous Materials and Waste - Regulatory Compliance**

Contractor 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.

Contractor 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 Material Spill Containment, Control and Cleanup**

If safe to do so, Contractor shall take immediate action to contain and control all hazardous material spills. Contractor 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, Contractor 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 Contractor 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 Contractor 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-131.1 Refuse Disposal**

As required by RCW 70.93, All Contractor 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.

### **S-150.1 Recreation Trail Cleanout**

At the completion of logging operations , Contractor shall repair any damage to and clean out all logging debris from recreational trail(s).

## **Section D: Damages**

### **D-010.1 Liquidated Damages**

The clauses in the DAMAGES section of this contract provide for the State's payments to the Contractor to be reduced for certain breaches of the terms of this contract. These offsets are agreed to as liquidated damages for the Contractor's breach, and are not penalties. They are reasonable estimates of anticipated harm to the State caused by the Contractor's breach. The State and Contractor agree to these liquidated damages provisions 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 Contractor by allowing the Contractor to better assess its responsibilities under the contract.

#### **D-014.1 Damages for Delivered Mis-sorted Poles**

Poles delivered by Contractor that do not meet the sorting specifications in G-022.1, and poles not meeting ANSI specifications (American National Standard Specifications and Dimensions for Wood Poles), in force at the time of signing this contract are considered mis-sorts.

When the volume of mis-sorts amount to more than 10% of a pole sort's total delivered volume as determined by a third party scaling organization, the State is harmed and an adjustment to the Contractor's harvesting payment may be made.

Payment reduction for delivered mis-sorted pole volume exceeding the 10% threshold will be calculated as follows:

$$\text{Payment Reduction} = (B \times V) \times (.35)$$

Where:

B = 'On Board Truck' rate from P-030.1

V = Mis-sorted pole Volume exceeding 10%

Poles authorized for delivery by the Contract Administrator shall not contribute to the percentage of mis-sorted pole volume.

#### **D-015.1 Damages for Delivered Mis-sorted Logs**

Logs delivered by Contractor that do not meet the receiving Purchaser's log sort specifications as described in clause G-022.1 are considered mis-sorts.

Mis-sorted log volume will be considered on a per load basis. When mis-sorts amount to more than 12% of a load's total volume, as determined by a third-party scaling organization, the State is harmed and an adjustment to the Contractor's harvesting payment may be made. For the improper delivery of mis-sorted logs, the State may reduce the harvesting payment by \$100.00 for each load delivered which contained mis-sorted volume in excess of 12%, as documented by third-party scaling ticket.

#### **D-016.1 Damages for Delivered Mis-manufactured Logs or Poles**

Logs or Poles delivered by Contractor that do not meet the receiving Purchaser's preferred log length specifications as described in clause G-022.1, logs not meeting manufacturing standards as described in clause G-024.1, and poles not meeting specifications in Schedule P are considered mis-manufactured logs or poles.

Mis-manufactured log or pole volume will be considered on a per load basis. When mis-manufactured logs or poles amount to more than 5% of a loads total volume, as determined by a third-party scaling organization, the State is harmed and an adjustment to the harvesting payment may be made. For the delivery of mis-manufactured logs or poles, the State may reduce the harvesting payment due to the Contractor by an amount of \$100.00 for each load of mis-manufactured logs or \$300 for each load of poles

delivered which has been determined to contain mis-manufactured volume in excess of 5% as documented by third-party scaling ticket.

#### **D-022.1 Damages for Failure to Begin Product Deliveries**

Contractor's failure to begin deliveries by the date listed in clause G-027.1, Log Delivery Schedule and Conditions, can result in substantial injury to the State. The Contractor shall pay \$100.00 per day until deliveries begin or until a plan to remedy the delay has been agreed to in writing by the State. Days where operations are restricted such as weekends and State holidays are not subject to damages.

#### **D-023.1 Damages for Failure to Remove Forest Products**

Contractor's failure to remove all of the forest products specified prior to the expiration of the contract operating authority results in substantial injury to the State. The value of the forest products sold at the time of breach is not readily ascertainable. The Contractor's failure to perform disrupts the State's management plans in the project area, the actual cost of which is difficult to assess. A re-offering of the contract involves additional time and expense and is not an adequate remedy. Therefore, the Contractor agrees to accept a reduction of the amount due for harvesting services from the State in the amount calculated according to the following guidelines:

- a. Full stumpage value will be assessed for felled trees, individual or scattered standing trees, or clumps of standing trees less than three acres in size, plus all costs associated with scaling and computing the stumpage value of the forest products left.
- b. 35% of full stumpage value will be assessed for clumps of standing trees greater than three acres in size, plus all costs associated with scaling and computing the stumpage value of the forest products left.

The stumpage value of forest products left shall be determined by the State or a third party scaling organization utilizing whatever method(s) best suited for accurate volume and acreage measurement as determined by the State.

#### **D-024.1 Damages for Excessive Timber Breakage**

Excessive breakage of timber results in substantial injury to the State. The value of the forest products sold at the time of breach is not readily ascertainable. Therefore, the Contractor agrees to accept a reduction of the amount due for harvesting services from the State at an amount calculated according to the following:

The value for excessive timber breakage will be determined at a rate, which reflects the log sort price that the Purchasers would have paid for unbroken logs minus the cost of delivery, plus all costs associated with scaling and computing the stumpage value of the forest products excessively broken.

The stumpage value of forest products excessively broken shall be determined by the State or a third party scaling organization utilizing whatever method(s) best suited for accurate volume measurement as determined by the State.

**D-030.1 Inadequate Log Accountability**

Removal of forest products from the sale area without adequate branding and/or valid load tickets attached to the load, weighing or scaling forest products in a location other than the facilities authorized for use for this sale, and failing to deliver load ticket to the weighing/scaling official all result in substantial injury to the State. The potential loss from not having proper branding, ticketing, weighing locations and accountability is not readily ascertainable. These contractual breaches result in a loss of load and weighing/scaling data the potential for the removal of forest products for which the State receives no payment, and cause increases in the State's administration costs associated with this contract. The actual costs of these breaches are difficult to assess.

For these reasons, Contractor's payments for harvesting under this contract will be reduced in the following amounts, as liquidated damages, to compensate the State for these breaches: a sum of \$100.00 each time a load of logs does not have branding as required in the contract, \$250.00 each time a load of logs does not have a load ticket as required by the contract, \$250.00 each time a load ticket has not been filled out as required by the plan of operations, \$250.00 each time a load is weighed or scaled at a facility not approved as required by the contract, and \$250.00 each time load and weight scale data is not presented to the weighing/scaling official, and \$250 each time a ticket is either lost or otherwise unaccounted for.

**D-040.1 Leave Tree Excessive Damage**

When Contractor's operations exceed the damage limits set forth in clause H-012.1, Leave Tree Damage Definition, the trees damaged result in substantial injury to the State. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Contractor agrees to pay the State as liquidated damages at the rate of \$50.00 per tree for all damaged trees in the Variable Density Thinning areas.

**D-041.1 Reserve Tree Excessive Damage**

When Contractor's operations exceed the damage limits set forth in clause H-013.1, 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 Contractor 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 the Variable Retention Harvest area.

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

\_\_\_\_\_  
Jay Guthrie, Acting  
Northwest Region Manager

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

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_

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

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_

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

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

\_\_\_\_\_  
Notary Public in and for the State of

\_\_\_\_\_

My appointment expires \_\_\_\_\_

**Schedule C**  
**Harvest Prescription**

General Information:

1. Trees marked with red paint represent the last take tree along property line boundaries.
2. Outer boundary of harvest area in thinning areas is demarcated with blue special management tags within the unit. These trees may be harvested if the tree meets the prescription for the VDT area.
3. Trees with orange right-of-way tags in ROW 6, in the VDT area may be harvested if the tree meets the prescription for the VDT area.

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VARIABLE RETENTION HARVEST AREAS (UNITS 1 and 2)

All timber within the unit, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, and forest products tagged out by yellow leave tree area tags in Unit.

Trees marked with red paint (two red bands) represent the last take tree on State along property line boundaries.

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VARIABLE RETENTION HARVEST AREAS WITHIN UNIT 3

All timber within the unit, except cedar salvage (cedar snags, preexisting dead and down cedar trees and cedar logs), trees marked with blue paint on the bole and root collar, forest products tagged out by blue special management area tags, and forest products tagged out by yellow leave tree area tags in Unit.

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TAKE TREES ALONG ROADS:

All nine trees marked with orange paint along the MY-ML Road and MY-04 Road junction area are take trees.

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RIGHT-OF-WAY (ROWS 2, 3, 4, 5, and 6)

All timber within the right-of-way tagged areas.

RIGHT-OF-WAY (ROW 1)

All timber within the right-of-way tagged/ flagged area.

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VARIABLE DENSITY THINNING (VDT) AREA WITHIN Unit 3:

THINNING PRESCRIPTION:

Unit 3B VDT and 3C VDT

- Thin from below, leaving a range of 115-125 trees per acre maintained at uniform spacing throughout the unit. (Approximately 19'x 19' spacing)
- Only live trees 8 inches or greater in DBH shall be used to calculate trees per acre.

To accomplish this prescription, fallers shall harvest smallest diameter trees first and species in the following order:

- Hardwood
- Western Hemlock
- Western Red Cedar
- Douglas-fir

SPECIAL THINNING CONDITIONS AND CORRIDORS FOR UNIT 3B VDT AND UNIT 3C VDT

- Hardwood patches will be held to the same stocking criteria as the rest of the stand.
- In areas where thinning is not necessary, i.e., prescription is met, do not put in yarding corridors or skid trails. These areas must be identified and agreed upon in advance with the Contract Administrator.
- Landings will be located to provide for parallel yarding corridors whenever possible.
- Ground-based corridors will be limited to 14 feet in width including rub trees.
- Ground-based corridors will be no closer than 75 feet apart from center of corridor.
- If radial yarding corridors are required from a central landing, the distance between yarding corridors must be no closer than 100 feet where the corridor leaves the unit as measured from the center of the corridors.

THINNING CONDITIONS

Fallers and operators shall harvest trees of the first species and diameter range until the prescription is met. If there are not enough trees in a plot of the first species, then the faller shall harvest from the second species and diameter range and so on until the prescription is met.

Fallers and operators shall cut from the full diameter range for each species, as specified above, and shall avoid targeting only one or two diameter ranges for harvest.

Orange tagged “Right-of-Way” trees and blue tagged “Special Management Unit” trees may be harvested if they meet the specification under the prescription above.

The Contract Administrator (CA) shall approve and certify in writing all persons engaged in felling of timber prior to any cutting operations, per the H-011 clause of the contract.

If corridors are needed to facilitate implementation of NRF thinning prescriptions the corridors shall contribute to final trees per acre and basal area goals.

#### CERTIFICATION COMPLIANCE

The Contract Administrator and Operator shall jointly review the take tree selection criteria as outlined in this Schedule of the contract. In conjunction with the Contract Administrator, the Faller or Harvest Operator shall mark a designated area as a test plot within the sale area boundary. Satisfactory thinning of this test plot completes the certification process. The Contractor shall not deviate from the requirements set forth in the Compliance portion of this schedule without prior written approval by the Contract Administrator.

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**Schedule M**  
**EQUIPMENT RATE**

ADDITIONAL ROAD MAINTENANCE PAYMENT RATES  
(Hourly Rate Including Operator)

Motor Grader

To 140 HP (Cat 120H, 120M) \$138.00  
 To 175 HP (John Deere 670D, 670G, 672D, G; Cat 12M; CAT 140G; CAT143H; Volvo G930; Komatsu GD-655-3) \$150.00  
 To 200 HP (John Deere 772; Cat 140M; Volvo G940; Komatsu GD675-3) \$165.00  
 Over 200 HP (Cat 160M, 14M, 16H; Komatsu GD-825A-2) \$209.00

Ripper/Scarifier Use

To 140 HP \$4.00  
 To 175 HP \$6.00  
 Over 175 HP \$10.00

Front End Loaders & Loader/Backhoe

To 75 HP (Cat 416D, Cat 416E; Komatsu WB142-2) \$96.00  
 To 110 HP (Cat 420E; Case 580, 590; Cat 908H, 914G; John Deere 344J) \$106.00  
 To 160 HP (Cat 450E, Cat 924H, 930H; Hyundai HL 730-9; John Deere 524K) \$122.00  
 Over 160 HP (John Deere 624K; Case 621E; Cat 938H, 950H, 966K) \$142.00  
 Addition for special attachment use: compactor, clam, extendaboom, etc. add \$6.50

Gravel Trucks

On-Highway Rear Dump \$97.00  
 On-Highway Rear Dump Transfer Trailer (2 axles, 10 CY) \$13.00  
 On-Highway Bottom Dump Trailer (3 axles, 12 CY) \$11.00

Dozers

To 75 HP (Case 650K; Cat D3K XL) \$101.00  
 To 105 HP (Cat D4K, D5K; Case 750K, 850K; John Deere 450J, 550J, 650J; Komatsu D37EX-22) \$111.00  
 To 135 HP (Cat D6K; Case 1150K, John Deere 700J; Komatsu D51EX-22) \$130.00  
 To 185 HP (John Deere 750J; Case 1650, 1850; Cat D6N; Komatsu D61EX-15) \$150.00  
 To 240 HP (Cat D6T, D7E; John Deere 850J; Komatsu D65EX-15) \$184.00  
 Over 240 HP (Cat D8T; John Deere 950J) \$252.00

Ripper Use

To 180 HP add \$8.00

To 235 HP add \$13.00  
Over 235 HP add \$20.00

**Excavators**

To 60 HP (Kubota U45, U55; John Deere 50D; Hitachi 50U; Cat 307D) \$92.00  
To 95 HP (Cat 312D, 314D; Doosan 140LCV; Hitachi 120-3, 135US-3; Link-Belt 135; Komatsu PC120-6, PC130-8; John Deere 120D, 135D) \$133.00  
To 120 HP (Cat 315D; John Deere 160LC; Doosan 175LCV; Komatsu PC160LC-8; Link-Belt 160 LX; Volvo EC160C L) \$146.00  
To 140 HP (Cat 319D L, 320C; Hitachi 160LC-3; Link-Belt 210LX) \$161.00  
To 170 HP (Cat 320D; Hitachi 200LC-3, 225LCV; Link-Belt 240 LX; Komatsu PC200-8, PC220LC-8; John Deere 225D LC; Volvo EC240C) \$172.00  
To 230 HP (Cat 324D, 324E, 328D, 329D; John Deere 240D, 270D, 290G; Hitachi 240LC-3, 270LC-3; Link-Belt 290 LX RB; Volvo EC290C; Komatsu PC270LC-8) \$200.00  
Over 230 HP (Cat 330D, 336D; Volvo EC330C; John Deere 330C, 330D; Komatsu PC300LC-8, C350LC-8; Link-Belt 330LX, 350 X2; Hitachi 330LC, 350LC-3) \$230.00  
Add Attachment Rate to Excavator \$30.00

**Self-Propelled Vibratory Compactors**

To 80 HP (Bomag BW145DH-40, BW177D-40; Dynapac CA150D; Sakai 201D; Ing. Rand SD45F TF) \$100.00  
To 125 HP (Bomag BW177PDBH-40; Cat CP-433E; Sakai SV400D-II; Dynapac CA152D) \$110.00  
Over 125 HP (Bomag BW211PD-40; Dynapac CA262D; Ing. Rand SD105DA TF; Sakai SV505D-1) \$120.00

**Tractor Brush Cutters**

To 67 PTO HP \$65.00  
To 80 PTO HP \$80.00  
Over 80 PTO HP (JD 6200, 6300, 6400) \$95.00

**Track Mounted Rock Drills (with one operator)**

To 4.5" Diameter Hole \$210.00  
Over 4.5" Diameter Hole \$246.75

**Heavy Equipment Hauling**

On-Highway Rear Dump \$97.00  
Tilt Deck Utility Trailer (2 axle, up to 40,000 lbs.) \$9.00  
Tilt Deck Utility Trailer (3 axle, up to 50,000 lbs.) \$12.00

On-Highway Truck Tractor (GVW up to 50,000 lbs.) \$104.00

**DRAFT**

**DRAFT**

**DRAFT**

Lowbed Trailer (2-axle, up to 50,000 lbs.) \$15.00  
Lowbed Trailer (3-axle, up to 80,000 lbs.) \$21.00

**Water Trucks**

To 3,000 gallons \$92.00  
To 4,000 gallons \$114.00  
Over 4,000 gallons \$135.00

**Power Saws and Pumps \$10.00**

Laborer- Journey Level \$40.00  
Laborer- Apprentice Level \$32.00

**INSTRUCTIONS**

HP taken at the Flywheel unless stated otherwise.

WA Sales Tax - Add sales tax only if an activity is not directly tied to a state timber sale. Sales tax on purchased material will be reimbursed.

Hourly rates include operator, owning and operating costs, profit, and overhead, and includes costs for all service and support vehicles.

Specification data, such as weight and flywheel HP can be determined upon request by providing equipment make and model information.

Rates on equipment not included in this schedule can be determined upon request.

Rev. 7/1/2016

**Schedule P**  
**POLE SPECIFICATIONS**

Poles produced under this contract shall meet the following specifications:

**MINIMUM SAPWOOD:** Required both butt and top; 1-inch on Douglas-fir and none on western redcedar.

**BUTTS:** Shall be cut above the swell and hook.

**SWEEP:** Poles shall be line straight. That is, a straight line from the center of the butt to the center of the top will not pass outside the body of the pole.

**KNOTS:** Maximum diameter of a single knot shall not exceed 3 inches. The sum of the diameters of all knots (1/2 inch and larger) in any 1-foot section shall not exceed 8 inches on 45-foot and shorter and 10 inches on 50-foot and longer poles.

**TRIM:** Poles shall have a minimum of 12 inches of trim.

**MAXIMUM DIAMETER AT GROUND LINE:** Shall not be more than 7 inches or 20% larger than the specified minimum, whichever is greater.

**CLASSIFICATION:** The diameter (D.O.B.) at ground line (6 feet up from the butt) will determine the true class of the pole, provided that its top is large enough. Otherwise, the diameter (D.I.B.) at the top will determine the true class.

**PROHIBITED DEFECTS:** Poles shall be free of sucker knots, knot clusters, rotten knots, short crooks, splits, shake, scars or catfaces, deadwood streaks, snowbreak, cross break, decay, and worm or insect damage.

**REFERENCE:** American National  
**STANDARDS INSTITUTE:** A.N.S.I. 05.1-2008 or later

## Timber Sale Cruise Report Madera Sorts- NW

**Sale Name:** MADERA SORTS

**Sale Type:** SORT

**Region:** NORTHWEST

**District:** CASCADE

**Lead Cruiser:** Matt Llobet

**Other Cruisers:**

**Cruise Narrative:**

**Location:**

Madera Sorts is a combination of VRH and VDT management with 6 ROW units associated with the sale. Units 1A and 1B can be accessed up the Wallace Falls Mainline, off Kellogg Lake Road, east of Sultan. Units 2 and 3 can be accessed off Reiter Road, east of Gold Bar. The sale ranges in elevation from 320 feet to 1,560 feet. An F-1 key is needed to access the sale.

**Cruise Design:**

Units 1 and 2 were cruised using a 62.5 and a 40 BAF. Unit 3A was cruised using a 54.4 and a 40 BAF. Units 3B, 3C, Corridor Units, and all ROW units were cruised using a 20th acre fix plot. All timber cruised in units 3B and 3C, fell within the thinning prescription. The smallest merchantable tree cruised in the sale had a DBH of 7.0 inches and 5 inches at 16 feet. If a plot landed in a "Leave Tree Area" the plot was dropped. Log lengths were cruised to maximize the amount of preferred lengths.

**Timber Quality:**

The major specie throughout the sale is Douglas fir and Western Hemlock. Approximately 860 mbf of Douglas fir high quality "B" was cruise throughout the sale. Also observed throughout the sale was 250 mbf of pole quality Douglas fir and 40 mbf of pole quality Western Red Cedar. Defect noted in the stands were spike knots, root rot pockets, forked/multiple tops, and frost check in the Western Hemlock.

**Logging and Stand Conditions:**

Approximately 73% of the sale is ground base harvesting and the other 27% is cable harvesting. The majority of the sale has great gentle to mild operator ground. Observed in unit 3A in the south western portion, was steep rocky terrain, that could make for difficult yarding.

### Timber Sale Notice Volume (MBF)

Sp	QMD	Rings/In	Age	MBF Volume by Grade						
				All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	22.9	6.0		2,941.3	68.4	129.0	2,166.3	439.0	96.0	42.6
WH	15.0			535.5			170.1	298.9	43.1	23.1
RC	19.8			291.8				241.6	50.0	
MA	18.0			139.2			95.3	6.8	5.7	31.3
RA	16.3			121.8			55.5	47.1	11.2	7.9
BC	29.1			24.1			24.1			
ALL	19.8	6.0		4,053.5	68.4	129.0	2,511.2	1,033.6	206.3	104.8

**Timber Sale Notice Weight (tons)**

Sp	Tons by Grade						
	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	19,539.9	343.7	721.4	13,490.8	3,679.4	731.1	573.4
WH	4,689.4			1,391.6	2,695.9	397.8	204.1
RC	2,401.7				1,950.5	451.2	
MA	880.0			572.2	50.4	53.3	204.1
RA	854.8			338.6	342.2	90.6	83.5
BC	119.9			119.9			
ALL	28,485.7	343.7	721.4	15,913.1	8,718.2	1,723.8	1,065.2

**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 (%)
252.4	4.9	152.2	2.3	38,313	5.6

**Timber Sale Unit Cruise Design**

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
MADERA SORTS U1A	B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	24.9	28.4	20	14	1
MADERA SORTS U2A	B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	13.9	14.0	13	8	0
MADERA SORTS U1B	B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	14.5	14.9	11	8	0
MADERA SORTS U3A	B2C: VR, 2 BAF (54.44, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	36.1	38.1	25	17	0
MADERA SORTS U3B	FX: FR plots (20 tree / acre expansion)	4.0	4.6	3	3	0
MADERA SORTS U3C	FX: FR plots (20 tree / acre expansion)	4.9	5.7	3	3	0
MADERA ROW 1	FX: FR plots (20 tree / acre expansion)	1.2	1.2	1	1	0
MADERA ROW 2	FX: FR plots (20 tree / acre expansion)	0.6	0.6	1	1	0
MADERA ROW 3	FX: FR plots (20 tree / acre expansion)	0.4	0.4	1	1	0

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
MADERA ROW 4	FX: FR plots (20 tree / acre expansion)	1.3	1.3	3	3	0
MADERA ROW 5	FX: FR plots (20 tree / acre expansion)	1.9	1.9	3	3	0
MADERA ROW 6	FX: FR plots (20 tree / acre expansion)	0.7	0.7	1	1	0
3B CORR	FX: FR plots (20 tree / acre expansion)	0.6		1	1	0
3C CORR	FX: FR plots (20 tree / acre expansion)	0.8		1	1	0
All		105.8	111.7	87	65	1

### Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	17.9	34.0	228	2.6	119.9	24.1
BC	LIVE	CULL	Cull	9.5	19.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	Domestic	16.6	38.0	13,567	1.3	8,872.4	1,435.4
DF	LIVE	2 SAW	HQ-A	15.2	36.0	1,061	0.8	716.6	112.3
DF	LIVE	2 SAW	HQ-B	17.1	40.0	5,846	0.9	3,902.0	618.5
DF	LIVE	3 PEELER	Domestic	25.5	31.0	646	0.0	343.8	68.3
DF	LIVE	3 SAW	Domestic	9.3	35.0	4,150	0.2	3,679.4	439.1
DF	LIVE	4 SAW	Domestic	6.9	24.0	908	1.5	730.9	96.0
DF	LIVE	CULL	Cull	7.4	7.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	20.7	33.0	1,219	0.0	721.5	128.9
DF	LIVE	UTILITY	Pulp	5.8	28.0	403	0.0	573.4	42.6
MA	LIVE	2 SAW	Domestic	14.2	22.0	900	2.0	572.3	95.2
MA	LIVE	3 SAW	Domestic	11.0	20.0	64	9.6	50.4	6.8
MA	LIVE	4 SAW	Domestic	9.0	20.0	55	6.2	53.3	5.8
MA	LIVE	CULL	Cull	7.0	19.0	0	100.0	0.0	0.0
MA	LIVE	UTILITY	Pulp	10.3	20.0	296	1.1	204.1	31.3
RA	LIVE	2 SAW	Domestic	14.3	21.0	525	2.8	338.6	55.5
RA	LIVE	3 SAW	Domestic	10.4	26.0	445	3.8	342.1	47.1
RA	LIVE	4 SAW	Domestic	6.5	24.0	106	0.0	90.6	11.2
RA	LIVE	CULL	Cull	7.4	9.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	5.3	26.0	75	0.0	83.6	7.9
RC	LIVE	3 SAW	Domestic	10.6	35.0	2,284	3.2	1,950.5	241.7
RC	LIVE	4 SAW	Domestic	6.5	26.0	474	0.1	451.2	50.2
RC	LIVE	CULL	Cull	7.1	9.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	13.3	39.0	1,609	3.2	1,391.5	170.2
WH	LIVE	3 SAW	Domestic	8.3	37.0	2,825	0.5	2,695.9	298.9

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	4 SAW	Domestic	5.6	25.0	409	0.0	397.8	43.2
WH	LIVE	CULL	Cull	5.4	6.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.1	24.0	219	0.0	204.2	23.2

### Timber Sale Log Grade x Diameter Bin Summary

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	8+	LIVE	CULL	9.7	26.0	0	100.0	0.0	0.0
BC	8+	LIVE	2 SAW	19.5	29.0	228	2.6	119.9	24.1
DF	5 - 11	LIVE	UTILITY	5.6	28.0	363	0.0	549.8	38.4
DF	5 - 11	LIVE	4 SAW	6.7	23.0	908	1.5	730.9	96.0
DF	5 - 11	LIVE	CULL	6.9	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	3 SAW	9.3	34.0	4,150	0.2	3,679.4	439.1
DF	12 - 19	LIVE	CULL	14.0	6.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	2 SAW	15.3	38.0	13,469	0.4	9,276.8	1,425.0
DF	12 - 19	LIVE	UTILITY	17.2	12.0	40	0.0	23.6	4.2
DF	12 - 19	LIVE	SPECIAL MILL	17.9	30.0	302	0.0	179.5	32.0
DF	20+	LIVE	SPECIAL MILL	22.4	37.0	916	0.0	541.9	96.9
DF	20+	LIVE	2 SAW	23.0	40.0	7,005	2.6	4,214.1	741.2
DF	20+	LIVE	3 PEELER	25.7	31.0	646	0.0	343.8	68.3
DF	20+	LIVE	CULL	28.7	21.0	0	100.0	0.0	0.0
MA	5 - 7	LIVE	CULL	5.8	19.0	0	100.0	0.0	0.0
MA	5 - 7	LIVE	UTILITY	6.8	28.0	10	0.0	15.0	1.1
MA	8 - 11	LIVE	CULL	8.0	30.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	4 SAW	9.2	20.0	55	6.2	53.3	5.8
MA	8 - 11	LIVE	UTILITY	10.2	21.0	257	1.2	170.3	27.2
MA	8 - 11	LIVE	3 SAW	11.0	20.0	64	9.6	50.4	6.8
MA	12+	LIVE	UTILITY	12.6	20.0	29	0.0	18.8	3.1
MA	12+	LIVE	2 SAW	14.6	22.0	900	2.0	572.3	95.2
MA	12+	LIVE	CULL	16.0	17.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	CULL	5.4	9.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	UTILITY	5.4	27.0	71	0.0	79.2	7.5
RA	5 - 7	LIVE	4 SAW	6.6	24.0	106	0.0	90.6	11.2
RA	8 - 11	LIVE	UTILITY	8.2	30.0	4	0.0	4.3	0.4
RA	8 - 11	LIVE	3 SAW	10.4	26.0	445	3.8	342.1	47.1
RA	12+	LIVE	2 SAW	13.8	23.0	525	2.8	338.6	55.5
RA	12+	LIVE	CULL	17.0	4.0	0	100.0	0.0	0.0
RC	5+	LIVE	4 SAW	6.5	26.0	474	0.1	451.2	50.2

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
RC	5+	LIVE	CULL	7.4	9.0	0	100.0	0.0	0.0
RC	5+	LIVE	3 SAW	10.9	35.0	2,284	3.2	1,950.5	241.7
WH	5 - 11	LIVE	UTILITY	5.1	24.0	219	0.0	204.2	23.2
WH	5 - 11	LIVE	4 SAW	5.5	26.0	409	0.0	397.8	43.2
WH	5 - 11	LIVE	CULL	5.6	6.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	3 SAW	8.3	37.0	2,825	0.5	2,695.9	298.9
WH	12 - 19	LIVE	2 SAW	13.3	39.0	1,504	2.5	1,313.4	159.1
WH	12 - 19	LIVE	CULL	17.1	10.0	0	100.0	0.0	0.0
WH	20+	LIVE	2 SAW	23.5	40.0	105	12.4	78.1	11.1

### Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	8+	LIVE	Cull	9.7	26.0	0	100.0	0.0	0.0
BC	8+	LIVE	Domestic	19.5	29.0	228	2.6	119.9	24.1
DF	5 - 11	LIVE	Pulp	5.6	28.0	363	0.0	549.8	38.4
DF	5 - 11	LIVE	Cull	6.9	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Domestic	8.4	31.0	5,058	0.4	4,410.3	535.1
DF	12 - 19	LIVE	Cull	14.0	6.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	Domestic	15.1	38.0	8,521	0.3	5,844.3	901.6
DF	12 - 19	LIVE	HQ-A	15.9	34.0	1,241	0.7	825.2	131.3
DF	12 - 19	LIVE	HQ-B	16.1	40.0	4,009	0.5	2,786.9	424.1
DF	12 - 19	LIVE	Pulp	17.2	12.0	40	0.0	23.6	4.2
DF	20+	LIVE	HQ-A	22.4	38.0	1,039	0.0	612.9	109.9
DF	20+	LIVE	HQ-B	22.6	40.0	1,837	1.8	1,115.1	194.4
DF	20+	LIVE	Domestic	23.5	38.0	5,692	2.6	3,371.9	602.2
DF	20+	LIVE	Cull	28.7	21.0	0	100.0	0.0	0.0
MA	5 - 7	LIVE	Cull	5.8	19.0	0	100.0	0.0	0.0
MA	5 - 7	LIVE	Pulp	6.8	28.0	10	0.0	15.0	1.1
MA	8 - 11	LIVE	Cull	8.0	30.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	Domestic	9.6	20.0	119	8.1	103.7	12.6
MA	8 - 11	LIVE	Pulp	10.2	21.0	257	1.2	170.3	27.2
MA	12+	LIVE	Pulp	12.6	20.0	29	0.0	18.8	3.1
MA	12+	LIVE	Domestic	14.6	22.0	900	2.0	572.3	95.2
MA	12+	LIVE	Cull	16.0	17.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	Cull	5.4	9.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	Pulp	5.4	27.0	71	0.0	79.2	7.5
RA	5 - 7	LIVE	Domestic	6.6	24.0	106	0.0	90.6	11.2

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
RA	8 - 11	LIVE	Pulp	8.2	30.0	4	0.0	4.3	0.4
RA	8 - 11	LIVE	Domestic	10.4	26.0	445	3.8	342.1	47.1
RA	12+	LIVE	Domestic	13.8	23.0	525	2.8	338.6	55.5
RA	12+	LIVE	Cull	17.0	4.0	0	100.0	0.0	0.0
RC	5+	LIVE	Cull	7.4	9.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	8.7	31.0	2,758	2.7	2,401.7	291.8
WH	5 - 11	LIVE	Pulp	5.1	24.0	219	0.0	204.2	23.2
WH	5 - 11	LIVE	Cull	5.6	6.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	7.4	33.0	3,233	0.4	3,093.8	342.1
WH	12 - 19	LIVE	Domestic	13.3	39.0	1,504	2.5	1,313.4	159.1
WH	12 - 19	LIVE	Cull	17.1	10.0	0	100.0	0.0	0.0
WH	20+	LIVE	Domestic	23.5	40.0	105	12.4	78.1	11.1

## Cruise Unit Report MADERA SORTS U1A

### Unit Sale Notice Volume (MBF): MADERA SORTS U1A

Sp	QMD	Rings/In	Age	MBF Volume by Grade						
				All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	25.2	6.0		917.8	46.5	42.0	726.9	81.6	13.9	7.0
RC	27.6			91.1				86.3	4.8	
RA	16.3			76.7			28.6	38.0	5.1	5.1
WH	10.9			24.3				15.0	1.9	7.4
MA	15.7			10.4			8.5		1.9	
ALL	21.7	6.0		1,120.4	46.5	42.0	764.0	220.9	27.6	19.4

