



GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

SALE NAME: GREY TOWERS

AGREEMENT NO: 36-106480

AUCTION: August 29th, 2024 starting at 10:00 a.m., Pacific Cascade Office, Castle Rock, WA
See DNR website for remote auction protocol. **COUNTY:** Skamania

SALE LOCATION: Sale located approximately 18 miles South of Randle, WA. Elevation 2000'-3040'.

**PRODUCTS SOLD
AND SALE AREA:**

Unit 01: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2800000 road.

Unit 02: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2800000 road.

Unit 03: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2809000 road.

Unit 04: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2809000 road.

Unit 05: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags.

Unit 06: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2809000 road.

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Unit 08: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags.

Unit 09: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2809000 road.

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Unit 13: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags.



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Unit 14: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags.

Unit 15: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2810000 road. Leave trees have been marked with a band of blue paint. Cut-and-leave trees for down wood debris have been marked with two bands of blue paint.

Unit 16: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2810000 road. Leave trees have been marked with a band of blue paint. Cut-and-leave trees for down wood debris have been marked with two bands of blue paint.

Unit 17: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2810000 road. Leave trees have been marked with a band of blue paint. Cut-and-leave trees for down wood debris have been marked with two bands of blue paint.

The above described products, located on approximately 256 acres on part(s) of: [Township 10 North, Range 08 East, Sections 04, 05, 07, 08, 17, 18, 19, 20, and 29], in [Skamania County] as shown on the attached timber sale map and as designated on the sale area.

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Total MBF	Price \$/MBF	MBF by Grade					
				SM	1S	2S	3S	4S	UT
Douglas-fir	11.9	1,935	\$23.25	-	-	155	1,089	672	19
Western hemlock	11.5	379	\$20.00	-	-	11	235	126	7
Pacific silver fir	8.0	4	\$20.00	-	-	-	-	4	-
Red alder	10.7	124	\$20.00	-	-	-	6	118	-
Western redcedar	N/A	N/A	\$776.66						
Subtotal		2,442		-	-	166	1,330	920	26

MINIMUM BID: Douglas-fir \$23.25/MBF

BID METHOD: Sealed Bids

ESTIMATED TOTAL VALUE: \$55,000

PERFORMANCE SECURITY: \$11,000.00

SALE TYPE: MBF Scale



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shall not be allowed from March 1st through September 1st, and within 1 mile all activities shall be seasonally restricted from April 1st to July 15th.

Harvest activities, including landing and temporary road construction, felling, skidding, yarding, and rehabilitation, are not permitted from March 1 to July 15 in Units 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 to limit detrimental noise disturbance during the spotted owl nesting and fledging season.

Winter harvest operations may occur if authorized in writing by the Contract Administrator and if waiver conditions exist. See contract for conditions.

Slash piles shall be covered by plastic.

Slash piles shall not be created within 60 ft. of ~~all~~ streams.

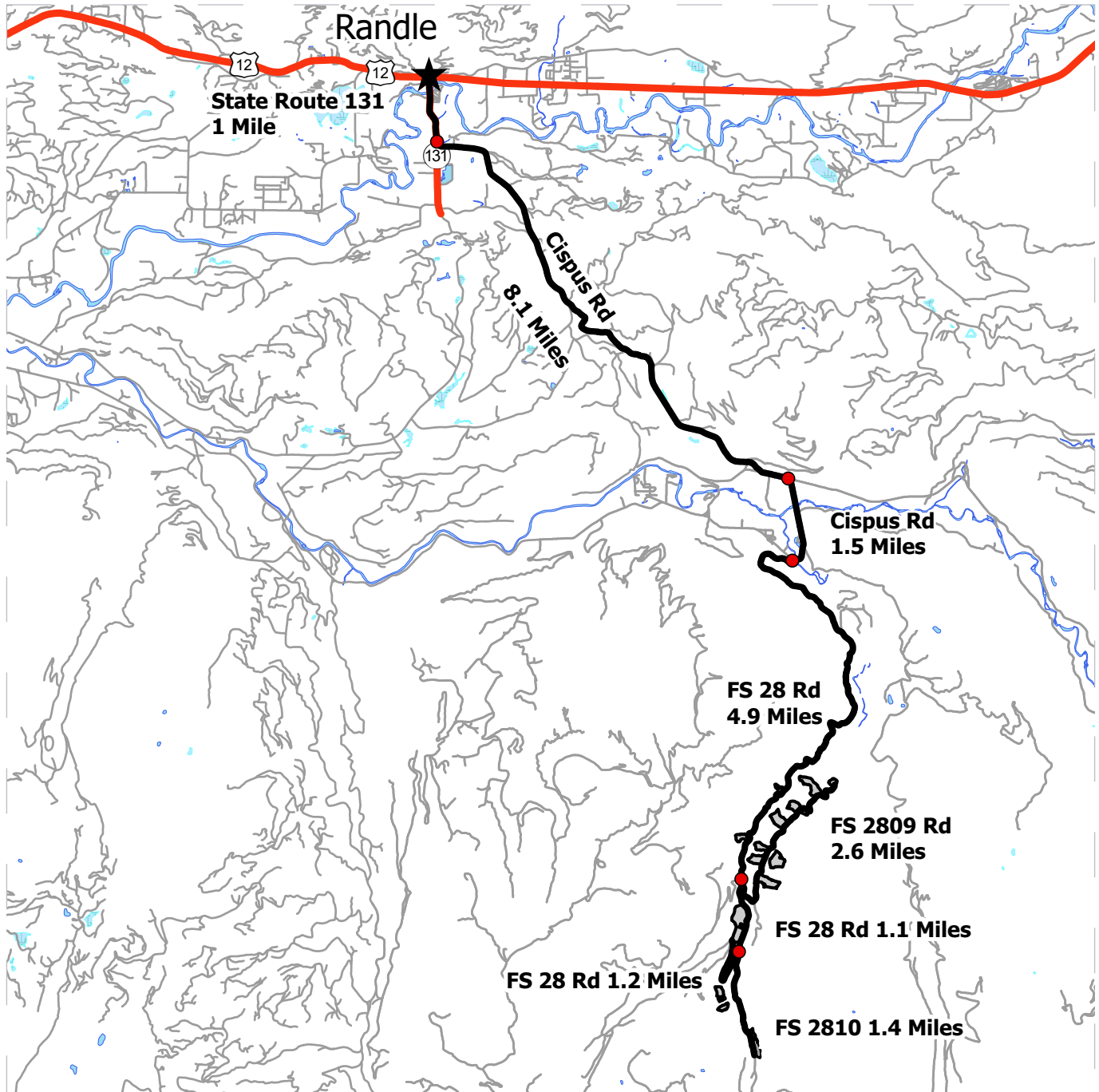
Notify the Contract Administrator when Brushing is proposed from July 1st through October 31st as soon as possible.







For additional information, please contact Justin Tamez at (564)669-3341 or Justin.Tamez@dnr.wa.gov

GOOD NEIGHBOR AUTHORITY DRIVING MAP

SALE NAME: GREY TOWERS
AGREEMENT #: 36-106480
TOWNSHIP(S): T10R08E

NATIONAL FOREST: Gifford Pinchot
COUNTY(S): Skamania
ELEVATION RGE: 2,000-3040



-  Timber Sale Unit
-  Highway
-  Haul Route
-  Other Route
-  Distance Indicator
-  Town

DRIVING DIRECTIONS:

From Randle, WA head south on State Route 131 for 1 mile. Turn left onto Cispus Rd and follow for 8.1 miles. Turn right to continue on Cispus Rd and follow for 1.5 miles. Take a slight turn left onto the FS 28 Rd and follow for 4.9 miles (Units 1 and 2).

Turn left onto 2809 Rd for 2.6 miles (Units 3-10)

Continue on the FS 28 Rd for 1.1 miles. Turn right to stay on the FS 28 Rd and follow for 1.2 miles. (Units 11-14)

Continue on the FS 28 Rd for 1.1 miles. Turn left onto FS 2810 Rd for 1.4 miles. (Units 15-17)

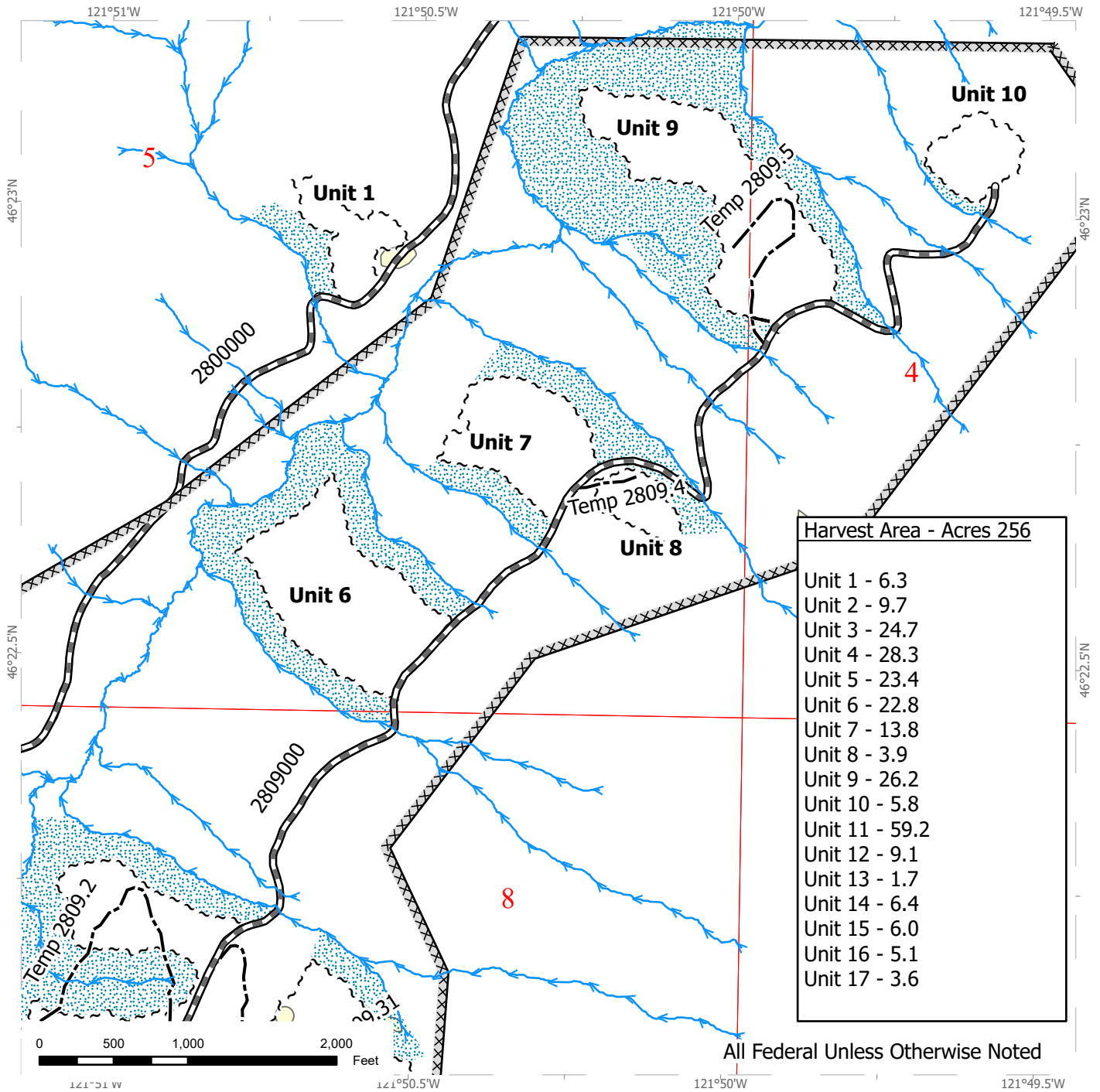
All mileages are approximate



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Harvest Area - Acres 256

Unit 1	- 6.3
Unit 2	- 9.7
Unit 3	- 24.7
Unit 4	- 28.3
Unit 5	- 23.4
Unit 6	- 22.8
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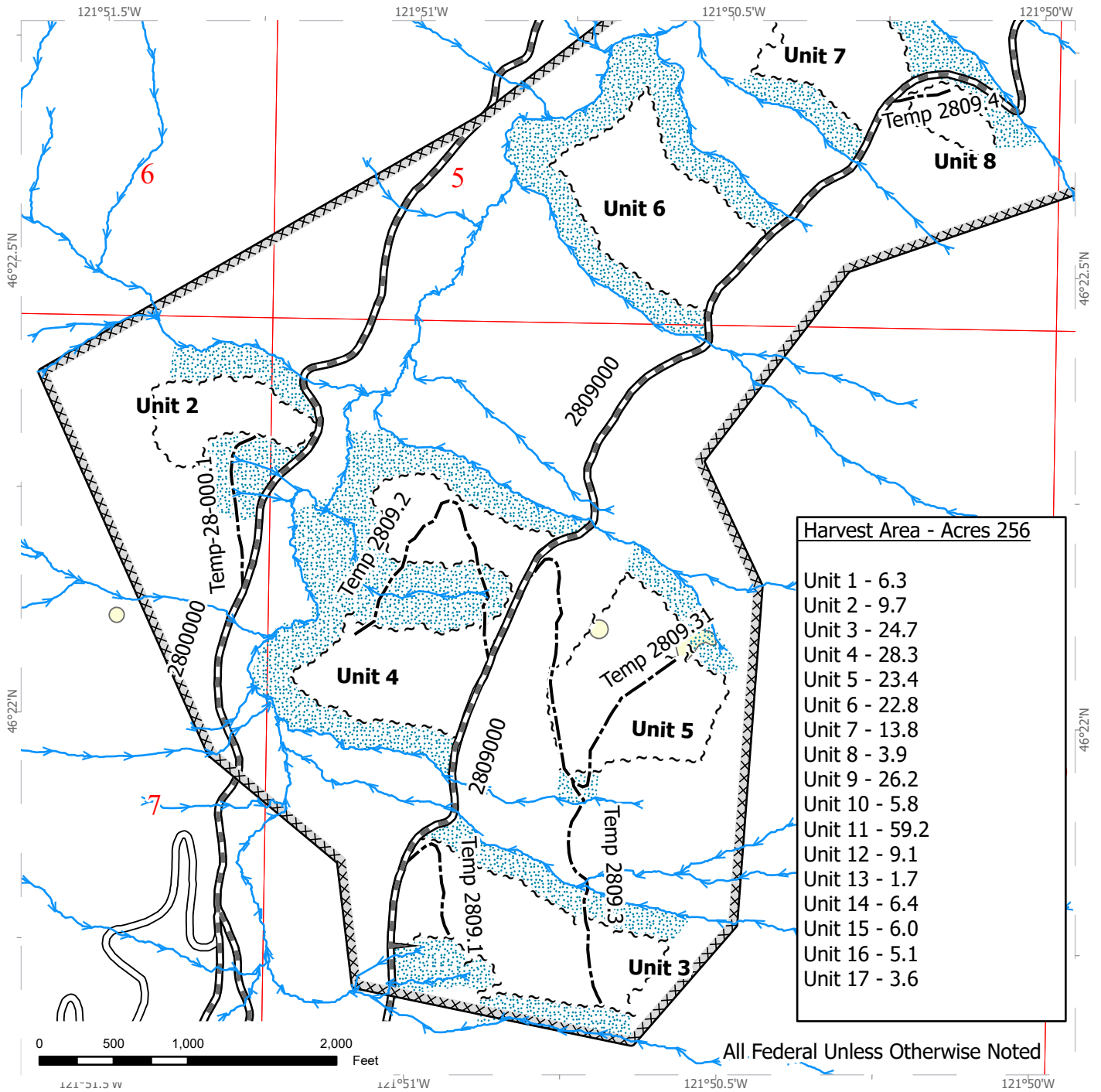
All Federal Unless Otherwise Noted

Variable Density Thinning	Existing Roads	Public Land Survey Townships
Riparian Zone	Required Pre-Haul Maintenance	Public Land Survey Sections
Sale Boundary Tags	Optional Temporary Construction	Streams
Timing Restriction		

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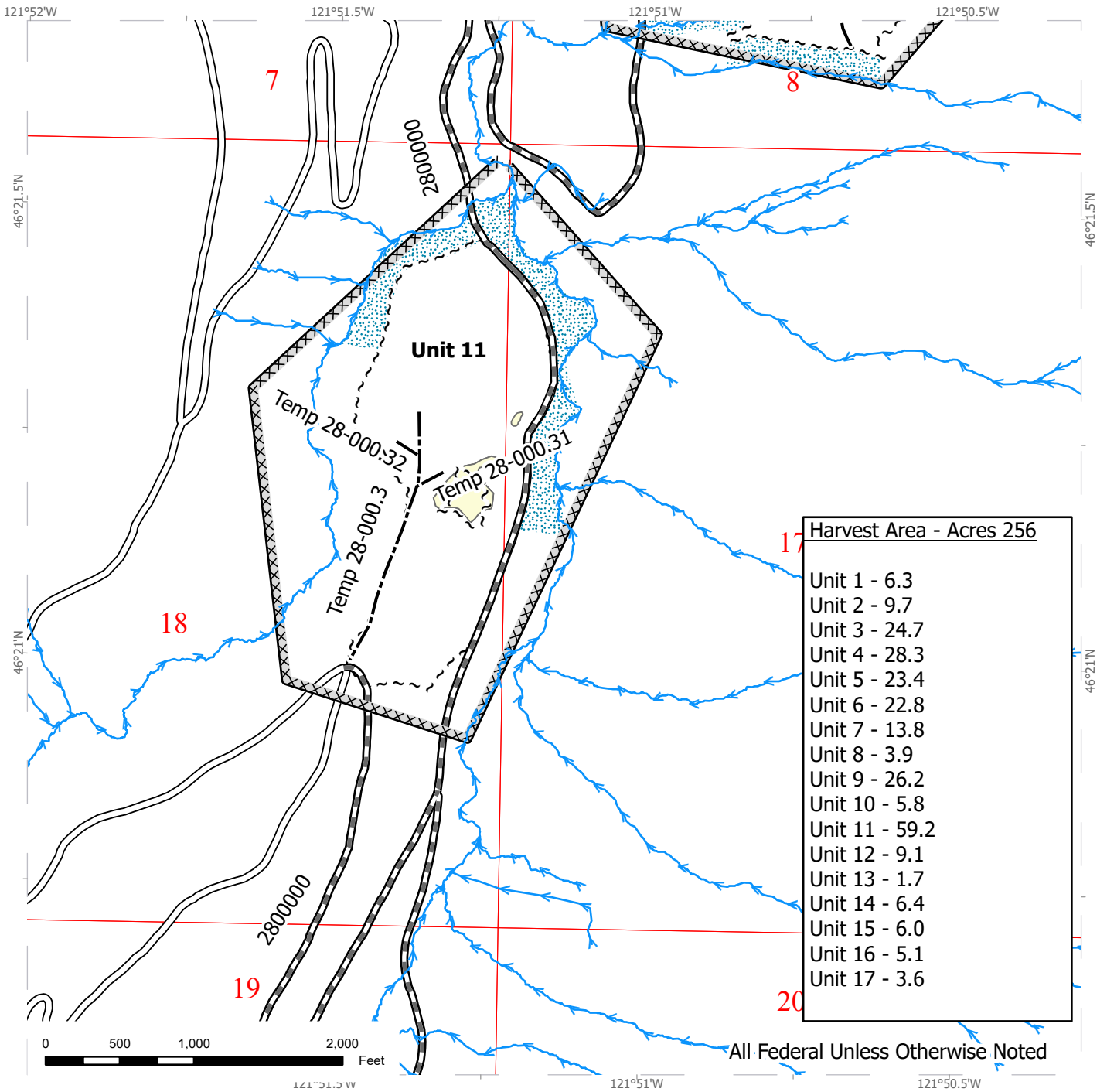
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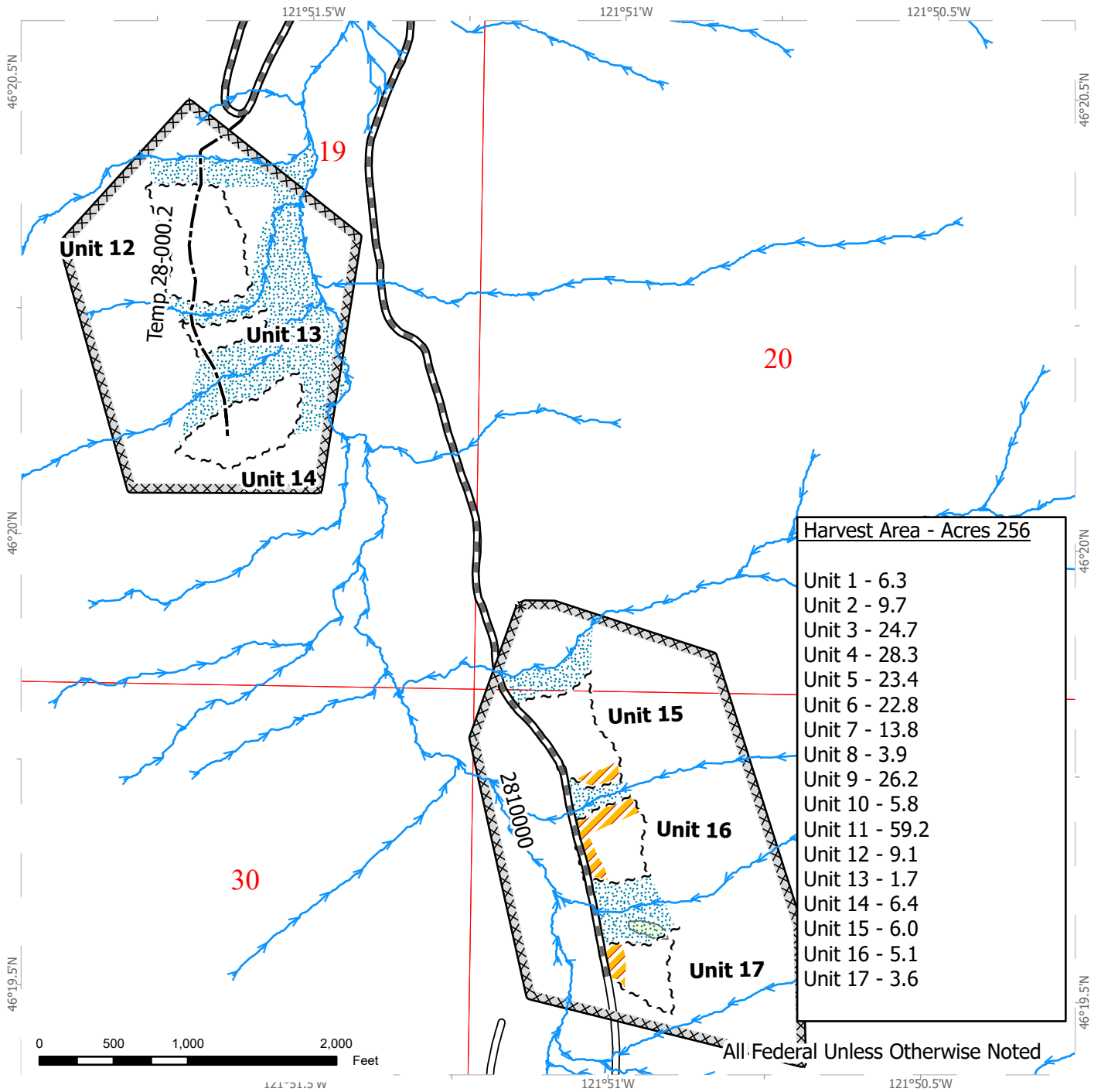
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Riparian Zone	Required Pre-Haul Maintenance	Public Land Survey Sections
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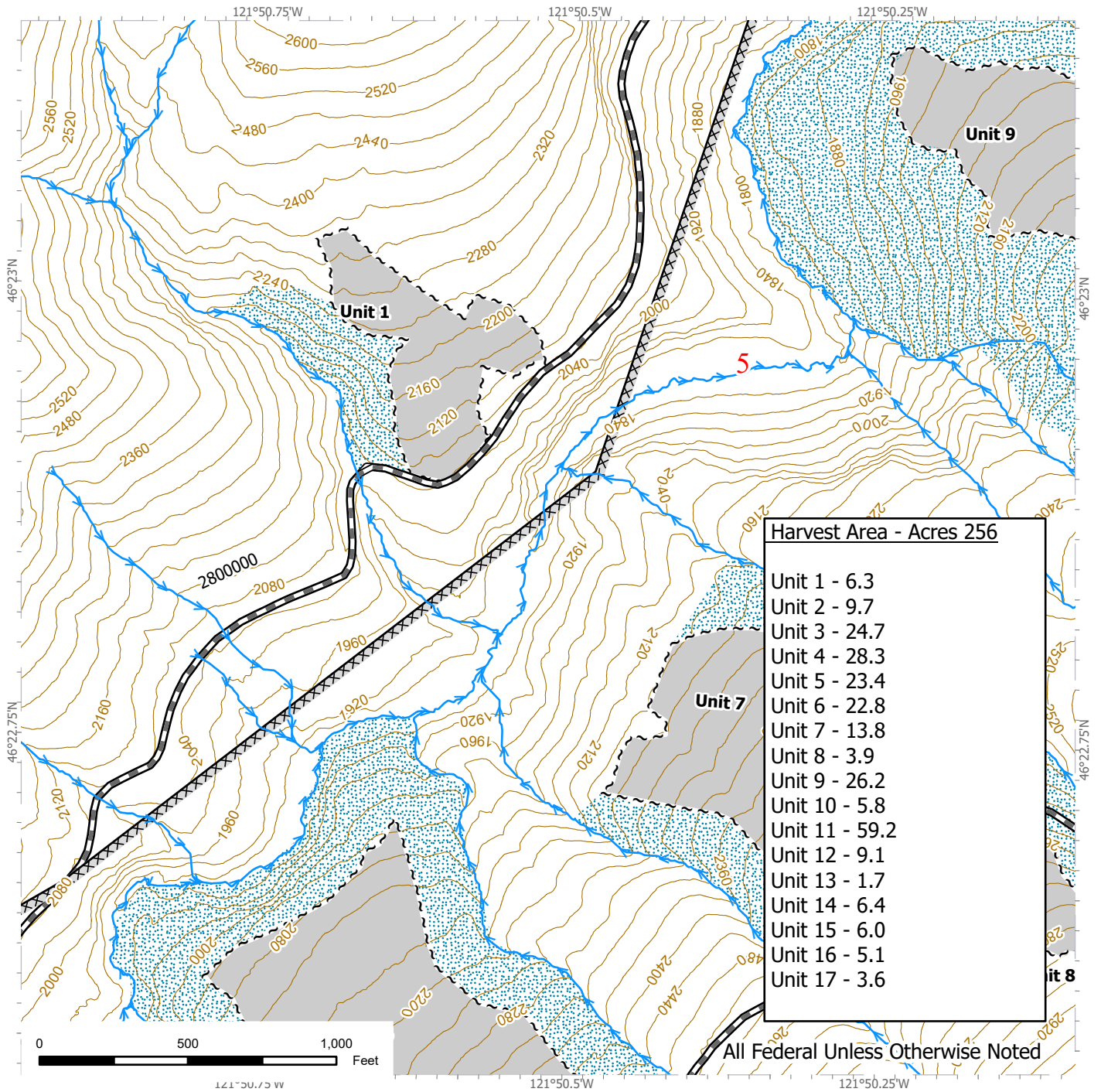
Regeneration	Existing Roads	Public Land Survey Townships
Variable Density Thinning	Required Pre-Haul Maintenance	Public Land Survey Sections
Riparian Zone	Optional Temporary Construction	Streams
Outer-Riparian Zone		
Sale Boundary Tags		
Timing Restriction		



