



GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

SALE NAME: *Hobbit*

AGREEMENT NO: *36-106683*

AUCTION: September 25th, 2024 starting at 10:00 a.m.,
Olympic Region Office, Forks, WA

COUNTY: Grays Harbor, Jefferson

SALE LOCATION: Sale located approximately 50 miles North of Hoquiam, WA.

PRODUCTS SOLD AND SALE AREA:

Unit 1: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, and the 2120030 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 2: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

Unit 3: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 4: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, and the 2120030 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 5: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road.

Unit 6 ROW: All timber bounded by orange right-of-way tags.

Unit 7: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road.

Unit 8: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 9: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

Unit 10 ROW: All timber bounded by orange right-of-way tags, and the 2160000 Road.

The above described products, located on approximately 145 acres on part(s) of: Township 23, Range 11 West, Section 1, Township 24, Range 10 West, Section 22, and Township 24, Range 10 West 5, Sections 45, 46, 47, and 48, in Grays Harbor and Jefferson Counties, Washington, as shown on the attached timber sale map and as designated on the sale area.



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ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Total Take MBF	Price \$/MBF	MBF by Grade			
				2S	3S	4S	UT
Douglas-fir	16.6	604	\$10.34	167	344	79	14
Western hemlock	12.2	2,832	\$7	203	1,890	670	69
Pacific silver fir	11.9	1	\$7	0	1	0	0
Sitka spruce	15.6	0	\$7	0	0	0	0
Western redcedar	9.1	1	\$921	0	0	1	0
Red alder	10.4	1	\$7	0	0	1	0
Subtotal	12.6	3,439		370	2,235	751	83

MINIMUM BID: Douglas-fir **\$10.34/MBF** (Est. Total Value \$27,000)

BID METHOD: Sealed Bids

PERFORMANCE SECURITY:

\$5,400.00

SALE TYPE:

MBF Scale

EXPIRATION DATE: October 31st, 2027

ALLOCATION: Export Restricted; Timber processing subject to the Amended Policy Statement for the Grays Harbor Federal Sustained Yield Unit, 1987 (map and policy text available upon request)

BIDDABLE SPECIES: Douglas-fir

BID DEPOSIT: 10% of Total Value (\$2,700.00) or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Uphill Cable, Ground-based.

Harvesting activities are estimated to be 35% ground-based harvest, and 65% uphill cable yarding. Ground-based harvest equipment shall be restricted to slopes of 30% and less, and only occur during dry soil conditions. See Clause H-140 for further harvest requirements. A detailed felling and yarding plan shall be required prior to any harvest activities and approved in writing by the Contract Administrator.

Cutting and yarding in Unit 1, Unit 2, Unit 6 ROW, and Unit 10 ROW shall occur between June 1st and October 31st. Cutting and yarding in Unit 3, Unit 4, Unit 5, Unit 7, Unit 8, and Unit 9 shall occur between September 24th and February 28th. This schedule shall be adhered to unless authority to do otherwise is granted in writing by the Contract Administrator.

Within the timing-restricted areas indicated on the timber sale maps in Unit 1, and/or demarcated by blue diagonal paint lines on trees within the Unit 1, harvest operations are not permitted to begin until 2 hours after sunrise and shall end 2 hours before sunset between the dates of April 1st and September 23rd due to wildlife protections.



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ROADS: 20+43 stations of construction. 186+52 stations of reconstruction. 00+00 stations of maintenance. 20+46 stations of temporary optional construction / abandonment.

Road construction, reconstruction, and abandonment shall occur between June 1st and October 31st.

Haul may occur year-round, however, a wet-weather haul agreement shall be approved and signed by the Contract Administrator prior to haul occurring between November 1st and May 31st.

Purchaser may be required to obtain a Forest Service Overload Permit for each vehicle that exceeds weight limits for crossing Forest Service bridges.

ACREAGE DETERMINATION /

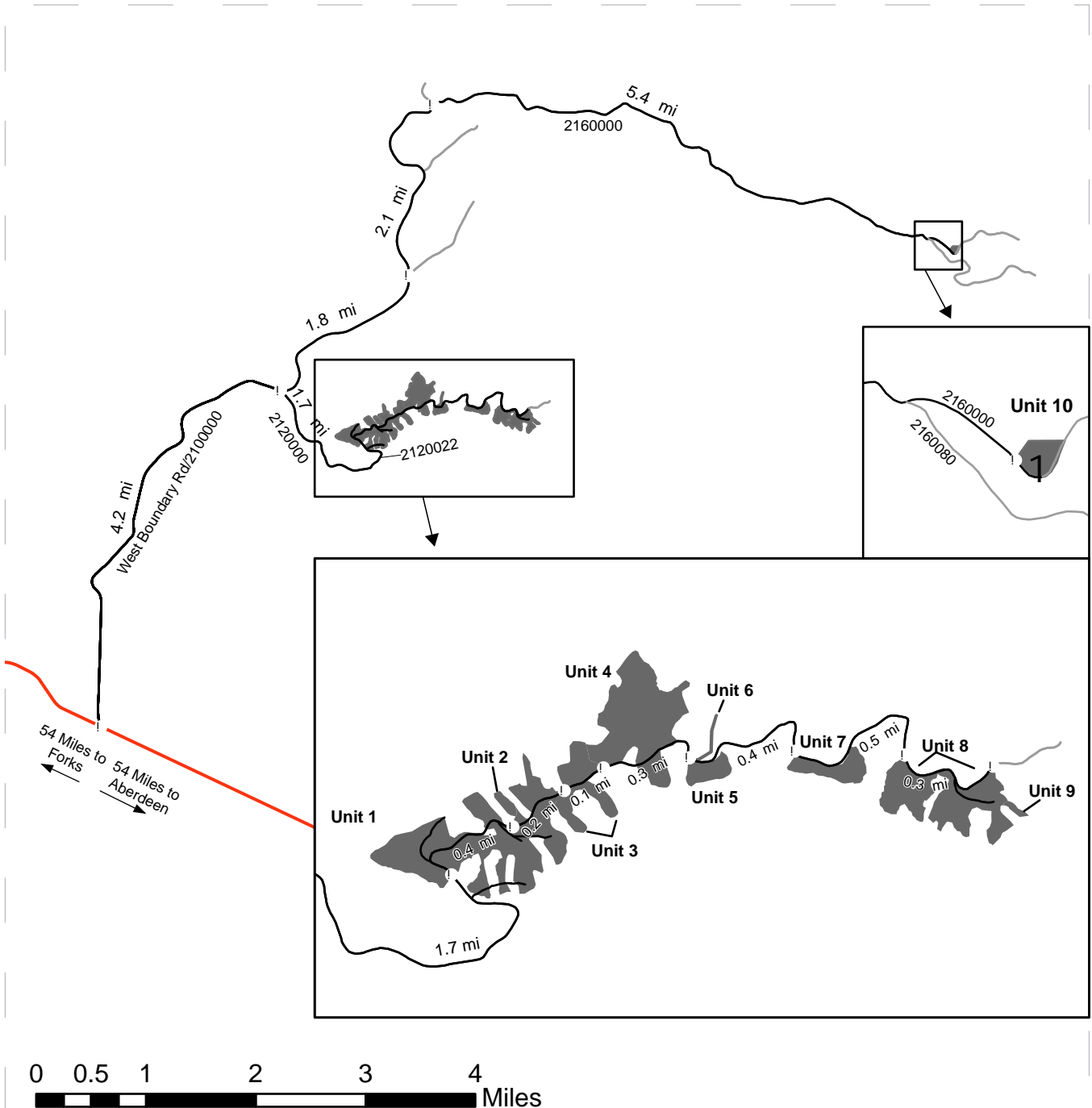
CRUISE METHOD: *Acres determined by GPS traverse. 145.4 harvestable acres of commercial thinning. Cruised using variable plot sample method, except Unit 6 ROW was cruised using a strip cruise method cruise to count ratio of 1:10 trees. Basal Area Factor 54.44 was used. Sighting height was 4.5 feet. A total of 134 plots were taken.*








Shapefiles are available upon request.

GOOD NEIGHBOR AUTHORITY DRIVING MAP

SALE NAME: HOBBIT
 AGREEMENT#: 36-106683
 TOWNSHIPS: T23R11W, T24R10W5, T24R10W

NATIONAL FOREST: OLYMPIC
 COUNTY (S): GRAYS HARBOR, JEFFERSON



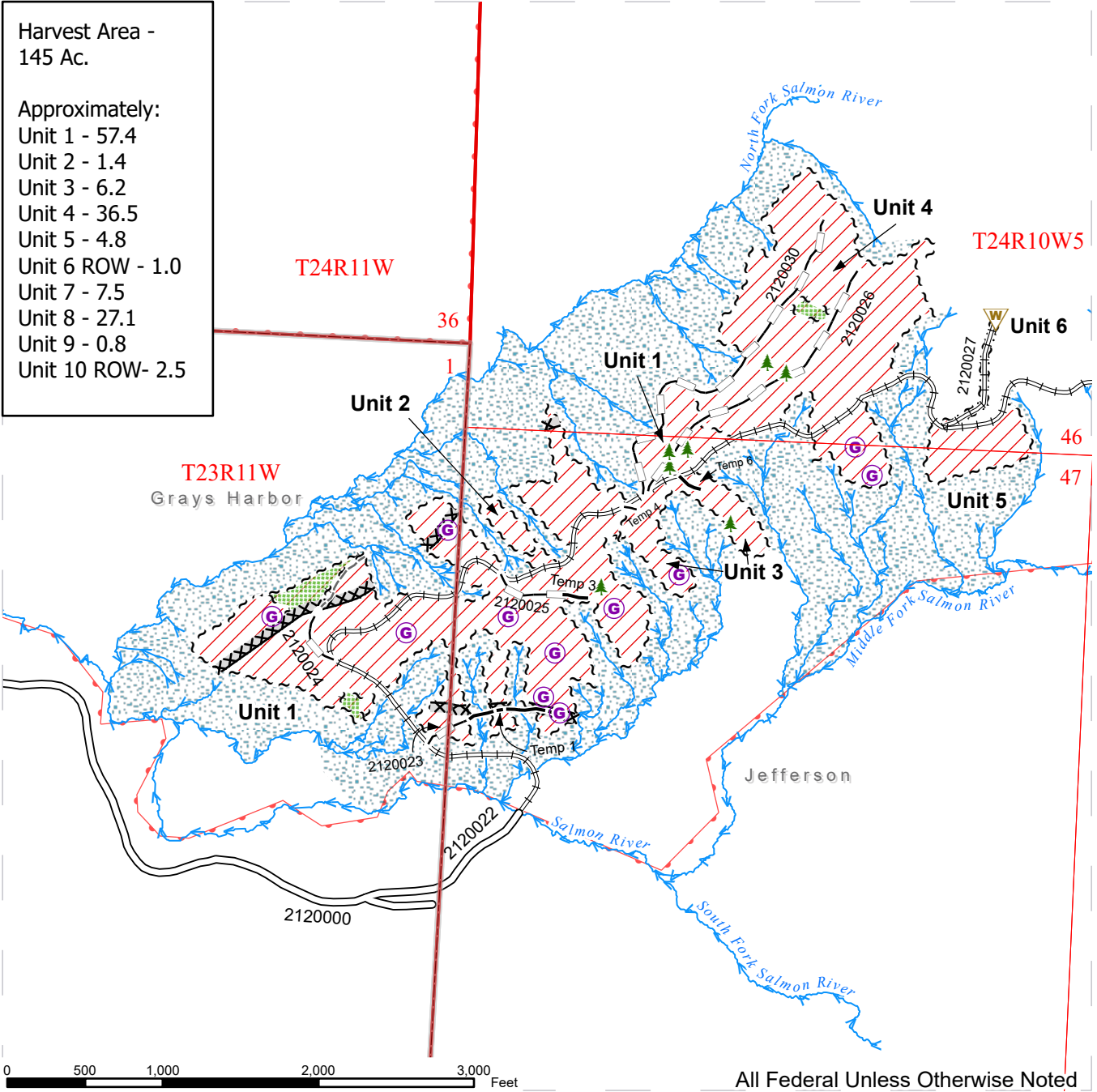
<ul style="list-style-type: none">  Sale Area  Haul Route  Other Road  HWY 101  Milepost Marker  Distance indicators  Empire Quarry 	<p>Directions: From Forks, WA drive South on HWY 101 for 54 miles and turn left onto W Boundary Rd/2100000 Rd. Unit 1: Continue on W Boundary Rd/2100000 for 4.2 miles. Turn right onto FS 2120000 Rd and drive for 1.7 miles. Unit 2: From Unit 1, continue for 0.4 miles. Unit 3: From Unit 2, continue for 0.2 miles. Unit 4: From Unit 3, continue for 0.1 miles. Units 5 & 6: From Unit 4, continue for 0.3 miles. Unit 7: From Units 5 & 6, continue for 0.4 miles. Unit 8: From Unit 7, continue for 0.5 miles. Unit 9: From Unit 8, continue for 0.3 miles. Unit 10/Rock pit: From the West Boundary Rd/FS 2120000 junction, continue for 3.9 miles on West Boundary Rd. Turn right onto FS-2160000 and drive for 5.4 miles keeping left at the fork to stay on FS 2160000.</p>
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GOOD NEIGHBOR AUTHORITY TIMBER SALE MAP

SALE NAME: HOBBIT
 AGREEMENT#: 36-106683
 TOWNSHIP(S): T23R11W, T24R10W5, T24R10W

NATIONAL FOREST: Olympic
 COUNTY(S): Grays Harbor, Jefferson
 ELEVATION RANGE: 560'-1220'



Harvest Area - 145 Ac.

Approximately:

- Unit 1 - 57.4
- Unit 2 - 1.4
- Unit 3 - 6.2
- Unit 4 - 36.5
- Unit 5 - 4.8
- Unit 6 ROW - 1.0
- Unit 7 - 7.5
- Unit 8 - 27.1
- Unit 9 - 0.8
- Unit 10 ROW - 2.5

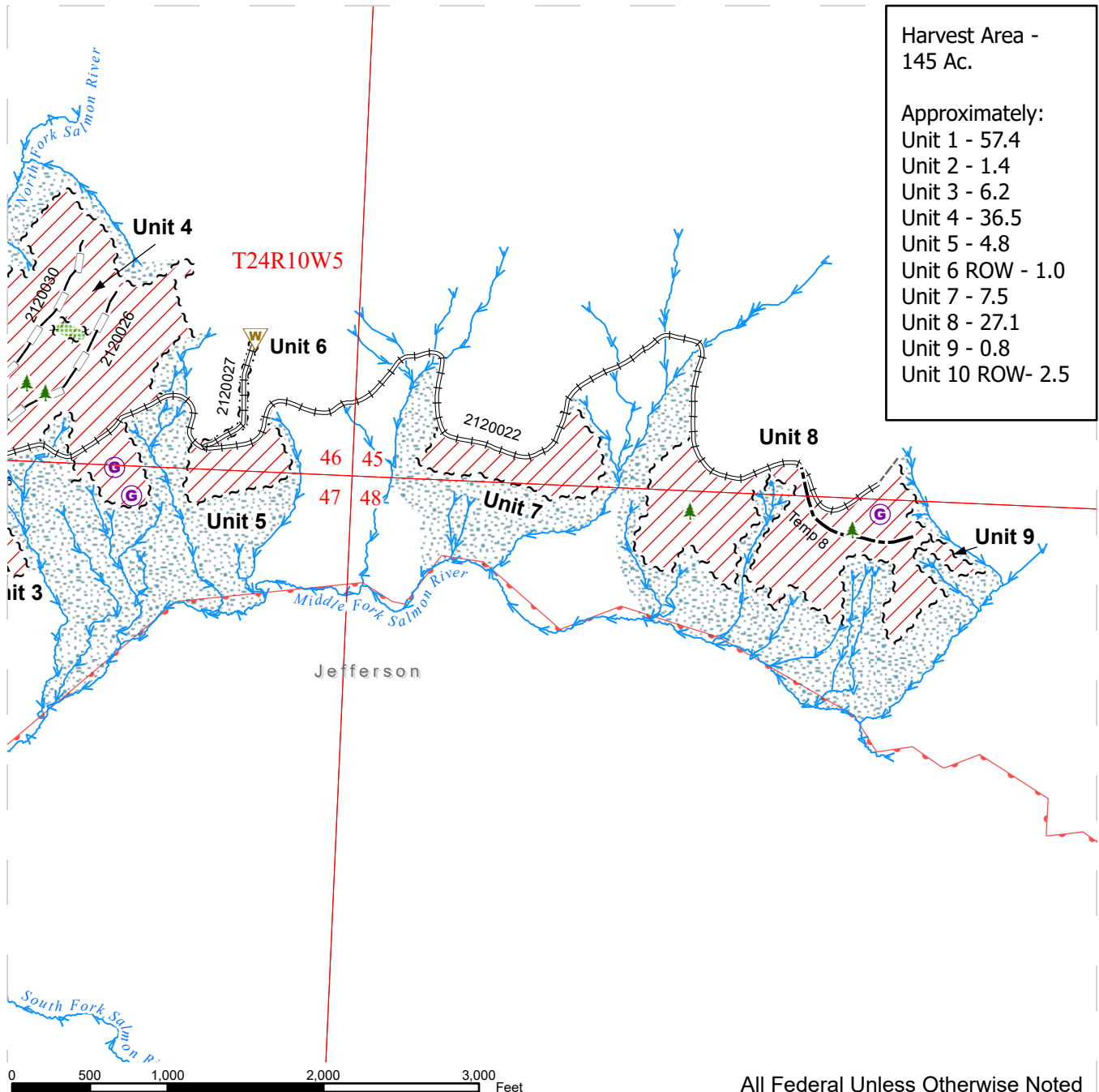
Sale Area	Required Reconstruction	Leave Tree Area < 1/4 ac
Sale Boundary Tags	Old Road Grade	Waste Area
Leave Tree Area Tags	Streams	Timing Restriction
Right of Way Tags	Public Land Survey Townships	Leave Tree Area
Existing Roads	Public Land Survey Sections	Riparian Mgt Zone
Optional Construction	US Forest Service Ownership	County Boundary
Optional Reconstruction	Gap	

All Federal Unless Otherwise Noted

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Harvest Area -	145 Ac.
Approximately:	
Unit 1 -	57.4
Unit 2 -	1.4
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Unit 8 -	27.1
Unit 9 -	0.8
Unit 10 ROW -	2.5

All Federal Unless Otherwise Noted

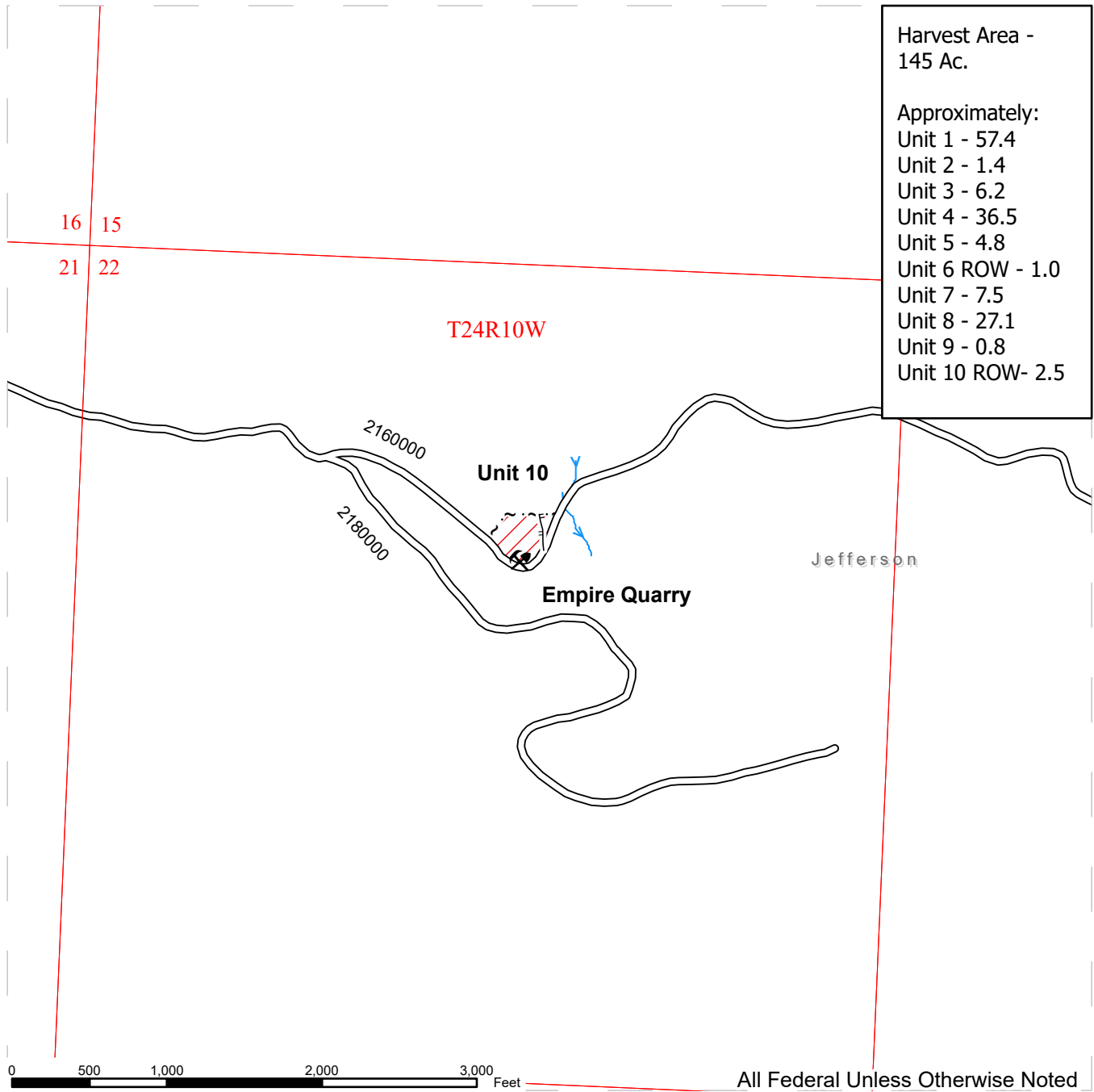
Sale Area	Required Reconstruction	Leave Tree Area < 1/4 ac
Sale Boundary Tags	Old Road Grade	Waste Area
Leave Tree Area Tags	Streams	Leave Tree Area
Right of Way Tags	Public Land Survey Townships	Riparian Mgt Zone
Optional Construction	Public Land Survey Sections	County Boundary
Optional Reconstruction	US Forest Service Ownership	
	Gap	



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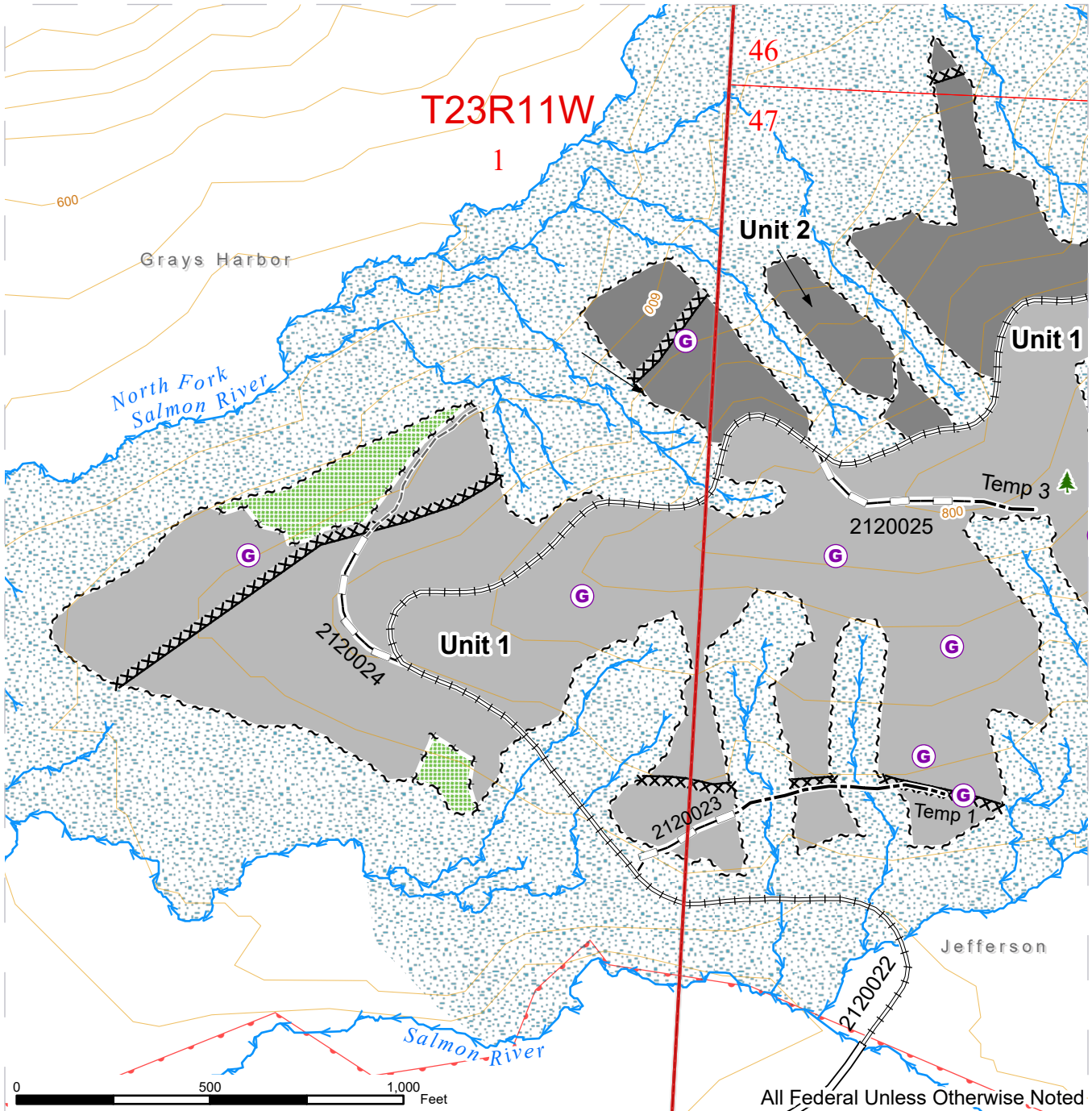
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Unit 5 - 4.8
Unit 6 ROW - 1.0
Unit 7 - 7.5
Unit 8 - 27.1
Unit 9 - 0.8
Unit 10 ROW - 2.5

Sale Area	Streams	Rock Pit
Right of Way Tags	Public Land Survey Townships	County Boundary
Designated Skid Trail	Public Land Survey Sections	
Existing Roads	US Forest Service Ownership	

GOOD NEIGHBOR AUTHORITY LOGGING PLAN MAP

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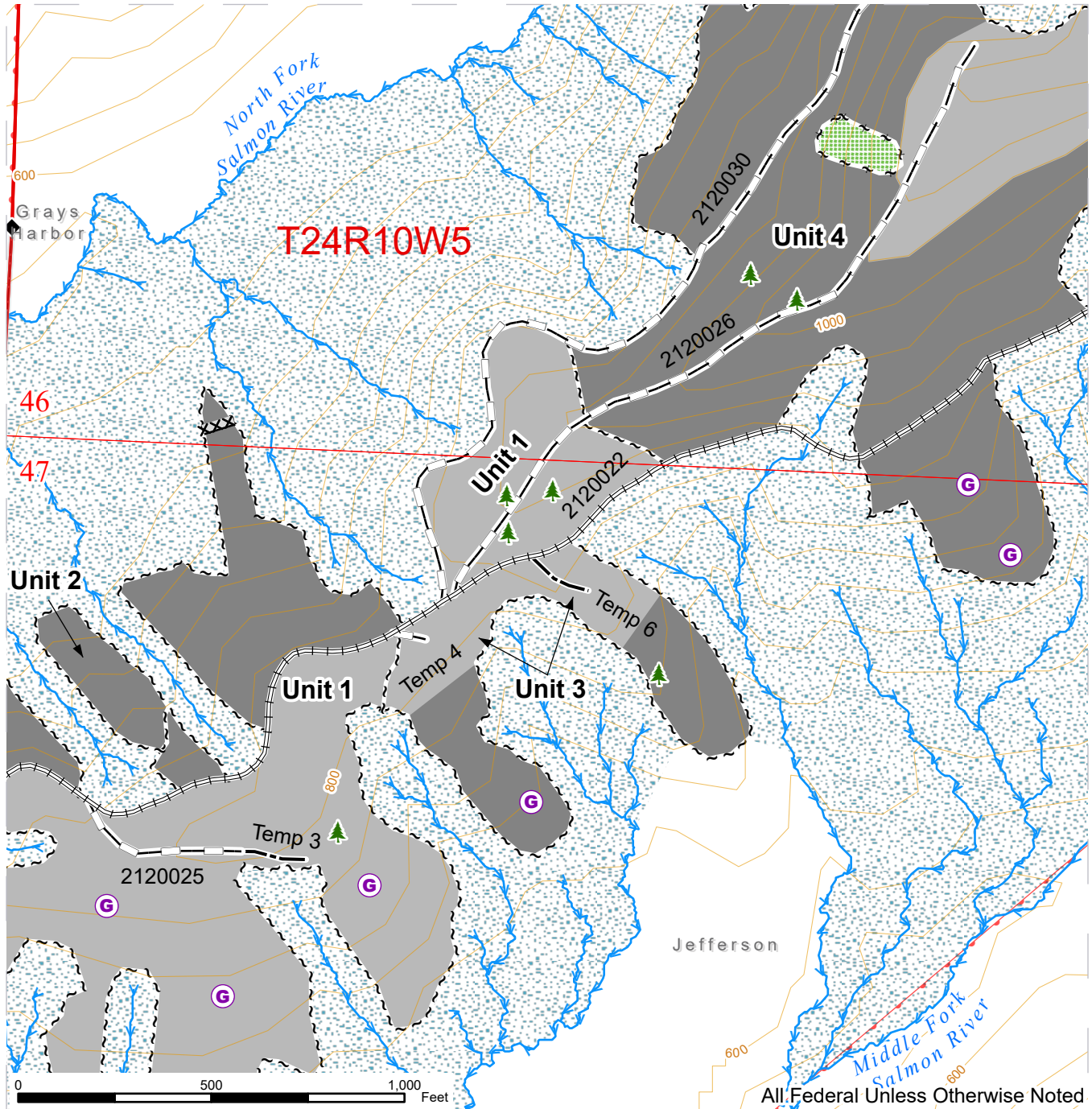
Approx. Harvest Methods		Unit, Target BA, Season	
Cable	Old Road Grades	Unit, Target BA, Season 1, 220, Jun 1-Oct 31 2, 120, Jun 1-Oct 31	
Ground	Streams		
Sale Boundary Tags	County Boundaries		
Leave Tree Area Tags	Public Land Survey Sections		
Existing Roads	Public Land Survey Townships		
Optional Construction	US Forest Service Ownership		
Optional Reconstruction	Leave Tree Area		
Required Reconstruction	Riparian Mgt Zone		
	Gap		
	Leave Tree Area < 1/4 ac		
	Contours 40-ft		
	Timing Restriction		



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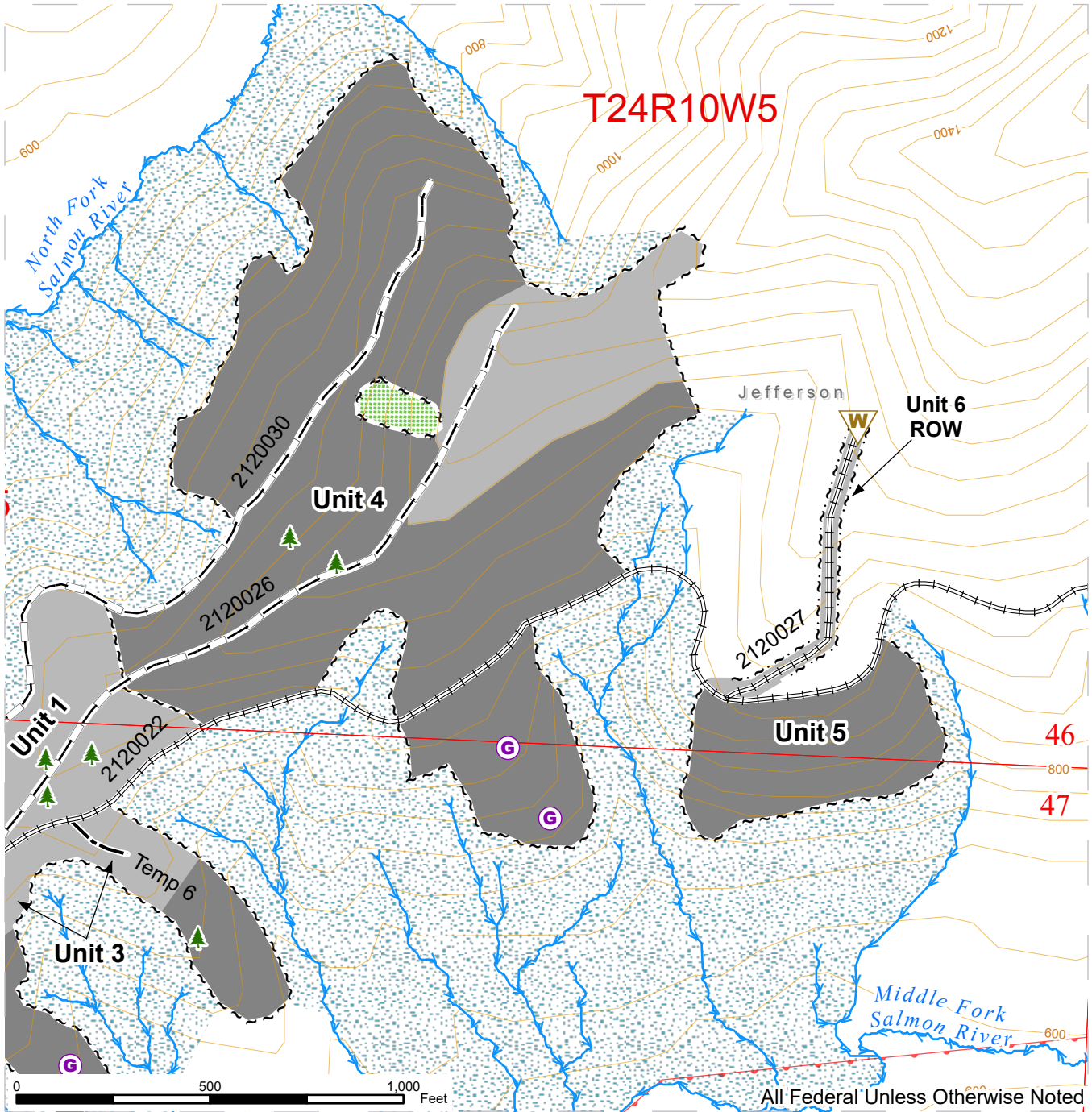
Approx. Harvest Methods		County Boundaries		Unit, Target BA, Season	
Cable	Public Land Survey Sections	Leave Tree Area < 1/4 ac	Survey Monument	Unit, Target BA, Season 1, 220, Jun 1-Oct 31 2, 120, Jun 1-Oct 31 3, 180, Sep 24-Feb 28 4, 220, Sep 24-Feb 28	
Ground	Public Land Survey Townships	Contours 40-ft	Timing Restriction		
Sale Boundary Tags	US Forest Service Ownership	Leave Tree Area			
Leave Tree Area Tags	Riparian Mgt Zone	Gap			
Optional Construction					
Optional Reconstruction					
Required Reconstruction					
Streams					



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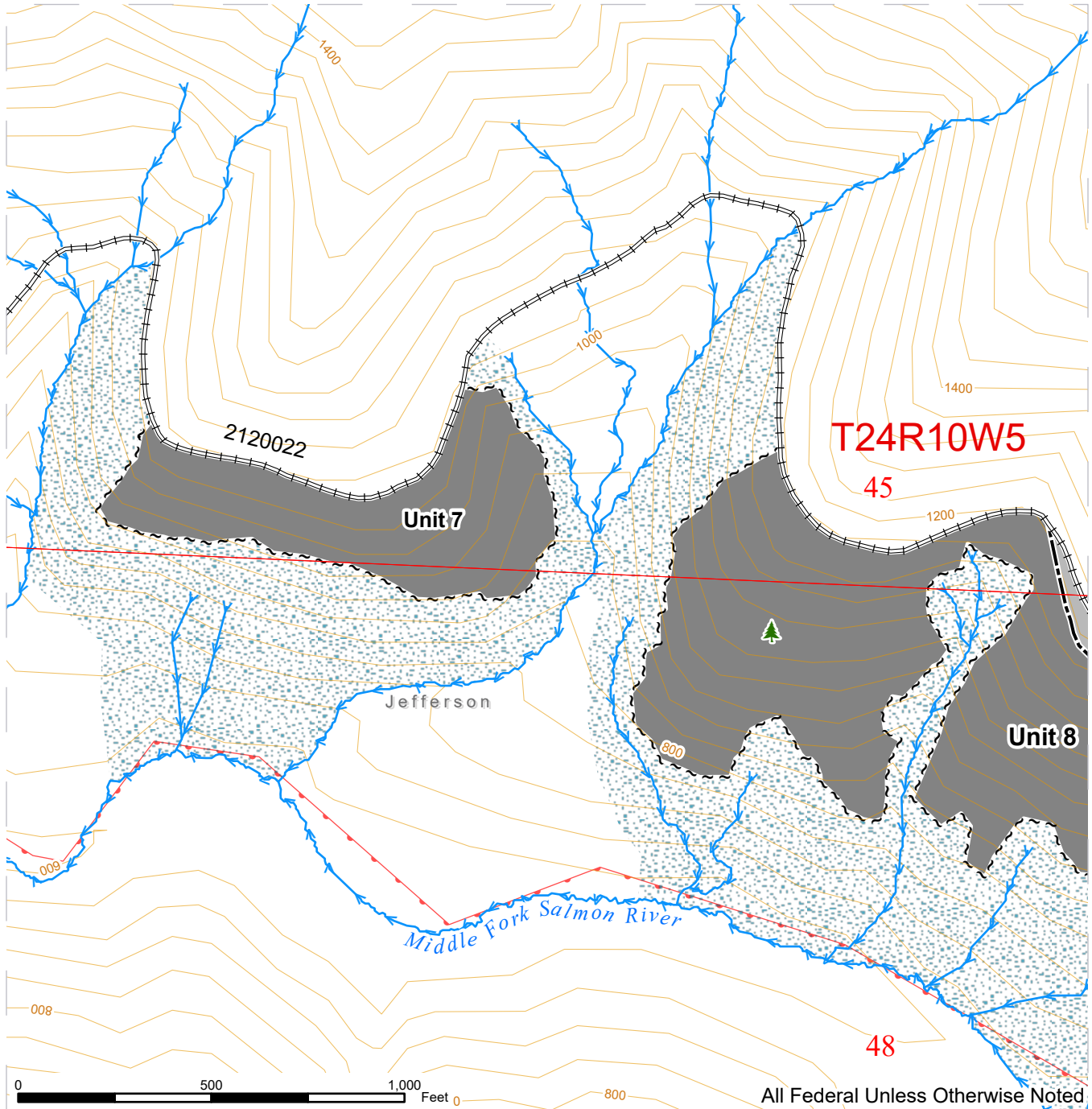


Approx. Harvest Methods		Unit, Target BA, Season	
Cable	Streams	1, 220, Jun 1-Oct 31	
Ground	County Boundaries	3, 180, Sep 24-Feb 28	
Sale Boundary Tags	Public Land Survey Sections	4, 220, Sep 24-Feb 28	
Leave Tree Area Tags	Public Land Survey Townships	5, 220, Sep 24-Feb 28	
Right of Way Tags	US Forest Service Ownership	6 ROW, N/A, Jun 1-Oct 31	
Optional Construction	Leave Tree Area		
Optional Reconstruction	Riparian Mgt Zone		
Required Reconstruction	Gap		
	Leave Tree Area < 1/4 ac		
	Waste Area		
	Contours 40-ft		

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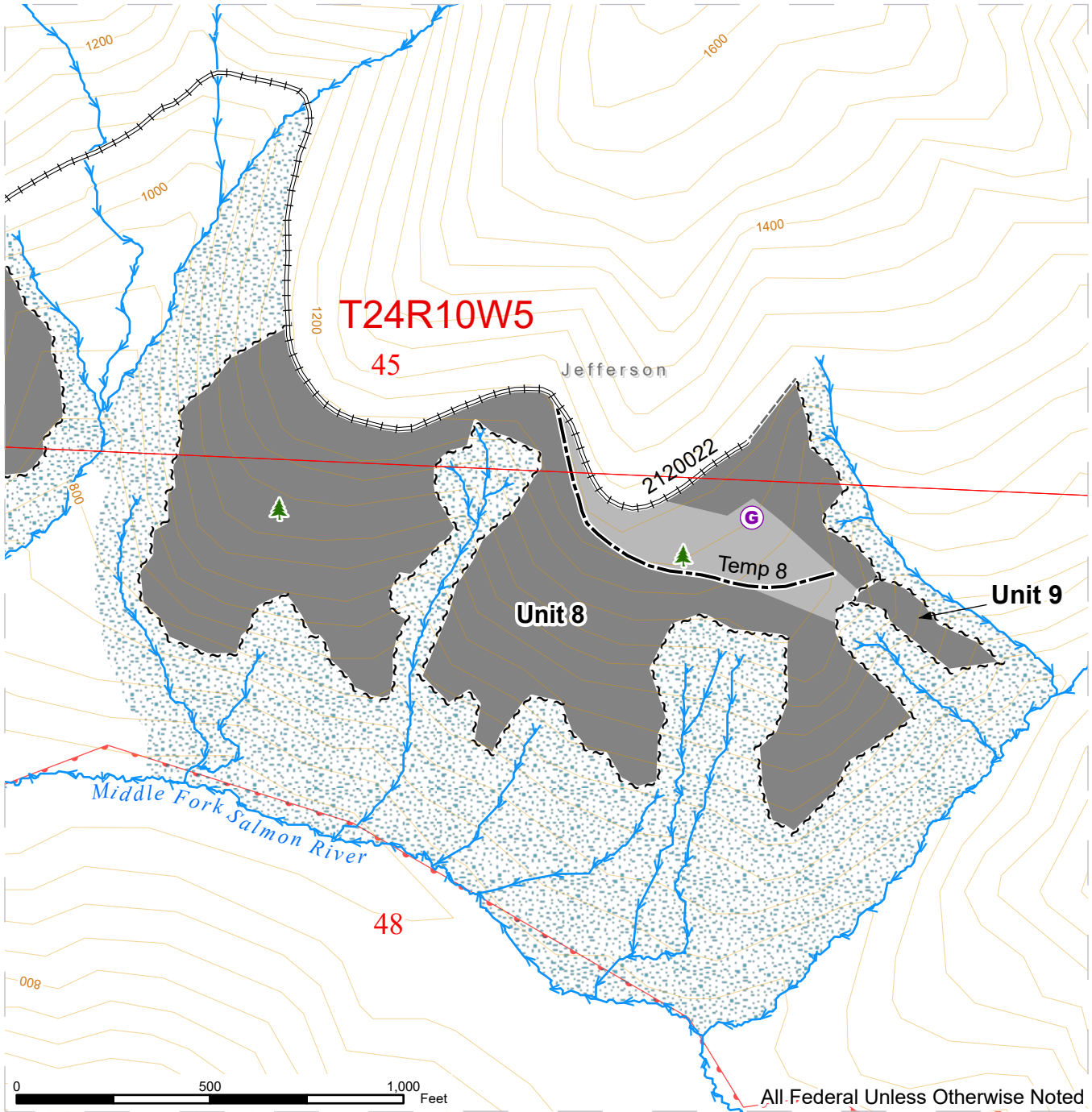
All Federal Unless Otherwise Noted

Approx. Harvest Methods		Unit, Target BA, Season	
Cable	Public Land Survey Townships	7, 220, Sep 24-Feb 28	
Ground	US Forest Service Ownership	8, 180, Sep 24-Feb 28	
Sale Boundary Tags	Riparian Mgt Zone		
Optional Construction	Leave Tree Area < 1/4 ac		
Required Reconstruction	Contours 40-ft		
Streams			
County Boundaries			
Public Land Survey Sections			

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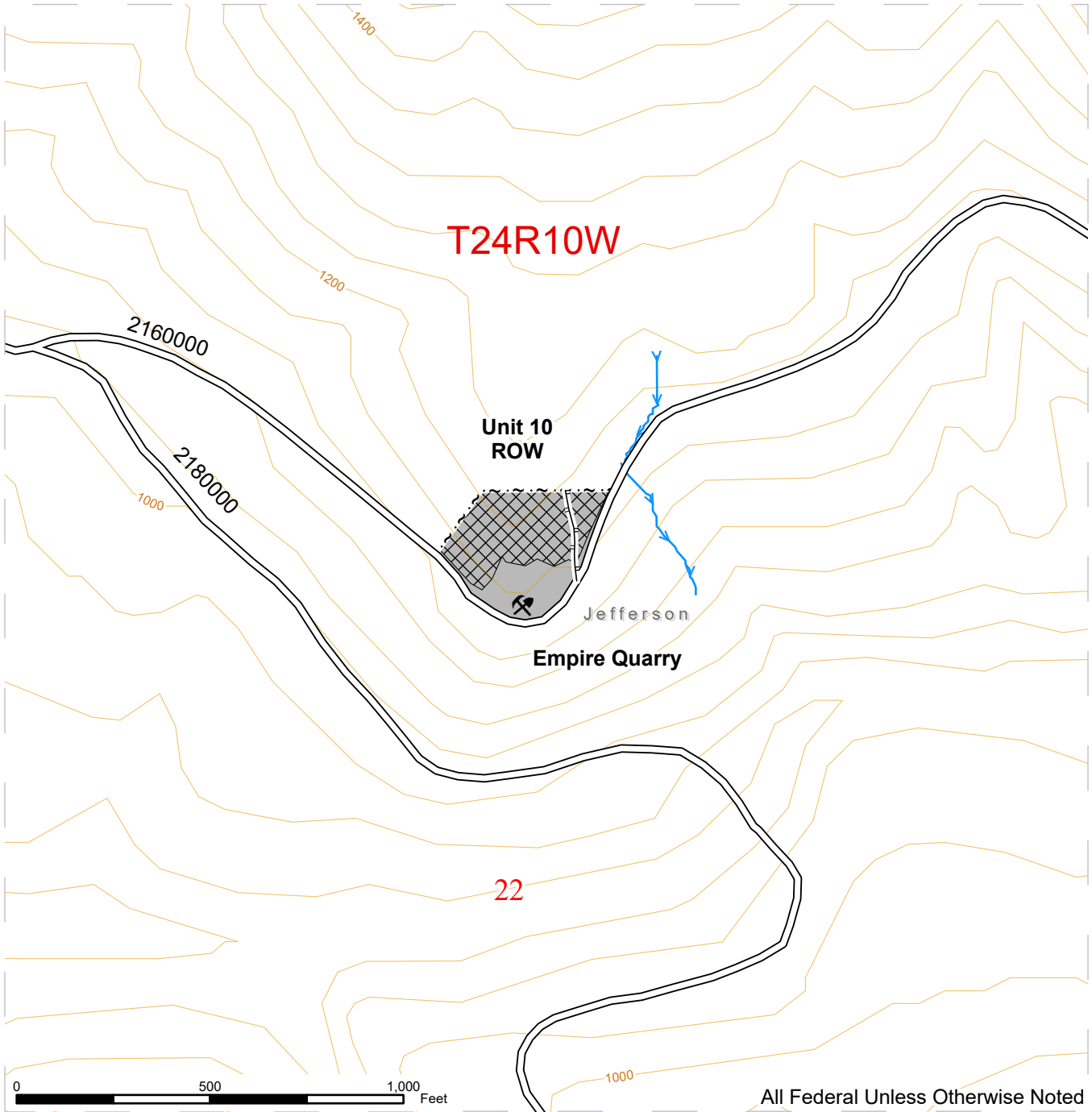
Approx. Harvest Methods Cable Ground Sale Boundary Tags Optional Construction Required Reconstruction Old Road Grades		Streams County Boundaries Public Land Survey Sections Public Land Survey Townships US Forest Service Ownership	Riparian Mgt Zone Gap Leave Tree Area < 1/4 ac Contours 40-ft	Unit, Target BA, Season 7, 220, Sep 24-Feb 28 8, 180, Sep 24-Feb 28 9, 120, Sep 24-Feb 28
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GOOD NEIGHBOR AUTHORITY LOGGING PLAN MAP

SALE NAME: HOBBIT
 AGREEMENT#: 36-106683
 TOWNSHIP(S): T23R11W, T24R10W5, T24R10W

NATIONAL FOREST: Olympic
 COUNTY(S): Grays Harbor, Jefferson
 ELEVATION RANGE: 560'-1220'



Approx. Harvest Methods		Unit, Target BA, Season
Ground	Public Land Survey Sections	10 ROW, N/A, All
Unit 10 Harvest Area	Public Land Survey Townships	
Right of Way Tags	US Forest Service Ownership	
Skid Trail	Rock Pit	
Existing Roads	Contours 40-ft	
Streams		
County Boundaries		



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

**BILL OF SALE AND CONTRACT FOR
GOOD NEIGHBOR AGREEMENT FOREST PRODUCTS**

Export Restricted MBF Scale AGREEMENT NO. 36-106683

SALE NAME: Hobbit

This Bill of Sale and Contract for Good Neighbor Agreement Forest Products (Contract) is entered into between the Washington State Department of Natural Resources (DNR), acting as the agent for the United States Department of Agriculture Forest Service (U.S. Forest Service) pursuant to the authority granted in 16 USC § 2113a, and [TBD] Purchaser, herein collectively referred to as the “Parties” or individually as a “Party.”