### Unit Sale Notice Weight (tons): MADERA SORTS U1A

Sp	Tons by Grade						
	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	5,654.0	231.4	246.4	4,331.1	637.9	135.3	71.9
RC	712.0				667.2	44.8	
RA	540.1			169.0	278.4	44.6	48.1
WH	239.9				159.9	17.2	62.8
MA	72.1			50.4		21.7	
ALL	7,218.1	231.4	246.4	4,550.5	1,743.3	263.5	182.9

### Unit Cruise Design: MADERA SORTS U1A

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	24.9	28.4	20	14	1

### Unit Cruise Summary: MADERA SORTS U1A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	49	55	2.8	1
RC	15	21	1.1	0
RA	3	14	0.7	0
WH	6	7	0.4	0
MA	3	3	0.2	0
ALL	76	100	5.0	1

**Unit Cruise Statistics (Cut + Leave Trees): MADERA SORTS U1A**

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	171.9	87.4	19.5	214.5	25.7	3.7	36,860	91.1	19.9
RC	42.0	143.2	32.0	87.1	39.4	10.2	3,660	148.5	33.6
RA	28.0	207.8	46.5	110.0	11.2	6.5	3,080	208.1	46.9
WH	14.0	191.7	42.9	69.8	46.7	19.1	977	197.3	46.9
MA	6.0	447.2	100.0	69.6	38.5	22.2	418	448.9	102.4
ALL	261.9	56.2	12.6	171.8	46.1	5.3	44,995	72.7	13.6

**Unit Summary: MADERA SORTS U1A**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	43	ALL	25.9	92	122	32,839	3.8	41.9	153.1	30.1	5,037.2	817.7
DF	LIVE	POLE	6	ALL	21.4	91	116	4,021	3.8	7.5	18.8	4.1	616.8	100.1
MA	LIVE	CUT	3	ALL	15.7	52	63	418	25.2	4.5	6.0	1.5	72.1	10.4
RA	LIVE	CUT	3	ALL	16.3	58	71	3,080	11.5	19.3	28.0	6.9	540.1	76.7
RC	LIVE	CUT	13	ALL	28.9	66	82	3,311	23.1	8.3	38.0	7.1	644.2	82.5
RC	LIVE	POLE	2	ALL	21.9	61	77	349	23.1	1.5	4.0	0.9	67.8	8.7
WH	LIVE	CUT	6	ALL	10.9	34	40	977	1.7	21.6	14.0	4.2	239.9	24.3
ALL	LIVE	CUT	68	ALL	21.4	68	87	40,625	6.6	95.6	239.1	49.8	6,533.5	1,011.6
ALL	LIVE	POLE	8	ALL	21.5	86	110	4,370	5.7	9.0	22.8	5.0	684.6	108.8
ALL	ALL	ALL	76	ALL	21.4	69	89	44,995	6.5	104.6	261.9	54.8	7,218.1	1,120.4

**Unit Stand Table: MADERA SORTS U1A**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	10	LIVE	CUT	1	9.8	42	85	254	9.3	6.6	3.5	1.1	65.7	6.3
DF	16	LIVE	CUT	1	16.2	80	101	484	2.4	2.4	3.5	0.9	94.4	12.1
DF	18	LIVE	CUT	1	18.8	90	114	516	8.8	1.8	3.5	0.8	99.4	12.8
DF	20	LIVE	CUT	2	19.1	96	122	1,364	0.8	3.5	7.0	1.6	216.1	34.0
DF	22	LIVE	CUT	3	21.7	91	116	1,731	1.8	4.0	10.4	2.2	316.0	43.1
DF	24	LIVE	CUT	2	24.1	87	111	996	12.8	2.2	7.0	1.4	165.1	24.8
DF	26	LIVE	CUT	2	26.0	97	124	1,323	0.2	1.9	7.0	1.4	220.7	33.0
DF	28	LIVE	CUT	6	27.9	100	127	4,216	0.7	4.9	20.9	4.0	681.5	105.0
DF	30	LIVE	CUT	2	29.7	104	133	1,543	0.1	1.4	7.0	1.3	234.6	38.4
DF	32	LIVE	CUT	8	31.9	110	142	5,870	10.8	5.0	27.8	4.9	902.6	146.2
DF	34	LIVE	CUT	7	33.9	115	148	6,368	1.7	3.9	24.4	4.2	882.7	158.6
DF	36	LIVE	CUT	4	35.2	116	149	4,526	2.0	2.6	17.4	2.9	642.3	112.7

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	38	LIVE	CUT	1	38.3	123	158	972	3.6	0.4	3.5	0.6	132.6	24.2
DF	40	LIVE	CUT	2	39.8	115	148	1,760	3.6	0.8	7.0	1.1	252.0	43.8
DF	46	LIVE	CUT	1	45.8	127	164	916	8.9	0.3	3.5	0.5	131.4	22.8
DF	16	LIVE	POLE	1	16.0	72	91	453	0.0	2.2	3.1	0.8	80.3	11.3
DF	18	LIVE	POLE	1	18.7	85	108	468	2.6	1.6	3.1	0.7	89.3	11.6
DF	20	LIVE	POLE	1	20.5	98	125	667	0.0	1.4	3.1	0.7	103.7	16.6
DF	26	LIVE	POLE	2	26.2	105	135	1,547	0.2	1.7	6.3	1.2	223.3	38.5
DF	30	LIVE	POLE	1	30.1	120	154	887	0.6	0.6	3.1	0.6	120.2	22.1
MA	12	LIVE	CUT	1	12.5	48	58	78	44.1	2.3	2.0	0.6	21.7	1.9
MA	18	LIVE	CUT	1	17.0	57	69	174	17.5	1.3	2.0	0.5	28.5	4.3
MA	22	LIVE	CUT	1	21.0	55	67	166	20.6	0.8	2.0	0.4	21.9	4.1
RA	14	LIVE	CUT	2	14.6	55	67	1,931	3.9	16.0	18.7	4.9	371.1	48.1
RA	22	LIVE	CUT	1	22.5	71	88	1,149	21.8	3.4	9.3	2.0	169.0	28.6
RC	20	LIVE	CUT	1	20.1	50	62	105	43.2	1.2	2.7	0.6	32.2	2.6
RC	24	LIVE	CUT	2	23.5	60	75	435	2.8	1.8	5.4	1.1	105.2	10.8
RC	26	LIVE	CUT	2	25.6	65	84	377	37.4	1.5	5.4	1.1	68.6	9.4
RC	30	LIVE	CUT	1	29.3	52	64	130	68.9	1.2	5.4	1.0	40.3	3.2
RC	32	LIVE	CUT	1	32.9	83	106	349	28.0	0.5	2.7	0.5	46.3	8.7
RC	34	LIVE	CUT	2	33.5	70	86	530	6.2	0.9	5.4	0.9	116.1	13.2
RC	36	LIVE	CUT	1	35.0	94	121	409	28.7	0.4	2.7	0.5	48.8	10.2
RC	38	LIVE	CUT	1	38.0	91	116	340	9.6	0.3	2.7	0.4	69.9	8.5
RC	40	LIVE	CUT	1	39.1	93	112	325	28.7	0.3	2.7	0.4	43.3	8.1
RC	50	LIVE	CUT	1	49.5	101	116	313	36.5	0.2	2.7	0.4	73.5	7.8
RC	20	LIVE	POLE	1	19.6	57	71	160	0.0	1.0	2.0	0.5	31.5	4.0
RC	26	LIVE	POLE	1	25.3	68	86	189	0.0	0.6	2.0	0.4	36.3	4.7
WH	8	LIVE	CUT	1	8.0	25	28	214	0.0	11.5	4.0	1.4	39.1	5.3
WH	10	LIVE	CUT	1	10.9	25	32	83	0.0	3.1	2.0	0.6	23.7	2.1
WH	14	LIVE	CUT	2	13.4	58	72	459	0.4	4.1	4.0	1.1	103.7	11.4
WH	16	LIVE	CUT	2	15.3	42	50	220	5.4	3.1	4.0	1.0	73.4	5.5

### Unit Log Grade Summary: MADERA SORTS U1A

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	17.2	38.0	29,193	1.5	4,331.1	726.9
DF	LIVE	3 PEELER	25.3	31.0	1,867	0.0	231.4	46.5
DF	LIVE	3 SAW	9.7	34.0	3,276	0.1	637.9	81.6
DF	LIVE	4 SAW	7.5	21.0	557	0.0	135.3	13.9
DF	LIVE	CULL	8.2	6.0	0	100.0	0.0	0.0

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	SPECIAL MILL	20.3	32.0	1,687	0.0	246.4	42.0
DF	LIVE	UTILITY	5.7	34.0	280	0.0	71.9	7.0
MA	LIVE	2 SAW	14.0	25.0	340	0.0	50.4	8.5
MA	LIVE	4 SAW	8.9	20.0	78	10.8	21.7	1.9
MA	LIVE	CULL	5.7	25.0	0	100.0	0.0	0.0
RA	LIVE	2 SAW	15.6	20.0	1,149	3.4	169.0	28.6
RA	LIVE	3 SAW	10.3	28.0	1,524	3.5	278.4	38.0
RA	LIVE	4 SAW	6.1	20.0	203	0.0	44.6	5.1
RA	LIVE	CULL	8.2	8.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	5.1	24.0	203	0.0	48.1	5.1
RC	LIVE	3 SAW	13.9	36.0	3,466	5.9	667.2	86.3
RC	LIVE	4 SAW	7.6	20.0	194	0.0	44.8	4.8
RC	LIVE	CULL	14.5	7.0	0	100.0	0.0	0.0
WH	LIVE	3 SAW	8.0	36.0	604	0.0	159.9	15.0
WH	LIVE	4 SAW	5.3	17.0	76	0.0	17.2	1.9
WH	LIVE	CULL	5.2	3.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	5.2	18.0	298	0.0	62.8	7.4

#### Unit Log Sort Summary: MADERA SORTS U1A

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	8.2	6.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	13.1	33.0	25,217	1.2	3,923.7	627.9
DF	LIVE	HQ-A	16.4	34.0	3,241	0.3	502.4	80.7
DF	LIVE	HQ-B	19.7	39.0	8,122	1.7	1,156.0	202.2
DF	LIVE	Pulp	5.7	34.0	280	0.0	71.9	7.0
MA	LIVE	Cull	5.7	25.0	0	100.0	0.0	0.0
MA	LIVE	Domestic	11.3	22.0	418	2.2	72.1	10.4
RA	LIVE	Cull	8.2	8.0	0	100.0	0.0	0.0
RA	LIVE	Domestic	10.3	24.0	2,877	3.2	492.0	71.6
RA	LIVE	Pulp	5.1	24.0	203	0.0	48.1	5.1
RC	LIVE	Cull	14.5	7.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	12.0	31.0	3,660	5.6	712.0	91.1
WH	LIVE	Cull	5.2	3.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	7.0	29.0	679	0.0	177.1	16.9
WH	LIVE	Pulp	5.2	18.0	298	0.0	62.8	7.4

**Unit Log Grade x Sort Summary: MADERA SORTS U1A**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	16.9	38.0	19,517	1.5	2,919.1	486.0
DF	LIVE	2 SAW	HQ-A	14.4	36.0	1,554	0.7	256.0	38.7
DF	LIVE	2 SAW	HQ-B	19.7	39.0	8,122	1.7	1,156.0	202.2
DF	LIVE	3 PEELER	Domestic	25.3	31.0	1,867	0.0	231.4	46.5
DF	LIVE	3 SAW	Domestic	9.7	34.0	3,276	0.1	637.9	81.6
DF	LIVE	4 SAW	Domestic	7.5	21.0	557	0.0	135.3	13.9
DF	LIVE	CULL	Cull	8.2	6.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	20.3	32.0	1,687	0.0	246.4	42.0
DF	LIVE	UTILITY	Pulp	5.7	34.0	280	0.0	71.9	7.0
MA	LIVE	2 SAW	Domestic	14.0	25.0	340	0.0	50.4	8.5
MA	LIVE	4 SAW	Domestic	8.9	20.0	78	10.8	21.7	1.9
MA	LIVE	CULL	Cull	5.7	25.0	0	100.0	0.0	0.0
RA	LIVE	2 SAW	Domestic	15.6	20.0	1,149	3.4	169.0	28.6
RA	LIVE	3 SAW	Domestic	10.3	28.0	1,524	3.5	278.4	38.0
RA	LIVE	4 SAW	Domestic	6.1	20.0	203	0.0	44.6	5.1
RA	LIVE	CULL	Cull	8.2	8.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	5.1	24.0	203	0.0	48.1	5.1
RC	LIVE	3 SAW	Domestic	13.9	36.0	3,466	5.9	667.2	86.3
RC	LIVE	4 SAW	Domestic	7.6	20.0	194	0.0	44.8	4.8
RC	LIVE	CULL	Cull	14.5	7.0	0	100.0	0.0	0.0
WH	LIVE	3 SAW	Domestic	8.0	36.0	604	0.0	159.9	15.0
WH	LIVE	4 SAW	Domestic	5.3	17.0	76	0.0	17.2	1.9
WH	LIVE	CULL	Cull	5.2	3.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.2	18.0	298	0.0	62.8	7.4

**Unit Log Grade x Diameter Bin Summary: MADERA SORTS U1A**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	UTILITY	5.7	34.0	280	0.0	71.9	7.0
DF	5 - 11	LIVE	4 SAW	7.5	21.0	557	0.0	135.3	13.9
DF	5 - 11	LIVE	CULL	7.7	6.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	3 SAW	9.7	34.0	3,276	0.1	637.9	81.6
DF	12 - 19	LIVE	CULL	12.4	4.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	2 SAW	15.5	37.0	16,681	0.4	2,623.4	415.4
DF	12 - 19	LIVE	SPECIAL MILL	18.8	29.0	797	0.0	110.9	19.8
DF	20+	LIVE	SPECIAL MILL	22.8	36.0	890	0.0	135.5	22.2
DF	20+	LIVE	2 SAW	23.5	40.0	12,512	3.1	1,707.8	311.5

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	20+	LIVE	CULL	23.6	40.0	0	100.0	0.0	0.0
DF	20+	LIVE	3 PEELER	25.3	31.0	1,867	0.0	231.4	46.5
MA	5 - 7	LIVE	CULL	5.7	25.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	4 SAW	8.9	20.0	78	10.8	21.7	1.9
MA	12+	LIVE	2 SAW	14.0	25.0	340	0.0	50.4	8.5
RA	5 - 7	LIVE	UTILITY	5.1	24.0	203	0.0	48.1	5.1
RA	5 - 7	LIVE	CULL	5.7	9.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	4 SAW	6.1	20.0	203	0.0	44.6	5.1
RA	8 - 11	LIVE	3 SAW	10.3	28.0	1,524	3.5	278.4	38.0
RA	12+	LIVE	2 SAW	15.6	20.0	1,149	3.4	169.0	28.6
RA	12+	LIVE	CULL	17.0	4.0	0	100.0	0.0	0.0
RC	5+	LIVE	4 SAW	7.6	20.0	194	0.0	44.8	4.8
RC	5+	LIVE	3 SAW	13.9	36.0	3,466	5.9	667.2	86.3
RC	5+	LIVE	CULL	14.5	7.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	CULL	5.2	3.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	UTILITY	5.2	18.0	298	0.0	62.8	7.4
WH	5 - 11	LIVE	4 SAW	5.3	17.0	76	0.0	17.2	1.9
WH	5 - 11	LIVE	3 SAW	8.0	36.0	604	0.0	159.9	15.0

#### Unit Log Sort x Diameter Bin Summary: MADERA SORTS U1A

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Pulp	5.7	34.0	280	0.0	71.9	7.0
DF	5 - 11	LIVE	Cull	7.7	6.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Domestic	8.9	29.0	3,833	0.1	773.1	95.4
DF	12 - 19	LIVE	Cull	12.4	4.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	Domestic	15.4	37.0	11,867	0.2	1,870.7	295.5
DF	12 - 19	LIVE	HQ-A	15.4	34.0	2,351	0.5	367.0	58.5
DF	12 - 19	LIVE	HQ-B	17.1	39.0	3,260	0.7	496.7	81.2
DF	20+	LIVE	HQ-A	22.8	36.0	890	0.0	135.5	22.2
DF	20+	LIVE	HQ-B	23.2	40.0	4,862	2.4	659.3	121.1
DF	20+	LIVE	Cull	23.6	40.0	0	100.0	0.0	0.0
DF	20+	LIVE	Domestic	24.1	38.0	9,517	2.9	1,279.9	237.0
MA	5 - 7	LIVE	Cull	5.7	25.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	Domestic	8.9	20.0	78	10.8	21.7	1.9
MA	12+	LIVE	Domestic	14.0	25.0	340	0.0	50.4	8.5
RA	5 - 7	LIVE	Pulp	5.1	24.0	203	0.0	48.1	5.1
RA	5 - 7	LIVE	Cull	5.7	9.0	0	100.0	0.0	0.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
RA	5 - 7	LIVE	Domestic	6.1	20.0	203	0.0	44.6	5.1
RA	8 - 11	LIVE	Domestic	10.3	28.0	1,524	3.5	278.4	38.0
RA	12+	LIVE	Domestic	15.6	20.0	1,149	3.4	169.0	28.6
RA	12+	LIVE	Cull	17.0	4.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	12.0	31.0	3,660	5.6	712.0	91.1
RC	5+	LIVE	Cull	14.5	7.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Cull	5.2	3.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Pulp	5.2	18.0	298	0.0	62.8	7.4
WH	5 - 11	LIVE	Domestic	7.0	29.0	679	0.0	177.1	16.9

## Cruise Unit Report MADERA SORTS U2A

### Unit Sale Notice Volume (MBF): MADERA SORTS U2A

Sp	QMD	Rings/In	Age	MBF Volume by Grade						
				All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	23.9	6.0		534.5	9.7	24.8	425.2	63.4	6.4	5.1
WH	22.5			78.6			69.1	9.5		
MA	17.0			32.3			15.9	6.8	3.4	6.1
RC	19.5			17.3				13.9	3.3	
ALL	22.9	6.0		662.7	9.7	24.8	510.2	93.6	13.2	11.2

### Unit Sale Notice Weight (tons): MADERA SORTS U2A

Sp	Tons by Grade						
	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	3,425.6	39.0	134.5	2,612.1	553.1	54.9	31.9
WH	670.8			565.1	105.7		
MA	217.9			100.9	50.4	27.8	38.8
RC	150.4				118.6	31.8	
ALL	4,464.7	39.0	134.5	3,278.1	827.8	114.5	70.7

### Unit Cruise Design: MADERA SORTS U2A

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	13.9	14.0	13	8	0

### Unit Cruise Summary: MADERA SORTS U2A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	32	41	3.2	1
WH	3	12	0.9	0
MA	3	8	0.6	0
RC	4	6	0.5	0
ALL	42	67	5.2	1

**Unit Cruise Statistics (Cut + Leave Trees): MADERA SORTS U2A**

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	197.1	73.0	20.3	195.1	30.8	5.5	38,456	79.3	21.0
WH	36.9	143.0	39.7	153.1	7.2	4.2	5,653	143.2	39.9
MA	24.6	234.9	65.2	94.3	40.5	23.4	2,321	238.4	69.2
RC	18.5	112.4	31.2	67.4	45.6	22.8	1,245	121.3	38.6
ALL	277.1	37.4	10.4	172.0	40.4	6.2	47,674	55.1	12.1

**Unit Summary: MADERA SORTS U2A**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	28	ALL	24.2	83	105	34,704	2.8	55.7	177.9	36.2	3,091.4	482.4
DF	LIVE	POLE	4	ALL	21.7	100	130	3,752	2.8	7.5	19.2	4.1	334.2	52.1
MA	LIVE	CUT	3	ALL	17.0	59	73	2,321	17.9	15.6	24.6	6.0	217.9	32.3
RC	LIVE	CUT	3	ALL	19.2	54	67	1,037	24.1	7.7	15.4	3.5	125.3	14.4
RC	LIVE	POLE	1	ALL	20.5	73	92	207	24.1	1.3	3.1	0.7	25.1	2.9
WH	LIVE	CUT	3	ALL	22.5	82	103	5,653	7.0	13.4	36.9	7.8	670.8	78.6
ALL	LIVE	POLE	5	ALL	21.5	96	124	3,959	4.3	8.8	22.3	4.8	359.3	55.0
ALL	LIVE	CUT	37	ALL	22.5	76	96	43,715	4.9	92.4	254.8	53.5	4,105.4	607.7
ALL	ALL	ALL	42	ALL	22.4	78	99	47,674	4.9	101.2	277.1	58.3	4,464.7	662.7

**Unit Stand Table: MADERA SORTS U2A**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	12	LIVE	CUT	1	12.6	57	70	555	6.0	7.1	6.1	1.7	64.8	7.7
DF	14	LIVE	CUT	2	13.6	54	66	776	25.2	12.1	12.3	3.3	96.9	10.8
DF	18	LIVE	CUT	1	17.7	60	74	694	0.0	3.6	6.1	1.5	70.0	9.6
DF	22	LIVE	CUT	2	22.5	84	106	1,774	2.7	4.4	12.3	2.6	176.9	24.7
DF	24	LIVE	CUT	3	23.7	91	116	3,036	2.7	6.0	18.4	3.8	311.4	42.2
DF	26	LIVE	CUT	1	26.0	104	133	1,265	0.0	1.7	6.1	1.2	118.4	17.6
DF	28	LIVE	CUT	2	28.2	90	115	2,079	2.6	2.8	12.3	2.3	202.3	28.9
DF	30	LIVE	CUT	5	30.2	105	135	6,766	2.3	6.2	30.7	5.6	581.3	94.0
DF	32	LIVE	CUT	3	31.6	115	147	4,664	0.3	3.4	18.4	3.3	376.6	64.8
DF	34	LIVE	CUT	4	33.7	107	137	5,203	1.4	4.0	24.5	4.2	465.9	72.3
DF	36	LIVE	CUT	4	35.7	121	156	7,893	4.4	4.4	30.7	5.1	626.9	109.7
DF	20	LIVE	POLE	2	19.4	95	124	1,621	2.7	4.7	9.6	2.2	156.3	22.5
DF	24	LIVE	POLE	1	24.0	107	137	1,068	0.0	1.5	4.8	1.0	88.0	14.8
DF	26	LIVE	POLE	1	26.2	114	146	1,063	0.0	1.3	4.8	0.9	89.9	14.8

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
MA	16	LIVE	CUT	2	15.9	55	67	1,211	25.2	11.9	16.4	4.1	127.8	16.8
MA	20	LIVE	CUT	1	20.0	72	89	1,110	8.1	3.8	8.2	1.8	90.1	15.4
RC	16	LIVE	CUT	2	16.7	51	63	494	34.0	6.8	10.3	2.5	77.5	6.9
RC	32	LIVE	CUT	1	32.2	80	102	543	28.2	0.9	5.1	0.9	47.8	7.5
RC	20	LIVE	POLE	1	20.5	73	92	207	6.1	1.4	3.1	0.7	25.1	2.9
WH	20	LIVE	CUT	1	19.3	85	107	1,890	3.7	6.1	12.3	2.8	223.7	26.3
WH	22	LIVE	CUT	1	22.6	75	93	1,746	4.4	4.4	12.3	2.6	210.3	24.3
WH	28	LIVE	CUT	1	28.0	88	110	2,017	11.8	2.9	12.3	2.3	236.8	28.0

### Unit Log Grade Summary: MADERA SORTS U2A

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	17.0	38.0	30,587	1.4	2,612.1	425.2
DF	LIVE	3 PEELER	27.4	24.0	696	0.0	39.0	9.7
DF	LIVE	3 SAW	9.5	31.0	4,563	1.2	553.1	63.4
DF	LIVE	4 SAW	6.4	22.0	461	0.0	54.9	6.4
DF	LIVE	CULL	7.7	13.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	23.8	38.0	1,782	0.0	134.5	24.8
DF	LIVE	UTILITY	13.5	16.0	367	0.0	31.9	5.1
MA	LIVE	2 SAW	13.9	20.0	1,144	4.5	100.9	15.9
MA	LIVE	3 SAW	11.0	20.0	488	9.6	50.4	6.8
MA	LIVE	4 SAW	9.2	20.0	248	4.2	27.8	3.4
MA	LIVE	CULL	5.5	22.0	0	100.0	0.0	0.0
MA	LIVE	UTILITY	11.5	28.0	440	0.0	38.8	6.1
RC	LIVE	3 SAW	11.0	35.0	1,004	1.8	118.6	13.9
RC	LIVE	4 SAW	7.4	30.0	240	0.0	31.8	3.3
RC	LIVE	CULL	9.0	8.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	14.7	39.0	4,973	5.6	565.1	69.1
WH	LIVE	3 SAW	8.1	32.0	680	0.0	105.7	9.5
WH	LIVE	CULL	7.2	10.0	0	100.0	0.0	0.0

### Unit Log Sort Summary: MADERA SORTS U2A

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	7.7	13.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	12.4	33.0	28,880	1.4	2,590.1	401.4
DF	LIVE	HQ-A	17.1	35.0	5,460	0.7	454.5	75.9
DF	LIVE	HQ-B	18.4	40.0	3,749	0.9	349.2	52.1
DF	LIVE	Pulp	13.5	16.0	367	0.0	31.9	5.1

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
MA	LIVE	Cull	5.5	22.0	0	100.0	0.0	0.0
MA	LIVE	Domestic	11.8	20.0	1,881	5.8	179.1	26.1
MA	LIVE	Pulp	11.5	28.0	440	0.0	38.8	6.1
RC	LIVE	Cull	9.0	8.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	9.5	33.0	1,244	1.4	150.4	17.3
WH	LIVE	Cull	7.2	10.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	12.1	36.0	5,653	5.0	670.8	78.6

### Unit Log Grade x Sort Summary: MADERA SORTS U2A

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	17.0	39.0	23,160	1.5	1,943.0	321.9
DF	LIVE	2 SAW	HQ-A	15.8	35.0	3,678	1.0	319.9	51.1
DF	LIVE	2 SAW	HQ-B	18.4	40.0	3,749	0.9	349.2	52.1
DF	LIVE	3 PEELER	Domestic	27.4	24.0	696	0.0	39.0	9.7
DF	LIVE	3 SAW	Domestic	9.5	31.0	4,563	1.2	553.1	63.4
DF	LIVE	4 SAW	Domestic	6.4	22.0	461	0.0	54.9	6.4
DF	LIVE	CULL	Cull	7.7	13.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	23.8	38.0	1,782	0.0	134.5	24.8
DF	LIVE	UTILITY	Pulp	13.5	16.0	367	0.0	31.9	5.1
MA	LIVE	2 SAW	Domestic	13.9	20.0	1,144	4.5	100.9	15.9
MA	LIVE	3 SAW	Domestic	11.0	20.0	488	9.6	50.4	6.8
MA	LIVE	4 SAW	Domestic	9.2	20.0	248	4.2	27.8	3.4
MA	LIVE	CULL	Cull	5.5	22.0	0	100.0	0.0	0.0
MA	LIVE	UTILITY	Pulp	11.5	28.0	440	0.0	38.8	6.1
RC	LIVE	3 SAW	Domestic	11.0	35.0	1,004	1.8	118.6	13.9
RC	LIVE	4 SAW	Domestic	7.4	30.0	240	0.0	31.8	3.3
RC	LIVE	CULL	Cull	9.0	8.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	14.7	39.0	4,973	5.6	565.1	69.1
WH	LIVE	3 SAW	Domestic	8.1	32.0	680	0.0	105.7	9.5
WH	LIVE	CULL	Cull	7.2	10.0	0	100.0	0.0	0.0

### Unit Log Grade x Diameter Bin Summary: MADERA SORTS U2A

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	4 SAW	6.4	22.0	461	0.0	54.9	6.4
DF	5 - 11	LIVE	CULL	6.9	14.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	UTILITY	8.4	21.0	63	0.0	8.3	0.9
DF	5 - 11	LIVE	3 SAW	9.5	31.0	4,563	1.2	553.1	63.4

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	12 - 19	LIVE	2 SAW	15.5	38.0	18,403	0.6	1,645.3	255.8
DF	12 - 19	LIVE	UTILITY	17.2	12.0	304	0.0	23.6	4.2
DF	20+	LIVE	2 SAW	22.6	40.0	12,183	2.5	966.8	169.3
DF	20+	LIVE	SPECIAL MILL	23.8	38.0	1,782	0.0	134.5	24.8
DF	20+	LIVE	3 PEELER	27.4	24.0	696	0.0	39.0	9.7
DF	20+	LIVE	CULL	31.9	5.0	0	100.0	0.0	0.0
MA	5 - 7	LIVE	CULL	5.5	22.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	4 SAW	9.2	20.0	248	4.2	27.8	3.4
MA	8 - 11	LIVE	3 SAW	11.0	20.0	488	9.6	50.4	6.8
MA	8 - 11	LIVE	UTILITY	11.5	28.0	440	0.0	38.8	6.1
MA	12+	LIVE	2 SAW	13.9	20.0	1,144	4.5	100.9	15.9
RC	5+	LIVE	4 SAW	7.4	30.0	240	0.0	31.8	3.3
RC	5+	LIVE	CULL	9.0	8.0	0	100.0	0.0	0.0
RC	5+	LIVE	3 SAW	11.0	35.0	1,004	1.8	118.6	13.9
WH	5 - 11	LIVE	CULL	7.2	10.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	3 SAW	8.1	32.0	680	0.0	105.7	9.5
WH	12 - 19	LIVE	2 SAW	14.7	39.0	4,973	5.6	565.1	69.1

#### Unit Log Sort x Diameter Bin Summary: MADERA SORTS U2A

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Cull	6.9	14.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Pulp	8.4	21.0	63	0.0	8.3	0.9
DF	5 - 11	LIVE	Domestic	8.8	29.0	5,024	1.0	608.0	69.8
DF	12 - 19	LIVE	HQ-A	15.1	34.0	2,746	1.4	249.0	38.2
DF	12 - 19	LIVE	Domestic	15.2	39.0	12,803	0.3	1,117.7	178.0
DF	12 - 19	LIVE	Pulp	17.2	12.0	304	0.0	23.6	4.2
DF	12 - 19	LIVE	HQ-B	17.8	40.0	2,854	1.2	278.7	39.7
DF	20+	LIVE	HQ-B	21.1	40.0	894	0.0	70.5	12.4
DF	20+	LIVE	Domestic	23.0	39.0	11,053	2.7	864.4	153.6
DF	20+	LIVE	HQ-A	23.3	39.0	2,714	0.0	205.4	37.7
DF	20+	LIVE	Cull	31.9	5.0	0	100.0	0.0	0.0
MA	5 - 7	LIVE	Cull	5.5	22.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	Domestic	10.2	20.0	736	7.9	78.2	10.2
MA	8 - 11	LIVE	Pulp	11.5	28.0	440	0.0	38.8	6.1
MA	12+	LIVE	Domestic	13.9	20.0	1,144	4.5	100.9	15.9
RC	5+	LIVE	Cull	9.0	8.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	9.5	33.0	1,244	1.4	150.4	17.3

<b>Sp</b>	<b>Bin</b>	<b>Status</b>	<b>Sort</b>	<b>Dia</b>	<b>Len</b>	<b>BF Net</b>	<b>Defect %</b>	<b>Tons</b>	<b>MBF Net</b>
WH	5 - 11	LIVE	Cull	7.2	10.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	8.1	32.0	680	0.0	105.7	9.5
WH	12 - 19	LIVE	Domestic	14.7	39.0	4,973	5.6	565.1	69.1

## Cruise Unit Report MADERA SORTS U1B

### Unit Sale Notice Volume (MBF): MADERA SORTS U1B

Sp	QMD	Rings/In	Age	MBF Volume by Grade						
				All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	23.8			485.5	12.2	51.9	346.9	69.2	5.3	
WH	14.5			53.8			22.2	27.7	3.9	
RA	16.2			42.2			25.5	8.3	5.9	2.4
RC	24.9			25.3				25.3		
BC	28.7			16.1			16.1			
ALL	21.6			622.8	12.2	51.9	410.7	130.5	15.2	2.4