GOOD NEIGHBOR AUTHORITY LOGGING PLAN MAP

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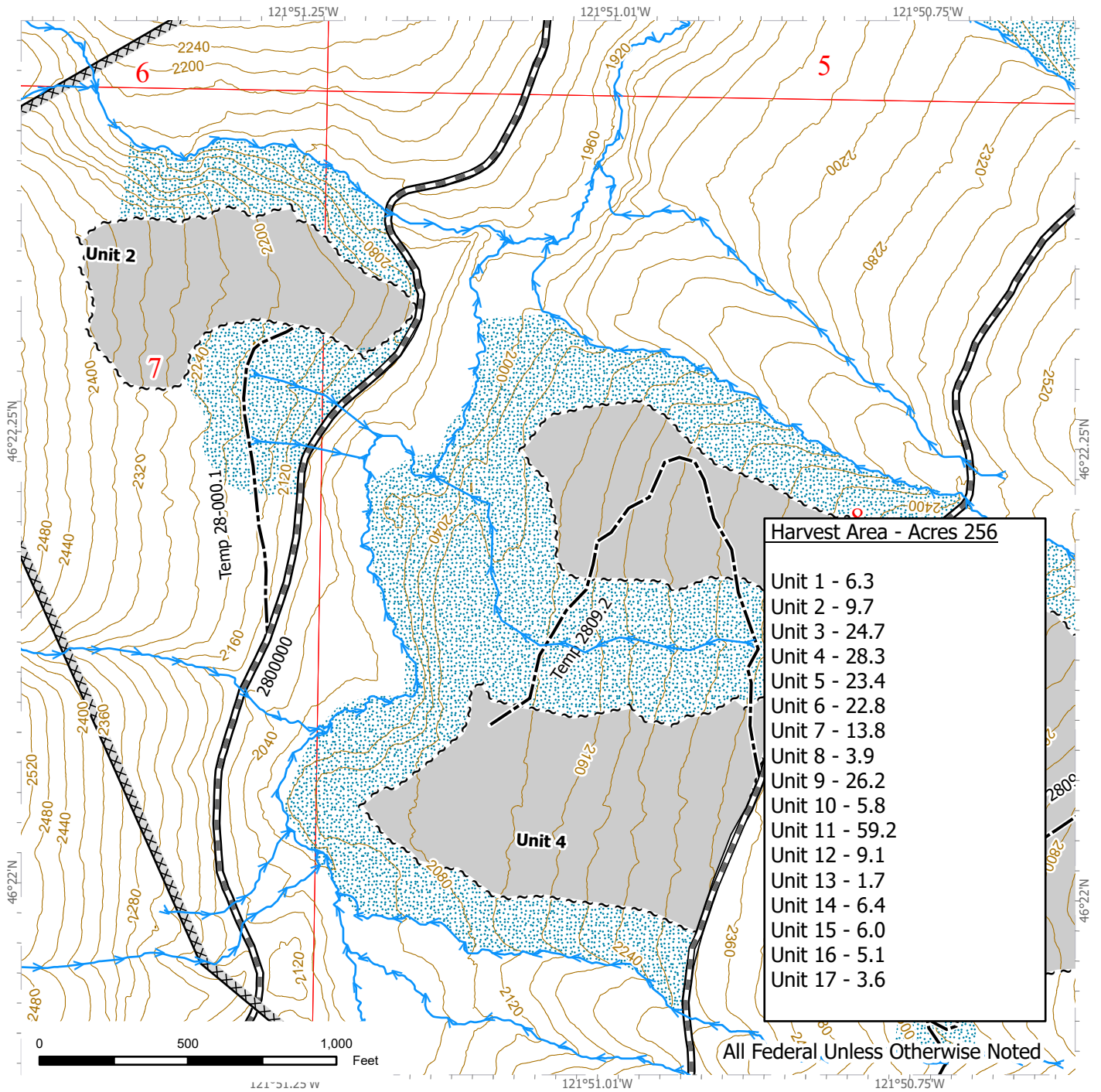
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Riparian Zone	Required Pre-Haul Maintenance	Public Land Survey Sections
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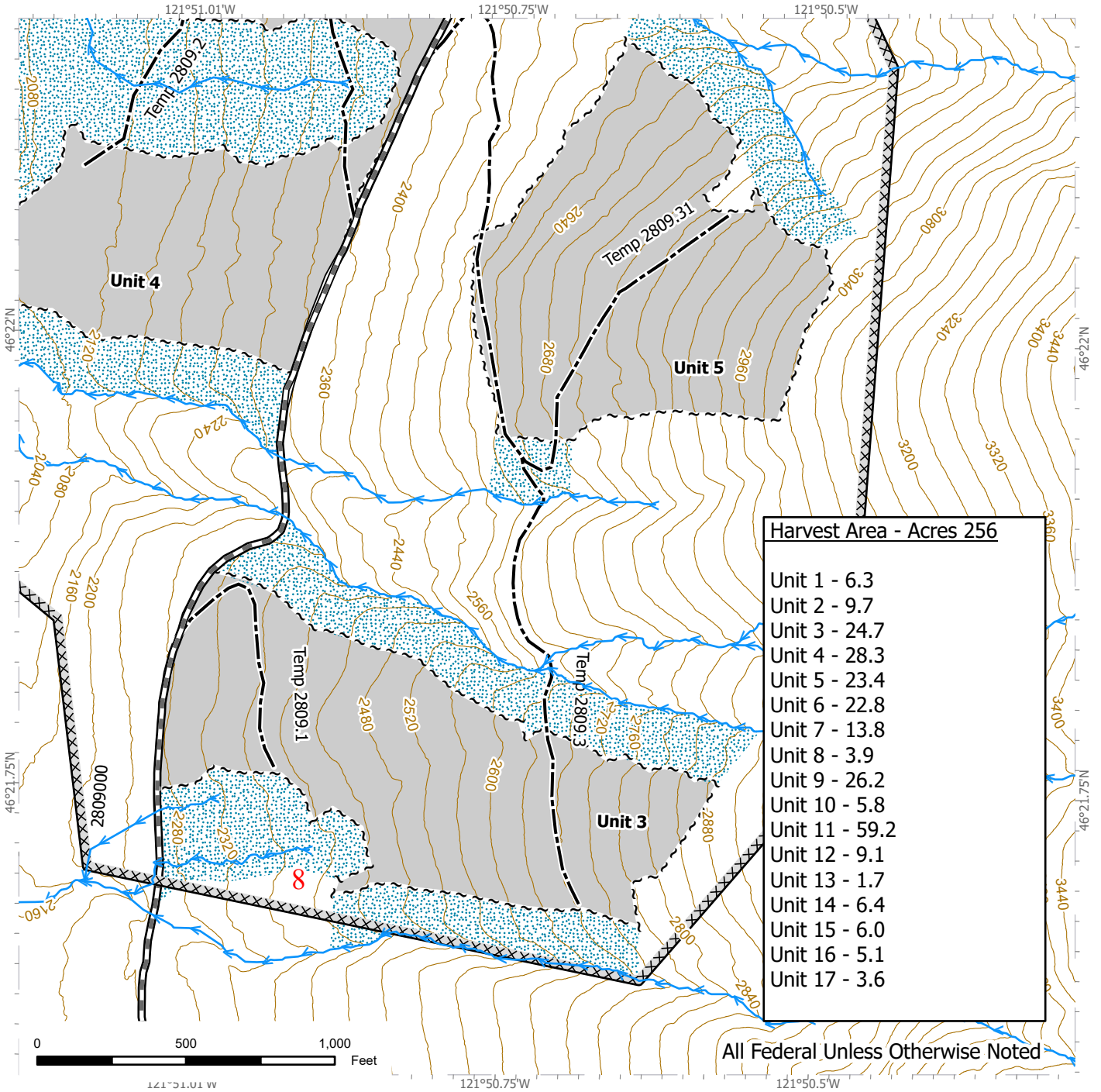
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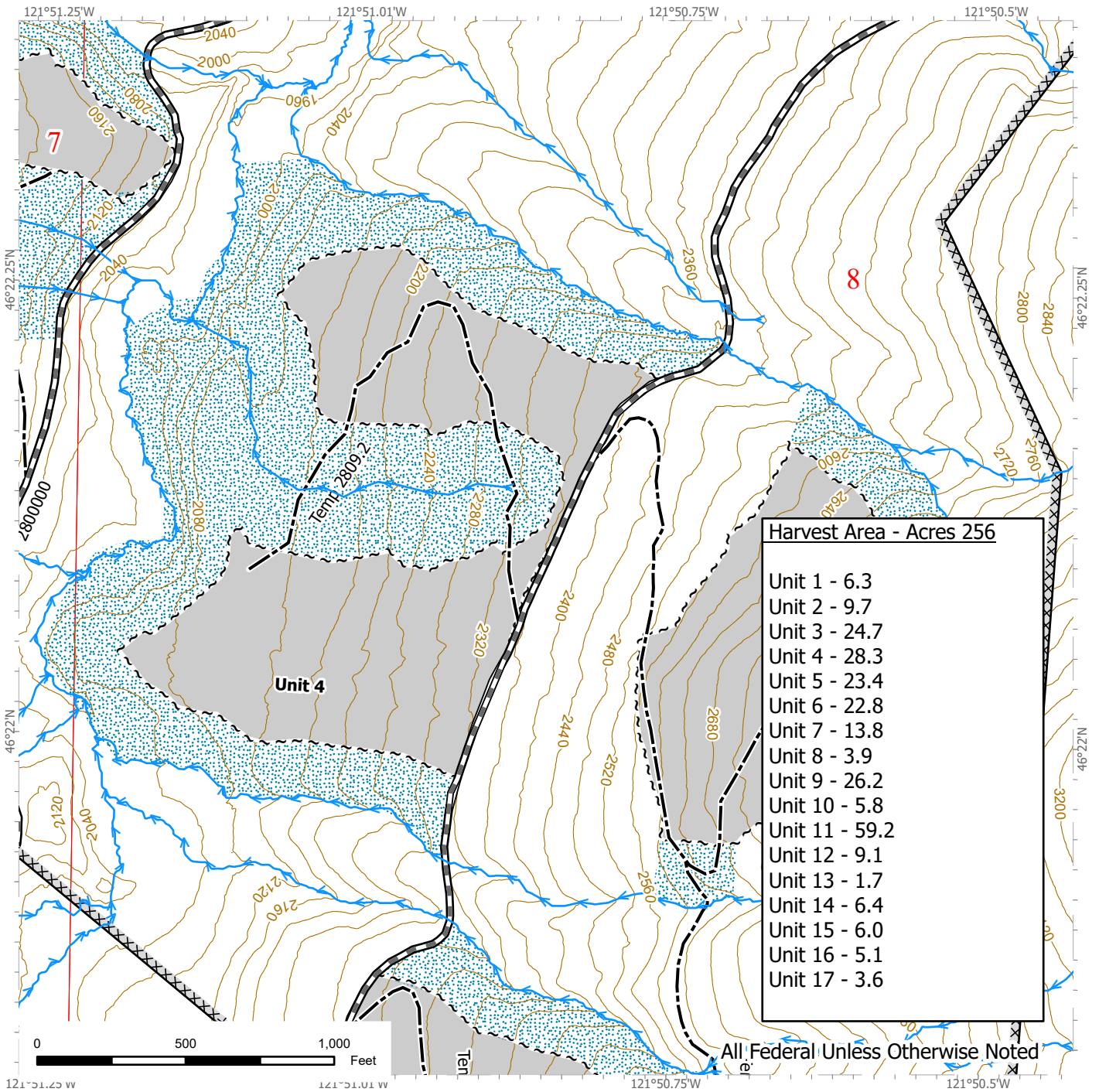
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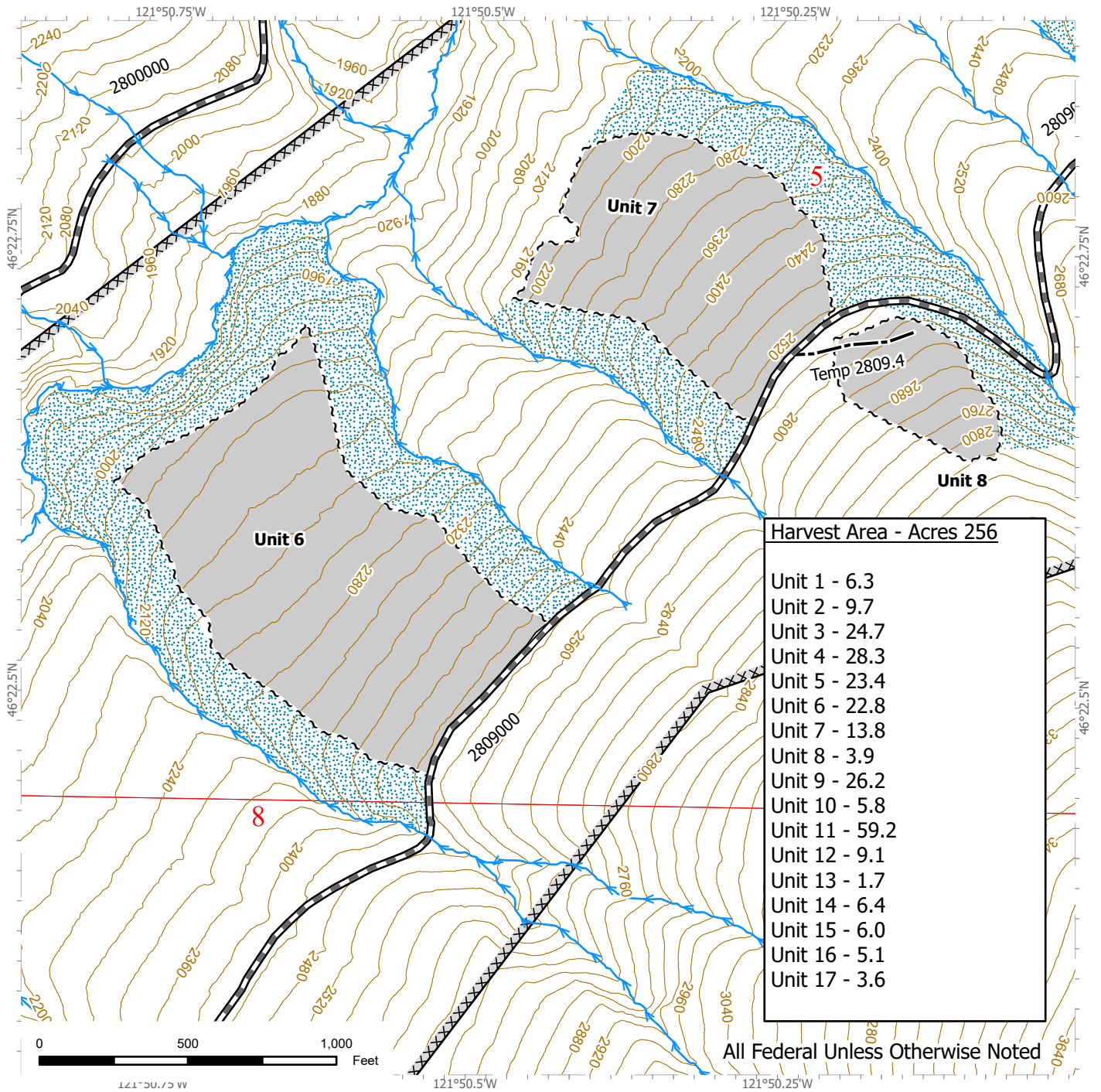
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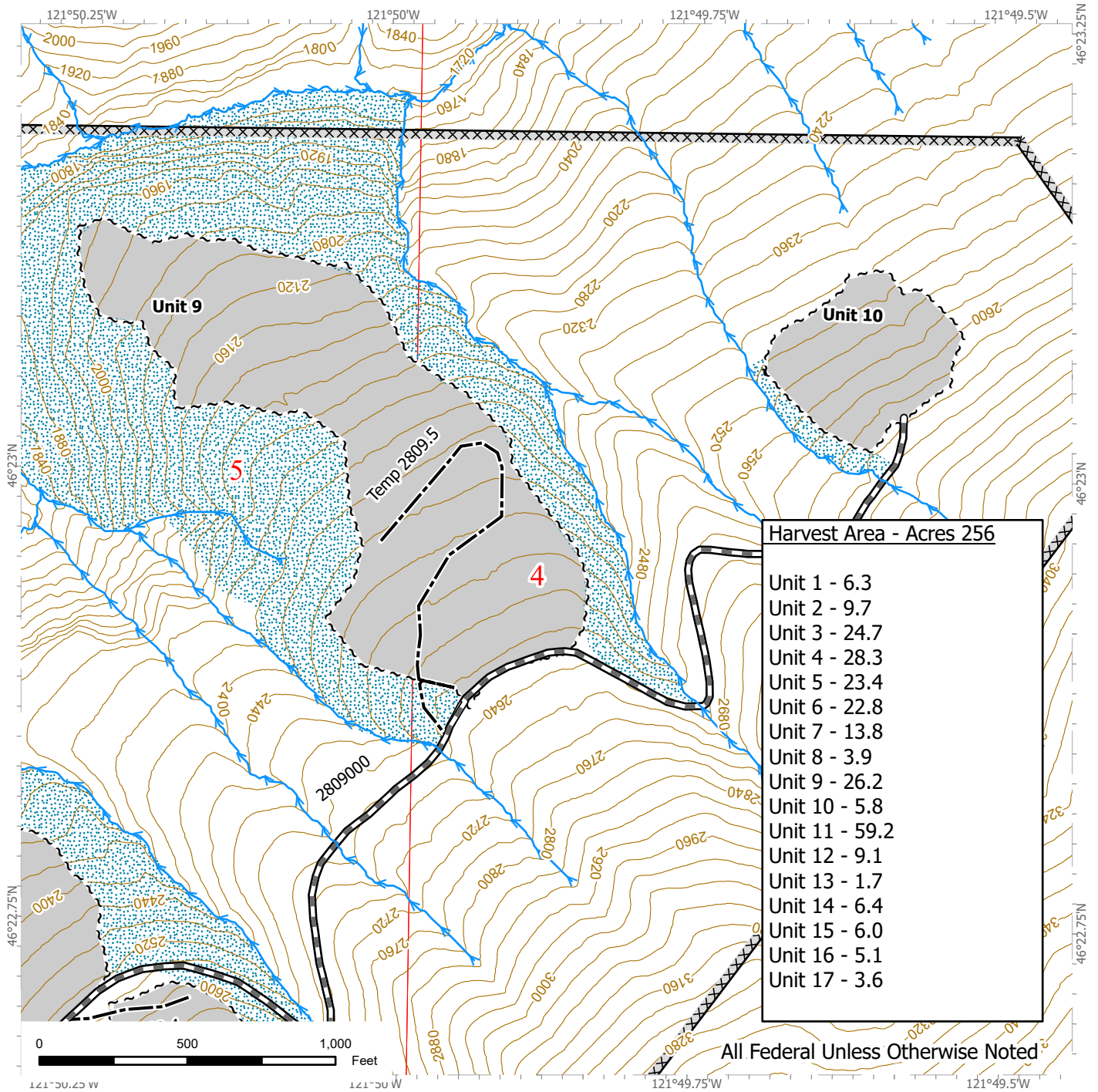
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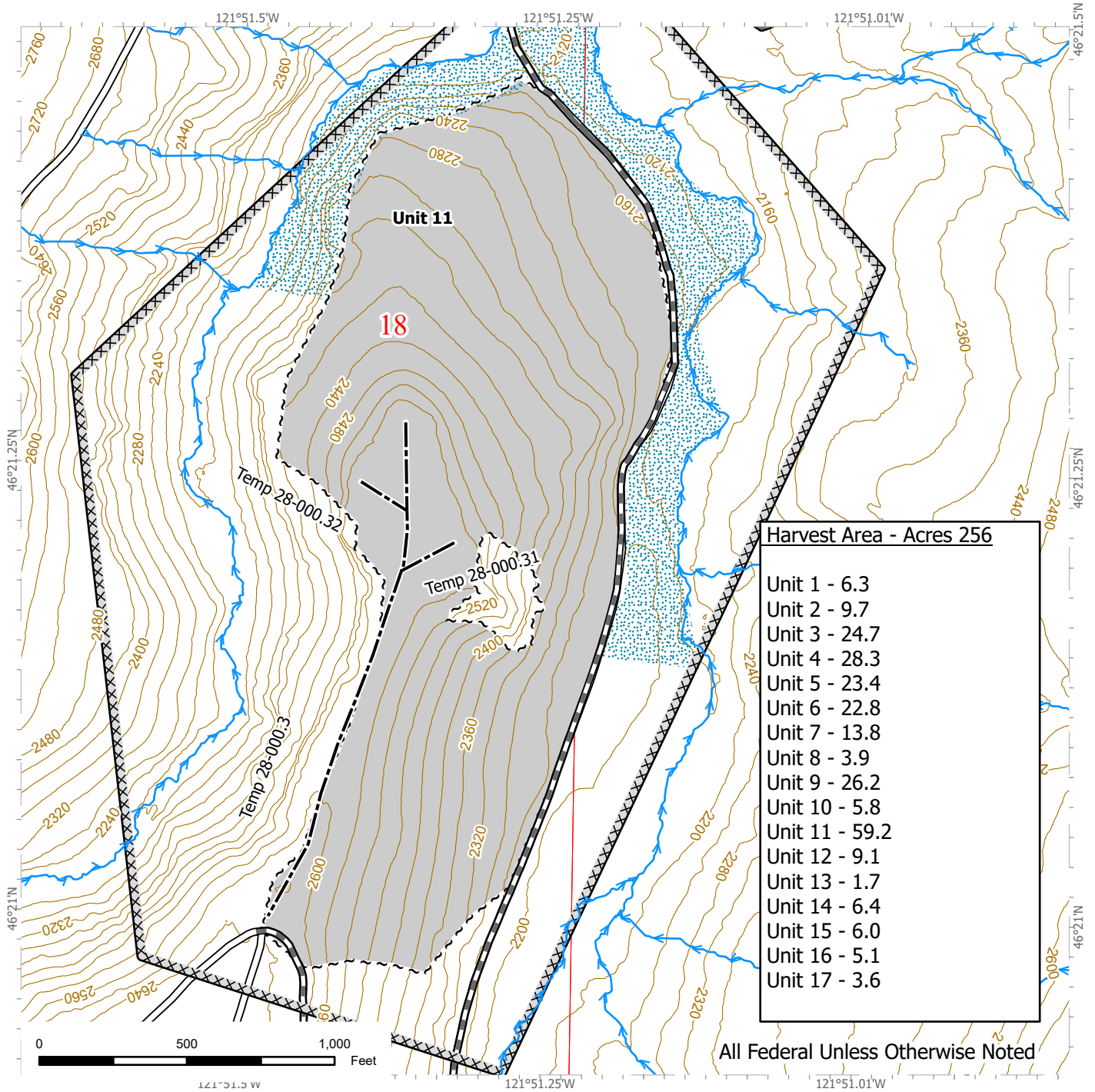
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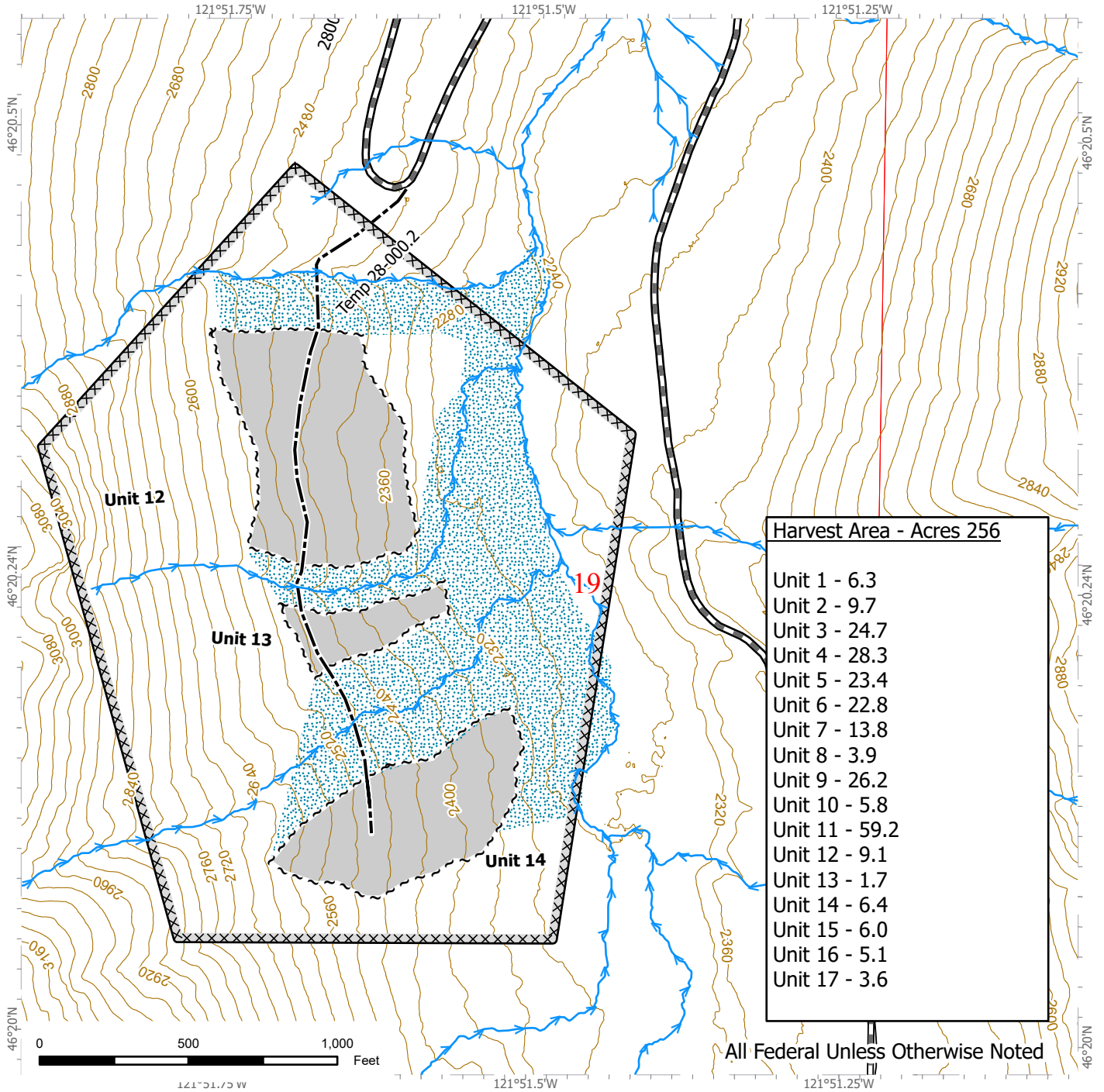
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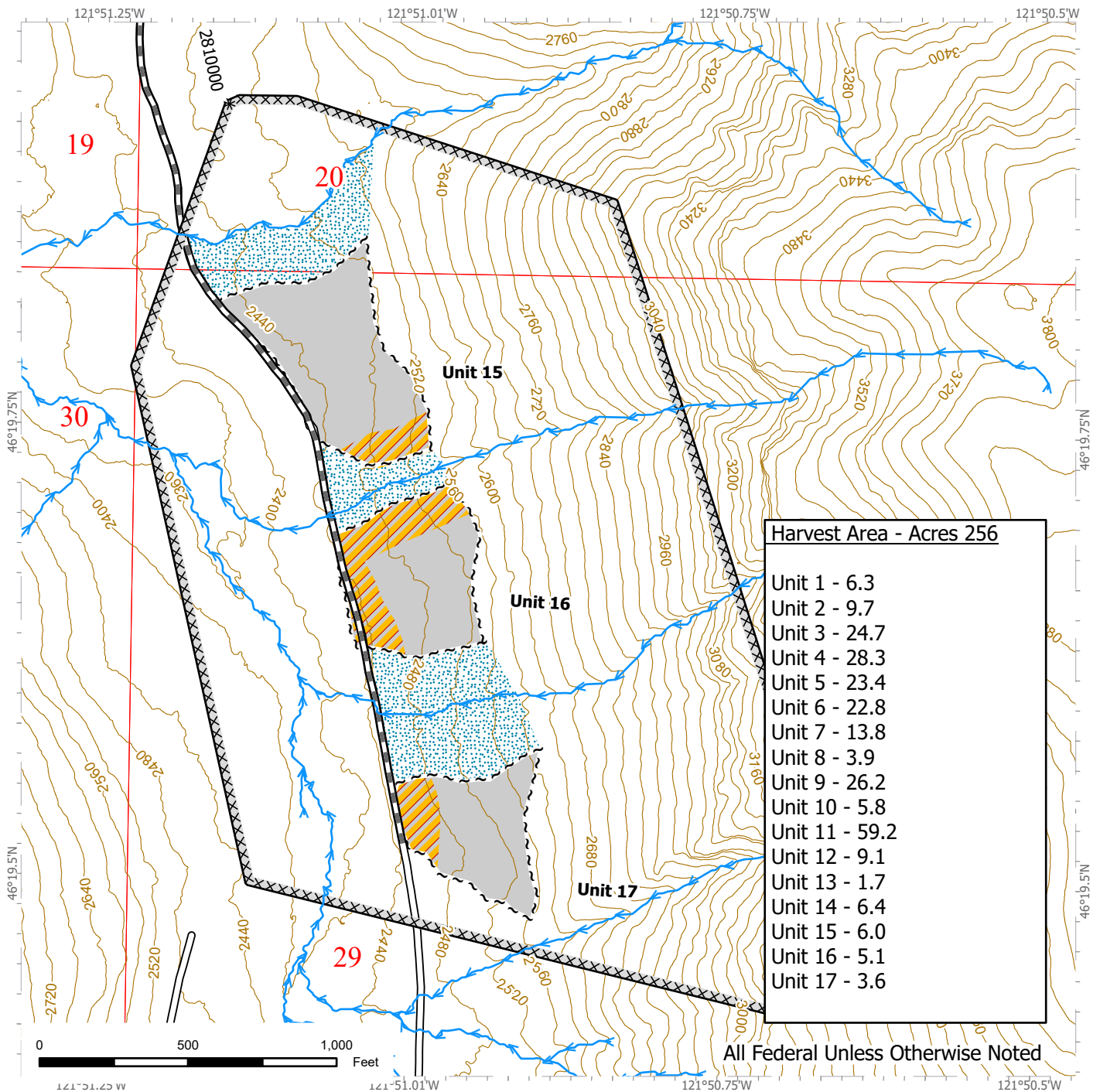
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Harvest Unit	Existing Roads	Public Land Survey Townships
Riparian Zone	Required Pre-Haul Maintenance	Public Land Survey Sections
Other Feature 1		Streams
Sale Boundary Tags		
Timing Restriction		