In consideration of the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the State and Purchaser hereby agree to the following terms and conditions for the Contract.

SECTION G: GENERAL TERMS

G-001 Definitions

The following definitions apply throughout this contract;

Bill of Sale and Contract for Forest Products: The contract between the Purchaser and the State, which sets forth the procedures and obligations of the Purchaser in exchange for the right to remove forest products from the sale area.

Contract Administrator: DNR’s State Forester’s designee responsible for assuring that the contractual obligations of the Purchaser are met.

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

Purchaser: The company or individual that has entered into the Contract with the State for the right to harvest and remove forest products from the timber sale area.

Road Construction: Includes construction of new temporary roads, reconstruction and maintenance of existing forest roads, and associated work as authorized and described in the Road Plan.

State: The State of Washington represented by the Washington State Department of Natural Resources (Seller), acting under an agreement with the U.S. Forest Service to act as their agent in the selling of Forest Products from the timber sale area, located on

U.S. Forest Service land, under the Good Neighbor Authority in 16 USC § 2113a. The State is represented by the State Forester as designated on the contract signature page. Contractual obligations of the Purchaser under the Contract are enforced by the State Forester or the designated Contract Administrator.

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

United States Forest Service (U.S. Forest Service): An agency of the U.S. Department of Agriculture responsible for administering the nation's national forests.

G-010 Products Sold and Sale Area

Purchaser was the successful bidder on DATA MISSING and the sale was confirmed on _____. The State, as the U.S. Forest Service's agent, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products:

Unit 1: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, and the 2120030 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 2: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

Unit 3: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 4: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, and the 2120030 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 5: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road.

Unit 6 ROW: All timber bounded by orange right-of-way tags.

Unit 7: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road.

Unit 8: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, and the 2120022 Road, including gaps bounded by blue special management area tags, excluding leave tree areas bounded by yellow leave tree area tags.

Unit 9: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

Unit 10 ROW: All timber bounded by orange right-of-way tags, and the 2160000 Road.

The above described products, located on approximately 145 acres on part(s) of: Township 23, Range 11 West, Section 1, Township 24, Range 10 West, Section 22, and Township 24, Range 10 West 5, Sections 45, 46, 47, and 48, in Grays Harbor and Jefferson Counties, Washington, as shown on the attached timber sale map and as designated on the sale area.

G-013 Primary Manufacture in Grays Harbor Federal Sustained Yield Unit

All timber and forest products from this sale must be given at least primary manufacture within the Grays Harbor Federal Sustained Yield Unit pursuant to the Amended Policy Statement for the Grays Harbor Federal Sustained Yield Unit dated 1987, unless a waiver is granted.

If Purchaser is unable to find a market or receive a fair price within the designated area for any raw forest products requiring primary manufacture within the Unit they may apply for a waiver to market such products elsewhere.

Purchaser must execute a written agreement with all buyers, exchangees, or recipients of timber, which must require compliance with this manufacturing requirement. Upon request, all records dealing with the origin and disposition of timber must be made available to the Contract Administrator.

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Unit Name Crosswalk
B	Thinning Prescription

G-030 Contract Term

Unless terminated earlier as authorized under the Contract, Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to October 31st, 2027 (Termination Date), unless this termination date is adjusted pursuant to either the G-040 or G-051 clauses, or extended pursuant to G-050, in which case the new Termination Date shall be as established by the State.

G-040 Contract Term Adjustment - No Payment

Purchaser may request an adjustment in the contract term due to an interruption or delay in operations. A request for an adjustment must be submitted in writing and received by the State within 30 days after the start of the interruption or delay and describe Purchaser's reason for seeking a contract term adjustment. The request must also indicate the actual or anticipated length of interruption or delay. The State may grant an adjustment without charge only if the cause for contract term adjustment is beyond Purchaser's control (force majeure). A force majeure includes, but is not limited to acts of God, acts of the public enemy, acts of the Government, labor disputes, fires, insurrections, floods; road and bridge failures that deny Purchaser access to, or out of, the sale area; access road closures imposed by a road owner; excessive suspensions as provided in clause G-220; and regulatory actions, that do not arise from Purchaser's failure to comply with the Contract and which will prevent timber harvest for a period of less than 6 months.

The State shall adjust the term of the Contract to provide for additional calendar days equal to the actual time lost for the period that such force majeure continues in effect. All other terms and conditions of the Contract shall remain in effect during periods of force majeure. Lack of funds on the part of Purchaser, adverse market conditions, state approval or assistance delays, and/or similar conditions shall not constitute force majeure.

G-050 Contract Term Extension – Payment

Extensions of this contract term may be granted only if, in the judgment of the State, Purchaser is acting in good faith and has diligently performed in accordance with contract provisions and the approved Plan of Operations. The term of this Contract may be extended for a reasonable time by the State, at the State's sole discretion, if all of the following conditions are satisfied:

- a. A written request for extension of the contract term must be received prior to the Termination Date of the Contract.

- b. Purchaser has completed all required roads and is in compliance with all contract and regulatory requirements (e.g., applicable Federal, state, and local laws).
- c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the contract value based on the contract payment rate and advertised volume.

For the second extension, not to exceed 1 year, payment of at least 90 percent of the contract value based on the contract payment rate base and advertised volume.

The payments shall not include the initial deposit which shall be held until Purchaser has completed all obligations under this Contract.

- d. Payment of an amount based on 12 percent interest per annum on the unpaid portion of the timber value of the contract.

To determine the unpaid portion of the timber value of the contract, multiply the contract payment rate for each item by the remaining volume for each item based on the volumes from the Timber Notice of Sale. In addition, all cash deposits that can be used for timber payments, except the initial deposit, will be deducted from the unpaid portion of the contract.

- e. Payment of [INSERT UPON AWARD OF CONTRACT] per acre per annum for the acres on which an operating release has not been issued.
- f. In no event will the extension charge be less than \$500.00.
- g. Extension payments are non-refundable.

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."

- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.
- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies.
- g. Items contained in any other documents prepared for or by the State.

G-064 Permits

Purchaser is responsible for obtaining any permits not already obtained by the State or U.S. Forest Service that relate to Purchaser's operation. Any permits obtained by the State shall be transferred to Purchaser. Purchaser is responsible for all permits, amendments and renewals.

G-066 Termination Due to Governmental Regulatory Actions, Harm to the Environment or Administrative Appeal or Litigation

The State may terminate the Contract, in whole or in part, for any of the following reasons: (1) to prevent actual or potential harm to the environment including without limitation, harm to the land, water, air, habitat, animals, cave resources, or cultural resources; (2) to ensure consistency with U.S. Forest Service land and resource management plans; requirements for the timber sale imposed in any documents prepared pursuant to the National Environmental Policy Act of 1969, 42 USC 1531, et seq.; or compliance with any state or Federal law; (3) to conduct environmental analysis, including but not limited to, the Endangered Species Act of 1973, 16 USC 1531, et seq.; or (4) due to an existing or threatened administrative appeal or litigation involving the U.S. Forest Service or State that might affect or involve the timber sale, regardless of whether the Forest Service or State is required by an administrative or court order to terminate this Contract, or this Contract is named in such a proceeding.

In the event of termination for a reason stated above, Purchaser shall be entitled to a refund, or release of advanced deposits for timber cut but not removed from the sale area, and reimbursement of out-of-pocket expenses incurred as a direct result of the termination of operations; provided, however, that Purchaser shall not be entitled to any compensation provided herein when the Contract is terminated under this clause due to Purchaser's violation of any provision of the Contract. Out-of-pocket expenses do not include, lost profits, attorney's fees, replacement cost of timber, cost or expenses of running a sawmill or other processing facility, expectancy damages, or any other anticipatory expenses suffered by Purchaser.

G-066.1 Termination Due to Catastrophic Damage

The Contract may be terminated by the State, in whole or in part, or the Purchaser may request in writing that the Contract be terminated in whole or in part, if the value of timber remaining to be cut is diminished materially because of catastrophic damage caused by forces beyond the control of the Purchaser. Catastrophic damage is defined as a major change or damage to timber on the sale area, or access to the sale area, or a combination thereof: (a) caused by forces beyond the control of Purchaser, occurring within a 12 month period, including, but not limited to, wind, flood, earthquake, landslide, fire, forest pest epidemic (except as provided below), or other major natural phenomenon; and (b) affecting the value of any trees or products authorized for sale under the Contract estimated to total (i) either more than half of the estimated timber volume stated in Notice of Sale; or (ii) more than 1.5 MMBF or equivalent.

A forest pest epidemic shall not be considered catastrophic damage under this clause when the major change or damage to timber is caused by insect or disease that occurs after felling of the timber unless Purchaser is prevented from removing such timber for reasons that would qualify for a Contract Term Adjustment in G-040.

In the event of termination for the reasons stated above, Purchaser shall be entitled to a refund, or release of advanced deposits for timber cut but not removed from the sale area, and reimbursement of out-of-pocket expenses incurred as a direct result of termination of operations. Out-of-pocket expenses do not include, lost profits, attorney's fees, replacement cost of timber, cost or expenses of running a sawmill or other processing facility, expectancy damages, or any other anticipatory expenses suffered by Purchaser.

G-070 Limitation on Damage

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to Purchaser will be limited to a return of the initial deposit and any unapplied payments; credit for unamortized improvements made by Purchaser; and payment of out-of-pocket expenses, but only under the circumstances where the Contract is terminated under G-066 or G-066.1 and the State is required to pay such out-of-pocket expenses. The State or U.S. Forest Service shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State or U.S. Forest Service Advice

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

G-090 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary due to the circumstances specified in G-066.1 or G-066. The State shall adjust the total contract price by subtracting from the total contract price an amount determined in the following manner: the State shall cause the timber sale area excluded from harvest due to the circumstances to be measured. The State shall reduce the total contract price by that calculated percentage. However, variations in species, value, costs, or other items pertaining to the affected sale area will be analyzed and included in the adjustment if deemed appropriate by the State. The State will further reduce the total contract price by the reasonable cost of unamortized roads Purchaser constructed but is unable to use for removing timber. A reduction in total contract price terminates all of the Purchaser's rights to purchase and remove the timber and all other interest in the affected sale area.

G-100 Forest Products Not Designated

Any forest products not designated for removal, which must be removed in the course of operations authorized by the State, shall be approved and designated by the Contract Administrator. Added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this Contract.

G-110 Title and Risk of Loss

Title. All right, title, and interest in, and to any timber, shall remain in the U.S. Forest Service, until it has been cut, measured, and removed from the sale area, at which time title shall vest in Purchaser. Any right of Purchaser to cut and remove the timber from the sale area shall end at the time this Contract terminates. Any timber not removed by the termination date remains the property of the U.S. Forest Service.

Risk of Loss. If timber is destroyed or damaged by an “unexpected event” that significantly changes the nature of the timber, the party with title, right and interest to the timber shall bear the timber value loss resulting from such destruction or damage.

An “unexpected event” is defined to mean fire, wind, flood, insects or disease, or any similar cause; except that such losses caused by insect or disease after felling of timber shall be borne by Purchaser, unless Purchaser is prevented from removing such timber for reasons that would qualify for a Contract Term Adjustment in G-040.

Except as provided above, Purchaser will not be obligated to remove and pay for destroyed timber for which the U.S. Forest Service holds title. If timber is damaged by an unexpected event, and the U.S. Forest Service holds title and risk of loss for the damaged timber, the Contract Administrator shall make an appraisal to determine for each species the difference between the appraised unit value of the timber immediately prior to the value loss and the appraised unit value of timber after the loss. Current contract rates in effect at the time for the value loss shall be adjusted by differences to become the re-determined rates for the affected timber.

There shall be no obligation for the State to supply Federal timber, or for the Purchaser to accept and pay for other Federal timber, in lieu of that destroyed or damaged. Neither this contract provision, nor any other provision of the Contract, shall be construed to relieve Purchaser of liability for negligence resulting from its operations.

G-120 Responsibility for Work

All work, equipment, and materials necessary to perform this contract shall be the responsibility of Purchaser.

So far as practicable, Purchaser shall protect roads and other improvements (e.g., trails, telephone lines, ditches, fences) existing in the sale area. When Purchaser’s operations are adjacent to properties of railway, telephone, or power companies, or other property, work shall not begin until Purchaser has identified actions necessary to prevent damage to such property. Purchaser shall cooperate with the owners of any underground or overhead utility lines in their removal and/or rearrangement operations in order that these operations may progress in a reasonable manner such that utility duplication rearrangement work may be reduced to a minimum, and services shall not be unnecessarily interrupted. In the event of interruption to utility services because of accidental breakage or as a result of lines being exposed or unsupported, Purchaser shall promptly notify the proper authority and shall cooperate with that authority in the restoration of service until the service is restored.

Any damage to roads and improvements, except as provided in clause G-121 or unless the State issues an operating release pursuant to clause G-280, shall be repaired promptly to the satisfaction of the State and at Purchaser's expense. Road is defined as the road bed, including but not limited to its component parts, such as subgrade, ditches, culverts, bridges, and cattle guards. Improvement is defined to include trails, telephone and utility lines, gates, fences, buildings or any other type of structure.

G-121 Exceptions

Exceptions to Purchaser's responsibility for repairs in clause G-120 shall be limited exclusively to the following:

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

These exceptions shall not apply where road damage occurs due to Purchaser's failure to take reasonable precautions or to exercise sound forest engineering and construction practices.

The repair work identified by the State shall be promptly completed by Purchaser at an agreed price. If the Parties are unable to reach an agreement on price, Purchaser shall complete the repairs based on DNR's determination of the price. Purchaser shall be entitled to challenge the costs through the dispute resolution process in clause G-240. Nothing contained in clauses G-120 and G-121 shall be construed as relieving Purchaser of responsibility for, or damage resulting from, Purchaser's operations or negligence, nor shall Purchaser be relieved from full responsibility for making good any defective work or materials. Authorization to haul does not warrant that Purchaser built roads are free from material defect and the State may require additional work, at Purchaser's expense regardless of cost, to remedy deficiencies at any time.

G-140 Indemnity

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless the State, U.S. Forest Service, agencies of the State or U.S. Forest Service, and all officials, agents and employees of the State or U.S. Forest, from and against all claims arising out of, or in any way whatsoever resulting from, 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 brought against the State, including without limitation claims brought against the State by Purchaser's agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless the State or U.S. Forest Service for any claim arising out of or incident to Purchaser's or any subcontractors' performance or failure to perform the Contract. Purchaser's obligation to indemnify, defend, and hold harmless the State or U.S. Forest Service shall not be eliminated or reduced by any actual or alleged concurrent negligence of the State, U.S. Forest Service, or their agents, agencies, employees and officials. Purchaser waives its immunity under Title 51 RCW to the extent it is required

to indemnify, defend and hold harmless State or U.S. Forest Service and its agencies, officials, agents or employees.

G-150 Insurance

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

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

The State of Washington, Department of Natural Resources Product Sales and Leasing Division in Olympia, WA shall be provided written notice before cancellation or non-renewal of any insurance referred to therein, in accord with the following specifications:

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

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

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

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

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

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

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

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

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

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

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

compensation, employer's liability, commercial general liability, or commercial umbrella liability insurance.

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

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

G-160 Agents

The State's rights and duties will be exercised by the State Forester of the state of Washington. The State Forester will notify Purchaser in writing who is responsible for administering the Contract (Contract Administrator). The State Forester has sole authority to waive, modify, or amend the terms of this Contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State or U.S. Forest Service has any authority to bind the State or U.S. Forest Service to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract. The Contract Administrator shall be the State's authorized agent for purposes of receipt of notices under G-200.

Purchaser is required to have a person on site during all operations who is authorized to receive instructions and notices from the State. Purchaser shall inform the State in writing who is authorized to receive instructions, and notices under G-160, from the State, and any limits to this person's authority.

G-170 Assignment of Rights; Delegation of Performance (Subcontracting)

No rights or interest in this Contract shall be assigned by Purchaser without the prior written permission of the State, which approval shall be at the sole discretion of the State. Such approval shall not relieve the Purchaser of his or her responsibilities or liabilities under the Contract and may be given only if the third party assignee (assignee) has not been debarred or suspended from bidding on the award of U.S. Forest Service timber sale contracts in accordance with 36 CFR § 223.130 through 36 CFR § 223.145 and: (a) the assignee acquiring the rights of the Purchaser is acceptable

to the State under the conditions and requirements then in effect for similar GNA timber sales, and assumes in writing all of the obligations to the State under the terms of the Contract as to the uncompleted portion; or (b) the rights are acquired by the assignee in trust as security and subject to such conditions as may be necessary for the protection of the public interests. Any attempted assignment shall be void and ineffective for all purposes unless made in conformity with this paragraph.

Purchaser may perform any duty through a delegate (i.e., subcontractor), but Purchaser is not thereby relieved of any duty to perform or any liability under this contract. Any delegate shall be bound by the terms of the contract in the same manner as Purchaser.

G-180 Modifications

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

G-190 Contract Complete

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

G-200 Notice

All notices required to be given under this Contract shall be in writing and personally delivered to the Party's authorized agent as provided in G-160; or sent by U.S. mail (certified mail requested), or personally delivered to a Party at the address listed below:

Department of Natural Resources
Attn: Annette Mesman
Northwest Region
919 N Township Street
Sedro-Wooley, WA 98284

Purchaser

A party can designate a different authorized agent or address in writing by serving notice of such change as provided in this clause.

G-210 Violation of Contract

- a. If Purchaser violates any provision of this Contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser

under this contract and collect damages. Purchaser shall not be entitled to any compensation if the Contract is terminated by the State as provided in this clause.

- b. If the Contract expires pursuant to clause G-030 without Purchaser having performed all its duties under this Contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.
- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

G-220 State Suspends Operation

The Contract Administrator may suspend any operation of Purchaser under this Contract for any of the reasons stated in G-066, for any other reason as provided for in the Contract or, if deemed necessary in the public interest.

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

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

If it reasonably appears that the damage that the State or U.S. Forest Service is suffering, or can reasonably be expected to suffer if the operation is allowed to continue, will prevent harvest for a period that will exceed 6 months, and Purchaser has complied with all terms and conditions of this contract, then the State may elect to terminate the Contract under G-066 just as if the harvest was prevented by a governmental statute, regulation, or order.

G-230 Unauthorized Activity

Any cutting, removal, or damage of forest products by Purchaser, its employees, agents, or invitees, including independent contractors, in a manner inconsistent with the terms of this Contract or Federal law, is unauthorized. Purchaser agrees to pay two

times the current contract rates for any unauthorized cutting, removal or damage of forest products.

G-240 Dispute Resolution

The following procedures apply in the event of a dispute regarding interpretation or administration of this Contract. The Parties agree that these procedures must be followed before a lawsuit can be initiated against the State. Purchaser's failure to submit a request for resolution of a dispute under the procedures set forth shall relieve the State of any obligations whatsoever arising under the Contract regarding the dispute. As used herein, a dispute means a demand or assertion by Purchaser seeking, as a legal right, the extension or adjustment of the term of the Contract, or any other relief under the Contract, including a claim for the payment of any money.

- a. In the event of a dispute, Purchaser must submit a written request to the State Forester for resolution of any dispute prior to seeking other relief. If the dispute involves a claim for money owed by the State, Purchaser shall submit with the written request a demand for the amount owed and any appropriate data necessary to establish that the amount requested accurately reflects what Purchaser claims is owing under the Contract for which the State is liable.
- b. The State Forester will issue a written decision on Purchaser's request within ten business days for matters not involving a claim for money. In the case of a claim by Purchaser for money owed under the Contract, the State Forester shall render a decision within 30 days, or notify Purchaser of the date when a decision will be issued. The State Forester's decision shall be final unless Purchaser submits a request under c.
- c. Within ten business days of receipt of the State Forester's decision, Purchaser may submit a written request for resolution of the dispute to the Department Supervisor of the Department of Natural Resources.
- d. Unless otherwise agreed, a conference will be held by the Department Supervisor within 30 calendar days of the receipt of Purchaser's request for review of the State Forester's written decision. Purchaser and the State Forester will have an opportunity to present their positions. The Department Supervisor will issue a decision within a reasonable time of being presented with both Parties' positions.

G-250 Compliance with All Laws

Purchaser is responsible for completing all operations in compliance with all applicable statutes, regulations and laws; and in compliance with all applicable requirements of the U.S. Forest Service, Decision Notice and Finding of No Significant Impact (DN), Olympic National Forest, Queets Vegetation Management Environmental Assessment, including all applicable Mitigation Measures and Design Criteria in the DN Appendices, and applicable Best Management Practices contained in the Environmental Assessment. Failure to comply may result in suspension, and/or termination of this Contract.

G-260 Venue

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

G-270 Equipment and Personal Property Left on U.S. Forest Service Land

All equipment and personal property owned or in the possession of Purchaser, its employees, agents, or invitees, including independent contractors, shall be removed from the sale area and other U.S. Forest Service land by the termination date of this contract. Any equipment or personal property remaining on U.S. Forest Service land 60 days after the expiration of the contract may be removed and disposed of by the State. Purchaser shall pay to the State all costs of moving, storing, and disposing of such personal property and equipment. The State and the U.S. Forest Service shall not be responsible for any damages to or loss of the personal property or equipment, or damage caused by the moving, storing or disposal of the personal property or equipment.

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following U.S. Forest Service roads, State roads, and roads for which the State has acquired easements and road use permits; The 2100000 Road, the 2120000 Road, the 2120022 Road, the 2120023 Road, the 2120025 Road, the 2120027 Road, the 2120030 Road, the 2160000 Road, Temp 1, Temp 3, Temp 4, Temp 6, and Temp 8. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

The U.S. Forest Service shall have the right to use any road constructed by Purchaser during the term of the Contract for any and all purposes in connection with the protection and administration of the National Forest. Other parties, in connection with the logging of tributary National Forest timber, may use roads constructed by Purchaser when the Contract Administrator determines that such use will not materially interfere with Purchaser's Operations. The State may grant others the right to use the roads constructed by Purchaser during the term of the Contract if such uses are authorized by the U.S. Forest Service and will not materially interfere with Purchaser's operations.

G-320 Erosion Control

Reference Road Plan for revegetation measures. To reduce soil damage from logging operations, the Contract Administrator may require water bars to be constructed, grass seed (provided by the Contract Administrator) to be placed on exposed soils, slash mats to be constructed, silt fence to be installed, cross-drains to be installed, or other mitigation measures to be taken by the Purchaser, in addition to what is already required under this contract.

G-330 Pre-work Conference

Purchaser shall arrange with the Contract Administrator to review this Contract and examine the sale area before beginning any operations. Purchaser shall furnish the State a written Plan of Operations at the pre-work conference that includes the Harvest Plan required in H-040, and sets forth planned periods for road construction and completion of all other contractual requirements. The State's written approval of the Plan of Operations is a prerequisite to commencement of Purchaser's operations. A revised Plan of Operations shall be submitted by Purchaser for the Contract Administrator's approval to accommodate a contract adjustment under G-040, a contract extension under G-050, or if determined necessary by the Contract Administrator. To the extent that the Plan of Operations is inconsistent with the Contract, the terms of the Contract shall prevail. State's acceptance and approval of Purchaser's Plan of Operations shall not be construed as any statement or warranty that the Plan of Operations is adequate for Purchaser's purposes or complies with applicable laws.

G-340 Preservation of Markers

Purchaser shall protect all survey monuments, witness corners, reference monuments, and bearing trees (hereinafter collectively referred to as "survey markers") against destruction, obliteration, or damage during operations performed under the Contract. If any survey markers are destroyed, obliterated, or damaged by such operations, Purchaser shall hire an appropriate county surveyor or registered land surveyor to reestablish or restore the survey markers at the same location, using surveying procedures in accordance with the *Manual of Instruction for the Survey of the Public Lands of the United States* as required by the U.S. Forest Service under federal law and the State under RCW 58.24, and shall record such survey in appropriate county records. The Contract Administrator may prescribe in writing additional requirements for protection of monuments, corners, and bearing trees.

G-370 Blocking Roads

Purchaser shall not block the 2100000 Road unless authority is granted in writing by the Contract Administrator.

G-396 County Hauling Permit

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

G-430 Open Fires

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

SECTION P: PAYMENTS AND SECURITIES

P-010 Initial Deposit and Periodic Payment Schedule

Purchaser paid [TO BE DETERMINED ON DAY OF SALE] as an initial deposit to the State, which will be maintained until Purchaser has completed all obligations under this Contract. Purchaser shall not be entitled to any interest earned on the initial deposit. However, all or a portion of the initial deposit may be applied as the final payment for the timber if the State determines that adequate security exists for the performance or fulfillment of any remaining obligations of the Purchaser under the Contract. If the Contract expires without Purchaser's payment of the full amount specified in P-021, the initial deposit will be immediately forfeited to the State, and will be offset against Purchaser's remaining balance due. Any excess initial deposit funds not needed to ensure full payment of the contract price, or not needed to complete any remaining obligations of the Purchaser existing after contract expiration, will be refunded to the Purchaser.

P-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area.

[TO BE DETERMINED ON DAY OF SALE]

Species that are conveyed but are not listed in the table above shall be paid for at a rate to be determined by the State.

Utility logs, special cull and peelable cull logs of all species, included on loads of logs that are required to be removed and scaled per clause H-150 will be paid for on an adjusted gross scale basis at the rate of \$5.00 per MBF plus fees.

P-027 Payment for Removal of Optional Forest Products

Purchaser agrees to weigh all loads and pay the rate of \$0.50 per ton for forest product approved for removal from the sale area under clause H-157.

P-040 Weighing and Scaling Costs

Purchaser agrees to pay for all scaling and weighing costs for logs and other products sold under this Contract. Purchaser also agrees to pay for all costs associated with the transmission and reporting of scale or weight data.

P-045 Guarantee of Payment

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

P-052 Billing and Payment Procedure

The State will compute and forward to the Purchaser statements of charges provided for in the contract. Purchaser shall deliver payment to DNR's Forest Health and Resiliency Division in Olympia, WA on or before the date shown on the billing statement.

Payment will be based on the contract rate multiplied by the tons (tonnage contracts) or volume (mbf contracts) removed during the month or payment period. Included with the payment will be a summary report along with all related load tickets and the corresponding certified weight tickets for the payment period. The summary report will be generated using a computer spreadsheet and list the load tickets in ascending numerical order with the corresponding ticket number and weight or volume for each load.

P-070 Payment for Products: Damage, Theft, Loss or Mismatch

Forest products included in this agreement which are destroyed, damaged, stolen, lost, or mismatched shall be paid for by Purchaser on demand of the State. The rates contained in clause P-021 shall apply. If such material is not listed in P-021, the State shall establish the rates to be paid.

P-080 Payment Account Refund

Advance payments made under P-045 remaining on account above the value for the charges shall be returned to Purchaser within 30 days following the final report of charges. Interest shall accrue at the rate of five percent per month, or fraction thereof, on any balance owed after expiration of the thirty days.

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date of the sale, security acceptable to the State in the amount of \$___ [INCLUDE ON EXECUTION OF

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

P-100 Performance Security Reduction

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

SECTION L: LOG DEFINITIONS AND ACCOUNTABILITY

L-010 Forest Products Conveyed

Forest products conveyed are all logs or parts of logs described by the 'Products Sold and Sale Area' (G-010) clause meeting the removal requirements listed in the 'Required Removal of Forest Products' (H-150) clause.

L-020 Short Logs - Peeler Blocks

Logs or parts of logs which are removed from the sale area that fail to meet the minimum gross length requirements shall be scaled and graded as short logs or peeler blocks. Such material shall be paid for at the forest products rates specified in this contract.

L-040 Utility Logs

Utility logs are logs that meet the minimum utility log standards as described by the log scaling rules applicable for this contract.

L-060 Load Tickets

Purchaser 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.

Purchaser shall account for all load tickets issued by the Contract Administrator and return unused tickets at termination of the contract, or as otherwise required by the Contract Administrator. Unused tickets not returned shall be subject to liquidated damages per clause D-030.

The State may also treat load tickets either not accounted for or not returned as lost forest products per clause P-070. All costs associated with computing the billings for lost forest products shall be borne by Purchaser.

L-070 Purchaser to Furnish Log Scale Information

Purchaser agrees to furnish the State with scaling information, supplied by a third party scaling organization showing the scale, count, and measure of forest products removed during each billing period unless the scale, count, and measure is performed by the State.

L-071 Log and Load Reporting Service

This contract requires the use of a State approved third party Log and Load Reporting Service (LLRS). Purchaser shall ensure log volume measurement data and/or load and weight data is received by the LLRS within one (1) business day of logs being measured or weighed. Purchaser agrees to pay the LLRS for log and load data supplied to the State.

If during the term of this contract, the State discontinues use of the LLRS, the State will notify the Purchaser in writing and the Purchaser will then be responsible to send log scale and/or weight information to the State.

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.

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 enroute 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-120 Long Log Taper Distribution

Forest products over 40 feet long plus trim shall be segment scaled and the lower segment diameters shall be determined using actual taper. In order to utilize taper rules for determining segment diameters for poles and pilings greater than 40 feet in length plus trim, Purchaser must request use of a Pole and Piling Scaling Specification Agreement on file in the region office. Approval for usage of a special Pole and Piling Scaling Specification Agreement may be granted at the sole discretion of the State.

Following State approval for usage of the Pole and Piling Scaling Specification Agreement, the Brand Designation form shall be amended to incorporate the long log taper rules. The volume reported by the scaling organization for forest products over 40 feet plus trim will be expanded by 5 percent and the additional 5 percent volume shall be billed to the purchaser at the contract rate.

L-130 Conversion Factors

Forest products removed from the sale area that are not measured in units specified in the 'Payment for Forest Products' clause of this contract shall be converted to board feet using Department of Natural Resources' standard conversion factors.

SECTION H: HARVESTING OPERATIONS

H-001 Operations Outside the Sale Boundaries

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

H-010 Cutting and Yarding Schedule

Cutting and yarding activities in Unit 1, Unit 2, Unit 6 ROW, and Unit 10 ROW shall occur between June 1st and October 31st. Cutting and yarding activities in Unit 3, Unit

4, Unit 5, Unit 7, Unit 8, and Unit 9 shall occur between September 24th and February 28th. This schedule shall be adhered to unless authority to do otherwise is granted in writing by the Contract Administrator.

H-011 Certification of Fallers and Yarder Operators

All persons engaged in the felling and yarding of timber must receive certification in writing from the Contract Administrator. Certification may be revoked when the Contract Administrator determines that non-compliance of leave tree selection criteria or cut tree selection criteria is occurring, or excessive damage to leave trees or skid trails is occurring.

Excessive damage for leave trees is defined in clause H-012.

Excessive skid trail damage is defined in clause H-016.

When leave tree damage exceeds the limits set forth in clause H-012, Purchaser shall be subject to liquidated damages (clause D-040).

H-012 Leave Tree Damage Definition

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

Leave tree damage exists when more than 20 percent of leave tree stems over 16 inches DBH exhibit operationally-caused damage, as determined by the Contract Administrator. Individual tree damage will be determined using the following criteria:

1. A leave tree top is broken and the live crown ratio is reduced by 30 percent or more.
2. A leave tree has more than 1/3 of the circumference of its root system or bole injured such that the cambium layer is exposed.

If the Contract Administrator determines that a leave tree has been cut or damaged, the Purchaser may be required to pay liquidated damages for Excessive Leave Tree Damage as detailed in clause D-040.

H-016 Skid Trail Requirements

Purchaser shall comply with the following during the yarding operation:

1. Skid trails shall be located outside of all no-harvest buffers, including leave tree areas bounded by yellow leave tree area tags, and/or re-established at previous skid trail locations, except where existing skid trails are causing detrimental soil or hydrologic conditions that could be avoided with alternative skid trail locations.

2. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber. Rub trees shall be left standing until all timber tributary to the skid trail has been removed pursuant to clause H-050.
3. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
4. Purchaser shall not have more than two skid trails open to active skidding at any one time, unless otherwise approved in writing by the Contract Administrator. All other skid trails used for skidding timber shall be closed. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
5. Skid trails shall be covered in slash matting as thick and continuous as practicable prior to use.
6. Skid trails, especially if heavily-impacted, may be required to be water-barred and decompacted to a depth of at least 12 inches, at the discretion of the Contract Administrator. The Contract Administrator may also require slash to be placed across decompacted skid trail surfaces.

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended, in all or in part, by the Contract Administrator, for such periods as may be deemed necessary to avoid damage when soil rutting exceeds 12 inches as measured from the natural ground line, or when ground conditions are unfavorable.

To reduce soil damage, the Contract Administrator may require water bars to be constructed, weed-free certified grass seed (provided by the Contract Administrator) to be placed on exposed soils, decompaction, or other mitigation measures to be taken by the Purchaser, in addition to what is already required under this Contract. 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 shall be removed within 30 days of being felled unless written authorization to do otherwise is provided by the Contract Administrator.

H-030 Timber Falling

Trees shall be felled and logs shall be bucked to obtain the greatest practicable utilization of forest products and other valuable materials conveyed.

H-035 Fall Trees Into Sale Area

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

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the Plan of Operations, prepare an acceptable Harvest Plan for each operating season for planned units. The Harvest Plan shall address the harvest and haul operations and be presented to the Contract Administrator at the pre-work conference. The Harvest Plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the Harvest Plan without prior written approval by the Contract Administrator.

H-050 Rub Trees

Trees designated for cutting along skid trails and cable corridors shall be left standing as rub trees until all timber that is tributary to the skid trail or cable corridor has been removed.

H-052 Branding and Painting

All timber shall be painted with a spot of highway yellow paint not less than three square inches in size, and branded on each end with a hammer brand approved by the State prior to removal from the sale area. Purchaser shall not use the brand pattern selected to mark timber for another source in violation of the requirements set forth in 36 CFR § 223.195.

H-060 Skid Trail Locations

Locations of skid trails must be marked by Purchaser and approved by the Contract Administrator prior to the felling of timber.

H-080 Snags Not to be Felled

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

H-110 Stump Height

Trees shall be cut as close to the ground as practicable and shall not exceed 12 inches in height measured on the uphill side, or 2 inches above the root collar, whichever is higher.

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by hand or mechanical means and yarded by ground-based equipment on slopes of 30% or less. Forest products sold under this contract shall be felled by hand and yarded by cable-based equipment on slopes greater than 30%. Authority to use other equipment or to operate outside the equipment specifications detailed above shall be approved in writing by the Contract Administrator.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-131 Hauling Schedule

Haul may occur year-round, however, a wet-weather haul agreement shall be approved and signed by the Contract Administrator prior to haul occurring between November 1st and May 31st.

Between November 1st and May 31st, log haul may be allowed during freezing conditions, but suspended during thaw conditions, by the Contract Administrator. Log haul shall be re-authorized by the Contract Administrator as road conditions allow.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. A copy of the timber sale maps and contract shall be present onsite during active operations.
2. In-stream culvert removal and/or replacement shall adhere to timelines described in the Road Plan. After use, landings and temporary roads shall be decompacted to a depth of 18 inches or greater. Decompaction shall not occur during times of excessive wet conditions. Equipment shall not travel across the decompacted surface. Native grass and forb seed, and mulch composed of certified weed-free straw or onsite forest debris, shall be applied to the disturbed ground as directed by the Contract Administrator. Seed shall be provided by the Contract Administrator.
3. Certified weed-free straw bale catchments, silt fences, spot-rocking, or other mitigation measures at the discretion of the Contract Administrator, shall be located to intercept runoff from roads or landings prior to reaching any ditch or stream. Any sediment or obstruction that is captured and deposited behind sediment catchments or in the path of ditches or culverts shall be removed annually, or as directed by the Contract Administrator, and deposited out on the forest floor to ensure it does not have a direct flow path to a stream or ditch. When applicable, for winter

maintenance of ditches, ditches will not be bladed past the last cross-drain before a stream crossing.

4. Legacy snags marked with orange paint and snags greater than 30 inches DBH and at least 12 feet in height shall not be felled unless permitted by the Contract Administrator. If snags cannot be operated around safely a minimum no-cut and equipment limitation zone buffer 1.5 times the height of the snag shall be applied, including when those buffers encompass proposed gaps.
5. Old stumps greater than 30 inches in diameter and large woody debris (LWD) greater than 30 inches in diameter may be moved for access, however disturbance should be minimized to the extent possible.
6. Fall and yard away from all waters when possible. Portions of trees falling into riparian or no-cut buffers shall be left on the ground where they were felled.
7. Yarding / skidding activities shall be planned to make as few trips as possible.
8. Areas of gouging or soil displacement resulting from logging systems shall be treated to prevent rill and gully erosion and potential sediment delivery to stream courses. Off-road trails used for equipment fueling and servicing shall be rehabilitated post use by moving the soil back to the natural contour of the hillslope (re-contour) and placing slash or vegetation on exposed mineral soils. Steep slopes will not be decompacted to prevent further soil disturbance. Erosion control treatment may include, but is not limited to, repositioning displaced soil to restore the hillslope contour of disturbed sites, creating small ditches or diversions to redirect surface water movement, seeding, and scattering slash material to disrupt flow and provide soil surface stability. Seed shall be provided by the Contract Administrator.
9. No fuel storage or refueling shall occur in riparian buffers.
10. Workers shall properly store and dispose of food and garbage daily while working on site to minimize nest predation by corvids.
11. Locations of skid trails and skyline corridors shall be approved by the Contract Administrator prior to the felling of timber. Skid trails shall generally be 110 feet apart except where converging, and skyline corridors shall generally be 120 feet apart except where converging. Permission to do otherwise shall be granted in writing by the Contract Administrator. Skyline logging anchors outside of unit boundaries, including within leave tree areas marked by yellow leave tree area tags, shall be approved of in writing by the Contract Administrator prior to use.
12. Ground-based skidding equipment shall be restricted within 30 feet of harvest unit boundaries which serve as riparian no-cut buffers.

13. If active raptor, spotted owl, fisher, or marbled murrelet nest activity is discovered within the unit during operations, any tree(s) or area(s) containing the nest(s) shall not be felled or disturbed, and the Contract Administrator shall be notified.
14. If subsurface archaeological evidence is discovered in the project area, operations shall cease until permission is granted to resume in writing by the Contract Administrator.

H-142 Wildlife Timing Restrictions

Within the timing-restricted areas indicated on the timber sale maps in Unit 1, and/or demarcated by blue diagonal paint lines on trees within the Unit 1, harvest operations are not permitted to begin until 2 hours after sunrise and shall end 2 hours before sunset between the dates of April 1st and September 23rd due to wildlife protections.

H-150 Required Removal of Forest Products

Purchaser shall remove from the sale area and present for scaling or weighing all forest products conveyed in G-010 that meet the following minimum net scale dimensions:

Species	Net bd ft	Log length (ft)	Log dib
All	10	12	5

The State may treat failure to remove forest products left on the sale area that meet the above specifications as a breach of this Contract. At the State's option, forest products left on the sale area upon termination of the Contract that meet the above specifications may be scaled for volume or measured and converted to weight by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling, measuring and computing the billing will be borne by the Purchaser.

H-157 Optional Removal of Forest Products Not Designated

If in the course of operations, Purchaser decides to remove forest products that are below the minimum designated removal specifications per the 'Required Removal of Forest Products' (H-150), the payment rates in clause P-027 shall apply.

Forest products designated as optional shall be decked separately from forest products designated as required for removal. Prior to removal from the sale area, optional forest products as described in this clause must be inspected and approved by the Contract Administrator. Optional forest products may not be mixed with forest products that are required for removal by this contract and shall be removed from the sale area in separate truck loads using load tickets specified by the Contract Administrator.

All material removed under this clause is subject to the same log and load accountability rules as defined in the Log Definitions and Accountability section of this contract. Purchaser shall follow the payment procedures as required in the P-052 clause and will submit a separate summary report for all forest products removed from the sale area under the authority of this clause.

H-160 Mismatch

Mismatch is defined as forest products remaining on the sale area that would have met the specifications in clause H-150 if bucking lengths had been varied to include such products.

The State may treat mismatch as a breach of this Contract. At the State's option, forest products that are left on the sale area may be scaled for volume by the State or a third party scaling organization and billed to Purchaser at the contract payment rate. All costs associated with scaling and computing the billing will be borne by Purchaser.

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 otherwise authorized in writing by the Contract Administrator.

H-210 Log Length Hauling Restrictions

The maximum log length hauled from the sale area shall not exceed 42 feet unless otherwise approved in writing by the Contract Administrator.

H-220 Protection of Residual or Adjacent Trees

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

H-230 Tops and Limbs Outside the Sale Area

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

H-240 Lop and Scatter

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

H-260 Fall Leaners

Trees that have been pushed over in falling or skidding operations shall be felled.

SECTION C: CONSTRUCTION AND MAINTENANCE

C-040 Road Plan

Purchaser shall comply with all of the road construction, associated work provisions, and all other terms and conditions of the Road Plan for this sale, dated 05/02/2024 which is hereby made a part of this Contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform road maintenance and repair work at its own expense on the 2100000 Road, the 2120000 Road, the 2120022 Road, the 2120023 Road, the 2120024 Road, the 2120025 Road, the 2120026 Road, the 2120027 Road, the 2120030 Road, and the 2160000 Road. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the 2120000, the 2120022, the 2100000 Road (from road origin to milepost 8.0), and the 2160000 Road (from road origin to milepost 5.4). Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-080 Landing Locations Approved Prior to Construction

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

C-090 Landing Location

Landings should be located where past landings were located, unless a new location would cause less resource effect or where no past landings were used to harvest the unit.

New landings shall be located outside of all no harvest buffers and preferably not near riparian buffers. Avoid placing landings within 25' of streams, no-cut buffers, wet areas and unstable slopes.

Landings shall be designed for safe and efficient yarding, processing, and loading operations, and have proper drainage. Landings may also be extended to improve drainage or control potential runoff, if approved in writing by the Contract Administrator.

C-140 Water Bars

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

SECTION S: SITE PREPARATION AND PROTECTION

S-001 Emergency Response Plan

An Emergency Response Plan (ERP) shall be provided to the Contract Administrator containing but not limited to, a plan for the prevention and reporting of wildfires within the sale area; a communication plan for reporting wildfires; a description of fire prevention and control measures on the logging unit; and a list of qualified personnel and equipment available for implementing the plan. The ERP shall include the valid contact numbers for qualified personnel available for implementing the ERP, and the equipment available, and procedures for responding to, medical emergencies, fire, hazardous spills, forest practice violations and any unauthorized or unlawful activity occurring 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 to the Contract Administrator for inspection and approval at the prework meeting and kept readily available to all personnel, including subcontractors, on site during active operations. Purchaser shall make any revisions to the ERP required by the Contract Administrator, either upon initial inspection or anytime thereafter, required for operations within the sale area during the Contract.

S-010 Fire Hazardous Conditions

Fire Precautionary Period. The fire precautionary period for this Contract is April 15 to October 15. The Contract Administrator may change the dates of the fire precautionary period by advance written notice. Required tools and equipment shall be kept in serviceable condition and immediately available for fire-fighting at all times during Purchaser's Operations in Fire Precautionary Period.

Purchaser acknowledges that operations under this Contract may increase the risk of fire. Purchaser shall conduct all operations under this Contract 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. Purchaser shall, both independently and in cooperation with the U.S. Forest Service, take the highest degree of care to prevent fires resulting from Purchaser's Operations. Purchaser shall furnish and maintain in good and serviceable conditions such wildland firefighting tools and equipment, and take such fire prevention measures as may be required by the U.S. Forest Service or the State to meet the fire protection requirements of the Contract and the existing fire danger. The requirements shall not be less than are required under the laws of the State of Washington (i.e., WAC 332-24-401 through .411).

In the event of an uncontrolled fire, Purchaser shall immediately report the incident to the appropriate authorities specified in the ERP. Purchaser agrees to provide equipment and personnel working at the site to safely and effectively engage in first response fire suppression activity. Purchaser agrees to reimburse the State and U.S. Forest Service for the cost of fire suppression incurred as the result of the negligence or willful acts of its employees, agents, subcontractors, etc.

The Contract Administrator may require the Purchaser to suspend any or all of Purchaser's Operations when ignition conditions identified in the ERP are met, or when fire is within or threatening the Operational Area. Purchaser's failure to effectively engage in fire-safe operations is considered a breach and may result in suspension of operations.

S-030 Landing Debris Clean Up

Landing debris shall be disposed of in a manner approved in writing by the Contract Administrator; generally, landings shall be decompacted to a depth of 18 inches after use.

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-040 Noxious Weed Control

Purchaser shall ensure all off-road equipment is clean of dirt/mud, seeds, and other plant parts before it is moved onto National Forest Service land. If operating in an area infested with invasive plants, all equipment shall be cleaned before moving between sites or leaving the project area. Standard methods of cleaning shall be pressure-washing unless otherwise authorized in writing by the Contract Administrator. 'Off-road equipment' includes all machinery other than log trucks, chip vans, pickup trucks or vehicles used to transport personnel on a daily basis. Contract Administrator shall flag locations of high priority invasive plant infestations, if any, prior to work

commencing and provide the contractor with a map of these locations (if applicable). These areas shall be avoided during work and travel associated with the project unless otherwise directed by the Contracting Officer. If directed to work in infested area, the contractor shall be required to prevent spreading the infestation into un-infested areas by cleaning vehicles and equipment.

Purchaser shall notify the Contract Administrator in advance of moving all off-road logging and construction equipment onto U.S. Forest Service lands. Notification will include a location approved by the Contract Administrator where the equipment will be cleaned by the Purchaser, and made available for inspection by the State at a time agreed by the Parties. Only logging and construction equipment cleaned as required under this clause, and inspected by the Contract Administrator (or designee), will be allowed to operate on Federal lands within the sale area. All subsequent move-ins of equipment to the sale area shall be treated in the same manner as the initial move in.

All material (e.g. soil, gravel, sand borrow, mulch, aggregate, etc.) transported onto National Forest System land or incorporated into the work shall be certified weed-free. The contractor shall provide the Contract Administrator written notification of proposed material sources 14 days prior to use. If weed species are present in the proposed source, appropriate mitigation measures may allow conditional use of the source as required by the Contract Administrator.

Fill material generated from the project site which contains or is suspected to contain invasive plants shall be stockpiled within the project area and as close to the infested source area as possible, or as directed by the Contract Administrator. Mulch used on the project shall be weed-free or may be sourced from on-site slash. The Contract Administrator may request written documentation of methods used to determine the weed-free status of any materials furnished by the Purchaser, if material is sourced off-site.

S-050 Cessation of Operations for Low Humidity

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

S-060 Pump Truck or Pump Trailer

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

S-120 Stream Protection

No timber shall be felled into, across, or yarded through any stream without written approval by the Contract Administrator.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

All operations shall be conducted in a manner that prevents the release of hazardous materials, including petroleum products, into the environment (water, air or land). If the total oil or oil products storage exceeds 1320 gallons or if any single container exceeds a capacity of 660 gallons, the purchaser will prepare and provide the Contract Administrator a Spill Prevention Control and Counter measures Plan prior to commencing operations. The plan shall meet EPA requirements including certification by a registered professional engineer.

c. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Purchaser shall take immediate action to contain and control all hazardous material spills. Purchaser shall ensure that enough quick response spill kits capable of absorbing 4 to 6 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. Spill kit must also contain one or more oil-absorbing floating booms to contain a spill if it gets into a stream or other waterbody and plastic garbage bags for disposal of used pads and booms off-Forest. If large quantities of bulk fuel/other hazardous materials are stored on site, Purchaser must be able to effectively control a container leak and contain and recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29 CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology (ECY). It is the responsibility of the Purchaser to have all emergency contact information readily available

and a means of remote communication for purposes of quick notification. In the event of a spill, the Purchaser is responsible for notifying the following:

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

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

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

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

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

In addition to the above, Purchaser shall immediately notify the Contract Administrator if any leakage or spillage enters any stream, water course or area of open water.

S-131 Refuse Disposal

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

SECTION D: DAMAGES

D-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates

of anticipated harm to the State caused by Purchaser's breach. These liquidated damages provisions are agreed to by the State and Purchaser with the understanding of the difficulty of proving loss and the inconvenience or infeasibility of obtaining an adequate remedy. These liquidated damages provisions provide greater certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

D-020 Failure to Remove Forest Products

Purchaser's failure to remove all or part of the forest products sold in this agreement prior to the expiration of the contract term results in substantial injury to the State and the U.S. Forest Service. The value of the forest products sold at the time of breach is not readily ascertainable. Purchaser's failure to perform disrupts National Forest management plans and the state's role in implementing such plans, the actual cost of which is difficult to assess. A resale involves additional time and expense and is not an adequate remedy. Therefore, Purchaser agrees to pay the State as liquidated damages a sum calculated using the following formula:

$$LD = .35V-ID-P+C+A$$

Where:

- LD = Liquidated Damage value.
- V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal volume to date from the State's cruise volume multiplied by the contract bid rates.
- ID = Initial Deposit paid at date of contract that has not been applied to timber payments.
- P = Advance payments received but not yet applied to specific contract requirements.
- C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.
- A = Administrative Fee = \$2,500.00.