### Unit Sale Notice Weight (tons): MADERA SORTS U1B

Sp	Tons by Grade						
	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	3,114.4	73.3	275.6	2,122.0	595.7	47.8	
WH	457.6			165.3	255.7	36.6	
RA	294.3			161.1	57.9	44.3	31.1
RC	182.3				182.3		
BC	84.9			84.9			
ALL	4,133.5	73.3	275.6	2,533.3	1,091.6	128.6	31.1

### Unit Cruise Design: MADERA SORTS U1B

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 40 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	14.5	14.9	11	8	0

### Unit Cruise Summary: MADERA SORTS U1B

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	26	30	2.7	0
WH	6	9	0.8	0
RA	3	7	0.6	0
RC	5	5	0.5	0
BC	1	1	0.1	0
ALL	41	52	4.7	0

**Unit Cruise Statistics (Cut + Leave Trees): MADERA SORTS U1B**

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	170.5	77.1	23.2	196.4	26.3	5.1	33,480	81.4	23.8
WH	32.7	120.0	36.2	113.4	43.8	17.9	3,712	127.7	40.3
RA	25.5	161.4	48.7	114.2	8.8	5.1	2,907	161.6	48.9
RC	18.2	151.3	45.6	95.8	49.6	22.2	1,743	159.2	50.7
BC	5.7	331.7	100.0	195.7	0.0	0.0	1,112	331.7	100.0
ALL	252.5	42.6	12.9	170.1	37.4	5.8	42,954	56.7	14.1

**Unit Summary: MADERA SORTS U1B**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	LIVE	CUT	1	ALL	28.7	90	112	1,112	8.0	1.3	5.7	1.1	84.9	16.1
DF	LIVE	CUT	23	ALL	24.5	88	113	30,132	2.5	46.9	153.4	31.0	2,803.0	436.9
DF	LIVE	POLE	3	ALL	20.0	88	116	3,348	2.5	7.8	17.0	3.8	311.4	48.5
RA	LIVE	CUT	3	ALL	16.2	59	78	2,907	6.0	17.8	25.5	6.3	294.3	42.2
RC	LIVE	CUT	4	ALL	24.2	52	85	1,394	11.2	4.6	14.5	3.0	145.8	20.2
RC	LIVE	POLE	1	ALL	28.6	85	96	349	11.2	0.8	3.6	0.7	36.5	5.1
WH	LIVE	CUT	6	ALL	14.5	56	70	3,712	8.3	28.5	32.7	8.6	457.6	53.8
ALL	LIVE	POLE	4	ALL	20.9	88	114	3,697	3.4	8.6	20.6	4.5	347.9	53.6
ALL	LIVE	CUT	37	ALL	20.7	72	93	39,257	3.9	99.1	231.8	50.0	3,785.6	569.2
ALL	ALL	ALL	41	ALL	20.7	73	95	42,954	3.8	107.7	252.4	54.5	4,133.5	622.8

**Unit Stand Table: MADERA SORTS U1B**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	28	LIVE	CUT	1	28.7	90	112	1,112	8.0	1.3	5.7	1.1	84.9	16.1
DF	14	LIVE	CUT	2	14.4	60	74	1,078	1.6	11.3	12.8	3.4	153.1	15.6
DF	18	LIVE	CUT	2	17.9	82	109	1,810	1.7	7.3	12.8	3.0	211.4	26.2
DF	20	LIVE	CUT	1	19.5	73	92	832	0.7	3.1	6.4	1.4	92.3	12.1
DF	22	LIVE	CUT	1	22.7	95	121	1,230	0.0	2.3	6.4	1.3	112.9	17.8
DF	24	LIVE	CUT	1	24.3	90	114	1,002	1.9	2.0	6.4	1.3	109.1	14.5
DF	26	LIVE	CUT	2	26.1	96	123	3,560	0.8	5.1	19.2	3.8	347.6	51.6
DF	28	LIVE	CUT	3	27.7	103	132	4,111	3.0	4.6	19.2	3.6	364.4	59.6
DF	30	LIVE	CUT	2	29.8	103	132	2,876	0.3	2.6	12.8	2.3	250.3	41.7
DF	32	LIVE	CUT	1	31.2	105	134	1,507	0.2	1.2	6.4	1.1	126.4	21.8
DF	34	LIVE	CUT	3	33.8	116	149	4,325	0.6	3.1	19.2	3.3	394.6	62.7
DF	36	LIVE	CUT	3	35.8	117	151	4,783	1.6	2.7	19.2	3.2	405.2	69.4

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	38	LIVE	CUT	1	37.7	125	165	1,572	1.7	0.8	6.4	1.0	133.9	22.8
DF	40	LIVE	CUT	1	40.3	120	155	1,448	21.7	0.7	6.4	1.0	101.9	21.0
DF	18	LIVE	POLE	1	17.7	86	121	1,115	3.5	3.3	5.7	1.3	103.1	16.2
DF	20	LIVE	POLE	1	19.4	85	108	881	2.6	2.8	5.7	1.3	97.9	12.8
DF	24	LIVE	POLE	1	24.7	95	121	1,351	0.0	1.7	5.7	1.1	110.4	19.6
RA	14	LIVE	CUT	1	13.5	68	84	981	12.9	8.6	8.5	2.3	102.1	14.2
RA	18	LIVE	CUT	1	17.3	60	73	878	0.0	5.2	8.5	2.0	105.7	12.7
RA	20	LIVE	CUT	1	19.5	40	70	1,047	3.8	4.1	8.5	1.9	86.5	15.2
RC	18	LIVE	CUT	1	18.0	30	81	137	6.5	2.1	3.6	0.9	19.7	2.0
RC	22	LIVE	CUT	1	21.4	56	70	255	16.8	1.5	3.6	0.8	35.9	3.7
RC	36	LIVE	CUT	2	36.0	90	115	1,002	15.2	1.0	7.3	1.2	90.3	14.5
RC	28	LIVE	POLE	1	28.6	85	96	349	1.7	0.8	3.6	0.7	36.5	5.1
WH	12	LIVE	CUT	3	12.0	50	62	1,398	4.8	20.7	16.4	4.7	195.8	20.3
WH	16	LIVE	CUT	1	15.5	75	94	783	2.1	4.2	5.5	1.4	96.6	11.3
WH	20	LIVE	CUT	1	19.0	60	74	468	18.0	2.8	5.5	1.3	54.0	6.8
WH	32	LIVE	CUT	1	32.8	91	114	1,063	11.9	0.9	5.5	1.0	111.3	15.4

#### Unit Log Grade Summary: MADERA SORTS U1B

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	17.6	35.0	1,112	3.8	84.9	16.1
BC	LIVE	CULL	9.5	17.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	16.4	38.0	23,922	0.6	2,122.0	346.9
DF	LIVE	3 PEELER	25.9	36.0	840	0.0	73.3	12.2
DF	LIVE	3 SAW	9.1	34.0	4,773	0.0	595.7	69.2
DF	LIVE	4 SAW	6.4	17.0	367	0.0	47.8	5.3
DF	LIVE	CULL	8.1	5.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	20.1	33.0	3,577	0.0	275.6	51.9
RA	LIVE	2 SAW	13.3	22.0	1,759	2.3	161.1	25.5
RA	LIVE	3 SAW	10.6	20.0	572	5.6	57.9	8.3
RA	LIVE	4 SAW	7.2	30.0	410	0.0	44.3	5.9
RA	LIVE	CULL	5.0	12.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	5.7	30.0	166	0.0	31.1	2.4
RC	LIVE	3 SAW	12.9	33.0	1,743	1.8	182.3	25.3
RC	LIVE	CULL	8.3	9.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	15.8	32.0	1,531	6.6	165.3	22.2
WH	LIVE	3 SAW	7.7	35.0	1,910	0.0	255.7	27.7
WH	LIVE	4 SAW	5.9	22.0	271	0.0	36.6	3.9

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	CULL	5.6	8.0	0	100.0	0.0	0.0

### Unit Log Sort Summary: MADERA SORTS U1B

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	Cull	9.5	17.0	0	100.0	0.0	0.0
BC	LIVE	Domestic	17.6	35.0	1,112	3.8	84.9	16.1
DF	LIVE	Cull	8.1	5.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	11.5	33.0	22,370	0.7	2,145.8	324.4
DF	LIVE	HQ-A	20.1	33.0	3,577	0.0	275.6	51.9
DF	LIVE	HQ-B	17.0	39.0	7,532	0.0	693.0	109.2
RA	LIVE	Cull	5.0	12.0	0	100.0	0.0	0.0
RA	LIVE	Domestic	10.8	24.0	2,741	2.7	263.2	39.7
RA	LIVE	Pulp	5.7	30.0	166	0.0	31.1	2.4
RC	LIVE	Cull	8.3	9.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	12.9	33.0	1,743	1.8	182.3	25.3
WH	LIVE	Cull	5.6	8.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	8.1	31.0	3,712	2.8	457.6	53.8

### Unit Log Grade x Sort Summary: MADERA SORTS U1B

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	17.6	35.0	1,112	3.8	84.9	16.1
BC	LIVE	CULL	Cull	9.5	17.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	Domestic	16.2	37.0	16,390	0.9	1,429.0	237.7
DF	LIVE	2 SAW	HQ-B	17.0	39.0	7,532	0.0	693.0	109.2
DF	LIVE	3 PEELER	Domestic	25.9	36.0	840	0.0	73.3	12.2
DF	LIVE	3 SAW	Domestic	9.1	34.0	4,773	0.0	595.7	69.2
DF	LIVE	4 SAW	Domestic	6.4	17.0	367	0.0	47.8	5.3
DF	LIVE	CULL	Cull	8.1	5.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	20.1	33.0	3,577	0.0	275.6	51.9
RA	LIVE	2 SAW	Domestic	13.3	22.0	1,759	2.3	161.1	25.5
RA	LIVE	3 SAW	Domestic	10.6	20.0	572	5.6	57.9	8.3
RA	LIVE	4 SAW	Domestic	7.2	30.0	410	0.0	44.3	5.9
RA	LIVE	CULL	Cull	5.0	12.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	5.7	30.0	166	0.0	31.1	2.4
RC	LIVE	3 SAW	Domestic	12.9	33.0	1,743	1.8	182.3	25.3
RC	LIVE	CULL	Cull	8.3	9.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	15.8	32.0	1,531	6.6	165.3	22.2

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	3 SAW	Domestic	7.7	35.0	1,910	0.0	255.7	27.7
WH	LIVE	4 SAW	Domestic	5.9	22.0	271	0.0	36.6	3.9
WH	LIVE	CULL	Cull	5.6	8.0	0	100.0	0.0	0.0

#### Unit Log Grade x Diameter Bin Summary: MADERA SORTS U1B

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	8+	LIVE	CULL	9.5	17.0	0	100.0	0.0	0.0
BC	8+	LIVE	2 SAW	17.6	35.0	1,112	3.8	84.9	16.1
DF	5 - 11	LIVE	4 SAW	6.4	17.0	367	0.0	47.8	5.3
DF	5 - 11	LIVE	CULL	7.5	5.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	3 SAW	9.1	34.0	4,773	0.0	595.7	69.2
DF	12 - 19	LIVE	CULL	12.8	3.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	2 SAW	14.9	38.0	14,868	0.3	1,389.0	215.6
DF	12 - 19	LIVE	SPECIAL MILL	17.6	24.0	622	0.0	49.2	9.0
DF	20+	LIVE	SPECIAL MILL	21.7	38.0	2,955	0.0	226.5	42.8
DF	20+	LIVE	2 SAW	22.7	38.0	9,055	1.1	733.0	131.3
DF	20+	LIVE	3 PEELER	25.9	36.0	840	0.0	73.3	12.2
DF	20+	LIVE	CULL	32.5	12.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	CULL	5.0	12.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	UTILITY	5.7	30.0	166	0.0	31.1	2.4
RA	5 - 7	LIVE	4 SAW	7.2	30.0	410	0.0	44.3	5.9
RA	8 - 11	LIVE	3 SAW	10.6	20.0	572	5.6	57.9	8.3
RA	12+	LIVE	2 SAW	13.3	22.0	1,759	2.3	161.1	25.5
RC	5+	LIVE	CULL	8.3	9.0	0	100.0	0.0	0.0
RC	5+	LIVE	3 SAW	12.9	33.0	1,743	1.8	182.3	25.3
WH	5 - 11	LIVE	CULL	5.6	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	4 SAW	5.9	22.0	271	0.0	36.6	3.9
WH	5 - 11	LIVE	3 SAW	7.7	35.0	1,910	0.0	255.7	27.7
WH	12 - 19	LIVE	2 SAW	13.9	30.0	766	0.0	87.2	11.1
WH	20+	LIVE	2 SAW	23.5	40.0	765	12.4	78.1	11.1

#### Unit Log Sort x Diameter Bin Summary: MADERA SORTS U1B

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	8+	LIVE	Cull	9.5	17.0	0	100.0	0.0	0.0
BC	8+	LIVE	Domestic	17.6	35.0	1,112	3.8	84.9	16.1
DF	5 - 11	LIVE	Cull	7.5	5.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Domestic	8.5	30.0	5,140	0.0	643.5	74.5

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	12 - 19	LIVE	Cull	12.8	3.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	Domestic	14.7	38.0	10,026	0.5	937.5	145.4
DF	12 - 19	LIVE	HQ-B	15.6	39.0	4,841	0.0	451.5	70.2
DF	12 - 19	LIVE	HQ-A	17.6	24.0	622	0.0	49.2	9.0
DF	20+	LIVE	HQ-A	21.7	38.0	2,955	0.0	226.5	42.8
DF	20+	LIVE	Domestic	22.7	37.0	7,204	1.4	564.7	104.5
DF	20+	LIVE	HQ-B	23.6	40.0	2,691	0.0	241.5	39.0
DF	20+	LIVE	Cull	32.5	12.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	Cull	5.0	12.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	Pulp	5.7	30.0	166	0.0	31.1	2.4
RA	5 - 7	LIVE	Domestic	7.2	30.0	410	0.0	44.3	5.9
RA	8 - 11	LIVE	Domestic	10.6	20.0	572	5.6	57.9	8.3
RA	12+	LIVE	Domestic	13.3	22.0	1,759	2.3	161.1	25.5
RC	5+	LIVE	Cull	8.3	9.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	12.9	33.0	1,743	1.8	182.3	25.3
WH	5 - 11	LIVE	Cull	5.6	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	7.1	31.0	2,181	0.0	292.3	31.6
WH	12 - 19	LIVE	Domestic	13.9	30.0	766	0.0	87.2	11.1
WH	20+	LIVE	Domestic	23.5	40.0	765	12.4	78.1	11.1

## Cruise Unit Report MADERA SORTS U3A

### Unit Sale Notice Volume (MBF): MADERA SORTS U3A

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	18.5			753.7	502.0	187.3	42.7	21.7
WH	13.1			252.8	43.0	171.9	23.0	14.8
RC	14.4			138.6		101.5	37.1	
MA	18.4			84.4	60.3			24.1
ALL	15.8			1,229.5	605.3	460.8	102.8	60.6

### Unit Sale Notice Weight (tons): MADERA SORTS U3A

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	5,475.7	3,318.6	1,565.2	414.0	178.0
WH	2,226.2	369.8	1,516.7	208.0	131.6
RC	1,179.8		856.2	323.6	
MA	504.6	354.3			150.3
ALL	9,386.3	4,042.7	3,938.1	945.6	459.9

### Unit Cruise Design: MADERA SORTS U3A

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	36.1	38.0	25	17	0

### Unit Cruise Summary: MADERA SORTS U3A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	34	62	2.5	0
WH	24	33	1.3	0
RC	18	30	1.2	0
MA	5	14	0.6	0
ALL	81	139	5.6	0

**Unit Cruise Statistics (Cut + Leave Trees): MADERA SORTS U3A**

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	135.0	59.5	11.9	154.6	31.6	5.4	20,878	67.4	13.1
WH	52.8	144.6	28.9	132.6	19.2	3.9	7,002	145.9	29.2
RC	48.0	107.6	21.5	80.0	32.2	7.6	3,840	112.3	22.8
MA	22.4	247.7	49.5	104.4	14.1	6.3	2,338	248.0	49.9
ALL	258.2	40.8	8.2	131.9	35.4	3.9	34,058	54.0	9.1

**Unit Summary: MADERA SORTS U3A**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	30	ALL	18.6	77	97	19,531	2.4	66.9	126.3	29.3	5,122.4	705.1
DF	LIVE	POLE	4	ALL	17.5	75	94	1,347	2.4	5.2	8.7	2.1	353.3	48.6
MA	LIVE	CUT	5	ALL	18.4	61	75	2,338	25.8	12.1	22.4	5.2	504.6	84.4
RC	LIVE	CUT	13	ALL	13.4	58	73	3,200	12.0	40.8	40.0	10.9	983.2	115.5
RC	LIVE	POLE	5	ALL	18.4	70	88	640	12.0	4.3	8.0	1.9	196.6	23.1
WH	LIVE	CUT	24	ALL	13.1	70	87	7,002	2.7	56.4	52.8	14.6	2,226.2	252.8
ALL	LIVE	POLE	9	ALL	17.9	73	91	1,987	5.7	9.5	16.7	4.0	549.9	71.7
ALL	LIVE	CUT	72	ALL	15.8	69	87	32,071	5.7	176.2	241.5	60.0	8,836.4	1,157.8
ALL	ALL	ALL	81	ALL	16.0	69	87	34,058	5.7	185.7	258.2	64.0	9,386.3	1,229.5

**Unit Stand Table: MADERA SORTS U3A**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	10	LIVE	CUT	1	9.6	67	84	309	9.3	8.1	4.1	1.3	107.1	11.2
DF	12	LIVE	CUT	3	11.9	57	70	919	11.2	15.7	12.2	3.5	299.8	33.2
DF	14	LIVE	CUT	2	14.2	66	83	889	0.0	7.4	8.1	2.2	270.2	32.1
DF	16	LIVE	CUT	1	16.3	75	95	515	0.0	2.8	4.1	1.0	151.4	18.6
DF	18	LIVE	CUT	2	18.2	83	105	1,093	1.6	4.5	8.1	1.9	323.5	39.5
DF	20	LIVE	CUT	2	19.5	83	104	1,082	1.0	3.9	8.1	1.8	327.1	39.0
DF	22	LIVE	CUT	4	21.3	86	108	2,435	1.3	6.6	16.3	3.5	666.1	87.9
DF	24	LIVE	CUT	6	23.4	89	114	4,649	3.4	9.5	28.5	5.9	1,182.1	167.8
DF	26	LIVE	CUT	3	25.6	101	129	2,371	0.4	3.4	12.2	2.4	577.5	85.6
DF	28	LIVE	CUT	2	28.4	110	141	1,752	0.0	1.9	8.1	1.5	408.4	63.3
DF	32	LIVE	CUT	2	32.1	106	135	1,645	3.7	1.5	8.1	1.4	396.4	59.4
DF	34	LIVE	CUT	1	33.0	117	150	950	1.9	0.7	4.1	0.7	207.8	34.3
DF	36	LIVE	CUT	1	35.0	120	154	923	2.4	0.6	4.1	0.7	205.1	33.3
DF	14	LIVE	POLE	1	13.8	63	79	246	0.0	2.1	2.2	0.6	72.8	8.9

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	16	LIVE	POLE	1	16.2	73	92	305	1.1	1.5	2.2	0.5	82.5	11.0
DF	22	LIVE	POLE	1	21.3	93	118	388	2.9	0.9	2.2	0.5	99.3	14.0
DF	24	LIVE	POLE	1	23.5	90	114	409	1.9	0.7	2.2	0.4	98.8	14.8
MA	18	LIVE	CUT	3	17.8	59	72	1,917	10.2	10.4	17.9	4.3	416.1	69.2
MA	22	LIVE	CUT	1	21.0	74	91	222	33.2	0.9	2.2	0.5	47.1	8.0
MA	24	LIVE	CUT	1	23.0	75	93	199	38.9	0.8	2.2	0.5	41.4	7.2
RC	10	LIVE	CUT	2	9.9	49	61	422	13.6	11.5	6.2	2.0	129.3	15.2
RC	12	LIVE	CUT	3	11.5	61	76	690	29.5	12.7	9.2	2.7	189.5	24.9
RC	14	LIVE	CUT	3	13.7	61	76	667	19.7	9.0	9.2	2.5	228.3	24.1
RC	16	LIVE	CUT	1	15.2	70	89	279	8.3	2.4	3.1	0.8	92.9	10.1
RC	18	LIVE	CUT	2	18.1	55	68	376	19.9	3.5	6.2	1.4	135.8	13.6
RC	24	LIVE	CUT	1	24.9	70	88	390	1.1	0.9	3.1	0.6	99.6	14.1
RC	26	LIVE	CUT	1	25.8	74	94	376	6.3	0.8	3.1	0.6	107.8	13.6
RC	16	LIVE	POLE	2	15.6	67	84	265	2.0	2.4	3.2	0.8	75.2	9.6
RC	22	LIVE	POLE	3	21.5	73	93	375	1.4	1.9	4.8	1.0	121.4	13.5
WH	8	LIVE	CUT	2	8.3	56	69	352	0.0	11.1	4.2	1.5	113.5	12.7
WH	10	LIVE	CUT	2	10.6	54	66	392	12.9	6.9	4.2	1.3	118.5	14.2
WH	12	LIVE	CUT	6	11.9	70	87	1,583	3.4	16.3	12.7	3.7	503.0	57.2
WH	14	LIVE	CUT	2	13.5	75	93	537	0.0	4.2	4.2	1.1	183.3	19.4
WH	16	LIVE	CUT	6	15.7	82	103	1,980	1.6	9.4	12.7	3.2	603.9	71.5
WH	18	LIVE	CUT	5	17.7	83	104	1,846	2.4	7.4	12.7	3.0	599.7	66.6
WH	20	LIVE	CUT	1	19.7	87	109	312	1.6	1.0	2.1	0.5	104.2	11.3

### Unit Log Grade Summary: MADERA SORTS U3A

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	15.7	38.0	13,906	0.6	3,318.6	502.0
DF	LIVE	3 SAW	9.0	38.0	5,190	0.0	1,565.2	187.3
DF	LIVE	4 SAW	6.8	26.0	1,183	3.2	414.0	42.7
DF	LIVE	CULL	6.4	7.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	5.5	27.0	600	0.0	178.0	21.7
MA	LIVE	2 SAW	14.2	21.0	1,669	1.4	354.3	60.3
MA	LIVE	CULL	7.5	17.0	0	100.0	0.0	0.0
MA	LIVE	UTILITY	10.3	20.0	669	1.4	150.3	24.1
RC	LIVE	3 SAW	9.4	35.0	2,812	1.6	856.2	101.5
RC	LIVE	4 SAW	6.3	27.0	1,028	0.0	323.6	37.1
RC	LIVE	CULL	5.6	10.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	12.7	40.0	1,192	0.0	369.8	43.0

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	3 SAW	8.3	37.0	4,762	0.9	1,516.7	171.9
WH	LIVE	4 SAW	5.6	25.0	637	0.0	208.0	23.0
WH	LIVE	CULL	5.4	6.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	5.0	29.0	411	0.0	131.6	14.8

#### Unit Log Sort Summary: MADERA SORTS U3A

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	6.4	7.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	9.7	34.0	13,539	0.8	3,680.1	488.8
DF	LIVE	HQ-A	17.4	40.0	517	0.0	117.0	18.7
DF	LIVE	HQ-B	15.4	40.0	6,222	0.4	1,500.6	224.6
DF	LIVE	Pulp	5.5	27.0	600	0.0	178.0	21.7
MA	LIVE	Cull	7.5	17.0	0	100.0	0.0	0.0
MA	LIVE	Domestic	14.2	21.0	1,669	1.4	354.3	60.3
MA	LIVE	Pulp	10.3	20.0	669	1.4	150.3	24.1
RC	LIVE	Cull	5.6	10.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	7.7	31.0	3,840	1.2	1,179.8	138.6
WH	LIVE	Cull	5.4	6.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	7.9	34.0	6,591	0.6	2,094.6	238.0
WH	LIVE	Pulp	5.0	29.0	411	0.0	131.6	14.8

#### Unit Log Grade x Sort Summary: MADERA SORTS U3A

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	15.9	37.0	7,167	0.9	1,701.0	258.7
DF	LIVE	2 SAW	HQ-A	17.4	40.0	517	0.0	117.0	18.7
DF	LIVE	2 SAW	HQ-B	15.4	40.0	6,222	0.4	1,500.6	224.6
DF	LIVE	3 SAW	Domestic	9.0	38.0	5,190	0.0	1,565.2	187.3
DF	LIVE	4 SAW	Domestic	6.8	26.0	1,183	3.2	414.0	42.7
DF	LIVE	CULL	Cull	6.4	7.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	5.5	27.0	600	0.0	178.0	21.7
MA	LIVE	2 SAW	Domestic	14.2	21.0	1,669	1.4	354.3	60.3
MA	LIVE	CULL	Cull	7.5	17.0	0	100.0	0.0	0.0
MA	LIVE	UTILITY	Pulp	10.3	20.0	669	1.4	150.3	24.1
RC	LIVE	3 SAW	Domestic	9.4	35.0	2,812	1.6	856.2	101.5
RC	LIVE	4 SAW	Domestic	6.3	27.0	1,028	0.0	323.6	37.1
RC	LIVE	CULL	Cull	5.6	10.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	12.7	40.0	1,192	0.0	369.8	43.0

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	3 SAW	Domestic	8.3	37.0	4,762	0.9	1,516.7	171.9
WH	LIVE	4 SAW	Domestic	5.6	25.0	637	0.0	208.0	23.0
WH	LIVE	CULL	Cull	5.4	6.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.0	29.0	411	0.0	131.6	14.8

#### Unit Log Grade x Diameter Bin Summary: MADERA SORTS U3A

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	UTILITY	5.5	27.0	600	0.0	178.0	21.7
DF	5 - 11	LIVE	CULL	6.0	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	4 SAW	6.8	26.0	1,183	3.2	414.0	42.7
DF	5 - 11	LIVE	3 SAW	9.0	38.0	5,190	0.0	1,565.2	187.3
DF	12 - 19	LIVE	2 SAW	15.2	38.0	11,800	0.3	2,840.1	426.0
DF	12 - 19	LIVE	CULL	16.6	4.0	0	100.0	0.0	0.0
DF	20+	LIVE	2 SAW	22.4	40.0	2,105	2.5	478.5	76.0
MA	5 - 7	LIVE	CULL	6.0	15.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	CULL	8.0	30.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	UTILITY	10.1	20.0	584	1.6	131.5	21.1
MA	12+	LIVE	UTILITY	12.6	20.0	84	0.0	18.8	3.1
MA	12+	LIVE	2 SAW	14.2	21.0	1,669	1.4	354.3	60.3
MA	12+	LIVE	CULL	16.0	17.0	0	100.0	0.0	0.0
RC	5+	LIVE	CULL	5.6	10.0	0	100.0	0.0	0.0
RC	5+	LIVE	4 SAW	6.3	27.0	1,028	0.0	323.6	37.1
RC	5+	LIVE	3 SAW	9.4	35.0	2,812	1.6	856.2	101.5
WH	5 - 11	LIVE	UTILITY	5.0	29.0	411	0.0	131.6	14.8
WH	5 - 11	LIVE	CULL	5.4	6.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	4 SAW	5.6	25.0	637	0.0	208.0	23.0
WH	5 - 11	LIVE	3 SAW	8.3	37.0	4,762	0.9	1,516.7	171.9
WH	12 - 19	LIVE	2 SAW	12.7	40.0	1,192	0.0	369.8	43.0

#### Unit Log Sort x Diameter Bin Summary: MADERA SORTS U3A

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Pulp	5.5	27.0	600	0.0	178.0	21.7
DF	5 - 11	LIVE	Cull	6.0	7.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Domestic	8.1	33.0	6,372	0.6	1,979.2	230.0
DF	12 - 19	LIVE	Domestic	15.0	36.0	5,061	0.2	1,222.5	182.7
DF	12 - 19	LIVE	HQ-B	15.4	40.0	6,222	0.4	1,500.6	224.6
DF	12 - 19	LIVE	Cull	16.6	4.0	0	100.0	0.0	0.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	12 - 19	LIVE	HQ-A	17.4	40.0	517	0.0	117.0	18.7
DF	20+	LIVE	Domestic	22.4	40.0	2,105	2.5	478.5	76.0
MA	5 - 7	LIVE	Cull	6.0	15.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	Cull	8.0	30.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	Pulp	10.1	20.0	584	1.6	131.5	21.1
MA	12+	LIVE	Pulp	12.6	20.0	84	0.0	18.8	3.1
MA	12+	LIVE	Domestic	14.2	21.0	1,669	1.4	354.3	60.3
MA	12+	LIVE	Cull	16.0	17.0	0	100.0	0.0	0.0
RC	5+	LIVE	Cull	5.6	10.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	7.7	31.0	3,840	1.2	1,179.8	138.6
WH	5 - 11	LIVE	Pulp	5.0	29.0	411	0.0	131.6	14.8
WH	5 - 11	LIVE	Cull	5.4	6.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	7.5	33.0	5,399	0.8	1,724.7	194.9
WH	12 - 19	LIVE	Domestic	12.7	40.0	1,192	0.0	369.8	43.0

## Cruise Unit Report MADERA SORTS U3B

### Unit Sale Notice Volume (MBF): MADERA SORTS U3B

Sp	QMD	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	15.6			57.4	21.6	31.6	4.1
ALL	15.6			57.4	21.6	31.6	4.1

### Unit Sale Notice Weight (tons): MADERA SORTS U3B

Sp	Tons by Grade			
	All	2 Saw	3 Saw	4 Saw
WH	500.3	173.2	290.3	36.8
ALL	500.3	173.2	290.3	36.8

### Unit Cruise Design: MADERA SORTS U3B

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	4.0	4.6	3	3	0

### Unit Cruise Summary: MADERA SORTS U3B

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	11	11	3.7	0
ALL	11	11	3.7	0

### Unit Cruise Statistics (Cut + Leave Trees): MADERA SORTS U3B

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	96.9	62.6	36.1	148.1	12.0	3.6	14,346	63.7	36.3
ALL	96.9	62.6	36.1	148.1	12.0	3.6	14,346	63.7	36.3

### Unit Summary: MADERA SORTS U3B

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
WH	LIVE	CUT	11	ALL	15.6	82	102	14,346	0.0	73.0	96.9	24.5	500.3	57.4
ALL	LIVE	CUT	11	ALL	15.6	82	102	14,346	0.0	73.0	96.9	24.5	500.3	57.4
ALL	ALL	ALL	11	ALL	15.6	82	102	14,346	0.0	73.0	96.9	24.5	500.3	57.4

**Unit Stand Table: MADERA SORTS U3B**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
WH	12	LIVE	CUT	1	12.2	72	90	710	0.0	6.7	5.4	1.6	24.3	2.8
WH	14	LIVE	CUT	4	13.3	76	95	3,360	0.0	26.7	25.8	7.1	122.1	13.4
WH	16	LIVE	CUT	3	16.7	91	114	4,936	0.0	20.0	30.6	7.5	169.0	19.7
WH	18	LIVE	CUT	2	17.4	81	101	3,295	0.0	13.3	22.0	5.3	112.9	13.2
WH	20	LIVE	CUT	1	19.0	87	109	2,045	0.0	6.7	13.1	3.0	71.9	8.2

**Unit Log Grade Summary: MADERA SORTS U3B**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	2 SAW	12.4	40.0	5,405	0.0	173.2	21.6
WH	LIVE	3 SAW	8.5	38.0	7,906	0.0	290.3	31.6
WH	LIVE	4 SAW	5.4	30.0	1,035	0.0	36.8	4.1

**Unit Log Sort Summary: MADERA SORTS U3B**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	Domestic	8.5	36.0	14,346	0.0	500.3	57.4

**Unit Log Grade x Sort Summary: MADERA SORTS U3B**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	LIVE	2 SAW	Domestic	12.4	40.0	5,405	0.0	173.2	21.6
WH	LIVE	3 SAW	Domestic	8.5	38.0	7,906	0.0	290.3	31.6
WH	LIVE	4 SAW	Domestic	5.4	30.0	1,035	0.0	36.8	4.1

**Unit Log Grade x Diameter Bin Summary: MADERA SORTS U3B**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	5 - 11	LIVE	4 SAW	5.4	30.0	1,035	0.0	36.8	4.1
WH	5 - 11	LIVE	3 SAW	8.5	38.0	7,906	0.0	290.3	31.6
WH	12 - 19	LIVE	2 SAW	12.4	40.0	5,405	0.0	173.2	21.6