**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted MBF Scale AGREEMENT NO. 36-106480

SALE NAME: Grey Towers

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 all 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 01: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and the existing NF-2800000 road.

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The above described products, located on approximately 256 acres on part(s) of: Township 10 North, Range 08 East, Sections 04, 05, 07, 08, 17, 18, 19, 20, and 29, in Skamania County as shown on the attached timber sale map and as designated on the sale area.

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
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- 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 1, 2027 (Termination Date), unless this termination date is adjusted pursuant to G-040, 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 8.6 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 Forest Resilience 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	Purchaser
Northwest Region	
Attn: Annette Mesman	
919 N Township Street	
Sedro-Woolley, WA 98284	

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), Gifford Pinchot National Forest, including all applicable Mitigation Measures and Project Design Criteria in the Yellowjacket Environmental Assessment and associated errata, 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; 2300000, 2800000, 2809000, 2810000, Temp 28-000.1, Temp 28-000.2, Temp 28-000.3, Temp 28-000.31, Temp 28-000.32, Temp 2809.1, Temp 2809.2, Temp 2809.3, Temp 2809.31, Temp 2809.4, and Temp 2809.5. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights. Heavy equipment mobilization, operations and timber haul shall occur in accordance with the retaining wall installation on the NF-2800000 road at STA 485.

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 for cable operations and logging operations, the Contract Administrator may require water bars to be constructed, Forest Service provided grass seed to be placed on exposed soils, slash mats to be utilized in skid trails, 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 2300000, 2800000, 2809000 and 2810000 roads unless authority is granted in writing by the Contract Administrator. Any other road the

operator would like to block must be approved 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 \$20.00 per MBF plus fees. |

P-027 Payment for Removal of Optional Forest Products

Purchaser agrees to weigh all loads and pay the rate of \$2.00 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 Resilience 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 \$11,000[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-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

Falling, yarding and heavy equipment operations will not be permitted from October 1 to June 30th unless authorized in writing by the Contract Administrator. Additionally, falling, yarding, and heavy equipment operations will not be permitted in Units 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 from March 1 through July 15 to limit detrimental noise disturbance during the spotted owl nesting and fledging season.

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

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

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

Purchaser shall comply with the following during the yarding operation:

- a. Mechanical harvesters, when traveling away from approved skid trails or roads, will operate on ground cover as thick and continuous as practical that protects the soil, such as slash, existing vegetation, downed saplings, or broken limbs.

- b. Location of the skid trails must be marked by Purchaser and approved by the Contract Administrator.
- c. Skid trails must be located outside of all no harvest buffers.
- d. Skid trails shall be 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.
- e. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- f. Rub trees shall be left standing until all skidding is complete.
- g. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- h. Skid trails shall be covered with a mat of slash, 4-6 inches in depth, and prior to skidding to prevent excessive soil damage during skidding operations.
- i. Contract Administrator may require skid trails to be decompacted to a depth of 18 inches prior to closure of a skid trail.
- j. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- k. Erosion control measures such as slash and mulch placement, seeding and water bars will be utilized where bare soil is exposed.
- l. Skid trails and skyline corridors shall be spaced, on average, 150 feet apart.
- m. Skyline yarding corridors across intermittent streams if full suspension can be obtained may be approved in writing by the Contract Administrator. |

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended, in all or in part, by the Contract Administrator, for such periods as may be deemed necessary to avoid damage when soil rutting exceeds |6 inches in depth and for a length of 10 feet or more | as measured from the natural ground line, or when ground conditions are unfavorable.

|Winter harvest is allowed if ground-based equipment can operate on snow which is at least 2 feet deep, or a combination of 3 to 4 inches of compacted snow and soil frozen

to at least 6 inches in depth; operations shall not continue where snow does not provide protection - for example, if it rains heavily and the soil and snow become saturated. As an indicator, overnight temperatures should be less than 25 degrees F; afternoon daytime temperatures should not exceed 32 degrees F. Contract Administrator will update District Ranger on a weekly basis when winter operations are planned or in effect.

If over-snow haul is permitted, haul will occur when roads are covered by a minimum of 2-4 inches of compacted snow, and air temperatures at the lowest elevation on the unpaved haul route have remained below 30 degrees F over the prior 24 hours. In addition, all culvert locations and stream crossings will be marked to permit appropriate drainage work and subsequent plowing. Drainage outlets must be cut into any snow berms created by plowing operations to ensure proper drainage of snowmelt and precipitation on roadway.

To reduce soil damage, the Contract Administrator may require water bars to be constructed, Forest Service provided grass seed to be placed on exposed soils, 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 must be removed within 30 days of being felled. |

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-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 lower.

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 35% or less. Avoid uphill travel on forest soils greater than 30% slope. On slopes greater than 35%, cable yarding shall be used. Tethered equipment is allowed in units 1, 2, 4, 6, 7, 9, and 10 on slopes between 45-70 percent to mechanically fell and bunch timber, and tethered shovel equipment is allowed on slopes 35 to 55 percent. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the Contract Administrator.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities except for yarding across intermittent streams. The Contract Administrator can approve corridors across intermittent streams if full suspension can be obtained across the entire bankfull channel including 20 feet on either side of the channel edge, and where skyline corridors would be a maximum of 12 feet wide and cumulatively not occupy more than 15% of the stream length in the treatment stand.

H-131 Hauling Schedule

The hauling of forest products will not be permitted from October 1 to June 30th unless authorized in writing by the Contract Administrator. Hauling of forest products shall occur after all repair work is completed along the designated haul route. Hauling of forest products shall occur in accordance with all other maintenance operations associated with the designated haul route.

Heavy equipment mobilization, operations and timber haul shall occur in accordance with the retaining wall installation on the NF-2800000 road at STA 485.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. Fall and yard away from all waters when possible. No yarding in riparian reserves.
2. A copy of the timber sale prospectus map and contract shall be present onsite during active operations.
3. Tops and limbs shall be redistributed in the unit to the satisfaction of the Contract Administrator.
4. Maintain legacy features wherever practical and safe, including remnant trees, snags, and large down woody debris.
5. Heavy equipment should operate on operationally-generated slash mats (limbs, tops, or otherwise unmerchantable material) to minimize soil compaction and long term soil disturbance. The slash mat shall be as thick and continuous as practicable, though not to exceed 12 inches.
6. When practical, save topsoil on site from areas to be disturbed and replace over disturbed soil when operations conclude..
7. Immediately following their use, temporary roads, spur roads and landings shall be “rehabilitated” by decompacting the road surface to a depth of 18 inches or greater. Rehabilitation shall not occur during times of excessive wet conditions and/or when soil has reached saturation. Equipment shall not travel across the decompacted surface. Native seed and mulch composed of certified weed free straw or onsite forest debris must be applied to the disturbed ground. Seed shall be provided by the Forest Service.
8. Silt fences, certified weed free straw bales, or other catchment systems approved by the Contract Administrator shall be located to intercept runoff from landings prior to reaching any road, ditch, or stream. Any sediment that is captured and deposited behind sediment catchments will be removed annually and deposited

out on the forest floor to ensure it does not have a direct flow path to a system road, ditch, or stream.

9. Hazard trees that are felled along haul routes shall be retained to add to large woody debris on the ground, unless otherwise approved by the Contract Administrator.
10. Average residual logging debris depth shall not exceed 12 inches immediately post-harvest.
11. Coarse woody debris may be moved for access; however, disturbance should be minimized. Large, old stumps shall be kept intact and not uprooted wherever possible.
12. Trees felled in the vicinity of streams, wetlands, seeps, or springs shall be felled away from aquatic features. Portions of trees falling into no-cut buffers shall be left on the ground where they were felled.
13. Ground-based equipment shall travel on operationally generated slash where possible. Yarding activities shall be planned to make as few trips as possible.
14. Feller bunchers/ mechanical harvesters shall not operate like a skidder and travel while bearing the weight of trees except in some occasions at the ends of a skid trail where it may cause less disturbance than a skidder.
15. Areas of soil displacement resulting from logging systems shall be treated to prevent rill and gully erosion and potential sediment delivery to stream courses. This may include re-contouring, decompacting, placing seed and slash, etc.
16. No fuel storage, refueling, or long-term staging of heavy equipment shall occur in riparian buffers or within 150 feet of live water, whichever is greater.
17. Workers shall properly store and dispose of food and garbage while working on site.
18. Skid trails that originate from or intersect visual corridor travel routes should be avoided when possible. If a temporary road or skid trail is necessary it should be implemented in a manner which reduces its visual impact.

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

H-142 Wildlife Timing Restrictions

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

Harvest activities, including landing and temporary road construction, felling, skidding, yarding, and rehabilitation, are not permitted from March 1 to July 15 in Unit 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 to limit detrimental noise disturbance during the spotted owl nesting and fledging season.

Reconstruction, Temporary Construction, and Pre-Haul Maintenance work taking longer than 5 hours to complete in a single location, is not permitted on system roads from March 1 to July 15 to limit detrimental noise disturbance during the spotted owl nesting and fledging season.

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-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 40 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 June 25, 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 2300000, 2800000, 2809000, 2810000, Temp 28-000.1, Temp 28091, Temp 2809.2, Temp 2809.3, Temp 2809.31, Temp 2809.4, Temp 2809.5, Temp 28-000.2, Temp 28-000.3, Temp 28-000.31, and Temp 28-000.32. All work shall be completed to the specifications detailed in the Road Plan.

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. Avoid placing landings adjacent to streams, riparian buffers, wet areas and unstable slopes.

Landings shall be limited to the area needed for safe and efficient yarding and loading operations and have proper drainage.

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 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.

Average residual logging debris depth should not exceed 12 inches immediately post-harvest.

Slash piles shall be covered with plastic. Every slash pile shall be 30% covered. Plastic shall be secured and anchored.

Landings shall be decompacted to a depth of 18 inches. of 12 inches or a depth determined by the Contract Administrator with written approval.

Scatter, pile, or remove logging slash less than 8 inches in diameter from within 25 feet of Forest Service Roads 2300000, 2800000, 2809000, and 2810000.

Temporary roads, skid trails, and landings should not be visible for up to 300 feet from the 2800000, and 2810000 in units 1, 2, 4, 6, and 8.

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 thoroughly pressure wash all equipment prior to entry onto U.S. Forest Service land, or before moving equipment between infested sites, to remove all contaminated soils, plant parts, seeds, vegetative matter, or other debris that could contain or hold seeds. Equipment shall be considered free of soil seed, and other such debris when a visual inspection does not disclose such material. The Contract Administrator reserves the right to also require the cleaning of equipment as required by this clause in cases where equipment is being moved onto nonfederal lands.

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. "Off-road equipment" includes all logging and construction machinery, except for log trucks, chip vans, pickup trucks or vehicles used to transport personnel on a daily basis. All logging equipment operating in unit 11 will be washed and inspected for approval prior to continuing sale operations.

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. |

S-050 Cessation of Operations for Low Humidity

During the 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 precautionary period 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:

$$LD = \text{Liquidated Damage value.}$$

- 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: $\text{Interest} = r \times \text{LD} \times \text{N}$.

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 \$1,000.00 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 § 1531 et 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, mortars, 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 _____

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 Yellowjacket Project Environmental Assessment and its supporting documents for the official NEPA stand boundary locations.

Grey Towers Unit Number	NEPA Stand ID
1	79
2	85
3	89, 90
4	86, 87
5	88
6	82
7	81
8	80
9	78
10	78
11	91, 92
12	95
13	95
14	95
15	96
16	96
17	96

Grey Towers |
Schedule B - Thinning Prescription

The thinning is generally a thinning from below, retaining the “largest”, “healthiest”, and “best formed” designated live tree species utilizing a species preference and leave tree criteria. Cut designated species within DBH limits to the Basal Area Target in accordance with Table 1, and the leave tree priority criteria until basal area requirements are met.

Table 1 Grey Towers Thinning Prescriptions

Unit Number	Designated Species (Species Preference Order: Highest to Lowest in Cut Priority)	Target Residual Basal Area (ft²/ac)	Designated Species DBH Cutting Limits (min - max in.)
01	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
02	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
03	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
04	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
05	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
06	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	140	7-26
07	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26

08	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	120	7-26
09	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
10	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
11	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
12	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
13	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
14	Douglas-fir/ Western hemlock/ Pacific fir/ Noble fir	130	7-26
15	Douglas fir/Western hemlock/ Pacific silver fir/ Red alder/ Noble fir/ Western red cedar	See Regeneration Unit Prescription	7-26
16	Douglas fir/Western hemlock/ Pacific silver fir/ Red alder/ Noble fir/ Western red cedar	See Regeneration Unit Prescription	7-26
17	Douglas fir/Western hemlock/ Pacific silver fir/ Red alder/ Noble fir/ Western red cedar	See Regeneration Unit Prescription	7-26

Designated Species – These are species to be removed if they are within the diameter limit. Each species listed is in order of preference *to cut* from highest weight to lowest weight. Except on landings, skid trails and temporary roads, all other tree species are to be left.

General Conditions

All dead trees are not to be designated for cutting, unless for safety mitigation. All live trees of any species above 7 inches DBH within the treatment area are to be included in achieving post-harvest residual basal area targets. Any trees tagged as boundary trees may be used to achieve the basal area target if their diameter is greater than the lower diameter limit. No trees with diameters in excess of the maximum diameter presented in **Table 1** should be harvested from treatment units unless they are within the right of way for road construction, skid trails, yarding corridors, or landings.