The above formula reflects the Purchaser's forfeiture of the initial deposit in accordance with clause P-010 by deducting the initial deposit from the amount owed. In no event shall the liquidated damages be less than zero. Interest on the liquidated damage is owed from the date of breach until final payment, calculated using the following formula: Interest = $r \times LD \times N$.

Where:

- r = daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.
- LD = Liquidated damage value.
- N = Number of days from date of breach to date payment is received.

D-030 Inadequate Log Accountability

Removal of forest products from the sale area without adequate branding and/or valid load tickets attached to the load and scaling forest products in a location other than the facility approved by the State can result in substantial injury to the State or U.S. Forest Service. Failure to properly account for loads and scaling and/or weighing information can result in loss to the State or U.S. Forest Service. The potential loss from not having proper branding, ticketing, scaling and/or weighing location and accountability is not readily ascertainable. Purchaser's failure to perform results in a loss of log weight and scale accountability, increases the potential for unauthorized removal of forest products, and increases the State's administration costs, the actual costs of which are difficult to assess.

Enforcement actions for unauthorized removal of forest products for each improperly branded load, improperly ticketed load, lost or unaccounted for tickets, or use of a facility not authorized for this sale or improper submission of scaling data are impractical, expensive, time consuming and are not an adequate remedy. Therefore, Purchaser agrees to pay the State, as liquidated damages, a sum of \$100 each time a load of logs does not have branding as required in the contract, \$250 each time a load of logs does not have a load ticket as required by the contract, \$250 each time a load ticket has not been filled out as required by the plan of operations, \$250 each time a load is weighed or scaled at a location not approved as required under this contract, \$250 each time a log ticket summary report is not submitted properly, and if a third party Log and Load Reporting Service is required, \$250 each time scaling or weight data is not properly submitted to the Log and Load Reporting Service per clause L-071, and \$250 each unused ticket that is not returned to the State, for any reason.

D-040 Leave Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the National Forest. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of \$500.00 per tree for all damaged trees in the sale area.

SECTION M: MISCELLANEOUS

M-010 Federal Endangered Species Act

The Federal Endangered Species Act of 1973 (ESA), 16 USC § 1531et seq. prohibits a person from taking any Federally listed threatened or endangered species. Taking under the Federal ESA may include alteration of habitat. Neither this Contract, or the State's approval of Purchaser's Plan of Operations, is certification that Purchaser's operations under the plan are lawful under the ESA. Purchaser's compliance with the plan is not in

lieu of compliance with any Federal requirements under the ESA or its implementing regulations.

M-020 Forest Resources Conservation and Shortage Relief Act of 1990

Purchaser must comply with the provisions of the Forest Resources Conservation and Shortage Relief Act of 1990 (Act), (16 USC 620 *et seq.*), and its implementing regulations (36 CFR § 223.185 *et seq.*), as the Act and rules now exist or are hereafter amended. Prior to award, during the life of this contract, and for a period of three years from the Contract Termination Date, Purchaser shall upon request furnish to the State and the U.S. Forest Service records showing the volume and geographic origin of unprocessed timber from private lands exported or sold for export by Purchaser or affiliates. Prior to delivering unprocessed timber to another party, Purchaser shall require each buyer, exchange, or recipient to execute an acceptable agreement that will: (i) identify the Federal origin of the timber; (ii) specify domestic processing for the timber involved; (iii) require the execution of such agreements between the parties to any subsequent transactions involving the timber; (iv) require that all hammer brands and/or yellow paint must remain on logs until they are either legally exported or domestically processed, whichever is applicable; and (v) otherwise comply with the requirements of the Act, 16 USC 620(d). No later than 10 (ten) days following the execution of any such agreement between Purchaser and another party, Purchaser shall furnish to U. S. Forest Service a copy of each such agreement. Purchaser shall retain, for three years from the Termination Date, the records of all sales, exchanges, or dispositions of all timber. For breach of this Subsection, the State may terminate this contract and the U.S. Forest Service may take such other action as may be provided by statute or regulation, including the imposition of penalties. When the Contract is terminated by the State for a violation of the Act or rules under this clause, the State shall not be liable for any Claim submitted by Purchaser relating to the termination.

M-030 Debarment, Suspension, Ineligibility, and Exclusion.

Purchaser is a corporation organized and existing under the laws of the State of [insert State] and certifies by execution of the Contract that it is not, nor are its principals, presently debarred, suspended, proposed for debarment or suspension, declared ineligible, or excluded from participation in any transaction with the Federal government. Purchaser shall immediately notify the State without undue delay if it receives a notice from the Federal government that it or its principals are proposed for debarment or suspension, or are debarred, suspended, declared ineligible, or excluded from participating in a transaction with the Federal government.

Purchaser shall require all subcontractors to provide written certification that they are not debarred, suspended, ineligible, or excluded from participating in a transaction with the Federal government. (Execution of Department of Agriculture Form AD-1048 is sufficient to satisfy this requirement.) Purchaser shall maintain a file of certifications and provide a copy to the Contract Administrator upon request.

M-040 Certification Regarding Felony Conviction and Tax Delinquent Status.

Purchaser, by signature below, certifies that: (1) Neither the corporation or its principals have been convicted of a felony violation under any Federal law within the preceding 24 months of the effective date of the Contract; and (2) Neither the corporation or its principals have failed to file all Federal tax returns required during the three years preceding the Contract; have been convicted of a criminal offense under the Internal Revenue Code; or have been notified of any unpaid Federal tax assessment for which the liability remains unsatisfied, unless the assessment is the subject of an installment agreement or offer in compromise that has been approved by the Internal Revenue Service and is not in default.

M-050 Human Remains, Artifacts, and Other Cultural and Historic Items

In the event that human remains, burials, funerary items, sacred objects, object of cultural patrimony, prehistoric artifacts (i.e., arrowheads, spear points, motors, pestles, other ground stone tools, knives, scrapers, or flakes from the manufacture of tools, fire pits, peeled trees, etc.) or historic period artifacts or features (i.e., fragments of old plates or ceramic vessels, weathered glass, dumps of old cans, cabins, root cellars, etc.) are found during project implementation, work on the site shall cease immediately to protect the find from further damage or disruption and the U.S. Forest Service Archeologist will be notified. No further work shall be allowed on the site until the Forest Archeologist has approved a plan for managing or preserving the remains or items.

M-060 Payment of Taxes

The State makes no representations concerning tax liability or consequences arising from the purchase of Federal timber under the Contract. It is Purchaser's sole responsibility to pay all taxes owed, including any forest excise taxes under RCW 84.33.

M-070 Non-Discrimination in Employment

In connection with the performance of work under this Contract, Purchaser agrees not to discriminate against any applicant for employment, employee, or independent contractor on the basis of race, color, national origin, sex, religion, age, disability, sexual orientation, or marital status. This shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment, layoff or termination; rates of pay, or other forms of compensation; and selection for training, including apprenticeship. Purchaser agrees to comply with all Federal and state laws governing non-discrimination in employment applicable to the work performed under the Contract.

M-080 Records

Purchaser shall maintain all reports, data, correspondence, other and information pertaining to this Contract for a period of 6 years, and provide copies to the State upon request.

M-090 Waiver

Any provision of the Contract that is determined to be invalid, void, or illegal shall in no way affect, impair, or invalidate any other provision of the Contract, such other provisions remaining in full force and effect.

M-100 Severability Clause

Any provision of the Contract that is determined to be invalid, void, or illegal shall in no way affect, impair, or invalidate any other provision of the Contract, such other provisions remaining in full force and effect.

M-110 Effective Date

This Contract shall be effective upon the date signed by the State of Washington, Department of Natural Resources.

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Print Name

State Forester

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 _____

Hobbit

Schedule A – Unit Name Crosswalk

Schedule A serves as a general resource for translating the Timber Sale unit number to their corresponding NEPA stand ID number. Refer to the Queets Vegetation Management Environmental Assessment and its supporting documents for the official NEPA stand boundary locations.

Hobbit Sale Unit #	Queets EA Unit #
1	C14, C15
2	C14
3	C53
4	C15
5	C15
6 ROW	C15
7	C54, C16
8	C16, C17, C55
9	C17
10 ROW	Quarry

Hobbit

Schedule B - Thinning Prescription

Cut designated species to Basal Area Target in accordance with Table 1, starting at smallest diameter and working up to max DBH limits ensuring that smaller diameter trees are harvested first to meet target basal area requirements.

Table 1.

Unit	Current BA	Target BA	DBH Max Cut Limit	Designated Cut Species (In Order of Preference)	Preferred No-Cut Species
1	355	220	20"	WH, DF	PSF, WRC, SS
2	380	120	20"	WH, DF	PSF, WRC, SS
3	325	180	20"	WH, DF	PSF, WRC, SS
4	405	220	20"	WH, DF	PSF, WRC, SS
5	390	220	20"	WH, DF	PSF, WRC, SS
6 ROW	420	0	n/a	n/a	n/a
7	420	220	20"	WH, DF	PSF, WRC, SS
8	380	180	20"	WH, DF	PSF, WRC, SS
9	405	120	20"	WH, DF	PSF, WRC, SS
10 ROW	345	0	n/a	n/a	n/a

DF = Douglas-fir, WH = Western hemlock, SS = Sitka spruce, WRC = Western redcedar, PSF = Pacific silver fir, RA = Red alder, GF = Grand fir

Basal Area Target: Target of residual basal area to be left, including all live trees within the thinned area, but excluding landings, temporary roads, skips, and gaps. Variability of +/- 40 square feet per acre within the treatment unit of the target is permitted, but the average for the unit shall be within +/- 10% of Target Basal Area. Post-harvest basal area shall be measured by the Contract Administrator.

Designated Cut Species: These are species to be removed if they are within the diameter limit in order of preference.

Preferred No Cut Species: All preferred non-cut tree species are to be left, as are all trees outside of the diameter limits except on landings, skid trails, skyline corridors, temporary roads or otherwise approved by the Contract Administrator.

DBH: Diameter Breast Height is 4.5 feet on the uphill side.

Right-of-Way: In areas of reconstruction and new construction all timber 20' from centerline in right-of-way may be harvested for a total of 40' width right-of-way removal, unless otherwise demarcated by orange Right-of-way tags, or otherwise approved in writing by the Contract Administrator.

Harvesting: Only live trees are designated for removal. In general, leave vine maple, bigleaf maple, and black cottonwood where possible, unless specifically included as a designated cut species. Legacy snags marked with orange paint and snags greater than 30" DBH and at least 12' in height shall not be felled unless permitted by the Contract Administrator.

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

Timber Sale Cruise Report Hobbit (GNA)

Sale Name: Hobbit

Sale Type: MBF SCALE

Region: N/A

District: Olympic

Lead Cruiser: Aaron Coleman

Other Cruisers: Matt Llobett, Kevin Peterson, Bret McNamara, Salvador Silahua, Michael Case

Cruise Narrative:

Directions:

From Hoquiam, drive North 50 miles on HWY 101. Turn right onto West Boundary Rd; continue for 4.1 miles. Turn right onto the FS 2120000 Rd; continue for 1.1 miles. Slight left onto the FS 2120022; continue for 0.3 miles across bridge to parking area to access units.

Cruise Design: BAF 54.54, sighting height 4.5 feet, cruise to count ratio 1:1 plots. Unit 6 ROW Strip Cruise, cruise to count ratio 1:10 trees.

Timber Quality: Approximately 80% western hemlock and 20% Douglas-fir with the majority of cut trees being 3-saw grade.

Logging and Stand Conditions: Ground-based and cable thinning with rolling topography.

General Remarks: Leave-Tree / skip area removed from cruise acreage. Gap area for each unit calculated as separate units, shown in report. Unforested ML 1 road surface area internal to unit area removed from Units 1 and 4. Unit 10 total ROW clearing area amounts to 1.6 acres after removing road and landing area from cruise calculation. Gross acreage provided in Notice of Sale and Contract.

Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	12.2			2,832	203	1,890	670	69
DF	16.5			604	167	344	79	14
RA	10.3			1			1	
RC	9.1			1			1	
SF	11.9			1		1		
SS	15.6							
ALL	12.7			3,439	370	2,235	751	83

Timber Sale Notice Weight (tons)

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
WH	23,984	1,578	16,177	5,788	441
DF	4,844	1,113	2,912	729	89
RA	12		1	11	0
SF	9		8	1	
RC	7		2	5	
SS	1		1	0	0
ALL	28,857	2,691	19,102	6,534	531

Timber Sale Overall Cruise Statistics

BA (sq ft/acre)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR SE (%)	Net Vol (bf/acre)	Vol SE (%)
376.3	2.5	137.2	1.7	51,743	3.0

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
Unit 1	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	52.2		40	20	0
Unit 2	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	1.4		5	3	0
Unit 3	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	6.1		6	3	0
Unit 4	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	35.0		24	10	0
Unit 5	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	4.8		5	4	0
Unit 6 ROW	ST: Strip/Percent Sample (1 tree expansion)	1.0		1	1	0
Unit 7	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	7.5		7	4	0
Unit 8	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	26.8		20	10	0
Unit 9	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.8		5	3	0
Unit 10 ROW	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	1.6		3	1	0
Unit 1 - GAPS	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	2.0		11	7	0

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
Unit 3 - GAPS	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.3		2	1	0
Unit 4 - GAPS	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.5		3	2	0
Unit 8 - GAPS	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.3		2	2	0
All		140.3		134	71	0

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	12.9	37	1,092	1,070	2.0	983.1	150.1
DF	LIVE	2 SAW	HQ-B	12.2	40	127	121	5.1	129.9	17.0
DF	LIVE	3 SAW	Domestic	8.4	38	1,961	1,923	1.9	2,310.1	269.8
DF	LIVE	3 SAW	HQ-B	10.2	39	535	527	1.6	602.1	73.9
DF	LIVE	4 SAW	Domestic	5.5	31	572	562	1.7	729.0	78.9
DF	LIVE	CULL	Cull	10.7	35	114	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	5.1	16	105	103	1.4	89.3	14.5
RA	LIVE	3 SAW	Domestic	10.1	32	1	1	0.0	0.9	0.1
RA	LIVE	4 SAW	Domestic	6.6	28	11	10	5.7	10.9	1.5
RA	LIVE	UTILITY	Pulp	5.5	13	1	1	0.0	0.4	0.1
RC	LIVE	3 SAW	Domestic	6.2	36	2	2	4.9	2.2	0.3
RC	LIVE	4 SAW	Domestic	5.0	27	6	6	0.0	5.2	0.8
SF	LIVE	3 SAW	Domestic	6.6	40	7	7	0.0	8.4	1.0
SF	LIVE	4 SAW	Domestic	6.2	23	1	1	0.0	0.7	0.1
SS	LIVE	3 SAW	Domestic	11.0	32	1	1	0.0	0.9	0.1
SS	LIVE	4 SAW	Domestic	6.0	31	0	0	0.0	0.3	0.0
SS	LIVE	UTILITY	Pulp	2.9	12	0	0	0.0	0.1	0.0
WH	LIVE	2 SAW	Domestic	12.6	39	1,467	1,445	1.5	1,577.6	202.7
WH	LIVE	3 SAW	Domestic	8.7	38	13,670	13,472	1.4	16,176.9	1,890.1
WH	LIVE	4 SAW	Domestic	5.4	30	4,886	4,776	2.3	5,787.9	670.0
WH	LIVE	CULL	Cull	7.2	2	1	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.0	16	489	489	0.0	441.4	68.6

Timber Sale Log Grade x Diameter Bin Summary

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	UTILITY	5.2	17	103	0.3	89.3	14.5
DF	5 - 7	LIVE	4 SAW	5.5	28	562	1.7	729.0	78.9

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	CULL	6.5	15	0	100.0	0.0	0.0
DF	5 - 7	LIVE	3 SAW	7.2	37	540	2.0	646.4	75.7
DF	8 - 11	LIVE	3 SAW	9.6	37	1,906	1.8	2,263.4	267.4
DF	8 - 11	LIVE	CULL	11.3	38	0	100.0	0.0	0.0
DF	12 - 15	LIVE	UTILITY	12.8	32	0	100.0	0.0	0.0
DF	12 - 15	LIVE	2 SAW	13.3	35	823	2.3	827.0	115.4
DF	16 - 19	LIVE	2 SAW	18.3	32	234	3.0	189.7	32.8
DF	20 - 24	LIVE	2 SAW	21.4	32	120	0.7	87.5	16.9
DF	20 - 24	LIVE	3 SAW	21.4	32	4	6.3	2.4	0.6
DF	25+	LIVE	2 SAW	26.5	32	14	6.3	9.0	2.0
RA	5 - 7	LIVE	UTILITY	5.5	13	1	0.0	0.4	0.1
RA	5 - 7	LIVE	4 SAW	6.3	27	8	5.8	8.5	1.2
RA	8 - 11	LIVE	4 SAW	8.3	32	2	5.0	2.4	0.3
RA	8 - 11	LIVE	3 SAW	10.1	32	1	0.0	0.9	0.1
RC	5 - 7	LIVE	4 SAW	5.0	27	6	0.0	5.2	0.8
RC	5 - 7	LIVE	3 SAW	6.2	36	2	4.9	2.2	0.3
SF	5 - 7	LIVE	4 SAW	6.2	23	1	0.0	0.7	0.1
SF	5 - 7	LIVE	3 SAW	6.6	40	6	0.0	7.6	0.9
SF	8 - 11	LIVE	3 SAW	10.5	32	1	0.0	0.8	0.1
SS	< 5	LIVE	UTILITY	2.9	12	0	0.0	0.1	0.0
SS	5 - 7	LIVE	4 SAW	6.0	31	0	0.0	0.3	0.0
SS	8 - 11	LIVE	3 SAW	11.0	32	1	0.0	0.9	0.1
WH	< 5	LIVE	UTILITY	4.8	21	1	0.0	2.1	0.2
WH	5 - 7	LIVE	UTILITY	5.1	17	488	0.0	439.3	68.5
WH	5 - 7	LIVE	4 SAW	5.4	29	4,747	2.3	5,750.8	666.1
WH	5 - 7	LIVE	3 SAW	7.0	37	3,293	0.0	4,137.1	462.0
WH	5 - 7	LIVE	CULL	7.2	3	0	100.0	0.0	0.0
WH	8 - 11	LIVE	4 SAW	8.3	24	28	0.0	37.1	3.9
WH	8 - 11	LIVE	3 SAW	9.7	37	10,168	1.9	12,026.9	1,426.5
WH	12 - 15	LIVE	3 SAW	12.3	34	11	0.0	12.9	1.6
WH	12 - 15	LIVE	2 SAW	13.3	36	1,364	1.4	1,511.2	191.3
WH	16 - 19	LIVE	2 SAW	16.5	32	73	3.0	59.9	10.2
WH	20 - 24	LIVE	2 SAW	20.4	32	9	0.0	6.5	1.2

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Pulp	5.2	17	103	0.3	89.3	14.5

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Domestic	5.9	30	1,102	1.9	1,375.4	154.6
DF	5 - 7	LIVE	Cull	6.5	15	0	100.0	0.0	0.0
DF	8 - 11	LIVE	Domestic	9.5	36	1,379	1.9	1,661.3	193.5
DF	8 - 11	LIVE	HQ-B	9.8	39	527	1.6	602.1	73.9
DF	8 - 11	LIVE	Cull	11.3	38	0	100.0	0.0	0.0
DF	12 - 15	LIVE	HQ-B	12.2	40	121	5.1	129.9	17.0
DF	12 - 15	LIVE	Pulp	12.8	32	0	100.0	0.0	0.0
DF	12 - 15	LIVE	Domestic	13.4	34	702	1.8	697.0	98.4
DF	16 - 19	LIVE	Domestic	18.3	32	234	3.0	189.7	32.8
DF	20 - 24	LIVE	Domestic	21.4	32	124	0.9	89.9	17.5
DF	25+	LIVE	Domestic	26.5	32	14	6.3	9.0	2.0
RA	5 - 7	LIVE	Pulp	5.5	13	1	0.0	0.4	0.1
RA	5 - 7	LIVE	Domestic	6.3	27	8	5.8	8.5	1.2
RA	8 - 11	LIVE	Domestic	8.6	32	3	3.5	3.3	0.5
RC	5 - 7	LIVE	Domestic	5.0	27	8	1.3	7.4	1.1
SF	5 - 7	LIVE	Domestic	6.6	39	7	0.0	8.3	0.9
SF	8 - 11	LIVE	Domestic	10.5	32	1	0.0	0.8	0.1
SS	< 5	LIVE	Pulp	2.9	12	0	0.0	0.1	0.0
SS	5 - 7	LIVE	Domestic	6.0	31	0	0.0	0.3	0.0
SS	8 - 11	LIVE	Domestic	11.0	32	1	0.0	0.9	0.1
WH	< 5	LIVE	Pulp	4.8	21	1	0.0	2.1	0.2
WH	5 - 7	LIVE	Pulp	5.1	17	488	0.0	439.3	68.5
WH	5 - 7	LIVE	Domestic	5.9	31	8,041	1.4	9,887.9	1,128.1
WH	5 - 7	LIVE	Cull	7.2	3	0	100.0	0.0	0.0
WH	8 - 11	LIVE	Domestic	9.7	37	10,196	1.9	12,064.0	1,430.4
WH	12 - 15	LIVE	Domestic	13.3	36	1,375	1.4	1,524.1	192.9
WH	16 - 19	LIVE	Domestic	16.5	32	73	3.0	59.9	10.2
WH	20 - 24	LIVE	Domestic	20.4	32	9	0.0	6.5	1.2

Cruise Unit Report Unit 1

Unit Sale Notice Volume (MBF): Unit 1

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	11.1			922	17	568	311	27
DF	17.2			59	22	30	5	1
ALL	11.4			981	38	598	316	28

Unit Cruise Design: Unit 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	52.2		40	20	0

Unit Cruise Summary: Unit 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
SF		5	0.1	0
RC		2	0.1	0
WH	50	237	5.9	0
DF	4	17	0.4	0
ALL	54	261	6.5	0

Unit Cruise Statistics: Unit 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 (%)
SF	6.8	323.4	51.1						
RC	2.7	441.4	69.8						
WH	322.6	37.3	5.9	132.5	21.0	3.0	42,726	42.8	6.6
DF	23.1	231.6	36.6	137.7	9.8	4.9	3,185	231.8	36.9
ALL	355.2	32.9	5.2	132.8	20.3	2.8	47,177	38.7	5.9

Unit Summary: Unit 1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	15.5	90	115	1,144	1,124	1.7	6.2	8.2	2.1	58.7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	LEA	8	ALL	18.2	91	116	2,097	2,061	1.7	8.3	15.0	3.5	107.6
RC	LIVE	LEA	2	ALL	9.0	42	51				6.2	2.7	0.9	
SF	LIVE	LEA	5	ALL	15.9	70	89				4.9	6.8	1.7	
WH	LIVE	CUT	50	ALL	11.0	70	81	17,732	17,667	0.4	202.1	133.4	40.2	922.2
WH	LIVE	LEA	67	ALL	18.5	93	116	25,150	25,059	0.4	101.3	189.2	44.0	1,308.1
ALL	LIVE	CUT	54	ALL	11.2	71	82	18,876	18,792	0.4	208.3	141.5	42.3	980.9
ALL	LIVE	LEA	82	ALL	18.0	89	112	27,247	27,120	0.5	120.7	213.7	50.1	1,415.7
ALL	ALL	ALL	136	ALL	14.1	77	93	46,123	45,911	0.5	329.0	355.2	92.4	2,396.6

Unit Stand Table: Unit 1

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	12	LIVE	CUT	1	12.5			187	1.7	1.6	1.4	0.4	9.8
DF	14	LIVE	CUT	2	14.4	98	125	401	0.8	2.4	2.7	0.7	20.9
DF	18	LIVE	CUT	2	17.8	82	104	364	0.0	1.6	2.7	0.6	19.0
DF	20	LIVE	CUT	1	19.0	95	121	172	7.1	0.7	1.4	0.3	9.0
DF	16	LIVE	LEA	4	16.0	92	117	711	1.3	3.9	5.4	1.4	37.1
DF	18	LIVE	LEA	2	17.7	81	102	309	4.6	1.6	2.7	0.6	16.1
DF	20	LIVE	LEA	3	19.6	92	116	586	0.0	1.9	4.1	0.9	30.6
DF	22	LIVE	LEA	1	21.0	92	117	190	0.0	0.6	1.4	0.3	9.9
DF	30	LIVE	LEA	1	30.1	110	141	265	0.0	0.3	1.4	0.2	13.8
RC	8	LIVE	LEA	1	8.5	41	49			3.5	1.4	0.5	
RC	10	LIVE	LEA	1	9.5	44	54			2.8	1.4	0.4	
SF	12	LIVE	LEA	1	12.0	53	66			1.7	1.4	0.4	
SF	16	LIVE	LEA	3	16.0	78	99			2.9	4.1	1.0	
SF	30	LIVE	LEA	1	29.8	96	123			0.3	1.4	0.2	
WH	8	LIVE	CUT	16	7.8	60	65	2,457	0.2	65.8	21.8	7.8	128.3
WH	10	LIVE	CUT	18	9.8	64	74	3,085	0.3	46.7	24.5	7.8	161.0
WH	12	LIVE	CUT	24	11.8	76	91	4,456	0.2	44.6	34.0	9.9	232.6
WH	14	LIVE	CUT	19	13.7	82	100	3,660	0.9	25.1	25.9	7.0	191.0
WH	16	LIVE	CUT	13	15.3	89	107	2,642	0.3	13.8	17.7	4.5	137.9
WH	18	LIVE	CUT	7	17.2	84	105	1,367	0.1	5.9	9.5	2.3	71.3
WH	14	LIVE	LEA	13	14.1	84	105	2,137	1.0	16.2	17.7	4.7	111.5
WH	16	LIVE	LEA	22	15.9	87	106	3,738	0.8	21.7	29.9	7.5	195.1
WH	18	LIVE	LEA	32	18.0	94	118	5,616	0.6	25.5	44.9	10.6	293.1
WH	20	LIVE	LEA	28	19.8	96	120	5,281	1.6	18.4	39.5	8.9	275.7
WH	22	LIVE	LEA	22	22.0	99	126	4,235	0.8	11.4	29.9	6.4	221.1
WH	24	LIVE	LEA	11	23.6	103	130	2,227	1.7	4.9	15.0	3.1	116.2

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	26	LIVE	LEA	5	25.1	98	124	846	2.4	2.0	6.8	1.4	44.2
WH	28	LIVE	LEA	3	27.4	104	131	733	3.4	1.0	4.1	0.8	38.2
WH	30	LIVE	LEA	1	29.9	105	133	247	0.0	0.3	1.4	0.2	12.9

Unit Log Grade Summary: Unit 1

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	12.3	40	417	3.6	176.4	21.7
DF	LIVE	3 SAW	8.9	39	582	0.7	252.0	30.4
DF	LIVE	4 SAW	5.8	40	102	0.0	68.5	5.3
DF	LIVE	UTILITY	5.0	13	24	0.0	5.0	1.2
WH	LIVE	2 SAW	12.1	40	320	0.0	136.5	16.7
WH	LIVE	3 SAW	8.7	39	10,874	0.5	4,938.5	567.6
WH	LIVE	4 SAW	5.5	31	5,958	0.2	2,588.5	311.0
WH	LIVE	UTILITY	5.0	15	516	0.0	155.2	26.9

Unit Log Sort Summary: Unit 1

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	8.9	40	1,101	1.8	496.9	57.4
DF	LIVE	Pulp	5.0	13	24	0.0	5.0	1.2
WH	LIVE	Domestic	6.7	34	17,151	0.4	7,663.4	895.3
WH	LIVE	Pulp	5.0	15	516	0.0	155.2	26.9

Unit Log Grade x Diameter Bin Summary: Unit 1

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	UTILITY	5.0	13	24	0.0	5.0	1.2
DF	5 - 7	LIVE	4 SAW	5.8	40	102	0.0	68.5	5.3
DF	5 - 7	LIVE	3 SAW	7.1	39	172	2.4	74.6	9.0
DF	8 - 11	LIVE	3 SAW	10.6	40	411	0.0	177.4	21.4
DF	12 - 15	LIVE	2 SAW	12.3	40	417	3.6	176.4	21.7
WH	5 - 7	LIVE	UTILITY	5.0	15	516	0.0	155.2	26.9
WH	5 - 7	LIVE	4 SAW	5.4	31	5,883	0.2	2,551.7	307.1
WH	5 - 7	LIVE	3 SAW	6.8	40	2,349	0.0	1,127.2	122.6
WH	8 - 11	LIVE	4 SAW	8.3	24	74	0.0	36.8	3.9
WH	8 - 11	LIVE	3 SAW	9.6	39	8,525	0.6	3,811.3	445.0
WH	12 - 15	LIVE	2 SAW	12.1	40	320	0.0	136.5	16.7

Cruise Unit Report Unit 2

Unit Sale Notice Volume (MBF): Unit 2

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	12.5			66	11	45	8	1
DF	12.8			2		2		
ALL	12.5			68	11	47	8	1

Unit Cruise Design: Unit 2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	1.4		5	3	0

Unit Cruise Summary: Unit 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	21	33	6.6	0
DF	1	2	0.4	0
ALL	22	35	7.0	0

Unit Cruise Statistics: Unit 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 (%)
WH	359.3	13.6	6.1	187.5	35.8	7.8	67,387	38.3	9.9
DF	21.8	136.9	61.2	147.7	0.0	0.0	3,217	136.9	61.2
ALL	381.1	14.3	6.4	185.3	35.7	7.6	70,604	38.4	9.9

Unit Summary: Unit 2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	12.8	90	105	1,998	1,608	19.5	12.2	10.9	3.0	2.3
DF	LIVE	LEA	1	ALL	19.1	105	130	1,998	1,608	19.5	5.5	10.9	2.5	2.3
WH	LIVE	CUT	21	ALL	12.7	72	95	48,578	46,967	3.3	284.7	250.4	70.3	65.8
WH	LIVE	LEA	9	ALL	20.7	102	122	21,121	20,420	3.3	46.6	108.9	23.9	28.6
ALL	LIVE	LEA	10	ALL	20.5	102	123	23,119	22,029	4.7	52.1	119.8	26.4	30.8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	22	ALL	12.7	72	96	50,577	48,575	4.0	296.9	261.3	73.3	68.0
ALL	ALL	ALL	32	ALL	14.2	77	100	73,696	70,604	4.2	349.0	381.1	99.7	98.8

Unit Stand Table: Unit 2

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	12	LIVE	CUT	1	12.8	90	105	1,608	19.5	12.2	10.9	3.0	2.3
DF	20	LIVE	LEA	1	19.1	105	130	1,608	2.5	5.5	10.9	2.5	2.3
WH	8	LIVE	CUT	2	8.4	44	73	2,545	0.0	56.7	21.8	7.5	3.6
WH	12	LIVE	CUT	8	11.9	69	90	15,256	5.5	113.2	87.1	25.3	21.4
WH	14	LIVE	CUT	7	13.8	84	108	15,787	2.5	73.6	76.2	20.5	22.1
WH	16	LIVE	CUT	2	16.0	98	124	5,600	1.6	15.7	21.8	5.4	7.8
WH	18	LIVE	CUT	4	17.7	95	115	7,779	2.9	25.6	43.6	10.4	10.9
WH	18	LIVE	LEA	2	18.4	107	123	5,186	1.2	11.8	21.8	5.1	7.3
WH	20	LIVE	LEA	3	19.6	91	113	4,125	0.0	15.7	32.7	7.4	5.8
WH	22	LIVE	LEA	3	22.3	108	130	6,801	0.0	12.1	32.7	6.9	9.5
WH	24	LIVE	LEA	2	23.7	107	126	4,309	1.8	7.1	21.8	4.5	6.0

Unit Log Grade Summary: Unit 2

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	8.6	32	1,608	12.6	17.0	2.3
DF	LIVE	CULL	7.0	9	0	100.0	0.0	0.0
WH	LIVE	2 SAW	13.5	32	8,115	3.9	78.6	11.4
WH	LIVE	3 SAW	9.1	30	32,284	3.7	331.5	45.2
WH	LIVE	4 SAW	6.3	20	5,548	0.0	62.9	7.8
WH	LIVE	CULL	7.2	2	0	100.0	0.0	0.0
WH	LIVE	UTILITY	5.9	16	1,020	0.0	10.6	1.4

Unit Log Sort Summary: Unit 2

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	7.0	9	0	100.0	0.0	0.0
DF	LIVE	Domestic	8.6	32	1,608	12.6	17.0	2.3
WH	LIVE	Cull	7.2	2	0	100.0	0.0	0.0
WH	LIVE	Domestic	8.5	27	45,947	3.3	473.0	64.3
WH	LIVE	Pulp	5.9	16	1,020	0.0	10.6	1.4

Unit Log Grade x Diameter Bin Summary: Unit 2

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	CULL	7.0	9	0	100.0	0.0	0.0
DF	5 - 7	LIVE	3 SAW	7.7	32	585	17.2	6.3	0.8
DF	8 - 11	LIVE	3 SAW	9.4	32	1,023	9.7	10.7	1.4
WH	< 5	LIVE	UTILITY	4.8	21	111	0.0	2.1	0.2
WH	5 - 7	LIVE	UTILITY	6.1	15	909	0.0	8.5	1.3
WH	5 - 7	LIVE	4 SAW	6.3	20	5,548	0.0	62.9	7.8
WH	5 - 7	LIVE	3 SAW	7.0	30	3,938	0.0	46.1	5.5
WH	5 - 7	LIVE	CULL	7.2	2	0	100.0	0.0	0.0
WH	8 - 11	LIVE	3 SAW	9.6	31	28,346	4.2	285.4	39.7
WH	12 - 15	LIVE	2 SAW	13.1	32	6,275	1.9	64.8	8.8
WH	16 - 19	LIVE	2 SAW	16.0	32	1,840	10.0	13.7	2.6

Cruise Unit Report Unit 3

Unit Sale Notice Volume (MBF): Unit 3

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	15.8			63	51	12
DF	16.0			43	35	8
ALL	15.9			106	85	20

Unit Cruise Design: Unit 3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	6.1		6	3	0

Unit Cruise Summary: Unit 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	4	21	3.5	0
DF	4	15	2.5	0
ALL	8	36	6.0	0

Unit Cruise Statistics: Unit 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 (%)
WH	190.5	35.0	14.3	126.7	10.1	5.0	24,145	36.4	15.1
DF	136.1	21.9	8.9	109.8	8.5	4.3	14,949	23.5	9.9
ALL	326.6	14.9	6.1	119.7	11.5	4.1	39,094	18.8	7.3

Unit Summary: Unit 3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	13.7	71	89	7,132	6,976	2.2	62.0	63.5	17.2	42.6
DF	LIVE	LEA	4	ALL	19.2	85	107	8,150	7,973	2.2	36.1	72.6	16.6	48.6
WH	LIVE	CUT	4	ALL	15.5	74	92	10,582	10,348	2.2	62.3	81.7	20.7	63.1
WH	LIVE	LEA	6	ALL	19.1	83	103	14,109	13,797	2.2	54.7	108.9	24.9	84.2
ALL	LIVE	LEA	10	ALL	19.1	84	105	22,259	21,770	2.2	90.8	181.5	41.5	132.8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	8	ALL	14.6	72	91	17,713	17,324	2.2	124.3	145.2	37.9	105.7
ALL	ALL	ALL	18	ALL	16.7	77	97	39,973	39,094	2.2	215.1	326.6	79.4	238.5

Unit Stand Table: Unit 3

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	10	LIVE	CUT	1	10.3			997	2.2	15.7	9.1	2.8	6.1
DF	12	LIVE	CUT	1	11.4			997	2.2	12.8	9.1	2.7	6.1
DF	14	LIVE	CUT	1	14.3	65	81	879	0.0	8.1	9.1	2.4	5.4
DF	16	LIVE	CUT	3	15.7	72	90	3,053	3.5	20.3	27.2	6.9	18.6
DF	18	LIVE	CUT	1	18.7	80	101	1,051	0.0	4.8	9.1	2.1	6.4
DF	18	LIVE	LEA	3	17.1	80	101	2,935	0.7	17.1	27.2	6.6	17.9
DF	20	LIVE	LEA	3	19.8	92	117	2,998	1.3	12.8	27.2	6.1	18.3
DF	22	LIVE	LEA	1	22.0			913	2.2	3.4	9.1	1.9	5.6
DF	26	LIVE	LEA	1	25.3	95	121	1,128	16.8	2.6	9.1	1.8	6.9
WH	12	LIVE	CUT	1	12.1			1,150	2.2	11.4	9.1	2.6	7.0
WH	16	LIVE	CUT	7	15.9	74	92	8,048	2.2	46.2	63.5	15.9	49.1
WH	18	LIVE	CUT	1	18.7			1,150	2.2	4.8	9.1	2.1	7.0
WH	18	LIVE	LEA	5	17.8	79	98	5,633	3.0	26.1	45.4	10.7	34.4
WH	20	LIVE	LEA	5	19.8	84	105	5,830	2.5	21.3	45.4	10.2	35.6
WH	22	LIVE	LEA	2	21.4	90	113	2,334	6.5	7.3	18.1	3.9	14.2

Unit Log Grade Summary: Unit 3

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	9.5	40	5,656	2.7	313.0	34.5
DF	LIVE	4 SAW	5.2	27	1,320	0.0	72.7	8.1
WH	LIVE	3 SAW	10.1	40	8,351	2.7	475.0	50.9
WH	LIVE	4 SAW	5.1	31	1,997	0.0	128.5	12.2

Unit Log Sort Summary: Unit 3

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	7.4	34	6,976	2.2	385.7	42.6
WH	LIVE	Domestic	7.6	36	10,348	2.2	603.5	63.1

Unit Log Grade x Diameter Bin Summary: Unit 3

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.2	27	1,320	0.0	72.7	8.1
DF	8 - 11	LIVE	3 SAW	9.5	40	5,656	2.7	313.0	34.5
WH	5 - 7	LIVE	4 SAW	5.1	31	1,997	0.0	128.5	12.2
WH	8 - 11	LIVE	3 SAW	10.1	40	8,351	2.7	475.0	50.9

Cruise Unit Report Unit 4

Unit Sale Notice Volume (MBF): Unit 4

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	13.2			863	67	648	130	17
DF	15.3			73		63	10	
ALL	13.3			936	67	711	140	17

Unit Cruise Design: Unit 4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	35.0		24	10	0

Unit Cruise Summary: Unit 4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
SF		4	0.2	0
WH	52	151	6.3	0
DF	3	23	1.0	0
ALL	55	178	7.4	0

Unit Cruise Statistics: Unit 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 (%)
SF	9.1	382.2	78.0						
WH	342.5	26.7	5.5	146.9	26.6	3.7	50,314	37.7	6.6
DF	52.2	113.0	23.1	153.0	10.8	6.3	7,983	113.5	23.9
ALL	403.8	21.0	4.3	147.7	25.8	3.5	59,637	33.3	5.5

Unit Summary: Unit 4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	14.8	100	115	2,121	2,082	1.8	11.4	13.6	3.5	72.9
DF	LIVE	LEA	12	ALL	19.6	102	119	6,011	5,900	1.8	18.4	38.6	8.7	206.5
SF	LIVE	LEA	4	ALL	20.1	88	113				4.1	9.1	2.0	

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	52	ALL	13.3	82	93	25,520	24,657	3.4	174.0	167.9	46.0	863.0
WH	LIVE	LEA	54	ALL	18.9	99	114	26,554	25,657	3.4	89.7	174.7	40.2	898.0
ALL	LIVE	CUT	55	ALL	13.4	83	94	27,641	26,740	3.3	185.4	181.5	49.6	935.9
ALL	LIVE	LEA	70	ALL	19.1	99	114	32,565	31,557	3.1	112.2	222.3	50.9	1,104.5
ALL	ALL	ALL	125	ALL	15.8	89	102	60,206	58,297	3.2	297.6	403.8	100.5	2,040.4

Unit Stand Table: Unit 4

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	12	LIVE	CUT	1	12.5			347	1.8	2.7	2.3	0.6	12.1
DF	14	LIVE	CUT	1	14.4	102	102	305	0.0	2.0	2.3	0.6	10.7
DF	16	LIVE	CUT	4	15.7	99	122	1,430	2.2	6.7	9.1	2.3	50.1
DF	14	LIVE	LEA	1	14.8			327	1.8	1.9	2.3	0.6	11.5
DF	16	LIVE	LEA	1	15.6			328	1.8	1.7	2.3	0.6	11.5
DF	18	LIVE	LEA	5	17.8	90	103	1,337	5.1	6.6	11.3	2.7	46.8
DF	20	LIVE	LEA	2	20.0	106	136	802	3.2	2.1	4.5	1.0	28.1
DF	22	LIVE	LEA	5	22.0	120	134	2,049	4.9	4.3	11.3	2.4	71.7
DF	24	LIVE	LEA	2	24.4	112	144	730	6.2	1.4	4.5	0.9	25.5
DF	28	LIVE	LEA	1	28.7			328	1.8	0.5	2.3	0.4	11.5
SF	18	LIVE	LEA	2	17.0	86	110			2.9	4.5	1.1	
SF	24	LIVE	LEA	1	24.5	90	115			0.7	2.3	0.5	
SF	28	LIVE	LEA	1	27.9	99	125			0.5	2.3	0.4	
WH	8	LIVE	CUT	4	8.4	61	68	705	23.7	23.6	9.1	3.1	24.7
WH	10	LIVE	CUT	2	9.5			666	3.4	9.1	4.5	1.5	23.3
WH	12	LIVE	CUT	17	12.0	84	95	5,584	2.7	48.9	38.6	11.1	195.4
WH	14	LIVE	CUT	23	14.0	85	98	8,098	3.9	48.6	52.2	13.9	283.4
WH	16	LIVE	CUT	21	15.7	93	103	7,216	1.2	35.2	47.6	12.0	252.6
WH	18	LIVE	CUT	7	17.2	95	104	2,388	1.9	9.8	15.9	3.8	83.6
WH	14	LIVE	LEA	1	14.8			294	3.4	1.9	2.3	0.6	10.3
WH	16	LIVE	LEA	14	16.2	98	109	4,460	2.3	22.2	31.8	7.9	156.1
WH	18	LIVE	LEA	20	17.9	92	108	5,977	4.4	25.9	45.4	10.7	209.2
WH	20	LIVE	LEA	25	19.8	104	118	8,248	7.2	26.6	56.7	12.8	288.7
WH	22	LIVE	LEA	7	22.0	91	114	2,286	4.3	6.0	15.9	3.4	80.0
WH	24	LIVE	LEA	9	24.2	102	123	4,034	2.1	6.4	20.4	4.1	141.2
WH	26	LIVE	LEA	1	25.3	125	125	358	17.5	0.6	2.3	0.5	12.5

Unit Log Grade Summary: Unit 4

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	8.9	40	1,792	2.1	525.0	62.7
DF	LIVE	4 SAW	5.1	26	291	0.0	73.8	10.2
WH	LIVE	2 SAW	12.4	40	1,915	2.1	546.5	67.0
WH	LIVE	3 SAW	8.8	38	18,526	2.2	5,415.2	648.4
WH	LIVE	4 SAW	5.4	29	3,723	9.6	1,239.9	130.3
WH	LIVE	UTILITY	5.0	17	493	0.0	115.6	17.3

Unit Log Sort Summary: Unit 4

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	7.0	34	1,611	0.8	462.7	56.4
DF	LIVE	HQ-B	10.9	40	471	5.2	136.1	16.5
WH	LIVE	Domestic	7.5	34	24,164	3.4	7,201.5	845.7
WH	LIVE	Pulp	5.0	17	493	0.0	115.6	17.3

Unit Log Grade x Diameter Bin Summary: Unit 4

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.1	26	291	0.0	73.8	10.2
DF	5 - 7	LIVE	3 SAW	7.3	40	464	2.7	115.4	16.2
DF	8 - 11	LIVE	3 SAW	9.9	40	1,328	1.9	409.6	46.5
WH	5 - 7	LIVE	UTILITY	5.0	17	493	0.0	115.6	17.3
WH	5 - 7	LIVE	4 SAW	5.4	29	3,723	9.6	1,239.9	130.3
WH	5 - 7	LIVE	3 SAW	7.1	34	3,553	0.0	1,085.2	124.3
WH	8 - 11	LIVE	3 SAW	9.7	40	14,973	2.8	4,330.0	524.1
WH	12 - 15	LIVE	2 SAW	12.4	40	1,915	2.1	546.5	67.0

Cruise Unit Report Unit 5

Unit Sale Notice Volume (MBF): Unit 5

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	11.1			112	8	70	24	9
DF	14.1			12		9	3	
ALL	11.4			124	8	79	28	9

Unit Cruise Design: Unit 5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	4.8		5	4	0

Unit Cruise Summary: Unit 5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	11	26	5.2	0
DF	2	10	2.0	0
ALL	13	36	7.2	0

Unit Cruise Statistics: Unit 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 (%)
WH	283.1	37.0	16.5	152.7	17.9	5.4	43,241	41.1	17.4
DF	108.9	70.7	31.6	117.6	3.7	2.6	12,808	70.8	31.7
ALL	392.0	26.7	11.9	143.0	19.8	5.5	56,049	33.3	13.1

Unit Summary: Unit 5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	2	ALL	14.1	101	101	2,762	2,562	7.3	20.1	21.8	5.8	12.3
DF	LIVE	LEA	6	ALL	20.2	109	131	11,050	10,246	7.3	39.1	87.1	19.4	49.2
WH	LIVE	CUT	11	ALL	11.6	89	92	23,284	23,284	0.0	207.7	152.4	44.8	111.8
WH	LIVE	LEA	10	ALL	17.7	109	118	19,958	19,958	0.0	76.5	130.7	31.1	95.8
ALL	LIVE	LEA	16	ALL	18.6	109	123	31,007	30,204	2.6	115.6	217.8	50.4	145.0

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	13	ALL	11.8	90	93	26,046	25,845	0.8	227.8	174.2	50.6	124.1
ALL	ALL	ALL	29	ALL	14.5	96	103	57,054	56,049	1.8	343.4	392.0	101.0	269.0

Unit Stand Table: Unit 5

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	14	LIVE	CUT	2	14.1	101	101	2,562	7.3	20.2	21.8	5.8	12.3
DF	16	LIVE	LEA	1	16.3	111	111	1,116	1.4	7.5	10.9	2.7	5.4
DF	18	LIVE	LEA	1	17.5			893	7.3	6.5	10.9	2.6	4.3
DF	20	LIVE	LEA	2	19.6	101	129	2,226	4.9	10.4	21.8	4.9	10.7
DF	22	LIVE	LEA	2	22.0	110	141	2,801	6.8	8.3	21.8	4.6	13.4
DF	24	LIVE	LEA	1	23.4	111	142	1,589	0.0	3.6	10.9	2.3	7.6
DF	26	LIVE	LEA	1	26.2	112	144	1,620	3.3	2.9	10.9	2.1	7.8
WH	8	LIVE	CUT	2	8.1	80	80	2,443	0.0	61.0	21.8	7.7	11.7
WH	10	LIVE	CUT	3	10.0	86	92	4,925	0.0	59.8	32.7	10.3	23.6
WH	12	LIVE	CUT	2	12.5	92	92	3,194	0.0	25.6	21.8	6.2	15.3
WH	14	LIVE	CUT	4	14.2	103	110	7,489	0.0	39.8	43.6	11.6	35.9
WH	16	LIVE	CUT	2	16.2	105	105	3,570	0.0	15.3	21.8	5.4	17.1
WH	18	LIVE	CUT	1	17.1			1,663	0.0	6.8	10.9	2.6	8.0
WH	14	LIVE	LEA	1	13.9	108	108	1,441	0.0	10.3	10.9	2.9	6.9
WH	16	LIVE	LEA	4	15.8	117	117	6,811	0.0	32.0	43.6	11.0	32.7
WH	18	LIVE	LEA	3	18.5	96	121	4,327	7.3	17.4	32.7	7.6	20.8
WH	20	LIVE	LEA	1	20.6			1,458	0.0	4.7	10.9	2.4	7.0
WH	22	LIVE	LEA	2	21.5	99	125	3,666	6.7	8.6	21.8	4.7	17.6
WH	24	LIVE	LEA	1	24.1	111	141	2,255	0.0	3.4	10.9	2.2	10.8

Unit Log Grade Summary: Unit 5

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	9.1	40	1,835	9.9	83.7	8.8
DF	LIVE	4 SAW	5.0	34	727	0.0	27.4	3.5
WH	LIVE	2 SAW	12.1	40	1,744	0.0	65.6	8.4
WH	LIVE	3 SAW	7.9	39	14,530	0.0	554.2	69.7
WH	LIVE	4 SAW	5.6	28	5,032	0.0	194.5	24.2
WH	LIVE	UTILITY	5.0	16	1,978	0.0	57.5	9.5