**Unit Log Sort x Diameter Bin Summary: MADERA SORTS U3B**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
WH	5 - 11	LIVE	Domestic	7.6	36.0	8,941	0.0	327.1	35.8
WH	12 - 19	LIVE	Domestic	12.4	40.0	5,405	0.0	173.2	21.6

## Cruise Unit Report MADERA SORTS U3C

### Unit Sale Notice Volume (MBF): MADERA SORTS U3C

Sp	QMD	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	20.9			42.0	30.4	10.8	0.8
WH	13.5			32.2		25.1	7.1
RC	16.6			7.3		6.3	1.0
ALL	16.2			81.5	30.4	42.1	8.9

### Unit Sale Notice Weight (tons): MADERA SORTS U3C

Sp	Tons by Grade			
	All	2 Saw	3 Saw	4 Saw
DF	298.8	204.5	86.8	7.5
WH	272.3		204.2	68.1
RC	65.0		52.7	12.3
ALL	636.1	204.5	343.7	87.9

### Unit Cruise Design: MADERA SORTS U3C

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	4.9	5.7	3	3	0

### Unit Cruise Summary: MADERA SORTS U3C

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	3	3	1.0	0
WH	7	7	2.3	0
RC	2	2	0.7	0
ALL	12	12	4.0	0

### Unit Cruise Statistics (Cut + Leave Trees): MADERA SORTS U3C

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	47.9	101.2	58.4	178.9	12.2	7.1	8,565	101.9	58.9
WH	46.5	54.7	31.6	141.3	11.2	4.2	6,574	55.9	31.9
RC	20.0	100.4	58.0	74.3	70.6	49.9	1,489	122.7	76.5

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 (%)
ALL	114.4	58.0	33.5	145.3	28.1	8.1	16,628	64.5	34.5

**Unit Summary: MADERA SORTS U3C**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	3	ALL	20.9	93	117	8,565	0.0	20.1	47.9	10.5	298.8	42.0
RC	LIVE	CUT	2	ALL	16.6	56	70	1,489	2.9	13.3	20.0	4.9	65.0	7.3
WH	LIVE	CUT	7	ALL	13.5	74	93	6,574	0.0	46.8	46.5	12.7	272.3	32.2
ALL	LIVE	CUT	12	ALL	16.2	76	95	16,628	0.3	80.2	114.4	28.1	636.1	81.5
ALL	ALL	ALL	12	ALL	16.2	76	95	16,628	0.3	80.2	114.4	28.1	636.1	81.5

**Unit Stand Table: MADERA SORTS U3C**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	20	LIVE	CUT	2	20.4	94	119	5,494	0.0	13.3	30.3	6.7	191.4	26.9
DF	22	LIVE	CUT	1	22.0	90	113	3,071	0.0	6.7	17.6	3.8	107.4	15.0
RC	14	LIVE	CUT	1	13.5	35	41	211	0.0	6.7	6.6	1.8	12.3	1.0
RC	20	LIVE	CUT	1	19.2	77	98	1,278	3.9	6.7	13.4	3.1	52.7	6.3
WH	10	LIVE	CUT	1	10.1	65	81	519	0.0	6.7	3.7	1.2	17.3	2.5
WH	12	LIVE	CUT	2	11.9	70	87	1,282	0.0	13.3	10.2	3.0	54.9	6.3
WH	14	LIVE	CUT	2	14.4	80	100	2,281	0.0	13.3	15.1	4.0	94.5	11.2
WH	16	LIVE	CUT	2	15.5	78	97	2,492	0.0	13.3	17.5	4.4	105.7	12.2

**Unit Log Grade Summary: MADERA SORTS U3C**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	14.7	40.0	6,203	0.0	204.5	30.4
DF	LIVE	3 SAW	9.3	37.0	2,201	0.0	86.8	10.8
DF	LIVE	4 SAW	6.6	19.0	161	0.0	7.5	0.8
RC	LIVE	3 SAW	9.9	36.0	1,278	3.9	52.7	6.3
RC	LIVE	4 SAW	6.3	30.0	211	0.0	12.3	1.0
WH	LIVE	3 SAW	9.1	38.0	5,121	0.0	204.2	25.1
WH	LIVE	4 SAW	5.2	29.0	1,453	0.0	68.1	7.1

**Unit Log Sort Summary: MADERA SORTS U3C**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	11.2	36.0	8,565	0.0	298.8	42.0
RC	LIVE	Domestic	8.7	34.0	1,489	3.3	65.0	7.3
WH	LIVE	Domestic	7.2	34.0	6,574	0.0	272.3	32.2

**Unit Log Grade x Sort Summary: MADERA SORTS U3C**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	14.7	40.0	6,203	0.0	204.5	30.4
DF	LIVE	3 SAW	Domestic	9.3	37.0	2,201	0.0	86.8	10.8
DF	LIVE	4 SAW	Domestic	6.6	19.0	161	0.0	7.5	0.8
RC	LIVE	3 SAW	Domestic	9.9	36.0	1,278	3.9	52.7	6.3
RC	LIVE	4 SAW	Domestic	6.3	30.0	211	0.0	12.3	1.0
WH	LIVE	3 SAW	Domestic	9.1	38.0	5,121	0.0	204.2	25.1
WH	LIVE	4 SAW	Domestic	5.2	29.0	1,453	0.0	68.1	7.1

**Unit Log Grade x Diameter Bin Summary: MADERA SORTS U3C**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	4 SAW	6.6	19.0	161	0.0	7.5	0.8
DF	5 - 11	LIVE	3 SAW	9.3	37.0	2,201	0.0	86.8	10.8
DF	12 - 19	LIVE	2 SAW	14.7	40.0	6,203	0.0	204.5	30.4
RC	5+	LIVE	4 SAW	6.3	30.0	211	0.0	12.3	1.0
RC	5+	LIVE	3 SAW	9.9	36.0	1,278	3.9	52.7	6.3
WH	5 - 11	LIVE	4 SAW	5.2	29.0	1,453	0.0	68.1	7.1
WH	5 - 11	LIVE	3 SAW	9.1	38.0	5,121	0.0	204.2	25.1

**Unit Log Sort x Diameter Bin Summary: MADERA SORTS U3C**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Domestic	8.7	33.0	2,362	0.0	94.3	11.6
DF	12 - 19	LIVE	Domestic	14.7	40.0	6,203	0.0	204.5	30.4
RC	5+	LIVE	Domestic	8.7	34.0	1,489	3.3	65.0	7.3
WH	5 - 11	LIVE	Domestic	7.2	34.0	6,574	0.0	272.3	32.2

## Cruise Unit Report MADERA ROW 1

### Unit Sale Notice Volume (MBF): MADERA ROW 1

Sp	QMD	Rings/In	Age	MBF Volume by Grade			
				All	3 Saw	4 Saw	Utility
DF	12.2			6.6	2.8	2.2	1.6
ALL	12.2			6.6	2.8	2.2	1.6

### Unit Sale Notice Weight (tons): MADERA ROW 1

Sp	Tons by Grade			
	All	3 Saw	4 Saw	Utility
DF	61.3	24.5	21.8	15.0
ALL	61.3	24.5	21.8	15.0

### Unit Cruise Design: MADERA ROW 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	1.2	1.2	1	1	0

### Unit Cruise Summary: MADERA ROW 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	7	7	7.0	0
ALL	7	7	7.0	0

### Unit Cruise Statistics (Cut + Leave Trees): MADERA ROW 1

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	114.2	0.0	0.0	48.3	16.6	6.3	5,520	16.6	6.3
ALL	114.2	0.0	0.0	48.3	16.6	6.3	5,520	16.6	6.3

### Unit Summary: MADERA ROW 1

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	7	ALL	12.2	35	42	5,520	8.3	140.7	114.2	32.7	61.3	6.6
ALL	LIVE	CUT	7	ALL	12.2	35	42	5,520	8.3	140.7	114.2	32.7	61.3	6.6
ALL	ALL	ALL	7	ALL	12.2	35	42	5,520	8.3	140.7	114.2	32.7	61.3	6.6

**Unit Stand Table: MADERA ROW 1**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	10	LIVE	CUT	2	9.9	32	38	1,104	0.0	40.0	21.4	6.8	10.9	1.3
DF	12	LIVE	CUT	2	11.8	34	40	1,305	3.0	40.0	30.1	8.8	16.3	1.6
DF	14	LIVE	CUT	3	13.8	37	45	3,111	16.2	60.0	62.6	16.8	34.1	3.7

**Unit Log Grade Summary: MADERA ROW 1**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	9.3	24.0	2,328	0.0	24.5	2.8
DF	LIVE	4 SAW	5.6	27.0	1,827	0.0	21.8	2.2
DF	LIVE	CULL	5.0	10.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	6.2	26.0	1,365	0.0	15.0	1.6

**Unit Log Sort Summary: MADERA ROW 1**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	5.0	10.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	7.1	26.0	4,155	0.0	46.3	5.0
DF	LIVE	Pulp	6.2	26.0	1,365	0.0	15.0	1.6

**Unit Log Grade x Sort Summary: MADERA ROW 1**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	Domestic	9.3	24.0	2,328	0.0	24.5	2.8
DF	LIVE	4 SAW	Domestic	5.6	27.0	1,827	0.0	21.8	2.2
DF	LIVE	CULL	Cull	5.0	10.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	6.2	26.0	1,365	0.0	15.0	1.6

**Unit Log Grade x Diameter Bin Summary: MADERA ROW 1**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	CULL	5.0	10.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	4 SAW	5.6	27.0	1,827	0.0	21.8	2.2
DF	5 - 11	LIVE	UTILITY	6.2	26.0	1,365	0.0	15.0	1.6
DF	5 - 11	LIVE	3 SAW	9.3	24.0	2,328	0.0	24.5	2.8

**Unit Log Sort x Diameter Bin Summary: MADERA ROW 1**

<b>Sp</b>	<b>Bin</b>	<b>Status</b>	<b>Sort</b>	<b>Dia</b>	<b>Len</b>	<b>BF Net</b>	<b>Defect %</b>	<b>Tons</b>	<b>MBF Net</b>
DF	5 - 11	LIVE	Cull	5.0	10.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Pulp	6.2	26.0	1,365	0.0	15.0	1.6
DF	5 - 11	LIVE	Domestic	7.1	26.0	4,155	0.0	46.3	5.0

## Cruise Unit Report MADERA ROW 2

### Unit Sale Notice Volume (MBF): MADERA ROW 2

Sp	QMD	Rings/In	Age	MBF Volume by Grade		
				All	4 Saw	Utility
DF	29.9			28.0	21.2	6.8
ALL	29.9			28.0	21.2	6.8

### Unit Sale Notice Weight (tons): MADERA ROW 2

Sp	Tons by Grade		
	All	4 Saw	Utility
DF	289.0	16.1	272.9
ALL	289.0	16.1	272.9

### Unit Cruise Design: MADERA ROW 2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	0.6	0.6	1	1	0

### Unit Cruise Summary: MADERA ROW 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	9	9	9.0	0
ALL	9	9	9.0	0

### Unit Cruise Statistics (Cut + Leave Trees): MADERA ROW 2

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	879.2	0.0	0.0	53.1	38.9	13.0	46,700	38.9	13.0
ALL	879.2	0.0	0.0	53.1	38.9	13.0	46,700	38.9	13.0

### Unit Summary: MADERA ROW 2

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	9	ALL	29.9	31	47	46,700	4.4	180.3	879.2	160.8	289.0	28.0
ALL	LIVE	CUT	9	ALL	29.9	31	47	46,700	4.4	180.3	879.2	160.8	289.0	28.0
ALL	ALL	ALL	9	ALL	29.9	31	47	46,700	4.4	180.3	879.2	160.8	289.0	28.0

**Unit Stand Table: MADERA ROW 2**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	8	LIVE	CUT	2	8.7	27	46	8,288	7.1	40.0	16.3	5.6	3.0	5.0
DF	10	LIVE	CUT	5	10.0	32	48	25,183	3.7	100.0	54.9	17.3	11.9	15.1
DF	14	LIVE	CUT	1	13.5	38	48	9,085	0.0	20.0	19.9	5.4	4.4	5.5
DF	86	LIVE	CUT	1	85.0	25	37	4,144	0.0	20.0	788.1	85.5	269.6	2.5

**Unit Log Grade Summary: MADERA ROW 2**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	4 SAW	5.9	27.0	35,384	0.0	16.1	21.2
DF	LIVE	CULL	5.0	3.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	5.0	22.0	11,316	0.0	272.9	6.8

**Unit Log Sort Summary: MADERA ROW 2**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	5.0	3.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	5.9	27.0	35,384	0.0	16.1	21.2
DF	LIVE	Pulp	5.0	22.0	11,316	0.0	272.9	6.8

**Unit Log Grade x Sort Summary: MADERA ROW 2**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	4 SAW	Domestic	5.9	27.0	35,384	0.0	16.1	21.2
DF	LIVE	CULL	Cull	5.0	3.0	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	5.0	22.0	11,316	0.0	272.9	6.8

**Unit Log Grade x Diameter Bin Summary: MADERA ROW 2**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	CULL	5.0	3.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	UTILITY	5.0	22.0	11,316	0.0	272.9	6.8
DF	5 - 11	LIVE	4 SAW	5.9	27.0	35,384	0.0	16.1	21.2

**Unit Log Sort x Diameter Bin Summary: MADERA ROW 2**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Cull	5.0	3.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Pulp	5.0	22.0	11,316	0.0	272.9	6.8

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Domestic	5.9	27.0	35,384	0.0	16.1	21.2

## Cruise Unit Report MADERA ROW 3

### Unit Sale Notice Volume (MBF): MADERA ROW 3

Sp	QMD	Rings/In	Age	MBF Volume by Grade					
				All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	23.3			11.0	3.1	5.5	2.3		
RA	16.2			2.9		1.4	0.8	0.2	0.4
RC	13.6			0.3				0.3	
WH	10.0			0.2				0.2	
ALL	18.6			14.4	3.1	6.9	3.2	0.7	0.4

### Unit Sale Notice Weight (tons): MADERA ROW 3

Sp	Tons by Grade					
	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	79.6	19.4	37.5	22.6		
RA	20.4		8.5	5.9	1.7	4.3
RC	3.0				3.0	
WH	2.3				2.3	
ALL	105.3	19.4	46.0	28.5	7.0	4.3

### Unit Cruise Design: MADERA ROW 3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	0.4	0.4	1	1	0

### Unit Cruise Summary: MADERA ROW 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	3	3	3.0	0
RA	2	2	2.0	0
RC	1	1	1.0	0
WH	1	1	1.0	0
ALL	7	7	7.0	0

**Unit Cruise Statistics (Cut + Leave Trees): MADERA ROW 3**

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	177.2	0.0	0.0	155.2	13.6	7.9	27,488	13.6	7.9
RA	56.9	0.0	0.0	126.6	18.9	13.4	7,206	18.9	13.4
RC	20.2	0.0	0.0	38.7	0.0	0.0	780	0.0	0.0
WH	10.9	0.0	0.0	55.0	0.0	0.0	600	0.0	0.0
ALL	265.2	0.0	0.0	136.0	38.0	14.3	36,074	38.0	14.3

**Unit Summary: MADERA ROW 3**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	1	ALL	23.7	81	102	9,507	1.7	20.0	61.3	12.6	27.5	3.8
DF	LIVE	POLE	2	ALL	23.0	85	108	17,981	1.7	40.2	115.9	24.2	52.1	7.2
RA	LIVE	CUT	2	ALL	16.2	65	80	7,206	3.6	39.8	56.9	14.1	20.4	2.9
RC	LIVE	CUT	1	ALL	13.6	30	37	780	9.3	20.0	20.2	5.5	3.0	0.3
WH	LIVE	CUT	1	ALL	10.0	30	42	600	11.8	20.0	10.9	3.5	2.3	0.2
ALL	LIVE	CUT	5	ALL	16.6	54	68	18,093	3.2	99.8	149.3	35.7	53.2	7.2
ALL	LIVE	POLE	2	ALL	23.0	85	108	17,981	1.7	40.2	115.9	24.2	52.1	7.2
ALL	ALL	ALL	7	ALL	18.6	63	80	36,074	2.4	140.0	265.2	59.9	105.3	14.4

**Unit Stand Table: MADERA ROW 3**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	24	LIVE	CUT	1	23.7	81	102	9,507	0.6	20.0	61.3	12.6	27.5	3.8
DF	20	LIVE	POLE	1	20.3	79	100	5,844	1.6	20.0	45.0	10.0	18.9	2.3
DF	26	LIVE	POLE	1	25.5	90	115	12,137	2.7	20.0	70.9	14.0	33.2	4.9
RA	14	LIVE	CUT	1	14.8	58	71	2,565	3.0	20.0	23.9	6.2	7.6	1.0
RA	18	LIVE	CUT	1	17.4	72	89	4,641	4.0	20.0	33.0	7.9	12.8	1.9
RC	14	LIVE	CUT	1	13.6	30	37	780	9.3	20.0	20.2	5.5	3.0	0.3
WH	10	LIVE	CUT	1	10.0	30	42	600	11.8	20.0	10.9	3.4	2.3	0.2

**Unit Log Grade Summary: MADERA ROW 3**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	15.8	40.0	13,783	0.0	37.5	5.5
DF	LIVE	3 SAW	9.4	35.0	5,862	0.0	22.6	2.3
DF	LIVE	CULL	7.7	6.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	16.7	40.0	7,843	0.0	19.4	3.1
RA	LIVE	2 SAW	13.1	30.0	3,544	0.0	8.5	1.4

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
RA	LIVE	3 SAW	10.2	30.0	2,076	0.0	5.9	0.8
RA	LIVE	4 SAW	6.4	20.0	490	0.0	1.7	0.2
RA	LIVE	CULL	5.5	7.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	8.2	30.0	1,097	0.0	4.3	0.4
RC	LIVE	4 SAW	7.4	24.0	780	0.0	3.0	0.3
RC	LIVE	CULL	5.0	4.0	0	100.0	0.0	0.0
WH	LIVE	4 SAW	6.2	24.0	600	0.0	2.3	0.2
WH	LIVE	CULL	5.0	4.0	0	100.0	0.0	0.0

### Unit Log Sort Summary: MADERA ROW 3

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	7.7	6.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	11.9	37.0	19,645	0.0	60.2	7.9
DF	LIVE	HQ-A	16.7	40.0	7,843	0.0	19.4	3.1
RA	LIVE	Cull	5.5	7.0	0	100.0	0.0	0.0
RA	LIVE	Domestic	9.9	27.0	6,109	0.0	16.1	2.4
RA	LIVE	Pulp	8.2	30.0	1,097	0.0	4.3	0.4
RC	LIVE	Cull	5.0	4.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	7.4	24.0	780	0.0	3.0	0.3
WH	LIVE	Cull	5.0	4.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	6.2	24.0	600	0.0	2.3	0.2

### Unit Log Grade x Sort Summary: MADERA ROW 3

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	15.8	40.0	13,783	0.0	37.5	5.5
DF	LIVE	3 SAW	Domestic	9.4	35.0	5,862	0.0	22.6	2.3
DF	LIVE	CULL	Cull	7.7	6.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	16.7	40.0	7,843	0.0	19.4	3.1
RA	LIVE	2 SAW	Domestic	13.1	30.0	3,544	0.0	8.5	1.4
RA	LIVE	3 SAW	Domestic	10.2	30.0	2,076	0.0	5.9	0.8
RA	LIVE	4 SAW	Domestic	6.4	20.0	490	0.0	1.7	0.2
RA	LIVE	CULL	Cull	5.5	7.0	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	8.2	30.0	1,097	0.0	4.3	0.4
RC	LIVE	4 SAW	Domestic	7.4	24.0	780	0.0	3.0	0.3
RC	LIVE	CULL	Cull	5.0	4.0	0	100.0	0.0	0.0
WH	LIVE	4 SAW	Domestic	6.2	24.0	600	0.0	2.3	0.2
WH	LIVE	CULL	Cull	5.0	4.0	0	100.0	0.0	0.0

**Unit Log Grade x Diameter Bin Summary: MADERA ROW 3**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	CULL	7.7	6.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	3 SAW	9.4	35.0	5,862	0.0	22.6	2.3
DF	12 - 19	LIVE	2 SAW	15.8	40.0	13,783	0.0	37.5	5.5
DF	12 - 19	LIVE	SPECIAL MILL	16.7	40.0	7,843	0.0	19.4	3.1
RA	5 - 7	LIVE	CULL	5.5	7.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	4 SAW	6.4	20.0	490	0.0	1.7	0.2
RA	8 - 11	LIVE	UTILITY	8.2	30.0	1,097	0.0	4.3	0.4
RA	8 - 11	LIVE	3 SAW	10.2	30.0	2,076	0.0	5.9	0.8
RA	12+	LIVE	2 SAW	13.1	30.0	3,544	0.0	8.5	1.4
RC	5+	LIVE	CULL	5.0	4.0	0	100.0	0.0	0.0
RC	5+	LIVE	4 SAW	7.4	24.0	780	0.0	3.0	0.3
WH	5 - 11	LIVE	CULL	5.0	4.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	4 SAW	6.2	24.0	600	0.0	2.3	0.2

**Unit Log Sort x Diameter Bin Summary: MADERA ROW 3**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Cull	7.7	6.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Domestic	9.4	35.0	5,862	0.0	22.6	2.3
DF	12 - 19	LIVE	Domestic	15.8	40.0	13,783	0.0	37.5	5.5
DF	12 - 19	LIVE	HQ-A	16.7	40.0	7,843	0.0	19.4	3.1
RA	5 - 7	LIVE	Cull	5.5	7.0	0	100.0	0.0	0.0
RA	5 - 7	LIVE	Domestic	6.4	20.0	490	0.0	1.7	0.2
RA	8 - 11	LIVE	Pulp	8.2	30.0	1,097	0.0	4.3	0.4
RA	8 - 11	LIVE	Domestic	10.2	30.0	2,076	0.0	5.9	0.8
RA	12+	LIVE	Domestic	13.1	30.0	3,544	0.0	8.5	1.4
RC	5+	LIVE	Cull	5.0	4.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	7.4	24.0	780	0.0	3.0	0.3
WH	5 - 11	LIVE	Cull	5.0	4.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	6.2	24.0	600	0.0	2.3	0.2

## Cruise Unit Report MADERA ROW 4

### Unit Sale Notice Volume (MBF): MADERA ROW 4

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	28.5			41.0	38.3	2.1	0.5	
MA	19.8			12.1	10.6		0.4	1.1
BC	30.0			8.0	8.0			
RC	16.3			3.0		1.9	1.1	
WH	15.4			1.6		1.6		
ALL	22.4			65.6	56.9	5.6	2.0	1.1

### Unit Sale Notice Weight (tons): MADERA ROW 4

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	265.9	243.5	17.2	5.2	
MA	85.4	66.6		3.8	15.0
BC	35.0	35.0			
RC	27.2		14.1	13.1	
WH	17.2		17.2		
ALL	430.7	345.1	48.5	22.1	15.0

### Unit Cruise Design: MADERA ROW 4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	1.3	1.3	3	3	0

### Unit Cruise Summary: MADERA ROW 4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	6	6	2.0	0
MA	3	7	2.3	0
BC	1	1	0.3	0
RC	3	4	1.3	0
WH	2	2	0.7	0
ALL	15	20	6.7	0

**Unit Cruise Statistics (Cut + Leave Trees): MADERA ROW 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	177.4	93.0	53.7	177.6	43.6	17.8	31,506	102.7	56.6
MA	100.1	157.5	90.9	92.9	10.9	6.3	9,293	157.9	91.2
BC	32.7	173.2	100.0	188.6	0.0	0.0	6,173	173.2	100.0
RC	38.5	98.4	56.8	59.6	61.0	35.2	2,295	115.8	66.8
WH	17.2	173.2	100.0	70.0	5.7	4.1	1,207	173.3	100.1
ALL	365.9	49.9	28.8	137.9	53.2	13.7	50,475	73.0	31.9

**Unit Summary: MADERA ROW 4**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	LIVE	CUT	1	ALL	30.0	85	106	6,173	9.1	6.7	32.7	6.0	35.0	8.0
DF	LIVE	CUT	6	ALL	28.5	89	113	31,506	3.6	40.0	177.4	33.2	265.9	41.0
MA	LIVE	CUT	3	ALL	19.8	56	69	9,293	11.3	46.8	100.1	22.5	85.4	12.1
RC	LIVE	CUT	3	ALL	16.3	41	51	2,295	6.3	26.6	38.5	9.5	27.2	3.0
WH	LIVE	CUT	2	ALL	15.4	49	59	1,207	11.3	13.3	17.2	4.4	17.2	1.6
ALL	LIVE	CUT	15	ALL	22.4	64	79	50,474	6.1	133.4	365.9	75.6	430.7	65.7
ALL	ALL	ALL	15	ALL	22.4	64	79	50,474	6.1	133.4	365.9	75.6	430.7	65.7

**Unit Stand Table: MADERA ROW 4**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
BC	30	LIVE	CUT	1	30.0	85	106	6,173	9.1	6.7	32.7	6.0	35.0	8.0
DF	12	LIVE	CUT	1	12.5	30	38	216	9.3	6.7	5.7	1.6	2.8	0.3
DF	16	LIVE	CUT	1	15.8	75	94	1,037	0.0	6.7	9.1	2.3	10.5	1.3
DF	28	LIVE	CUT	1	27.2	107	137	4,818	1.7	6.7	26.9	5.2	41.7	6.3
DF	30	LIVE	CUT	1	30.7	110	141	6,443	3.2	6.7	34.3	6.2	54.6	8.4
DF	36	LIVE	CUT	1	35.3	85	108	6,737	4.0	6.7	45.3	7.6	58.3	8.8
DF	40	LIVE	CUT	1	39.3	124	160	12,254	5.8	6.7	56.2	9.0	98.0	15.9
MA	14	LIVE	CUT	1	13.0	55	67	511	0.0	6.7	6.1	1.7	6.1	0.7
MA	20	LIVE	CUT	1	20.2	55	67	5,243	21.9	26.7	59.4	13.2	37.6	6.8
MA	22	LIVE	CUT	1	21.8	60	73	3,539	9.1	13.3	34.6	7.4	41.7	4.6
RC	12	LIVE	CUT	1	12.5	32	42	224	13.3	6.7	5.7	1.6	2.7	0.3
RC	14	LIVE	CUT	1	13.5	35	42	368	13.5	13.3	13.3	3.6	6.9	0.5
RC	24	LIVE	CUT	1	23.2	63	79	1,703	0.0	6.7	19.6	4.1	17.5	2.2
WH	16	LIVE	CUT	2	15.4	49	59	1,207	11.3	13.3	17.2	4.4	17.2	1.6

**Unit Log Grade Summary: MADERA ROW 4**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	20.9	25.0	6,173	0.0	35.0	8.0
BC	LIVE	CULL	9.9	32.0	0	100.0	0.0	0.0
DF	LIVE	2 SAW	19.1	39.0	29,460	4.3	243.5	38.3
DF	LIVE	3 SAW	10.0	29.0	1,641	0.0	17.2	2.1
DF	LIVE	4 SAW	6.1	28.0	405	0.0	5.2	0.5
DF	LIVE	CULL	5.0	4.0	0	100.0	0.0	0.0
MA	LIVE	2 SAW	15.9	23.0	8,153	4.2	66.6	10.6
MA	LIVE	4 SAW	9.8	20.0	315	0.0	3.8	0.4
MA	LIVE	CULL	8.0	30.0	0	100.0	0.0	0.0
MA	LIVE	UTILITY	6.8	28.0	826	0.0	15.0	1.1
RC	LIVE	3 SAW	14.9	36.0	1,478	0.0	14.1	1.9
RC	LIVE	4 SAW	6.9	26.0	817	4.1	13.1	1.1
RC	LIVE	CULL	5.1	3.0	0	100.0	0.0	0.0
WH	LIVE	3 SAW	8.7	36.0	1,207	0.0	17.2	1.6
WH	LIVE	CULL	5.2	11.0	0	100.0	0.0	0.0

**Unit Log Sort Summary: MADERA ROW 4**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	Cull	9.9	32.0	0	100.0	0.0	0.0
BC	LIVE	Domestic	20.9	25.0	6,173	0.0	35.0	8.0
DF	LIVE	Cull	5.0	4.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	14.4	35.0	24,592	4.1	208.9	32.0
DF	LIVE	HQ-A	19.7	36.0	2,911	2.8	23.6	3.8
DF	LIVE	HQ-B	21.4	40.0	4,003	5.0	33.3	5.2
MA	LIVE	Cull	8.0	30.0	0	100.0	0.0	0.0
MA	LIVE	Domestic	15.1	22.0	8,467	4.0	70.4	11.0
MA	LIVE	Pulp	6.8	28.0	826	0.0	15.0	1.1
RC	LIVE	Cull	5.1	3.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	8.5	28.0	2,295	1.5	27.2	3.0
WH	LIVE	Cull	5.2	11.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	8.7	36.0	1,207	0.0	17.2	1.6

**Unit Log Grade x Sort Summary: MADERA ROW 4**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	LIVE	2 SAW	Domestic	20.9	25.0	6,173	0.0	35.0	8.0
BC	LIVE	CULL	Cull	9.9	32.0	0	100.0	0.0	0.0

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	18.7	39.0	22,545	4.4	186.6	29.3
DF	LIVE	2 SAW	HQ-A	19.7	36.0	2,911	2.8	23.6	3.8
DF	LIVE	2 SAW	HQ-B	21.4	40.0	4,003	5.0	33.3	5.2
DF	LIVE	3 SAW	Domestic	10.0	29.0	1,641	0.0	17.2	2.1
DF	LIVE	4 SAW	Domestic	6.1	28.0	405	0.0	5.2	0.5
DF	LIVE	CULL	Cull	5.0	4.0	0	100.0	0.0	0.0
MA	LIVE	2 SAW	Domestic	15.9	23.0	8,153	4.2	66.6	10.6
MA	LIVE	4 SAW	Domestic	9.8	20.0	315	0.0	3.8	0.4
MA	LIVE	CULL	Cull	8.0	30.0	0	100.0	0.0	0.0
MA	LIVE	UTILITY	Pulp	6.8	28.0	826	0.0	15.0	1.1
RC	LIVE	3 SAW	Domestic	14.9	36.0	1,478	0.0	14.1	1.9
RC	LIVE	4 SAW	Domestic	6.9	26.0	817	4.1	13.1	1.1
RC	LIVE	CULL	Cull	5.1	3.0	0	100.0	0.0	0.0
WH	LIVE	3 SAW	Domestic	8.7	36.0	1,207	0.0	17.2	1.6
WH	LIVE	CULL	Cull	5.2	11.0	0	100.0	0.0	0.0

#### Unit Log Grade x Diameter Bin Summary: MADERA ROW 4

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	8+	LIVE	CULL	9.9	32.0	0	100.0	0.0	0.0
BC	8+	LIVE	2 SAW	20.9	25.0	6,173	0.0	35.0	8.0
DF	5 - 11	LIVE	CULL	5.0	4.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	4 SAW	6.1	28.0	405	0.0	5.2	0.5
DF	5 - 11	LIVE	3 SAW	10.0	29.0	1,641	0.0	17.2	2.1
DF	12 - 19	LIVE	2 SAW	15.4	38.0	9,099	0.9	84.0	11.8
DF	20+	LIVE	2 SAW	23.7	40.0	20,361	5.8	159.5	26.5
MA	5 - 7	LIVE	UTILITY	6.8	28.0	826	0.0	15.0	1.1
MA	8 - 11	LIVE	CULL	8.0	30.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	4 SAW	9.8	20.0	315	0.0	3.8	0.4
MA	12+	LIVE	2 SAW	15.9	23.0	8,153	4.2	66.6	10.6
RC	5+	LIVE	CULL	5.1	3.0	0	100.0	0.0	0.0
RC	5+	LIVE	4 SAW	6.9	26.0	817	4.1	13.1	1.1
RC	5+	LIVE	3 SAW	14.9	36.0	1,478	0.0	14.1	1.9
WH	5 - 11	LIVE	CULL	5.2	11.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	3 SAW	8.7	36.0	1,207	0.0	17.2	1.6