Thinning Prescription – General area within the harvest units, excluding road right-of-way and landings. Thinning is from below, retaining the “largest”, “healthiest”, and “best formed” designated live tree species according to a species preference. Prescription is to be achieved by cutting smallest live designated tree species first until the desired target basal area is achieved. As such, basal area may vary +/- 40 square feet per acre in any particular point within the treatment unit in order to retain trees with the best desired live tree characteristics. Test plots will be measured in the field by the Contract Administrator. The resulting average for the entire unit shall have a basal area tolerance not to exceed +/- 10 ft².

Regeneration Unit Prescription – Leave 240 linear feet of logs per acre greater than or equal to 12 inches in diameter. The source and quantity of down logs shall be approved by Contract Administrator. Leave trees have been marked with blue paint, cut trees for down wood debris have been marked with two bands of blue paint.

Definitions:

“Largest” – Trees which in comparison to other adjacent trees are larger in diameter and/or taller in height.

“Healthiest” – Free of signs of insect or disease infestation, or other stressors. Live crown ratios which exceed 30%. If no trees are free of such indicators, retain the trees which have the greatest live crown ratio.

“Best Formed” – Trees which are best formed are generally single-stemmed and are lacking: sweep, crooks, cat faces, bear damage, or other disfigurements. If no trees are free of such indicators, retain the trees which are the straightest and have the least amount of disfigurements.

Leave Tree Priority

Overarching Criteria – all designated species and diameter leave trees should generally be the largest, healthiest, best formed trees in the dominant or codominant crown classes.

Special Thinning Conditions:

In areas where thinning is not necessary (i.e., prescription is met), do not put in corridors.

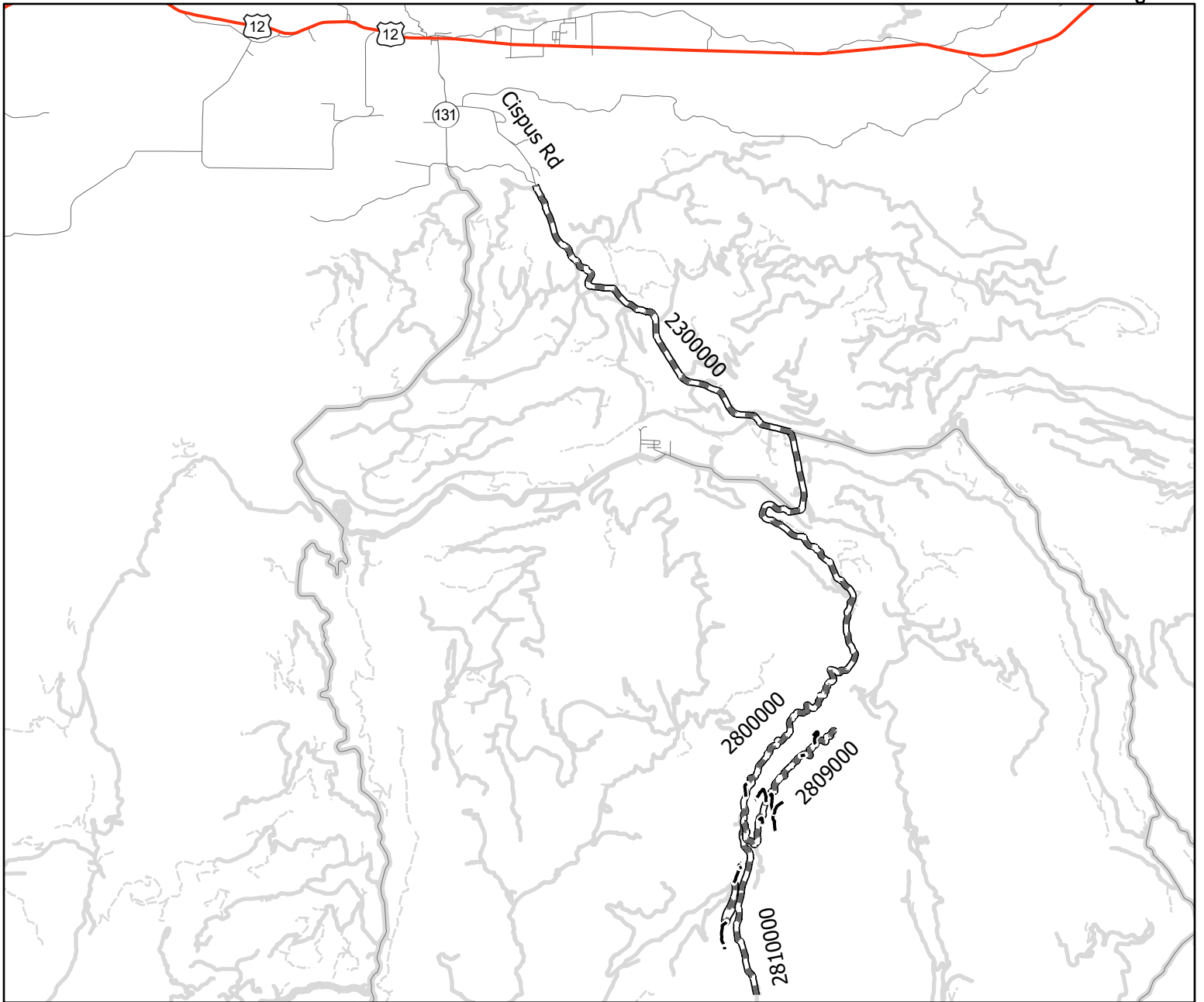
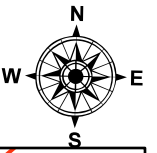
Certification of Fallers and yarder operations – see clause H-011.

The Contract Administrator and Faller/Harvester Operator will jointly review the take tree selection criteria as outlined in Schedule B of the contract.

In conjunction with the Contract Administrator, the Faller/Harvester Operator will mark a designated area as a test plot within the sale area boundary. Satisfactory thinning of the test plot completes the certification process. Certification may be revoked at any time by Contract Administrator if Contract Administrator determines that the prescription is not being implemented properly. |

VICINITY MAP

Page 1 of 21



Legend

- | | | | | | |
|-----|-----------------------------------|-----|-------------------------------------|--|-----------------------|
| --- | 1 - BASIC CUSTODIAL CARE (CLOSED) | --- | 4 - MODERATE DEGREE OF USER COMFORT | | 12 |
| --- | 2 - HIGH CLEARANCE VEHICLES | --- | Required Prehaul Maintenance | | 131 |
| --- | 3 - SUITABLE FOR PASSENGER CARS | --- | Optional Temporary Construction | | U.S. |
| | | | | | Local |
| | | | | | County Roads from DOT |



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

County: SKAMANIA

T10R08E

SEC(S) 4,5,7,8,17,18,19,20,29

AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

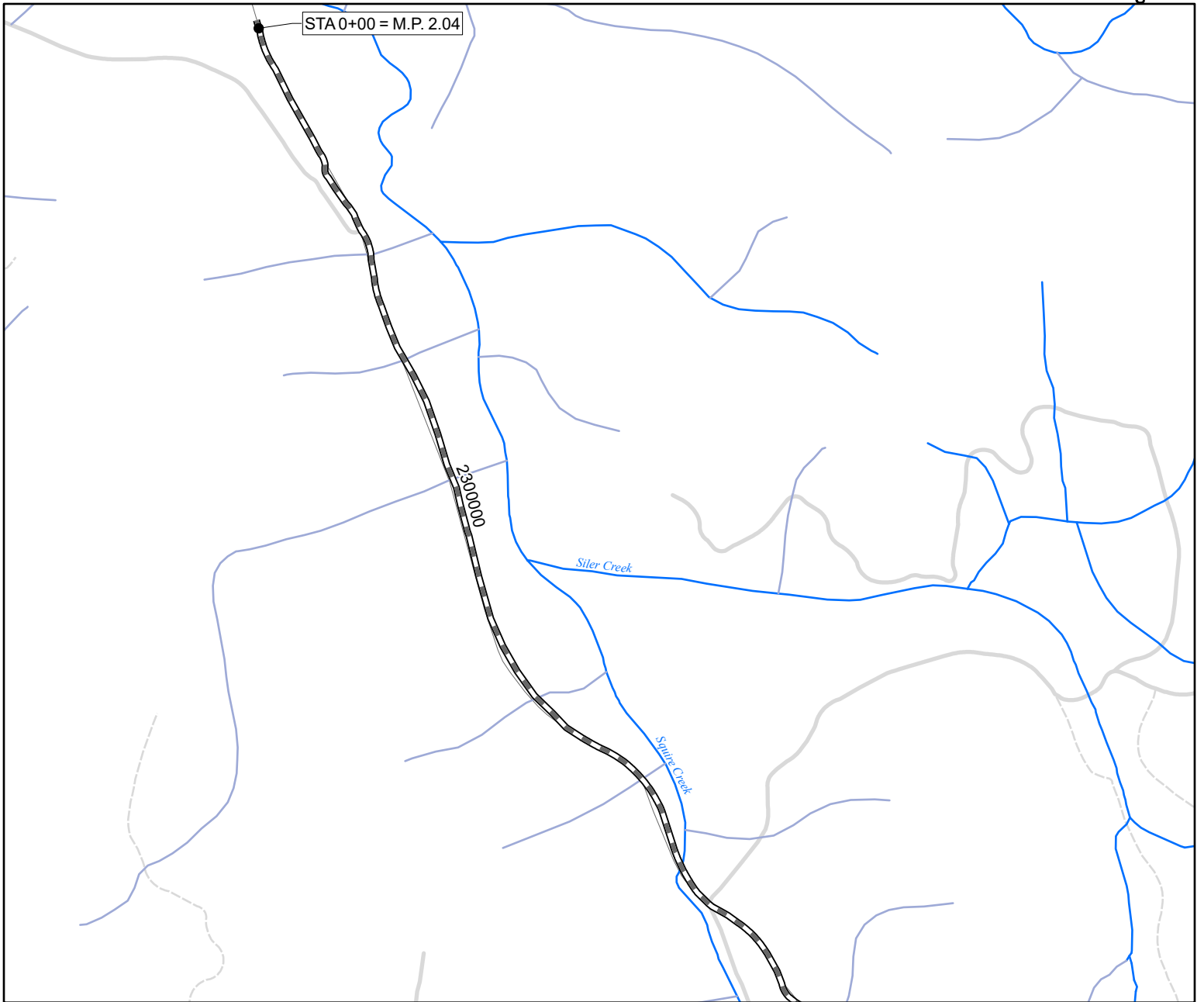
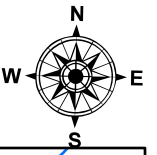
GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

Date Created: JUNE 25, 2024

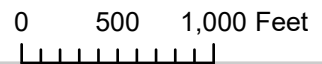
ROAD PLAN MAP

Page 2 of 21



Legend

- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- 4 - MODERATE DEGREE OF USER COMFORT
- ▬ Required Prehaul Maintenance
- County Roads from DOT
- Station
- typed stream
- U, unknown



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

County: SKAMANIA
T12R07E
SEC(S) 27,34
AGREEMENT NO.: 36-106480

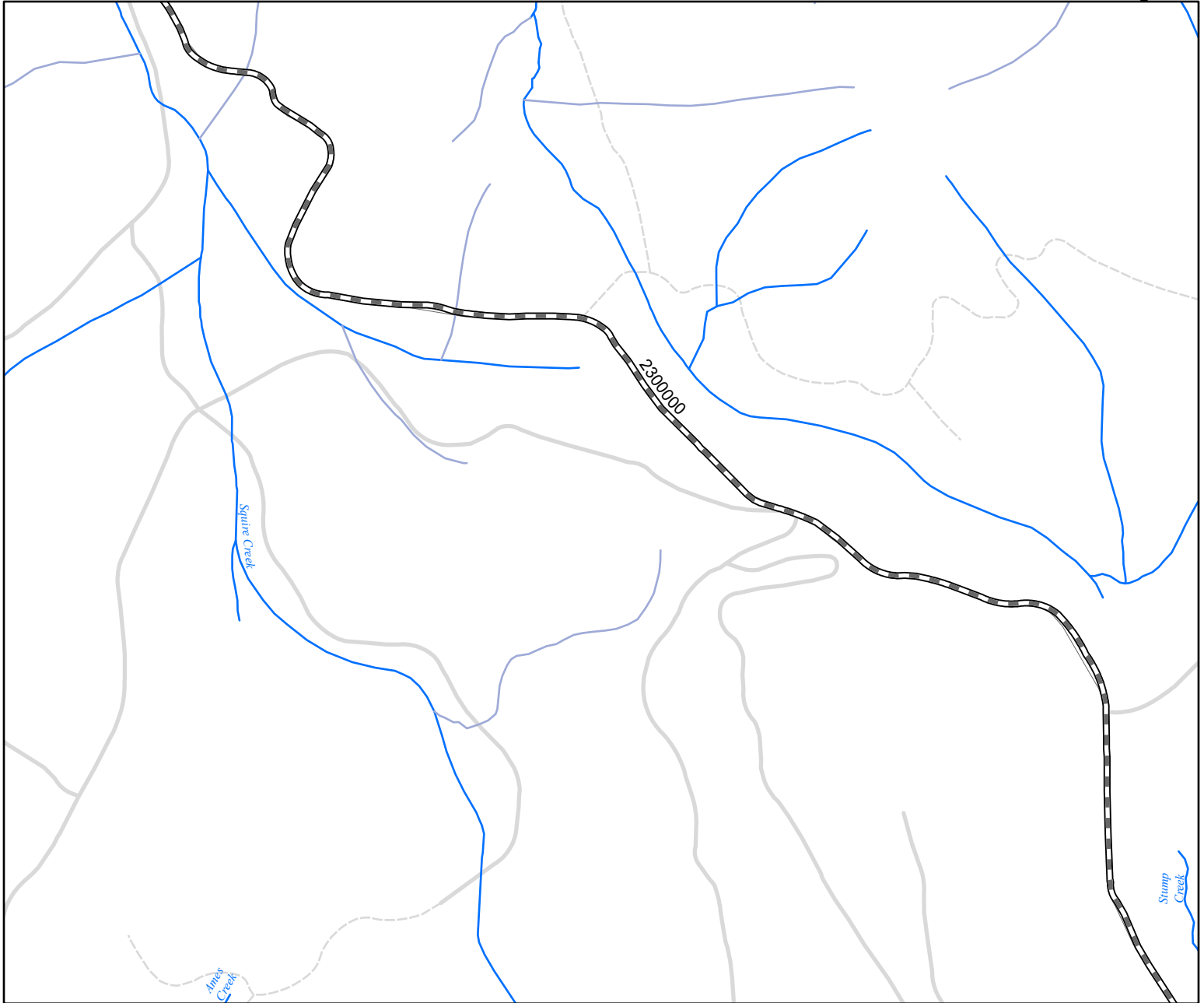
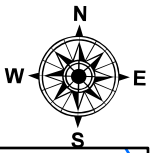
GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
Date Created: JUNE 25, 2024

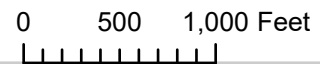
ROAD PLAN MAP

Page 3 of 21



Legend

- | | | |
|---------------------------------------|---------------------------------------|-------------------------|
| --- 1 - BASIC CUSTODIAL CARE (CLOSED) | — 4 - MODERATE DEGREE OF USER COMFORT | — County Roads from DOT |
| — 2 - HIGH CLEARANCE VEHICLES | ▬ Required Prehaul Maintenance | — typed stream |
| | | — U, unknown |



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

County: SKAMANIA
T11R07E T12R07E
SEC(S) 3, 2, 1, 34,35
AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

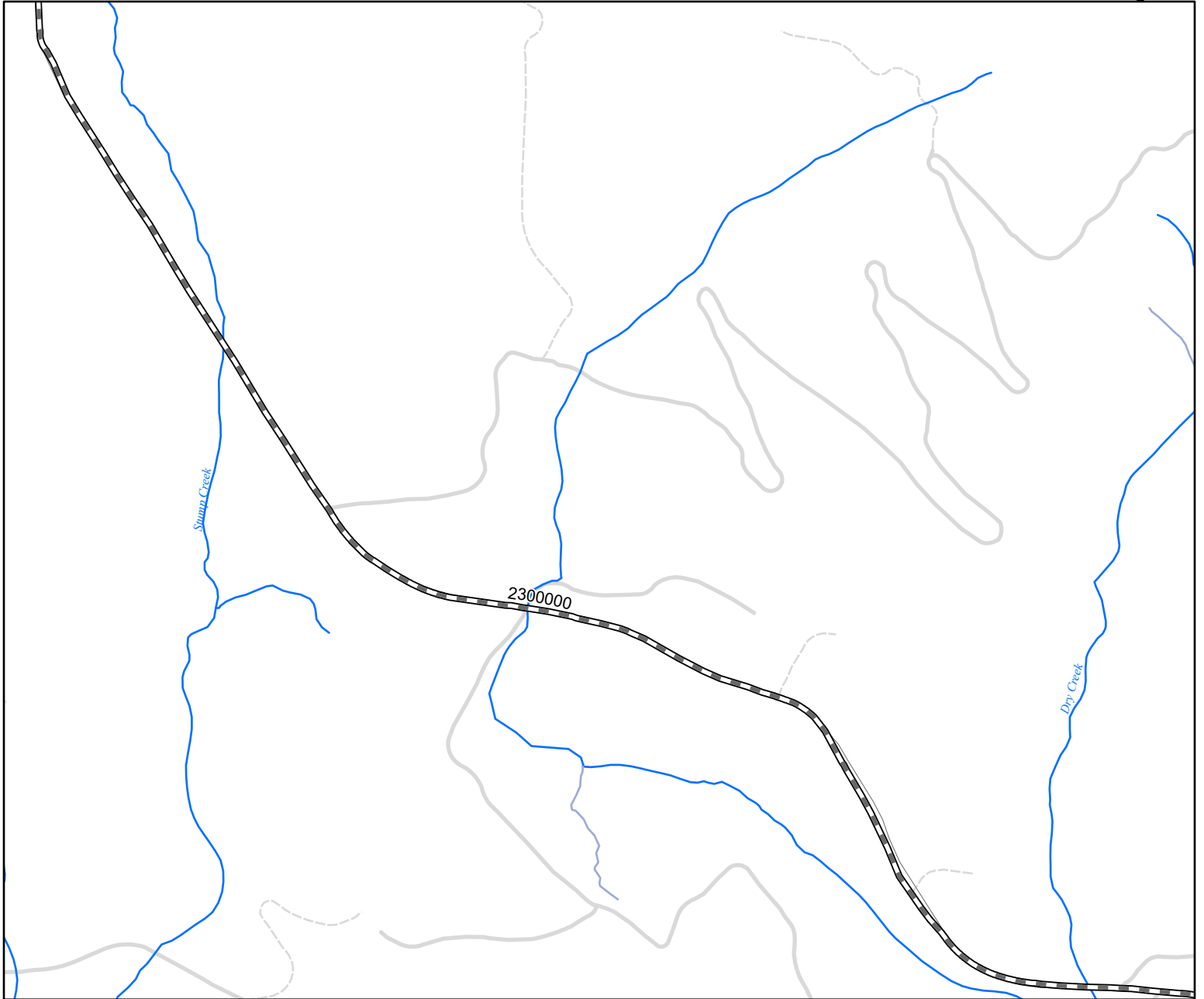
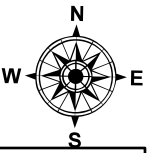
GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

Date Created: JUNE 25, 2024

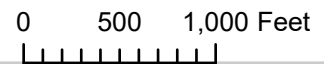
ROAD PLAN MAP

Page 4 of 21



Legend

- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- 4 - MODERATE DEGREE OF USER COMFORT
- ▬ Required Prehaul Maintenance
- County Roads from DOT
- typed stream
- U, unknown



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

County: SKAMANIA
T11R07E T11R08E
SEC(S) 1,12,40
AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

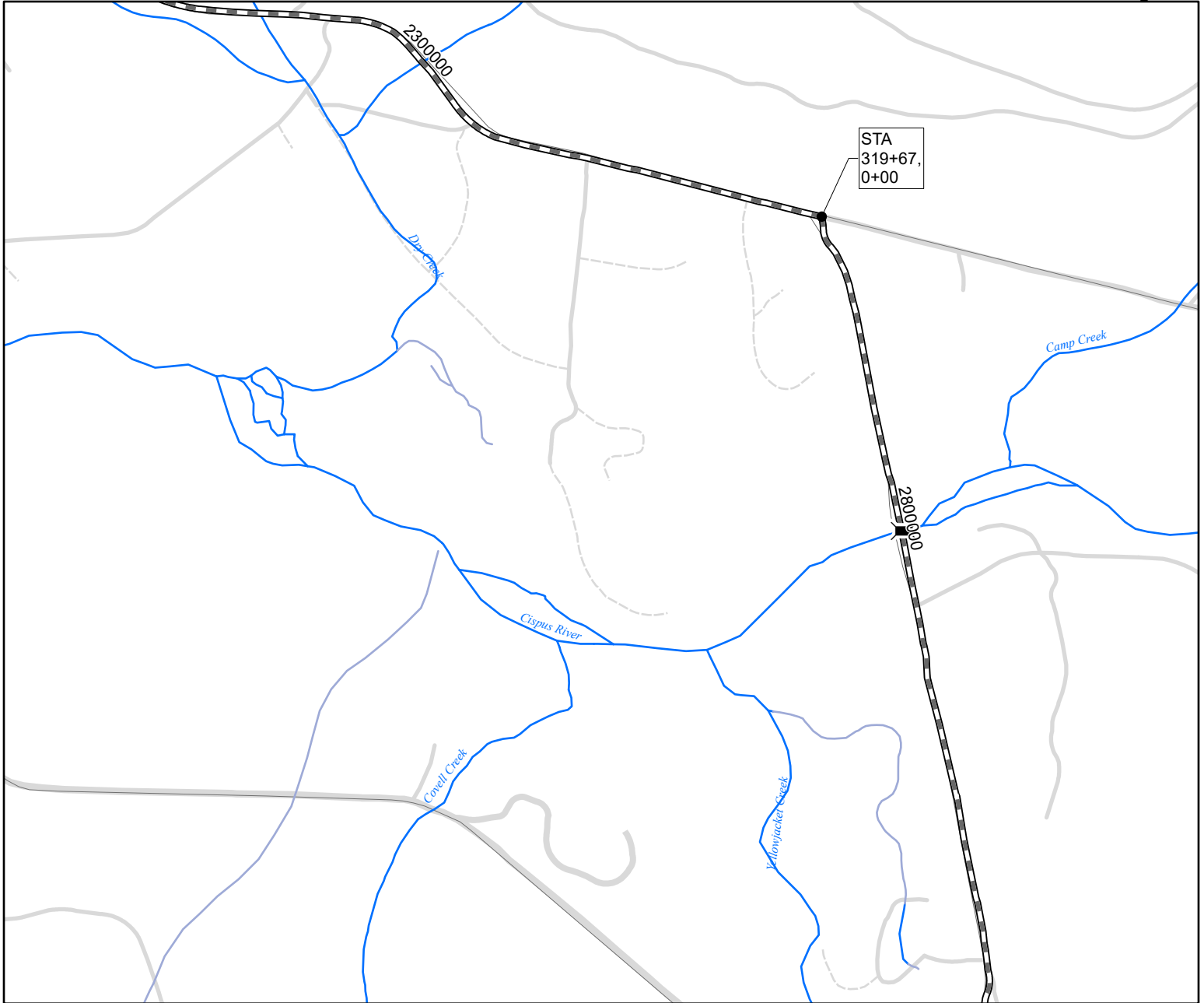
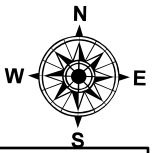
GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

Date Created: JUNE 25, 2024

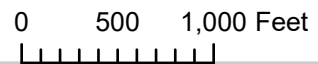
ROAD PLAN MAP

Page 5 of 21



Legend

- | | | | | | |
|-------|-----------------------------------|-------|-------------------------------------|---|--------------|
| ----- | 1 - BASIC CUSTODIAL CARE (CLOSED) | ----- | 4 - MODERATE DEGREE OF USER COMFORT | ● | Station |
| ———— | 2 - HIGH CLEARANCE VEHICLES | ——— | Required Prehaul Maintenance | ⌘ | Bridge |
| ———— | 3 - SUITABLE FOR PASSENGER CARS | ———— | County Roads from DOT | — | typed stream |
| | | | | — | U, unknown |