Unit Log Sort Summary: Unit 5

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	7.0	37	2,562	7.3	111.1	12.3
WH	LIVE	Domestic	6.9	34	21,306	0.0	814.3	102.3
WH	LIVE	Pulp	5.0	16	1,978	0.0	57.5	9.5

Unit Log Grade x Diameter Bin Summary: Unit 5

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.0	34	727	0.0	27.4	3.5
DF	8 - 11	LIVE	3 SAW	9.1	40	1,835	9.9	83.7	8.8
WH	5 - 7	LIVE	UTILITY	5.0	16	1,978	0.0	57.5	9.5
WH	5 - 7	LIVE	4 SAW	5.6	28	5,032	0.0	194.5	24.2
WH	5 - 7	LIVE	3 SAW	6.6	38	5,442	0.0	209.3	26.1
WH	8 - 11	LIVE	3 SAW	9.4	39	9,089	0.0	344.9	43.6
WH	12 - 15	LIVE	2 SAW	12.1	40	1,744	0.0	65.6	8.4

Cruise Unit Report Unit 6 ROW

Unit Sale Notice Volume (MBF): Unit 6 ROW

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	15.7			54	30	20	4	0
DF	22.2			18	14	3	0	0
RA	10.3			2		0	1	0
RC	10.3			0		0	0	
SF	11.6			0		0	0	
SS	15.6			0		0	0	0
ALL	16.0			74	44	24	6	0

Unit Cruise Design: Unit 6 ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
ST: Strip/Percent Sample (1 tree expansion)	1.0		1	1	0

Unit Cruise Summary: Unit 6 ROW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	200	236	236.0	0
DF	28	31	31.0	0
RA	22	27	27.0	0
RC	7	8	8.0	0
SF	3	3	3.0	0
SS	1	1	1.0	0
ALL	261	306	306.0	0

Unit Cruise Statistics: Unit 6 ROW

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	313.2	0.0	0.0	172.6	23.1	1.6	54,073	23.1	1.6
DF	83.6	0.0	0.0	212.5	30.0	5.7	17,768	30.0	5.7
RA	15.7	0.0	0.0	108.0	25.6	5.5	1,699	25.6	5.5
RC	5.1	0.0	0.0	68.2	21.3	8.0	347	21.3	8.0
SF	2.2	0.0	0.0	119.5	32.0	18.5	263	32.0	18.5

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 (%)
SS	1.3	0.0	0.0	139.1	0.0	0.0	185	0.0	0.0
ALL	421.2	0.0	0.0	176.5	27.5	1.7	74,335	27.5	1.7

Unit Summary: Unit 6 ROW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	28	ALL	22.2	98	119	18,323	17,768	3.0	31.1	83.6	17.7	17.8
RA	LIVE	CUT	22	ALL	10.3	42	71	1,787	1,699	4.9	27.2	15.7	4.9	1.7
RC	LIVE	CUT	7	ALL	10.8	29	55	361	347	3.9	8.0	5.1	1.5	0.3
SF	LIVE	CUT	3	ALL	11.6	51	70	263	263	0.0	3.0	2.2	0.6	0.3
SS	LIVE	CUT	1	ALL	15.6	65	105	185	185	0.0	1.0	1.3	0.3	0.2
WH	LIVE	CUT	200	ALL	15.6	68	91	54,239	54,073	0.3	236.0	313.2	79.3	54.1
ALL	LIVE	CUT	261	ALL	15.9	67	91	75,159	74,335	1.1	306.3	421.2	104.5	74.3
ALL	ALL	ALL	261	ALL	15.9	67	91	75,159	74,335	1.1	306.3	421.2	104.5	74.3

Unit Stand Table: Unit 6 ROW

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	12	LIVE	CUT	2	12.6	66	89	264	2.4	2.0	1.7	0.5	0.3
DF	16	LIVE	CUT	2	15.2	68	93	375	0.0	2.0	2.5	0.6	0.4
DF	18	LIVE	CUT	4	18.2	85	104	1,560	0.3	5.0	9.0	2.1	1.6
DF	20	LIVE	CUT	3	20.3	91	113	814	0.0	3.0	6.8	1.5	0.8
DF	22	LIVE	CUT	6	21.8	102	126	3,885	4.5	6.0	15.6	3.3	3.9
DF	24	LIVE	CUT	6	23.9	109	131	2,940	7.2	6.0	18.6	3.8	2.9
DF	26	LIVE	CUT	5	25.9	110	131	4,766	2.7	5.0	18.3	3.6	4.8
DF	28	LIVE	CUT	1	27.3	120	133	970	0.0	1.0	4.1	0.8	1.0
DF	36	LIVE	CUT	1	35.9	140	156	2,194	0.0	1.0	7.0	1.2	2.2
RA	8	LIVE	CUT	5	7.9	25	61	192	0.0	6.0	2.0	0.7	0.2
RA	10	LIVE	CUT	12	10.0	41	71	629	10.3	12.0	6.6	2.1	0.6
RA	12	LIVE	CUT	8	11.8	52	79	693	2.3	8.0	6.1	1.8	0.7
RA	14	LIVE	CUT	1	14.0	62	85	185	0.0	1.0	1.1	0.3	0.2
RC	8	LIVE	CUT	2	7.7	14	46	52	0.0	2.0	0.6	0.2	0.1
RC	10	LIVE	CUT	2	9.8	27	53	75	15.7	2.0	1.0	0.3	0.1
RC	12	LIVE	CUT	2	11.4	37	61	141	0.0	2.0	1.4	0.4	0.1
RC	14	LIVE	CUT	2	13.6	45	67	80	0.0	2.0	2.0	0.5	0.1
SF	10	LIVE	CUT	2	9.5	47	65	110	0.0	2.0	1.0	0.3	0.1
SF	16	LIVE	CUT	1	15.0	59	80	153	0.0	1.0	1.2	0.3	0.2

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
SS	16	LIVE	CUT	1	15.6	65	105	185	0.0	1.0	1.3	0.3	0.2
WH	8	LIVE	CUT	17	7.8	22	52	406	0.0	17.0	5.7	2.0	0.4
WH	10	LIVE	CUT	24	10.1	43	69	1,619	1.6	25.0	13.9	4.4	1.6
WH	12	LIVE	CUT	31	12.0	54	78	3,329	0.4	33.0	26.0	7.5	3.3
WH	14	LIVE	CUT	35	13.8	64	87	5,782	1.0	38.0	39.5	10.6	5.8
WH	16	LIVE	CUT	39	16.0	75	98	9,301	0.0	42.0	58.5	14.6	9.3
WH	18	LIVE	CUT	36	17.8	83	104	11,584	0.3	41.0	71.3	16.9	11.6
WH	20	LIVE	CUT	18	19.8	89	108	8,742	0.4	19.0	40.5	9.1	8.7
WH	22	LIVE	CUT	13	21.8	97	115	9,180	0.0	16.0	41.4	8.9	9.2
WH	24	LIVE	CUT	3	23.6	102	120	2,194	0.0	3.0	9.2	1.9	2.2
WH	26	LIVE	CUT	2	26.1	109	125	1,937	0.0	2.0	7.4	1.5	1.9

Unit Log Grade Summary: Unit 6 ROW

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	16.0	32	14,111	2.0	81.0	14.1
DF	LIVE	3 SAW	8.8	33	3,201	1.4	23.1	3.2
DF	LIVE	4 SAW	6.1	20	457	0.9	4.2	0.5
DF	LIVE	CULL	6.7	5	0	100.0	0.0	0.0
DF	LIVE	UTILITY	8.9	35	0	100.0	0.0	0.0
RA	LIVE	3 SAW	10.1	32	144	0.0	0.9	0.1
RA	LIVE	4 SAW	6.6	28	1,469	5.7	10.9	1.5
RA	LIVE	UTILITY	5.5	13	86	0.0	0.4	0.1
RC	LIVE	3 SAW	6.2	36	270	4.9	2.2	0.3
RC	LIVE	4 SAW	5.3	18	77	0.0	0.5	0.1
SF	LIVE	3 SAW	9.0	32	180	0.0	1.2	0.2
SF	LIVE	4 SAW	6.2	23	83	0.0	0.7	0.1
SS	LIVE	3 SAW	11.0	32	144	0.0	0.9	0.1
SS	LIVE	4 SAW	6.0	31	39	0.0	0.3	0.0
SS	LIVE	UTILITY	2.9	12	2	0.0	0.1	0.0
WH	LIVE	2 SAW	14.2	32	29,572	0.1	199.1	29.6
WH	LIVE	3 SAW	8.6	34	20,245	0.4	162.7	20.2
WH	LIVE	4 SAW	6.0	22	4,149	0.0	39.9	4.1
WH	LIVE	CULL	6.0	33	0	100.0	0.0	0.0
WH	LIVE	UTILITY	5.4	18	107	0.0	0.8	0.1

Unit Log Sort Summary: Unit 6 ROW

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	6.7	5	0	100.0	0.0	0.0
DF	LIVE	Domestic	11.7	30	17,768	1.9	108.3	17.8
DF	LIVE	Pulp	8.9	35	0	100.0	0.0	0.0
RA	LIVE	Domestic	6.7	28	1,613	5.2	11.8	1.6
RA	LIVE	Pulp	5.5	13	86	0.0	0.4	0.1
RC	LIVE	Domestic	5.8	28	347	3.9	2.7	0.3
SF	LIVE	Domestic	7.3	26	263	0.0	1.9	0.3
SS	LIVE	Domestic	8.5	32	183	0.0	1.2	0.2
SS	LIVE	Pulp	2.9	12	2	0.0	0.1	0.0
WH	LIVE	Cull	6.0	33	0	100.0	0.0	0.0
WH	LIVE	Domestic	9.2	30	53,966	0.2	401.7	54.0
WH	LIVE	Pulp	5.4	18	107	0.0	0.8	0.1

Unit Log Grade x Diameter Bin Summary: Unit 6 ROW

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	UTILITY	5.0	37	0	100.0	0.0	0.0
DF	5 - 7	LIVE	4 SAW	6.1	20	457	0.9	4.2	0.5
DF	5 - 7	LIVE	3 SAW	6.2	36	668	0.0	6.6	0.7
DF	5 - 7	LIVE	CULL	6.7	5	0	100.0	0.0	0.0
DF	8 - 11	LIVE	3 SAW	9.7	32	1,923	0.3	14.0	1.9
DF	12 - 15	LIVE	UTILITY	12.8	32	0	100.0	0.0	0.0
DF	12 - 15	LIVE	2 SAW	13.9	32	5,663	0.2	36.2	5.7
DF	16 - 19	LIVE	2 SAW	17.9	33	5,199	0.4	30.2	5.2
DF	20 - 24	LIVE	3 SAW	21.4	32	610	6.3	2.4	0.6
DF	20 - 24	LIVE	2 SAW	22.0	32	1,243	8.9	5.7	1.2
DF	25+	LIVE	2 SAW	26.5	32	2,006	6.3	9.0	2.0
RA	5 - 7	LIVE	UTILITY	5.5	13	86	0.0	0.4	0.1
RA	5 - 7	LIVE	4 SAW	6.3	27	1,156	5.8	8.5	1.2
RA	8 - 11	LIVE	4 SAW	8.3	32	313	5.0	2.4	0.3
RA	8 - 11	LIVE	3 SAW	10.1	32	144	0.0	0.9	0.1
RC	5 - 7	LIVE	4 SAW	5.3	18	77	0.0	0.5	0.1
RC	5 - 7	LIVE	3 SAW	6.2	36	270	4.9	2.2	0.3
SF	5 - 7	LIVE	4 SAW	6.2	23	83	0.0	0.7	0.1
SF	5 - 7	LIVE	3 SAW	7.4	32	58	0.0	0.4	0.1
SF	8 - 11	LIVE	3 SAW	10.5	32	122	0.0	0.8	0.1
SS	< 5	LIVE	UTILITY	2.9	12	2	0.0	0.1	0.0

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
SS	5 - 7	LIVE	4 SAW	6.0	31	39	0.0	0.3	0.0
SS	8 - 11	LIVE	3 SAW	11.0	32	144	0.0	0.9	0.1
WH	5 - 7	LIVE	UTILITY	5.4	18	107	0.0	0.8	0.1
WH	5 - 7	LIVE	4 SAW	6.0	22	4,105	0.0	39.5	4.1
WH	5 - 7	LIVE	CULL	6.0	33	0	100.0	0.0	0.0
WH	5 - 7	LIVE	3 SAW	6.3	37	4,804	0.8	46.1	4.8
WH	8 - 11	LIVE	4 SAW	8.2	22	44	0.0	0.3	0.0
WH	8 - 11	LIVE	3 SAW	9.9	32	15,441	0.2	116.6	15.4
WH	12 - 15	LIVE	2 SAW	13.5	32	20,756	0.0	146.5	20.8
WH	16 - 19	LIVE	2 SAW	17.2	32	7,620	0.4	46.1	7.6
WH	20 - 24	LIVE	2 SAW	20.4	32	1,196	0.0	6.5	1.2

Cruise Unit Report Unit 7

Unit Sale Notice Volume (MBF): Unit 7

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	3 Saw	4 Saw	Utility
WH	11.7			182	129	48	5
DF	14.4			20	15	5	1
ALL	12.2			202	143	53	6

Unit Cruise Design: Unit 7

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	7.5		7	4	0

Unit Cruise Summary: Unit 7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	10	38	5.4	0
DF	3	16	2.3	0
ALL	13	54	7.7	0

Unit Cruise Statistics: Unit 7

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	295.5	60.0	22.7	142.0	21.6	6.8	41,957	63.8	23.7
DF	124.4	106.3	40.2	115.2	9.1	5.3	14,332	106.7	40.5
ALL	420.0	16.2	6.1	134.0	21.9	6.1	56,289	27.3	8.6

Unit Summary: Unit 7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	14.4	102	102	2,710	2,687	0.9	20.6	23.3	6.1	20.2
DF	LIVE	LEA	8	ALL	20.4	111	120	11,745	11,645	0.9	44.5	101.1	22.4	87.3
WH	LIVE	CUT	10	ALL	11.8	91	91	24,363	24,291	0.3	225.3	171.1	49.8	182.2
WH	LIVE	LEA	8	ALL	17.6	103	108	17,719	17,666	0.3	73.7	124.4	29.7	132.5
ALL	LIVE	CUT	13	ALL	12.0	92	92	27,073	26,978	0.4	245.9	194.4	56.0	202.3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	LEA	16	ALL	18.7	106	112	29,464	29,311	0.5	118.2	225.5	52.0	219.8
ALL	ALL	ALL	29	ALL	14.5	97	99	56,537	56,289	0.4	364.1	420.0	108.0	422.2

Unit Stand Table: Unit 7

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	14	LIVE	CUT	2	13.9	103	103	1,854	0.0	14.8	15.6	4.2	13.9
DF	16	LIVE	CUT	1	15.7	99	99	833	2.7	5.8	7.8	2.0	6.2
DF	16	LIVE	LEA	1	15.8	121	121	1,101	0.0	5.7	7.8	2.0	8.3
DF	18	LIVE	LEA	3	17.4	112	112	3,469	3.1	18.8	31.1	7.5	26.0
DF	20	LIVE	LEA	1	19.6	103	131	1,110	1.6	3.7	7.8	1.8	8.3
DF	22	LIVE	LEA	2	22.3	108	138	1,988	1.8	5.7	15.6	3.3	14.9
DF	24	LIVE	LEA	3	23.4	102	130	2,557	18.0	7.8	23.3	4.8	19.2
DF	30	LIVE	LEA	1	30.5			710	0.9	1.5	7.8	1.4	5.3
DF	34	LIVE	LEA	1	34.8			710	0.9	1.2	7.8	1.3	5.3
WH	8	LIVE	CUT	4	8.2	80	80	3,947	0.2	85.6	31.1	10.9	29.6
WH	10	LIVE	CUT	1	10.5			1,104	0.3	12.9	7.8	2.4	8.3
WH	12	LIVE	CUT	6	11.8	94	94	6,366	0.2	61.4	46.7	13.6	47.7
WH	14	LIVE	CUT	2	13.4	90	90	2,000	1.6	15.9	15.6	4.2	15.0
WH	16	LIVE	CUT	8	15.7	115	115	9,769	0.2	46.4	62.2	15.7	73.3
WH	18	LIVE	CUT	1	17.4			1,104	0.3	4.7	7.8	1.9	8.3
WH	14	LIVE	LEA	1	14.2			1,032	0.3	7.1	7.8	2.1	7.7
WH	16	LIVE	LEA	6	16.1	97	104	6,632	3.1	32.9	46.7	11.6	49.7
WH	18	LIVE	LEA	4	17.8	123	123	4,840	0.1	18.0	31.1	7.4	36.3
WH	20	LIVE	LEA	2	20.1			2,065	0.3	7.0	15.6	3.5	15.5
WH	22	LIVE	LEA	3	21.8			3,097	0.3	9.0	23.3	5.0	23.2

Unit Log Grade Summary: Unit 7

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	9.1	40	1,953	0.9	142.9	14.6
DF	LIVE	4 SAW	5.9	27	607	0.9	38.8	4.6
DF	LIVE	UTILITY	5.0	16	127	0.0	4.8	1.0
WH	LIVE	3 SAW	8.7	38	17,157	0.4	1,142.6	128.7
WH	LIVE	4 SAW	5.2	32	6,416	0.0	388.9	48.1
WH	LIVE	UTILITY	5.1	17	718	0.0	38.3	5.4

Unit Log Sort Summary: Unit 7

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	5.9	27	607	0.9	38.8	4.6
DF	LIVE	HQ-B	9.1	40	1,953	0.9	142.9	14.6
DF	LIVE	Pulp	5.0	16	127	0.0	4.8	1.0
WH	LIVE	Domestic	6.9	35	23,573	0.3	1,531.5	176.8
WH	LIVE	Pulp	5.1	17	718	0.0	38.3	5.4

Unit Log Grade x Diameter Bin Summary: Unit 7

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	UTILITY	5.0	16	127	0.0	4.8	1.0
DF	5 - 7	LIVE	4 SAW	5.9	27	607	0.9	38.8	4.6
DF	8 - 11	LIVE	3 SAW	9.1	40	1,953	0.9	142.9	14.6
WH	5 - 7	LIVE	UTILITY	5.1	17	718	0.0	38.3	5.4
WH	5 - 7	LIVE	4 SAW	5.2	32	6,416	0.0	388.9	48.1
WH	5 - 7	LIVE	3 SAW	7.6	36	5,540	0.0	395.9	41.6
WH	8 - 11	LIVE	3 SAW	9.7	40	11,617	0.6	746.6	87.1

Cruise Unit Report Unit 8

Unit Sale Notice Volume (MBF): Unit 8

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	11.8			423	30	281	106	6
DF	14.1			250	44	154	39	12
ALL	12.5			673	75	435	146	18

Unit Cruise Design: Unit 8

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	26.8		20	10	0

Unit Cruise Summary: Unit 8

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RA		1	0.1	0
WH	23	76	3.8	0
DF	15	63	3.2	0
ALL	38	140	7.0	0

Unit Cruise Statistics: Unit 8

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RA	2.7	447.2	100.0						
WH	206.9	70.2	15.7	134.9	24.8	5.2	27,904	74.5	16.5
DF	171.5	57.6	12.9	114.0	33.1	8.5	19,551	66.4	15.5
ALL	381.1	26.2	5.9	125.4	28.9	4.7	47,797	39.0	7.5

Unit Summary: Unit 8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	15	ALL	14.8	80	90	10,065	9,310	7.5	68.4	81.7	21.2	249.5
DF	LIVE	LEA	13	ALL	20.5	93	118	11,072	10,241	7.5	39.2	89.8	19.8	274.5
RA	LIVE	LEA	1	ALL	13.7	68	84				2.7	2.7	0.7	

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	23	ALL	13.1	78	88	16,066	15,788	1.7	125.1	117.0	32.3	423.1
WH	LIVE	LEA	19	ALL	19.9	93	112	12,330	12,116	1.7	41.6	89.8	20.1	324.7
ALL	LIVE	CUT	38	ALL	13.7	79	89	26,131	25,098	4.0	193.5	198.7	53.6	672.6
ALL	LIVE	LEA	33	ALL	20.0	92	114	23,402	22,357	4.5	83.5	182.4	40.7	599.2
ALL	ALL	ALL	71	ALL	15.9	83	96	49,533	47,455	4.2	277.0	381.1	94.3	1,271.8

Unit Stand Table: Unit 8

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	10	LIVE	CUT	1	10.2	60	74	281	0.0	4.8	2.7	0.9	7.5
DF	12	LIVE	CUT	3	11.7	64	74	1,096	0.0	10.9	8.2	2.4	29.4
DF	14	LIVE	CUT	10	14.2	86	91	2,931	4.9	24.9	27.2	7.2	78.5
DF	16	LIVE	CUT	6	15.8	96	102	1,356	5.1	12.0	16.3	4.1	36.3
DF	18	LIVE	CUT	8	17.7	91	110	2,800	14.2	12.8	21.8	5.2	75.0
DF	20	LIVE	CUT	2	19.2			846	7.5	2.7	5.4	1.2	22.7
DF	14	LIVE	LEA	1	14.3	71	89	302	5.3	2.4	2.7	0.7	8.1
DF	18	LIVE	LEA	4	17.5			1,068	7.5	6.5	10.9	2.6	28.6
DF	20	LIVE	LEA	9	19.6	91	116	1,908	5.0	11.7	24.5	5.5	51.1
DF	22	LIVE	LEA	12	22.0	95	122	3,934	7.7	12.3	32.7	7.0	105.4
DF	24	LIVE	LEA	5	23.6	107	138	1,922	5.9	4.5	13.6	2.8	51.5
DF	26	LIVE	LEA	2	25.2	104	133	1,107	4.2	1.6	5.4	1.1	29.7
RA	14	LIVE	LEA	1	13.7	68	84			2.7	2.7	0.7	
WH	8	LIVE	CUT	2	8.5	48	58	494	4.4	13.8	5.4	1.9	13.2
WH	10	LIVE	CUT	6	10.1	75	82	2,140	0.0	29.6	16.3	5.2	57.4
WH	12	LIVE	CUT	9	12.1	88	103	3,631	0.4	30.6	24.5	7.0	97.3
WH	14	LIVE	CUT	10	14.4	99	99	2,983	1.3	24.1	27.2	7.2	79.9
WH	16	LIVE	CUT	8	16.1	81	101	2,974	4.5	15.4	21.8	5.4	79.7
WH	18	LIVE	CUT	5	17.4	90	113	2,211	1.3	8.2	13.6	3.3	59.3
WH	20	LIVE	CUT	3	19.1	123	123	1,356	2.4	4.1	8.2	1.9	36.3
WH	14	LIVE	LEA	3	13.9	79	99	1,343	1.3	7.8	8.2	2.2	36.0
WH	16	LIVE	LEA	1	16.4	99	99	444	6.3	1.9	2.7	0.7	11.9
WH	18	LIVE	LEA	3	17.7	101	107	1,179	5.7	4.8	8.2	1.9	31.6
WH	20	LIVE	LEA	11	20.0	97	123	4,014	4.9	13.8	29.9	6.7	107.6
WH	22	LIVE	LEA	7	21.6	97	122	2,910	14.2	7.5	19.1	4.1	78.0
WH	24	LIVE	LEA	4	23.5	96	121	1,803	9.6	3.6	10.9	2.2	48.3
WH	26	LIVE	LEA	2	26.0			425	1.7	1.5	5.4	1.1	11.4
WH	30	LIVE	LEA	1	30.5			0		0.5	2.7	0.5	0.0
WH	36	LIVE	LEA	1	36.0			0		0.4	2.7	0.5	0.0

Unit Log Grade Summary: Unit 8

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	12.4	36	1,653	3.5	333.8	44.3
DF	LIVE	3 SAW	8.4	36	5,749	1.3	1,295.8	154.1
DF	LIVE	4 SAW	5.5	31	1,463	3.1	372.4	39.2
DF	LIVE	CULL	11.3	38	0	100.0	0.0	0.0
DF	LIVE	UTILITY	5.1	17	445	0.0	76.8	11.9
WH	LIVE	2 SAW	13.0	37	1,127	2.7	252.3	30.2
WH	LIVE	3 SAW	8.1	39	10,476	2.0	2,512.2	280.8
WH	LIVE	4 SAW	5.2	29	3,971	0.9	924.3	106.4
WH	LIVE	UTILITY	5.0	23	213	0.0	47.9	5.7

Unit Log Sort Summary: Unit 8

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	11.3	38	0	100.0	0.0	0.0
DF	LIVE	Domestic	7.2	34	6,789	2.2	1,582.2	181.9
DF	LIVE	HQ-B	10.7	39	2,076	1.5	419.8	55.6
DF	LIVE	Pulp	5.1	17	445	0.0	76.8	11.9
WH	LIVE	Domestic	6.7	34	15,575	1.8	3,688.8	417.4
WH	LIVE	Pulp	5.0	23	213	0.0	47.9	5.7

Unit Log Grade x Diameter Bin Summary: Unit 8

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	UTILITY	5.1	17	445	0.0	76.8	11.9
DF	5 - 7	LIVE	4 SAW	5.5	31	1,463	3.1	372.4	39.2
DF	5 - 7	LIVE	3 SAW	7.0	37	1,734	1.3	422.7	46.5
DF	8 - 11	LIVE	3 SAW	9.3	36	4,015	1.4	873.1	107.6
DF	8 - 11	LIVE	CULL	11.3	38	0	100.0	0.0	0.0
DF	12 - 15	LIVE	2 SAW	12.4	36	1,653	3.5	333.8	44.3
WH	5 - 7	LIVE	UTILITY	5.0	23	213	0.0	47.9	5.7
WH	5 - 7	LIVE	4 SAW	5.2	29	3,971	0.9	924.3	106.4
WH	5 - 7	LIVE	3 SAW	6.9	40	4,511	0.0	1,085.3	120.9
WH	8 - 11	LIVE	3 SAW	9.6	39	5,966	3.4	1,426.9	159.9
WH	12 - 15	LIVE	2 SAW	13.0	37	1,127	2.7	252.3	30.2

Cruise Unit Report Unit 9

Unit Sale Notice Volume (MBF): Unit 9

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	16.1			34	15	17	2
DF	16.3			10	4	5	1
ALL	16.2			44	18	21	4

Unit Cruise Design: Unit 9

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.8		5	3	0

Unit Cruise Summary: Unit 9

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	18	26	5.2	0
DF	7	11	2.2	0
ALL	25	37	7.4	0

Unit Cruise Statistics: Unit 9

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	283.1	41.7	18.6	216.2	15.2	3.6	61,217	44.4	19.0
DF	119.8	59.3	26.5	138.0	22.1	8.3	16,530	63.2	27.8
ALL	402.9	15.4	6.9	193.0	24.7	4.9	77,747	29.1	8.5

Unit Summary: Unit 9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	7	ALL	15.9	73	98	12,783	12,022	6.0	63.2	87.1	21.8	9.6
DF	LIVE	LEA	3	ALL	21.4	106	129	4,794	4,508	6.0	13.1	32.7	7.1	3.6
WH	LIVE	CUT	18	ALL	16.1	94	118	43,391	42,381	2.3	138.6	196.0	48.8	33.9
WH	LIVE	LEA	7	ALL	22.1	109	128	19,285	18,836	2.3	32.7	87.1	18.5	15.1
ALL	LIVE	LEA	10	ALL	21.9	108	128	24,079	23,344	3.1	45.8	119.8	25.6	18.7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	25	ALL	16.0	87	112	56,174	54,403	3.2	201.8	283.1	70.7	43.5
ALL	ALL	ALL	35	ALL	17.3	91	115	80,253	77,747	3.1	247.6	402.9	96.3	62.2

Unit Stand Table: Unit 9

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	14	LIVE	CUT	3	13.9	61	89	2,718	7.6	30.8	32.7	8.7	2.2
DF	16	LIVE	CUT	1	16.8	95	119	2,304	0.0	7.1	10.9	2.7	1.8
DF	18	LIVE	CUT	4	17.7	81	104	7,000	7.1	25.5	43.6	10.4	5.6
DF	20	LIVE	LEA	1	20.9	100	128	1,346	1.7	4.6	10.9	2.4	1.1
DF	22	LIVE	LEA	2	21.6	110	130	3,162	3.0	8.5	21.8	4.7	2.5
WH	12	LIVE	CUT	1	12.5	85	115	2,415	11.7	12.8	10.9	3.1	1.9
WH	14	LIVE	CUT	3	13.9	86	107	6,455	3.3	31.1	32.7	8.8	5.2
WH	16	LIVE	CUT	6	16.1	98	123	14,540	1.2	46.0	65.3	16.3	11.6
WH	18	LIVE	CUT	7	18.0	95	119	16,111	1.8	43.2	76.2	18.0	12.9
WH	20	LIVE	CUT	1	19.2	115	142	2,860	0.0	5.4	10.9	2.5	2.3
WH	20	LIVE	LEA	3	20.4	101	120	5,022	3.7	14.3	32.7	7.2	4.0
WH	22	LIVE	LEA	2	22.0	115	133	5,277	3.5	8.2	21.8	4.6	4.2
WH	24	LIVE	LEA	2	23.5	110	124	5,476	0.0	7.2	21.8	4.5	4.4
WH	26	LIVE	LEA	1	25.7	130	156	3,060	10.0	3.0	10.9	2.1	2.4

Unit Log Grade Summary: Unit 9

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	12.8	32	4,843	0.0	27.3	3.9
DF	LIVE	3 SAW	9.5	33	5,731	3.8	35.8	4.6
DF	LIVE	4 SAW	6.0	22	1,448	0.0	9.3	1.2
DF	LIVE	CULL	6.2	21	0	100.0	0.0	0.0
WH	LIVE	2 SAW	13.7	32	18,179	1.4	98.1	14.5
WH	LIVE	3 SAW	9.5	32	21,109	3.5	124.8	16.9
WH	LIVE	4 SAW	6.1	24	3,092	0.0	22.8	2.5

Unit Log Sort Summary: Unit 9

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Cull	6.2	21	0	100.0	0.0	0.0
DF	LIVE	Domestic	8.9	29	12,022	1.8	72.3	9.6
WH	LIVE	Domestic	9.6	30	42,381	2.3	245.8	33.9

Unit Log Grade x Diameter Bin Summary: Unit 9

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	6.0	22	1,448	0.0	9.3	1.2
DF	5 - 7	LIVE	CULL	6.2	21	0	100.0	0.0	0.0
DF	8 - 11	LIVE	3 SAW	9.5	33	5,731	3.8	35.8	4.6
DF	12 - 15	LIVE	2 SAW	12.8	32	4,843	0.0	27.3	3.9
WH	5 - 7	LIVE	4 SAW	6.1	24	3,092	0.0	22.8	2.5
WH	5 - 7	LIVE	3 SAW	6.3	34	1,966	0.0	14.5	1.6
WH	8 - 11	LIVE	3 SAW	10.2	32	19,143	3.8	110.3	15.3
WH	12 - 15	LIVE	2 SAW	13.7	32	18,179	1.4	98.1	14.5

Cruise Unit Report Unit 10 ROW

Unit Sale Notice Volume (MBF): Unit 10 ROW

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	23.4			94	77	14	4
WH	9.8			12		5	7
ALL	16.6			106	77	19	10

Unit Cruise Design: Unit 10 ROW

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	1.6		3	1	0

Unit Cruise Summary: Unit 10 ROW

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	15	15	5.0	0
WH	4	4	1.3	0
ALL	19	19	6.3	0

Unit Cruise Statistics: Unit 10 ROW

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	272.2	20.0	11.5	216.6	16.3	4.2	58,968	25.8	12.3
WH	72.6	114.6	66.1	103.5	20.9	10.5	7,512	116.5	67.0
ALL	344.8	36.5	21.1	192.8	29.8	6.8	66,481	47.1	22.1

Unit Summary: Unit 10 ROW

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	15	ALL	23.4	112	130	59,766	58,968	1.3	91.1	272.2	56.3	94.3
WH	LIVE	CUT	4	ALL	9.8	43	66	7,512	7,512	0.0	138.6	72.6	23.2	12.0
ALL	LIVE	CUT	19	ALL	16.6	70	91	67,278	66,481	1.2	229.7	344.8	79.5	106.4
ALL	ALL	ALL	19	ALL	16.6	70	91	67,278	66,481	1.2	229.7	344.8	79.5	106.4

Unit Stand Table: Unit 10 ROW

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	18	LIVE	CUT	2	17.6	97	118	6,081	0.0	21.5	36.3	8.7	9.7
DF	20	LIVE	CUT	2	20.8	105	124	6,675	2.5	15.4	36.3	8.0	10.7
DF	22	LIVE	CUT	1	21.2	100	117	3,428	0.0	7.4	18.1	3.9	5.5
DF	24	LIVE	CUT	2	24.0	130	150	8,012	7.3	11.5	36.3	7.4	12.8
DF	26	LIVE	CUT	4	26.0	117	133	16,541	0.0	19.7	72.6	14.2	26.5
DF	28	LIVE	CUT	1	27.0	120	135	4,504	0.0	4.6	18.1	3.5	7.2
DF	30	LIVE	CUT	3	29.5	127	142	13,728	0.0	11.5	54.4	10.0	22.0
WH	8	LIVE	CUT	1	8.8	36	60	1,590	0.0	43.0	18.1	6.1	2.5
WH	10	LIVE	CUT	2	9.8	43	66	3,509	0.0	68.6	36.3	11.6	5.6
WH	12	LIVE	CUT	1	11.2	54	74	2,414	0.0	26.5	18.1	5.4	3.9

Unit Log Grade Summary: Unit 10 ROW

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	16.0	32	47,852	1.6	449.6	76.6
DF	LIVE	3 SAW	9.8	32	8,705	0.0	101.3	13.9
DF	LIVE	4 SAW	5.3	24	2,412	0.0	36.6	3.9
WH	LIVE	3 SAW	7.4	32	3,366	0.0	41.8	5.4
WH	LIVE	4 SAW	5.0	28	4,147	0.0	52.9	6.6

Unit Log Sort Summary: Unit 10 ROW

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	11.4	30	58,968	1.3	587.6	94.3
WH	LIVE	Domestic	5.7	29	7,512	0.0	94.7	12.0

Unit Log Grade x Diameter Bin Summary: Unit 10 ROW

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.3	24	2,412	0.0	36.6	3.9
DF	5 - 7	LIVE	3 SAW	7.8	32	446	0.0	6.3	0.7
DF	8 - 11	LIVE	3 SAW	10.0	32	8,259	0.0	95.0	13.2
DF	12 - 15	LIVE	2 SAW	14.0	32	20,861	0.8	208.3	33.4
DF	16 - 19	LIVE	2 SAW	18.4	32	17,235	3.5	159.5	27.6
DF	20 - 24	LIVE	2 SAW	21.4	32	9,757	0.0	81.8	15.6
WH	5 - 7	LIVE	4 SAW	5.0	28	4,147	0.0	52.9	6.6
WH	5 - 7	LIVE	3 SAW	6.8	32	1,509	0.0	20.1	2.4
WH	8 - 11	LIVE	3 SAW	8.0	32	1,857	0.0	21.7	3.0

Cruise Unit Report Unit 1 - GAPS

Unit Sale Notice Volume (MBF): Unit 1 - GAPS

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	12.4			67	17	34	14	2
DF	17.9			11	6	4	1	0
SF	12.0			1		1		
RC	8.5			1			1	
ALL	12.7			79	23	39	15	2

Unit Cruise Design: Unit 1 - GAPS

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	2.0		11	7	0

Unit Cruise Summary: Unit 1 - GAPS

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	29	56	5.1	0
DF	6	8	0.7	0
SF	1	2	0.2	0
RC	1	1	0.1	0
ALL	37	67	6.1	0

Unit Cruise Statistics: Unit 1 - GAPS

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	277.1	46.0	13.9	146.8	26.8	5.0	40,676	53.2	14.7
DF	39.6	204.8	61.7	156.5	15.9	6.5	6,196	205.4	62.1
SF	9.9	222.5	67.1	80.2	0.0	0.0	794	222.5	67.1
RC	4.9	331.7	100.0	73.6	0.0	0.0	364	331.7	100.0
ALL	331.6	27.9	8.4	144.8	27.3	4.5	48,030	39.1	9.5

Unit Summary: Unit 1 - GAPS

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	6	ALL	17.2	90	114	5,421	5,421	0.0	21.5	34.6	8.4	10.8
DF	LIVE	LEA	1	ALL	21.0	92	117	774	774	0.0	2.1	4.9	1.1	1.5
RC	LIVE	CUT	1	ALL	8.5	41	49	364	364	0.0	12.6	4.9	1.7	0.7
SF	LIVE	CUT	1	ALL	12.0	53	66	397	397	0.0	6.3	4.9	1.4	0.8
SF	LIVE	LEA	1	ALL	29.8	96	123	397	397	0.0	1.0	4.9	0.9	0.8
WH	LIVE	CUT	29	ALL	12.5	69	81	33,460	33,412	0.1	267.1	227.7	64.4	66.8
WH	LIVE	LEA	4	ALL	23.0	101	128	7,274	7,264	0.1	17.2	49.5	10.3	14.5
ALL	LIVE	LEA	6	ALL	23.2	100	127	8,446	8,435	0.1	20.3	59.4	12.3	16.9
ALL	LIVE	CUT	37	ALL	12.7	69	82	39,643	39,595	0.1	307.5	272.2	75.9	79.2
ALL	ALL	ALL	43	ALL	13.6	71	85	48,089	48,030	0.1	327.8	331.6	88.2	96.1

Unit Stand Table: Unit 1 - GAPS

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	14	LIVE	CUT	2	14.4	98	125	1,543	0.0	8.7	9.9	2.6	3.1
DF	18	LIVE	CUT	2	17.8	82	104	1,323	0.0	5.7	9.9	2.3	2.6
DF	20	LIVE	CUT	3	19.6	92	116	2,556	0.0	7.1	14.8	3.4	5.1
DF	22	LIVE	LEA	1	21.0	92	117	774	0.0	2.1	4.9	1.1	1.5
RC	8	LIVE	CUT	1	8.5	41	49	364	0.0	12.6	4.9	1.7	0.7
SF	12	LIVE	CUT	1	12.0	53	66	397	0.0	6.3	4.9	1.4	0.8
SF	30	LIVE	LEA	1	29.8	96	123	397	0.0	1.0	4.9	0.9	0.8
WH	8	LIVE	CUT	4	7.8	51	58	1,960	0.0	59.3	19.8	7.1	3.9
WH	10	LIVE	CUT	7	9.7	66	74	4,514	0.1	67.0	34.6	11.1	9.0
WH	12	LIVE	CUT	6	11.6	62	75	3,792	0.1	40.5	29.7	8.7	7.6
WH	14	LIVE	CUT	6	13.8	71	87	3,972	0.1	28.7	29.7	8.0	7.9
WH	16	LIVE	CUT	9	15.4	90	104	7,119	0.5	34.5	44.5	11.4	14.2
WH	18	LIVE	CUT	8	17.8	94	118	6,676	0.0	23.0	39.6	9.4	13.4
WH	20	LIVE	CUT	5	19.3	98	124	5,379	0.0	14.6	29.7	6.8	10.8
WH	20	LIVE	LEA	1	20.4			626	0.1	2.2	4.9	1.1	1.3
WH	22	LIVE	LEA	5	22.1	102	130	3,610	0.1	9.3	24.7	5.3	7.2
WH	24	LIVE	LEA	2	23.7	95	120	1,493	2.1	3.2	9.9	2.0	3.0
WH	26	LIVE	LEA	1	25.0			626	0.1	1.5	4.9	1.0	1.3
WH	30	LIVE	LEA	1	29.9	105	133	909	0.0	1.0	4.9	0.9	1.8

Unit Log Grade Summary: Unit 1 - GAPS

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	13.1	40	2,769	0.0	38.2	5.5
DF	LIVE	3 SAW	9.3	36	2,113	0.0	34.3	4.2
DF	LIVE	4 SAW	6.0	33	342	0.0	8.4	0.7
DF	LIVE	UTILITY	5.7	17	197	0.0	2.7	0.4
RC	LIVE	4 SAW	5.0	27	364	0.0	4.7	0.7
SF	LIVE	3 SAW	6.6	40	397	0.0	7.2	0.8
WH	LIVE	2 SAW	13.4	40	8,570	0.0	136.3	17.1
WH	LIVE	3 SAW	8.7	39	17,220	0.3	293.6	34.4
WH	LIVE	4 SAW	5.2	29	6,808	0.0	115.0	13.6
WH	LIVE	UTILITY	5.0	17	815	0.0	10.0	1.6

Unit Log Sort Summary: Unit 1 - GAPS

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	9.6	36	5,225	0.0	80.9	10.4
DF	LIVE	Pulp	5.7	17	197	0.0	2.7	0.4
RC	LIVE	Domestic	5.0	27	364	0.0	4.7	0.7
SF	LIVE	Domestic	6.6	40	397	0.0	7.2	0.8
WH	LIVE	Domestic	7.3	34	32,597	0.1	544.9	65.2
WH	LIVE	Pulp	5.0	17	815	0.0	10.0	1.6

Unit Log Grade x Diameter Bin Summary: Unit 1 - GAPS

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	UTILITY	5.7	17	197	0.0	2.7	0.4
DF	5 - 7	LIVE	4 SAW	6.0	33	342	0.0	8.4	0.7
DF	5 - 7	LIVE	3 SAW	6.9	35	262	0.0	3.8	0.5
DF	8 - 11	LIVE	3 SAW	10.0	36	1,850	0.0	30.5	3.7
DF	12 - 15	LIVE	2 SAW	13.1	40	2,769	0.0	38.2	5.5
RC	5 - 7	LIVE	4 SAW	5.0	27	364	0.0	4.7	0.7
SF	5 - 7	LIVE	3 SAW	6.6	40	397	0.0	7.2	0.8
WH	5 - 7	LIVE	UTILITY	5.0	17	815	0.0	10.0	1.6
WH	5 - 7	LIVE	4 SAW	5.2	29	6,808	0.0	115.0	13.6
WH	5 - 7	LIVE	3 SAW	7.0	38	3,805	0.0	66.5	7.6
WH	8 - 11	LIVE	3 SAW	9.6	39	12,610	0.4	214.2	25.2
WH	12 - 15	LIVE	3 SAW	12.3	34	804	0.0	12.9	1.6
WH	12 - 15	LIVE	2 SAW	13.4	40	8,570	0.0	136.3	17.1

Cruise Unit Report Unit 3 - GAPS

Unit Sale Notice Volume (MBF): Unit 3 - GAPS

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	17.2			7	2	4	1	0
DF	16.0			5		4	1	
ALL	16.6			11	2	8	2	0

Unit Cruise Design: Unit 3 - GAPS

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.3		2	1	0

Unit Cruise Summary: Unit 3 - GAPS

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	3	6	3.0	0
DF	3	6	3.0	0
ALL	6	12	6.0	0

Unit Cruise Statistics: Unit 3 - GAPS

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	163.3	0.0	0.0	134.4	16.0	9.2	21,958	16.0	9.2
DF	163.3	0.0	0.0	111.5	11.5	6.6	18,213	11.5	6.6
ALL	326.6	0.0	0.0	123.0	16.4	6.7	40,171	16.4	6.7

Unit Summary: Unit 3 - GAPS

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	13.2	71	89	15,177	15,177	0.0	143.2	136.1	37.5	4.6
DF	LIVE	LEA	0	ALL	22.0			3,035	3,035	0.0	10.3	27.2	5.8	0.9
WH	LIVE	CUT	3	ALL	16.0	78	97	21,958	21,958	0.0	117.0	163.3	40.8	6.6
ALL	LIVE	CUT	6	ALL	14.5	74	93	37,136	37,136	0.0	260.2	299.4	78.3	11.1
ALL	LIVE	LEA	0	ALL	22.0			3,035	3,035	0.0	10.3	27.2	5.8	0.9
ALL	ALL	ALL	6	ALL	14.9	74	93	40,171	40,171	0.0	270.5	326.6	84.1	12.1

Unit Stand Table: Unit 3 - GAPS

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	10	LIVE	CUT	1	10.3			3,036	0.0	47.0	27.2	8.5	0.9
DF	12	LIVE	CUT	1	11.4			3,036	0.0	38.4	27.2	8.1	0.9
DF	14	LIVE	CUT	1	14.3	65	81	2,636	0.0	24.4	27.2	7.2	0.8
DF	16	LIVE	CUT	1	16.9	70	88	3,198	0.0	17.5	27.2	6.6	1.0
DF	18	LIVE	CUT	1	17.2	80	101	3,273	0.0	16.9	27.2	6.6	1.0
DF	22	LIVE	LEA	1	22.0			3,035	0.0	10.3	27.2	5.8	0.9
WH	12	LIVE	CUT	1	12.1			3,660	0.0	34.1	27.2	7.8	1.1
WH	16	LIVE	CUT	1	15.2	73	91	3,175	0.0	21.6	27.2	7.0	1.0
WH	18	LIVE	CUT	3	17.7	77	96	10,815	0.0	47.9	81.7	19.4	3.2
WH	20	LIVE	CUT	1	19.7	88	110	4,308	0.0	12.9	27.2	6.1	1.3

Unit Log Grade Summary: Unit 3 - GAPS

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	9.5	40	12,337	0.0	33.0	3.7
DF	LIVE	4 SAW	5.1	27	2,840	0.0	7.8	0.9
WH	LIVE	2 SAW	13.1	40	6,224	0.0	16.3	1.9
WH	LIVE	3 SAW	9.9	37	12,663	0.0	36.7	3.8
WH	LIVE	4 SAW	5.2	32	2,531	0.0	8.4	0.8
WH	LIVE	UTILITY	5.0	20	540	0.0	1.5	0.2

Unit Log Sort Summary: Unit 3 - GAPS

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	7.3	34	15,177	0.0	40.9	4.6
WH	LIVE	Domestic	8.6	36	21,418	0.0	61.4	6.4
WH	LIVE	Pulp	5.0	20	540	0.0	1.5	0.2

Unit Log Grade x Diameter Bin Summary: Unit 3 - GAPS

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.1	27	2,840	0.0	7.8	0.9
DF	8 - 11	LIVE	3 SAW	9.5	40	12,337	0.0	33.0	3.7
WH	5 - 7	LIVE	UTILITY	5.0	20	540	0.0	1.5	0.2
WH	5 - 7	LIVE	4 SAW	5.2	32	2,531	0.0	8.4	0.8
WH	8 - 11	LIVE	3 SAW	9.9	37	12,663	0.0	36.7	3.8
WH	12 - 15	LIVE	2 SAW	13.1	40	6,224	0.0	16.3	1.9

Cruise Unit Report Unit 4 - GAPS

Unit Sale Notice Volume (MBF): Unit 4 - GAPS

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	14.8			19	3	14	2	0
DF	16.0			5		4	0	
ALL	15.0			24	3	18	2	0

Unit Cruise Design: Unit 4 - GAPS

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.5		3	2	0

Unit Cruise Summary: Unit 4 - GAPS

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	8	12	4.0	0
DF	1	6	2.0	0
ALL	9	18	6.0	0

Unit Cruise Statistics: Unit 4 - GAPS

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	217.8	25.0	14.4	190.7	9.6	3.4	41,522	26.8	14.8
DF	108.9	50.0	28.9	166.2	0.0	0.0	18,091	50.0	28.9
ALL	326.6	16.7	9.6	182.5	10.4	3.5	59,613	19.6	10.2

Unit Summary: Unit 4 - GAPS

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	15.4	103	131	9,514	9,046	4.9	42.1	54.4	13.9	4.5
DF	LIVE	LEA	3	ALL	20.6	107	137	9,514	9,046	4.9	23.5	54.4	12.0	4.5
WH	LIVE	CUT	8	ALL	15.1	111	119	38,324	38,062	0.7	160.5	199.6	51.4	19.0
WH	LIVE	LEA	1	ALL	20.8	111	140	3,484	3,460	0.7	7.7	18.1	4.0	1.7
ALL	LIVE	CUT	9	ALL	15.2	109	121	47,837	47,107	1.5	202.6	254.1	65.2	23.6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	LEA	4	ALL	20.6	108	138	12,998	12,506	3.8	31.2	72.6	16.0	6.3
ALL	ALL	ALL	13	ALL	16.0	109	124	60,835	59,613	2.0	233.8	326.6	81.2	29.8

Unit Stand Table: Unit 4 - GAPS

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	14	LIVE	CUT	1	14.8			3,015	4.9	15.2	18.1	4.7	1.5
DF	16	LIVE	CUT	2	15.8	103	131	6,031	4.9	26.7	36.3	9.1	3.0
DF	20	LIVE	LEA	2	20.0	106	136	5,889	3.2	16.6	36.3	8.1	2.9
DF	22	LIVE	LEA	1	22.0	111	142	3,156	7.0	6.9	18.1	3.9	1.6
WH	12	LIVE	CUT	2	11.9	109	109	6,041	0.0	47.0	36.3	10.5	3.0
WH	14	LIVE	CUT	3	14.6	118	118	10,484	0.5	47.1	54.4	14.3	5.2
WH	16	LIVE	CUT	3	15.9	108	125	10,721	0.0	39.7	54.4	13.7	5.4
WH	20	LIVE	CUT	3	19.2	117	131	10,815	1.9	27.0	54.4	12.4	5.4
WH	20	LIVE	LEA	1	20.8	111	140	3,460	14.0	7.7	18.1	4.0	1.7