**Unit Log Sort x Diameter Bin Summary: MADERA ROW 4**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
BC	8+	LIVE	Cull	9.9	32.0	0	100.0	0.0	0.0
BC	8+	LIVE	Domestic	20.9	25.0	6,173	0.0	35.0	8.0
DF	5 - 11	LIVE	Cull	5.0	4.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Domestic	8.4	29.0	2,046	0.0	22.4	2.7
DF	12 - 19	LIVE	Domestic	14.4	38.0	6,188	0.0	60.4	8.0
DF	12 - 19	LIVE	HQ-A	19.7	36.0	2,911	2.8	23.6	3.8
DF	20+	LIVE	HQ-B	21.4	40.0	4,003	5.0	33.3	5.2
DF	20+	LIVE	Domestic	24.5	40.0	16,357	6.0	126.2	21.3
MA	5 - 7	LIVE	Pulp	6.8	28.0	826	0.0	15.0	1.1
MA	8 - 11	LIVE	Cull	8.0	30.0	0	100.0	0.0	0.0
MA	8 - 11	LIVE	Domestic	9.8	20.0	315	0.0	3.8	0.4
MA	12+	LIVE	Domestic	15.9	23.0	8,153	4.2	66.6	10.6
RC	5+	LIVE	Cull	5.1	3.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	8.5	28.0	2,295	1.5	27.2	3.0
WH	5 - 11	LIVE	Cull	5.2	11.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	8.7	36.0	1,207	0.0	17.2	1.6

## Cruise Unit Report MADERA ROW 5

### Unit Sale Notice Volume (MBF): MADERA ROW 5

Sp	QMD	Rings/In	Age	MBF Volume by Grade					
				All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	22.3			64.8	7.2	46.3	9.9	1.5	
WH	15.8			19.5		9.4	8.6	0.6	0.9
RC	12.8			0.5				0.5	
ALL	19.5			84.8	7.2	55.6	18.5	2.6	0.9

### Unit Sale Notice Weight (tons): MADERA ROW 5

Sp	Tons by Grade					
	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	464.1	45.5	313.6	89.7	15.3	
WH	173.4		76.7	79.3	7.8	9.7
RC	3.9				3.9	
ALL	641.4	45.5	390.3	169.0	27.0	9.7

### Unit Cruise Design: MADERA ROW 5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	1.9	1.9	3	3	0

### Unit Cruise Summary: MADERA ROW 5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	12	12	4.0	0
WH	9	9	3.0	0
RC	1	1	0.3	0
ALL	22	22	7.3	0

### Unit Cruise Statistics (Cut + Leave Trees): MADERA ROW 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	216.6	49.5	28.6	157.5	33.9	9.8	34,104	60.0	30.2
WH	81.6	157.9	91.2	125.9	30.1	10.0	10,272	160.7	91.7
RC	6.0	173.2	100.0	43.6	0.0	0.0	260	173.2	100.0

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 (%)
ALL	304.2	16.2	9.4	146.8	35.7	7.6	44,635	39.2	12.1

**Unit Summary: MADERA ROW 5**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	12	ALL	22.3	85	109	34,104	2.1	79.9	216.6	45.9	464.1	64.8
RC	LIVE	CUT	1	ALL	12.8	30	35	260	4.9	6.7	6.0	1.7	3.9	0.5
WH	LIVE	CUT	9	ALL	15.8	71	89	10,272	4.3	59.9	81.6	20.5	173.4	19.5
ALL	LIVE	CUT	22	ALL	19.5	77	97	44,636	2.6	146.5	304.2	68.1	641.4	84.8
ALL	ALL	ALL	22	ALL	19.5	77	97	44,636	2.6	146.5	304.2	68.1	641.4	84.8

**Unit Stand Table: MADERA ROW 5**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	10	LIVE	CUT	1	10.5	57	70	314	13.6	6.7	4.0	1.2	4.9	0.6
DF	14	LIVE	CUT	3	13.6	71	89	1,945	0.8	20.0	20.1	5.5	33.5	3.7
DF	18	LIVE	CUT	1	17.5	78	98	1,207	0.0	6.7	11.1	2.7	20.5	2.3
DF	20	LIVE	CUT	1	19.1	80	101	1,394	0.0	6.7	13.3	3.0	25.0	2.6
DF	22	LIVE	CUT	2	21.8	84	106	4,022	0.0	13.3	34.4	7.4	66.0	7.6
DF	26	LIVE	CUT	1	26.5	97	124	4,127	0.0	6.7	25.5	5.0	56.9	7.8
DF	30	LIVE	CUT	1	30.4	116	149	6,644	0.0	6.7	33.6	6.1	83.2	12.6
DF	32	LIVE	CUT	1	31.0	114	146	6,733	3.0	6.7	34.9	6.3	85.8	12.8
DF	34	LIVE	CUT	1	33.0	93	143	7,719	6.0	6.7	39.6	6.9	88.4	14.7
RC	12	LIVE	CUT	1	12.8	30	35	260	4.9	6.7	6.0	1.7	3.9	0.5
WH	10	LIVE	CUT	2	10.6	57	70	624	10.9	13.3	8.1	2.5	12.7	1.2
WH	12	LIVE	CUT	2	12.2	66	82	1,101	7.4	13.3	10.8	3.1	18.2	2.1
WH	14	LIVE	CUT	1	13.6	60	74	613	0.0	6.7	6.7	1.8	11.9	1.2
WH	18	LIVE	CUT	1	17.3	78	97	1,290	0.0	6.7	10.9	2.6	24.6	2.5
WH	20	LIVE	CUT	2	19.7	83	103	3,746	2.0	13.3	28.2	6.4	65.1	7.1
WH	22	LIVE	CUT	1	21.5	92	115	2,898	3.5	6.7	16.8	3.6	40.9	5.5

**Unit Log Grade Summary: MADERA ROW 5**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	16.8	40.0	24,347	0.9	313.6	46.3
DF	LIVE	3 SAW	8.9	35.0	5,207	0.3	89.7	9.9
DF	LIVE	4 SAW	6.1	25.0	782	0.0	15.3	1.5
DF	LIVE	CULL	10.0	9.0	0	100.0	0.0	0.0

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	SPECIAL MILL	21.8	36.0	3,769	0.0	45.5	7.2
RC	LIVE	4 SAW	7.0	24.0	260	0.0	3.9	0.5
RC	LIVE	CULL	5.4	2.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	14.1	40.0	4,930	0.0	76.7	9.4
WH	LIVE	3 SAW	8.4	37.0	4,512	0.0	79.3	8.6
WH	LIVE	4 SAW	5.4	27.0	336	0.0	7.8	0.6
WH	LIVE	CULL	7.1	8.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	5.2	26.0	495	0.0	9.7	0.9

#### Unit Log Sort Summary: MADERA ROW 5

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	10.0	9.0	0	100.0	0.0	0.0
DF	LIVE	Domestic	10.7	35.0	23,427	0.1	330.2	44.5
DF	LIVE	HQ-A	21.8	36.0	3,769	0.0	45.5	7.2
DF	LIVE	HQ-B	20.2	40.0	6,909	2.9	88.4	13.1
RC	LIVE	Cull	5.4	2.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	7.0	24.0	260	0.0	3.9	0.5
WH	LIVE	Cull	7.1	8.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	9.3	36.0	9,777	0.0	163.7	18.6
WH	LIVE	Pulp	5.2	26.0	495	0.0	9.7	0.9

#### Unit Log Grade x Sort Summary: MADERA ROW 5

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	15.9	40.0	17,438	0.0	225.2	33.1
DF	LIVE	2 SAW	HQ-B	20.2	40.0	6,909	2.9	88.4	13.1
DF	LIVE	3 SAW	Domestic	8.9	35.0	5,207	0.3	89.7	9.9
DF	LIVE	4 SAW	Domestic	6.1	25.0	782	0.0	15.3	1.5
DF	LIVE	CULL	Cull	10.0	9.0	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	21.8	36.0	3,769	0.0	45.5	7.2
RC	LIVE	4 SAW	Domestic	7.0	24.0	260	0.0	3.9	0.5
RC	LIVE	CULL	Cull	5.4	2.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	14.1	40.0	4,930	0.0	76.7	9.4
WH	LIVE	3 SAW	Domestic	8.4	37.0	4,512	0.0	79.3	8.6
WH	LIVE	4 SAW	Domestic	5.4	27.0	336	0.0	7.8	0.6
WH	LIVE	CULL	Cull	7.1	8.0	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.2	26.0	495	0.0	9.7	0.9

**Unit Log Grade x Diameter Bin Summary: MADERA ROW 5**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	CULL	5.0	8.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	4 SAW	6.1	25.0	782	0.0	15.3	1.5
DF	5 - 11	LIVE	3 SAW	8.9	35.0	5,207	0.3	89.7	9.9
DF	12 - 19	LIVE	CULL	15.0	10.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	2 SAW	15.3	40.0	15,190	0.0	203.8	28.9
DF	20+	LIVE	SPECIAL MILL	21.8	36.0	3,769	0.0	45.5	7.2
DF	20+	LIVE	2 SAW	22.7	40.0	9,157	2.2	109.9	17.4
RC	5+	LIVE	CULL	5.4	2.0	0	100.0	0.0	0.0
RC	5+	LIVE	4 SAW	7.0	24.0	260	0.0	3.9	0.5
WH	5 - 11	LIVE	UTILITY	5.2	26.0	495	0.0	9.7	0.9
WH	5 - 11	LIVE	4 SAW	5.4	27.0	336	0.0	7.8	0.6
WH	5 - 11	LIVE	CULL	7.1	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	3 SAW	8.4	37.0	4,512	0.0	79.3	8.6
WH	12 - 19	LIVE	2 SAW	14.1	40.0	4,930	0.0	76.7	9.4

**Unit Log Sort x Diameter Bin Summary: MADERA ROW 5**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Cull	5.0	8.0	0	100.0	0.0	0.0
DF	5 - 11	LIVE	Domestic	8.0	32.0	5,989	0.3	105.0	11.4
DF	12 - 19	LIVE	Domestic	14.8	40.0	12,259	0.0	167.1	23.3
DF	12 - 19	LIVE	Cull	15.0	10.0	0	100.0	0.0	0.0
DF	12 - 19	LIVE	HQ-B	18.7	40.0	2,931	0.0	36.7	5.6
DF	20+	LIVE	HQ-B	21.7	40.0	3,978	5.0	51.7	7.6
DF	20+	LIVE	HQ-A	21.8	36.0	3,769	0.0	45.5	7.2
DF	20+	LIVE	Domestic	23.6	40.0	5,179	0.0	58.2	9.8
RC	5+	LIVE	Cull	5.4	2.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	7.0	24.0	260	0.0	3.9	0.5
WH	5 - 11	LIVE	Pulp	5.2	26.0	495	0.0	9.7	0.9
WH	5 - 11	LIVE	Cull	7.1	8.0	0	100.0	0.0	0.0
WH	5 - 11	LIVE	Domestic	7.8	35.0	4,847	0.0	87.1	9.2
WH	12 - 19	LIVE	Domestic	14.1	40.0	4,930	0.0	76.7	9.4

## Cruise Unit Report MADERA ROW 6

### Unit Sale Notice Volume (MBF): MADERA ROW 6

Sp	QMD	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	22.6			19.8	16.3	3.2	0.3
RC	15.5			7.8		6.4	1.3
WH	20.0			3.6	2.7	0.8	
ALL	18.7			31.1	19.0	10.4	1.7

### Unit Sale Notice Weight (tons): MADERA ROW 6

Sp	Tons by Grade			
	All	2 Saw	3 Saw	4 Saw
DF	138.8	109.2	27.4	2.2
RC	69.1		59.4	9.7
WH	30.9	22.4	8.5	
ALL	238.8	131.6	95.3	11.9

### Unit Cruise Design: MADERA ROW 6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	0.7	0.7	1	1	0

### Unit Cruise Summary: MADERA ROW 6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	3	3	3.0	0
RC	5	5	5.0	0
WH	1	1	1.0	0
ALL	9	9	9.0	0

### Unit Cruise Statistics (Cut + Leave Trees): MADERA ROW 6

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	167.4	0.0	0.0	168.6	29.8	17.2	28,228	29.8	17.2
RC	131.1	0.0	0.0	84.9	27.8	12.4	11,130	27.8	12.4
WH	43.6	0.0	0.0	116.4	0.0	0.0	5,080	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 (%)
ALL	342.1	0.0	0.0	129.9	38.9	13.0	44,438	38.9	13.0

**Unit Summary: MADERA ROW 6**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	3	ALL	22.6	92	117	28,228	0.1	60.1	167.4	35.2	138.8	19.8
RC	LIVE	CUT	3	ALL	13.7	61	77	5,198	3.8	59.8	61.2	16.5	32.3	3.6
RC	LIVE	POLE	2	ALL	17.9	70	88	5,932	3.8	40.0	69.9	16.5	36.8	4.2
WH	LIVE	CUT	1	ALL	20.0	88	111	5,080	31.2	20.0	43.6	9.8	30.9	3.6
ALL	LIVE	CUT	7	ALL	18.9	78	99	38,506	6.2	139.9	272.2	61.5	202.0	27.0
ALL	LIVE	POLE	2	ALL	17.9	70	88	5,932	3.8	40.0	69.9	16.5	36.8	4.2
ALL	ALL	ALL	9	ALL	18.7	76	97	44,438	5.9	179.9	342.1	78.0	238.8	31.2

**Unit Stand Table: MADERA ROW 6**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	12	LIVE	CUT	1	12.2	73	92	1,801	0.0	20.0	16.2	4.6	9.7	1.3
DF	20	LIVE	CUT	1	20.0	90	115	5,659	0.0	20.0	43.6	9.8	32.8	4.0
DF	32	LIVE	CUT	1	31.4	113	145	20,768	0.2	20.0	107.5	19.2	96.3	14.5
RC	12	LIVE	CUT	1	12.5	68	86	1,967	0.0	20.0	17.0	4.8	10.3	1.4
RC	14	LIVE	CUT	1	13.3	61	76	1,920	0.0	20.0	19.3	5.3	11.4	1.3
RC	16	LIVE	CUT	1	15.1	55	68	1,311	27.3	20.0	24.9	6.4	10.6	0.9
RC	16	LIVE	POLE	1	16.6	70	88	2,332	0.0	20.0	30.1	7.4	15.5	1.6
RC	20	LIVE	POLE	1	19.1	70	88	3,600	0.0	20.0	39.8	9.1	21.3	2.5
WH	20	LIVE	CUT	1	20.0	88	111	5,080	31.2	20.0	43.6	9.7	30.9	3.6

**Unit Log Grade Summary: MADERA ROW 6**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	17.0	40.0	23,272	0.0	109.2	16.3
DF	LIVE	3 SAW	8.7	35.0	4,510	1.1	27.4	3.2
DF	LIVE	4 SAW	5.4	24.0	446	0.0	2.2	0.3
RC	LIVE	3 SAW	8.9	36.0	9,210	0.0	59.4	6.4
RC	LIVE	4 SAW	5.3	23.0	1,920	0.0	9.7	1.3
RC	LIVE	CULL	5.1	20.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	12.8	40.0	3,920	0.0	22.4	2.7
WH	LIVE	3 SAW	7.3	32.0	1,160	0.0	8.5	0.8
WH	LIVE	CULL	17.1	10.0	0	100.0	0.0	0.0

**Unit Log Sort Summary: MADERA ROW 6**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	9.5	34.0	11,044	0.5	57.3	7.7
DF	LIVE	HQ-B	17.7	40.0	17,184	0.0	81.5	12.0
RC	LIVE	Cull	5.1	20.0	0	100.0	0.0	0.0
RC	LIVE	Domestic	7.3	30.0	11,130	0.0	69.1	7.8
WH	LIVE	Cull	17.1	10.0	0	100.0	0.0	0.0
WH	LIVE	Domestic	10.1	36.0	5,080	0.0	30.9	3.6

**Unit Log Grade x Sort Summary: MADERA ROW 6**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	15.8	40.0	6,088	0.0	27.8	4.3
DF	LIVE	2 SAW	HQ-B	17.7	40.0	17,184	0.0	81.5	12.0
DF	LIVE	3 SAW	Domestic	8.7	35.0	4,510	1.1	27.4	3.2
DF	LIVE	4 SAW	Domestic	5.4	24.0	446	0.0	2.2	0.3
RC	LIVE	3 SAW	Domestic	8.9	36.0	9,210	0.0	59.4	6.4
RC	LIVE	4 SAW	Domestic	5.3	23.0	1,920	0.0	9.7	1.3
RC	LIVE	CULL	Cull	5.1	20.0	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	12.8	40.0	3,920	0.0	22.4	2.7
WH	LIVE	3 SAW	Domestic	7.3	32.0	1,160	0.0	8.5	0.8
WH	LIVE	CULL	Cull	17.1	10.0	0	100.0	0.0	0.0

**Unit Log Grade x Diameter Bin Summary: MADERA ROW 6**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	4 SAW	5.4	24.0	446	0.0	2.2	0.3
DF	5 - 11	LIVE	3 SAW	8.7	35.0	4,510	1.1	27.4	3.2
DF	12 - 19	LIVE	2 SAW	14.9	40.0	10,238	0.0	50.5	7.2
DF	20+	LIVE	2 SAW	21.4	40.0	13,034	0.0	58.8	9.1
RC	5+	LIVE	CULL	5.1	20.0	0	100.0	0.0	0.0
RC	5+	LIVE	4 SAW	5.3	23.0	1,920	0.0	9.7	1.3
RC	5+	LIVE	3 SAW	8.9	36.0	9,210	0.0	59.4	6.4
WH	5 - 11	LIVE	3 SAW	7.3	32.0	1,160	0.0	8.5	0.8
WH	12 - 19	LIVE	2 SAW	12.8	40.0	3,920	0.0	22.4	2.7
WH	12 - 19	LIVE	CULL	17.1	10.0	0	100.0	0.0	0.0

**Unit Log Sort x Diameter Bin Summary: MADERA ROW 6**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Domestic	7.9	32.0	4,956	1.0	29.6	3.5
DF	12 - 19	LIVE	HQ-B	13.9	40.0	4,150	0.0	22.7	2.9
DF	12 - 19	LIVE	Domestic	15.8	40.0	6,088	0.0	27.8	4.3
DF	20+	LIVE	HQ-B	21.4	40.0	13,034	0.0	58.8	9.1
RC	5+	LIVE	Cull	5.1	20.0	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	7.3	30.0	11,130	0.0	69.1	7.8
WH	5 - 11	LIVE	Domestic	7.3	32.0	1,160	0.0	8.5	0.8
WH	12 - 19	LIVE	Domestic	12.8	40.0	3,920	0.0	22.4	2.7
WH	12 - 19	LIVE	Cull	17.1	10.0	0	100.0	0.0	0.0

## Cruise Unit Report 3B CORR

### Unit Sale Notice Volume (MBF): 3B CORR

Sp	QMD	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	21.9			19.8	16.2	2.4	0.8	0.4
WH	14.5			5.3	2.1	2.4	0.8	
ALL	19.1			25.1	18.3	4.8	1.6	0.4

### Unit Sale Notice Weight (tons): 3B CORR

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	144.0	109.7	22.8	7.8	3.7
WH	47.7	19.1	20.5	8.1	
ALL	191.7	128.8	43.2	15.9	3.7

### Unit Cruise Design: 3B CORR

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	0.6		1	1	0

### Unit Cruise Summary: 3B CORR

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	4	4	4.0	0
WH	3	3	3.0	0
ALL	7	7	7.0	0

### Unit Cruise Statistics (Cut + Leave Trees): 3B CORR

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	208.9	0.0	0.0	157.7	32.1	16.1	32,933	32.1	16.1
WH	68.7	0.0	0.0	129.7	27.7	16.0	8,915	27.7	16.0
ALL	277.6	0.0	0.0	150.7	29.2	11.0	41,848	29.2	11.0

**Unit Summary: 3B CORR**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	4	ALL	21.9	89	113	32,933	0.0	79.9	208.9	44.6	144.0	19.8
WH	LIVE	CUT	3	ALL	14.5	75	94	8,915	0.0	59.9	68.7	18.0	47.7	5.3
ALL	LIVE	CUT	7	ALL	19.1	83	105	41,848	0.0	139.8	277.6	62.6	191.7	25.1
ALL	ALL	ALL	7	ALL	19.1	83	105	41,848	0.0	139.8	277.6	62.6	191.7	25.1

**Unit Stand Table: 3B CORR**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	10	LIVE	CUT	1	9.0	65	81	688	0.0	20.0	8.8	2.9	3.7	0.4
DF	24	LIVE	CUT	2	23.5	91	116	17,824	0.0	40.0	120.5	24.9	80.4	10.7
DF	28	LIVE	CUT	1	27.0	108	138	14,421	0.0	20.0	79.5	15.3	59.8	8.7
WH	10	LIVE	CUT	1	9.0	65	80	712	0.0	20.0	8.8	2.9	4.2	0.4
WH	16	LIVE	CUT	1	15.0	75	94	3,434	0.0	20.0	24.5	6.3	16.6	2.1
WH	18	LIVE	CUT	1	18.0	86	108	4,768	0.0	20.0	35.3	8.3	26.9	2.9

**Unit Log Grade Summary: 3B CORR**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	16.0	40.0	26,956	0.0	109.7	16.2
DF	LIVE	3 SAW	9.7	38.0	3,967	0.0	22.8	2.4
DF	LIVE	4 SAW	7.9	22.0	1,322	0.0	7.8	0.8
DF	LIVE	UTILITY	5.0	36.0	688	0.0	3.7	0.4
WH	LIVE	2 SAW	12.7	40.0	3,581	0.0	19.1	2.1
WH	LIVE	3 SAW	8.9	38.0	3,983	0.0	20.5	2.4
WH	LIVE	4 SAW	5.7	32.0	1,352	0.0	8.1	0.8

**Unit Log Sort Summary: 3B CORR**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	12.4	35.0	32,245	0.0	140.3	19.3
DF	LIVE	Pulp	5.0	36.0	688	0.0	3.7	0.4
WH	LIVE	Domestic	8.4	36.0	8,915	0.0	47.7	5.3

**Unit Log Grade x Sort Summary: 3B CORR**

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	16.0	40.0	26,956	0.0	109.7	16.2

Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	Domestic	9.7	38.0	3,967	0.0	22.8	2.4
DF	LIVE	4 SAW	Domestic	7.9	22.0	1,322	0.0	7.8	0.8
DF	LIVE	UTILITY	Pulp	5.0	36.0	688	0.0	3.7	0.4
WH	LIVE	2 SAW	Domestic	12.7	40.0	3,581	0.0	19.1	2.1
WH	LIVE	3 SAW	Domestic	8.9	38.0	3,983	0.0	20.5	2.4
WH	LIVE	4 SAW	Domestic	5.7	32.0	1,352	0.0	8.1	0.8

#### Unit Log Grade x Diameter Bin Summary: 3B CORR

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	UTILITY	5.0	36.0	688	0.0	3.7	0.4
DF	5 - 11	LIVE	4 SAW	7.9	22.0	1,322	0.0	7.8	0.8
DF	5 - 11	LIVE	3 SAW	9.7	38.0	3,967	0.0	22.8	2.4
DF	12 - 19	LIVE	2 SAW	16.0	40.0	26,956	0.0	109.7	16.2
WH	5 - 11	LIVE	4 SAW	5.7	32.0	1,352	0.0	8.1	0.8
WH	5 - 11	LIVE	3 SAW	8.9	38.0	3,983	0.0	20.5	2.4
WH	12 - 19	LIVE	2 SAW	12.7	40.0	3,581	0.0	19.1	2.1

#### Unit Log Sort x Diameter Bin Summary: 3B CORR

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Pulp	5.0	36.0	688	0.0	3.7	0.4
DF	5 - 11	LIVE	Domestic	8.8	30.0	5,289	0.0	30.5	3.2
DF	12 - 19	LIVE	Domestic	16.0	40.0	26,956	0.0	109.7	16.2
WH	5 - 11	LIVE	Domestic	7.3	35.0	5,334	0.0	28.6	3.2
WH	12 - 19	LIVE	Domestic	12.7	40.0	3,581	0.0	19.1	2.1

## Cruise Unit Report 3C CORR

### Unit Sale Notice Volume (MBF): 3C CORR

Sp	QMD	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	20.3			16.8	12.3	4.0	0.4
WH	12.6			6.2		4.7	1.5
RC	13.5			0.6			0.6
ALL	16.4			23.6	12.3	8.8	2.5

### Unit Sale Notice Weight (tons): 3C CORR

Sp	Tons by Grade			
	All	2 Saw	3 Saw	4 Saw
DF	128.7	89.0	36.5	3.2
WH	50.8		37.9	12.9
RC	9.0			9.0
ALL	188.5	89.0	74.4	25.1

### Unit Cruise Design: 3C CORR

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
FX: FR plots (20 tree / acre expansion)	0.8		1	1	0

### Unit Cruise Summary: 3C CORR

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	3	3	3.0	0
WH	3	3	3.0	0
RC	1	1	1.0	0
ALL	7	7	7.0	0

### Unit Cruise Statistics (Cut + Leave Trees): 3C CORR

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	134.4	0.0	0.0	155.9	4.2	2.4	20,965	4.2	2.4
WH	52.1	0.0	0.0	148.0	7.5	4.3	7,706	7.5	4.3
RC	19.9	0.0	0.0	39.2	0.0	0.0	780	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 (%)
ALL	206.4	0.0	0.0	142.7	30.4	11.5	29,451	30.4	11.5

**Unit Summary: 3C CORR**

Sp	Status	Rx	N	D	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	LIVE	CUT	3	ALL	20.3	92	114	20,965	0.0	59.8	134.4	29.8	128.7	16.8
RC	LIVE	CUT	1	ALL	13.5	40	53	780	0.0	20.0	19.9	5.4	9.0	0.6
WH	LIVE	CUT	3	ALL	12.6	75	94	7,706	0.0	60.1	52.1	14.7	50.8	6.2
ALL	LIVE	CUT	7	ALL	16.4	77	97	29,451	0.0	139.9	206.4	49.9	188.5	23.6
ALL	ALL	ALL	7	ALL	16.4	77	97	29,451	0.0	139.9	206.4	49.9	188.5	23.6

**Unit Stand Table: 3C CORR**

Sp	D	Status	Rx	N	QMD	BL	THT	BF Net	Defect %	TPA	BA	RD	Tons	MBF Net
DF	20	LIVE	CUT	3	20.3	92	114	20,965	0.0	60.0	134.4	29.9	128.7	16.8
RC	14	LIVE	CUT	1	13.5	40	53	780	0.0	20.0	19.9	5.4	9.0	0.6
WH	10	LIVE	CUT	1	10.1	65	80	1,533	0.0	20.0	11.1	3.5	9.0	1.2
WH	12	LIVE	CUT	1	12.5	80	100	2,398	0.0	20.0	17.1	4.8	17.4	1.9
WH	14	LIVE	CUT	1	14.8	80	101	3,774	0.0	20.0	23.9	6.2	24.4	3.0

**Unit Log Grade Summary: 3C CORR**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	13.8	40.0	15,404	0.0	89.0	12.3
DF	LIVE	3 SAW	8.3	37.0	5,061	0.0	36.5	4.0
DF	LIVE	4 SAW	6.3	20.0	500	0.0	3.2	0.4
RC	LIVE	4 SAW	5.8	36.0	780	0.0	9.0	0.6
WH	LIVE	3 SAW	8.6	37.0	5,878	0.0	37.9	4.7
WH	LIVE	4 SAW	5.2	29.0	1,828	0.0	12.9	1.5

**Unit Log Sort Summary: 3C CORR**

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	10.4	36.0	20,965	0.0	128.7	16.8
RC	LIVE	Domestic	5.8	36.0	780	0.0	9.0	0.6
WH	LIVE	Domestic	6.9	33.0	7,706	0.0	50.8	6.2

**Unit Log Grade x Sort Summary: 3C CORR**

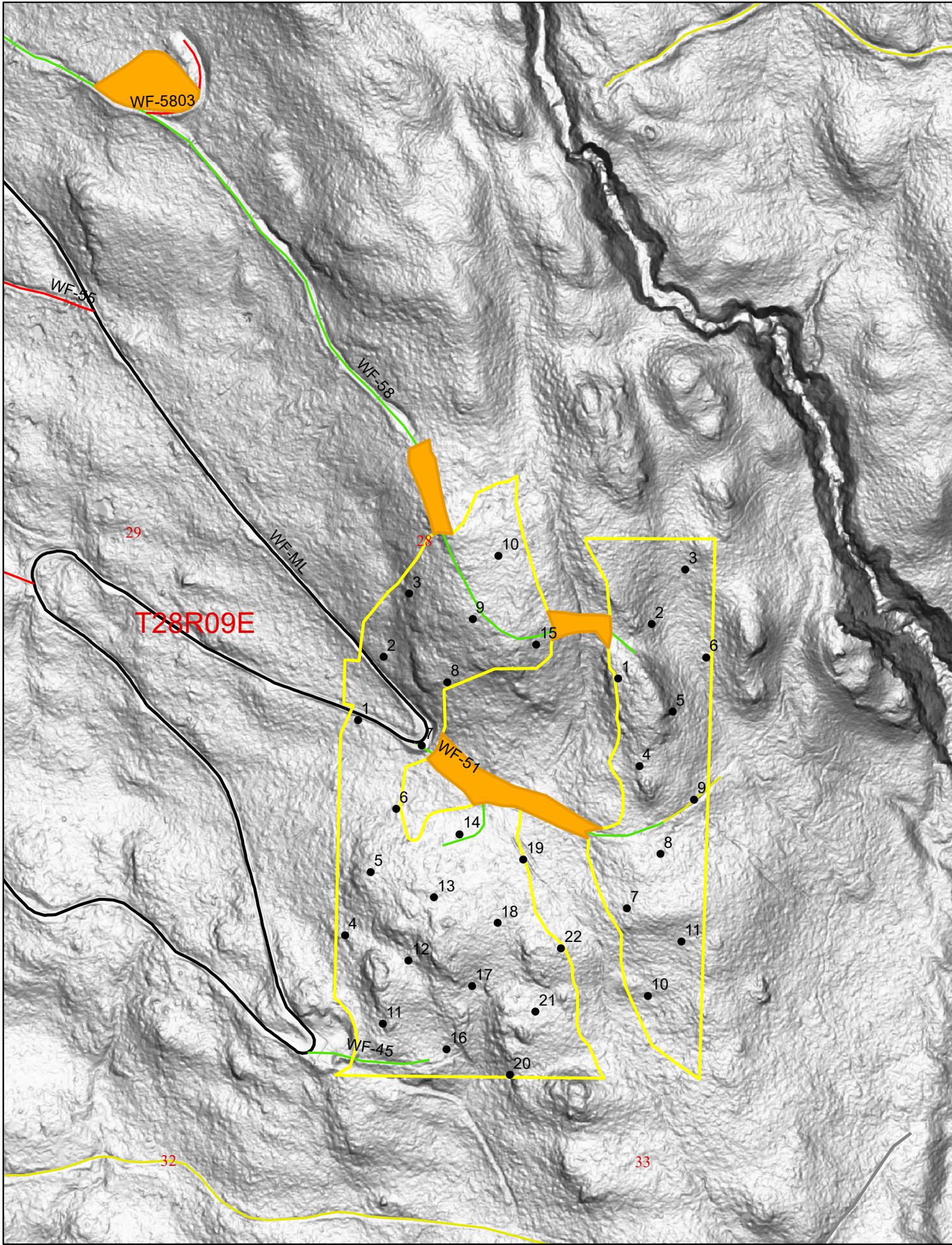
Sp	Status	Grade	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	13.8	40.0	15,404	0.0	89.0	12.3
DF	LIVE	3 SAW	Domestic	8.3	37.0	5,061	0.0	36.5	4.0
DF	LIVE	4 SAW	Domestic	6.3	20.0	500	0.0	3.2	0.4
RC	LIVE	4 SAW	Domestic	5.8	36.0	780	0.0	9.0	0.6
WH	LIVE	3 SAW	Domestic	8.6	37.0	5,878	0.0	37.9	4.7
WH	LIVE	4 SAW	Domestic	5.2	29.0	1,828	0.0	12.9	1.5

**Unit Log Grade x Diameter Bin Summary: 3C CORR**

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	4 SAW	6.3	20.0	500	0.0	3.2	0.4
DF	5 - 11	LIVE	3 SAW	8.3	37.0	5,061	0.0	36.5	4.0
DF	12 - 19	LIVE	2 SAW	13.8	40.0	15,404	0.0	89.0	12.3
RC	5+	LIVE	4 SAW	5.8	36.0	780	0.0	9.0	0.6
WH	5 - 11	LIVE	4 SAW	5.2	29.0	1,828	0.0	12.9	1.5
WH	5 - 11	LIVE	3 SAW	8.6	37.0	5,878	0.0	37.9	4.7