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

County: SKAMANIA
T11R08E
SEC(S) 8,41
AGREEMENT NO.: 36-106480

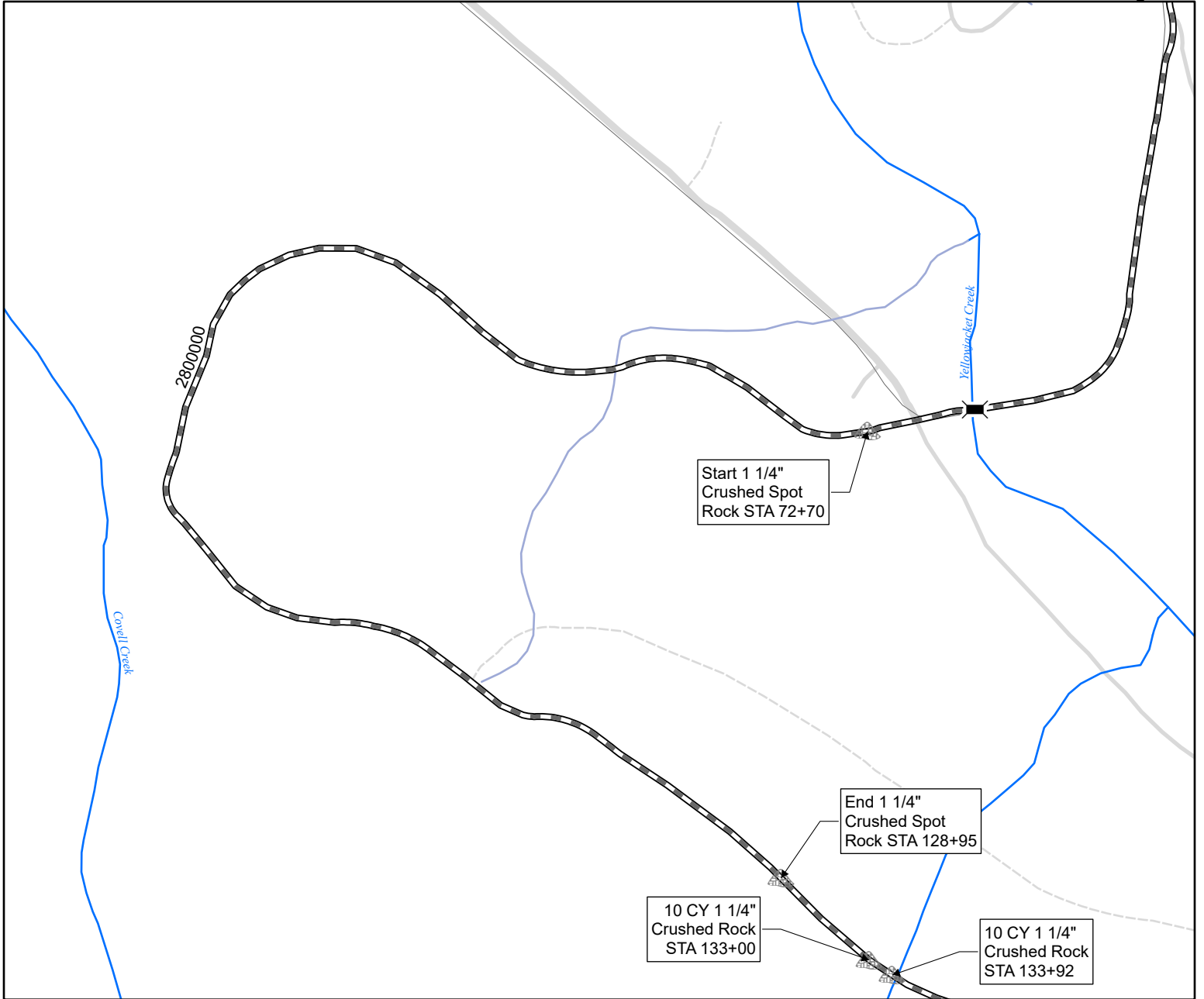
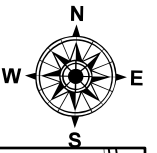
GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
Date Created: JUNE 25, 2024

ROAD PLAN MAP

Page 6 of 21



Legend

--- 1 - BASIC CUSTODIAL CARE (CLOSED)
 --- 2 - HIGH CLEARANCE VEHICLES

— 4 - MODERATE DEGREE OF USER COMFORT
 - - - Required Prehaul Maintenance
 — County Roads from DOT

⊠ Spot Rock
 ⚬ Bridge
 — typed stream
 — U, unknown

0 500 1,000 Feet



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

County: SKAMANIA
 T11R08E
 SEC(S) 41,20
 AGREEMENT NO.: 36-106480

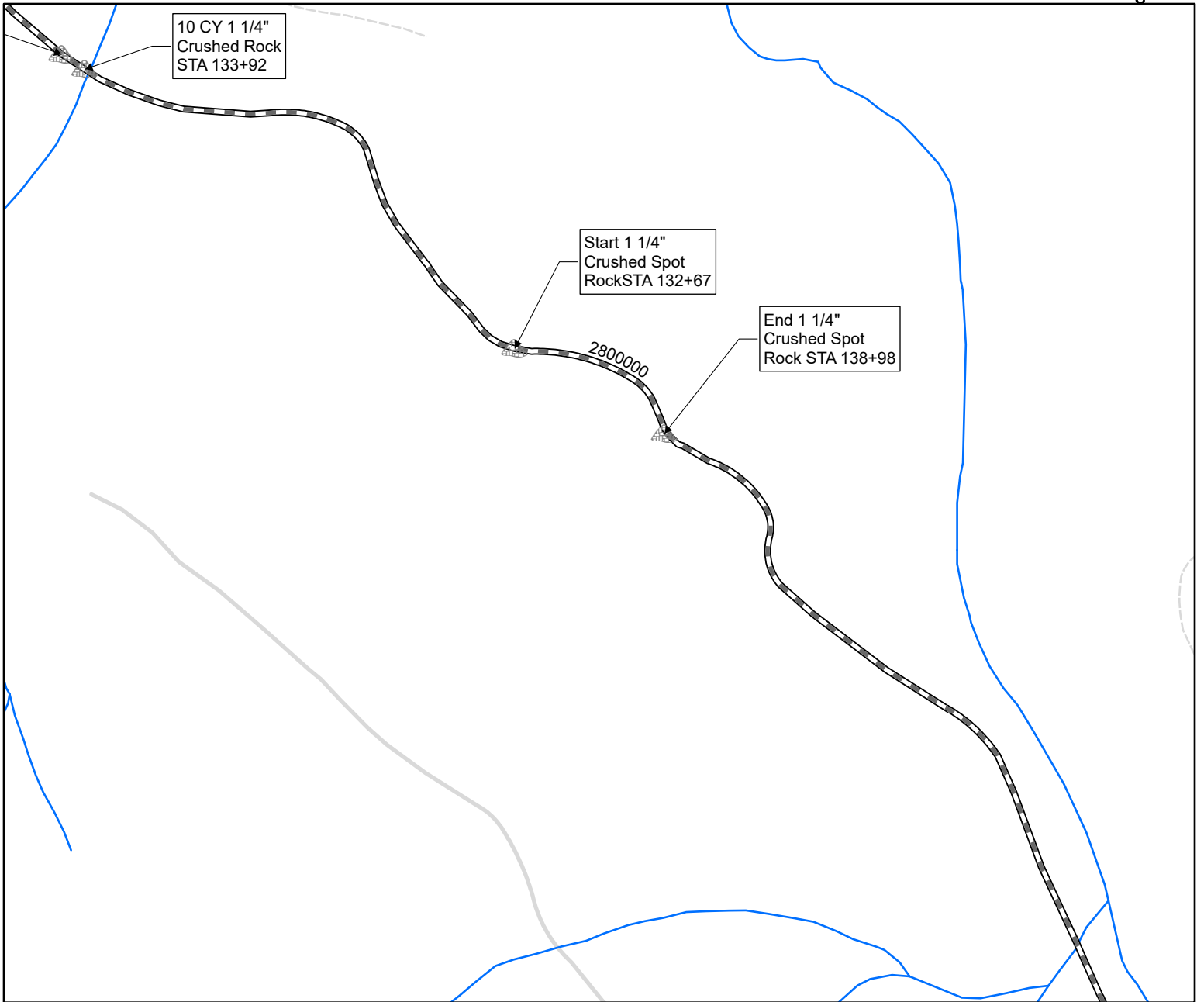
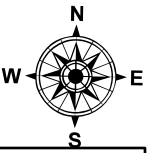
GREY TOWERS
 TIMBER SALE

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 COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
 Date Created: JUNE 25, 2024

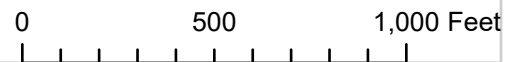
ROAD PLAN MAP

Page 7 of 21



Legend

- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- ▬ Required Prehaul Maintenance
- ▲ Spot Rock
- typed stream



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

County: SKAMANIA
T11R08E
SEC(S) 20,21
AGREEMENT NO.: 36-106480

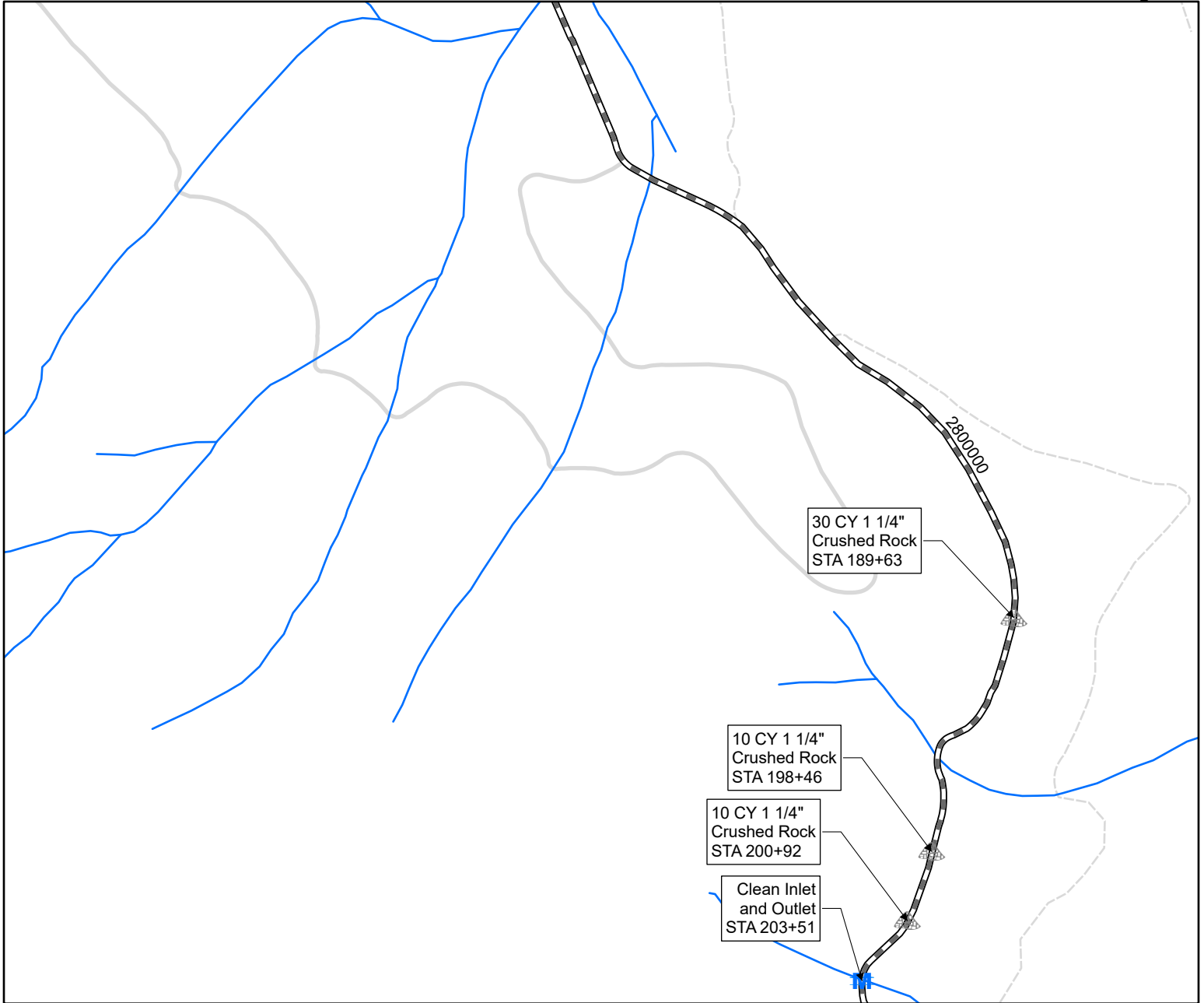
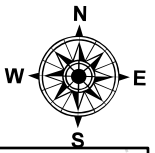
GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
Date Created: JUNE 25, 2024

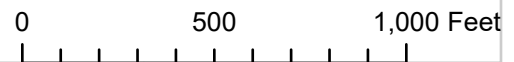
ROAD PLAN MAP

Page 8 of 21



Legend

- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- Required Prehaul Maintenance
- Maintain Culvert
- Spot Rock
- typed stream



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

County: SKAMANIA

T11R08E

SEC(S) 21,28

AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

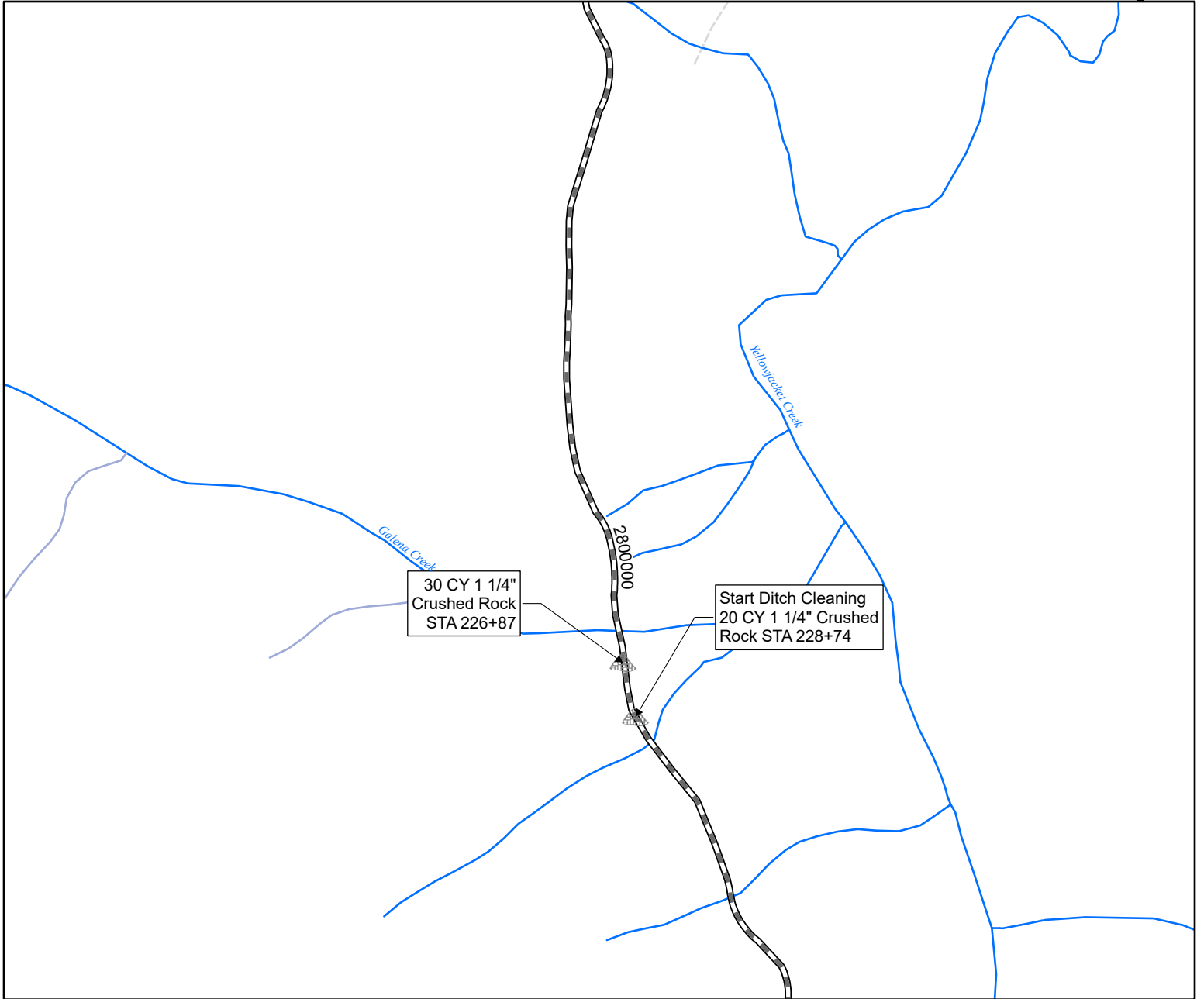
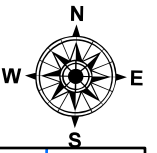
GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

Date Created: JUNE 25, 2024

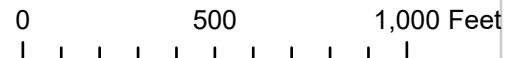
ROAD PLAN MAP

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Legend

- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- ▬ Required Prehaul Maintenance
- M** Maintain Culvert
- ▲ Spot Rock
- typed stream
- U, unknown



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

County: SKAMANIA

T11R08E

SEC(S) 28,33

AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

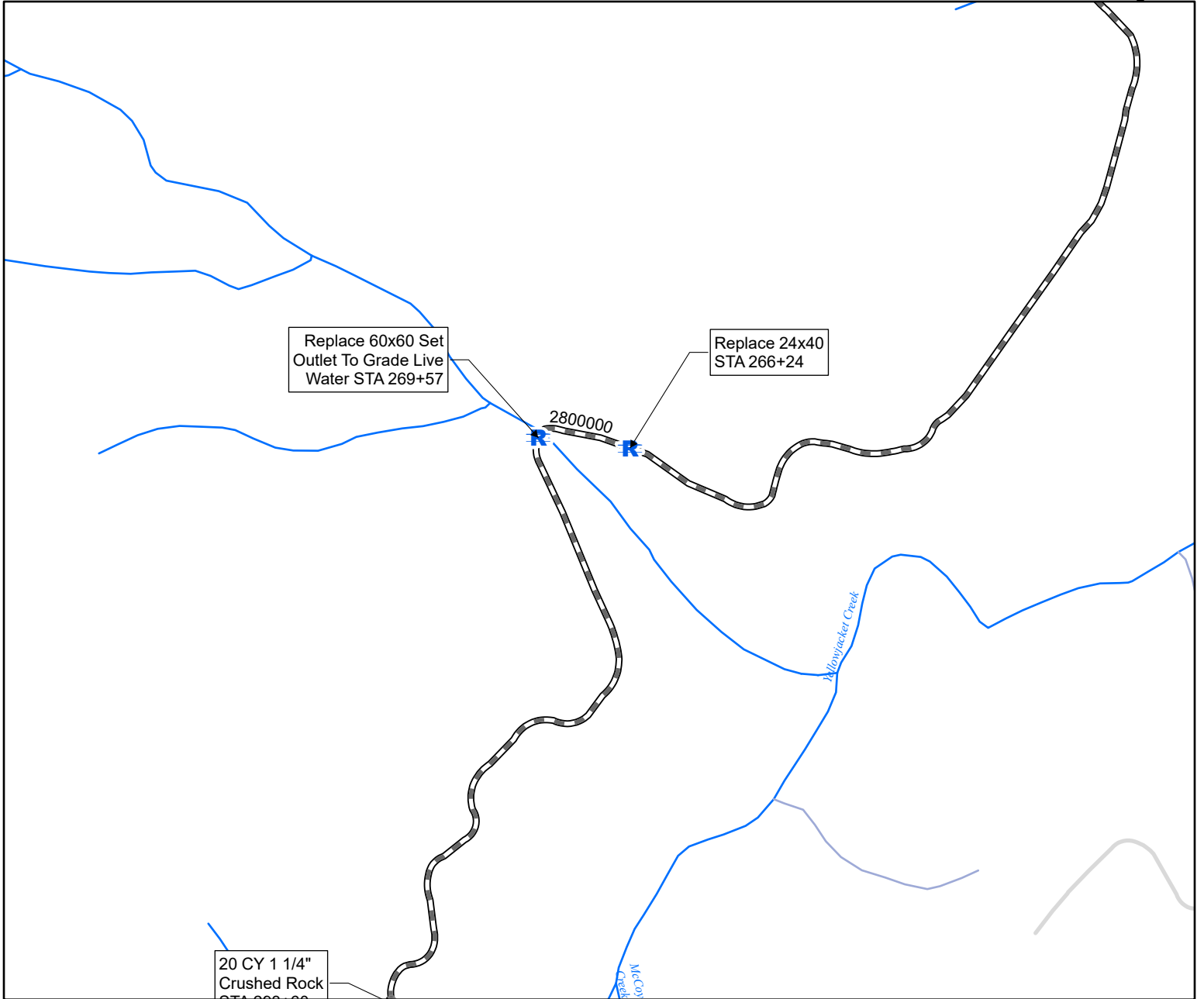
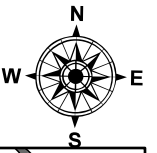
GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

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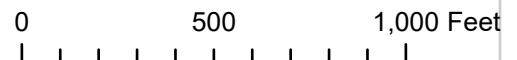
ROAD PLAN MAP

Page 10 of 21



Legend

- 2 - HIGH CLEARANCE VEHICLES
- Required Prehaul Maintenance
- Replace Culvert
- Spot Rock
- typed stream
- U, unknown