Unit Log Grade Summary: Unit 4 - GAPS

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	3 SAW	9.2	40	8,305	5.3	33.9	4.2
DF	LIVE	4 SAW	5.2	18	741	0.0	2.2	0.4
WH	LIVE	2 SAW	14.1	40	6,178	4.1	25.0	3.1
WH	LIVE	3 SAW	9.2	40	27,727	0.0	110.2	13.9
WH	LIVE	4 SAW	5.5	30	3,460	0.0	15.4	1.7
WH	LIVE	UTILITY	5.0	18	696	0.0	2.4	0.3

Unit Log Sort Summary: Unit 4 - GAPS

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	Domestic	6.3	29	3,392	4.4	12.8	1.7
DF	LIVE	HQ-B	10.9	40	5,654	5.2	23.3	2.8
WH	LIVE	Domestic	8.4	37	37,365	0.7	150.6	18.7
WH	LIVE	Pulp	5.0	18	696	0.0	2.4	0.3

Unit Log Grade x Diameter Bin Summary: Unit 4 - GAPS

Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.2	18	741	0.0	2.2	0.4
DF	5 - 7	LIVE	3 SAW	7.4	40	2,651	5.6	10.6	1.3
DF	8 - 11	LIVE	3 SAW	10.9	40	5,654	5.2	23.3	2.8
WH	5 - 7	LIVE	UTILITY	5.0	18	696	0.0	2.4	0.3
WH	5 - 7	LIVE	4 SAW	5.5	30	3,460	0.0	15.4	1.7
WH	5 - 7	LIVE	3 SAW	7.4	39	6,656	0.0	29.7	3.3
WH	8 - 11	LIVE	3 SAW	10.3	40	21,071	0.0	80.6	10.5
WH	12 - 15	LIVE	2 SAW	14.1	40	6,178	4.1	25.0	3.1

Cruise Unit Report Unit 8 - GAPS

Unit Sale Notice Volume (MBF): Unit 8 - GAPS

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	15.3			8	3	4	1	0
DF	15.1			4	1	3	1	
ALL	15.2			12	4	7	1	0

Unit Cruise Design: Unit 8 - GAPS

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	0.3		2	2	0

Unit Cruise Summary: Unit 8 - GAPS

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	6	10	5.0	0
DF	4	6	3.0	0
ALL	10	16	8.0	0

Unit Cruise Statistics: Unit 8 - GAPS

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	272.2	28.3	20.0	159.8	15.6	6.4	43,508	32.3	21.0
DF	163.3	0.0	0.0	127.8	22.7	11.4	20,878	22.7	11.4
ALL	435.5	17.7	12.5	147.8	20.3	6.4	64,386	26.9	14.1

Unit Summary: Unit 8 - GAPS

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	15.1	95	100	14,459	13,919	3.7	87.6	108.9	28.0	4.2
DF	LIVE	LEA	2	ALL	22.9	104	134	7,230	6,959	3.7	19.0	54.4	11.4	2.1
WH	LIVE	CUT	6	ALL	15.3	101	107	26,269	26,105	0.6	127.9	163.3	41.8	7.8
WH	LIVE	LEA	4	ALL	20.7	101	128	17,513	17,403	0.6	46.6	108.9	23.9	5.2
ALL	LIVE	CUT	10	ALL	15.2	99	104	40,728	40,023	1.7	215.5	272.2	69.8	12.0

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	LEA	6	ALL	21.4	102	130	24,742	24,362	1.5	65.6	163.3	35.3	7.3
ALL	ALL	ALL	16	ALL	16.9	99	110	65,470	64,386	1.7	281.1	435.5	105.1	19.3

Unit Stand Table: Unit 8 - GAPS

Sp	D	Status	Rx	N	DBH	BL	THT	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	14	LIVE	CUT	2	13.9	92	92	6,542	1.4	51.3	54.4	14.6	2.0
DF	16	LIVE	CUT	1	15.6	98	98	2,769	9.4	20.5	27.2	6.9	0.8
DF	18	LIVE	CUT	1	17.6	99	127	4,607	3.4	16.1	27.2	6.5	1.4
DF	22	LIVE	LEA	1	21.2	99	127	3,153	1.4	11.1	27.2	5.9	0.9
DF	26	LIVE	LEA	1	25.1	112	144	3,806	0.0	7.9	27.2	5.4	1.1
WH	12	LIVE	CUT	1	11.6	92	92	3,449	0.0	37.1	27.2	8.0	1.0
WH	14	LIVE	CUT	2	14.6	109	109	8,705	0.0	46.5	54.4	14.2	2.6
WH	18	LIVE	CUT	1	17.0	90	113	4,525	0.0	17.3	27.2	6.6	1.4
WH	20	LIVE	CUT	2	19.1	110	122	9,426	1.7	27.4	54.4	12.5	2.8
WH	20	LIVE	LEA	2	20.2	101	128	8,201	3.4	24.4	54.4	12.1	2.5
WH	22	LIVE	LEA	2	21.1	101	128	9,202	4.9	22.4	54.4	11.9	2.8

Unit Log Grade Summary: Unit 8 - GAPS

Sp	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	12.2	40	2,996	5.1	6.9	0.9
DF	LIVE	3 SAW	9.0	37	8,465	1.7	21.3	2.5
DF	LIVE	4 SAW	5.3	29	2,457	8.8	6.9	0.7
WH	LIVE	2 SAW	13.2	38	9,341	1.7	23.2	2.8
WH	LIVE	3 SAW	8.6	38	13,937	0.0	37.9	4.2
WH	LIVE	4 SAW	5.3	25	2,274	0.0	6.1	0.7
WH	LIVE	UTILITY	5.0	30	553	0.0	1.7	0.2

Unit Log Sort Summary: Unit 8 - GAPS

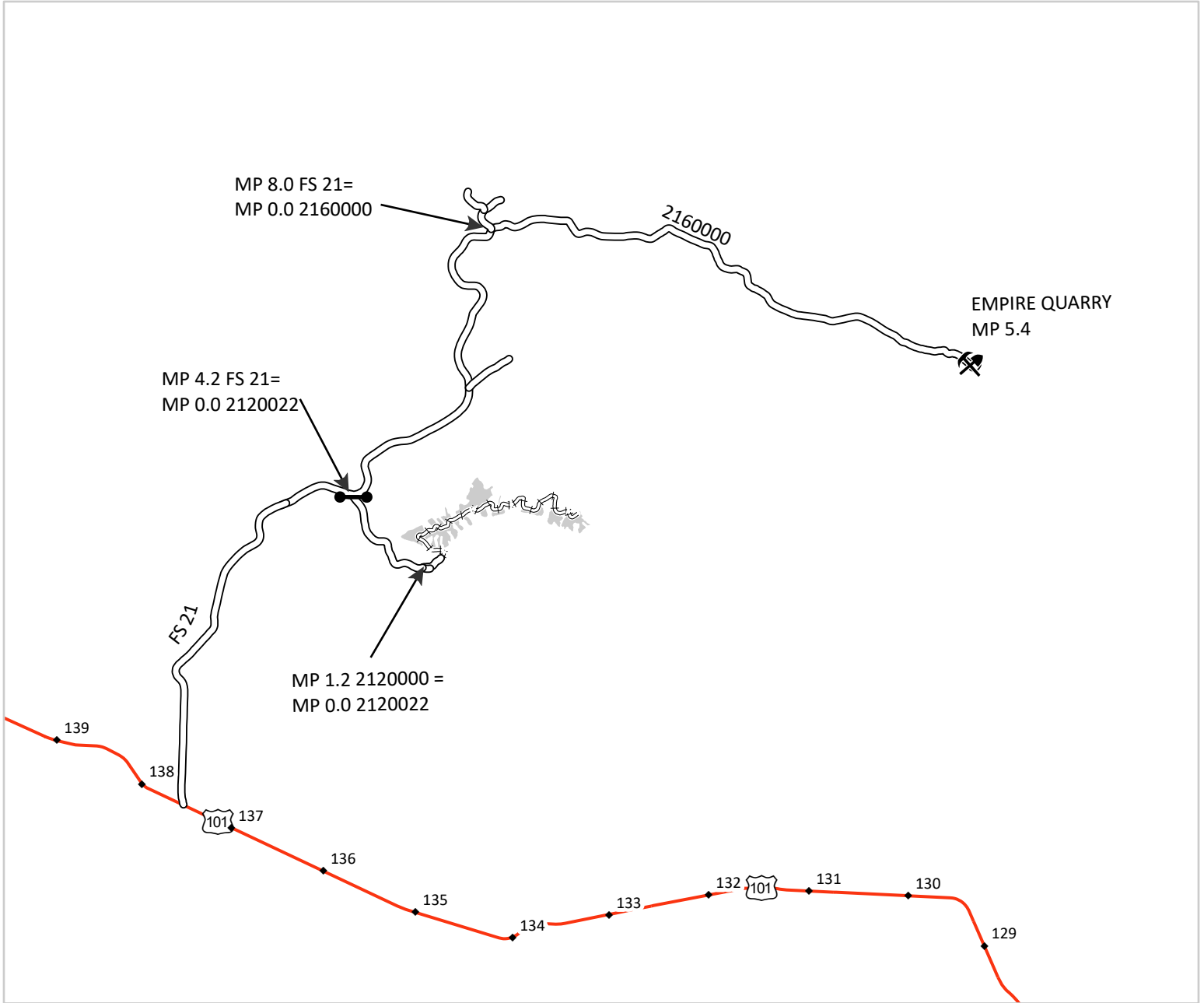
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DF	LIVE	Domestic	7.0	32	9,649	3.8	25.1	2.9
DF	LIVE	HQ-B	10.4	38	4,269	3.6	9.9	1.3
WH	LIVE	Domestic	8.3	34	25,552	0.6	67.2	7.7
WH	LIVE	Pulp	5.0	30	553	0.0	1.7	0.2









Unit Log Grade x Diameter Bin Summary: Unit 8 - GAPS

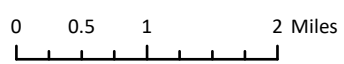
Sp	Bin	Status	Grade	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	4 SAW	5.3	29	2,457	8.8	6.9	0.7
DF	8 - 11	LIVE	3 SAW	9.0	37	8,465	1.7	21.3	2.5
DF	12 - 15	LIVE	2 SAW	12.2	40	2,996	5.1	6.9	0.9
WH	5 - 7	LIVE	UTILITY	5.0	30	553	0.0	1.7	0.2
WH	5 - 7	LIVE	4 SAW	5.3	25	2,274	0.0	6.1	0.7
WH	5 - 7	LIVE	3 SAW	7.0	40	4,166	0.0	11.3	1.2
WH	8 - 11	LIVE	3 SAW	9.6	37	9,771	0.0	26.7	2.9
WH	12 - 15	LIVE	2 SAW	13.2	38	9,341	1.7	23.2	2.8

ROAD PLAN MAP

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-  Empire Quarry
-  Gate, Existing
-  Existing Road
-  WSDOT - Milepost Markers
-  Required Reconstruction
-  Highways
-  Hobbit Sale Area
-  U.S.



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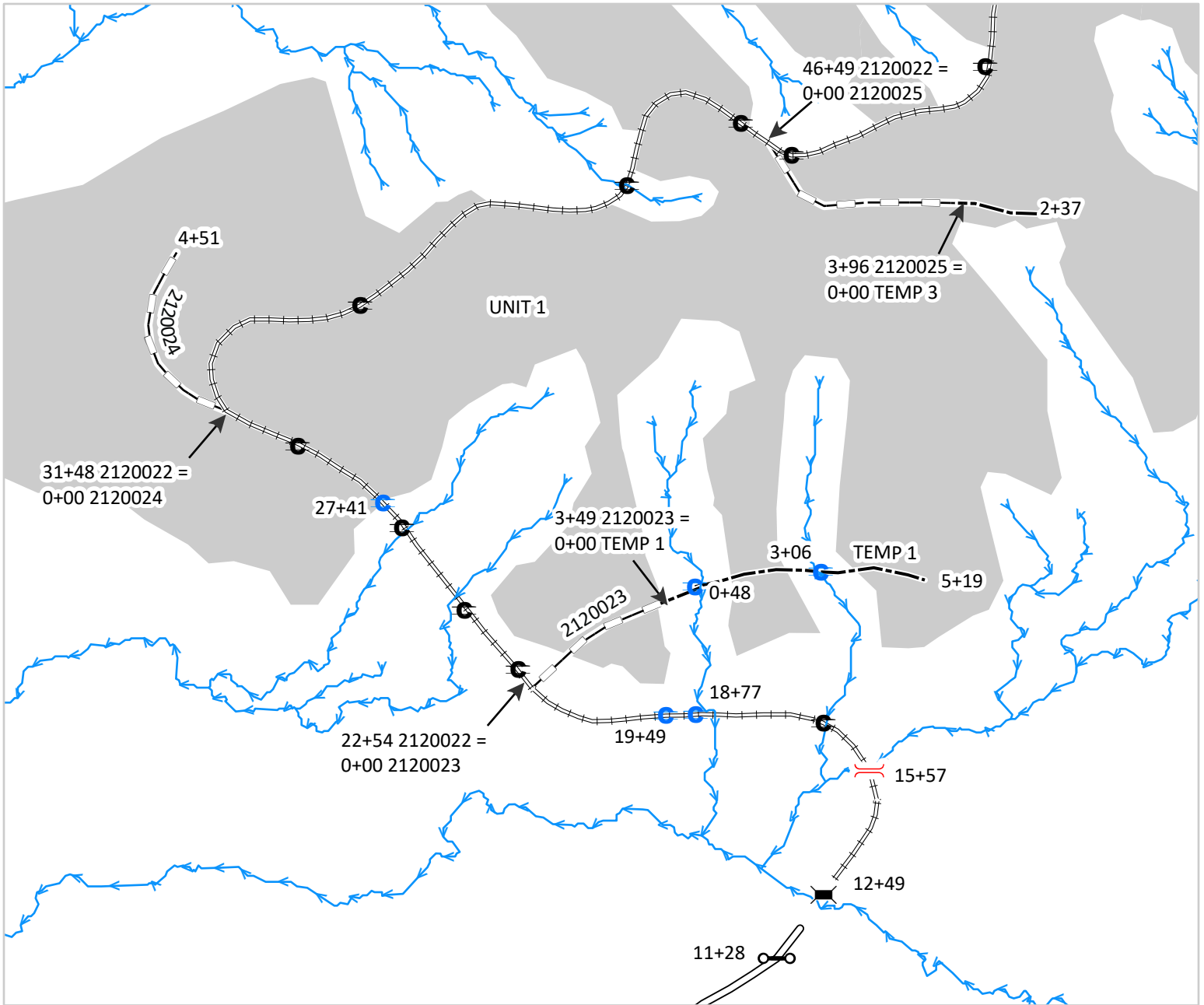
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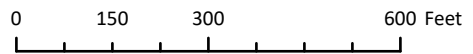
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ROAD PLAN MAP

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- Gate, Temporary
- Existing Bridge
- Log Stringer Bridge, Proposed
- Culvert, Proposed
- Culvert, Existing
- Streams
- Existing Road
- Optional Construction
- Required Reconstruction
- Optional Reconstruction
- Hobbit Sale Area



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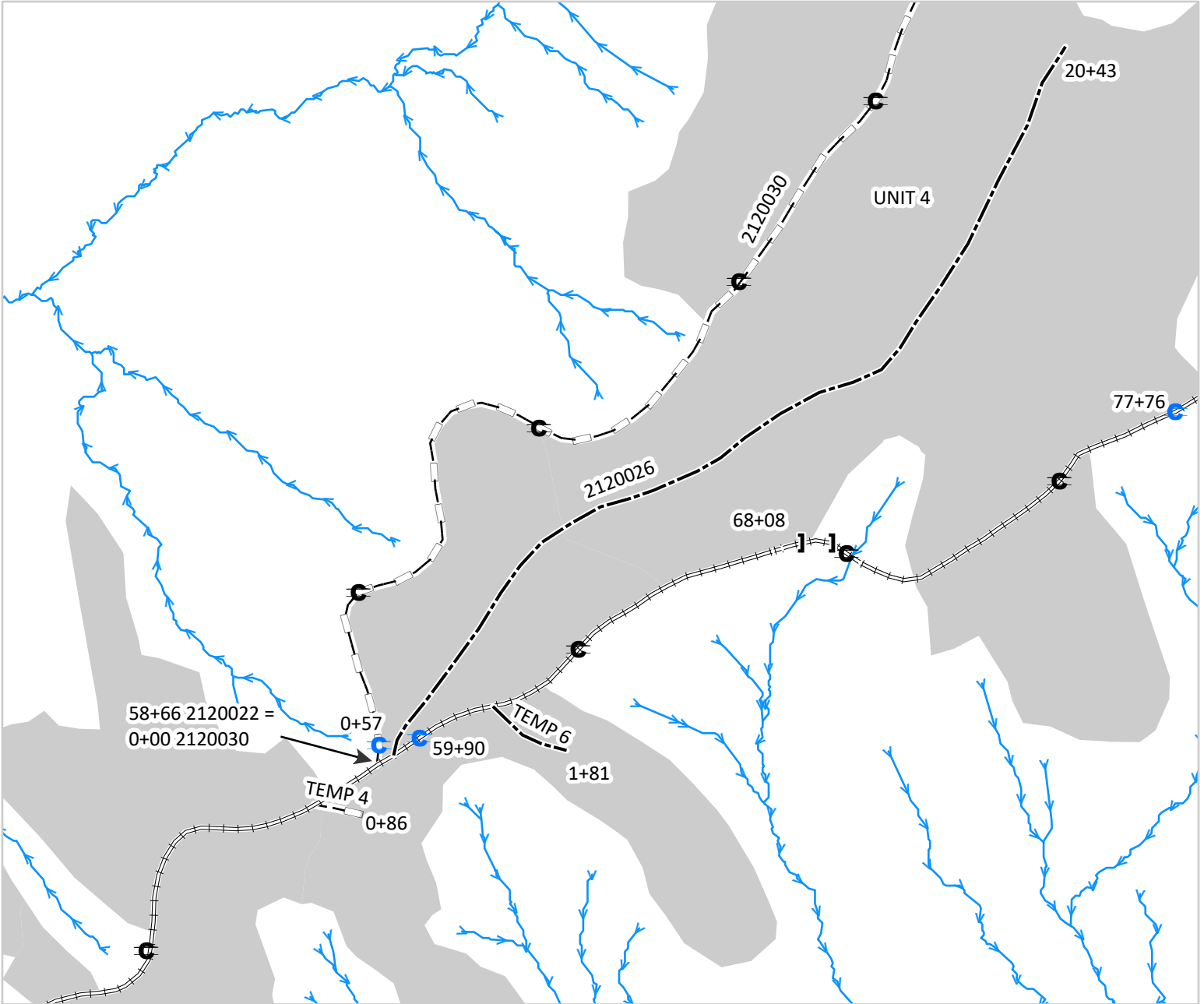
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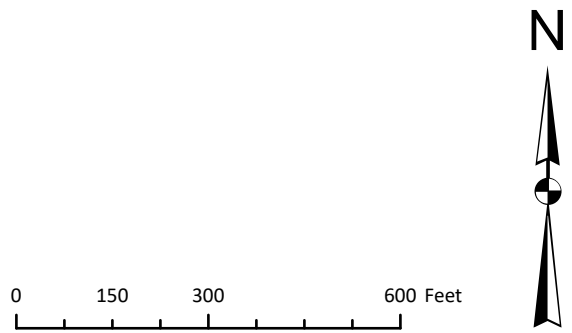
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ROAD PLAN MAP

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- J** End Haul
- C** Culvert, Proposed
- C** Culvert, Existing
- Streams
- Optional Construction
- Required Reconstruction
- Optional Reconstruction
- Hobbit Sale Area



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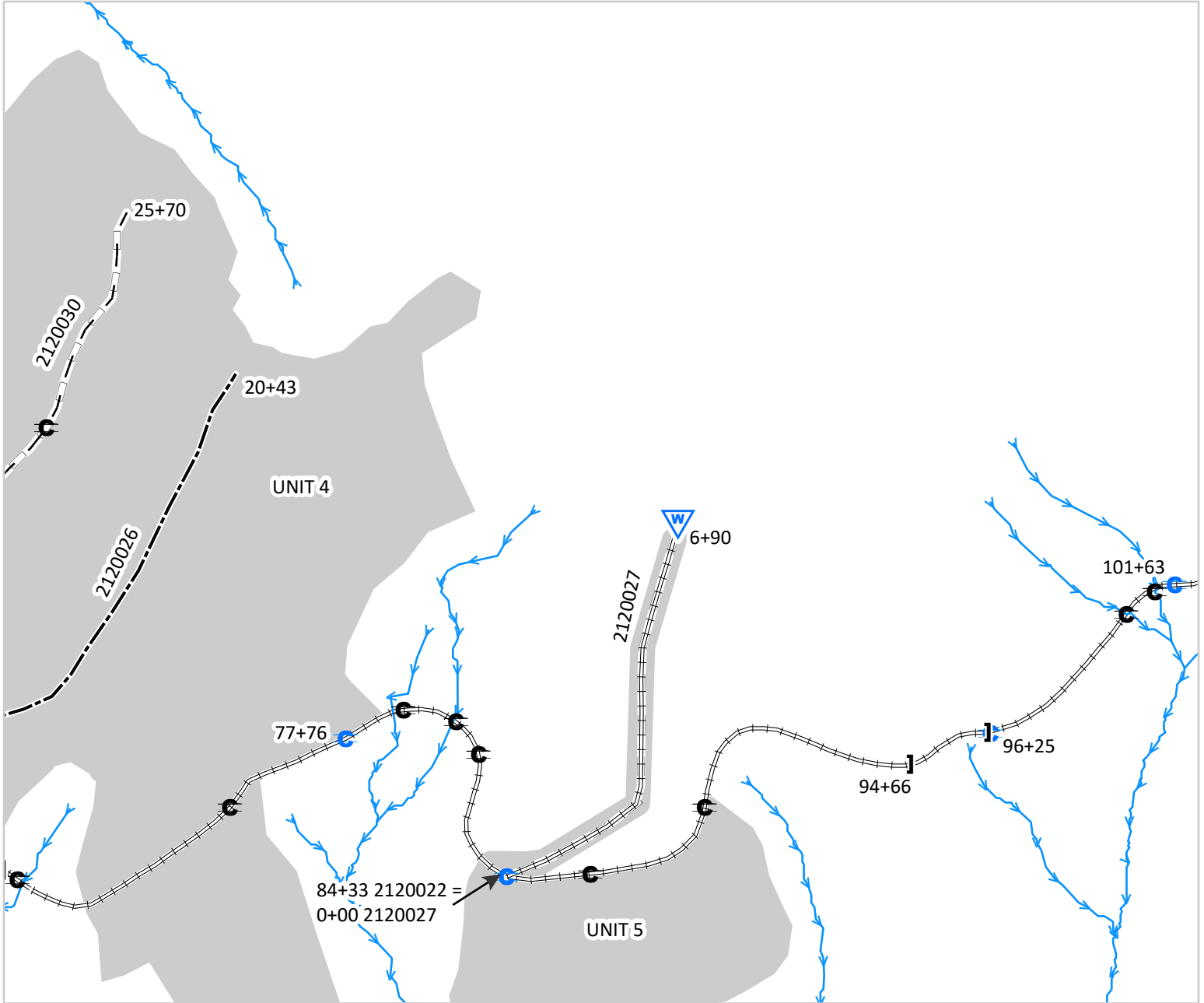
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



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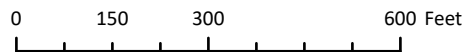
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ROAD PLAN MAP

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-  Waste Area
-  Streams
-  End Haul
-  Optional Construction
-  Culvert, Proposed
-  Required Reconstruction
-  Culvert, Existing
-  Optional Reconstruction
-  Hobbit Sale Area



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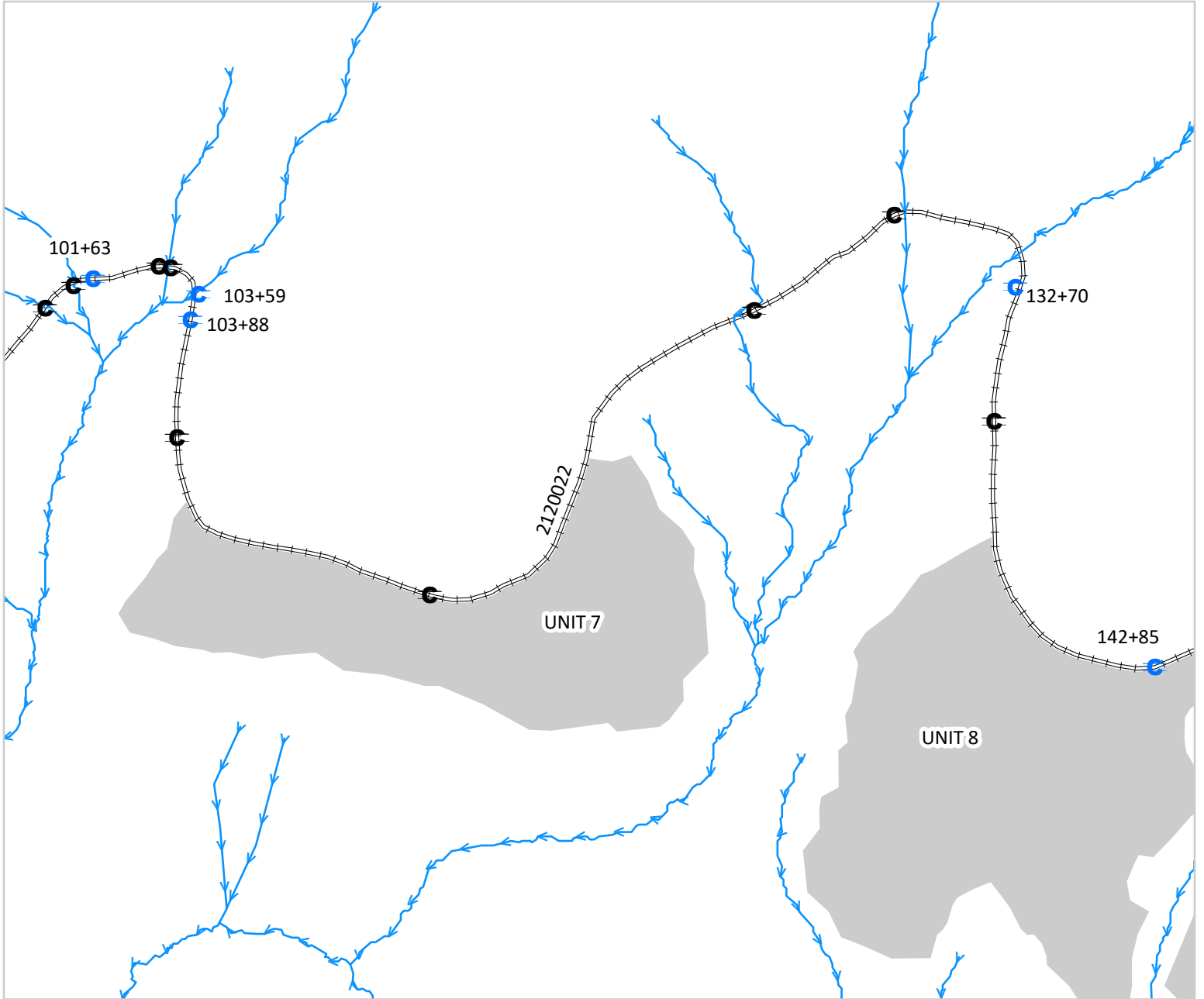
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
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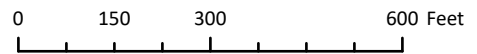
 Culvert, Proposed

 Culvert, Existing

 Streams

 Required Reconstruction

 Hobbit Sale Area



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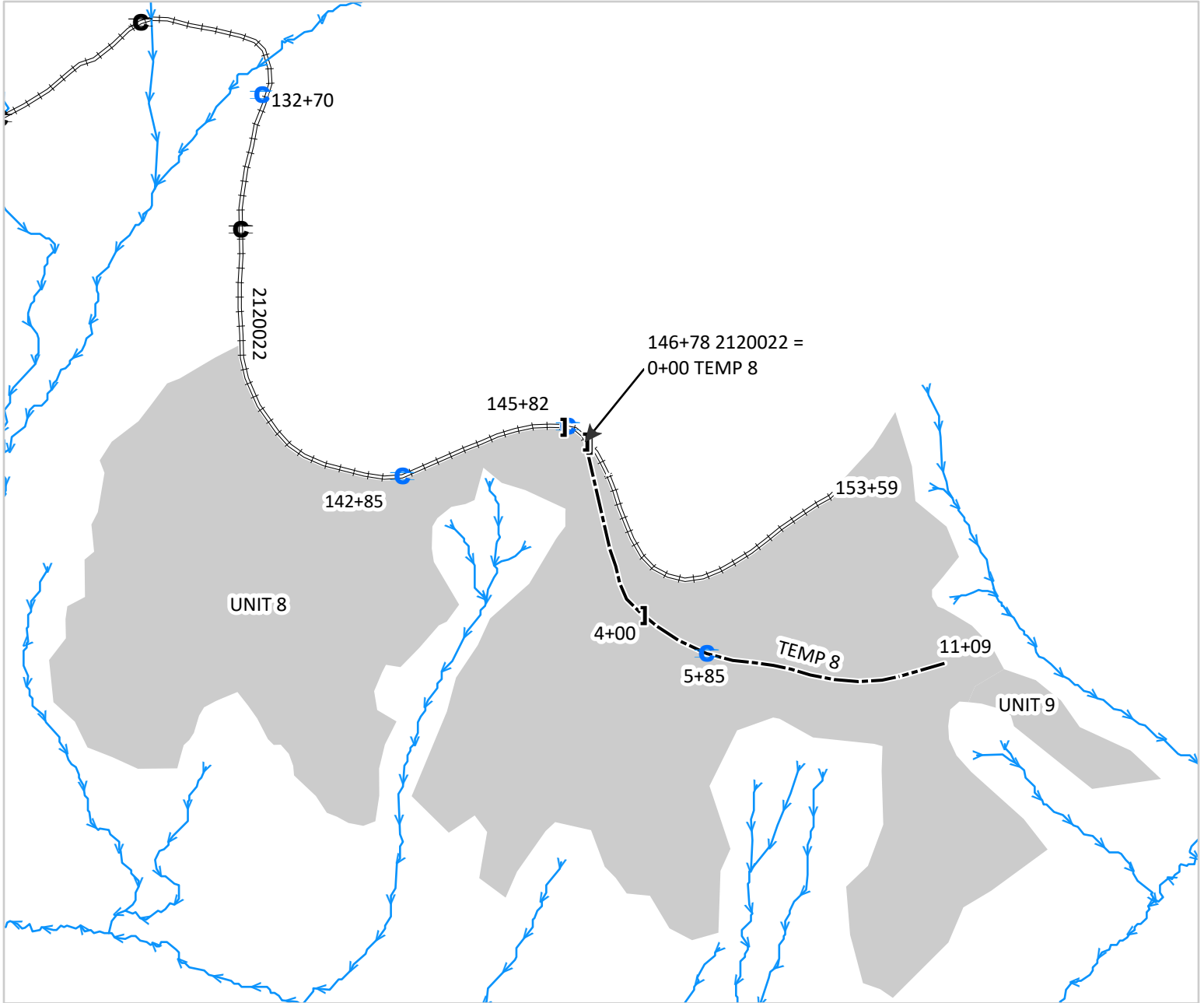
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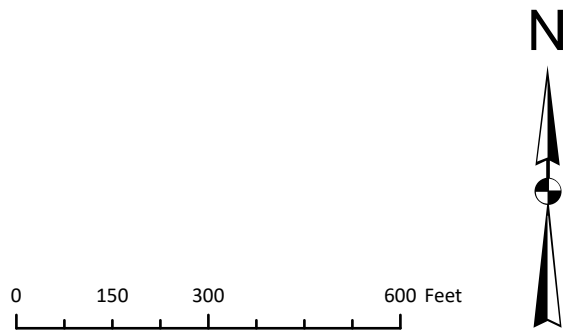
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ROAD PLAN MAP

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- End Haul
- Culvert, Proposed
- Culvert, Existing
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HOBBIT TIMBER SALE ROAD PLAN
GRAYS HARBOR/JEFFERSON COUNTY

AGREEMENT NO.: 36-106683

STAFF ENGINEER: SCOTT HANNA

DRAWN & COMPILED BY: SCOTT HANNA

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>	<u>Maintenance Class</u>
2120022	12+49 to 153+59	Reconstruction	1
2120027	0+00 to 6+90	Reconstruction	1

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>	<u>Maintenance Class</u>
2120023	0+00 to 3+49	Reconstruction	1
TEMP 1	0+00 to 5+19	Construction	Temporary
2120024	0+00 to 4+51	Reconstruction	1
2120025	0+00 to 3+96	Reconstruction	1
TEMP 3	0+00 to 2+37	Construction	Temporary
TEMP 4	0+00 to 0+86	Reconstruction	1
2120030	0+00 to 25+70	Reconstruction	1
2120026	0+00 to 20+43	Construction	1
TEMP 6	0+00 to 1+81	Construction	Temporary
TEMP 8	0+00 to 11+09	Construction	Temporary

0-4 TEMPORARY CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
TEMP 1	0+00 to 5+19	Clearing and grubbing; waste and debris disposal; excavation and embankment to sub-grade; full-bench excavation and end haul material; acquisition and installation of drainage structures; shaping and compaction of subgrade; turnout, turnaround and landing construction; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
TEMP 3	0+00 to 2+37	
2120026	0+00 to 20+43	
TEMP 6	0+00 to 1+81	
TEMP 8	0+00 to 11+09	
TOTAL	40.89 stations	

0-5 RECONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
2120022	12+49 to 153+59	Clearing and grubbing; waste and debris disposal; excavation and end haul material; acquisition and installation of drainage structures; construction of log stringer bridge; clean inlets and outlets of existing drainage structures; subgrade widening with centerline offsets and end haul material; grade, shape and compact subgrade; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
2120023	0+00 to 3+49	
2120024	0+00 to 4+51	
2120025	0+00 to 3+96	
TEMP 4	0+00 to 0+86	
2120030	0+00 to 25+70	
2120027	0+00 to 6+90	
TOTAL	186.52 stations	Note: Temporary gate shall be installed near station 11+28 of 2120022 road to prevent public access in accordance with Clause 7-76 TEMPORARY GATE INSTALLATION.

0-7 POST-HAUL MAINTENANCE

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

0-8 CLOSURE

This project includes road closure listed in Clause 9-15 ROAD CLOSURE.

0-9 DECOMMISSIONING

This project includes decommissioning listed in Clause 9-20 ROAD DECOMMISSIONING.

0-12 DEVELOP ROCK SOURCE

Purchaser may develop an existing rock source. Rock source development will involve clearing, stripping, end haul and waste disposal, drilling, shooting and processing rock. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STRUCTURES

Purchaser shall construct a log stringer bridge. Requirements for this structure is listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

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

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-6 ORDER OF PRECEDENCE

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

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

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

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

1-15 ROAD MARKING

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

- Construction: Orange ribbon, orange paint and aluminum tags for reference points, blue paint for culvert locations;
- Reconstruction: Orange paint on trees for reference; blue paint for culverts locations.

1-16 CONSTRUCTION STAKES SET BY STATE

Purchaser shall perform work on the following road(s) in accordance with the construction stakes, reference points, and benchmarks set in the field for grade and alignment.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
2120022	94+66 to 96+25	SEE 2120022 ROAD REPAIR DETAIL

1-18 REFERENCE POINT DAMAGE

Purchaser shall reset reference points (RPs) and benchmarks (BMs) 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 or BMs until Purchaser resets all moved or damaged RPs and BMs.

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

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

- Subgrade construction and reconstruction, drainage installation and compaction
- Rock application with compaction
- Pit development and closure
- Log stringer bridge construction/removal
- Decommissioning

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>Activity</u>	<u>Closure Period</u>	<u>Comment</u>
Construction	November 1 st to	
Reconstruction	May 31 st	
In-stream work	August 16 th to July 31 st	If channel is dry, then in-stream work can occur during the construction/reconstruction period, as approved, in writing, by Contract Administrator

1-26 OPERATING DURING CLOSURE PERIOD

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

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

On the following road(s), any road work, right-of-way timber falling and yarding, rock pit operation, or heavy equipment operation is only allowed between two hours after official sunrise until two before sunset from April 1st through September 23rd. This restriction does not apply to hauling timber, rock, or equipment.

<u>Road</u>	<u>Stations</u>
2120022	12+49 to 58+66
2120022	132+70 to 153+59
TEMP 8	0+00 to 11+09

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- 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. If surface or base stability problems persist, Purchaser shall cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

1-32 BRIDGE OR ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on bridge or asphalt surfaces, Contractor shall immediately cease all road construction and hauling operations. Contractor shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated by the USFS Olympic Bridge Engineer or their designee and/or Registered Professional Structural Engineer as required by Contract Administrator for any damages caused by equipment. Any damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

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

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain all roads in a condition that will allow the passage of light administrative vehicles.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-5 CLEARING

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

3-8 PROHIBITED DECKING AREAS

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

- Within the grubbing limits.
- Within 25 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- On uphill side of road prism.
- Against standing trees unless approved by the Contract Administrator.

3-9 RIPARIAN MANAGEMENT ZONE (RMZ) WOOD PLACEMENT

In addition to the clearing, grubbing, and other woody debris requirements, these requirements for RMZ wood placement apply at the following stream crossing(s):

<u>Road</u>	<u>Station</u>
2120022	15+57

- A. Logs: One log from the largest cut conifer class shall be placed in or along the stream in a manner that will not restrict or impede fish passage on the downstream side of the crossing as approved by Contract Administrator. If a conifer log is unavailable from onsite clearing operations, on site hardwood species may be substituted. The log shall have a minimum length of twice the width of the ordinary high water mark (OHWM) of the stream. Logs shall be placed a minimum of 30 feet downstream or twice the width of the ordinary high water mark, whichever is greater, of the culvert or bridge.
- B. Rootwads: Three root wads/uprooted stumps, if present on site, shall be placed in or along the stream channel on the downstream side of the crossing. All other grubbed stumps, when available from within the RMZ inner-zone (approximately 50 feet on either side of the stream) shall be placed in a linear fashion at least 50 feet from the road in the middle and outer zone of the RMZ.
- C. Source: Logs and root wads for RMZ wood placement shall be obtained from on site, as available. Purchaser is not required to supply or import logs or root wads from off the project site.

3-10 GRUBBING

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Purchaser shall remove stumps using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator.

3-12 STUMP PLACEMENT

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

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

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

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, and waste area limits as shown on the TYPICAL SECTION SHEET.

3-21 DISPOSAL COMPLETION

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

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below or at areas approved in writing by the Contract Administrator.

<u>Road</u>	<u>Disposal Location</u>	<u>Requirements</u>
2120027	6+90	Organic debris larger than one cubic foot in volume shall be separated from waste material as defined under Clause 4-35 WASTE MATERIAL DEFINITION. Contractor shall pile organic debris no closer than 40 feet from standing timber and no higher than 20 feet. Piles must be free of rock and soil.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 25 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- On uphill side of road prism.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside of the clearing limits or in natural openings on the downhill side of the road as directed by the Contract Administrator. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to written approval by the Contract Administrator.

3-31 PILING

Purchaser shall pile organic debris no closer than 40 feet from standing timber and no higher than 20 feet in areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS. Piles must be free of rock and soil.

3-32 END HAULING ORGANIC DEBRIS

On the following road(s), Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS or to a waste area located by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
2120022	68+08 to 69+85
2120022	94+66 to 96+25
2120022	145+82 to 147+32
TEMP 8	0+00 to 4+00

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. In addition, the following actions must be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 20 percent favorable and 15 percent adverse.
- Minimum curve radius is 50 feet at centerline.
- Maximum grade change for sag vertical curves is 12% in 100 feet.
- Maximum grade change for crest vertical curves is 10% in 100 feet.

4-5 CUT SLOPE RATIO

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth	1:1	100
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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

4-10 WIDEN THE EXISTING SUBGRADE

Purchaser shall widen the subgrade and fill slopes to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Purchaser shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches.

4-12 FULL BENCH CONSTRUCTION

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

<u>Road</u>	<u>Full Bench Location</u>	<u>Comments</u>
2120022	68+08 to 69+85	
2120022	94+66 to 96+25	SEE 2120022 ROAD REPAIR DETAIL
2120022	145+82 to 147+32	
TEMP 8	0+00 to 4+00	

4-21 TURNOUTS

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

4-22 TURNAROUNDS

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

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

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

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

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

4-37 WASTE AREA LOCATION

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

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>
2120027	6+90	Waste material shall be piled against the embankment face, shaped to conform to the natural surrounding ground and compacted.

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 45%.
- On uphill side of road prism.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

4-48 NATIVE MATERIAL

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 4 inches in any dimension.

4-55 ROAD SHAPING

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

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

4-63 EXISTING SURFACE COMPACTION

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

SECTION 5 – DRAINAGE

5-5 CULVERTS

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

5-6 CULVERT TYPE

Purchaser may install culverts made of steel or plastic in accordance with Clauses 10-15 through 10-24.

5-7 USED CULVERT MATERIAL

Purchaser may install used culverts. Purchaser 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.

5-8 TEMPORARY STREAM CULVERT INSTALLATION

Purchaser shall install temporary culverts as shown in the CULVERT LIST. Temporary stream culverts must be located in the natural channel of the stream. Temporary culverts must be removed within 15 days following completion of timber harvesting and site cleanup in the same season road was constructed.

<u>Road</u>	<u>Stations</u>
TEMP 1	0+48
TEMP 1	3+06

5-12 UNUSED MATERIALS STATE PROPERTY

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

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" or the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain and stream crossing culverts, except for temporary culverts. 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 ROCK LIST. Rock used for energy dissipaters must be PIT RUN rock. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Rock must be set in place by machine. Placement must with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. PIT RUN rock shall meet the specifications in Clause 6-41 PIT RUN ROCK.

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 20 feet must be staked on both sides at a maximum interval of 15 feet with 6-foot heavy-duty steel posts and fastened securely to the posts in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-25 CATCH BASINS

Purchaser shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 2 feet wide and 4 feet long with slopes consistent with Clause 4-5 CUT SLOPE RATIO.

5-26 HEADWALLS FOR CROSS DRAIN AND STREAM CROSSING CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain and stream crossing culverts, except for temporary culverts. 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. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rock type shall meet the specifications in Clause 6-41 PIT RUN ROCK.

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by October 1. Purchaser shall construct waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 20 feet between waterbars or between natural drainage paths, and with a maximum spacing of 150 feet.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON FEDERAL LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source(s) on federal land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source(s), a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>
EMPIRE QUARRY	S22, T24N, R10W, W.M.

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the ROCK LIST shall be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. Commercial rock sources must be WSDOT certified and officially weed-free.

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written EMPIRE QUARRY DEVELOPMENT PLAN prepared by the state and included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the EMPIRE QUARRY DEVELOPMENT PLAN, and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before starting any operations in the rock source.

<u>Source</u>	<u>Rock Type</u>
EMPIRE QUARRY	6-INCH JAW RUN, PIT RUN

6-23 ROCK GRADATION TYPES

Purchaser shall manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

6-28	1 ¼-INCH MINUS CRUSHED ROCK	
	% Passing 1 ¼" square sieve	100%
	% Passing 5/8" square sieve	50 - 80%
	% Passing U.S. #4 sieve	30 - 50%
	% Passing U.S. #40 sieve	3 - 18%
	% Passing U.S. #200 sieve	5%

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

6-39	6-INCH JAW RUN ROCK	
	% Passing 6" in one dimension	100%
	% Passing 2 ½" square sieve	25 - 60%
	% Passing U.S. #200 sieve	8% maximum

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

6-41 PIT RUN ROCK
 No more than 30 percent of the rock may be smaller than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Pit Run rock may not contain organic debris, dirt, and trash.

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH
 Measurement of specified rock depths, are defined as the compacted depth(s) using the compaction methods required in this road plan. Estimated quantities specified in the ROCK LIST are loose yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction, unless otherwise stated in Clause 6-75 OPTIONAL ROCK EXCEPTION.

6-57 ROCK MEASUREMENT BY TRUCK SCALE
 Measurement of the 1¼-INCH MINUS CRUSHED rock is on scaled truck weight. Purchaser shall provide scaled weight using a commercial scale. Purchaser shall provide the Contract Administrator with all scale sheets.

6-70 APPROVAL BEFORE ROCK APPLICATION
 Purchaser shall obtain written approval from the Contract Administrator for subgrade construction before rock application.

6-71 ROCK APPLICATION

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

6-72 ROCK APPLICATION AFTER HAULING

On the following road(s), upon completion of all hauling operations, Purchaser shall apply 1¼-INCH MINUS CRUSHED rock in accordance with the quantities shown on the ROCK LIST.

<u>Road</u>	<u>Stations</u>	<u>Comment</u>
2120000	0+00 to 61+85	The Contract Administrator will direct locations for rock that is to be applied as spot patching.

6-73 ROCK FOR WIDENED PORTIONS

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

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, Purchaser may provide and place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

If less rock is applied, Purchaser shall submit a written plan, for approval, describing how these roads will be constructed or reconstructed, used, maintained, and treated post-haul. Purchaser shall meet post-haul specifications in Section 9 POST-HAUL ROAD WORK, the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, or other conditions of the approved plan.

<u>Road</u>	<u>Stations</u>
2120022	12+49 to 153+59
2120023	0+00 to 3+49
TEMP 1	0+00 to 5+19
2120024	0+00 to 4+51
2120025	0+00 to 3+96
TEMP 3	0+00 to 2+37
TEMP 4	0+00 to 0+86
2120030	0+00 to 25+70
2120026	0+00 to 20+43
TEMP 6	0+00 to 1+81
2120027	0+00 to 6+90
TEMP 8	0+00 to 11+09

SECTION 7 – STRUCTURES

7-1 SIGN INSTALLATION

Purchaser shall install, and maintain the following road signs. Signs must comply with the Federal Highway Administration’s Manual on Uniform Traffic Control Devices (MUTCD).

<u>Road</u>	<u>Station</u>	<u>Sign</u>
FS 21	Location as approved by Contract Administrator	ROAD ACTIVITY AHEAD
2120000		
2160000		

7-2 TRAFFIC CONTROL

On the following road(s), Purchaser shall notify the Contract Administrator minimum of 14 days before closure of road(s). The period of closure shall be limited to a single closure, not to exceed 30 consecutive calendar days. The road shall be considered open to traffic when the project site is safe and passable to highway vehicles.

Purchaser shall provide all signs and barricades necessary for the protection of traffic. All costs associated with traffic control shall be the responsibility of the Purchaser. All construction warning signs shall conform to the standards established in the latest edition of the MUTCD standards except as modified here.

<u>Road</u>	<u>Comment</u>
2120022	Closure for road activities
2160000	Closure for pit operations

7-4 STREAM PROTECTION

Purchaser shall maintain all equipment used for installation or removal of structures free of external petroleum-based products or leaks. Equipment shall be monitor daily for leaks. Equipment maintenance work must be located in an upland area or away from nearby waters as approved by Contract Administrator.

7-5 STRUCTURE DEBRIS

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

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, STREAM DIVERSION PROCEDURE, and LOG STRINGER DETAIL.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

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

7-9 STRUCTURE EXCAVATION

On the following road(s), Purchaser shall remove all materials required to install the structure as shown on the LOG STRINGER DETAIL and to the specifications included in this road plan. Purchaser is required to remove all vegetation, culverts and objects not part of the natural soils within the limits of the new embankment or as specified on the LOG STRINGER DETAIL.

<u>Road</u>	<u>Stations</u>
2120022	15+57

7-50 TEMPORARY LOG STRINGER BRIDGE CONSTRUCTION

Purchaser shall construct a temporary bridge in accordance with this plan. Refer to LOG STRINGER BRIDGE DETAIL. Timber for the manufacture of stringers and cribbing is available from within the sale area. Timber to be used for stringers and cribbing were pre-selected and marked with red paint. Purchaser shall obtain written approval from the Contract Administrator for use of log stringers from any other trees not pre-selected prior to cutting. Temporary bridge must be removed prior to contract termination as directed by Contract Administrator.

7-57 CULVERT SHAPE CONTROL

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

7-76 TEMPORARY GATE INSTALLATION

Purchaser shall install the listed temporary gate(s). Gate installations must be completed prior to construction of LOG STRINGER BRIDGE. Purchaser shall keep gates closed and locked except during periods of haul. Temporary gate must be removed prior to contract termination as directed by Contract Administrator.

<u>Road</u>	<u>Station</u>	<u>Type</u>
2120022	11+28	As approved by CA.

7-78 GATE SUPPLIED BY PURCHASER

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

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Purchaser shall install sediment traps, silt fences, settling ponds or other methods as directed and approved by the Contract Administrator.