**Unit Log Sort x Diameter Bin Summary: 3C CORR**

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 11	LIVE	Domestic	7.8	33.0	5,561	0.0	39.7	4.4
DF	12 - 19	LIVE	Domestic	13.8	40.0	15,404	0.0	89.0	12.3
RC	5+	LIVE	Domestic	5.8	36.0	780	0.0	9.0	0.6
WH	5 - 11	LIVE	Domestic	6.9	33.0	7,706	0.0	50.8	6.2





T27R09E

May Creek Rd

Reiter Rd

US-2

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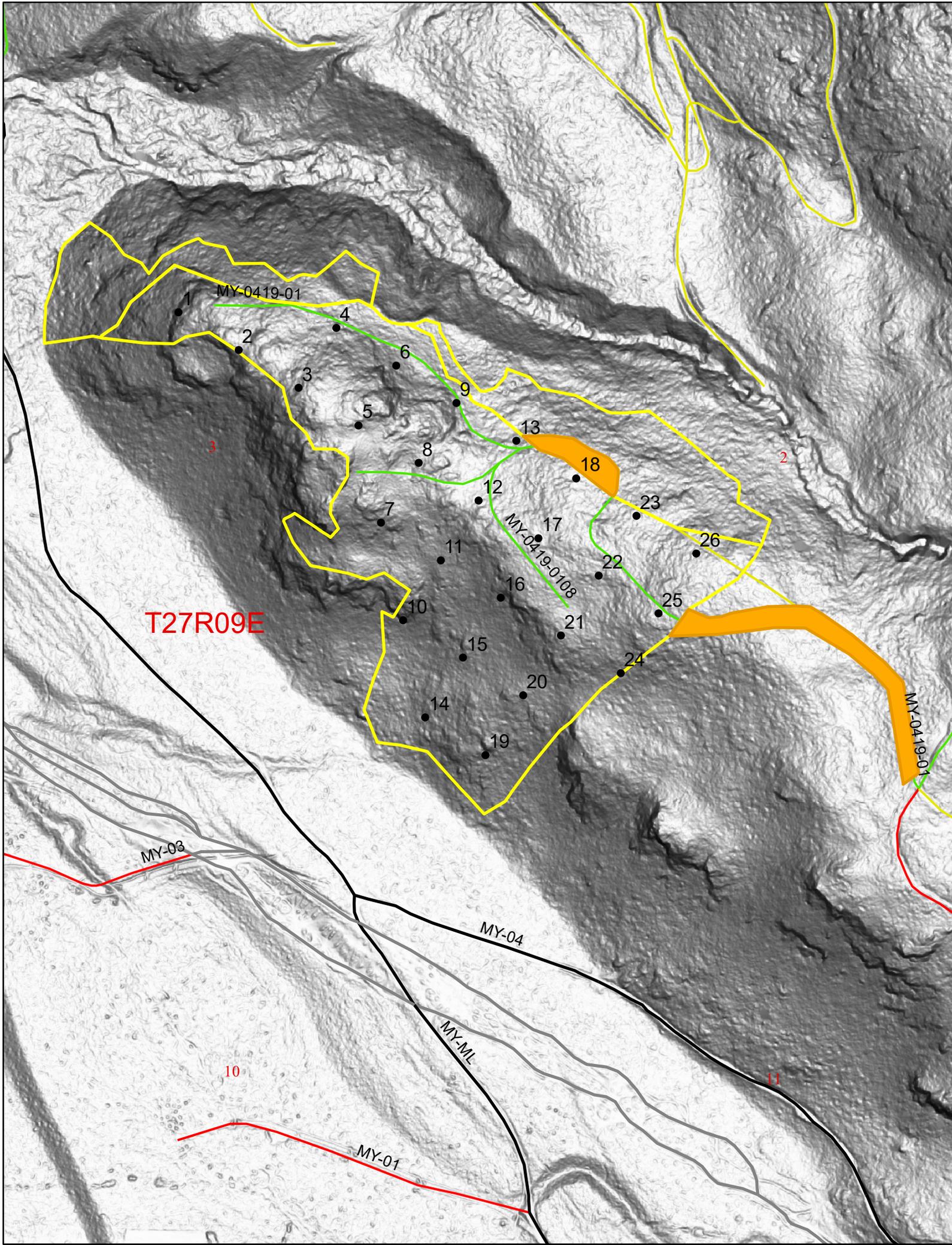
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CRT-020

CRT-02

16

15





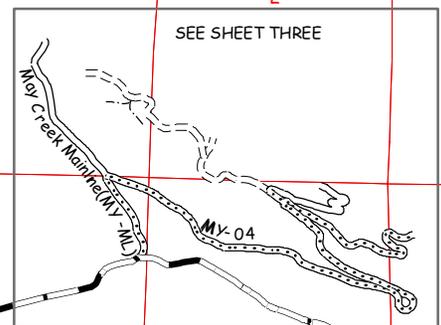
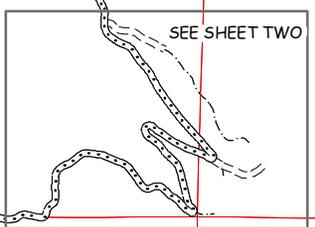
WASHINGTON STATE  
DEPT. OF NATURAL RESOURCES  
NORTHWEST REGION

# ROAD PLAN AND SPECIFICATIONS 30-100353 MADERA TIMBER SALE

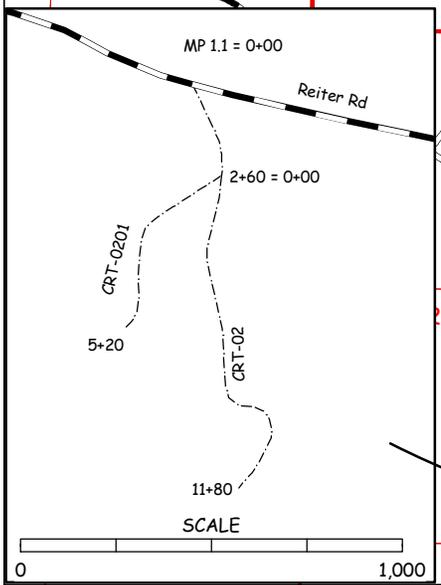
LEGEND	
PRE-HAUL MAINTENANCE	
REQUIRED CONSTRUCTION	
OPTIONAL CONSTRUCTION	
REQUIRED RECONSTRUCTION	
OPTIONAL RECONSTRUCTION	

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449+20  
WF-85 HARDROCK PIT:  
EXISTING HARDROCK PIT TO BE  
DEVELOPED TO GENERATE RIPRAP,  
AND 3-INCH-MINUS BALLAST.



SCALE  
0 1,000



DESIGNED BY	REVIEWED BY	APPROVED BY	PLAN DATE	SHEET
A, HALGREN	ZYLSTRA 7/8/2020	ZYLSTRA 7/8/2020	5/06/2020	1 OF 40



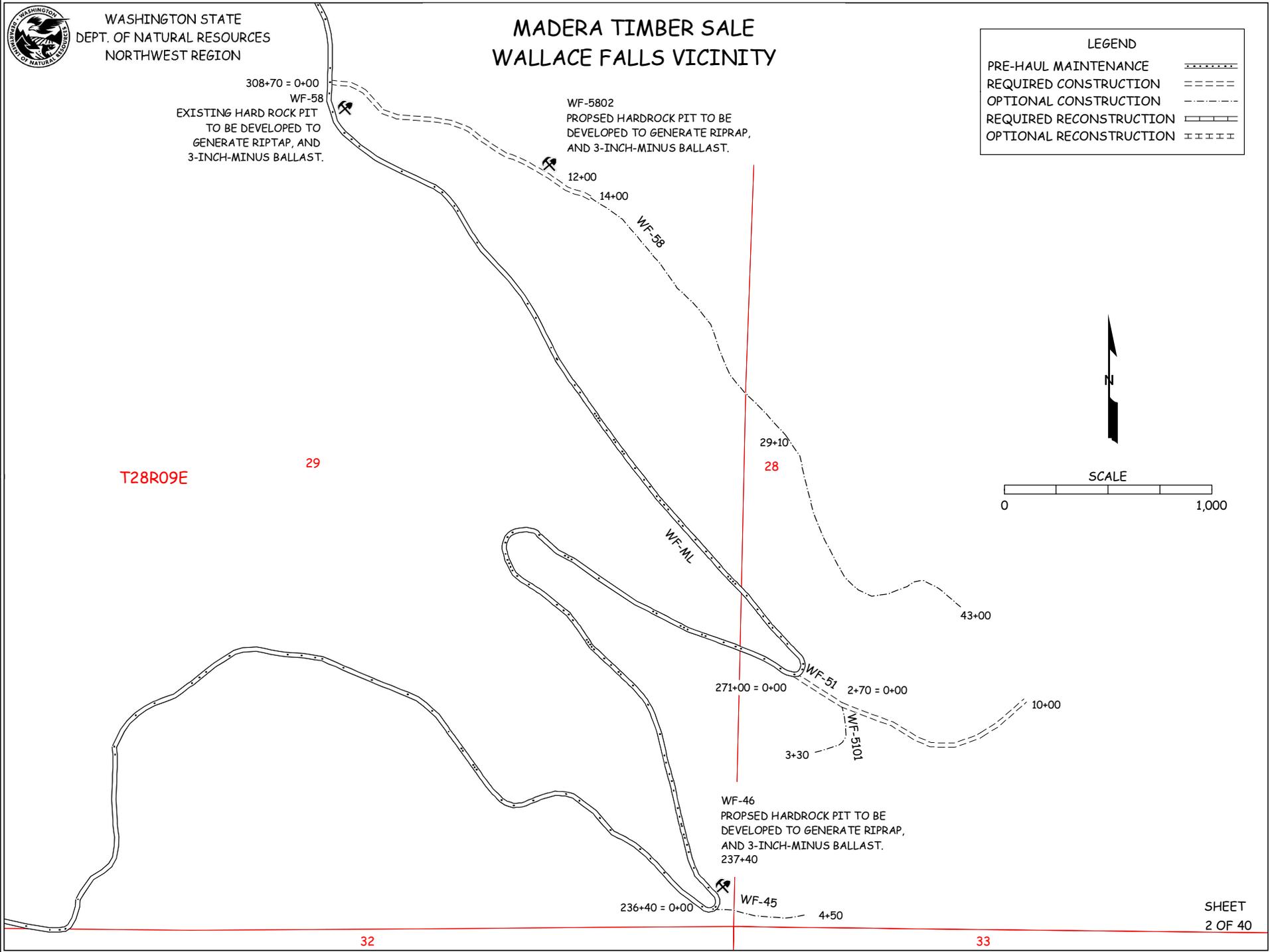
WASHINGTON STATE  
DEPT. OF NATURAL RESOURCES  
NORTHWEST REGION

# MADERA TIMBER SALE WALLACE FALLS VICINITY

LEGEND	
PRE-HAUL MAINTENANCE	-----
REQUIRED CONSTRUCTION	=====
OPTIONAL CONSTRUCTION	- - - - -
REQUIRED RECONSTRUCTION	
OPTIONAL RECONSTRUCTION	

308+70 = 0+00  
WF-58  
EXISTING HARD ROCK PIT  
TO BE DEVELOPED TO  
GENERATE RIPTAP, AND  
3-INCH-MINUS BALLAST.

WF-5802  
PROPOSED HARDROCK PIT TO BE  
DEVELOPED TO GENERATE RIPTAP,  
AND 3-INCH-MINUS BALLAST.



T28R09E

29

29+10

28

SCALE

0 1,000

WF-46  
PROPOSED HARDROCK PIT TO BE  
DEVELOPED TO GENERATE RIPTAP,  
AND 3-INCH-MINUS BALLAST.  
237+40

236+40 = 0+00  
WF-45  
4+50

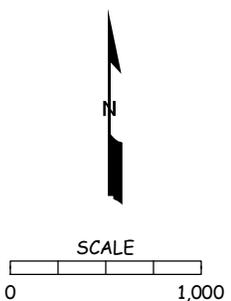
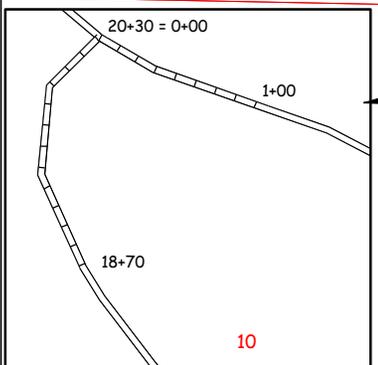
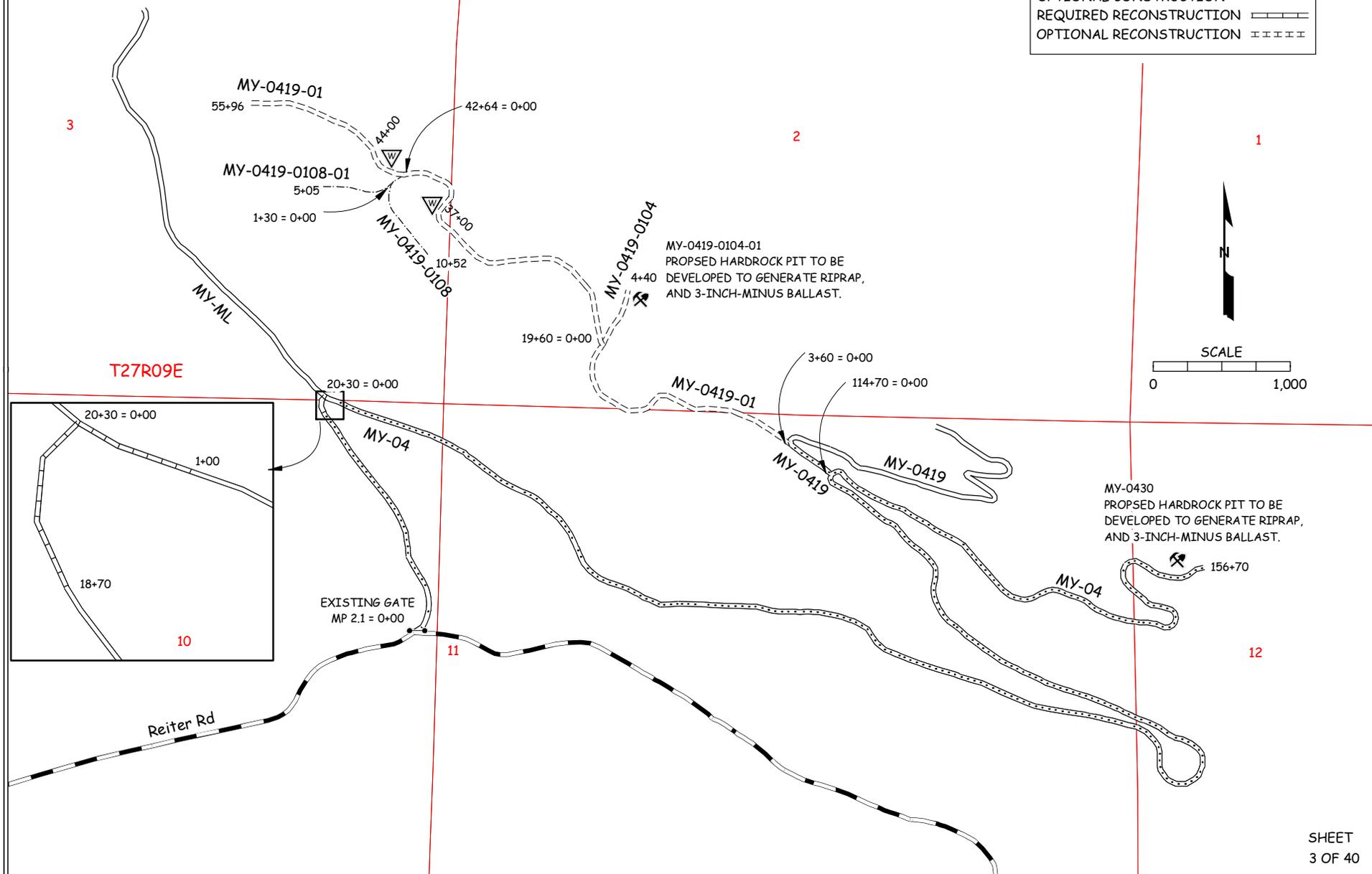
32

33



# MADERA TIMBER SALE MAY CREEK VICINITY

LEGEND	
PRE-HAUL MAINTENANCE	=====
REQUIRED CONSTRUCTION	-----
OPTIONAL CONSTRUCTION	- - - - -
REQUIRED RECONSTRUCTION	=====
OPTIONAL RECONSTRUCTION	- - - - -



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

MADERA TIMBER SALE ROAD PLAN  
SNOHOMISH COUNTY  
CASCADE DISTRICT  
NORTHWEST REGION

AGREEMENT NO.: 30-100353

STAFF ENGINEER: A. HALGREN

DATE: MAY 6, 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>
WF-ML	0+00 TO 449+20	MAINTENANCE
WF-51	0+00 TO 10+00	CONSTRUCTION
WF-58	0+00 TO 14+00	CONSTRUCTION
MY-ML	0+00 TO 18+70	MAINTENANCE
MY-ML	18+70 TO 20+30	RECONSTRUCTION
MY-04	0+00 TO 1+00	RECONSTRUCTION
MY-04	1+00 TO 156+70	MAINTENANCE
MY-0419	0+00 TO 3+60	MAINTENANCE
MY-0419-01	0+00 TO 55+96	CONSTRUCTION
MY-0419-0104	0+00 TO 4+40	CONSTRUCTION

**0-3 OPTIONAL ROADS**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
WF-45	0+00 TO 4+50	CONSTRUCTION
WF-5101	0+00 TO 3+30	CONSTRUCTION
WF-58	14+00 TO 43+00	CONSTRUCTION
CRT-02	0+00 TO 11+80	CONSTRUCTION
CRT-0201	0+00 TO 5+20	CONSTRUCTION
MY-0419-0108	0+00 TO 10+52	CONSTRUCTION
MY-0419-0108-01	0+00 TO 5+05	CONSTRUCTION

**0-4 CONSTRUCTION**

Construction includes, but is not limited to clearing, grubbing, excavation and embankment to sub-grade, full bench sidecast, full bench end-haul, landing and turnout construction, culvert installation, geotextile installation, drill and shoot, and application of 3-inch-minus ballast rock.

**0-6 PRE-HAUL MAINTENANCE**

Pre-haul maintenance includes, but is not limited to blading, shaping, and ditching the road surface, brushing, clearing, grubbing, culvert installation, existing culvert clean out, and application of 3-inch-minus ballast rock.

**0-7 POST-HAUL MAINTENANCE**

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

**0-10 ABANDONMENT**

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT.

**0-12 DEVELOP ROCK SOURCE**

Contractor may develop new and existing rock sources. Rock source development will involve clearing, stripping, drilling, shooting, and processing rock to generate riprap and 3-inch-minus ballast. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

If the Contractor 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, Contractor shall obtain approval from the State for any submitted plan that changes the scope of work or environmental condition from the original road plan.

**1-2 NON-COMPLIANCE WITH STATE ROAD PLAN**

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to non-compliance or the Contractor's choice of construction techniques will be at the Contractor's expense.

**1-3 ROAD DIMENSIONS**

Contractor shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan.

**1-4 ROAD TOLERANCES**

Contractor 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.

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**

Contractor 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.

**1-18 REFERENCE POINT DAMAGE**

Contractor 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 Contractor resets all moved or damaged RPs.

**1-21 HAUL APPROVAL**

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

**1-22 WORK NOTIFICATIONS**

On the following road(s) Contractor shall notify the Contract Administrator within 30 days, and a minimum of 14 calendar days before work begins.

<u>Road</u>	<u>Stations</u>
WF-45	0+00 to 4+50

**1-23 ROAD WORK PHASE APPROVAL**

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

- Subgrade construction on switchbacks listed in 4-3 ROAD GRADE AND ALIGNMENT STANDARDS

**1-25 ACTIVITY TIMING RESTRICTION**

The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
ALL		Rock hauling, construction, reconstruction, or abandonment	November 1 to March 31

**1-26 OPERATING DURING CLOSURE PERIOD**

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, Contractor shall provide a maintenance plan to include further protection of state resources. Contractor 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. Contractor is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

**1-29 SEDIMENT RESTRICTION**

Contractor 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 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, Contractor shall cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan. Before and during any suspension, Contractor shall protect the work from damage or deterioration.

**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. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

**1-42 UTILITY ACCESS ROAD**

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

<u>Road</u>	<u>Stations</u>
MY-ML	0+00 to 20+30

**1-43 ROAD WORK AROUND UTILITIES**

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

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
MY-ML	0+00 to 20+30	Bonneville Power Administration (overhead powerlines)	<b>1-800-282-3713</b>

**SECTION 2 – MAINTENANCE**

**2-1 GENERAL ROAD MAINTENANCE**

Contractor 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 – CONTRACTOR MAINTENANCE**

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

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

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

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

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

<u>Road</u>	<u>Stations</u>
MY-04	0+00 to 156+70
MY-0419	0+00 to 3+60

**2-6 CLEANING CULVERTS**

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

<u>Road</u>	<u>Stations</u>
WF-ML	0+00 to 449+20

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

On the following road(s), Contractor shall clean ditches, headwalls, and catchbasins. Work must be completed before haul. Pulling ditch material across the road or mixing in with the road surface is not allowed.

<u>Road</u>	<u>Stations</u>
WF-ML	0+00 to 449+20
MY-04	0+00 to 156+70

**SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL**

**3-1 BRUSHING**

On the following road(s), Contractor shall cut vegetative material up to 6 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Contractor shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

<u>Road</u>	<u>Stations</u>
MY-ML	0+00 TO 20+30
MY-04	0+00 TO 156+70

**3-5 CLEARING**

Contractor 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**

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

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

### **3-10 GRUBBING**

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

### **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**

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

### **3-23 PROHIBITED DISPOSAL AREAS**

Contractor shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 50%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

### **3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

### **3-25 SCATTERING ORGANIC DEBRIS**

Contractor shall scatter organic debris outside of the clearing limits in natural openings unless otherwise detailed in this road plan.

SECTION 4 – EXCAVATION

**4-2 PIONEERING**

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 500 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

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

Contractor shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

<u>Road</u>	<u>Stations</u>	<u>Minimum Curve Radius (ft)</u>	<u>Maximum Grade (%)</u>		<u>Note</u>
			<u>Favorable</u>	<u>Adverse</u>	
MC-ML	18+70 to 20+30	65	-	-	Reconstruction of existing intersection.
MC-04	0+00 to 1+00				
MY-0419-01	35+03 to 39+51	70	-	7%	-

**4-4 SWITCHBACK STANDARDS**

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

Contractor shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10% of the curve radius.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

**4-5 CUT SLOPE RATIO**

Contractor 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**

Contractor 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**

Contractor 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.

Contractor 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), Contractor shall widen the subgrade and fill slopes to accommodate the curve required in 4-3 ROAD GRADE AND ALIGNMENT STANDARDS plus the curve widening required in 4-8 CURVE WIDENING and according to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Contractor shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches.

<u>Road</u>	<u>Stations</u>
MC-ML	18+70 to 20+30
MC-04	0+00 to 1+00

**4-12 FULL BENCH CONSTRUCTION**

Where side slopes exceed 50%, Contractor shall use full bench construction for the entire subgrade width.

**4-21 TURNOUTS**

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

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

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

**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**

Contractor may sidecast waste material on side slopes up to 50% if the waste material is compacted and free of organic debris. On side slopes greater than 50%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

**4-37 WASTE AREA LOCATION**

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

<u>Road</u>	<u>Waste Area Location</u>	<u>Volume</u>
MY-0419-01	STA 36+48 to 37+85	1000 CY
MY-0419-01	STA 42+20 to 44+00	1200 CY

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Contractor 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.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.
- Outside the clearing limits.

**4-55 ROAD SHAPING**

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

**4-60 FILL COMPACTION**

Contractor shall compact all embankment and waste material by routing equipment over the entire width of each lift.

**4-61 SUBGRADE COMPACTION**

Contractor shall compact constructed and reconstructed subgrades by routing equipment over the entire width

**4-70 SUBGRADE REINFORCEMENT**

On the following road(s), Contractor shall provide and install geotextile fabric as specified in clause 10-3 GEOTEXTILE FOR STABILIZATION. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered with a minimum of 12 inches of compacted 3-inch minus ballast rock as specified in Clause 6-34 3-INCH MINUS BALLAST ROCK. Contractor shall apply rock in lift(s) over the geotextile in accordance with the manufacturer’s specifications. Geotextile fabric must meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION.

<u>Road</u>	<u>Stations</u>
WF-5101	1+06 TO 3+30

SECTION 5 – DRAINAGE

**5-5 CULVERTS**

Contractor 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 MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts may be new or used material and must meet the specifications in Clauses 10-15 through 10-24.

**5-7 USED CULVERT MATERIAL**

On temporary roads, Contractor may install used culverts. All other roads must have new culverts installed. Contractor shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts must meet the specifications in Clauses 10-15 through 10-24.

**5-15 CULVERT INSTALLATION**

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association’s "Installation Manual for Corrugated Steel Drainage Structures" and the Corrugated Polyethylene Pipe Association’s "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings".

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

Contractor shall obtain written approval from the Contract Administrator for the installation of culverts 36 inches in diameter and over before backfilling.

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

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

**5-18 CULVERT DEPTH OF COVER**

Cross drain culverts must be installed with a depth of cover of not less than 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.

**5-20 ENERGY DISSIPATERS**

Contractor shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

**5-25 CATCH BASINS**

Contractor 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 CROSS DRAIN CULVERTS**

Contractor shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock used for headwalls must weigh at least 50 pounds. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

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

At the following culvert(s), Contractor shall place rip rap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the MATERIALS LIST. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rip rap must meet the specifications in clause 6-50 LIGHT LOOSE RIP RAP and 6-51 HEAVY LOOSE RIP RAP.

<u>Road</u>	<u>Stations</u>
WF-51	4+90
WF-58	6+10
WF-58	19+50
WF-58	40+40
MY-0419-01	2+20
MY-0419-01	2+62
MY-0419-01	4+36
MY-0419-01	17+90

**SECTION 6 – ROCK AND SURFACING**

**6-2 ROCK SOURCE ON STATE LAND**

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following source(s) on state land at no charge to the Contractor. Contractor 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.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>	<u>Comments</u>
WF-46 (Proposed)	STA 237+40 of the WF-ML road	Hard Rock	-
WF-58	STA 308+70 of the WF-ML road	Hard Rock	Requires on-site meeting prior to pit plan development.
WF-5802 (Proposed)	STA 12+00 of the WF-58 road	Hard Rock	-
WF-85	STA 449+20 of the WF- ML	Hard Rock	-
MY-0430 (Proposed)	STA 156+70 of the MY-04 road	Hard Rock	-
MY-0419-0104-01 (Proposed)	STA 4+40 of the MY-0419-0104 road	Hard Rock	-

**6-3 ROCK SOURCE STATE LAND, EXISTING STOCKPILE**

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from the following existing stockpile(s) on state land at no charge to the Contractor. Other stockpiles may not be used without prior written approval from the Contract Administrator.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
WF-58	STA 308+70 of the WF-ML road	Hard Rock

**6-5 ROCK FROM COMMERCIAL SOURCE**

Rock used in accordance with the quantities on the TYPICAL SECTION and MATERIALS LIST may be obtained from any commercial source at the Contractor's expense. Rock sources are subject to written approval by the Contract Administrator before their use.

**6-11 ROCK SOURCE DEVELOPMENT PLAN BY CONTRACTOR**

Contractor shall conduct rock source development at the sources listed in 6-2 ROCK SOURCE ON STATE LAND, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Contractor. 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.

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

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

**6-12 ROCK SOURCE SPECIFICATIONS**

Rock sources must be in accordance with the following specifications:

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

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

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

**6-13 ROCK EXPLORATION**

Contractor shall provide an excavator with operator for up to 24 hours of exploration of rock at the following site(s).

<u>Site</u>	<u>Location</u>
WF-46 Proposed Hardrock Pit	STA 237+40 of the WF-ML road
WF-5802 Proposed Hardrock Pit	STA 12+00 of the WF-58 road
MY-0419-0104-01 (Proposed)	STA 4+40 of the MY-0419-0104 road

#### **6-14 DRILL AND SHOOT**

Rock drilling and shooting must meet the following specifications:

- No oversize material is allowed to remain in the rock source at the termination of this timber sale.
- Oversize material is defined as rock fragments larger than three feet in any dimension.
- Contractor shall notify the Contract Administrator a minimum of 2 but not more than 14 working days before blasting operations.
- Contractor shall block access roads and trails before blasting operations.

#### **6-21 IN-PLACE PROCESSING**

Contractor 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. Contractor 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**

Contractor shall provide rock in accordance with the types and amounts listed in the TYPICAL SECTION and MATERIALS LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles or during manufacture and placement into a stockpile. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

#### **6-34 3-INCH MINUS BALLAST ROCK**

Ballast rock must be 100% equal to, or smaller than, 3 inches in at least one dimension.

Rock may contain no more than 5 percent organic debris, dirt, and trash. All percentages are by weight.

#### **6-38 4-INCH IN-PLACE ROCK**

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

In-place rock may not contain organic debris and trash. No more than 50 percent of rock may be larger than 6 inches in any dimension and no rock may be larger than 10 inches in any dimension.

**6-50 LIGHT LOOSE RIP RAP**

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

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

**6-51 HEAVY LOOSE RIP RAP**

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

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

**6-55 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 TYPICAL SECTION are loose yards. Contractor shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements, and are not subject to reduction.

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Contractor shall obtain written approval from the Contract Administrator for culvert installation, ditch construction, ditch reconstruction, headwall construction, and headwall reconstruction before rock application.

**6-71 ROCK APPLICATION**

Contractor shall apply rock in accordance with the specifications and quantities shown on the TYPICAL SECTION. 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 TYPICAL SECTION by routing equipment over the entire width.

**6-73 ROCK FOR WIDENED PORTIONS**

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

**6-80 WATERING FOR DUST ABATEMENT**

Contractor shall use water for dust abatement on the following roads or as directed by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
WF-ML	0+00 to 449+20

**SECTION 8 – EROSION CONTROL**

**8-2 PROTECTION FOR EXPOSED SOIL**

Contractor shall provide and evenly spread a 4-inch layer of straw to all exposed soils at culvert installations. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**8-15 REVEGETATION**

Contractor shall spread seed and fertilizer on all exposed soils within the grubbing limits resulting from road work activities. Cover all exposed soils using manual dispersal of grass seed and fertilizer. Other methods of covering must be approved in writing by the Contract Administrator.

**8-16 REVEGETATION SUPPLY**

The Contractor shall provide the grass seed and fertilizer as directed in clauses 8-25 GRASS SEED and 8-27 FERTILIZER.

**8-17 REVEGETATION TIMING**

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

**8-18 PROTECTION FOR SEED**

Contractor shall provide a protective cover for seed if revegetation occurs between July 1 and March 31. The protective cover may consist of dispersed straw, jute matting, or clear plastic sheets. The protective cover requirement may be waived in writing by the Contract Administrator if Contractor is able to demonstrate a revegetation plan that will result in the establishment of a uniform dense crop (at least 50% coverage) of 3-inch tall grass by October 31.

**8-19 ASSURANCE FOR SEEDED AREA**

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

**8-25 GRASS SEED**

Contractor shall evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits 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>
Creeping Red Fescue	50
Elf Perennial Rye Grass	25
Highland Colonial Bentgrass	15
White Clover	10
Inert and Other Crop	0.5

**8-27 FERTILIZER**

Contractor shall evenly spread the fertilizer listed below on all exposed soil inside the grubbing limits at a rate of 200 pounds per acre of exposed soil. Fertilizer must meet the following specifications:

<u>Chemical Component</u>	<u>% by Weight</u>
Nitrogen	16
Phosphorous	16
Potassium	16
Sulphur	3
Inerts	49

SECTION 9 – POST-HAUL ROAD WORK

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

Culverts removed from roads become the property of the Contractor and must be removed from state land.

**9-5 POST-HAUL MAINTENANCE**

Contractor shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

**9-10 LANDING DRAINAGE**

Contractor shall provide for drainage of the landing surface.