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

County: SKAMANIA
T11R08E
SEC(S) 33
AGREEMENT NO.: 36-106480

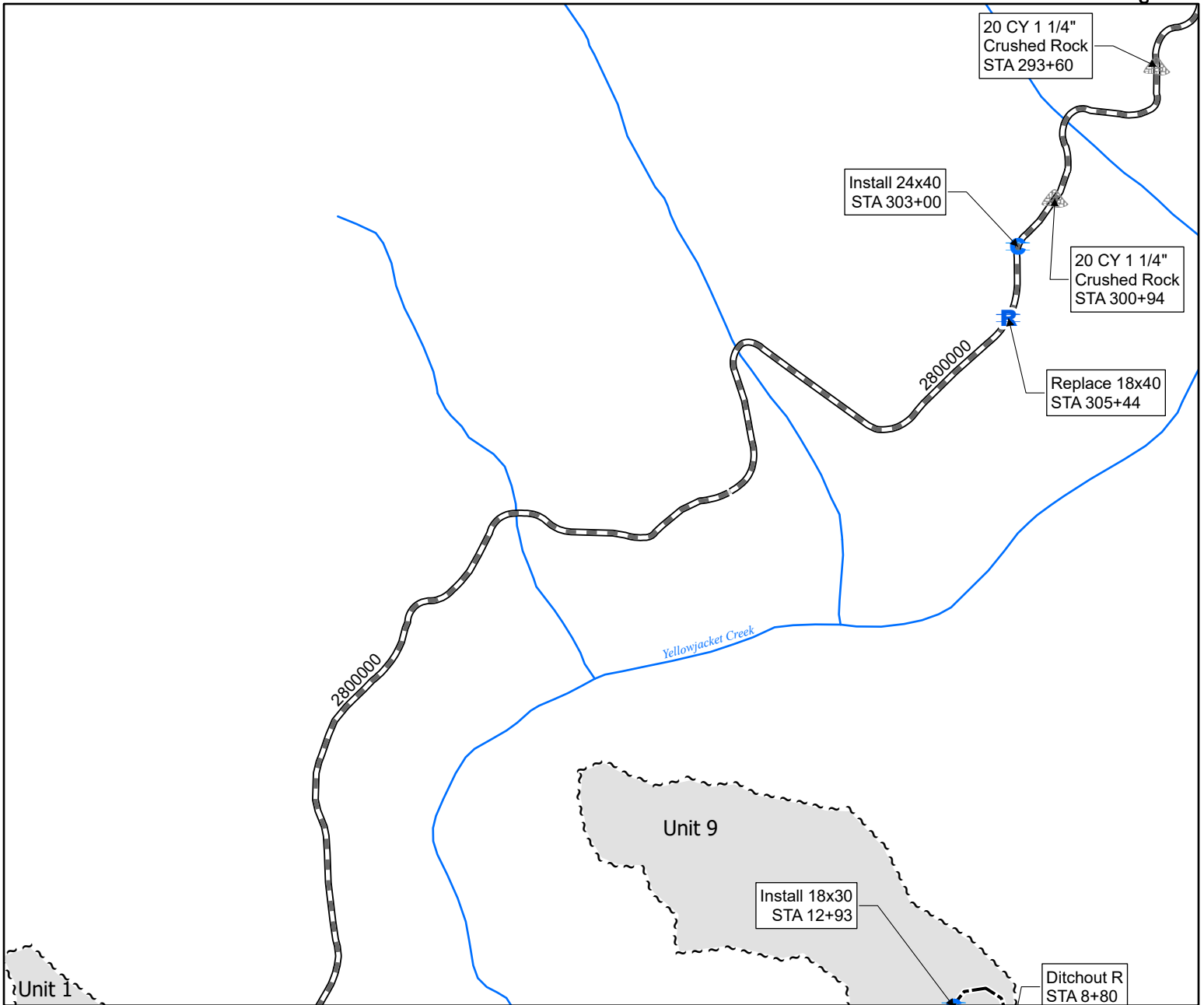
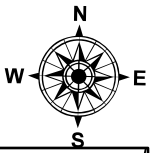
GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
Date Created: JUNE 25, 2024

ROAD PLAN MAP

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Legend

— 2 - HIGH CLEARANCE VEHICLES
 - - - Required Prehaul Maintenance

- - - Optional Temporary Construction
 C Install Culvert
 R Replace Culvert

▲ Spot Rock
 - - - Grey_Towers_Boundary
 — typed stream

0 500 1,000 Feet



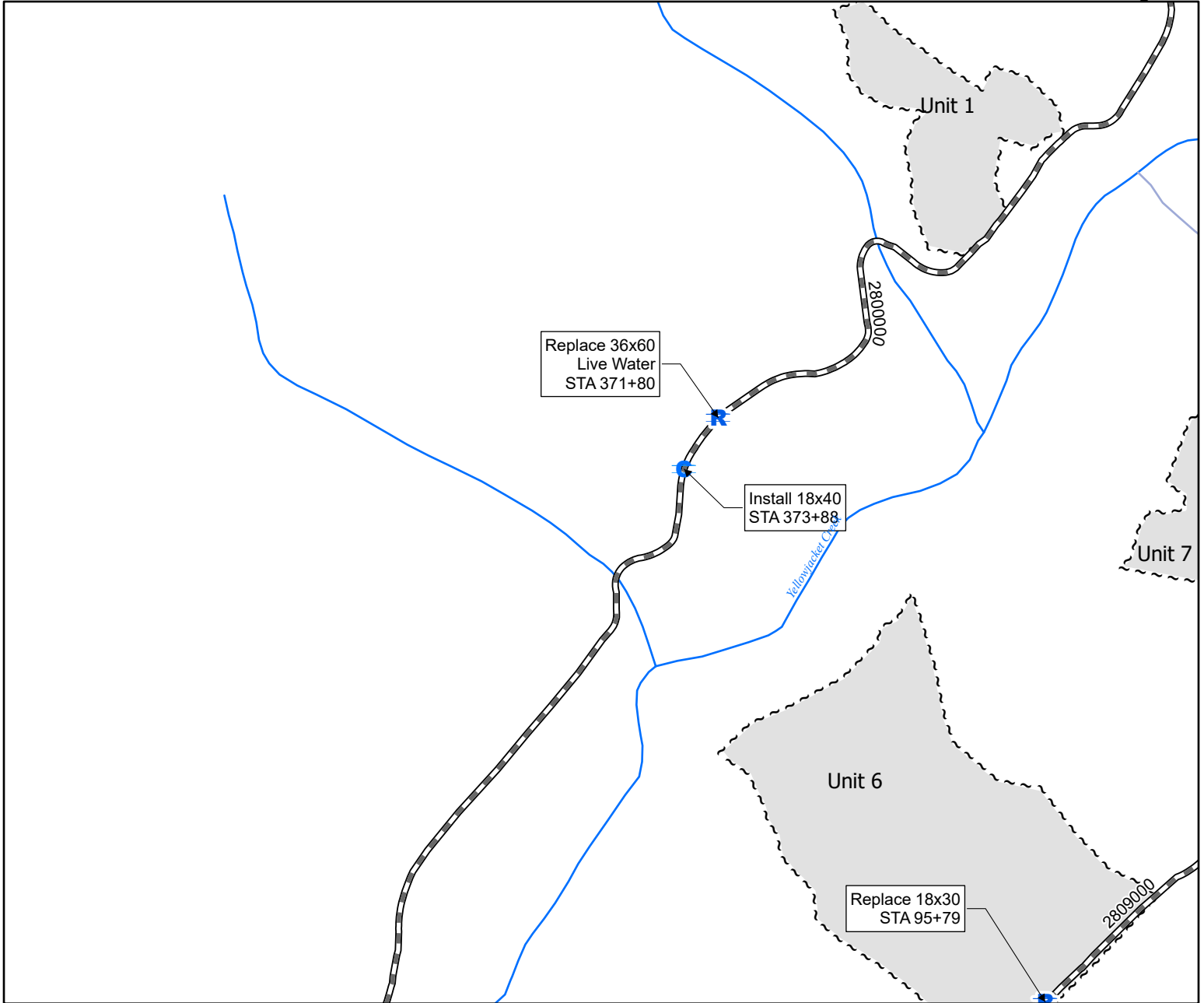
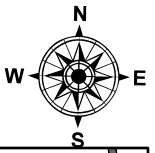
WASHINGTON STATE
 DEPARTMENT OF NATURAL RESOURCES
 GOOD NEIGHBOR AUTHORITY
 FEDERAL LANDS SECTION

County: SKAMANIA
 T10R08E T11R08E
 SEC(S) 5,32,33
 AGREEMENT NO.: 36-106480

GREY TOWERS
 TIMBER SALE

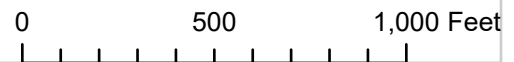
GIFFORD PINCHOT NATIONAL FOREST
 COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
 Date Created: JUNE 25, 2024



Legend

- 2 - HIGH CLEARANCE VEHICLES
- Grey_Towers_Boundary
- Required Prehaul Maintenance
- Replace Culvert
- Install Culvert
- typed stream
- U, unknown



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

County: SKAMANIA

T10R08E

SEC(S) 5

AGREEMENT NO.: 36-106480

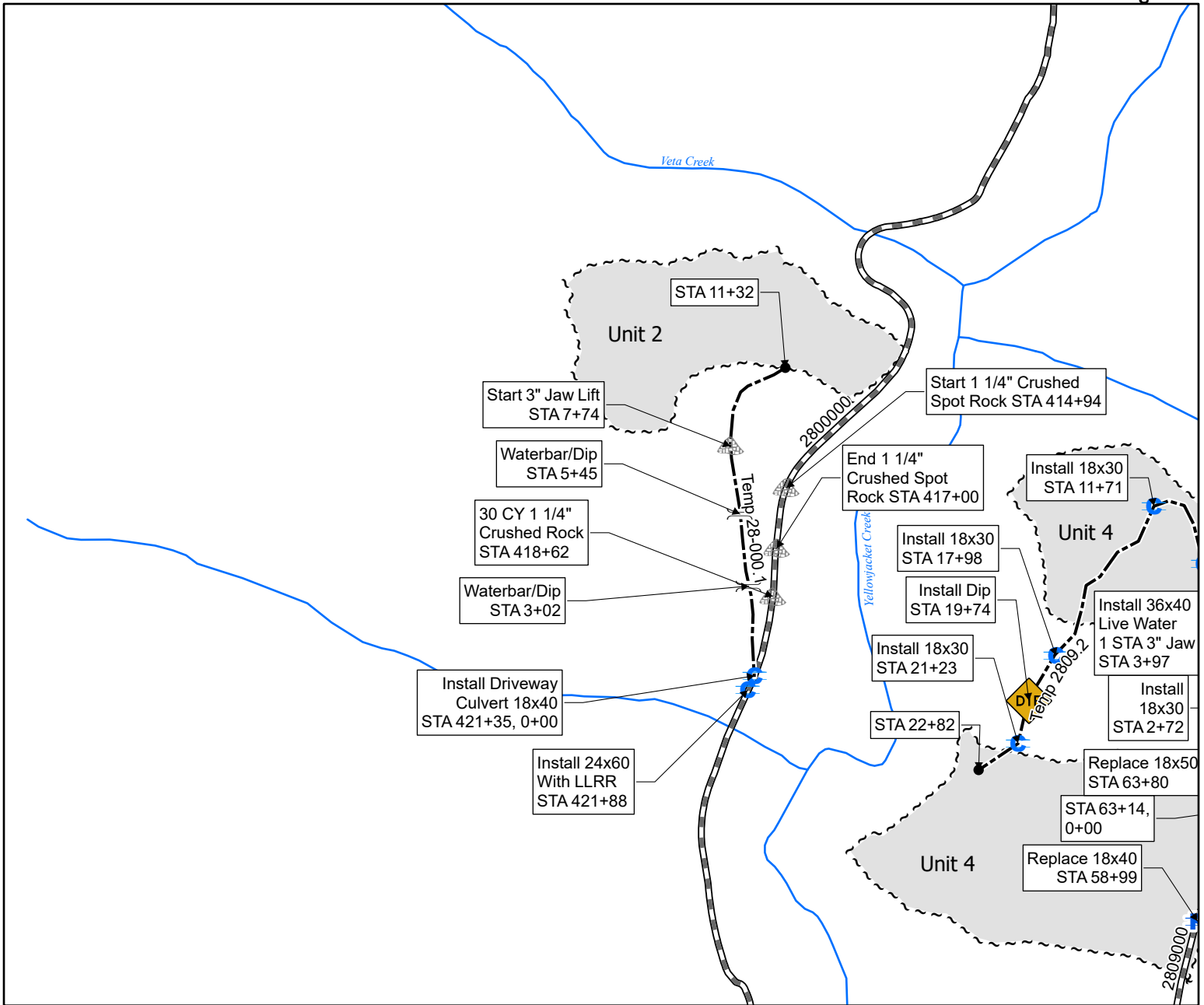
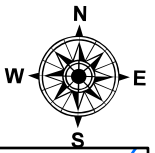
GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

Date Created: JUNE 25, 2024

ROAD PLAN MAP



Legend

- 2 - HIGH CLEARANCE VEHICLES
- Optional Temporary Construction
- Replace Culvert
- Grey_Towers_Boundary
- Dip
- Install Culvert
- Required Prehaul Maintenance
- Waterbar
- Station
- typed stream
- Spot Rock

0 500 1,000 Feet



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

County: SKAMANIA

T10R08E

SEC(S) 5,7,8

AGREEMENT NO.: 36-106480

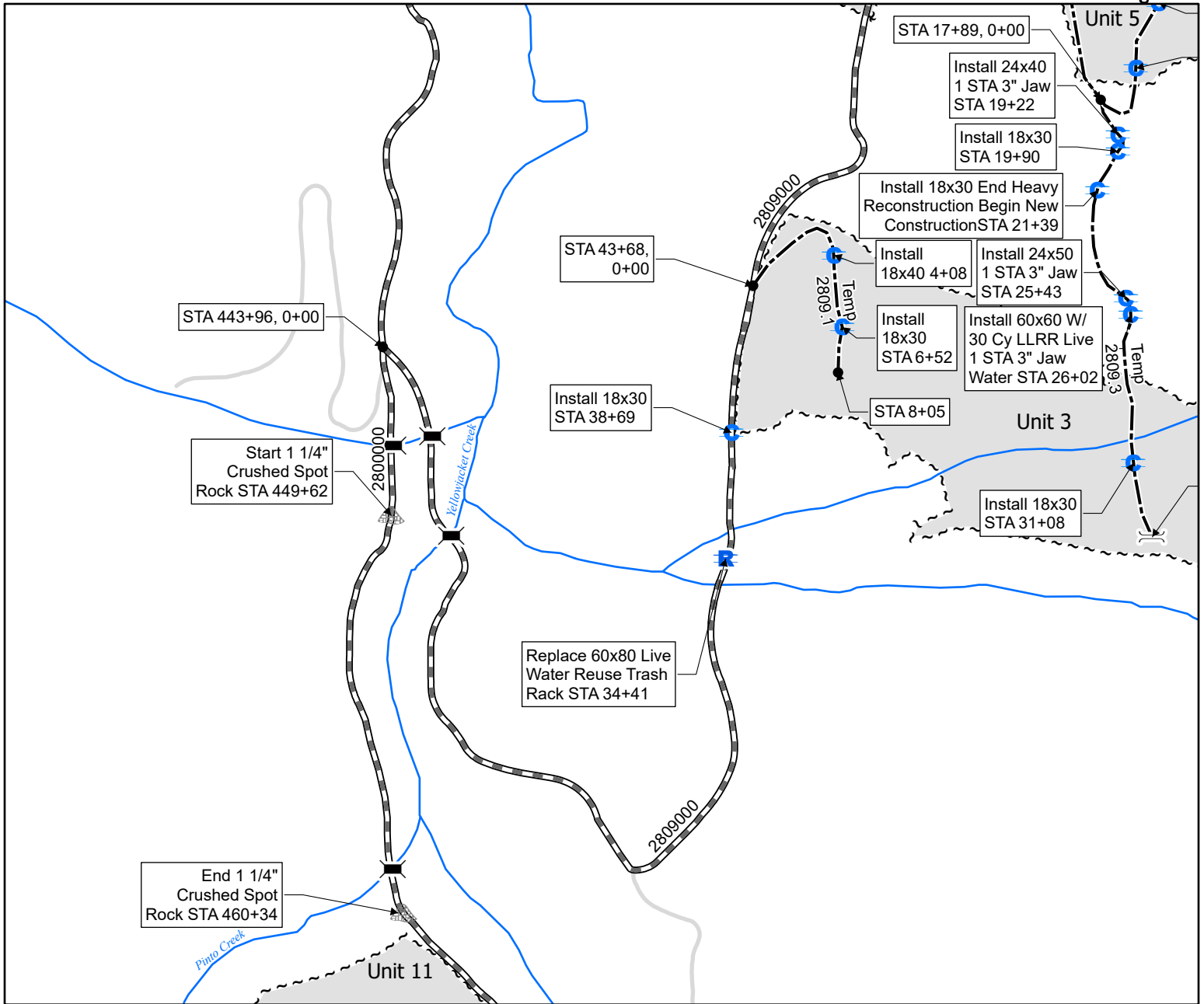
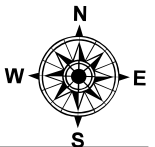
GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

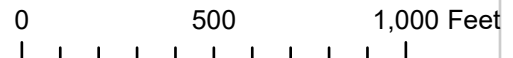
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ROAD PLAN MAP



Legend

- 2 - HIGH CLEARANCE VEHICLES
- Optional Temporary Construction
- Spot Rock
- Grey_Towers_Boundary
- Install Culvert
- Ditchout
- Required Prehaul Maintenance
- Replace Culvert
- Bridge
- Station
- typed stream



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

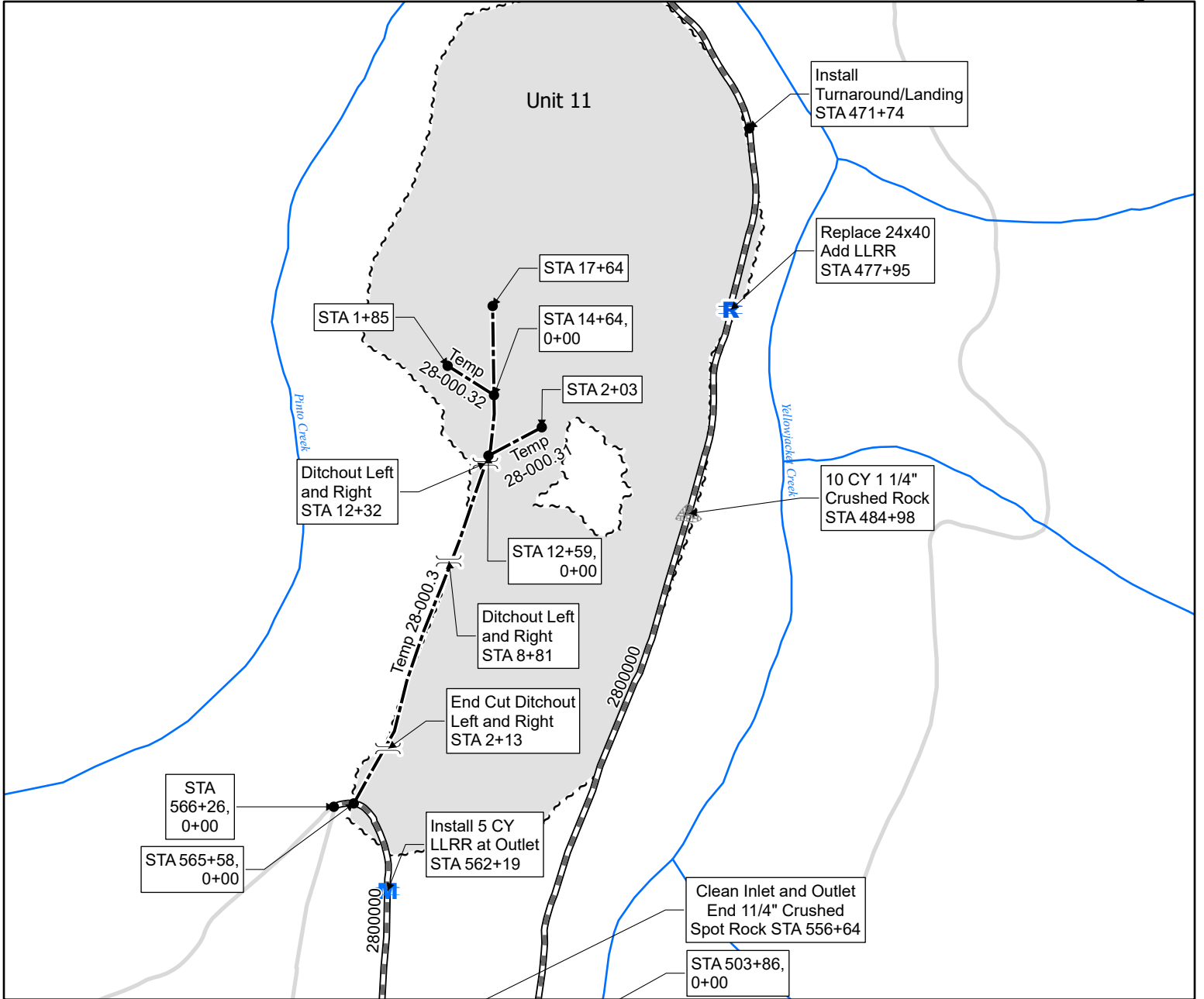
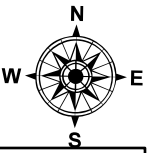
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T10R08E
SEC(S) 7,8,17,18
AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

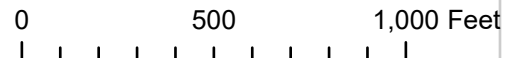
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Date Created: JUNE 25, 2024

ROAD PLAN MAP



Legend

- 2 - HIGH CLEARANCE VEHICLES
- Optional Temporary Construction
- Station
- Grey_Towers_Boundary
- Maintain Culvert
- Spot Rock
- Required Prehaul Maintenance
- Replace Culvert
- Ditchout
- typed stream



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

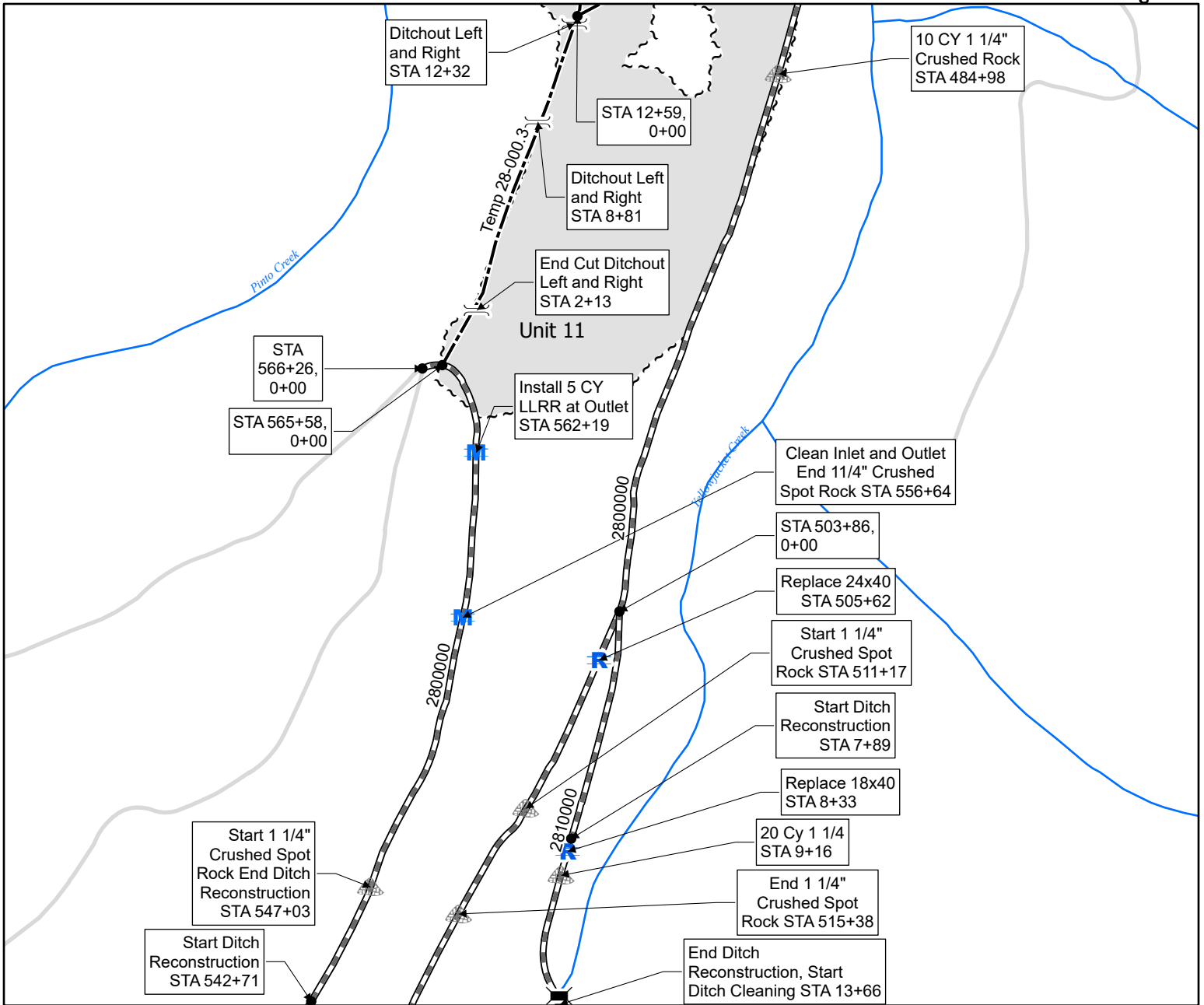
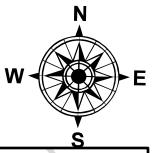
County: SKAMANIA
T10R08E
SEC(S) 17,18
AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