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 1-inch layer of certified weed-free straw to all exposed soils within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-15 REVEGETATION

Purchaser shall spread seed on all exposed soils within 50 feet of a stream or wetland resulting from road work activities. Cover all exposed soils using manual dispersal methods. Other methods of covering must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

The US Forest Service shall provide the grass seed.

8-17 REVEGETATION TIMING

Purchaser shall revegetate during the first available opportunity after road work is completed within 50 feet of a stream or wetland. Soils may not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator.

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover for seed on all exposed soils within 50 feet of streams or wetlands if revegetation occurs between July 1 and March 31. The protective cover may consist of certified weed-free straw. Application of straw shall provide coverage for 85% of exposed soils. Approximately 15% of the surface area shall be visible through the straw after application. Seed must be covered before the first anticipated storm event. Seed may not be allowed to sit exposed during any rain event.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture on all exposed soil at a rate of 2 pounds per acre of exposed soil. The application rate will be determined by US Forest Service botanist specialist based on the type of seed mixed provided.

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades prior to contract termination in accordance with the EARTHEN BARRICADE DETAIL.

<u>Road</u>	<u>Stations</u>
2120022	15+00

9-2 CULVERT REMOVAL FROM LIVE STREAM

On the following road(s), Purchaser shall remove existing culverts from live streams and leave the resulting channel open with excavation slope and excavated channel width as specified. Culvert removal from live streams must be in accordance with the Forest Practices Hydraulic Permit (FPHP) and STREAM DIVERSION PROCEDURE.

<u>Road</u>	<u>Stations</u>	<u>Excavated Channel Width</u>	<u>Slope Ratio</u>	<u>Comment</u>
TEMP 1	0+48	6	2(H):1(V)	Removal shall occur in the same season road was originally constructed.
TEMP 1	3+06	6	2(H):1(V)	

9-3 CULVERT MATERIAL REMOVED FROM FEDERAL LAND

Culverts removed from roads become the property of the Purchaser and must be removed from federal land.

9-5 POST-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
2120000	0+00 to 61+85	Grade, shape and compact existing surface; acquisition, application and compaction of spot patch rock in accordance with ROCK LIST.

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

9-15 ROAD CLOSURE

Purchaser shall close the following roads before the termination of this contract.

<u>Road</u>	<u>Stations</u>
2120023	0+00 to 3+49
2120024	0+00 to 4+51
212025	0+00 to 3+96
TEMP 4	0+00 to 0+86
2120026	0+00 to 20+43
2120027	0+00 to 6+90

9-16 CLOSURE

At a minimum, closure consists of:

- Maintain roads according to the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.
- Construct non-drivable waterbars in accordance with the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing of 150 feet.

9-20 ROAD DECOMMISSIONING

Purchaser shall decommission the following roads before the termination of this contract.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
TEMP 1	0+00 to 5+19	LEVEL 1
TEMP 3	0+00 to 2+37	LEVEL 1
TEMP 6	0+00 to 1+81	LEVEL 1
TEMP 8	0+00 to 11+09	LEVEL 1

9-24 LEVEL 1 DECOMMISSIONING

- Fill in ditches.
- Rip the surface to a minimum depth of 15 inches.
- Outslope the surface at a minimum of 30 percent.
- Remove embankments, sidecast fill, and place material into cut-banks and shape banks to conform to the natural ground.
- Remove all culverts in natural drainages in accordance with STREAM DIVERSION PROCEDURE, Clause 7-5 STRUCTURE DEBRIS, and Clause 9-2 CULVERT REMOVAL FROM LIVE STREAM. Place and compact the removed fill material in accordance with ROAD PRISM WASTE DETAIL.
- Remove ditch cross drain culverts and leave the resulting trench open in accordance with CROSS DRAIN REMOVAL DETAIL.
- Scatter woody debris onto decommissioned road surfaces.
- Apply grass seed concurrently with decommissioning and in accordance with Section 8 EROSION CONTROL.

SECTION 10 MATERIALS

10-15 CORRUGATED STEEL CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-20 FLUME AND DOWNSPOUT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

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

10-24 GAUGE AND CORRUGATION

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 ¹ / ₂ "
24" to 48"	14 (0.079")	2 ² / ₃ " X 1 ¹ / ₂ "
54" to 96"	14 (0.079")	3" X 1"

SECTION 11 SPECIAL NOTES

11.1 US FOREST SERVICE BRIDGE LOAD RESTRICTIONS

Vehicles exceeding highway legal load limits shall not pass over bridges without obtaining an overload permit from the Forest Service.

11.2 NOXIOUS WEED CONTROL

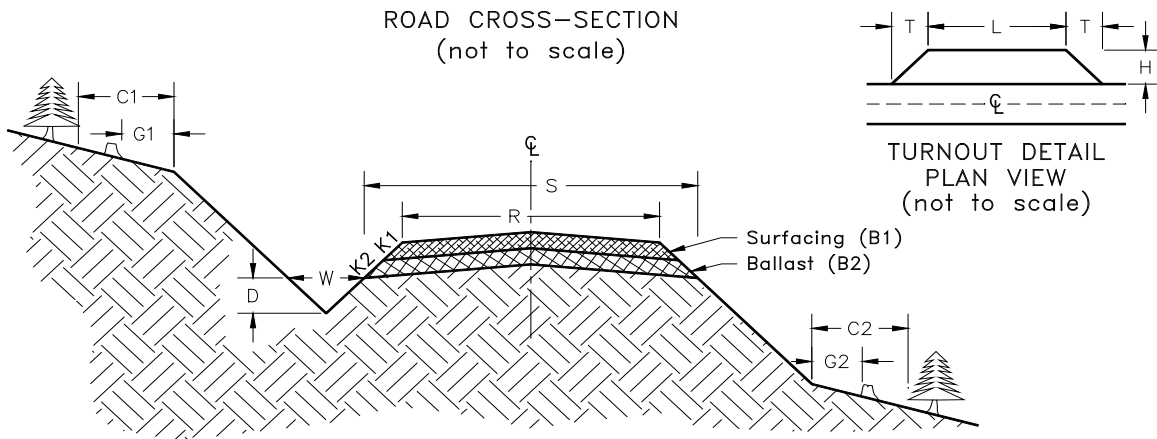
- A. Purchaser shall clean all motorized equipment, except transports, of any debris that could contain seeds from noxious weeds before mobilizing to any areas on US Forest Service property.
- B. Purchaser shall acquire approval from the Contract Administrator on methods used to clean equipment, type of equipment, and location prior to weed washing. Purchaser shall notify the Contract Administrator a minimum of five (5) calendar days to arrange inspection for all equipment before traveling on US Forest Service land.
- C. Any equipment that travels off US Forest Service land during operations may be subject to additional weed wash requirements prior to returning as determined by the Contract Administrator.
- D. Transports that do not require cleaning or inspection include, but not limited to, dump trucks, pickup trucks, or any other vehicles capable of carrying passengers.

11.3 WEED FREE STRAW REQUIREMENTS

All straw material shall be certified weed-free straw using North American Weed Management Association (NAWMA) standards or the Washington Wilderness Hay and Mulch (WWHAW) program run by the Washington State Department of Agriculture's Plant Service Program (www.nwcb.wa.gov).

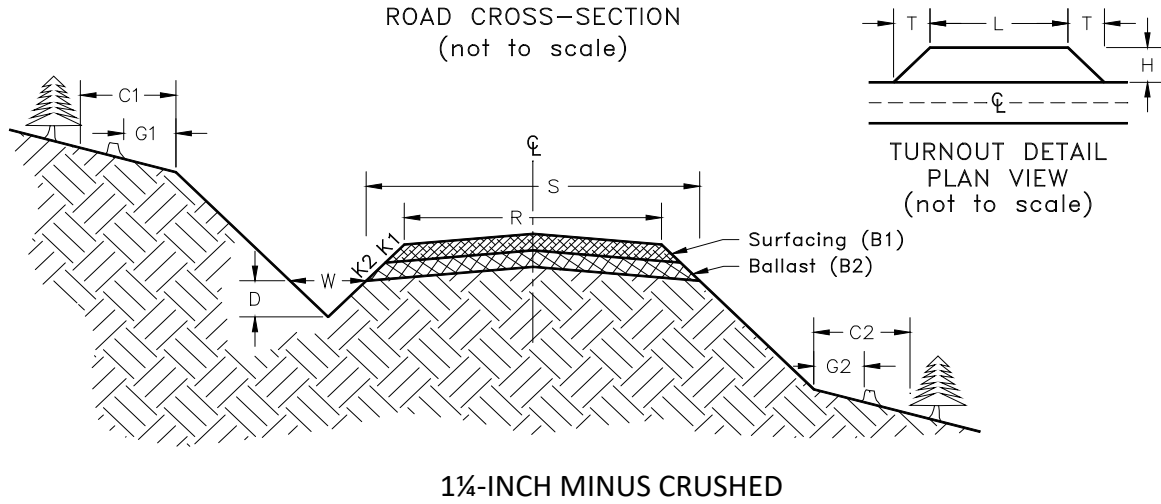
TYPICAL SECTION SHEET

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Road Number	From Station	To Station	Maintenance Level	Tolerance Class	Subgrade Width ft	Road Width ft	Ditch Width ft	Ditch Depth ft	Crown @ CL in	Grubbing Limits		Clearing Limits	
										ft	ft	ft	ft
					S	R	W	D		G1	G2	C1	C2
2120022	12+49	31+48	1	C	15	12	2	1	4	--	--	--	--
2120022	31+48	153+59	1	C	14	12	2	1	4	--	--	--	--
2120023	0+00	3+49	1	C	14	12	2	1	4	3	3	3	3
TEMP 1	0+00	5+19	Temporary	C	14	12	2	1	4	3	3	3	3
2120024	0+00	4+51	1	C	14	12	2	1	4	3	3	3	3
2120025	0+00	3+96	1	C	14	12	2	1	4	3	3	3	3
TEMP 3	0+00	2+37	Temporary	C	14	12	2	1	4	3	3	3	3
TEMP 4	0+00	0+86	1	C	14	12	2	1	4	3	3	3	3
2120030	0+00	25+70	1	C	14	12	2	1	4	--	--	--	--
2120026	0+00	20+43	1	C	14	12	2	1	4	3	3	3	3
TEMP 6	0+00	1+81	Temporary	C	14	12	2	1	4	3	3	3	3
2120027	0+00	6+90	1	C	14	12	2	1	4	3	3	3	3
TEMP 8	0+00	11+09	Temporary	C	14	12	2	1	4	3	3	3	3

ROCK LIST
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Road Number	Optional (*)	From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout		
										Length	Width	Taper
				K1	B1				Commercial	L	H	T
2120022	*	12+49	31+48	1 1/2:1	3	14	18.99	266				
2120000		As directed by CA		--	--	--	--	200				

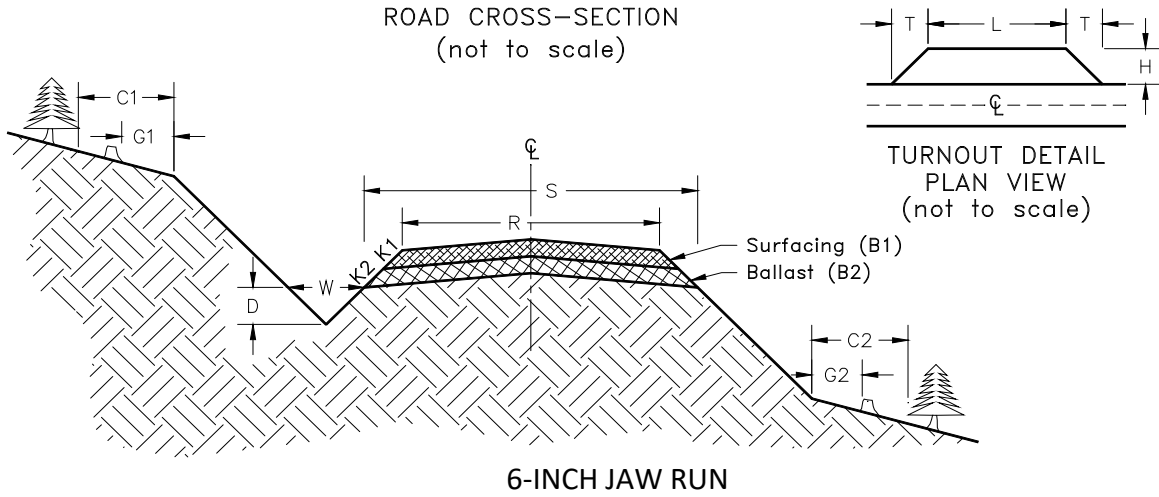
REQUIRED CRUSHED ROCK: 200 CY
 OPTIONAL CRUSHED ROCK: 266 CY

ARMORING AND ENERGY DISSIPATORS

<u>Road Number</u>	<u>Description</u>	<u>Rock Type</u>	<u>C.Y. Total</u>	<u>Rock Sources</u>
All roads	Culvert armoring and energy dissipators	PIT RUN	32	Empire Quarry

PIT RUN ROCK: 32 CY

ROCK LIST
Page 2 of 3



Road Number	Optional (*)	From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout		
										Length	Width	Taper
				K2	B2				Empire Quarry	L	H	T
2120022	*	12+49	153+59	1½:1	9	46	141.10	6491				
	*	18+77		1½:1	--	--	--	50				
	*	103+59		1½:1	--	--	--	50				
	*	Turnouts		1½:1	9	14	18	252		40	10	25
	*	Curve Widening		1½:1	9	--	--	227				
	*	Landings		1½:1	9	40.4	5	202				
2120023	*	0+00	3+49	1½:1	9	46	3.49	161				
TEMP 1	*	0+00	5+19	1½:1	9	46	5.19	238				
	*	Turnarounds		1½:1	9	25	1	25				
	*	Landings		1½:1	9	41	1	41				
2120024	*	0+00	4+51	1½:1	9	46	4.51	207				
2120025	*	0+00	3+96	1½:1	9	46	3.96	182				
TEMP 3	*	0+00	2+37	1½:1	9	46	2.37	109				
	*	Turnarounds		1½:1	9	25	1	25				
	*	Junctions		1½:1	9	9	1	9				
	*	Landings		1½:1	9	41	1	41				
TEMP 4	*	0+00	0+86	1½:1	9	47	0.86	40				
	*	Landings		1½:1	9	41	1	41				
2120030	*	0+00	25+70	1½:1	9	46	25.70	1182				
	*	Turnarounds		1½:1	9	25	1	25				
	*	Turnouts		1½:1	9	14	2	28		40	10	25
	*	Junctions		1½:1	9	9	1	9				
	*	Landings		1½:1	9	41	1	41				
2120026	*	0+00	20+43	1½:1	9	46	20.43	940				
	*	Turnarounds		1½:1	9	25	1	25				
	*	Turnouts		1½:1	9	14	1	14		40	10	25
	*	Junctions		1½:1	9	9	1	9				
	*	Landings		1½:1	9	41	1	41				

ROCK LIST
Page 3 of 3

6-INCH JAW RUN

Road Number	Optional (*)	From Station	To Station	Rock Slope	Compacted Rock Depth (in)	C.Y. per Station or Unit	# of Stations or Units	C.Y. Subtotal	Rock Source	Turnout		
										Length	Width	Taper
				K2	B2				Empire Quarry	L	H	T
TEMP 6	*	0+00	1+81	1½:1	9	46	1.81	83				
	*	Turnarounds		1½:1	9	25	1	25		30	30	
	*	Landings		1½:1	9	41	1	41				
2120027	*	0+00	6+90	1½:1	9	46	6.9	317				
TEMP 8	*	0+00	11+09	1½:1	9	46	11.09	510				
	*	Turnarounds		1½:1	9	25	1	25				
	*	Turnouts		1½:1	9	14	1	14		40	10	25
	*	Junctions		1½:1	9	9	1	9				
	*	Landings		1½:1	9	41	1	41				

*Optional Rock in accordance with Road Plan Clause 6-75

OPTIONAL BALLAST: 11770 CY

CULVERT LIST

Page 1 of 1

Road Number	Location	Culvert			Armoring (C.Y.)			Backfill Material	Bedding Material	Inlet Marker	Remarks
		Dia (In)	Length	Type	Inlet	Outlet	Type				
2120022	15+57	--		--	--	--	--	--	--	--	SEE LOG STRINGER DETAIL
2120022	18+77	24	40	XX	2.0	3.0	PR	NT	NT	--	Type Ns crossing
2120022	19+49	18	30	PD	0.5	0.5	PR	NT	NT	--	
	19+49	18	20	PSDS	--	--	--	--	--	--	Culvert with Downspout Option 1
2120022	27+41	18	40	XX	0.5	0.5	PR	NT	NT	--	
2120022	59+90	18	30	XX	0.5	0.5	PR	NT	NT	--	
2120022	77+76	18	30	XX	0.5	0.5	PR	NT	NT	--	
2120022	84+33	18	30	XX	0.5	0.5	PR	NT	NT	--	
2120022	96+25	18	40	XX	0.5	0.5	PR	NT	NT	--	
2120022	101+63	24	40	XX	0.5	0.5	SP	NT	NT	--	Type Ns crossing
2120022	103+59	24	60	XX	2.0	3.0	PR	NT	NT	--	Type Ns crossing
2120022	103+88	18	40	XX	0.5	0.5	PR	NT	NT	--	
2120022	132+70	18	30	PD	0.5	0.5	PR	NT	NT	--	
	132+70	18	20	PSDS	--	--	--	--	--	--	Culvert with Downspout Option 1
2120022	142+85	18	30	XX	0.5	0.5	PR	NT	NT	--	
2120022	146+01	18	40	XX	0.5	0.5	PR	NT	NT	--	
TEMP 1	0+48	24	40	XX	2.0	3.0	PR	NT	NT	--	Type Ns crossing
TEMP 1	3+06	24	40	XX	2.0	3.0	PR	NT	NT	--	Type Ns crossing
2120030	0+57	18	40	XX	0.5	0.5	PR	NT	NT	--	
TEMP 8	5+85	18	30	XX	0.5	0.5	PR	NT	NT	--	

Key:

- PR - Pit Run
- NT - Native Material (Defined per Road Plan Clause 4-48)
- PD - Polyethylene Pipe Double Wall
- PSDS - Polyethylene Downspout Single Wall
- XX - PD or GM
- GM - Galvanized Metal

Note: See CULVERT AND DRAINAGE SPECIFICATION DETAIL for Downspout Option 1 attachment requirement.

COMPACTION LIST

Page 1 of 1

<u>Road</u>	<u>Type</u>	<u>Max Depth Per Lift (inches)</u>	<u>Equipment Type</u>	<u>Equipment Weight (lbs)</u>	<u>Minimum Number of Passes</u>	<u>Maximum Operating Speed (mph)</u>	<u>Maximum Amount of Deflection</u>
All	Subgrade Surface	--	Vibratory Smooth Drum	20000	4	3	1
2120022	Surfacing (1¼-INCH MINUS CRUSHED)	3	Vibratory Smooth Drum	20000	4	3	1
Post-haul	Surfacing (1¼-INCH MINUS CRUSHED)	3	Vibratory Smooth Drum	20000	4	3	1
All	Ballast (6-INCH JAW RUN)	9	Excavation	28000	4	3	2
All	Waste Areas	24	Excavation	28000	--	--	4

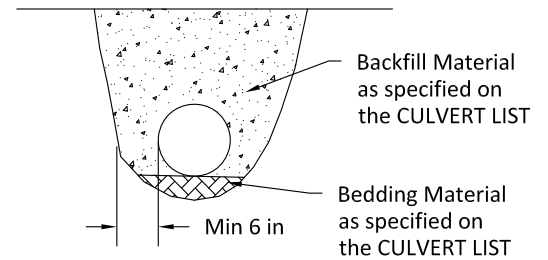
CULVERT AND DRAINAGE SPECIFICATION DETAIL
PAGE 1 OF 2

INSTALLATION REQUIREMENTS:

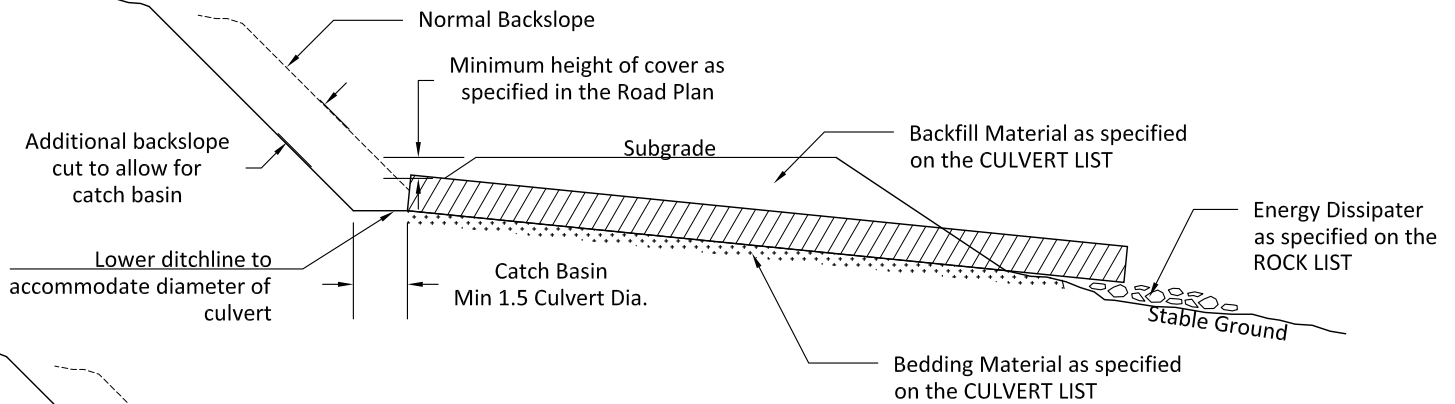
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly supported along the barrel.
2. Backfill material shall be compacted under the culvert haunches, around the sides, and above the culvert in accordance with the COMPACTION LIST.

ALL DRAWINGS ARE NOT TO SCALE

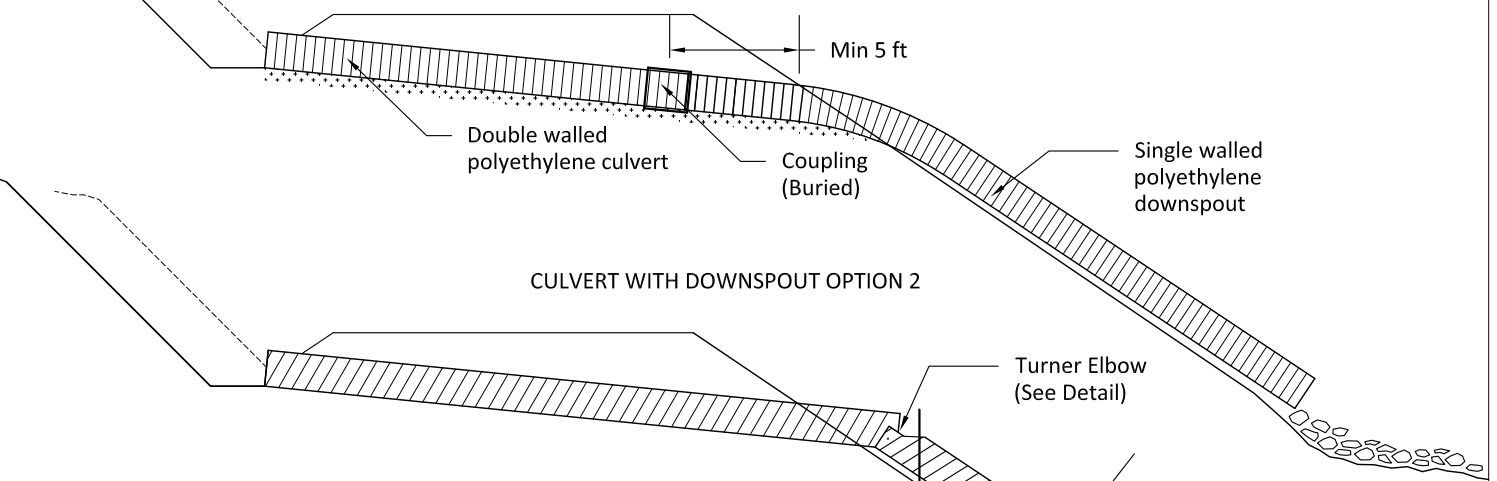
CROSS SECTION



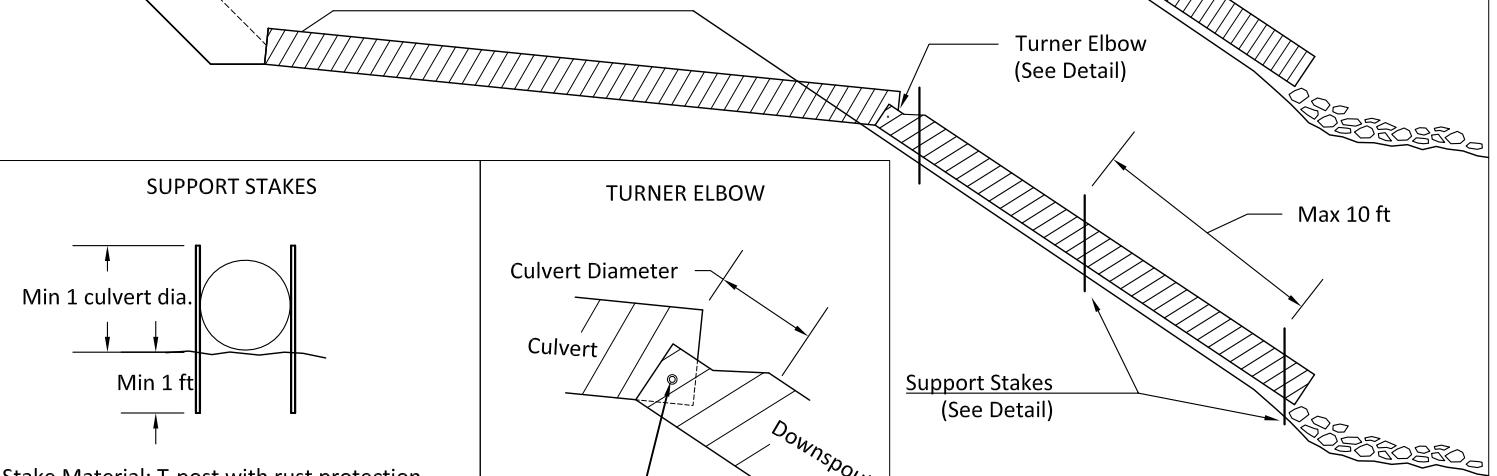
CULVERT PROFILE (TYPICAL)



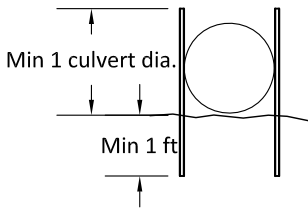
CULVERT WITH DOWNSPOUT OPTION 1



CULVERT WITH DOWNSPOUT OPTION 2

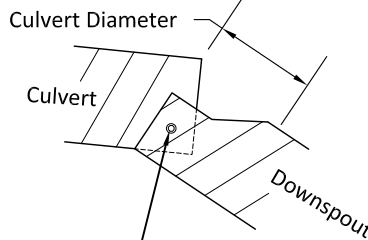


SUPPORT STAKES



Stake Material: T-post with rust protection coating.
Connections: Bolt support stakes to the culvert with $\frac{5}{8}$ " u-bolts, with washers on both the inside and outside of the culvert.
Alternative staking methods may be approved, in writing, by the Contract Administrator.

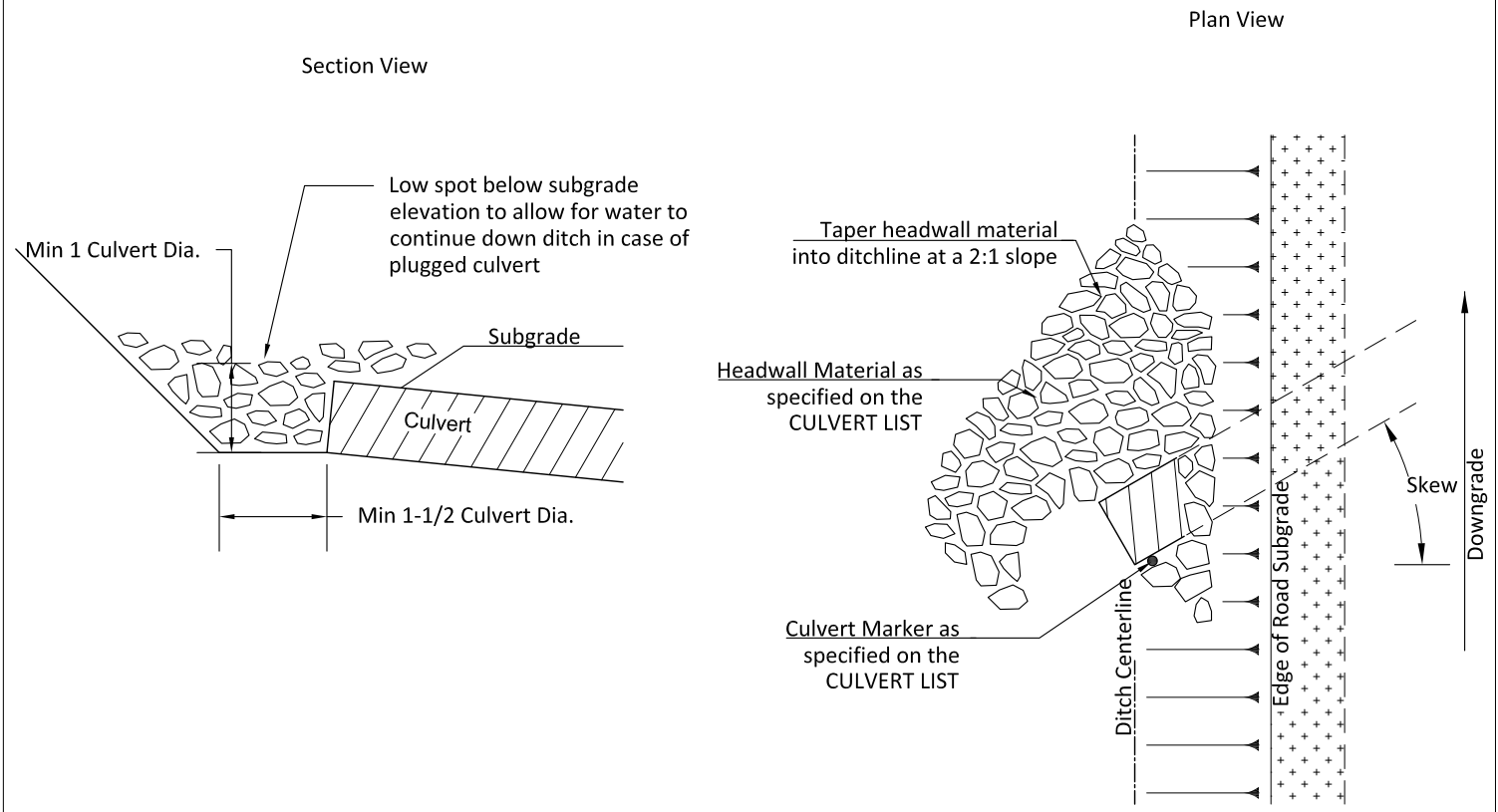
TURNER ELBOW



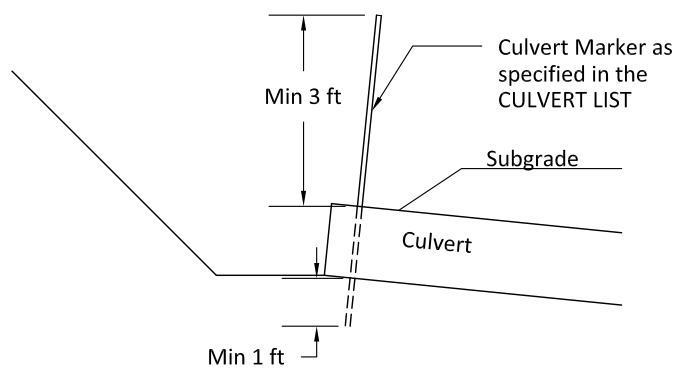
Bolted with $\frac{5}{8}$ " galvanized bolts and washers (both sides)
Downspout must be 6 inches larger in diameter than the culvert.

CULVERT AND DRAINAGE SPECIFICATION DETAIL
PAGE 2 OF 2

HEADWALLS

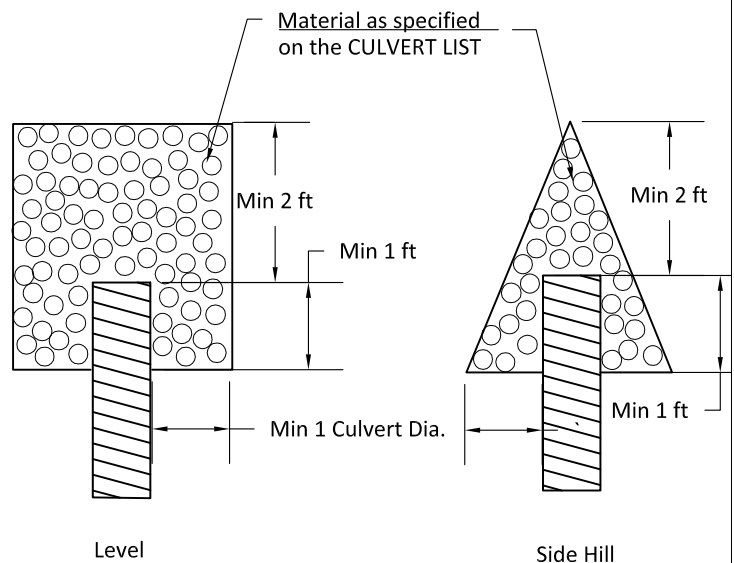


CULVERT MARKERS



Culvert Marker Material: 1 Inch I.D., Schedule 40 PVC Pipe, White. Marker must be capped on the top.
 Culvert Marker Placement: Place on uphill side of culvert, between corrugations if possible.
 Alternative culvert marker types may be approved, in writing, by the Contract Administrator.

ENERGY DISSIPATORS



Min Energy Dissipater Depth: 1 Culvert Dia.

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

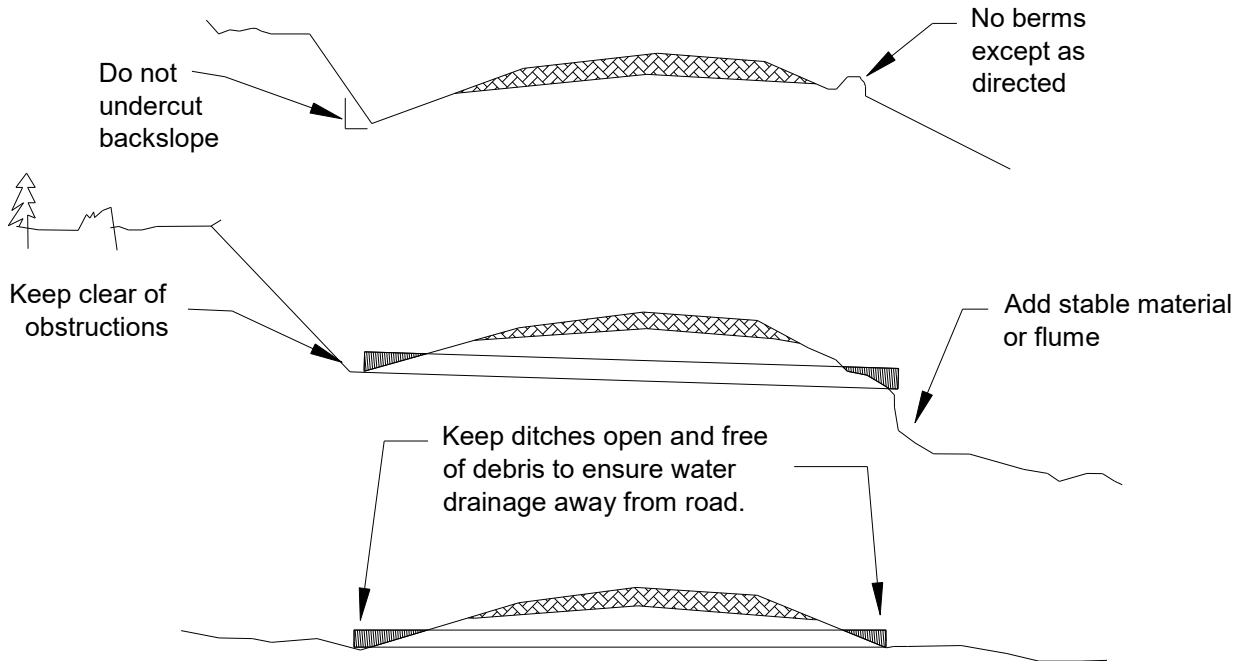
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

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.



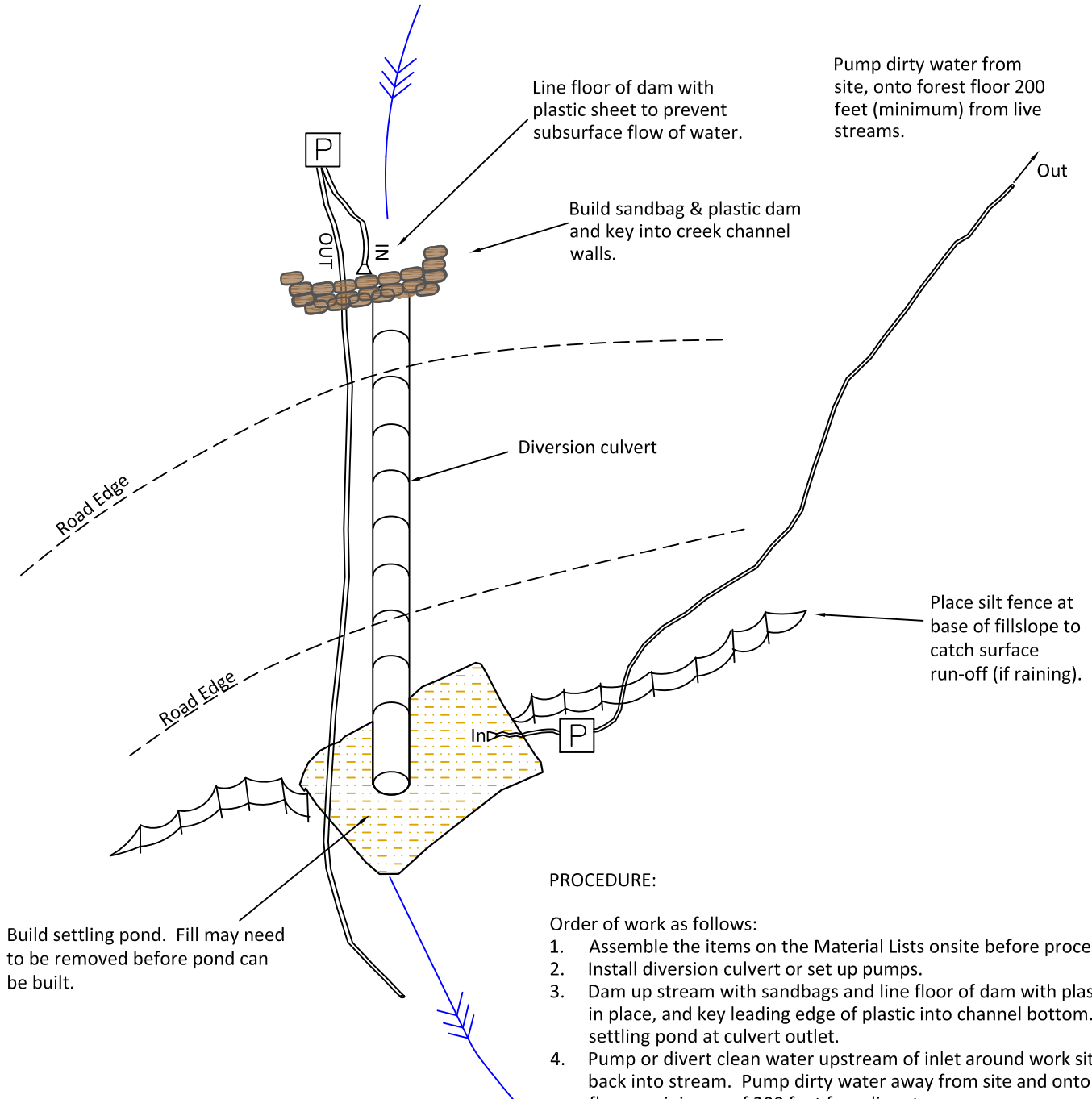
STREAM DIVERSION PROCEDURE

For culvert installation or removal in live waters, sites shall be dewatered within the area of direct influence of the stream. Stream culvert installations or removals will occur as follows, any deviations shall be approved, in writing, by the Contract Administrator.

1. Prior to any work within the high waterline, Purchaser shall contact the Contract Administrator for an on-site pre-work to submit a plan for pumping and/or diverting all stream flow around the work area and pumping and/or diverting any groundwater flow from out of the work area, as approved, in writing, by the Contract Administrator. The SETTLING POND AND PUMP DETAIL, included herein, is an example of a pre-approved dewatering plan.
2. Once the stream has been pumped and/or diverted, stream flow shall not be allowed through the work area until all work below the ordinary high water line has been completed and approved, in writing, by the Contract Administrator.
3. Sedimentation shall be avoided during culvert installation or removal in accordance with Road Plan Clause 1-29 SEDIMENT RESTRICTION.
4. Per Road Plan Clause 8-1 SEDIMENT CONTROL STRUCTURES, Purchaser shall install silt fences or other suitable sediment control methods as approved by the Contract Administrator.
5. Backfill any settling ponds and remove any diversion culverts.
6. Maintain a clean jobsite in accordance with Road Plan Clause 7-5 STRUCTURE DEBRIS.

SETTLING POND AND PUMP DETAIL

NOT TO SCALE



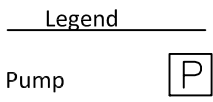
PROCEDURE:

Order of work as follows:

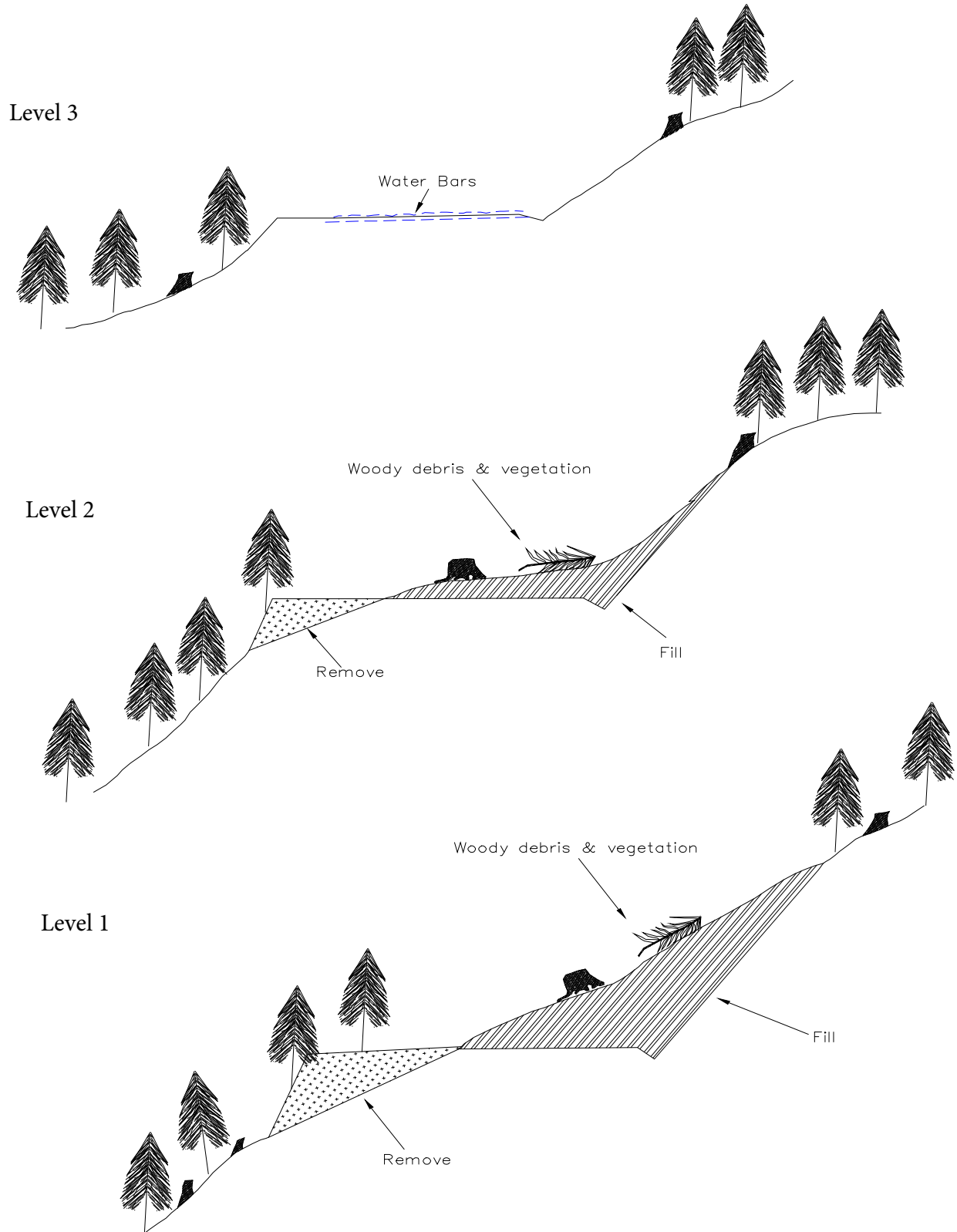
1. Assemble the items on the Material Lists onsite before proceeding.
2. Install diversion culvert or set up pumps.
3. Dam up stream with sandbags and line floor of dam with plastic to hold in place, and key leading edge of plastic into channel bottom. Build a settling pond at culvert outlet.
4. Pump or divert clean water upstream of inlet around work site and back into stream. Pump dirty water away from site and onto forest floor a minimum of 200 feet from live streams.
5. Install/remove stream crossing structure.
6. Backfill any settling ponds.
7. Cover exposed soils in accordance with Section 8 EROSION CONTROL as stated within Road Plan.

Material Lists:

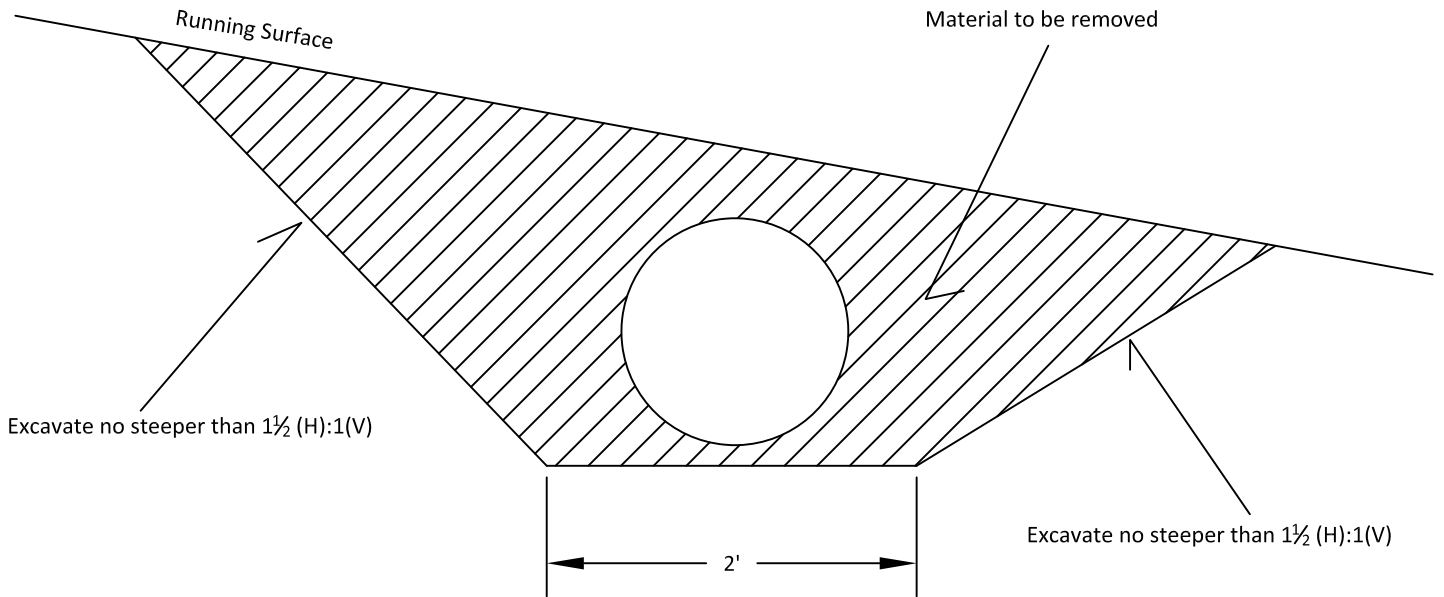
- 3 pumps, (one as a backup). The clean water pump (dam at culvert catch basin) shall have a minimum capacity of 1200 gallons per minute (gpm). The dirty water pump (settling pond) and the backup pump shall each have a minimum capacity of 600 gpm.
- Silt fence and stakes
- Plastic sheets
- Grass seed and bales of straw.