**9-21 ROAD ABANDONMENT**

Contractor shall abandon the following before the termination of this contract.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
WF-45	0+00 TO 4+50	ABANDONMENT FOR TRAIL CONVERSION
WF-5101	0+00 TO 3+30	ABANDONMENT FOR TRAIL CONVERSION
WF-58	14+00 TO 43+00	ABANDONMENT FOR TRAIL CONVERSION
MY-0419-0108	0+00 TO 10+52	ABANDONMENT FOR TRAIL CONVERSION
MY-0419-0108-01	0+00 TO 5+05	ABANDONMENT FOR TRAIL CONVERSION
CRT-02	0+00 TO 11+80	ABANDONMENT
CRT-0201	0+00 TO 5+20	ABANDONMENT

## 9-22 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1.5:1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Contractor.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.

## 9-25 ABANDONMENT FOR TRAIL CONVERSION

- Remove all ditch relief culverts. The resulting slopes must be **3:1** or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be **1.5:1** or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site. All removed culverts are the property of the Contractor.
- Construct **drivable** waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet. The resulting slopes must be **3:1** or flatter.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Inslope or outslope the road as appropriate.
- Remove bridges and other structures.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) OR Oversized Riprap placed in a stable condition (see 11-1 OVERSIZED RIPRAP and RIPRAP BARRICADE DETAIL). Barrier shall be constructed to include a 36-48" gap to allow passage of pedestrians and recreational, non-highway vehicles. Barrier shall be constructed so that four wheel highway vehicles cannot pass the point of abandonment. Typical barrier dimensions are 10 feet high by 20 feet deep, spanning the entire road prism (excepting a 36-48" gap) from top of cutslope to toe of fillslope. Long term effectiveness is the primary objective. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.

## SECTION 10 MATERIALS

### 10-3 GEOTEXTILE FOR STABILIZATION

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

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

### 10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

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

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

### 10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be galvanized (zinc coated meeting AASHTO M-218).

### 10-16 CORRUGATED ALUMINUM CULVERT

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

### 10-17 CORRUGATED PLASTIC CULVERT

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

**10-21 METAL BAND**

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

**10-22 PLASTIC BAND**

Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used.

**10-24 GAUGE AND CORRUGATION**

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

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

SECTION 11 SPECIAL NOTES

**11-1 OVERSIZED RIPRAP FOR ABANDONMENT**

Oversize material is defined as rock fragments larger than three feet in any dimension. Oversize Riprap used to block roads for abandonment as directed in clauses 9-25 ABANDONMENT FOR TRAIL CONVERSION shall meet the following requirements:

<u>At Least/Not More Than</u>	<u>Weight Range</u>	<u>Size Range</u>
0% / 50 %	3 tons to 4 tons	54" – 72"
50% / 100%	2 tons to 3 tons	36" - 54"

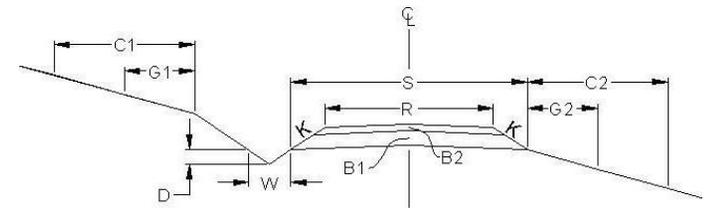
**11-2 RECREATIONAL TRAIL DAMAGE**

Any trail damage that occurs as a consequence of road work must be repaired at the Contractor's expense prior to contract termination with approval in writing by the Contract Administrator. Known trail crossing(s) adjacent to proposed construction are listed:

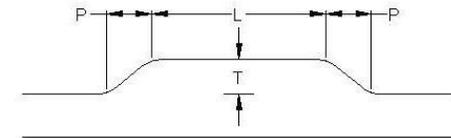
<u>Road</u>	<u>Stations</u>	<u>Comments</u>
WF-45	0+00 to 2+30	The recreational trail intersects the WF-ML at the junction with the WF-45 road, then parallels the WF-45 within the Right-of-Way for 230 feet. During abandonment it may be necessary to pull back road fill away from the trail.

ROAD #		WF-ML	WF-45 <sup>B</sup>	WF-51 <sup>B</sup>	WF-5101	WF-58 <sup>B</sup>
REQUIRED / OPTIONAL		REQUIRED	OPTIONAL	REQUIRED	OPTIONAL	REQUIRED
CONSTRUCT / RECONSTRUCT		MAINTAIN	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C	C
STATION / MP TO		0+00	0+00	0+00	0+00	0+00
STATION / MP		449+20	4+50	10+00	3+30	14+00
ROAD WIDTH	R	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3
DITCH WIDTH	W	3	2	3	2	3
DITCH DEPTH	D	1	1	1	1	1
TURNOUT LENGTH	L	-	25	50	25	50
TURNOUT WIDTH	T	-	10	10	10	10
TURNOUT TAPER	P	-	25	25	25	25
GRUBBING	G1	-	5	5	5	5
	G2	-	5	5	5	5
CLEARING	C1	-	10	10	10	10
	C2	-	10	10	10	10
ROCK FILLSLOPE	K:1	-	1 ½	1 ½	1 ½	1 ½
❖ BALLAST DEPTH	B1	-	12	12	12	12
CUBIC YARDS / STATION		-	72	72	72	72
➤ TOTAL CY BALLAST		-	330	720	240	1010
❖ SURFACING DEPTH	B2	-	-	-	-	-
CUBIC YARDS / STATION		-	-	-	-	-
➤ TOTAL CY SURFACING		-	-	-	-	-
➤ TOTAL CUBIC YARDS		-	330	720	240	1010
SUBGRADE WIDTH	S	-	15	15	15	15
BRUSHCUT (Y/N)		N	N/A	N/A	N/A	N/A
BLADE, SHAPE, & DITCH (Y/N)		N <sup>A</sup>	N/A	N/A	N/A	N/A

### TYPICAL SECTION



### TURNOUT DETAIL (PLAN VIEW)



### SYMBOL NOTES

- ❖ Specified Rock Depth is FINISHED COMPACTED DEPTH in inches.
- Specified Rock Quantity is LOOSE MEASURE (Truck Cubic Yards) needed to accomplish specified FINISHED COMPACTED DEPTH. Rock quantities include volume for turnouts, curve widening and landings.

### Rock Totals Summary

Type	Quantity (Cubic Yards)
Ballast	9270
Rip Rap	391

<sup>A</sup> See clause 2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

<sup>B</sup> Road work is located on an existing grade, abandoned or orphaned.

<sup>C</sup> Work requires removal of drivable waterbars.

ROAD #		WF-58 <sup>B</sup>	WF-58	MY-ML	MY-ML	MY-04	MY-04	MY-0419	MY-0419-01 <sup>B</sup>
REQUIRED / OPTIONAL		OPTIONAL	OPTIONAL	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED
CONSTRUCT / RECONSTRUCT		CONSTRUCT	CONSTRUCT	MAINTAIN	RECONSTRUCT	RECONSTRUCT	MAINTAIN	MAINTAIN	CONSTRUCT
TOLERANCE CLASS (A/B/C)		C	C	C	C	C	C	C	C
STATION / MP TO		14+00	39+10	0+00	18+70	0+00	1+00	0+00	0+00
STATION / MP		39+10	43+00	18+70	20+30	1+00	156+70	3+60	19+60
ROAD WIDTH	R	12	12	12	12	12	12	12	12
CROWN (INCHES @ C/L)		3	3	3	3	3	3	3	3
DITCH WIDTH	W	2	2	3	3	3	3	3	3
DITCH DEPTH	D	1	1	1	1	1	1	1	1
TURNOUT LENGTH	L	25	25	-	-	-	-	-	50
TURNOUT WIDTH	T	10	10	-	-	-	-	-	10
TURNOUT TAPER	P	25	25	-	-	-	-	-	25
GRUBBING	G1	5	5	-	-	-	-	-	5
	G2	5	5	-	-	-	-	-	5
CLEARING	C1	10	10	-	-	-	-	-	10
	C2	10	10	-	-	-	-	-	10
ROCK FILLSLOPE	K:1	1 ½	1 ½	-	-	-	-	-	1 ½
❖ BALLAST DEPTH	B1	6	12	-	-	-	-	-	6
CUBIC YARDS / STATION		34	72	-	-	-	-	-	34
➤ TOTAL CY BALLAST		860	290	-	-	-	-	30 <sup>C</sup>	670
❖ SURFACING DEPTH	B2	-	-	-	-	-	-	-	-
CUBIC YARDS / STATION		-	-	-	-	-	-	-	-
➤ TOTAL CY SURFACING		-	-	-	-	-	-	-	-
➤ TOTAL CUBIC YARDS		860	290	-	180	120	-	-	670
SUBGRADE WIDTH	S	13.5	15	-	-	-	-	-	13.5
BRUSHCUT (Y/N)		N/A	N/A	Y	Y	Y	Y	Y	N/A
BLADE, SHAPE, & DITCH (Y/N)		N/A	N/A	N	Y	Y	Y	Y <sup>C</sup>	N/A

<b>ROAD #</b>		MY-0419-01	MY-0419-01	MY-0419-01	MY-0419-0104 <sup>B</sup>	MY-0419-0108	MY-0419-0108-01	CRT-02	CRT-0201
<b>REQUIRED / OPTIONAL</b>		REQUIRED	REQUIRED	REQUIRED	REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
<b>CONSTRUCT / RECONSTRUCT</b>		CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT	CONSTRUCT
<b>TOLERANCE CLASS (A/B/C)</b>		C	C	C	C	C	C	C	C
<b>STATION / MP TO</b>		19+60	29+18	42+64	0+00	0+00	0+00	0+00	0+00
<b>STATION / MP</b>		29+18	42+64	55+96	4+40	10+52	5+05	11+80	5+20
<b>ROAD WIDTH</b>	<b>R</b>	12	12	12	12	12	12	12	12
<b>CROWN (INCHES @ C/L)</b>		3	3	3	3	3	3	3	3
<b>DITCH WIDTH</b>	<b>W</b>	3	3	3	3	2	2	2	2
<b>DITCH DEPTH</b>	<b>D</b>	1	1	1	1	1	1	1	1
<b>TURNOUT LENGTH</b>	<b>L</b>	50	50	50	50	25	25	25	25
<b>TURNOUT WIDTH</b>	<b>T</b>	10	10	10	10	10	10	10	10
<b>TURNOUT TAPER</b>	<b>P</b>	25	25	25	25	25	25	25	25
<b>GRUBBING</b>	<b>G1</b>	5	5	5	5	5	5	5	5
	<b>G2</b>	5	5	5	5	5	5	5	5
<b>CLEARING</b>	<b>C1</b>	10	10	10	10	10	10	10	10
	<b>C2</b>	10	10	10	10	10	10	10	10
<b>ROCK FILLSLOPE</b>	<b>K:1</b>	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½	1 ½
❖ <b>BALLAST DEPTH</b>	<b>B1</b>	12	18	12	6	12	12	12	12
<b>CUBIC YARDS / STATION</b>		72	114	72	34	72	72	72	72
➤ <b>TOTAL CY BALLAST</b>		690	1540	960	150	760	370	850	380
❖ <b>SURFACING DEPTH</b>	<b>B2</b>	-	-	-	-	-	-	-	-
<b>CUBIC YARDS / STATION</b>		-	-	-	-	-	-	-	-
➤ <b>TOTAL CY SURFACING</b>		-	-	-	-	-	-	-	-
➤ <b>TOTAL CUBIC YARDS</b>		690	1540	960	150	760	370	850	380
<b>SUBGRADE WIDTH</b>	<b>S</b>	15	16.5	15	13.5	15	15	15	15
<b>BRUSHCUT (Y/N)</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>BLADE, SHAPE, &amp; DITCH (Y/N)</b>		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

## MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
		18"										16	2 2/3" x 1/2"	
		24" – 48"										14	2 2/3" x 1/2"	
		54" – 96"										14	3" x 1"	
WF-45	0+00	18	32	XX	/	/	2	3	L	NT	C	Adjacent to recreational trail. See clause 11-2.		
WF-51	0+30	24	40	GM	/	/	5	7	L/H	NT	C			
	1+10	24	36	GM	/	/	3	5	L/H	NT	C			
	4+30	18	36	XX	/	/	2	3	L	NT	C			
	4+50	-	-	-	-	-	-	-	-	-	-	Start silt fencing		
	4+90	49S 33R	36	GM	/	/	5	7	L/H	NT	C	T4 Stream		
	5+20	-	-	-	-	-	-	-	-	-	-	End silt fencing		
	5+40	18	36	XX	/	/	2	3	L	NT	C			
	7+00	18	36	XX	/	/	2	3	L	NT	C			
WF-5101	1+06	-	-	-	-	-	-	-	-	-	-	Ditchout		
	3+30	-	-	-	-	-	-	-	-	-	-	Ditchout		
WF-58	3+30	18	36	XX	/	/	3	5	L	NT	C			
	6+10	24	36	XX	/	/	3	5	L/H	NT	C	T5 Stream		
	6+70	18	36	XX	/	/	3	5	L	NT	C			
	10+60	24	40	GM	/	/	3	7	L/H	NT	C			
	16+00	18	40	XX	/	/	2	3	L	NT	C			
	19+00	18	40	XX	/	/	2	3	L	NT	C			
	19+50	24	40	GM	/	/	5	7	L/H	NT	C	T5 Stream		
	21+60	18	36	XX	/	/	3	5	L	NT	C			
	23+80	18	32	XX	/	/	2	3	L	NT	C			
	25+60	18	36	XX	/	/	3	5	L	NT	C			
	29+00	18	36	XX	/	/	3	5	L	NT	C			

GM – Galvanized Metal    PS – Polyethylene Pipe Single Wall    PD – Polyethylene Pipe Dual Wall    AM – Aluminized Metal    C – Concrete    XX – PD or GM  
 H – Heavy Loose Riprap    L – Light Loose Riprap    SR – Shot Rock    NT – Native (Bank Run)    QS – Quarry Spalls

## MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
												18"                      16                      2 2/3" x 1/2" 24" – 48"              14                      2 2/3" x 1/2" 54" – 96"              14                      3" x 1"		
WF-58 (cont'd)	31+80	18	40	XX	/	/	3	5	L	NT	C			
	35+00	18	36	XX	/	/	3	5	L	NT	C			
	38+00	18	36	XX	/	/	3	5	L	NT	C			
	39+90	18	40	XX	/	/	3	5	L	NT	C			
	40+40	36	48	GM	/	/	8	16	L/H	NT	C	T4 Stream		
	40+70	18	36	XX	/	/	3	5	L	NT	C			
MY-0419-01	0+00	18	36	XX	/	/	2	3	L	NT	C			
	2+20	24	36	GM	/	/	5	7	H/L	NT	C	T4 Stream		
	2+62	24	36	GM	/	/	5	7	H/L	NT	C	T4 Stream		
	4+36	24	36	GM	/	/	5	7	H/L	NT	C	T4 Stream		
	7+79	18	36	XX	/	/	2	3	L	NT	C			
	10+40	18	36	XX	/	/	2	3	L	NT	C			
	14+11	18	36	XX	/	/	2	3	L	NT	C			
	17+90	30	36	GM	/	/	10	15	L	NT	C	T4 Stream		
	18+50	18	36	XX	/	/	2	3	L	NT	C			
	23+18	18	36	XX	/	/	2	3	L	NT	C			
	25+31	-	-	-	-	-	-	-	-	-	-	Ditchout		
	31+86	18	36	XX	/	/	3	5	L	NT	C			
	34+30	18	36	XX	/	/	3	5	L	NT	C			
	35+47	18	36	XX	/	/	3	5	L	NT	C			

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### MATERIALS LIST

LOCATION		CULVERT			DWNSPT		RIPRAP			FILL TYPE	TOLERANCE	REMARKS		
ROAD #	STATION	DIAMETER	LENGTH	TYPE	LENGTH	TYPE	INLET	OUTLET	TYPE			Note: Galvanized metal culverts shall conform to the following specifications for gage and corrugation as a function of the diameter:		
												Diameter	Gage	Corrugation
												18"                      16                      2 2/3" x 1/2" 24" – 48"              14                      2 2/3" x 1/2" 54" – 96"              14                      3" x 1"		
MY-0419-01 (cont'd)	38+64	-	-	-	-	-	-	-	-	-	-	Ditchout		
	40+73	18	36	XX			3	5	L	NT	C			
	42+64	18	36	XX			2	3	L	NT	C			
	44+44	18	36	XX			2	3	L	NT	C			
	47+80	18	36	XX			2	3	L	NT	C			
	49+33	18	36	XX			2	3	L	NT	C			
	50+97	18	36	XX			2	3	L	NT	C			
	52+60	18	36	XX			2	3	L	NT	C			
	55+96	-	-	-	-	-	-	-	-	-	-	Ditchout		
MY-0419-0104	2+18	18	36	XX			2	3	L	NT	C			
MY-0419-0108	2+01	18	36	XX			3	5	L	NT	C			
	7+69	-	-	-	-	-	-	-	-	-	-	Ditchout		
MY-0419-0108-01	3+26	18	40	XX			3	5	L	NT	C			
CRT-02	2+60	18	40	XX			3	5	L	NT	C	Intercept ditchline from CRT-0201		
	8+30	-	-	-	-	-	-	-	-	-	-	Ditchout		
	9+50	-	-	-	-	-	-	-	-	-	-	Ditchout		
CRT-0201	2+60	18	40	XX			3	5	L	NT	C			

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 H – Heavy Loose Riprap    L – Light Loose Riprap    SR – Shot Rock    NT – Native (Bank Run)    QS – Quarry Spalls

## FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

### Cuts and Fills

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

### Drainage

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

### Preventative Maintenance

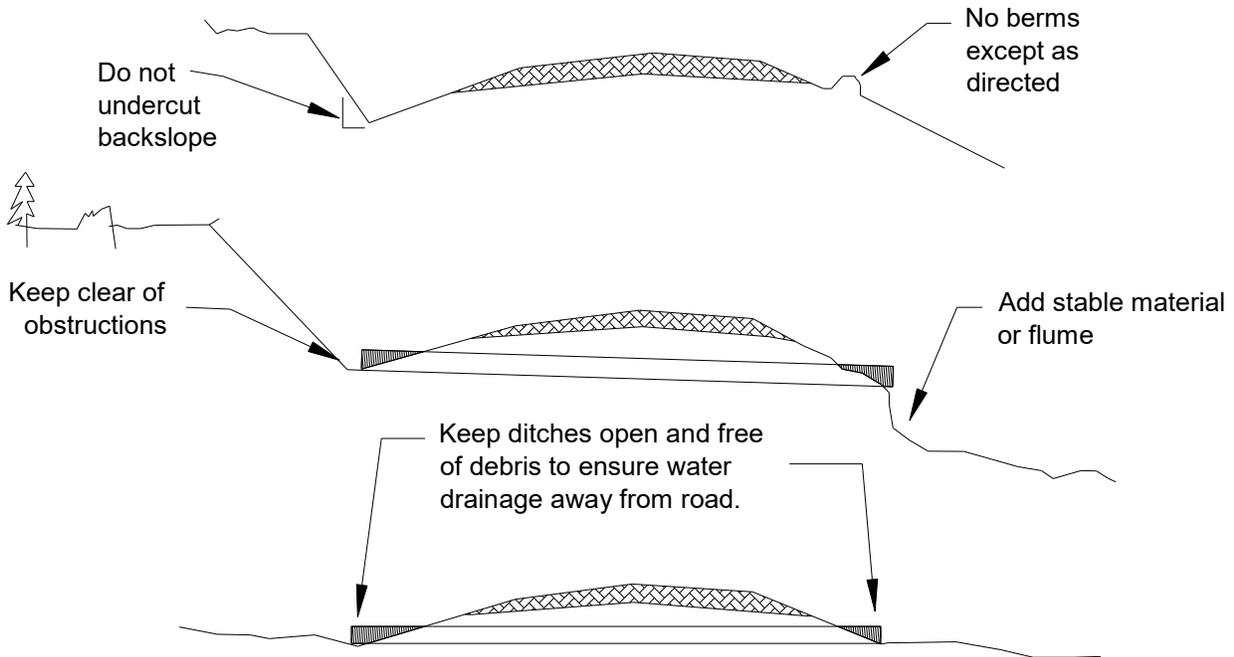
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

### Termination of Use or End of Season

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

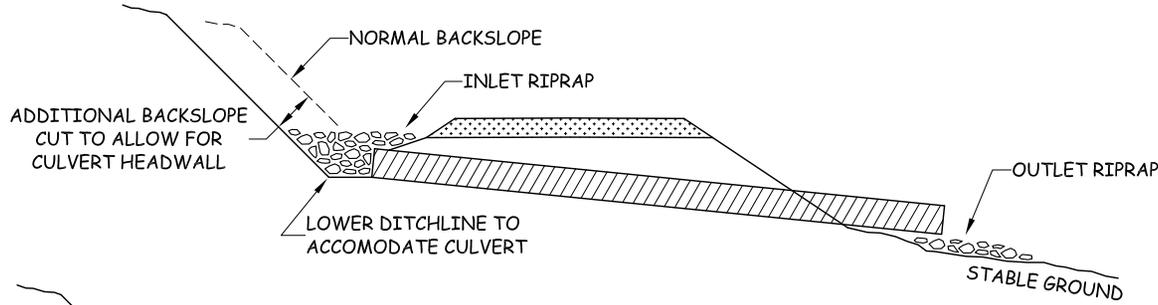
### Debris

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

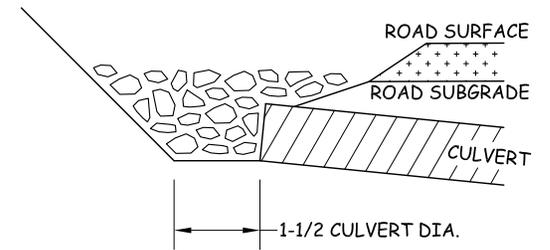


# CULVERT AND DRAINAGE SPECIFICATIONS

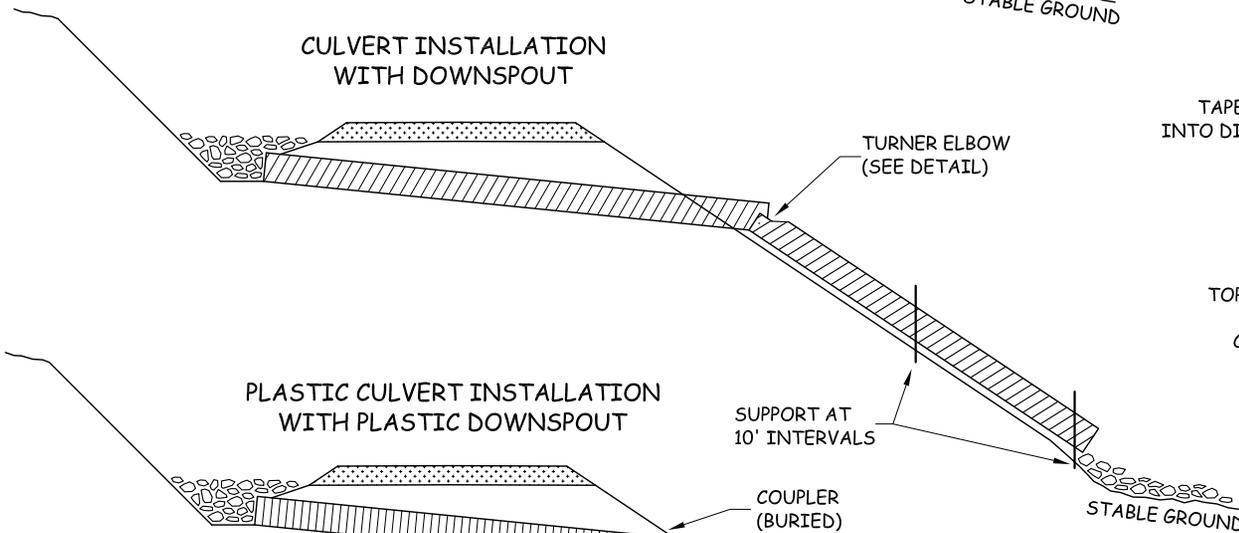
**CULVERT INSTALLATION (TYPICAL)**



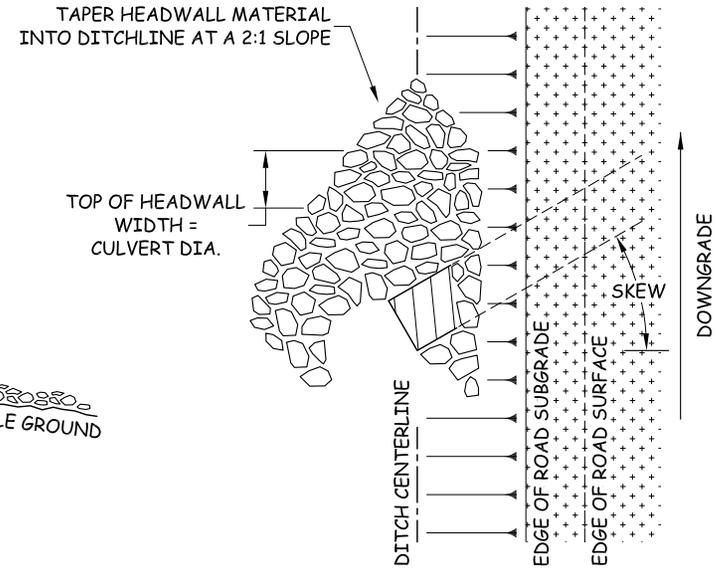
**CULVERT HEADWALL - SECTION VIEW**



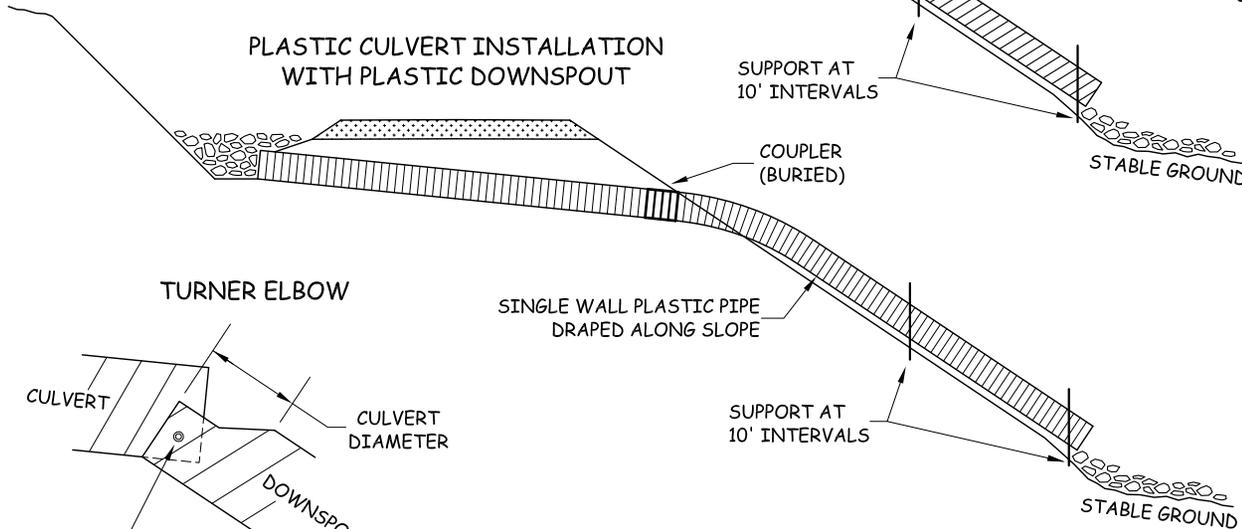
**CULVERT INSTALLATION WITH DOWNSPOUT**



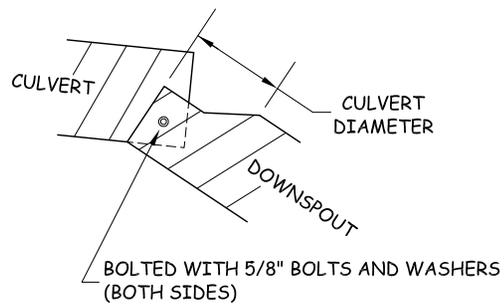
**CULVERT HEADWALL - PLAN VIEW**



**PLASTIC CULVERT INSTALLATION WITH PLASTIC DOWNSPOUT**



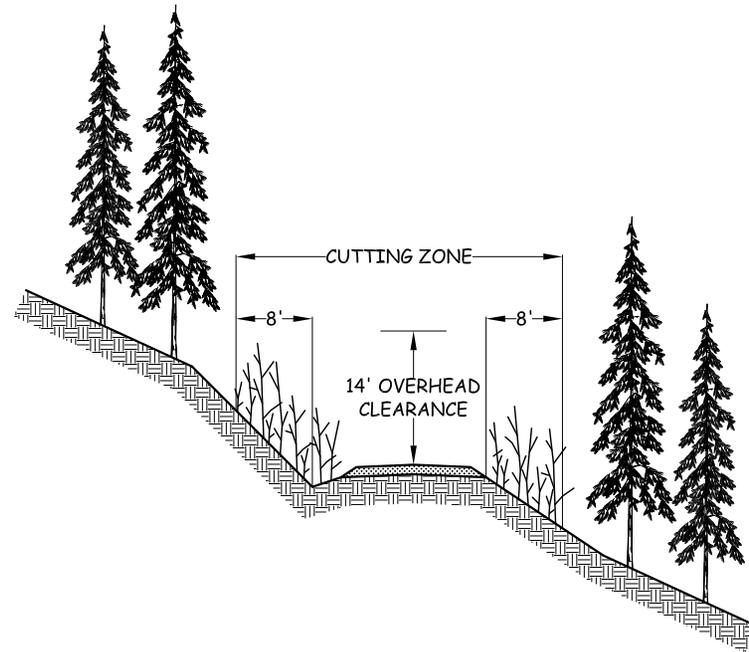
**TURNER ELBOW**



**HEADWALL NOTE:**  
 HEADWALL TO BE CONSTRUCTED OF IMPERVIOUS MATERIAL THAT WILL RESIST EROSION AND ARMORED WITH RIPRAP QUANTITY SPECIFIED IN ROAD PLAN.

CONTRACT #	PROJECT	SHEET
30-100353	MADERA	39 OF 40

## ROAD BRUSHING DETAILS



### SPECIFICATIONS

BRUSH SHALL BE CUT ON THE ROAD SURFACE AND 8 ft. BACK FROM ROAD DITCH AND OUTSIDE EDGE OF RUNNING SURFACE.

ON THE INSIDE OF SWITCHBACKS AND TIGHT CURVES, BRUSH SHALL BE CUT BACK 16 ft. FOR VISIBILITY.

ON TRUCK TURNOUTS, BRUSH SHALL BE CUT 8 ft. BACK FROM OUTSIDE EDGE.

BRUSH SHALL BE CUT TO PROVIDE AN OVERHEAD CLEARANCE OF 14 ft. ABOVE THE ROAD RUNNING SURFACE.

BRUSH SHALL BE CUT TO WITHIN 6 in. OF THE GROUND.

SLASH SHALL BE REMOVED FROM CUT SLOPES ABOVE THE ROAD AND SCATTERED ON EMBANKMENT SLOPES.

DITCHES SHALL BE CLEARED OF WOODY DEBRIS.