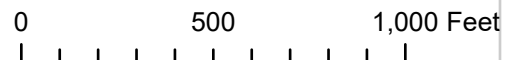
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Date Created: JUNE 25, 2024

ROAD PLAN MAP



Legend

- 2 - HIGH CLEARANCE VEHICLES
- Optional Temporary Construction
- Ditch Reconstruction
- Grey_Towers_Boundary
- Maintain Culvert
- Spot Rock
- Required Prehaul Maintenance
- Replace Culvert
- Ditchout
- Bridge
- Station
- typed stream



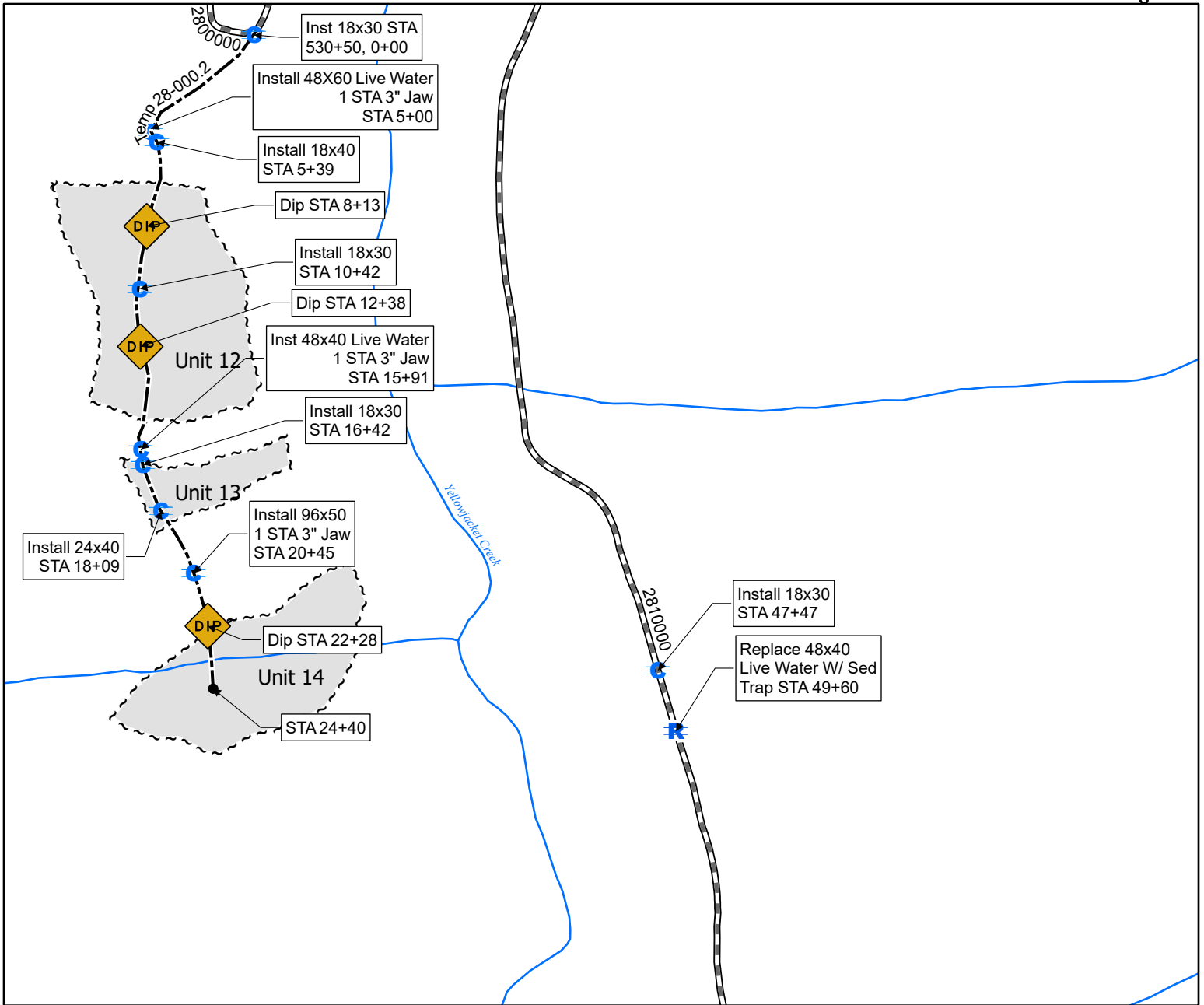
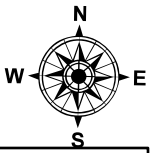
WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
GOOD NEIGHBOR AUTHORITY
FEDERAL LANDS SECTION

County: SKAMANIA
T10R08E
SEC(S) 17,18,19
AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
Date Created: JUNE 25, 2024



Legend

— 2 - HIGH CLEARANCE VEHICLES

⋯ Grey_Towers_Boundary

▬ Required Prehaul Maintenance

⋯ Optional Temporary Construction

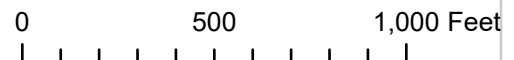
◆ Dip

⊕ Install Culvert

⊖ Replace Culvert

● Station

— typed stream



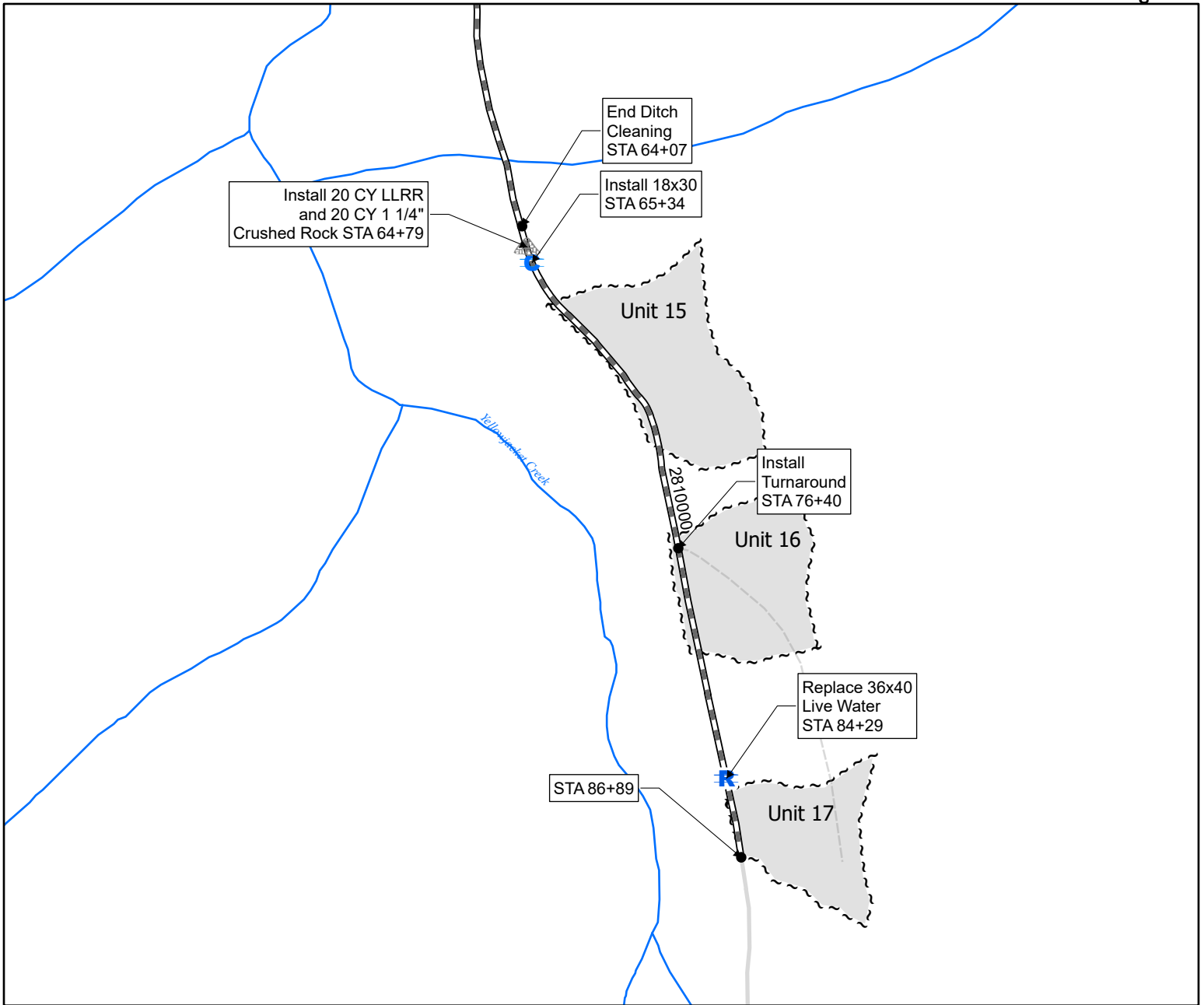
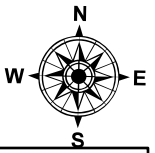
WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
GOOD NEIGHBOR AUTHORITY
FEDERAL LANDS SECTION

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T10R08E
SEC(S) 19,20
AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

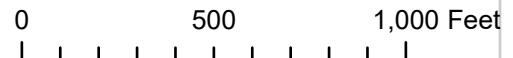
GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY
Date Created: JUNE 25, 2024



Legend

- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- ~~~~~ Grey_Towers_Boundary
- ▬ Required Prehaul Maintenance
- Ⓢ Install Culvert
- Ⓡ Replace Culvert
- Station
- Ditch Reconstruction
- ▒ Spot Rock
- typed stream



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

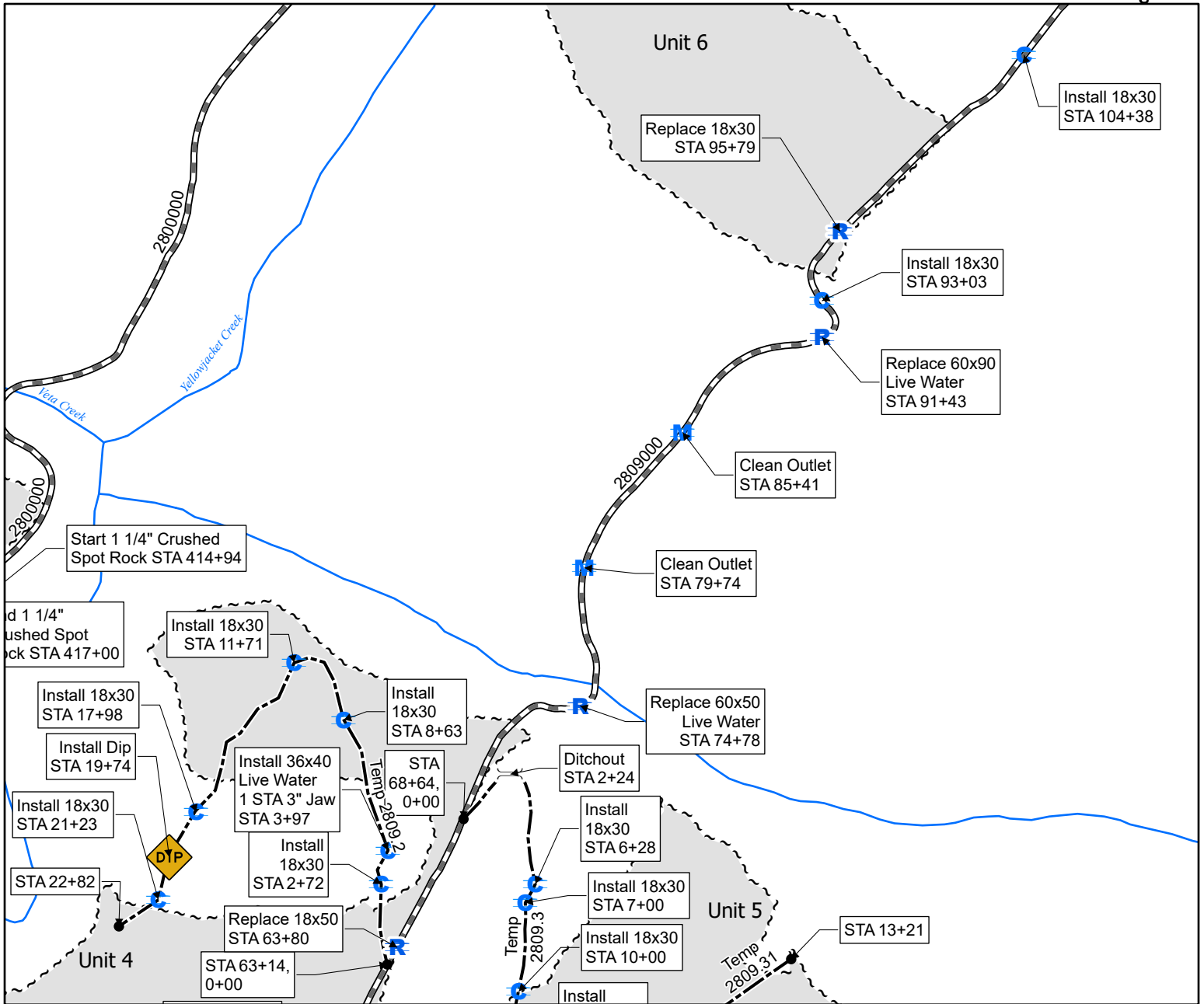
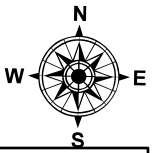
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T10R08E
SEC(S) 19,20,29
AGREEMENT NO.: 36-106480

GREYTOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

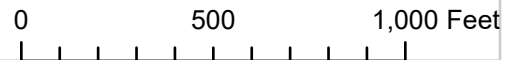
Created by: C.VANDEHEY
Date Created: JUNE 25, 2024

ROAD PLAN MAP



Legend

- 2 - HIGH CLEARANCE VEHICLES
- Optional Temporary Construction
- Maintain Culvert
- Grey_Towers_Boundary
- Dip
- Replace Culvert
- Required Prehaul Maintenance
- Install Culvert
- Station
- Ditchout
- typed stream



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

County: SKAMANIA

T10R08E

SEC(S) 5,8

AGREEMENT NO.: 36-106480

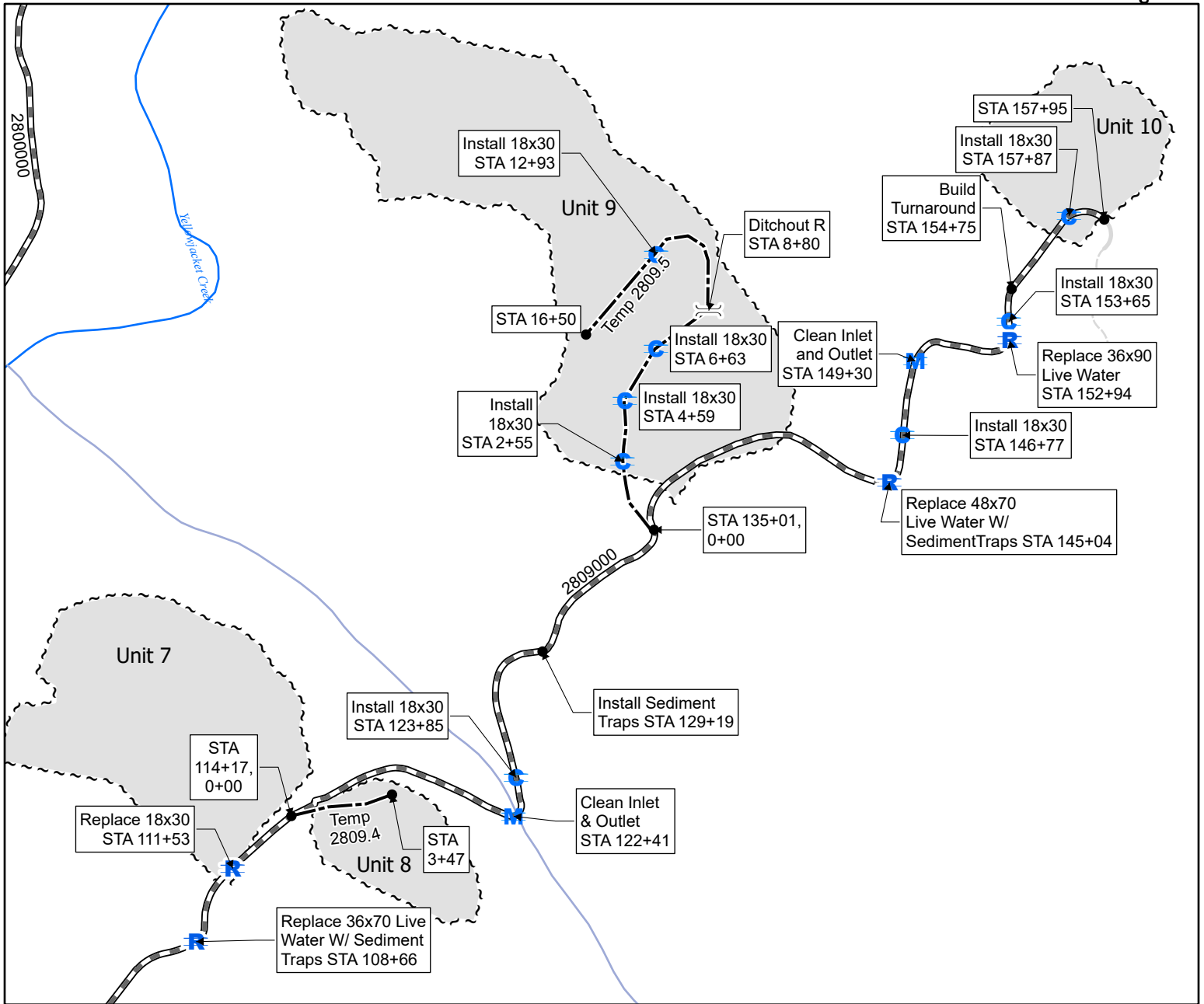
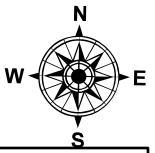
GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

Date Created: JUNE 25, 2024

ROAD PLAN MAP

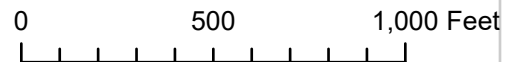


Legend

- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- Grey_Towers_Boundary

- ▬ Required Prehaul Maintenance
- Optional Temporary Construction
- Ⓢ Install Culvert
- Ⓜ Maintain Culvert

- Ⓡ Replace Culvert
- Station
- ⌋ Ditchout
- typed stream
- U, unknown



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

County: SKAMANIA

T10R08E

SEC(S) 4,5

AGREEMENT NO.: 36-106480

GREY TOWERS
TIMBER SALE

GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

Created by: C.VANDEHEY

Date Created: JUNE 25, 2024

GOOD NEIGHBOR AUTHORITY
GIFFORD PINCHOT NATIONAL FOREST
COWLITZ RANGER DISTRICT

GREY TOWERS TIMBER SALE ROAD PLAN
SKAMANIA COUNTY

AGREEMENT NO.: 36-106480

STAFF ENGINEER: CHAD VANDEHEY

DATE: JUNE 25, 2024

DRAWN & COMPILED BY: CHAD VANDEHEY

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>
2300000	0+00 to 319+67	Pre-Haul Maintenance	4
2800000	0+00 to 72+70	Pre-Haul Maintenance	4
2800000	72+70 to 319+67	Pre-Haul Maintenance	2
2800000	0+00 to 566+26	Pre-Haul Maintenance	2
2809000	0+00 to 157+95	Pre-Haul Maintenance	2
2810000	0+00 to 86+89	Pre-Haul Maintenance	2

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>
Temp 28-000.1	0+00 to 11+32	Temporary Construction	Temporary Road
Temp 28-000.2	0+00 to 24+40	Temporary Construction	Temporary Road
Temp 28-000.3	0+00 to 17+64	Temporary Construction	Temporary Road
Temp 28-000.31	0+00 to 2+03	Temporary Construction	Temporary Road
Temp 28-000.32	0+00 to 1+85	Temporary Construction	Temporary Road
Temp 2809.1	0+00 to 8+05	Temporary Construction	Temporary Road
Temp 2809.2	0+00 to 22+82	Temporary Construction	Temporary Road
Temp 2809.3	0+00 to 33+65	Temporary Construction	Temporary Road
Temp 2809.31	0+00 to 13+21	Temporary Construction	Temporary Road
Temp 2809.4	0+00 to 3+47	Temporary Construction	Temporary Road
Temp 2809.5	0+00 to 16+50	Temporary Construction	Temporary Road

0-4 TEMPORARY CONSTRUCTION

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

- Clearing, Grubbing, and Right-of-way debris disposal;
- Construct road in accordance to the TYPICAL SECTION SHEET;
- Excavation and/or embankment to subgrade;
- Compaction of embankment, subgrade, and rock as listed in the COMPACTION LIST.
- Road widening by excavating or shooting;
- Turnaround and turnout construction;
- Acquisition and installation of drainage structures as listed in the CULVERT AND DRAINAGE LIST;
- Acquisition and application of rock as listed in the ROCK LIST;
- Creating positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as designated by the Contract Administrator.
- If overwintered, Culverts sized below Q-100 must be removed and roads must be waterbarred between October 01 and June 30. 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 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.
- Decommissioning as listed in CLAUSE 9-20 ROAD DECOMMISSIONING in accordance with CLAUSE 9-22 LEVEL 1 DECOMMISSIONING and CLAUSE 9-23 LEVEL 2 DECOMMISSIONING.

TOTAL 154.94 STA'S

0-6 PRE-HAUL MAINTENANCE

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

- Purchaser shall perform maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS;
 - Cleaning culverts and catchbasins;
 - Reconstruct headwalls and construct outlet drainage trenches listed in the CULVERT AND DRAINAGE LIST;
 - Grading, shaping, and compacting according to the COMPACTION LIST;
 - Acquisition and application of rock as listed in the ROCK LIST;
 - Placement of energy dissipaters as indicated in the CULVERT AND DRAINAGE LIST;
 - Roadside brushing and debris removal according to the BRUSHING DETAIL;
 - Acquisition and installation of drainage structures as listed in the CULVERT AND DRAINAGE LIST;
 - Construction of Culvert Outlet Trenches as indicated in the CULVERT AND DRAINAGE LIST;
 - Cleaning and reshaping ditches and reconstructing headwalls indicated in the CULVERT AND DRAINAGE LIST according to the DITCH CLEANING DETAIL;
- TOTAL REQUIRED 1130.77 STA's**

0-7 POST-HAUL MAINTENANCE

This project includes post-haul road maintenance listed in Clause 9-5 POST-HAUL MAINTENANCE9-5 .

0-9 DECOMMISSIONING

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

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 Work maps.

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

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. No roads shall be closed without written approval from the contract administrator.

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.

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

- Orange flagging for centerline of new roads and reference points on existing.
- Orange and blue flagging and/or paint for culverts and drainage dips.

1-18 REFERENCE POINT DAMAGE

Purchaser shall reset reference points (RPs) that were moved or damaged at any time during construction to their original locations. Excavation and embankment may not proceed on road segments controlled by said RPs until Purchaser resets all moved or damaged RPs.

SUBSECTION TIMING

1-21 HAUL APPROVAL

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

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 compaction
- Ditch construction and drainage installation
- Rock application and compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

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

<u>Activity</u>	<u>Closure Period</u>	<u>Comment</u>
Clearing, Grubbing, Grading, Shaping, Rock placement, Culvert Installation, Construction, Reconstruction	October 1 st to June 30 th	
2800000 STA 371+80	August 16 th to July 31 st	
2809000 STA 34+41 Culvert		
2810000 STA(s) 20+09, 49+60, 84+29		
Temp 28-000.2 STA(s) 5+00, 15+91, 20+45		

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 federal 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 WOLVES

If a wolf den or rendezvous site is discovered, the following timing restrictions will apply. Within 0.25 miles of the active wolf den or rendezvous sites, any road work, right-of-way timber falling and yarding, rock pit operation, or heavy equipment operations shall not be allowed from March 1st through September 1st, and within 1 mile all activities shall be seasonally restricted from April 1st to July 15th.