ROAD DECOMMISSIONING DETAIL



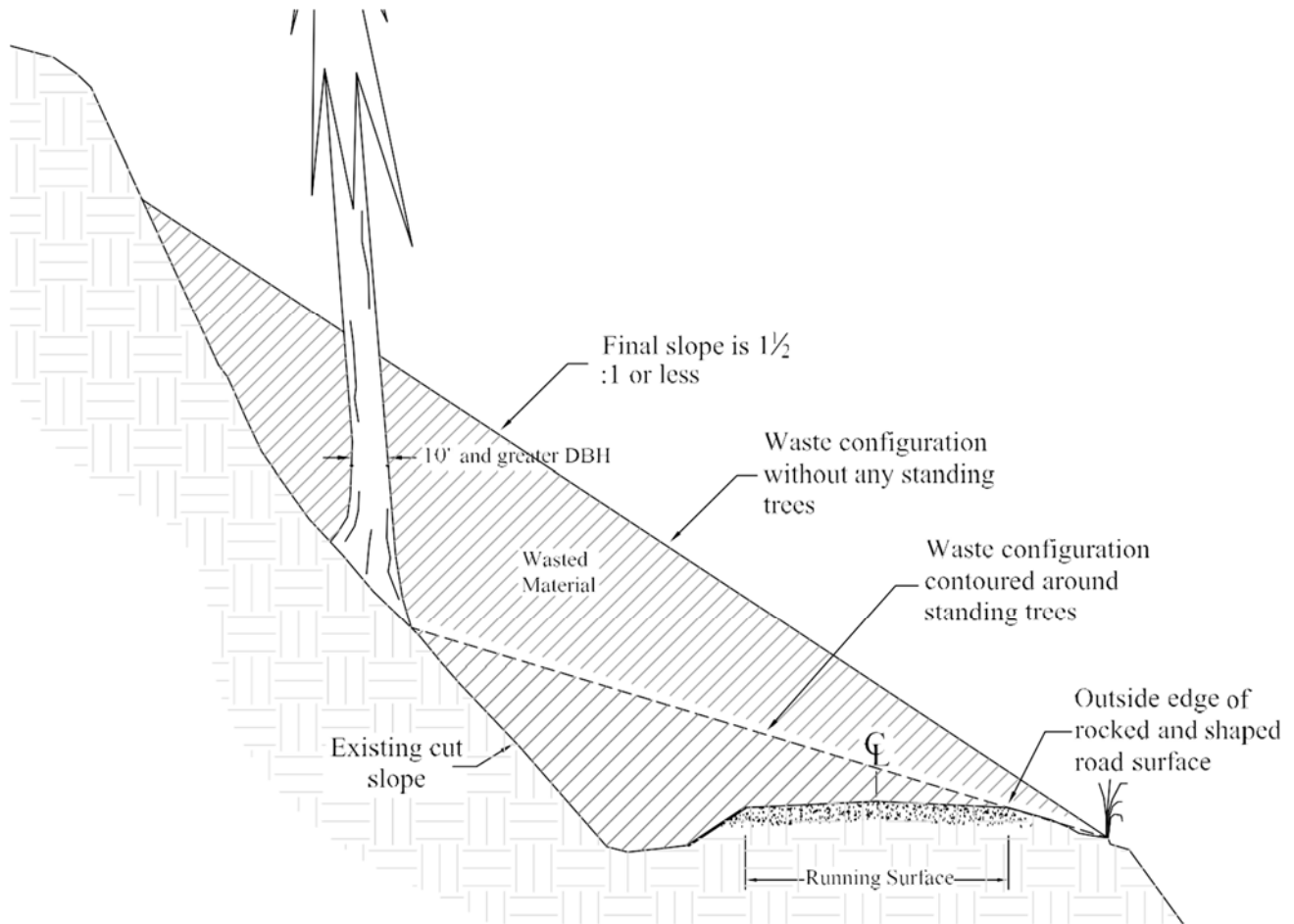
CROSS DRAIN REMOVAL DETAIL



1) Excavated material may be wasted on the road surface on the downhill side of the excavation. Waste material shall be sloped no steeper than 1½ (H):1(V).

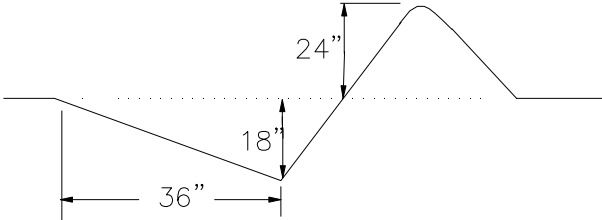
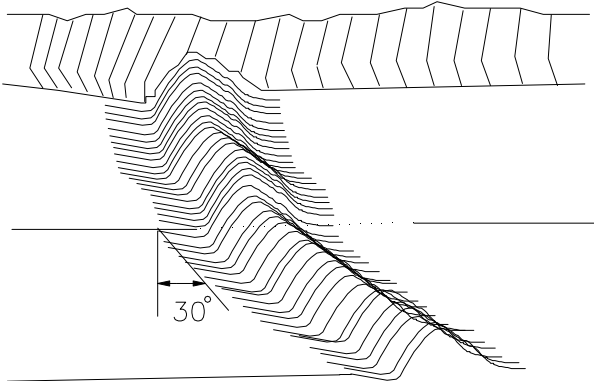
2) Resulting trench shall be keyed into the ditchline and sloped towards the outside edge of the road with a drop of at least 1 foot in 10 feet.

ROAD PRISM WASTE DETAIL



1. Excavated material may be wasted in the road prism, including ditchline, as long as it is sloped no steeper than $1\frac{1}{2}(H):1(V)$ and is placed at a minimum of 10 feet from the edge of excavation limits. Waste material shall not impede the natural drainage of water.
2. Waste shall be placed in 2-foot lifts and compacted by routing tracked excavation equipment over it.
3. A water bar shall be constructed immediately above the waste area.
4. All waste areas shall be grass seeded and covered with straw in accordance with Section 8 of Road Plan.
5. Woody debris shall not be buried in waste areas. Trees less than 10-inches DBH shall be cleared and scattered on top of the waste areas. Trees greater than 10-inches DBH shall be left in place, and the waste contoured around the base of the tree. Standing trees shall not be buried or partially buried by waste.

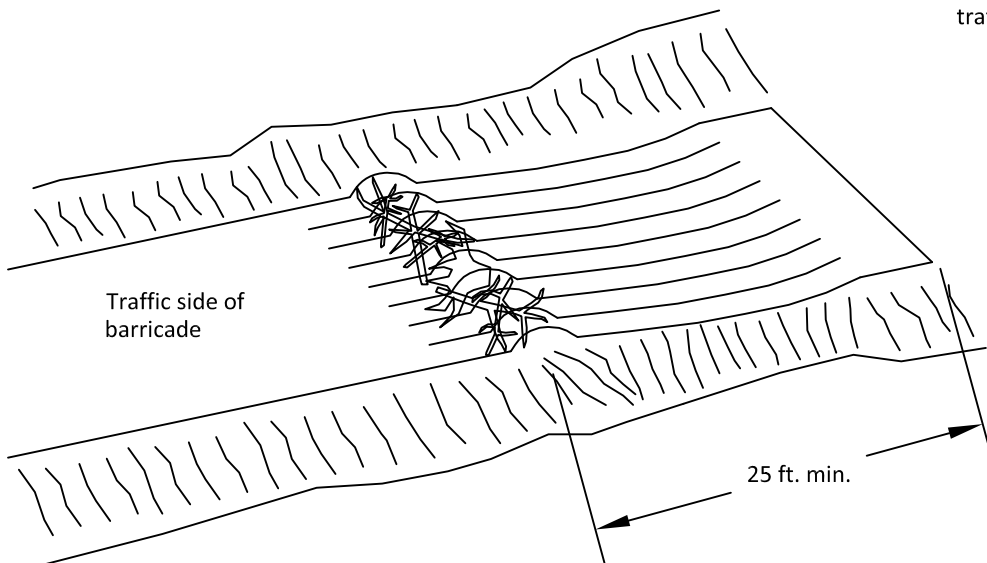
NON-DRIVABLE WATER BAR DETAIL



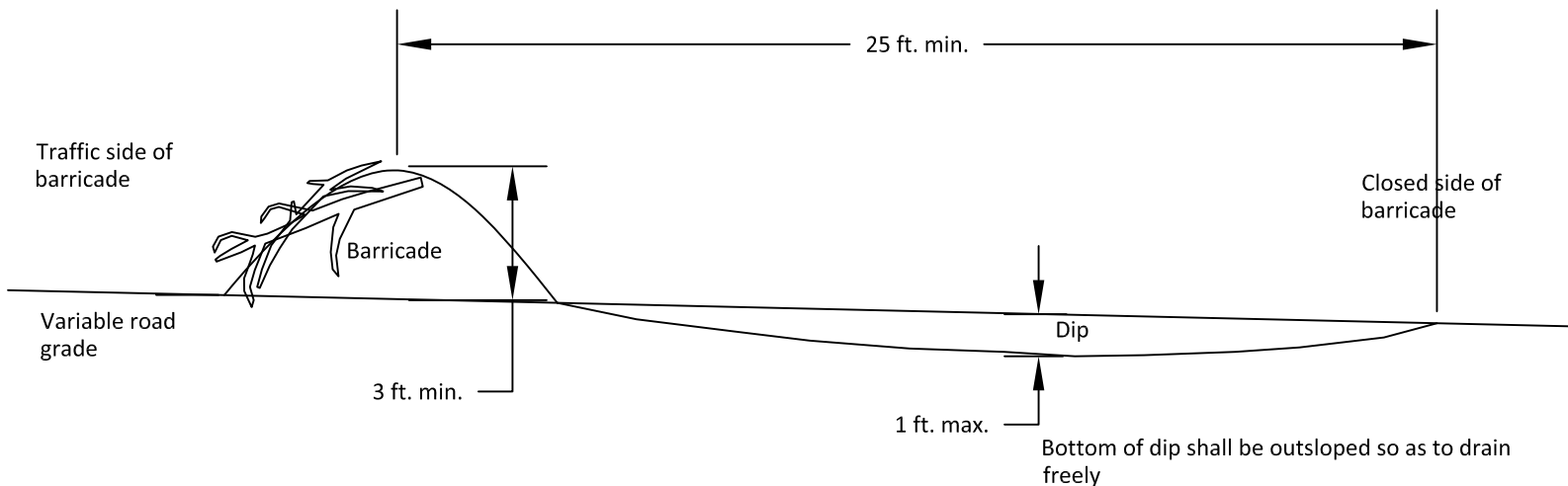
EARTHEN BARRICADE DETAIL

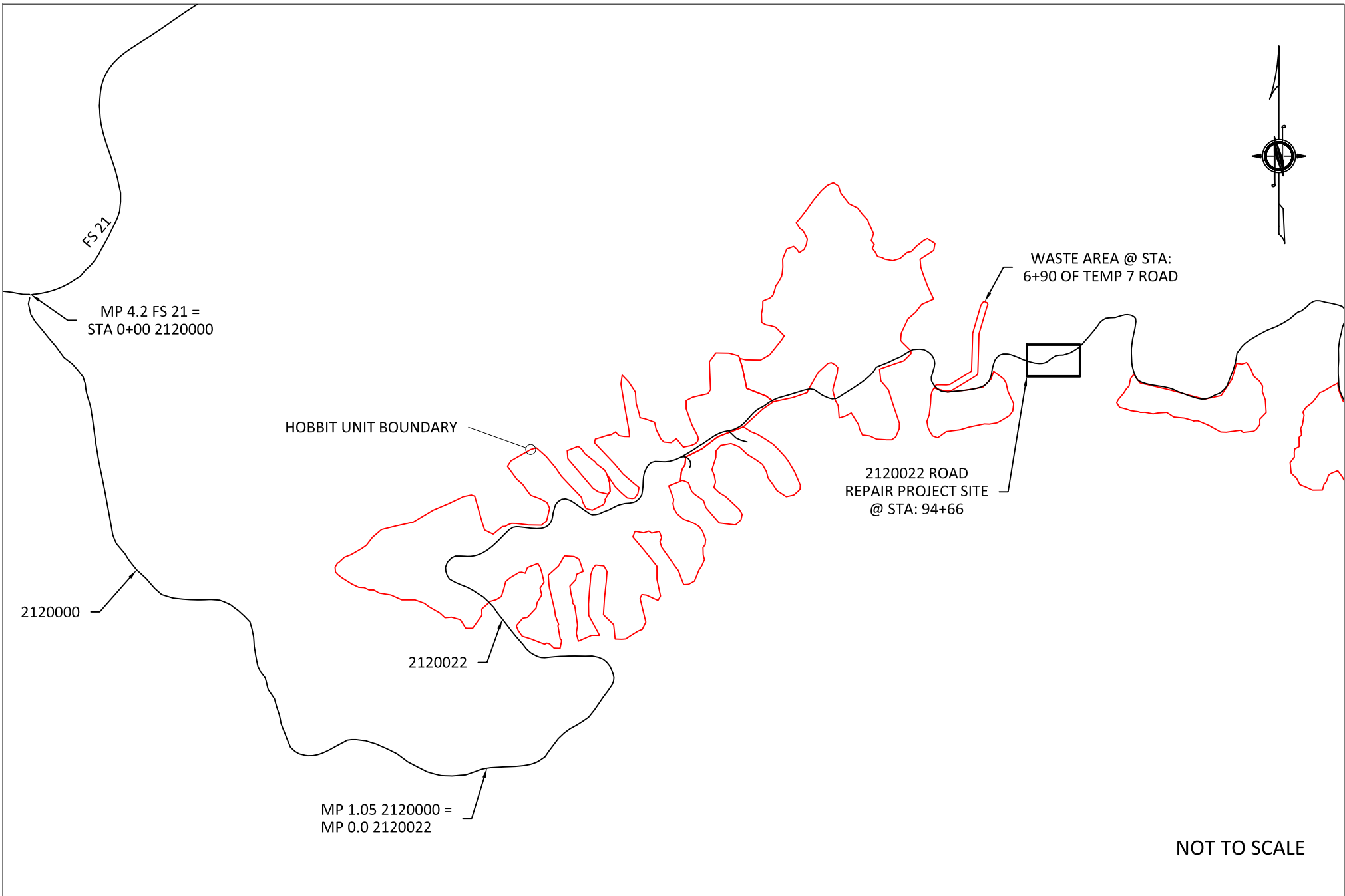
PLAN VIEW
(Not to scale)


Slash and root wads shall be incorporated into traffic side of the barricade.



PROFILE VIEW
(Not to scale)



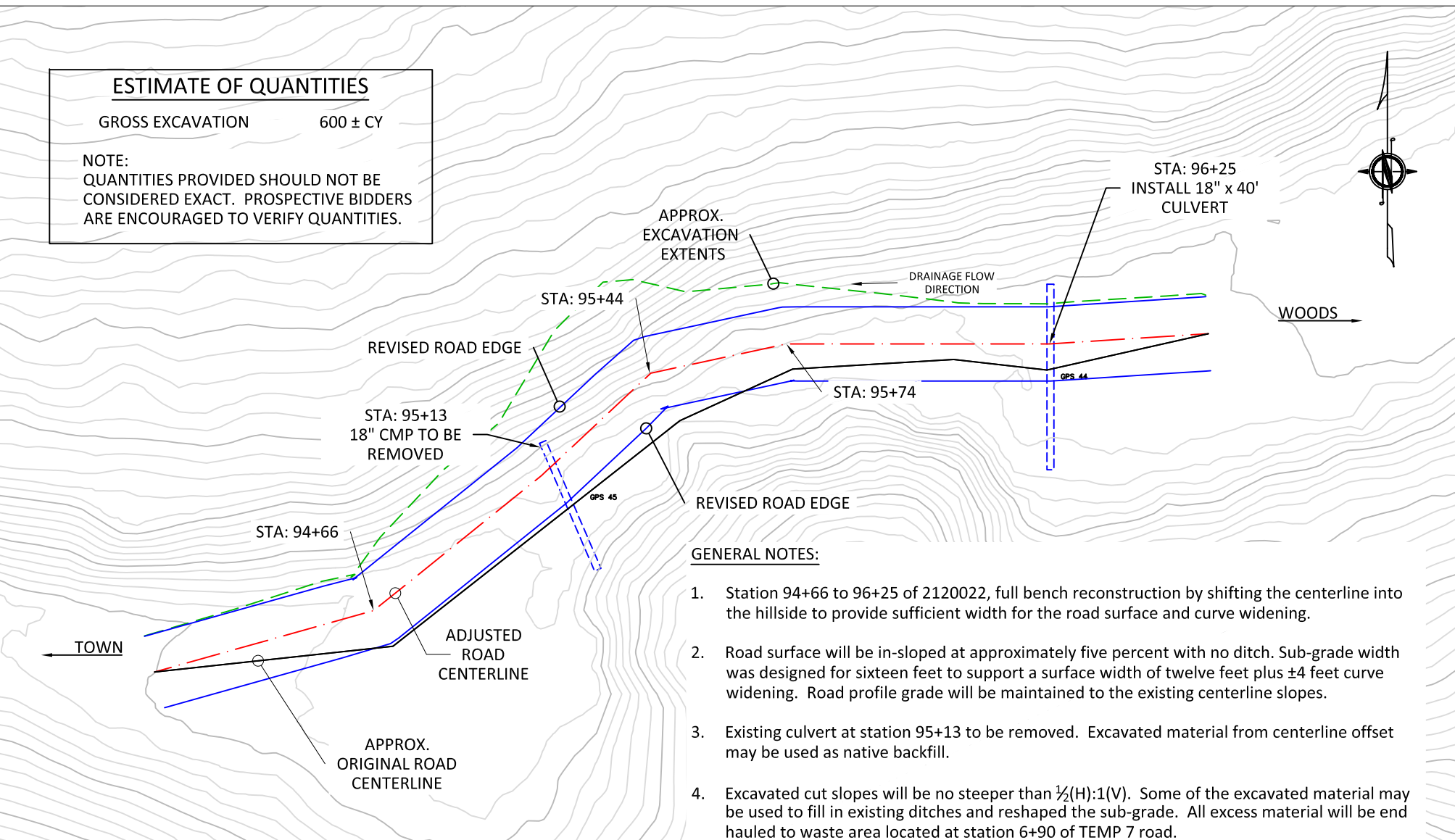


 <p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES GOOD NEIGHBOR AUTHORITY FEDERAL LANDS PROGRAM</p>	Road: 2120022		OLYMPIC NATIONAL FOREST		HOBBIT TIMBER SALE	
	Township: 24 N	Range: 10 W	PACIFIC RANGER DISTRICT		2120022 ROAD REPAIR DETAIL	
	Stations: 94+66 to 96+25		VICINITY MAP		County: Grays Harbor/Jefferson	Date: 03/11/2024
	Agreement No. 36-106683				Drawn By: S. Hanna	Sheet: 1 of 3

ESTIMATE OF QUANTITIES

GROSS EXCAVATION 600 ± CY

NOTE:
 QUANTITIES PROVIDED SHOULD NOT BE
 CONSIDERED EXACT. PROSPECTIVE BIDDERS
 ARE ENCOURAGED TO VERIFY QUANTITIES.



GENERAL NOTES:

1. Station 94+66 to 96+25 of 2120022, full bench reconstruction by shifting the centerline into the hillside to provide sufficient width for the road surface and curve widening.
2. Road surface will be in-sloped at approximately five percent with no ditch. Sub-grade width was designed for sixteen feet to support a surface width of twelve feet plus ±4 feet curve widening. Road profile grade will be maintained to the existing centerline slopes.
3. Existing culvert at station 95+13 to be removed. Excavated material from centerline offset may be used as native backfill.
4. Excavated cut slopes will be no steeper than 1/2(H):1(V). Some of the excavated material may be used to fill in existing ditches and reshaped the sub-grade. All excess material will be end hauled to waste area located at station 6+90 of TEMP 7 road.

NOTE: CONTOURS SHOWN ARE TWO FOOT MINOR AND TEN FOOT MAJOR. THEY REPRESENT THE TOPOGRAPHY BASED ON GIS LIDAR DATA.

1.0"

Measures one inch on original drawing. Adjust scales accordingly.

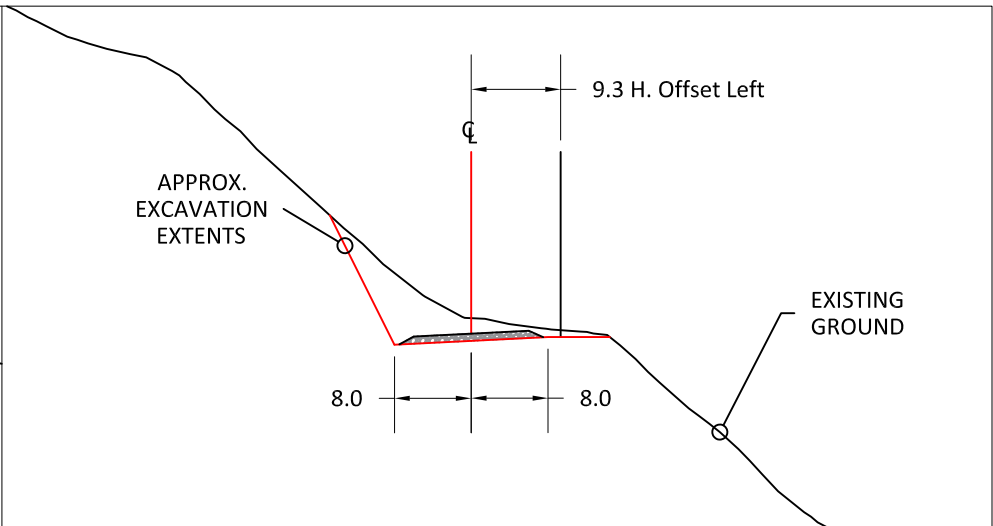
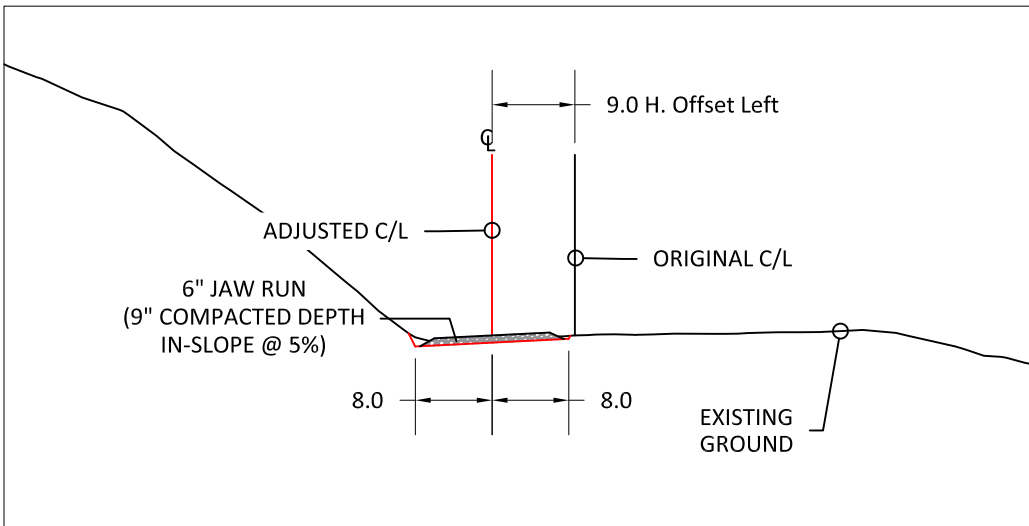


WASHINGTON STATE
 DEPARTMENT OF NATURAL RESOURCES
 GOOD NEIGHBOR AUTHORITY
 FEDERAL LANDS PROGRAM

Road: 2120022
 Township: 24 N Range: 10 W
 Stations: 94+66 to 96+25
 Agreement No. 36-106683

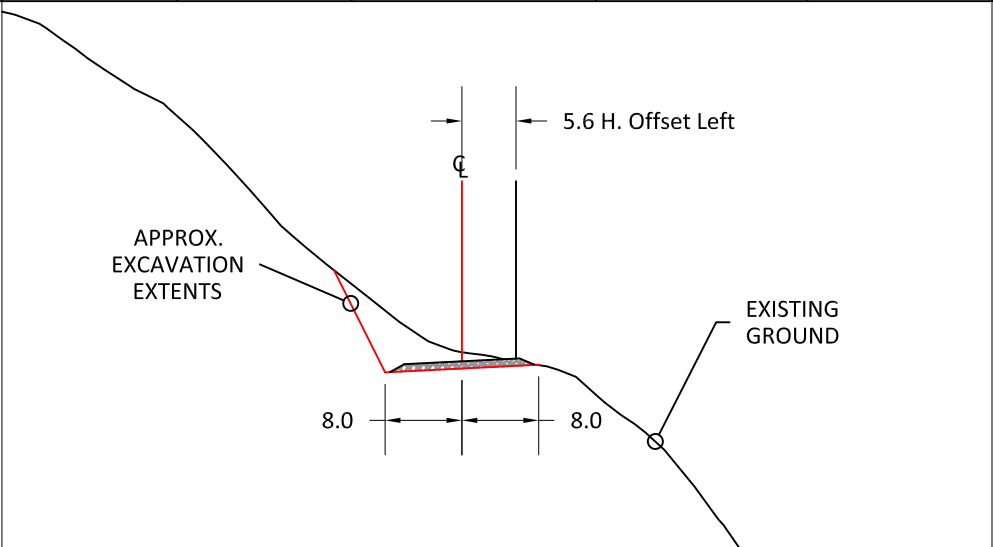
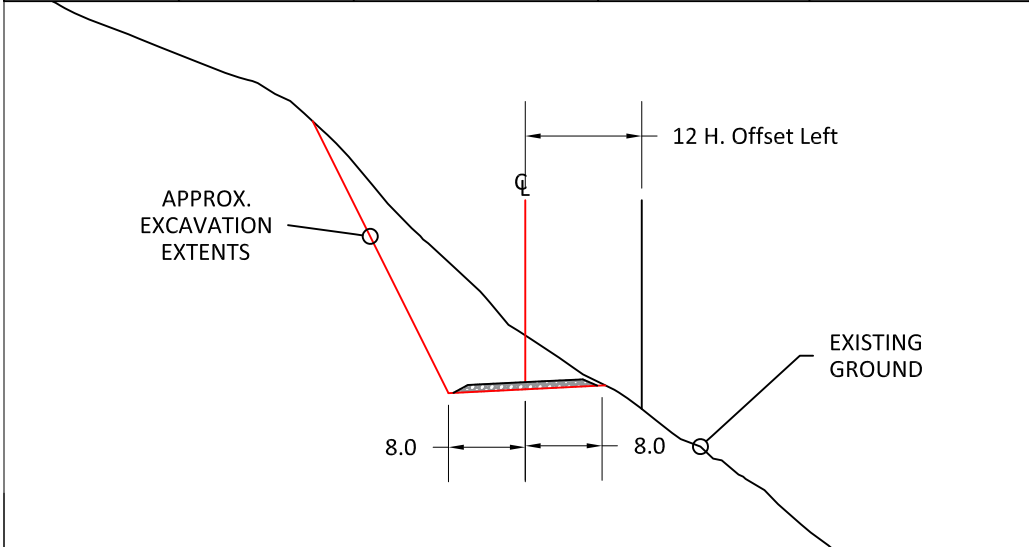
OLYMPIC NATIONAL FOREST
 PACIFIC RANGER DISTRICT
 PLAN VIEW

HOBBIT TIMBER SALE
 2120022 ROAD REPAIR DETAIL
 County: Grays Harbor/Jefferson Date: 03/11/2024
 Drawn By: S. Hanna Sheet: 2 of 3




STATION	CUT DEPTH AT C/L (FT)	HORIZONTAL OFFSET FROM ORIGINAL C/L (FT)	SLOPE STAKE LEFT (FT)	CUT SLOPE (%)
94+66	0	-9	8.7	MAX 200%

STATION	CUT DEPTH AT C/L (FT)	HORIZONTAL OFFSET FROM ORIGINAL C/L (FT)	SLOPE STAKE LEFT (FT)	CUT SLOPE (%)
95+13	2.4	-9.3	18.2	MAX 200%



STATION	CUT DEPTH AT C/L (FT)	HORIZONTAL OFFSET FROM ORIGINAL C/L (FT)	SLOPE STAKE LEFT (FT)	CUT SLOPE (%)
95+44	5.6	-12	31.4	MAX 200%

STATION	CUT DEPTH AT C/L (FT)	HORIZONTAL OFFSET FROM ORIGINAL C/L (FT)	SLOPE STAKE LEFT (FT)	CUT SLOPE (%)
95+74	1.7	-5.6	15.8	MAX 200%

 <p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES GOOD NEIGHBOR AUTHORITY FEDERAL LANDS PROGRAM</p>	Road: 2120022		OLYMPIC NATIONAL FOREST		HOBBIT TIMBER SALE	
	Township: 24 N	Range: 10 W	PACIFIC RANGER DISTRICT		2120022 ROAD REPAIR DETAIL	
	Stations: 94+66 to 96+25		CROSS SECTIONS VIEW		County: Grays Harbor/Jefferson	Date: 03/11/2024
	Agreement No. 36-106683				Drawn By: S. Hanna	Sheet: 3 of 3

RECOMMENDED BY:

Justin Long _____ Date _____

DNR Federal Lands Lead Engineer

Scott Hanna _____ Date 8/5/2024

DNR Federal Lands Engineer

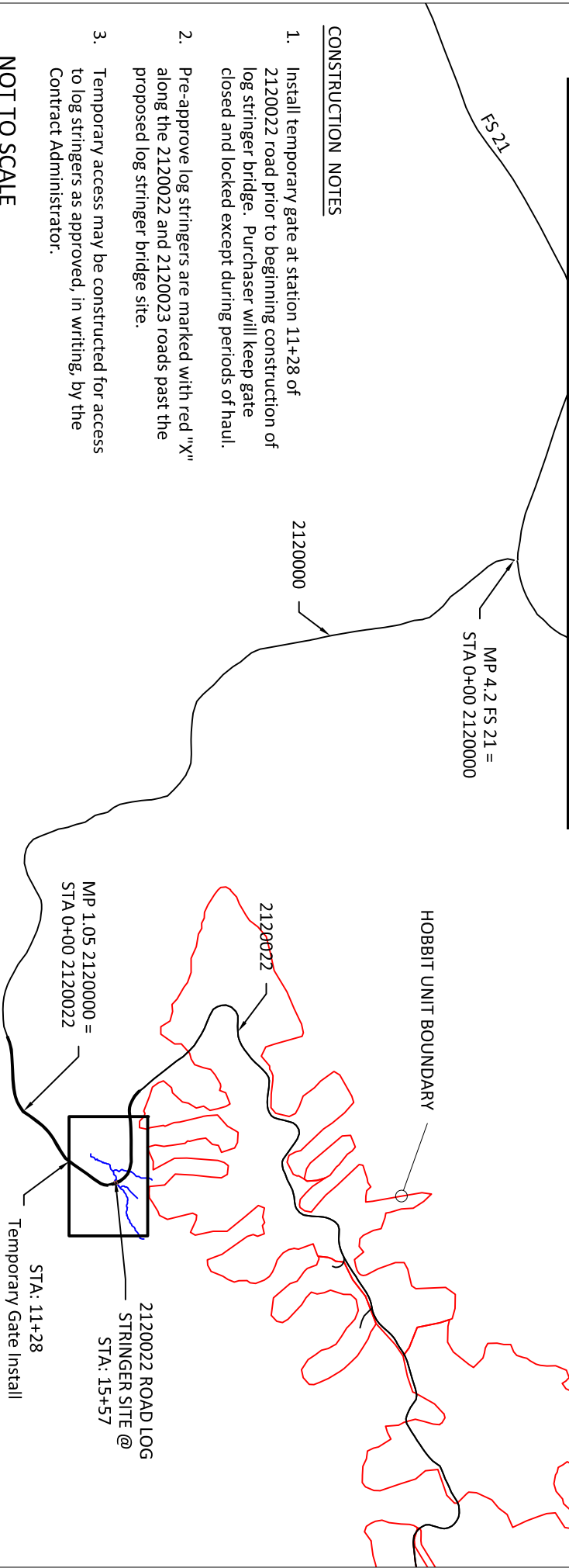
APPROVED BY: _____ Date _____

USFS Regional Structures Program Manager _____ Date _____

USFS Director of Engineering _____ Date _____

PROJECT DESCRIPTION:

Temporary 18-foot span log stringer bridge to provide fish passage during winter haul activities. Structure will be removed prior to contract termination.



CONSTRUCTION NOTES

1. Install temporary gate at station 11+28 of 2120022 road prior to beginning construction of log stringer bridge. Purchaser will keep gate closed and locked except during periods of haul.
2. Pre-approve log stringers are marked with red "X" along the 2120022 and 2120023 roads past the proposed log stringer bridge site.
3. Temporary access may be constructed for access to log stringers as approved, in writing, by the Contract Administrator.

NOT TO SCALE



WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
GOOD NEIGHBOR AUTHORITY
FEDERAL LANDS PROGRAM

Road: 2120022	
Township: 24 N	Range: 10 W
Station: 15+57	
Agreement No. 36-106683	

OLYMPIC NATIONAL FOREST
PACIFIC RANGER DISTRICT

VICINITY MAP

HOBBIT TIMBER SALE
LOG STRINGER BRIDGE DETAIL

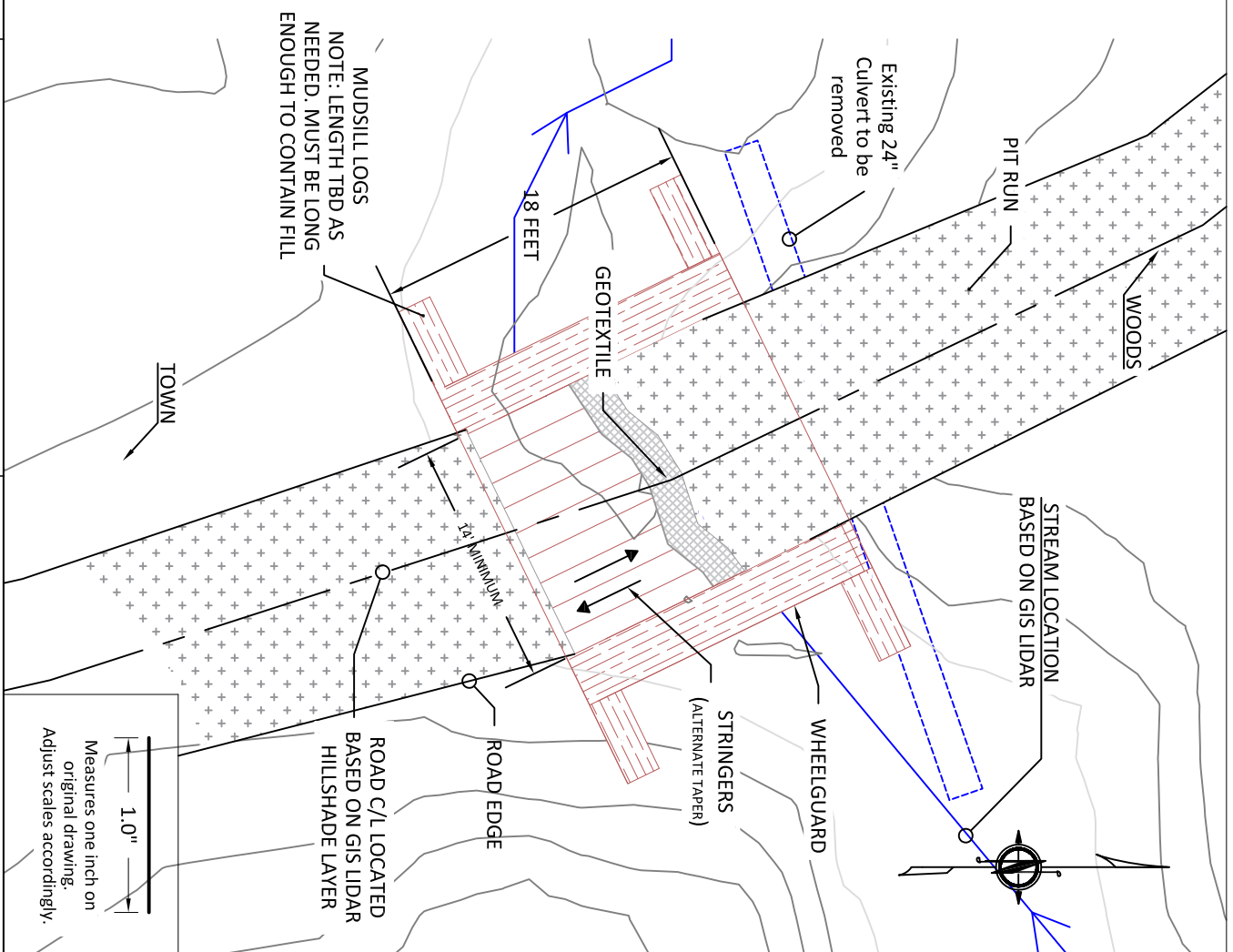
County: Grays Harbor/Jefferson	Date: 08/05/2024
Drawn By: S. Hanna	Sheet: 1 of 4

CONSTRUCTION NOTES

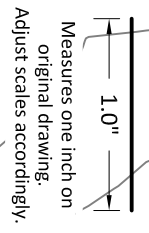
1. Remove existing 24-inch corrugated metal culvert prior to construction of log stringer. Backfill material from removal will be compacted native material.
2. Bridge alignment shown is approximate, alignment may be skewed to accommodate road curvature and stream alignment.
3. Use a single mudsill at each abutment. Place mudsill on suitable compacted material as approved by Contract Administrator.
4. Prior to contract termination, bridge removal shall be accomplished as follows:
 - 4.a. Remove rock from bridge deck and use as part of earthen barricade construction as shown in Earthen Barricade Detail.
 - 4.b. Lay back embankment slopes no steeper than 1½ (H):1(V).
 - 4.c. Remove each stringer and mudsill log with minimal stream disturbance.
 - 4.d. Seed and cover with weed-free straw all disturbed areas.


MATERIAL NOTES

1. Estimated span length was designed for 18-feet. Any design changes shall be approved by the Contract Administrator.
2. Based on the design span length, all logs to be Western Hemlock with minimum mid-span diameters inside bark as follows:
 - 2.1. Log stringers 22-inches.
 - 2.2. Mudsill logs 24-inches.
3. Logs to be straight, sound, and free of decay. All materials have been pre-selected and marked with "X" in red paint. Alternate material not marked shall be approved by Contract Administrator prior to cutting.
4. All bark shall be peeled from logs prior to construction.
5. Stringers and wheelguards shall be lashed as shown in the BRIDGE SURFACING & SHEAR RAIL DETAILS attached.

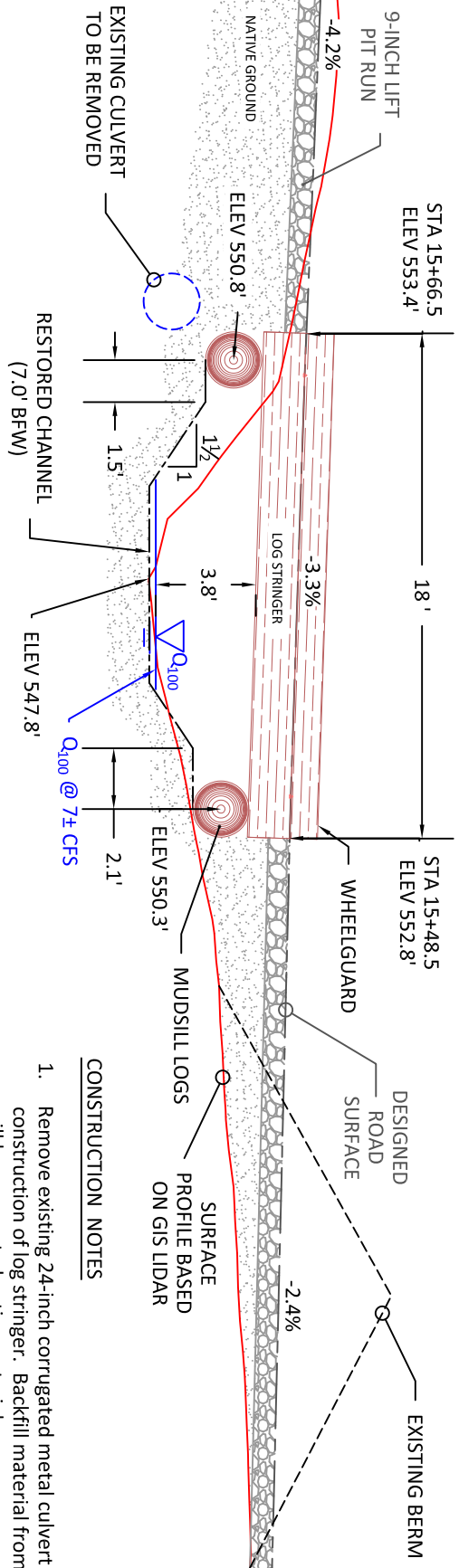


MUDSILL LOGS
NOTE: LENGTH TBD AS
NEEDED. MUST BE LONG
ENOUGH TO CONTAIN FILL



 <p>WASHINGTON DEPARTMENT OF NATURAL RESOURCES</p>	<p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES GOOD NEIGHBOR AUTHORITY FEDERAL LANDS PROGRAM</p>		<p>ROAD: 2120022</p>		<p>OLYMPIC NATIONAL FOREST PACIFIC RANGER DISTRICT</p>	<p>HOBBIT TIMBER SALE LOG STRINGER BRIDGE DETAIL</p>
	<p>Township: 24 N</p>	<p>Range: 10 W</p>	<p>Stations: 15+57</p>			
<p>Agreement No. 36-106683</p>			<p>PLAN VIEW</p>		<p>Drawn By: S. Hanna</p>	<p>Date: 08/05/2024 Sheet: 2 of 4</p>

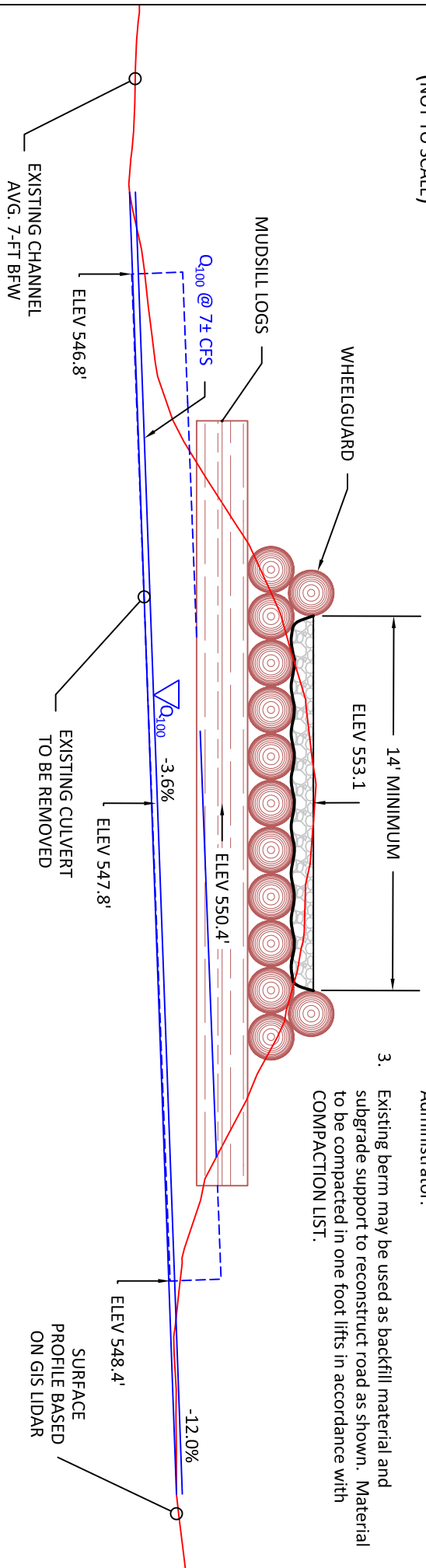
ROAD PROFILE VIEW
(NOT TO SCALE)



CONSTRUCTION NOTES

1. Remove existing 24-inch corrugated metal culvert prior to construction of log stringer. Backfill material from removal will be compacted native material.
2. Use a single mudsill at each abutment. Sill log shall have a minimum midspan diameter of 24" and be set on suitable compacted material as approved by Contract Administrator.
3. Existing berm may be used as backfill material and subgrade support to reconstruct road as shown. Material to be compacted in one foot lifts in accordance with COMPACTION LIST.

STREAM PROFILE VIEW
(NOT TO SCALE)



WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
GOOD NEIGHBOR AUTHORITY
FEDERAL LANDS PROGRAM

Road: 2120022
Township: 24 N
Range: 10 W
Stations: 15+57
Agreement No. 36-106683

OLYMPIC NATIONAL FOREST
PACIFIC RANGER DISTRICT
ROAD AND STREAM PROFILE

HOBBIT TIMBER SALE
2120022 ROAD REPAIR DETAIL
County: Grays Harbor/Jefferson
Date: 08/05/2024
Drawn By: S. Hanna
Sheet: 3 of 4

BRIDGE & FOUNDATION SPECIFICATIONS:

1. DESIGN: DESIGN GUIDE FOR NATIVE LOG STRINGER BRIDGES, U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE, AUGUST 1976.
2. SUPERSTRUCTURE: WOOD STRINGERS AND SILLS WILL BE WESTERN HEMLOCK THAT ARE STRAIGHT, SOUND, AND FREE OF DECAY.
3. CURB: CURB RAILS SHALL BE CONSTRUCTED IN ACCORDANCE WITH BRIDGE SURFACING AND SHEAR RAIL DETAIL.
4. BRIDGE DELINEATORS: BRIDGE DELINEATORS SHALL BE INSTALLED AT ALL BRIDGE ENTRANCE CORNERS AND SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) TYPE III OBJECT MARKER.

DESIGN LOADS

5. DEAD LOADS: WESTERN HEMLOCK LOGS AT 29 PCF, AGGREGATE SURFACING AT 120 PCF.
6. LIVE LOAD: U-80 OVERLOAD

OTHER

7. HYDROLOGY AND HYDRAULICS: THIS BRIDGE IS DESIGNED TO PASS A TOTAL FLOW OF 7± CFS, WHICH IS BASED ON A 100-YEAR FLOOD DERIVED FROM THE WADOT RATIONAL METHOD. FREEBOARD IS DESIGNED AT 3.6 FEET. HIGH WATER DEPTH IS APPROXIMATELY 0.23 FEET.
8. SOIL CONDITIONS ASSUMPTION OF 2500+ PSF BENEATH BOTH ABUTMENT FOUNDATIONS.

GENERAL NOTES:

TIMING RESTRICTIONS: IN-STREAM WORK ASSOCIATED WITH THIS PROJECT WILL BE COMPLETED BETWEEN JULY 1 AND SEPTEMBER 30, UNLESS MODIFIED BY USFS.

STREAM PROTECTION

STREAM WIDTH: THE ESTIMATED NATURAL CHANNEL WIDTH IS APPROXIMATELY 7 FEET AS DETERMINED BY THE STATE DURING AN ON SITE INVESTIGATION.


STREAM PROTECTION: STREAM FLOW WILL BE ISOLATED FROM ACTIVE WORK AREA THROUGH RELOCATION INTO BYPASS CULVERT OR PUMPING.

BANK PROTECTION: CONTRACTOR SHALL RETAIN AS MANY OF THE EXISTING CONIFER TREES ALONG THE STREAM BANKS AS POSSIBLE TO ENHANCE SLOPE STABILITY.

STRAW MULCHING/SEEDING: ALL EXPOSED OR DISTURBED SOILS SHALL BE PROTECTED FROM EROSION USING WEED-FREE GRASS SEED AND AT LEAST 1-INCHES OF STRAW MULCH IMMEDIATELY UPON COMPLETION OF THE PROJECT.

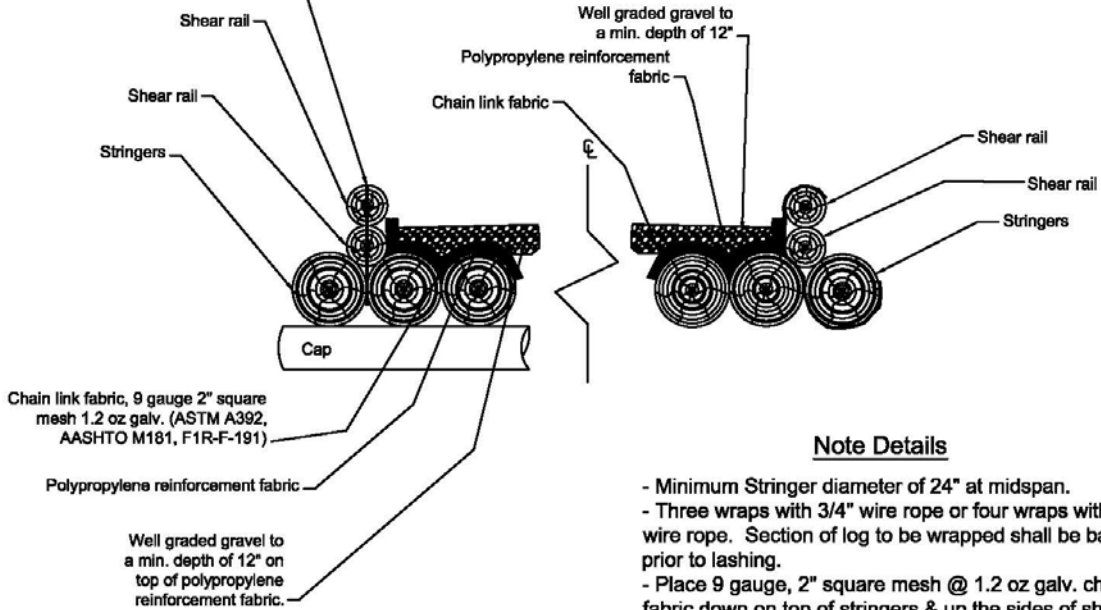
WASTE MATERIAL: EXCAVATED MATERIAL SHALL BE TEMPORARILY STOCKPILED IN AN LOCATION AS APPROVED BY CONTRACT ADMINISTRATOR TO BE USED FOR ROAD CLOSURE ACTIVITIES.