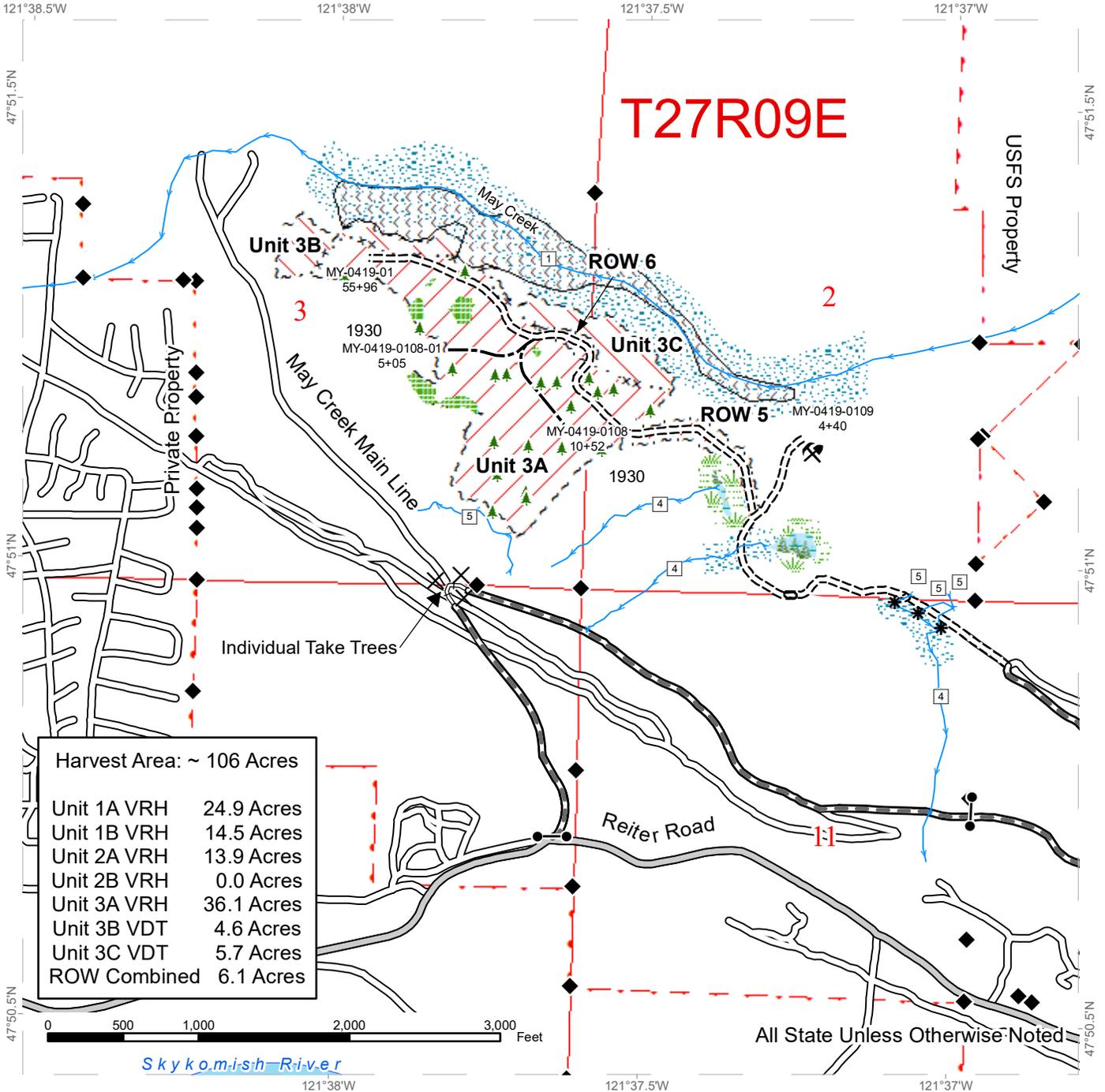
CULVERT INLETS AND OUTLETS SHALL BE CLEANED A MINIMUM DISTANCE OF TWO PIPE DIAMETERS AWAY.

CONTRACT #	PROJECT	SHEET
30-100353	MADERA	40 OF 40

# TIMBER SALE MAP

**SALE NAME:** MADERA SORTS  
**AGREEMENT #:** 30-100353  
**TOWNSHIP(S):** T27R9E, T28R9E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Snohomish  
**ELEVATION RGE:** 320-1560

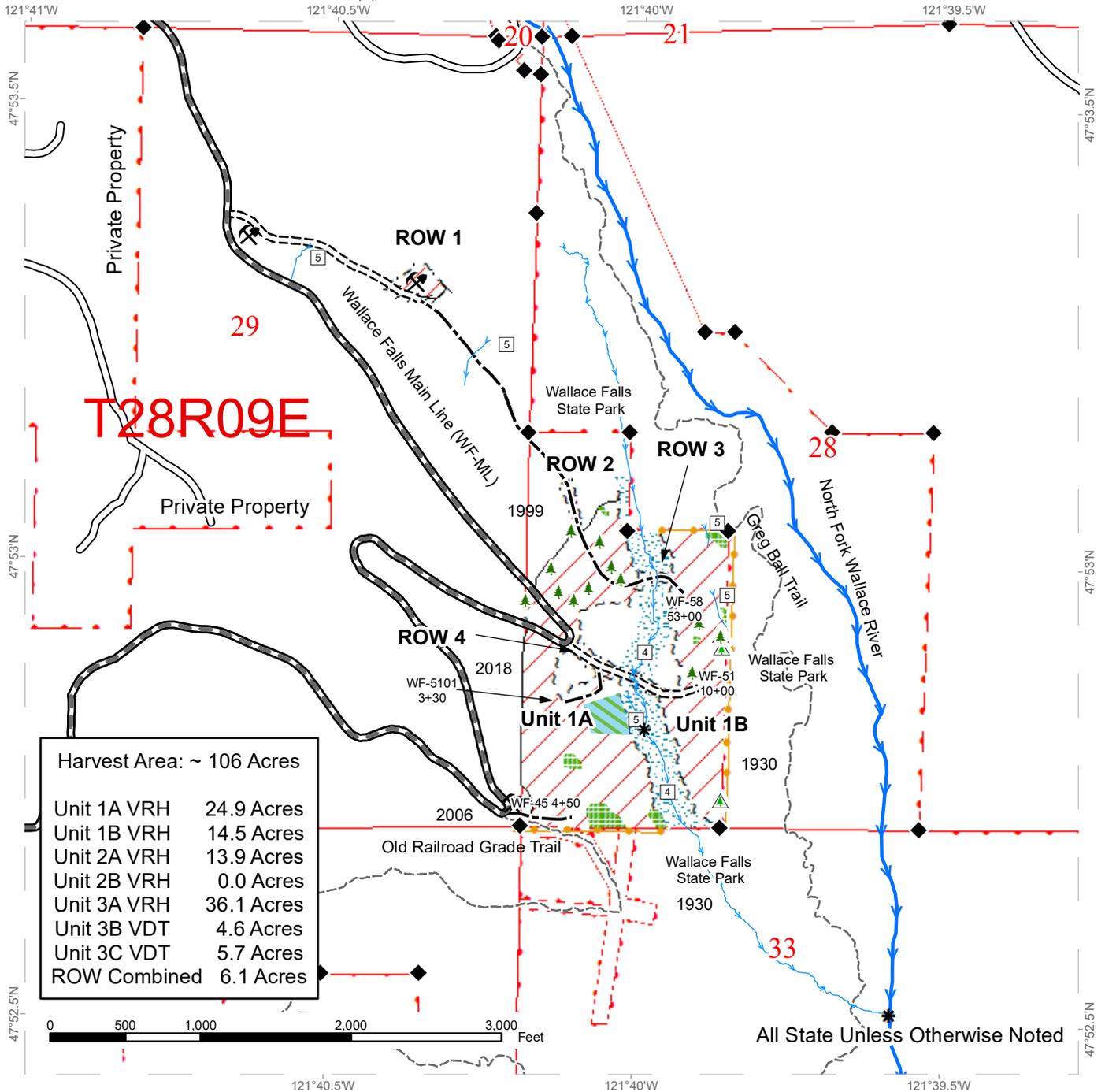


Variable Retention Harvest	County Road	Sale Boundary Tags	Streams
Variable Density Thinning	Existing Roads	Special Mgmt Area	Stream Type
Leave Tree Area	Required Pre-Haul Maintenance	Leave Tree Tags	Stream Type Break
Riparian Mgt Zone	Required Construction	Right of Way Tags	Survey Monument
Forested Wetland	Required Reconstruction	Take / Removal Trees	Gate
Wetland Mgt Zone	Optional Construction	Property Line	Rock Pit
Equipment Limitation Zone		Flag Line	Take Tree
		Timber Type Change	Leave Tree Area <1/4 Acre

# TIMBER SALE MAP

**SALE NAME:** MADERA SORTS  
**AGREEMENT #:** 30-100353  
**TOWNSHIP(S):** T27R9E, T28R9E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Snohomish  
**ELEVATION RGE:** 320-1560



Harvest Area: ~ 106 Acres

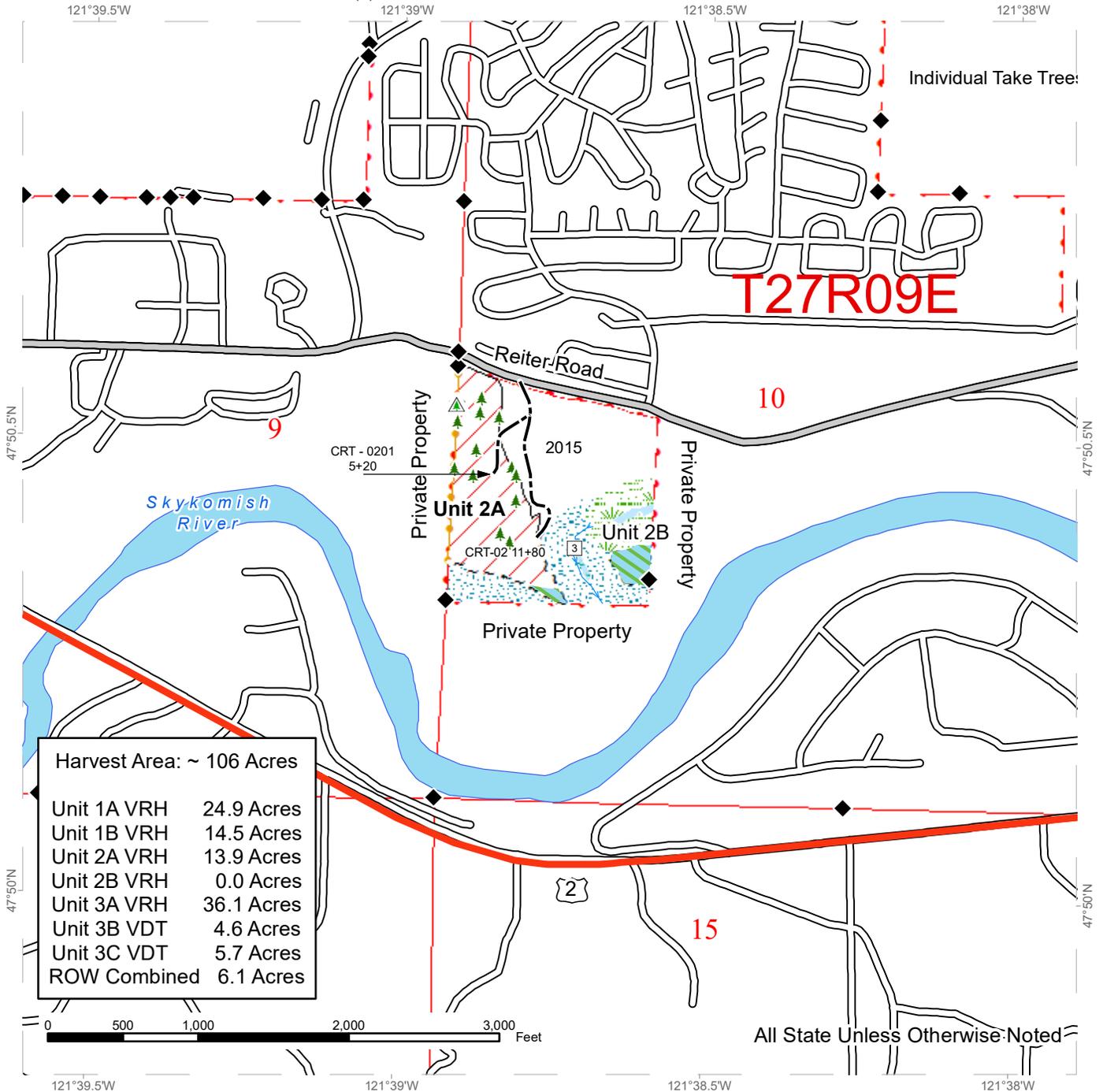
Unit 1A VRH	24.9 Acres
Unit 1B VRH	14.5 Acres
Unit 2A VRH	13.9 Acres
Unit 2B VRH	0.0 Acres
Unit 3A VRH	36.1 Acres
Unit 3B VDT	4.6 Acres
Unit 3C VDT	5.7 Acres
ROW Combined	6.1 Acres




# TIMBER SALE MAP

**SALE NAME:** MADERA SORTS  
**AGREEMENT #:** 30-100353  
**TOWNSHIP(S):** T27R9E, T28R9E  
**TRUST(S):** State Forest Transfer (1)

**REGION:** Northwest Region  
**COUNTY(S):** Snohomish  
**ELEVATION RGE:** 320-1560



All State Unless Otherwise Noted

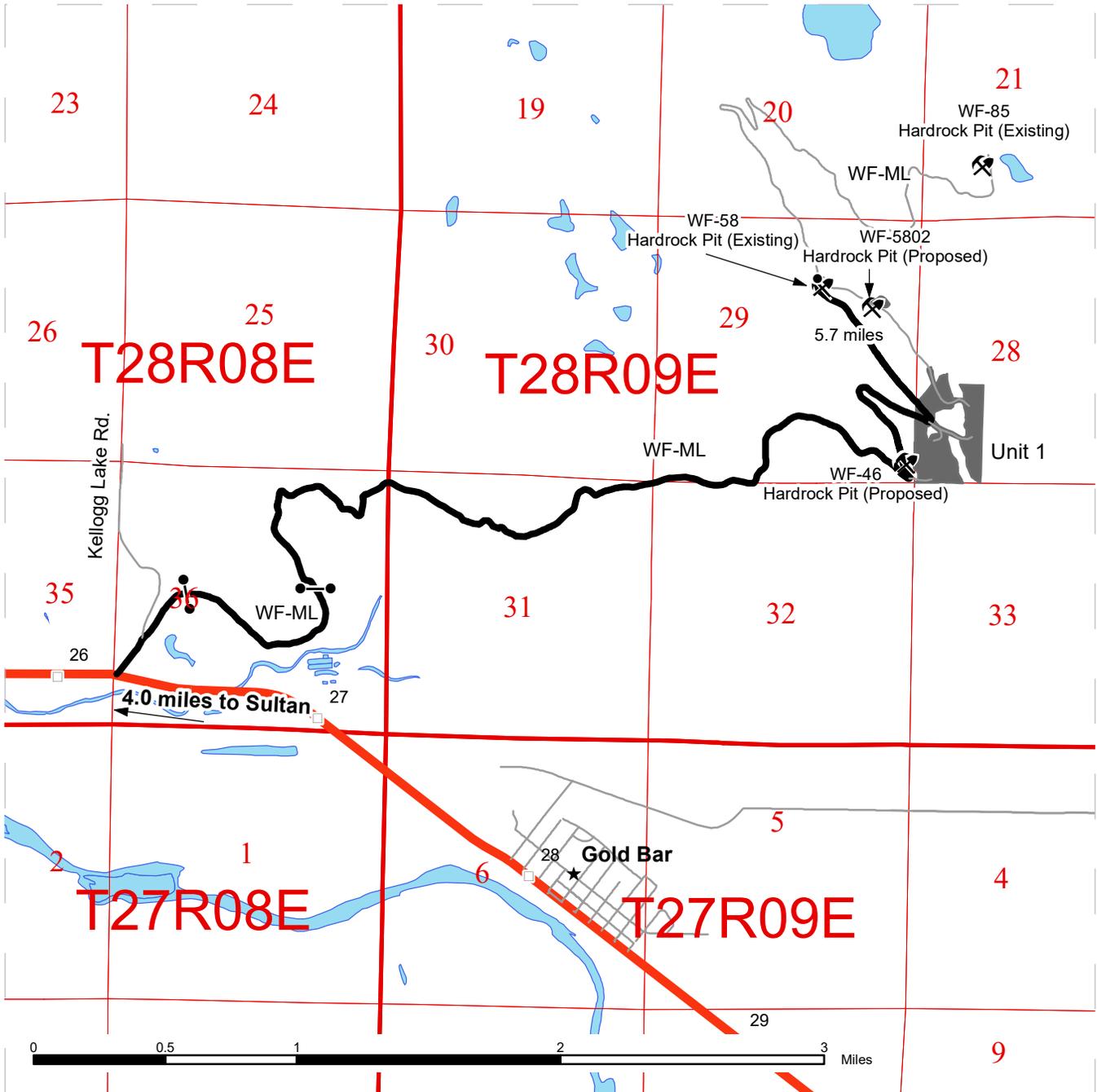
Variable Retention Harvest	County Road	Sale Boundary Tags	Streams
Non-tradable Leave Tree Area	Existing Roads	Special Mgmt Area	Stream Type
Riparian Mgt Zone	Optional Construction	Leave Tree Tags	Stream Type Break
Wetlands - Non-forested	Highway	Right of Way Tags	Survey Monument
Forested Wetland		Take / Removal Trees	Non-Tradeable Leave Trees
Wetland Mgt Zone		Property Line	Leave Tree Area <1/4 Acre
		Flag Line	
		Timber Type Change	



# DRIVING MAP

**SALE NAME:** MADERA SORTS  
**AGREEMENT#:** 30-100353  
**TOWNSHIP(S):** T27R9E, T28R9E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** Northwest Region  
**COUNTY(S):** SNOHOMISH  
**ELEVATION RGE:** 320-1560



- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Distance Indicator
- Gate
- Rock Pit

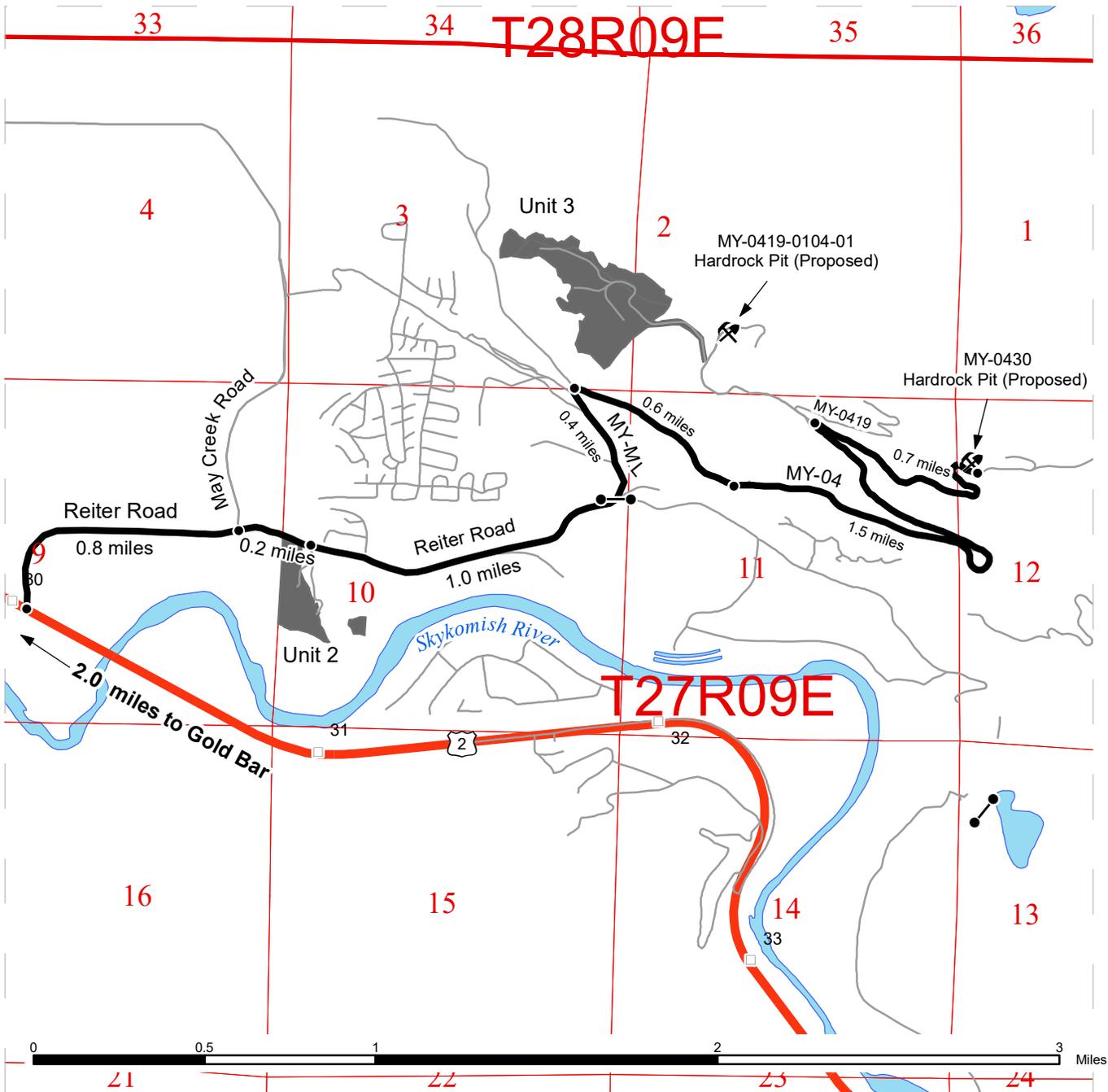
Access Wallace Falls Mainline (WF-ML) from Kellogg Lake Road , approximately 4.0 miles east of Sultan. Turn right approximately 950ft from U.S. HWY. 2 onto WF-ML. F1-3 Key is needed to open two gates along WF-ML. Units approximately 4.5 miles - 5.7 miles up WF-ML



# DRIVING MAP

**SALE NAME:** MADERA SORTS  
**AGREEMENT#:** 30-100353  
**TOWNSHIP(S):** T27R9E, T28R9E  
**TRUST(S):** State Forest Transfer(1)

**REGION:** Northwest Region  
**COUNTY(S):** SNOHOMISH  
**ELEVATION RGE:** 320-1560



- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Distance Indicator
- Gate
- Rock Pit

Drive approximately 2.0 miles east of Gold Bar. Turn left onto Reiter Rd. Drive approximately 1.0 miles to pull out on south side of Reiter Rd. to access Units 2A - 2B. To access Units 3A-3C continue on Reiter Rd for 1.0 miles. Turn left onto MY-ML through gate (F1 key is needed). Drive 0.4 miles on MY-ML and turn right onto MY-04 Rd. Drive 2.0 miles on MY-04 Rd. until abandoned. Walk 0.4 Miles to access units.



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

**HARVESTING SERVICES CONTRACT  
SEALED BID FORM**

Madera  
(Print Project Name)

100353  
(Agreement No.)

\_\_\_\_\_  
(Print Company Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Business Telephone Number)

\_\_\_\_\_  
(City, State and Zip Code)

\_\_\_\_\_  
(email address)

\*\*\*\*\*

**To meet Harvesting obligations, I bid the following On Board Truck (OBT) rate:**

(Bidder must check box for appropriate project payment method. See RFQ section 1.05 and 2.06)

- \$/Ton of timber harvested and delivered.**  
 **\$/mbf of timber harvested and delivered.**

**And to meet pole sort Harvesting obligations, I bid the following OBT rate:**

(Bidder must check box for appropriate project payment method. See RFQ section 1.05 and 2.06)

- \$/Ton of poles harvested and delivered.**  
 **\$/mbf of poles harvested and delivered.**

“Does Not Apply” to projects with no pole sorts identified. Refer to RFQ section 2.06.

**To meet Hauling obligations, I bid:**

**Hauling Bid Factor**  
(format to 3 decimal places ie 0.000)

Hauling Services Payment calculation explained in RFQ section 1.05.

Actual “live-load” weights used to determine payment for hauling sorts designated as “tonnage”. Sorts designated as “MBF” will use calculated tonnage based on the DNR’s advertised “tons/mbf conversion factor specific for each sort unless actual tonnage is available and approved for use.

- Road costs for this project are biddable. Road Cost Proposal Form must be completed and submitted as part of bid package.**

/

**If awarded this contract, I am responsible for independently negotiating, procuring and paying for any and all subcontracted services provided.**

**Attached is my completed 'Statement of Available Resources and Work Plan' which I understand will be evaluated by the Department of Natural Resources in conjunction with my bid to determine my ability to complete the project.**

\*\*\*\*\*

**BY SUBMISSION OF THIS BID THE BIDDER WARRANTS AND AGREES TO THE FOLLOWING:**

1. The bid price has been determined independently, without consultation, communication, or agreement with others for the purpose of restricting competition.
2. The bid is a firm offer for a period of 90 days from the bid submission deadline, and it may be accepted by the State without further negotiation at any time within the 90-day period.
3. In preparing this proposal or bid, the Bidder was not assisted by any current or former employee of the DNR whose duties relate (or did relate) to this prospective contract and who was assisting in other than his or her official, public capacity. Neither does such a person or any member of his or her immediate family have any financial interest in the outcome of this proposal.
4. Acceptance of the Harvesting Services Contract general terms and conditions.
5. Acceptance of the Harvesting Services Contract estimated road payment values as shown fixed by terms in contract clause P-32.1.
6. The Bidder has had an opportunity to fully inspect the sale area and the timber to be harvested.
7. The Bidder enters this bid based solely upon their own judgment of the costs associated with harvesting, hauling, and any additional required work formed after their own examination and inspection of both the timber sale area and the forest products to be harvested.
8. The Bidder enters this bid without any reliance upon the volume estimates, acreage estimates, appraisals, pre-bid documentation, or any other representation by the State Department of Natural Resources.
9. The Bidder, if successful, will furnish the necessary labor, equipment, and services needed to complete the work as specified by the harvesting contract including commencing and completing the operations in the times specified.
10. The Bidder agrees to execute the harvesting contract for the said project and agrees to furnish surety and insurance as required in the specifications.

/

11. The Bidder assumes the risk of liabilities related to any regulatory actions by any government agency that may affect the operability of these harvesting contracts. Such regulatory actions include, but are not limited to, actions taken pursuant to the Forest Practices Act, chapter 76.09 RCW, and the Endangered Species Act, 16 U.S.C. §§ 1531-1544. Please see the Harvesting Services Contract for further information.
12. The DNR cannot verify the presence or absence of northern spotted owls, marbled murrelets or any other threatened or endangered species that may affect the operability of the timber sale. The Bidder relies solely on his/her own assessments.
13. Acreage estimates and volume estimates contained within the harvesting services contract are made only for administrative and identification purposes. Except as expressly provided by the harvesting contract, the Apparent Successful Contractor shall be responsible to harvest the sale, even if the actual acreage or timber volume varies from the estimated quantity or volume shown.
14. The DNR will not reimburse the Bidder for any costs incurred in the preparation of this proposal. All proposals become the property of the DNR and I/we claim no proprietary rights to the ideas or writings contained in them.
15. The Bidder will be required to comply with the Department's Nondiscrimination Plan and federal and state laws on which it is based. If requested by the DNR, the Bidder/Harvester will submit additional information about the nondiscrimination and affirmative action policies and plans of their organization in advance of or after the contract award.
16. Bidder is required to complete the Responsible Bidder Criteria – Wage Law Compliance form in order to be considered a ‘responsible bidder’ (see RCW 39.26.160(2) and (4)). Pursuant to legislative enactment in 2017, the responsible bidder criteria include a contractor certification that the contractor has not willfully violated Washington's wage laws. See Chap. 258, 2017 Laws (enacting SSBS301).

\*\*\*\*\*

By signing and submitting this bid the Bidder agrees to all of the preceding requirements. The Bidder further warrants to the State that they enter this bid based upon their own judgments of the value of the harvesting services to be provided through the Harvesting Services Contract, formed after their own examination and inspection of both the timber sale area and the forest products to be harvested.

\_\_\_\_\_  
(Signature of authorized representative submitting this bid)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Print name and title of authorized representative signing bid)



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
HILLARY FRANZ  
COMMISSIONER OF PUBLIC LANDS

**HARVESTING SERVICES CONTRACT  
ROAD PROPOSAL COST PROPOSAL FORM**

\_\_\_\_\_  
(Print Company Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Business Telephone Number)

\_\_\_\_\_  
(City, State and Zip Code)

\_\_\_\_\_  
(email address)

\*\*\*\*\*

(Per RFQ section 2.06)

Road/Structure	Description	Req./Opt.	Stations/ Qty.	Min \$/Sta	Number of Stations to perform	Bid \$/Unit (Sta.)	Total
WF-ML (0+00 TO 449+20)	Pre-Haul Maint.	Required	449.2	\$47.33			
MY-ML (0+00 TO 18+70)	Pre-Haul Maint.	Required	18.7	\$57.30			
MY-04 (1+00 TO 156+70)	Pre-Haul Maint.	Required	155.7	\$18.30			
MY-0419 (0+00 TO 3+60)	Pre-Haul Maint.	Required	3.6	\$128.92			
MY-ML (18+70 TO 20+30)	Reconstruction	Required	1.6	\$57.30			
MY-04 (0+00 TO 1+00)	Reconstruction	Required	1	\$18.30			
WF-51 (0+00 TO 10+00)	Construction	Required	10	\$1,759			
WF-58 (0+00 TO 14+00)	Construction	Required	14	\$1,457			
MY-0419-01 (0+00 TO 55+96)	Construction	Required	55.96	\$1,264			
MY-0419-0104 (0+00 TO 4+40)	Construction	Required	4.4	\$773			
WF-45 (0+00 TO 4+50)	Construction	Optional	4.5	\$1,039			
WF-5101 (0+00 TO 3+30)	Construction	Optional	3.3	\$1,145			
WF-58 (14+00 TO 43+00)	Construction	Optional	29	\$1,320			
CRT-02 (0+00 TO 11+80)	Construction	Optional	11.8	\$1,734			
CRT-0201 (0+00 TO 5+20)	Construction	Optional	5.2	\$2,174			
MY-0419-0108 (0+00 TO 10+52)	Construction	Optional	10.52	\$1,102			
MY-0419-0108-01 (0+00 TO 5+05)	Construction	Optional	5.05	\$751			
WF-45 (0+00 TO 4+50)	Abandonment	Required (if built)	4.5	\$48.59			
WF-5101 (0+00 TO 3+30)	Abandonment	Required (if built)	3.3	\$29.01			
WF-58 (14+00 TO 43+00)	Abandonment	Required (if built)	29	\$85.34			
MY-0419-0108 (0+00 TO 10+52)	Abandonment	Required (if built)	10.52	\$35.95			
MY-0419-0108-01 (0+00 TO 5+05)	Abandonment	Required (if built)	5.05	\$45.40			
CRT-02 (0+00 TO 11+80)	Abandonment	Required (if built)	11.8	\$26.74			
CRT-0201 (0+00 TO 5+20)	Abandonment	Required (if built)	5.2	\$33.61			
<b>Additional Work or Materials</b>				<b>Min \$/Qty.</b>	<b>Quantity or Hourly</b>	<b>Bid \$ per Quantity</b>	
Rock Exploration at proposed hardrock pits: WF-46, WF-5802, MY-0419-0104-01, as specified in road plan clause 6-13				\$284.00	24 hours		
Watering for dust abatement of WF-ML (0+00 to 449+20) as specified in road plan clause 6-80				\$5.00	449.20 STA		
Total							

Road Work is paid on a per station basis.

**CONTRACTOR CERTIFICATION**  
**RESPONSIBLE BIDDER CRITERIA – WAGE LAW COMPLIANCE**

**WASHINGTON STATE PROCUREMENT OF GOODS & SERVICES CONTRACTS**

*Prior to awarding a contract, agencies are required to determine that a bidder is a 'responsible bidder.' See [RCW 39.26.160\(2\) and \(4\)](#). Pursuant to legislative enactment in 2017, the responsible bidder criteria include a contractor certification that the contractor has not willfully violated Washington's wage laws. See Chap. 258, 2017 Laws (enacting [SSB5301](#)).*

**SOLICITATION DATE:** Month \_\_\_\_\_, Day \_\_\_\_\_, Year \_\_\_\_\_

I hereby certify, on behalf of the firm identified below, as follows (check one):

**NO WAGE VIOLATIONS.** This firm has **NOT** been determined by a final and binding citation and notice of assessment issued by the Washington Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in [RCW 49.48.082](#), any provision of RCW chapters [49.46](#), [49.48](#), or [49.52](#) within three (3) years prior to the date of the above-referenced procurement solicitation date.

OR

**VIOLATIONS OF WAGE LAWS.** This firm has been determined by a final and binding citation and notice of assessment issued by the Washington Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in [RCW 49.48.082](#), any provision of RCW chapters [49.46](#), [49.48](#), or [49.52](#) within three (3) years prior to the date of the above-referenced procurement solicitation date.

I hereby certify, under penalty of perjury under the laws of the State of Washington, that the certifications herein are true and correct and that I am authorized to make these certifications on behalf of the firm listed herein.

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PRINT FULL LEGAL ENTITY NAME OF FIRM SUBMITTING BID

---

SIGNATURE OF AUTHORIZED PERSON

DATE SIGNED

---

PRINTED NAME OF PERSON MAKING CERTIFICATION FOR FIRM

---

TITLE OF PERSON SIGNING CERTIFICATE

---

PRINT COUNTY AND STATE WHERE SIGNED

Return this contractor certification to the solicitation coordinator listed in the solicitation document.