LARGE WOODY DEBRIS: AT LEAST ONE PIECE OF CONIFER LWD INCLUDING ROOTWAD SHALL BE PLACED DOWNSTREAM OF THE BRIDGE. LWD SHALL BE AT LEAST 12" DBH AND 15- FEET IN LENGTH AND OBTAINED FROM ADJACENT RMZ TREES REMOVED FOR BRIDGE INSTALLATION.

	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES GOOD NEIGHBOR AUTHORITY FEDERAL LANDS PROGRAM		ROAD: 2120022		OLYMPIC NATIONAL FOREST		HOBBIT TIMBER SALE	
	Township: 24 N	Range: 10 W	PACIFIC RANGER DISTRICT		GENERAL NOTES			
	Stations: 15+57		Agreement No. 36-106683		County: Grays Harbor/Jefferson	Drawn By: S. Hanna	Date: 08/05/2024	Sheet: 4 of 4

Bridge Surfacing & Shear Rail Details

1" Ø rod (drift pin) through both shear rails, lashed to log stringer. Minimum of 4 pins shall be used

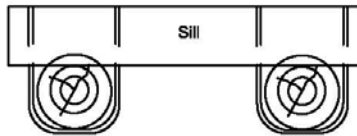


Chain link fabric, 9 gauge 2" square mesh 1.2 oz galv. (ASTM A392, AASHTO M181, F1R-F-191)

Polypropylene reinforcement fabric

Well graded gravel to a min. depth of 12" on top of polypropylene reinforcement fabric.

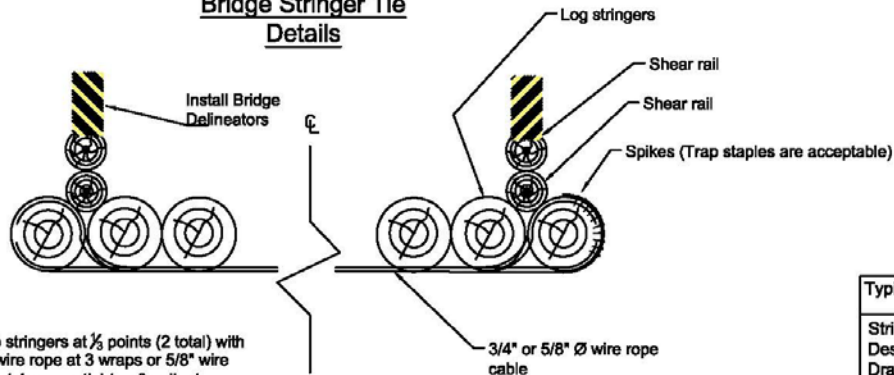
Lashing Detail



Note Details

- Minimum Stringer diameter of 24" at midspan.
- Three wraps with 3/4" wire rope or four wraps with 5/8" wire rope. Section of log to be wrapped shall be barked prior to lashing.
- Place 9 gauge, 2" square mesh @ 1.2 oz galv. chain link fabric down on top of stringers & up the sides of shear rails by min. 9" and over the ends to the top of the cap.
- After placement of chain link fabric, place polypropylene reinforcement fabric over the chain link fabric.
- Place well graded gravel over the polypropylene reinforcement fabric to a min. depth of 12". Finished surface elevation shall transition smoothly to road surface.
- Rail logs shall be selected and placed so that at least 15" are free and above the top of the gravel surfacing.

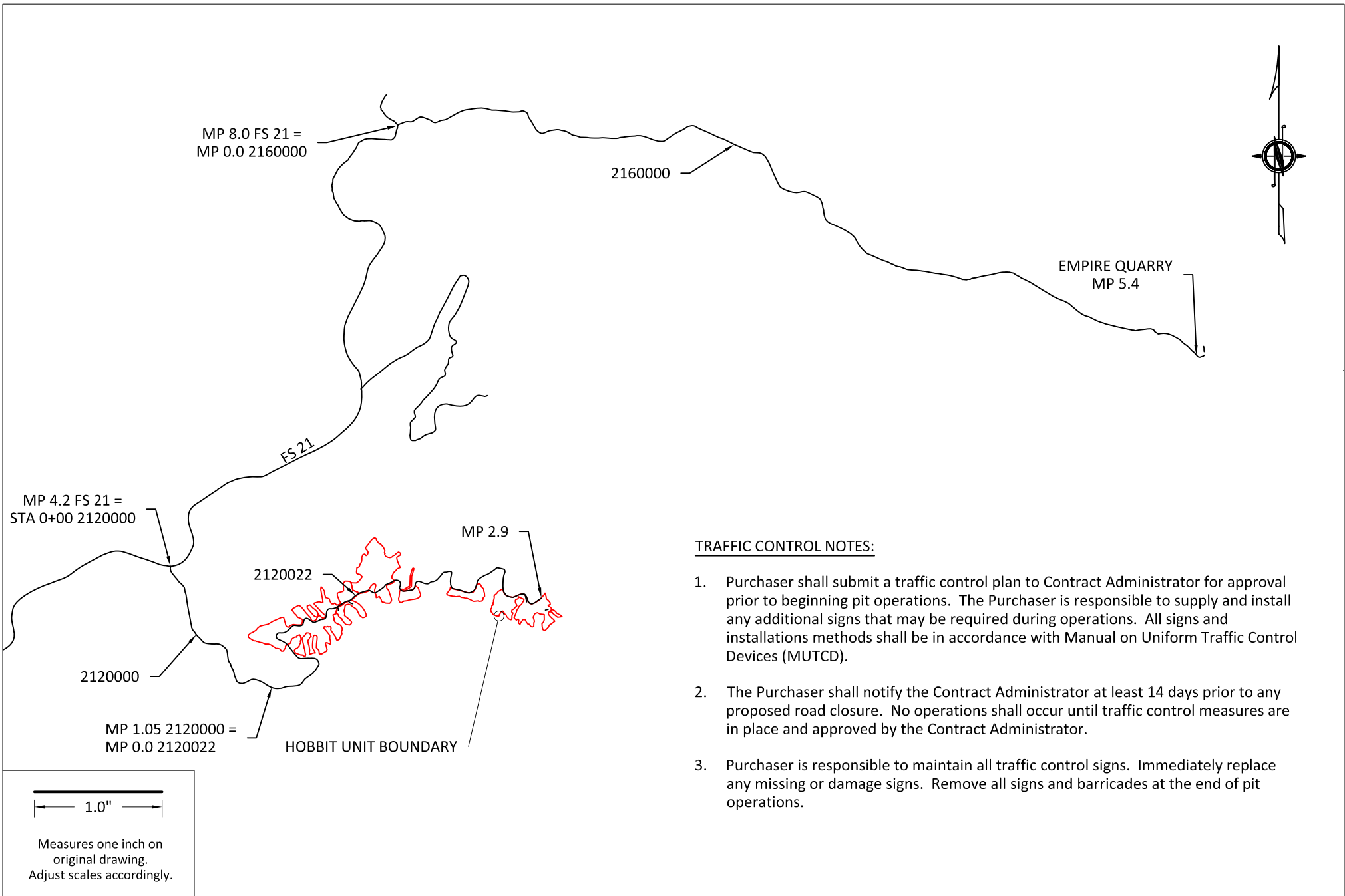
Bridge Stringer Tie Details




Wrap stringers at $\frac{1}{3}$ points (2 total) with 3/4" wire rope at 3 wraps or 5/8" wire rope at 4 wraps, tighten & spike to stringers.

Typical Stringer Bridge


Stringer and Rail Details
Designed By: Jed Nowak
Drawn By: Jed Nowak
Date: 10/30/2018

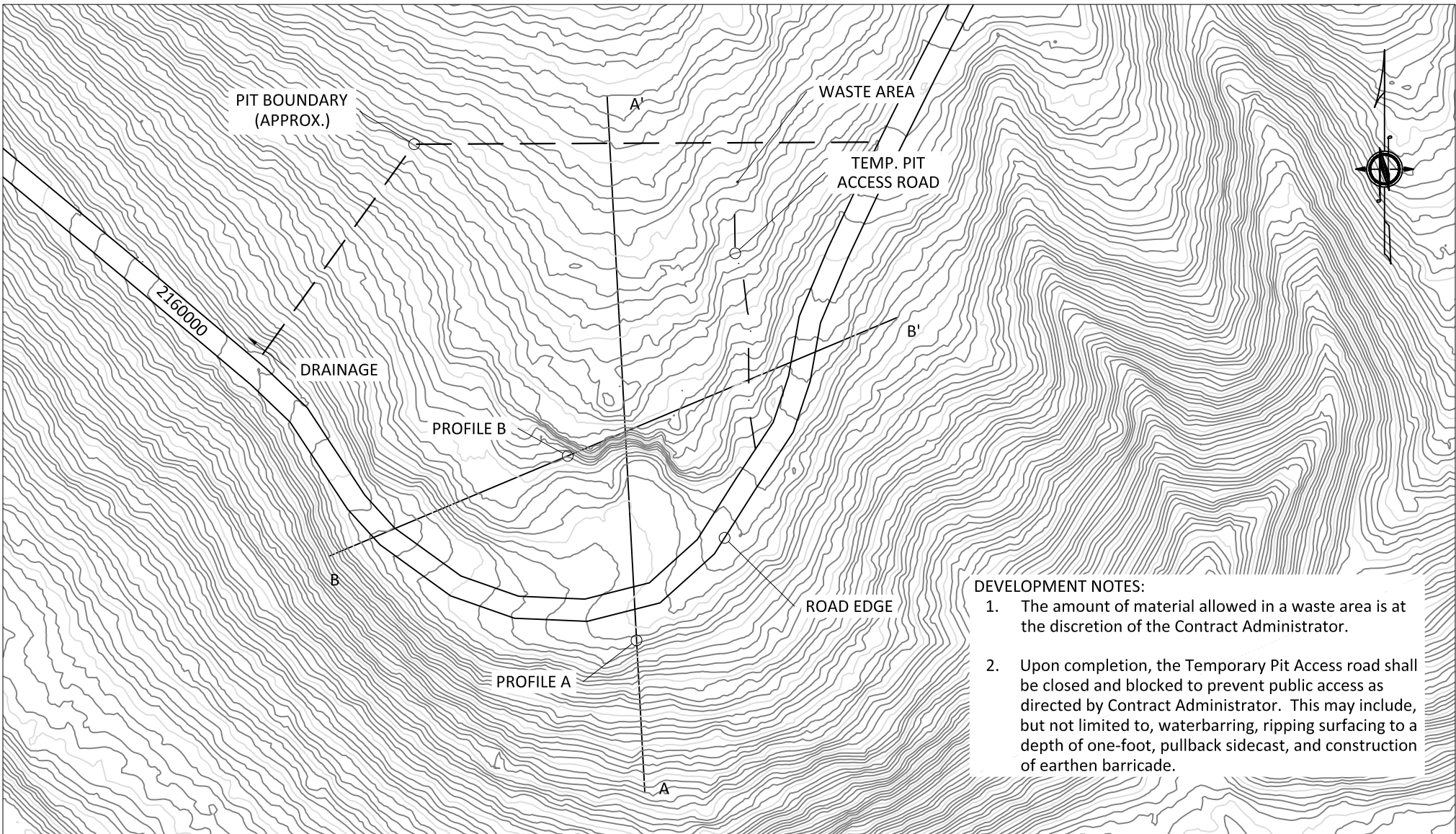


 <p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES GOOD NEIGHBOR AUTHORITY FEDERAL LANDS PROGRAM</p>	Road: 2160000	Station: 285+12	OLYMPIC NATIONAL FOREST PACIFIC RANGER DISTRICT		HOBBIT TIMBER SALE EMPIRE QUARRY DEVELOPMENT PLAN	
	Township: 24 N	Range: 10 W				
	Latitude : N 47.5564° Longitude: W 123.9346°		VICINITY MAP AND TRAFFIC CONTROL		Jefferson County	Date: 03/11/2024
	Agreement No. 36-106683				Drawn By: S. Hanna	Sheet: 1 of 4

1. All operations shall be carried out in compliance with all regulations of:
 - a. Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration.
 - b. "Safety Standards for Construction Work" (296-155 WAC), Washington Department of Labor and Industries.
2. Contractor shall arrange with the Contract Administrator to review the EMPIRE QUARRY and examine the area before beginning any operations. A rock source plan of operations shall be developed and agreed upon by the Contract Administrator and Contractor before beginning any operations.
 - 2.1. Maximum pit face height shall not exceed 30 feet, unless authorized in writing by the Contract Administrator.
 - 2.2. Any loose shot or excavated material not used will be stockpiled in a location as approved by Contract Administrator.
 - 2.3. Pit development shall occur within the approximate boundaries as shown in Plan View on page 3.
3. All vegetation including stumps shall be cleared a minimum of 25 feet beyond the top of all working faces. The Contractor shall maintain a minimum of 15 foot wide area stripped to rock from the pit face at all times.
4. All overburden and excavated material from construction of equipment access trail that cannot be use for processing rock shall be end hauled, placed, and compacted at the designated waste areas. Waste Area compaction requirements are specified in the COMPACTION LIST.
5. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the designated waste area.
6. Upon request by the Contract Administrator, the Contractor will submit an informational drilling and shooting plan five working days prior to any drilling.
7. Drilling and rock extraction may begin when the Contract Administrator has approved, in writing, all of the clearing, grubbing and overburden removal.
8. Working bench width shall be a minimum of 20 feet and outsloped at 2%.
9. Upon request by the Contract Administrator, the Contractor will submit an informational drilling and shooting report after blasting has occurred.
10. The pit floor shall have continuity of slope with a smooth and neat condition that provides drainage at a minimum of 3 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques. No sediment shall enter live water.
11. The location and amount of material deposited in a temporary stockpile is subject to approval by the Contract Administrator. All stockpiled material shall be maintained in a neat and useable condition.
12. Oversize material remaining in the pit at the conclusion of use shall not exceed 5 percent of the total volume mined during that operation. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of operations, all remaining oversize material shall be located as directed by the Contract Administrator.
13. Upon completion of pit operations, the following shall occur:
 - a. Pit walls may not be undermined or over steepened. Pit walls must be maintained in a condition that minimizes the possibility of walls sliding or failing.
 - b. Pit faces and walls shall be scaled and cleared of loose and overhanging material.
 - c. Benches shall have safety berms constructed or access blocked to highway vehicles.
 - d. The pit area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life.
 - e. All exposed soils in the Waste Areas shall be grass seeded in accordance with Section 8 of Road Plan.
 - f. The pit area shall be worked and left in a condition that future operations may proceed in an orderly manner. No loose rock material will be placed or stockpiled against pit faces.
 - g. The site shall be cleared of all temporary structures, equipment and rubbish. Block access roads with existing on-site rip rap as directed by the Contract Administrator. The pit area shall be left in a neat and presentable condition.
 - h. The Contractor shall obtain written approval of final rock source condition and compliance with the terms of this plan.
14. The maximum slope of pit walls must be consistent with recognized engineering standards for the type of material being excavated in accordance with the following table:

<u>MATERIAL</u>	<u>MAXIMUM SLOPE RATIO (H:V)</u>	<u>MAXIMUM SLOPE PERCENT</u>
SAND	2:1	50
GRAVEL	1 ½:1	67
COMMON EARTH	1:1	100
FRACTURED ROCK	½ :1	200
SOLID ROCK	¼ :1	400

	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES GOOD NEIGHBOR AUTHORITY FEDERAL LANDS PROGRAM	Road: 2160000	Station: 285+12	OLYMPIC NATIONAL FOREST PACIFIC RANGER DISTRICT	HOBBIT TIMBER SALE <i>EMPIRE QUARRY DEVELOPMENT PLAN</i>	
		Township: 24 N	Range: 10 W			
		Latitude : N 47.5564° Longitude: W 123.9346°		GENERAL CLAUSES	Jefferson County	Date: March 11, 2024
		Agreement No. 36-106683			Drawn By: S. Hanna	Sheet: 2 of 4




- DEVELOPMENT NOTES:**
1. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.
 2. Upon completion, the Temporary Pit Access road shall be closed and blocked to prevent public access as directed by Contract Administrator. This may include, but not limited to, waterbarring, ripping surfacing to a depth of one-foot, pullback sidecast, and construction of earthen barricade.

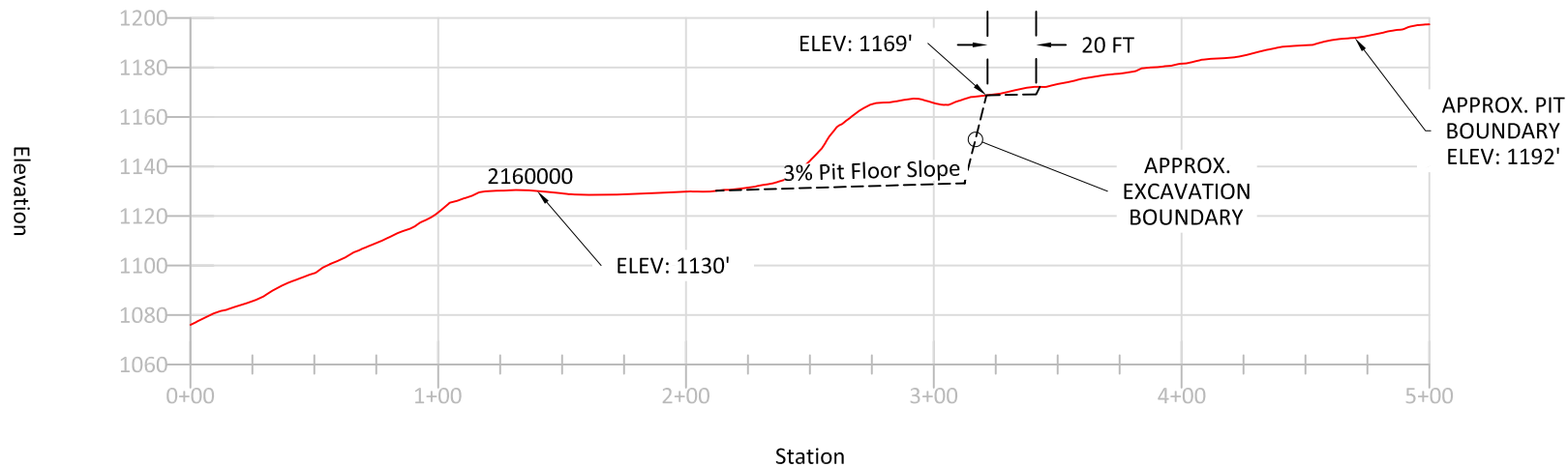
NOTE: CONTOURS SHOWN ARE TWO FOOT MINOR AND TEN FOOT MAJOR. THEY REPRESENT THE TOPOGRAPHY BASED ON GIS LIDAR DATA.

1.0"

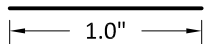
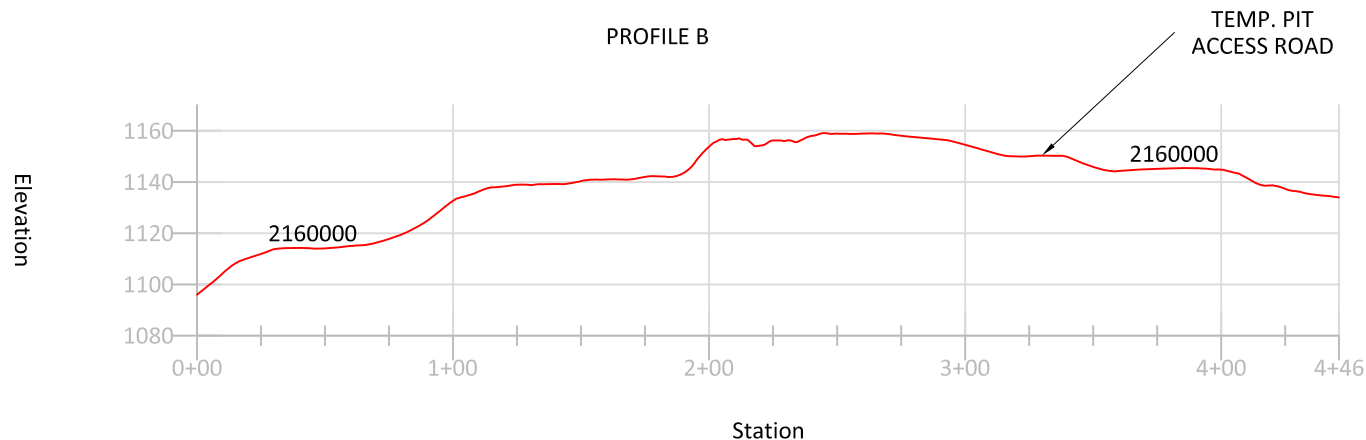
Measures one inch on original drawing. Adjust scales accordingly.

 <p>WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES GOOD NEIGHBOR AUTHORITY FEDERAL LANDS PROGRAM</p>	Road: 2160000	Station: 285+12	<p>OLYMPIC NATIONAL FOREST PACIFIC RANGER DISTRICT</p>		<p>HOBBIT TIMBER SALE EMPIRE QUARRY DEVELOPMENT PLAN</p>	
	Township: 24 N	Range: 10 W				
	Latitude : N 47.5564° Longitude: W 123.9346°		<p>PLAN VIEW</p>		Jefferson County	Date: 03/11/2024
	Agreement No. 36-106683				Drawn By: S. Hanna	Sheet: 3 of 4

PROFILE A



PROFILE B



Measures one inch on original drawing. Adjust scales accordingly.



WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
GOOD NEIGHBOR AUTHORITY
FEDERAL LANDS PROGRAM

Road: 2160000 Station: 285+12

Township: 24 N Range: 10 W

Latitude : N 47.5564°
Longitude: W 123.9346°

Agreement No. 36-106683

OLYMPIC NATIONAL FOREST

PACIFIC RANGER DISTRICT

PROFILE VIEWS

HOBBIT TIMBER SALE
EMPIRE QUARRY DEVELOPMENT PLAN

Jefferson County

Date: 03/11/2024

Drawn By: S. Hanna

Sheet: 4 of 4

DEPARTMENT OF NATURAL RESOURCES
ROAD DEVELOPMENT COST SUMMARY
Page 1 of 14

US NATIONAL FOREST: OLYMPIC NATIONAL FOREST
RANGER DISTRICT: PACIFIC REGION

GNA SALE/PROJECT NAME: HOBBIT

AGREEMENT #: 36-106683

ROAD NUMBERS:

Optional: 2120023, TEMP 1, 2120024, 2120025, TEMP 3, TEMP 4, 2120030, 2120026, TEMP 6, 2120027, TEMP 8

Required: 2120022

ROAD STANDARD:	Construction	Reconstruction	Post-Haul Maintenance
NUMBER OF STATIONS:	40.89	186.52	
CLEARING & GRUBBING, EXCAVATION AND FILL, MISC.:	\$44,256.33	\$57,883.68	
ROAD ROCK:			
Optional:	\$81,619.16	\$298,506.14	
Required:			\$8,554.00
Total:	\$81,619.16	\$298,506.14	\$8,554.00
CULVERTS AND FLUMES:	\$4,110.80	\$26,428.00	
STRUCTURES: GATE REMOVAL	-	\$0.00	-
MOBILIZATION:	\$7,101.69	\$9,288.44	\$0.00
TOTAL COSTS:	\$137,087.98	\$392,106.26	\$8,554.00
COST PER STATION:	\$3,353	\$2,102	\$138
ROAD CLOSURE & DECOMMISSION COSTS:	\$13,944.58		

10% OVERHEAD AND GENERAL EXPENSE =	\$53,774.82
TOTAL (All Roads) =	\$605,467.64
TOTAL (Minus Optional Rock) =	\$225,342.34
SALE VOLUME MBF =	3,439
TOTAL \$/MBF =	\$176.06
TOTAL \$/MBF (Minus Optional Rock) =	\$65.53

Compiled by: Scott Hanna
Date: 13-Jun-24

SALE NAME: **HOBBIT**

ROAD NAME: **2120022**

Required Pre-Haul Maintenance- stations
 0.00 miles

Required Reconstruction - stations
 2.67 miles

Required Construction - stations
 0.00 miles

Required Decommission- stations
 0.00 miles

Optional Reconstruction - stations
 0.00 miles

Optional Construction - stations
 0.00 miles

CLEARING/GRUBBING

Scattering Organic Debris	141.10	stations @	\$156.80	per station	\$22,124.48
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EXCAVATION

Pull and clean ditch-	42.33	stations @	\$68.87	per station	\$2,915.27
Clean culvert inlets/outlets - 12+49 to 153+5	26.00	culverts @	\$72.00	each	\$1,872.00
Grade and shape subgrade -	141.10	stations @	\$25.22	per station	\$3,558.54

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	141.10	stations @	\$9.09	per station	\$1,282.60
Grass seed and fertilize -	129.60	lbs @	\$6.48	per lbs	\$839.81

ENDHAUL

Centerline Offset (Station 68+08 to 69+85)	1150	cy @	\$3.09	per cy	\$3,553.50
Centerline Offset (Station 94+66 to 96+25)	2000	cy @	\$3.55	per cy	\$7,100.00
TEMP 8 Road junction construction (Station 145+82 to 147+32)	800	cy @	\$6.21	per cy	\$4,968.00

TOTAL EARTHWORK \$48,214.20

CULVERTS - MATERIALS & INSTALLATION

Culverts	280	LF of 18"	@	\$34.52	per foot	\$9,665.60
Stream Culverts	140	LF of 24"	@	\$38.44	per foot	\$5,381.60
Log Stringer Bridge		1	@	\$10,000.00	each	\$10,000.00

TOTAL CULVERTS AND LOG STRINGER \$25,047.20

ROCK

Spot Rock	As directed by CA	100	cy of	6" JAW RUN	@	\$31.97	per cy	\$3,197.00
Surfacing	See ROCK LIST	266	cy of	1½" MINUS CRUSHED	@	\$49.66	per cy	\$13,209.56
Spot Patch for 2120000	As directed by CA	200	cy of	Riprap	@	\$42.77	per cy	\$8,554.00
12+49 to 153+59		7,172	cy of	6" JAW RUN	@	\$31.17	per cy	\$223,551.24
Energy Dissipator	See CULVERT LIST	20	cy of	Pit Run	@	\$35.17	per cy	\$703.40

TOTAL ROCK \$240,661.20

GRAND TOTAL \$313,922.60

Optional Rock?	YES
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COST PER STATION \$2,224.82

SALE NAME:

HOBBIT

ROAD NAME: **2120023/TEMP 1**

Required Pre-Haul Maintenance- stations
0.00 miles

Required Reconstruction - stations
0.00 miles

Required Construction - stations
0.00 miles

Required Closure/Decommission- stations
0.16 miles

Optional Reconstruction - stations
0.07 miles

Optional Construction - stations
0.10 miles

CONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris	8.68	stations @	\$287.00	per station	\$2,491.16
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EXCAVATION

Road Construction Earthwork	8.68	stations @	\$250.00	per station	\$2,170.00
Grade and shape subgrade -	8.68	stations @	\$25.22	per station	\$218.91

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	8.68	stations @	\$9.09	per station	\$78.90
Construct turnaround @ sta. -	1.00	@	\$125.00	each	\$125.00
Construct landing -	1.00	@	\$500.00	each	\$500.00

TOTAL EARTHWORK \$5,583.97

CULVERTS - MATERIALS & INSTALLATION

Stream Culverts	80	LF of 24"	@	38.44	per foot	\$3,075.20
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TOTAL CULVERTS \$3,075.20

ROCK

Energy Dissipator	See CULVERT LIST	10	cy. of	Pit Run	@	\$27.58	per c.v.=	\$275.80
0+00 to	8+68	465	cy of	6" JAW RUN	@	\$28.58	per cy	\$13,289.70

TOTAL ROCK \$13,565.50

CLOSURE/DECOMMISSION

Construct waterbar -	3.00	@	\$57.33	each	\$171.99
Stream culvert removals -	2.00	@	\$500.00	each	\$1,000.00
Grass seed and fertilize -	32.00	lbs @	\$6.48	per lbs	\$207.36
Wood placement	5.19	@	\$30.00	per station	\$155.70
Sidecast pullback and recontour slope	5.19	@	\$408.20	per station	\$2,118.56
Road surface ripping	5.19	@	\$18.00	per station	\$93.42
Remove culverts from state lands -	2.00	@	\$437.90	total	\$437.90
Stream diversion installation-	2.00	hrs @	\$204.00	per hr	\$408.00

TOTAL CLOSURE/DECOMMISSION \$4,592.93

GRAND TOTAL \$26,817.60

Optional Rock?	YES
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COST PER STATION \$3,089.59

SALE NAME: **HOBBIT**

ROAD NAME: **2120024**

Required Pre-Haul Maintenance- stations
0.00 miles

Required Reconstruction - stations
0.00 miles

Required Construction - stations
0.00 miles

Required Closure- stations
0.09 miles

Optional Reconstruction - stations
0.09 miles

Optional Construction - stations
0.00 miles

CLEARING/GRUBBING

Scattering Organic Debris	4.51	sta @	\$156.80	per sta	\$707.17
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EXCAVATION

Pull and clean ditch	4.51	stations @	\$68.87	per station	\$310.60
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MISC.

Roll subgrade w/ vibratory roller prior to rocking -	4.51	stations @	\$9.09	per station	\$41.00
Grass seed and fertilize -	4.00	lbs @	\$6.48	per lbs	\$25.92

TOTAL EARTHWORK \$1,198.43

ROCK

0+00 to 4+51	207	cy of	6" JAW RUN	@	\$28.77	per cy	\$5,955.39
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TOTAL ROCK \$5,955.39

CLOSURE

Construct waterbar -	3.00	@	\$57.33	each	\$171.99
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TOTAL CLOSURE/DECOMMISSION \$171.99

Optional Rock?	YES
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GRAND TOTAL \$7,325.81

COST PER STATION \$1,624.35

SALE NAME: **HOBBIT**

ROAD NAME: **2120025/TEMP 3**

Required Pre-Haul Maintenance- stations
0.00 miles

Required Reconstruction - stations
0.00 miles

Required Construction - stations
0.00 miles

Required Closure/Decommission- stations
0.12 miles

Optional Reconstruction - stations
0.08 miles

Optional Construction - stations
0.04 miles

CONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris	6.33	stations @	\$287.00	per station	\$1,816.71
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EXCAVATION

Road Construction Earthwork	6.33	stations @	\$250.00	per station	\$1,582.50
Grade and shape subgrade -	6.33	stations @	\$25.22	per station	\$159.64

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	6.33	stations @	\$9.09	per station	\$57.54
Construct turnaround -	1.00	@	\$125.00	each	\$125.00
Construct landing -	1.00	@	\$500.00	each	\$500.00

TOTAL EARTHWORK \$4,241.39

ROCK

0+00	to	6+33	366	cy of	6" JAW RUN	@	\$30.11	per cy	\$11,020.26
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TOTAL ROCK \$11,020.26

CLOSURE/DECOMMISSION

Construct waterbar	3.00	@	\$57.33	each	\$171.99
Grass seed and fertilize	23.20	lbs @	\$6.48	per lbs	\$150.34
Wood placement	2.37	@	\$30.00	per station	\$71.10
Sidecast pullback and recontour slope	2.37	@	\$408.20	per station	\$967.43
Road surface ripping	2.37	@	\$17.25	per station	\$40.88

TOTAL CLOSURE/DECOMMISSION \$1,401.74

GRAND TOTAL \$17,443.52

Optional Rock?	YES
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COST PER STATION \$2,755.69

SALE NAME: **HOBBIT**

ROAD NAME: **TEMP 4**

Required Pre-Haul Maintenance- stations
0.00 miles

Required Reconstruction - stations
0.00 miles

Required Construction - stations
0.00 miles

Required Closure- stations
0.02 miles

Optional Reconstruction - stations
0.02 miles

Optional Construction - stations
0.00 miles

CLEARING/GRUBBING

Scattering Organic Debris -	0.86	stations @	\$156.80	per station	\$134.85
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EXCAVATION

Pull and clean ditch -	0.86	stations @	\$68.87	per station	\$59.23
Grade and shape subgrade -	0.86	stations @	\$25.22	per station	\$21.69

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	0.86	stations @	\$9.09	per station	\$7.82
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TOTAL EARTHWORK \$223.59

ROCK

0+00	to	0+86	81	cy of	6" JAW RUN	@	\$30.34	per cy	\$2,457.54
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TOTAL ROCK \$2,457.54

CLOSURE

Construct waterbar -	0.86	@	\$100.00	per station	\$86.00
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TOTAL ABANDONMENT \$86.00

GRAND TOTAL \$2,767.13

Optional Rock?	YES
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COST PER STATION \$3,217.59

SALE NAME: HOBBIT

ROAD NAME: 2120030

Required Pre-Haul Maintenance- stations
0.00 miles

Required Reconstruction - stations
0.00 miles

Required Construction - stations
0.00 miles

Required Decommission- stations
0.00 miles

Optional Reconstruction - stations
25+70
0.49 miles

Optional Construction - stations
0.00 miles

CLEARING/GRUBBING

Scattering Organic Debris	25.70	stations @	\$156.80	per station	\$4,029.76
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EXCAVATION

Grade and shape subgrade -	25.70	stations @	\$25.22	per station	\$648.15
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MISC.

Roll subgrade w/ vibratory roller prior to rocking -	25.70	stations @	\$9.09	per station	\$233.61
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TOTAL EARTHWORK \$4,911.52

CULVERTS - MATERIALS & INSTALLATION

Culverts	40	LF of 18"	@	\$34.52	per foot	\$1,380.80
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TOTAL CULVERTS \$1,380.80

ROCK

0+00 to 25+70	1,285	cy of	6" JAW RUN	@	\$30.74	per cy	\$39,500.90
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TOTAL ROCK \$39,535.27

GRAND TOTAL \$45,827.59

Optional Rock?	YES
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COST PER STATION \$1,783.17

SALE NAME: **HOBBIT**

ROAD NAME: **2120026**

Required
Pre-Haul Maintenance- stations
0.00 miles

Required
Reconstruction - stations
0.00 miles

Required
Construction - stations
0.00 miles

Required Closure- stations
0.39 miles

Optional
Reconstruction - stations
0.00 miles

Optional
Construction - stations
0.39 miles

CLEARING/GRUBBING

Scattering Organic Debris	20.43	stations @	\$287.00	per station	\$5,863.41
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EXCAVATION

Road Construction Earthwork	20.43	stations @	\$250.00	per station	\$5,107.50
Grade and shape subgrade -	20.43	stations @	\$25.22	per station	\$515.24

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	20.43	stations @	\$9.09	per station	\$185.71
Construct turnouts	1.00	@	\$125.00	each	\$125.00
Construct turnaround	1.00	@	\$125.00	each	\$125.00
Construct landing -	2.00	@	\$500.00	each	\$1,000.00

TOTAL EARTHWORK \$12,921.86

ROCK

0+00	to	20+43	1,029	cy of	6" JAW RUN	@	\$31.72	per cy	\$32,639.88
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TOTAL ROCK \$32,639.88

CLOSURE

Construct waterbar -	15.00	@	\$57.33	each	\$859.95
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TOTAL CLOSURE/DECOMMISSION \$859.95

GRAND TOTAL \$46,421.69

Optional Rock?	YES
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COST PER STATION \$2,272.23

SALE NAME:

HOBBIT

ROAD NAME:

TEMP 6

Required Pre-Haul Maintenance- stations
 0.00 miles

Required Decommission- stations
 0.03 miles

Required Reconstruction - stations
 0.00 miles

Optional Reconstruction - stations
 0.00 miles

Required Construction - stations
 0.00 miles

Optional Construction - stations
 0.03 miles

CLEARING/GRUBBING

Scattering Organic Debris	1.81	stations @	\$287.00	per sta	\$519.47
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EXCAVATION

Road Construction Earthwork	1.81	stations @	\$113.04	per sta. =	\$204.60
Grade and shape subgrade -	1.81	stations @	\$25.22	per station	\$45.65

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	1.81	stations @	\$9.09	per station	\$16.45
Construct turnaround	1.00	@	\$125.00	each	\$125.00
Construct landing -	1.00	@	\$500.00	each	\$500.00

TOTAL EARTHWORK \$1,411.17

ROCK

0+00	to	1+81	149	cy of	6" JAW RUN	@	\$30.48	per cy	\$4,541.52
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TOTAL ROCK \$4,541.52

CLOSURE/DECOMMISSION

Grass seed and fertilize -	6.80	lbs @	\$6.48	per lbs	\$44.06
Wood placement	1.81	@	\$30.00	per station	\$54.30
Sidecast pullback and recontour slope	1.81	@	\$408.20	per station	\$738.84
Road surface ripping	1.81	@	\$18.00	per station	\$32.58

TOTAL CLOSURE/DECOMMISSION \$869.78

GRAND TOTAL \$6,822.47

COST PER STATION \$3,769.32

Optional Rock?	YES
----------------	-----

SALE NAME: **HOBBIT**

ROAD NAME: **2120027**

Required
Pre-Haul Maintenance- stations
0.00 miles

Required
Reconstruction - stations
0.13 miles

Required
Construction - stations
0.00 miles

Required Closure- stations
0.00 miles

Optional
Reconstruction - stations
0.00 miles

Optional
Construction - stations
0.00 miles

CLEARING/GRUBBING

Scattering Organic Debris	6.90	stations @	\$156.80	per station	\$1,081.92
Construct waste areas -	8.00	hours @	\$260.00	per hour	\$2,080.00

EXCAVATION

Grade and shape subgrade -	6.90	stations @	\$25.22	per station	\$174.02
TOTAL EARTHWORK					\$3,335.94

ROCK

0+00	to	6+90	317	cy of	6" JAW RUN	@	\$31.22	per cy	\$9,896.74
TOTAL ROCK									\$9,896.74

CLOSURE/DECOMMISSION

Construct waterbar -	5.00	@	\$57.33	each	\$286.65
TOTAL CLOSURE/DECOMMISSION					\$286.65

Optional Rock?

GRAND TOTAL \$13,519.33
COST PER STATION \$1,959.32

SALE NAME: **HOBBIT**

ROAD NAME: **TEMP 8**

Optional Pre-Haul Maintenance-	<input type="text" value="0.00"/>	stations miles	Required Reconstruction -	<input type="text" value="0.00"/>	stations miles	Required Construction -	<input type="text" value="0.00"/>	stations miles
Required Decommission-	<input type="text" value="11+09"/>	stations miles	Optional Reconstruction -	<input type="text" value="0.00"/>	stations miles	Optional Construction -	<input type="text" value="11+09"/>	stations miles
	<u>0.00</u>			<u>0.00</u>			<u>0.00</u>	
	<u>0.21</u>			<u>0.00</u>			<u>0.21</u>	

CLEARING/GRUBBING

Scattering Organic Debris	11.09	station @	\$287.00	per sta	\$3,182.83
Endhaul Organic Debris	0.304	acres @	\$1,500.00	per acre	\$456.00

EXCAVATION

Road Construction Earthwork	11.09	station @	\$113.04	per sta	\$1,253.61
Grade and shape subgrade -	11.09	station @	\$25.22	per station	\$279.69

MISC.

Roll subgrade w/ vibratory roller prior to rocking -	11.09	stations @	\$9.09	per station	\$100.81
Construct turnouts @ sta. -	1.00	@	\$125.00	each	\$125.00
Construct turnaround @ sta. -	1.00	@	\$125.00	each	\$125.00
Construct landing -	1.00	@	\$500.00	each	\$500.00

ENDHAUL

Full Bench	2500	cy @	\$5.63	per cy	\$14,075.00
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TOTAL EARTHWORK \$20,097.94

CULVERTS - MATERIALS & INSTALLATION

Culverts	30	LF of 18"	@	34.52	per foot	\$1,035.60
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TOTAL CULVERTS \$1,035.60

ROCK

Energy Dissipator	See CULVERT LIST	1	cy of	Pit Run	@	\$37.08	per cy	\$37.08
0+00 to	11+09	599	cy of	6" JAW RUN	@	\$33.08	per cy	\$19,814.92

TOTAL ROCK \$19,852.00

DECOMMISSION

Grass seed and fertilize -	40.80	lbs @	\$6.48	per lbs	\$264.38
Wood placement	11.09	@	\$30.00	per station	\$332.70
Sidecast pullback and recontour slope	11.09	@	\$408.20	per station	\$4,526.94
Remove culverts from state lands -	1.00	@	\$437.90	total	\$437.90
Road surface ripping	11.09	@	\$18.00	per station	\$199.62

TOTAL CLOSURE/DECOMMISSION \$5,761.54

GRAND TOTAL \$46,747.08

COST PER STATION \$4,215.25

Optional Rock?	YES
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ROCK DEVELOPMENT COST

Pit:	<u>Empire Quarry</u>	Location:	<u>Sec(s) 22, T24N, R10w, W.M.</u>
Sale:	<u>HOBBIT</u>	Road:	<u>12268 c.y.</u>
Swell:	<u>1.40</u>	Stockpile (1½" Minus):	<u> </u>
Shrinkage:	<u>1.16</u>	Stockpile (4" Jaw Run):	<u> c.y.</u>
Drill Pct.:	<u>50%</u>	Total Truck Loads:	<u>12268 c.y.</u>
		In Place Total:	8763 c.y.

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact.					
	\$4.01	/cu.yd x	694	cu.yds. =	\$2,782.94
Drill & Shoot:	\$3.00	/cu.yd x	4382	cu.yds. =	\$13,146.00
Rip Rock:	\$2.96	/cu.yd x	4381	cu.yds. =	\$12,967.76
Push Rock:	\$1.11	/cu.yd x	12171	cu.yds. =	\$13,509.81
Load Crusher:	\$1.00	/cu.yd x	12171	cu.yds. =	\$12,171.00
Crush 6" Jaw Run:	\$2.50	/cu.yd x	11571	cu.yds. =	\$28,927.50
Load Dump Truck:	\$1.60	/cu.yd x	12268	cu.yds. =	\$19,628.80
Subtotal					\$103,133.81

Purchase 1½" Minus:	\$21.20	/cu.yd x	600	cu.yds. =	\$12,720.00
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Move In/Set-up 1 Stage Crusher	1	@	\$4,292.00	=	\$4,292.00
Move In and set up Drill and Compressor	1	@	\$241.98	=	\$241.98
Move in Loader	1	@	\$340.00	=	\$340.00
Move in Excavator	1	@	\$404.00	=	\$404.00
Move in Trucks	2	@	\$141.90	=	\$283.80
Weed Wash	4	@	\$500.00	=	\$2,000.00
Subtotal					\$7,561.78

Base Cost= \$9.02 Per Cu.Yd. TOTAL PRODUCTION COSTS **\$110,695.59**

Road Segment	Haul Cost (\$/cy)	Application Cost (\$/cy)	Base Cost (\$/cy)	Sub-total (\$/cy)	Number of	Speed (mph)	One-Way Distance (ft)	Sub-Total (\$)
					Cubic Yards			
2120022 Spot Rock	\$20.95	\$2.00	\$9.02	\$31.97	100	18	66053	\$3,197.00
2120022 Surfacing	\$26.46	\$2.00	\$21.20	\$49.66	266	45	212784	\$13,209.56
2120000 Spot Patch	\$31.75	\$2.00	\$9.02	\$42.77	200	45	212784	\$8,554.00
2120022	\$20.15	\$2.00	\$9.02	\$31.17	7172	18	63307	\$223,551.24
2120022 Energy Dissipator	\$20.15	\$6.00	\$9.02	\$35.17	20	18	63307	\$703.40
2120023/TEMP 1 Energy Dissi	\$17.56	\$1.00	\$9.02	\$27.58	10	19	57368	\$275.80
2120023/TEMP 1	\$17.56	\$2.00	\$9.02	\$28.58	465	19	57368	\$13,289.70
2120024	\$17.75	\$2.00	\$9.02	\$28.77	207	19	58054	\$5,955.39
2120025/TEMP 3	\$19.09	\$2.00	\$9.02	\$30.11	366	18	59646	\$11,020.26
TEMP 4	\$19.32	\$2.00	\$9.02	\$30.34	81	18	60441	\$2,457.54
2120030 Energy Dissipator	\$19.35	\$6.00	\$9.02	\$34.37	1	18	60546	\$34.37
2120030	\$19.72	\$2.00	\$9.02	\$30.74	1285	18	61831	\$39,500.90

ROCK DEVELOPMENT COST

<u>Road Segment</u>	<u>Haul Cost (\$/cy)</u>	<u>Application Cost (\$/cy)</u>	<u>Base Cost (\$/cy)</u>	<u>Sub-total (\$/cy)</u>	<u>Number of Cubic Yards</u>	<u>Speed (mph)</u>	<u>One-Way Distance (ft)</u>	<u>Sub-Total (\$)</u>
2120026	\$20.70	\$2.00	\$9.02	\$31.72	1029	17	61568	\$32,639.88
TEMP 6	\$19.46	\$2.00	\$9.02	\$30.48	149	18	60926	\$4,541.52
2120027	\$20.20	\$2.00	\$9.02	\$31.22	317	18	63458	\$9,896.74
TEMP 8 Energy Dissipator	\$22.06	\$6.00	\$9.02	\$37.08	1	18	69913	\$37.08
TEMP 8	\$22.06	\$2.00	\$9.02	\$33.08	599	18	69913	\$19,814.92
Total C.Y.					12268			

TOTAL ROCKING COSTS \$388,679.30

MOBILIZATION

SALE NAME: **HOBBIT**

LOWBOY HAUL (Round Trip)		
<u>DIST. (mi)</u>	<u>ROADWAY</u>	<u>AVE SPEED (mph)</u>
90.0	Highway	55
	County/ Mainline	10
8.0	Forest Roads	10

<u>Number of Equipment to Mobilize</u>	<u>Equipment Description</u>	<u>Move-in Costs (\$)</u>	<u>Pilot Cars</u>	<u>Mobilization (\$/mile)</u>	<u>Begin Mileage</u>	<u>End Mileage</u>	<u>Total Miles</u>	<u>Internal Mobilization Costs (\$/mile)</u>	<u>Sub-total Cost</u>
	Brush Cutter	\$640.13		\$10.90	0.00	0.00	0.00	\$0.00	\$0.00
1	Graders	\$792.82		\$13.50	0.00	3.00	3.00	\$40.50	\$833.32
	Loader (Small)	\$792.82		\$13.50	0.00	0.00	0.00	\$0.00	\$0.00
1	Loader (Med. & Large)	\$792.82	2	\$13.50	0.00	0.00	0.00	\$0.00	\$897.55
1	Rollers & Compactors	\$792.82		\$13.50	0.00	3.00	0.57	\$7.70	\$800.52
	Excavators (Small)	\$640.13		\$10.90	0.00	0.00	0.00	\$0.00	\$0.00
1	Excavators (Med.)	\$792.82	1	\$13.50	0.00	0.00	0.23	\$3.11	\$848.29
1	Excavators (Large)	\$792.82	2	\$13.50	0.00	1.00	1.00	\$13.50	\$911.05
	Tired Backhoes/Skidders	\$640.13		\$10.90	0.00	0.00	0.00	\$0.00	\$0.00
1	Tractors (D6)	\$640.13		\$10.90	0.00	0.00	0.00	\$0.00	\$640.13
	Tractors (D7)	\$792.82		\$13.50	0.00	0.00	0.00	\$0.00	\$0.00
1	Tractor (D8)	\$792.82	2	\$13.50	0.00	1.00	1.00	\$13.50	\$911.05
4	Dump Truck (10 cy +)	\$1,608.00		\$16.50	0.00	0.00	0.00	\$0.00	\$6,432.00
1	Dump Truck (Off Hiway)	\$616.22	2	\$10.90	0.00	0.00	0.00	\$0.00	\$616.22
	Water Truck (1500 Gal)	\$277.75		\$11.40	0.00	0.00	0.00	\$0.00	\$0.00
	Water Truck (2500 Gal)	\$328.91		\$13.50	0.00	0.00	0.00	\$0.00	\$0.00

EQUIPMENT TO WASH FOR WEED CONTROL	7	each	@	\$500.00	each	\$3,500.00
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TOTAL MOVE-IN COSTS: \$16,390.13