1-28 TIMING RESTRICTION FOR NORTHERN SPOTTED OWL

On the following road(s), any road work, right-of-way timber falling and yarding, rock pit operation, or heavy equipment operation taking more than 5 hours to complete in a single location within 0.25 miles of suitable spotted owl habitat is not allowed from March 1 through July 15. The distance between work sites that constitutes a separate work site is 0.25 miles.

<u>Road</u>	<u>Stations</u>
2800000	See Timber Sale Map for Specific Locations
2809000	
2810000	
Temp 28-000.2	
Temp 28-000.3	
Temp 28-000.31	
Temp 28-000.32	
Temp 2809.1	
Temp 2809.2	
Temp 2809.3	
Temp 2809.31	
Temp 2809.4	
Temp 2809.5	

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- Wheel track rutting exceeds 2 inches MAINTENANCE CLASS 2 roads.
- Wheel track rutting exceeds 6 inches on MAINTENANCE CLASS 1 roads and Temporary roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator, excessive road damage or rutting may occur.

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

1-31 SPEED LIMITS

Speeds are limited to 35 mph unless otherwise posted.

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, Purchaser shall immediately cease all road construction and hauling operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge or asphalt surface(s) and have surface(s) evaluated by the Engineer or their designee for any damage caused by tracked 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. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

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

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.

2-4 PASSAGE OF LIGHT VEHICLES

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface before execution of road construction. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
2800000	72+70 to 566+26	Grade, Shape and Compact
2809000	0+00 to 157+95	Grade, Shape and Compact
2810000	0+00 to 86+89	Grade, Shape and Compact

2-6 CLEANING CULVERTS

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

<u>Road</u>	<u>Stations</u>
2300000	0+00 to 319+67
2800000	0+00 to 566+26
2809000	0+00 to 157+95
2810000	0+00 to 86+89

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before execution of road construction.

<u>Road</u>	<u>Stations</u>
2800000	228+74 to 547+03
2809000	0+00 to 157+95
2810000	0+00 to 86+89

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following roads, Purchaser shall cut vegetative material up to 6 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by manual or mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditch lines, and culvert inlets and outlets. Purchaser shall notify the Contract Administrator when brushing is proposed from June 16th through October 31st as soon as possible.

<u>Road</u>	<u>Stations</u>
2300000	0+00 to 319+67
2800000	0+00 to 566+26
2809000	0+00 to 157+95
2810000	0+00 to 86+89

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries 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 an Riparian Reserve.
- Within 60 feet of any stream and within 180 feet of an ecologically sensitive stream.
- Within 25 feet of any cross drain culvert, waterbar or drainage dip.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 40%.
- Against standing trees.

SUBSECTION GRUBBING

3-10 GRUBBING

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

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditch lines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris, except by burning, before timber haul.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 25 feet of a cross drain culvert, water bar or drainage dip.
- Within a Riparian Reserve.
- Within 180 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 40%.
- 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 in natural openings unless otherwise detailed in this road plan.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. Pioneering may not extend more than 1000 feet beyond completed construction unless approved in writing by the Contract Administrator. In addition, the following actions must be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 20 percent favorable and 16 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.

4-4 SWITCHBACK STANDARDS

A switchback is defined as a curved segment of road between a beginning and end of the same curve, where the change of traffic travel direction is greater than 90 degrees. Purchaser shall follow these standards for switchbacks:

- Maximum adverse grades for switchbacks is 10%.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.

Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks

4-5 CUT SLOPE RATIO

Purchaser shall construct excavation slopes no steeper than shown on the following table or as identified below:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
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:

<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.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

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

4-22 TURNAROUNDS

Turnarounds must be no larger than 30 feet long and 30 feet wide.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 55% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, 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 areas identified or approved by the Contract Administrator. 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.

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas:

- Within 25 feet of a cross drain culvert or drainage dip.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 55%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift.

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.

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

5-1 REMOVAL OF SHOULDER BERMS

Purchaser shall remove berms from road shoulders. The construction of ditchouts is required where ponding could result from the effects of sidecast debris.

SUBSECTION CULVERTS

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on MATERIALS LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts may be new or used material and must meet the specifications in Clauses 10-15 through 10-24.

5-6 CULVERT TYPE

Purchaser shall install permanent culverts made of steel in accordance with Clauses 10-15 through 10-24. Temporary culverts can be steel or plastic.

5-7 USED CULVERT MATERIAL

On temporary roads, Purchaser may install used culverts. All other roads must have new culverts installed. 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 listed in the CULVERT AND DRAINAGE LIST. Temporary stream culverts must be located in the natural channel of the stream. Temporary culverts will be installed, used and removed in a single season unless they meet Q-100 sizing requirements. Purchaser shall implement measures to intercept sediment at live stream crossings when culverts are removed.

5-12 UNUSED MATERIALS FOREST SERVICE PROPERTY

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

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures" and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and

Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations. Culverts over 15 inches diameter shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Engineer or Designee for the installation of culverts 48 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

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

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Energy dissipater installation is subject to approval by the Contract Administrator.

The type of energy dissipater and the amount of material must be consistent with the specifications listed on the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At stream crossing culverts, Purchaser shall place riprap in conjunction with construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the MATERIALS LIST or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION SURFACE DRAINAGE

5-30 DRIVABLE WATERBAR CONSTRUCTION

Purchaser shall construct drivable waterbars in accordance with the DRIVABLE WATERBAR DETAIL and as specified on the CULVERT AND DRAINAGE LIST. Drivable waterbars must be installed concurrently with construction of the subgrade and must be maintained in an operable condition.

5-31 DRIVABLE DIP CONSTRUCTION

Purchaser shall construct rolling dips in accordance with the DRIVABLE DIP DETAIL and as specified on the CULVERT AND DRAINAGE LIST. Rolling dips must be installed concurrently with construction of the subgrade and must be maintained in an operable condition.

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by September 30. 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 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON 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.

<u>Source</u>	<u>Location</u>	<u>Rock Type</u>
2800000, 2809000	Ditch	Light Loose Riprap, Quarry Spalls

6-5 ROCK FROM COMMERCIAL SOURCE

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

<u>Possible Source</u>	<u>Location</u>
Ashe Construction	1203 Falls Rd, Randle, WA

SUBSECTION ROCK GRADATIONS

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.

6-34 3-INCH JAW RUN ROCK

% Passing 3" square sieve	100%
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A minimum of 35% must have a fractured surface.

Rock may contain no more than 5 percent organic debris, dirt, and trash. All percentages are by weight.

6-43 QUARRY SPALLS

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

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

6-50 LIGHT LOOSE RIP RAP

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

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

SUBSECTION ROCK MEASUREMENT

6-56 ROCK MEASUREMENT BY TRUCK VOLUME

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

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for culvert installation, ditch construction, ditch reconstruction, headwall construction, and headwall reconstruction 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 ROCK LIST by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

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

6-75 OPTIONAL ROCK EXCEPTION

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, 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.

SUBSECTION DUST ABATEMENT

6-80 WATERING FOR DUST ABATEMENT

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

SUBSECTION ASPHALT

6-93 ASPHALT REPAIR

If hauled upon, asphalt could deteriorate. Any damage or wear, including but not limited to depressions, sags, cracks, and alligating, must be replaced with new material. All pavement repair areas must be saw-cut before removal. The cutting line must be a minimum of 6 inches beyond the damaged area. Damaged areas exceeding 25 square feet must have asphalt placed with an approved paving machine. The replacement asphalt must be Hot Mix Asphalt or equivalent and installed per Clause 5-04.3(5)E of the WSDOT Standard Specifications. Purchaser shall notify the Contract Administrator at least 5 working days before starting any asphalt road repairs. Purchaser shall obtain written approval from the Contract Administrator for all completed repairs.

6-94 HMA WEATHER LIMITATIONS (WSDOT 5-04.3(16))

HMA may not be placed on any wet surface, or when the average surface temperatures are less than 45°F, or when weather conditions otherwise prevent the proper handling or finishing of the HMA.

When in the opinion of the Contract Administrator the weather is such that satisfactory results cannot be obtained in any phase of operations, the Purchaser shall suspend operations until the weather is favorable.

6-96 TEMPORARY TRAFFIC CONTROL FOR BITUMINOUS SURFACE TREATMENT

Purchaser shall provide temporary traffic control. Purchaser shall provide all flaggers, pilot car, signs, and barricades necessary for the protection of traffic. Partial road closures are allowed for up to 45 minutes. Upon completion of the bituminous surface treatment, the Purchaser shall provide traffic-warning signs stating "Fresh Oil – 20 mph." Signs must be placed every mile along the project.

Before starting work Purchaser shall submit to the Contract Administrator, for approval, a traffic control plan describing temporary warning signs and other traffic control measures to be used by the Purchaser.

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

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.

<u>Road</u>	<u>Station</u>	<u>Sign</u>
2300000	0+50	Forest Operations Ahead (Or Similar)
2800000	0+50, 72+70, 566+26	
2809000	0+50	
2810000	0+50	

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Purchaser shall install Sediment Traps as listed in the CULVERT AND DRAINAGE LIST in accordance with the SEDIMENT TRAP DETAIL and as directed by the Contract Administrator. Sediment control shall be accomplished using sediment traps or other methods as approved in writing by the Contract Administrator.

8-2 PROTECTION FOR EXPOSED SOIL

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

SUBSECTION REVEGETATION

8-15 REVEGETATION

Purchaser shall spread seed on all exposed soils resulting from road work activities using manual dispersal. Other methods of covering must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

The Forest Service shall provide the seed.

8-17 REVEGETATION TIMING

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

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover for seed if revegetation occurs between July 1 and March 31. The protective cover may consist of dispersed weed free certified straw, jute matting, or clear plastic sheets. The protective cover requirement may be waived in

writing by the Contract Administrator if Purchaser is able to demonstrate a revegetation plan that will result in the establishment of a uniform dense crop (at least 50% coverage) of 3-inch tall grass by October 31. **Total: 327 lbs**

8-19 ASSURANCE FOR SEEDED AREA

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

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture on all exposed soil within 100 feet of live water and the grubbing limits of all decommissioned roads at a rate of 21 pounds per acre of exposed soil.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the EARTHEN BARRICADE DETAIL.

<u>Road</u>	<u>Stations</u>
Temp 28-000.1	0+25
Temp 28-000.2	0+25
Temp 28-000.3	0+25
Temp 2809.1	0+25
Temp 2809.2	0+25
Temp 2809.3	0+25
Temp 2809.4	0+25
Temp 2809.5	0+25

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.

POST-HAUL MAINTENANCE

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>
2800000	0+00 to 566+26
2809000	0+00 to 157+95
2810000	0+00 to 86+89

SUBSECTION POST-HAUL LANDING MAINTENANCE

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.

SUBSECTION DECOMMISSIONING

9-20 ROAD DECOMMISSIONING

Purchaser shall decommission the following roads before the termination of this contract in accordance with the ROAD DECOMMISSIONING DETAIL.

<u>Road</u>	<u>Stations</u>	<u>Level</u>
Temp 28-000.1	0+00 to 11+32	2
Temp 28-000.2	0+00 to 24+40	2
Temp 28-000.3	0+00 to 17+64	1
Temp 28-000.31	0+00 to 2+03	1
Temp 28-000.32	0+00 to 1+85	1
Temp 2809.1	0+00 to 8+05	1
Temp 2809.2	0+00 to 22+82	2
Temp 2809.3	0+00 to 33+65	2
Temp 2809.31	0+00 to 13+21	1
Temp 2809.4	0+00 to 3+47	1
Temp 2809.5	0+00 to 16+50	1
Total STA	154.94	

9-22 LEVEL 1 DECOMMISSIONING

- Rip the surface to a minimum depth of 18 inches with an excavator bucket.
- Remove embankments, sidecast fill, and place material into cut-banks and shape banks to conform to the natural ground.

- Construct non-drivable waterbars in accordance with the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove stream culverts and leave the resulting trench open at bank full width.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with decommissioning and in accordance with Section 8 EROSION CONTROL.

Cover, concurrently with decommissioning, all exposed soils within 50 feet of any live stream, with a 4-inch deep layer of straw.

9-23 LEVEL 2 DECOMMISSIONING

- Fill in ditches.
- Rip the surface to a minimum depth of 18 inches with an excavator bucket.
- Outslope the surface at a minimum of 30 percent.
- Remove fill material and use to partially re-contour the road profile.
- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars in accordance with the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove stream culverts and leave the resulting trench open at bank full width.
- Remove ditch cross drain culverts and leave the resulting trench open.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with decommissioning and in accordance with Section 8 EROSION CONTROL.
 - Cover, concurrently with decommissioning, all exposed soils within 50 feet of any live stream, with a 4-inch deep layer of straw.

SECTION 10 MATERIALS

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts must be galvanized (zinc coated meeting AASHTO M-218) except culverts over 24 inches must be aluminized (aluminum type 2 coated meeting AASHTO M-274).

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-20 FLUME AND DOWNSPOUT

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

10-21 METAL BAND

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

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

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

10-24 GAUGE AND CORRUGATION

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

<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18" to 36"	14 (0.079")	2 2/3"x1/2"
42" to 96"	12 (0.109")	5"x1"

SECTION 11 SPECIAL NOTES

11-1 BRIDGE LOAD RESTRICTIONS

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

11-2 NOXIOUS WEED CONTROL

Purchaser shall thoroughly pressure wash all equipment prior to entry onto U.S. Forest Service land, or before moving equipment between infested sites, to remove all contaminated soils, plant parts, seeds, vegetative matter, or other debris that could contain or hold seeds. Equipment shall be considered free of soil, seed, and other such debris when a visual inspection does not disclose such material. The Contract Administrator reserves the right to also require the cleaning of equipment as required by this clause in cases where equipment is being moved onto non-federal lands.

Purchaser shall notify the Contract Administrator in advance of moving all off-road 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. "Off-road equipment" includes all construction machinery, except for dump trucks, pickup trucks or vehicles used to transport personnel on a daily basis.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 1 of 2

Cuts and Fills

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

Surface

- Grade and shape the road surface, turnouts, and shoulders to the original shape as directed, to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, or as directed by the Contract Administrator.
- Remove shoulder berms 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 drivable 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 dissipators at culvert outlets with non-erodible material or rock.
- Keep ditches and culverts 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.

Structures

- Repair culverts, bridges, gates, fences, cattle guards, signs, and other road structures as required because of purchaser use.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 2 of 2

Preventative Maintenance

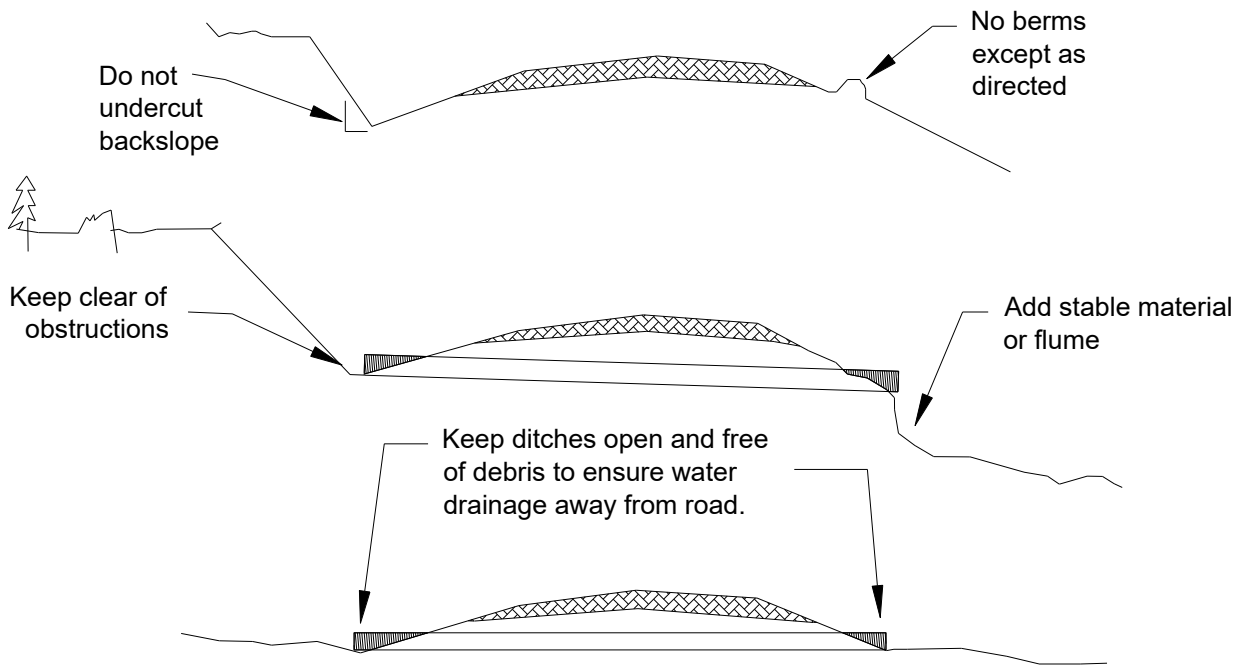
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

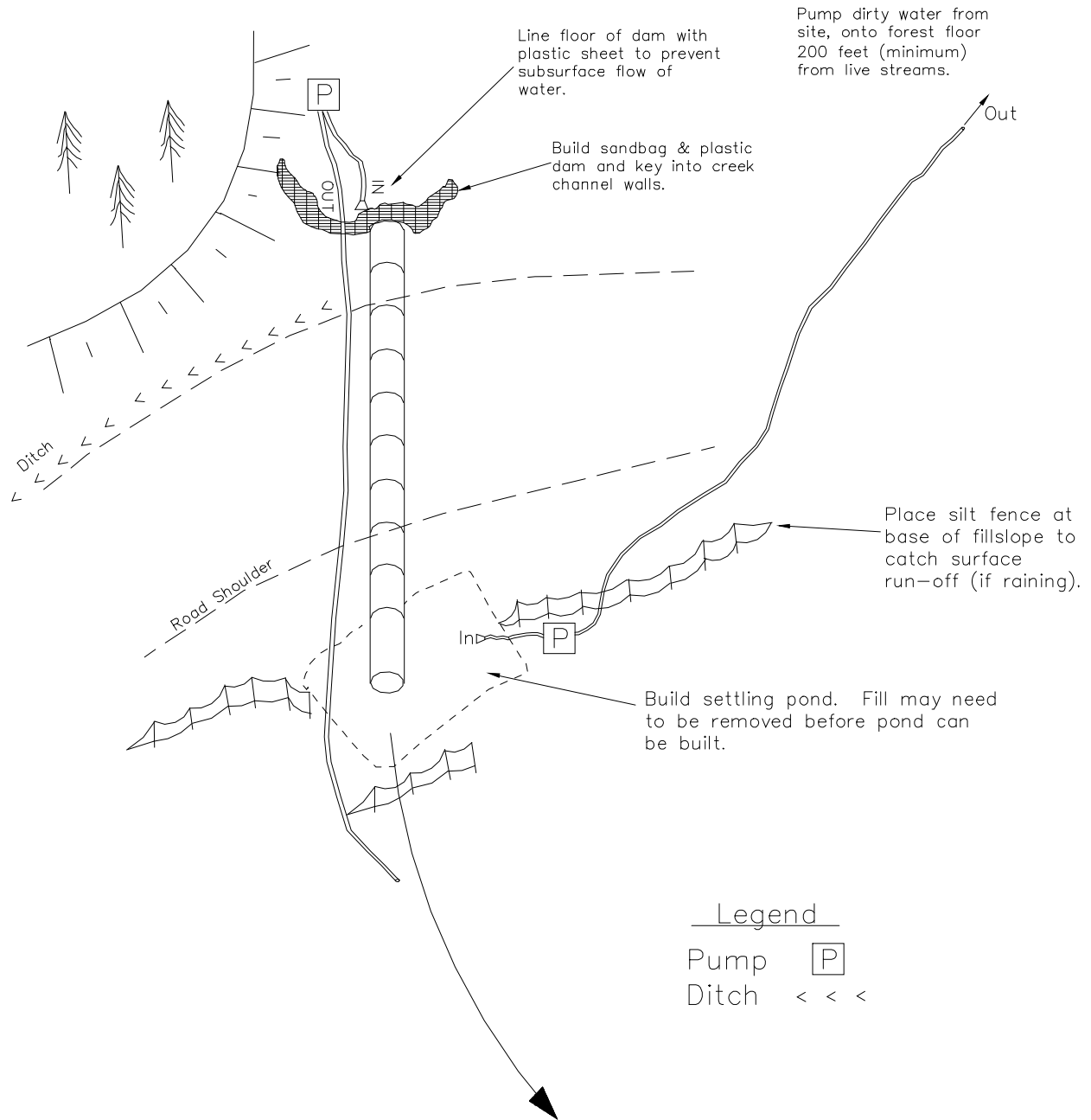
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



SETTLING POND AND PUMP DETAIL



LIVE STREAM CULVERT REMOVAL PROCEDURE

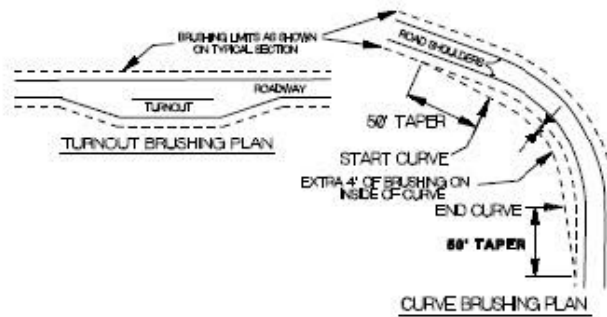
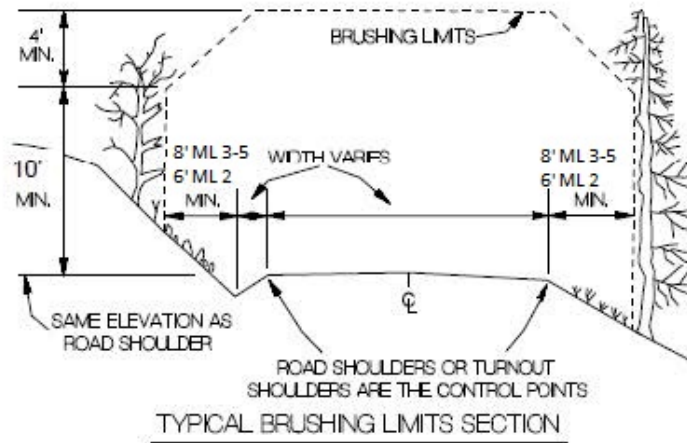
Order of work is as follows, deviations such as stream diversions shall be approved, in writing, by the Contract Administrator.

- 1) Purchaser shall notify the State of intent to start project, and a pre-work conference shall be held before move in of equipment. State will designate a representative that will inspect site when work is being performed in creek channel.
- 2) Assemble the items on the Materials List onsite before proceeding.
- 3) Remove 95% of fill (see FILL REMOVAL DETAIL).
- 4) Set up pumps (2 required, with one as backup).
- 5) Dam up stream with sandbags and line floor of dam with plastic (to prevent sub-surface water flow), place clean rock on plastic to hold in place, and key leading edge of plastic into channel bottom - see SETTLING POND AND PUMP DETAIL. Build a settling pond at culvert outlet. Fill may need to be removed before the settling pond installation due to space limitations. Pump clean water at catch basin around work site and back into stream. Dirty water shall be pumped away from site and onto forest floor a minimum of 200 feet from live streams.
- 6) Remove remainder of fill and culvert.
- 7) Backfill settling pond.
- 9) Cover exposed soils within 100 feet of all live streams with straw (minimum depth of 8 inches) and grass seed.

Materials List:

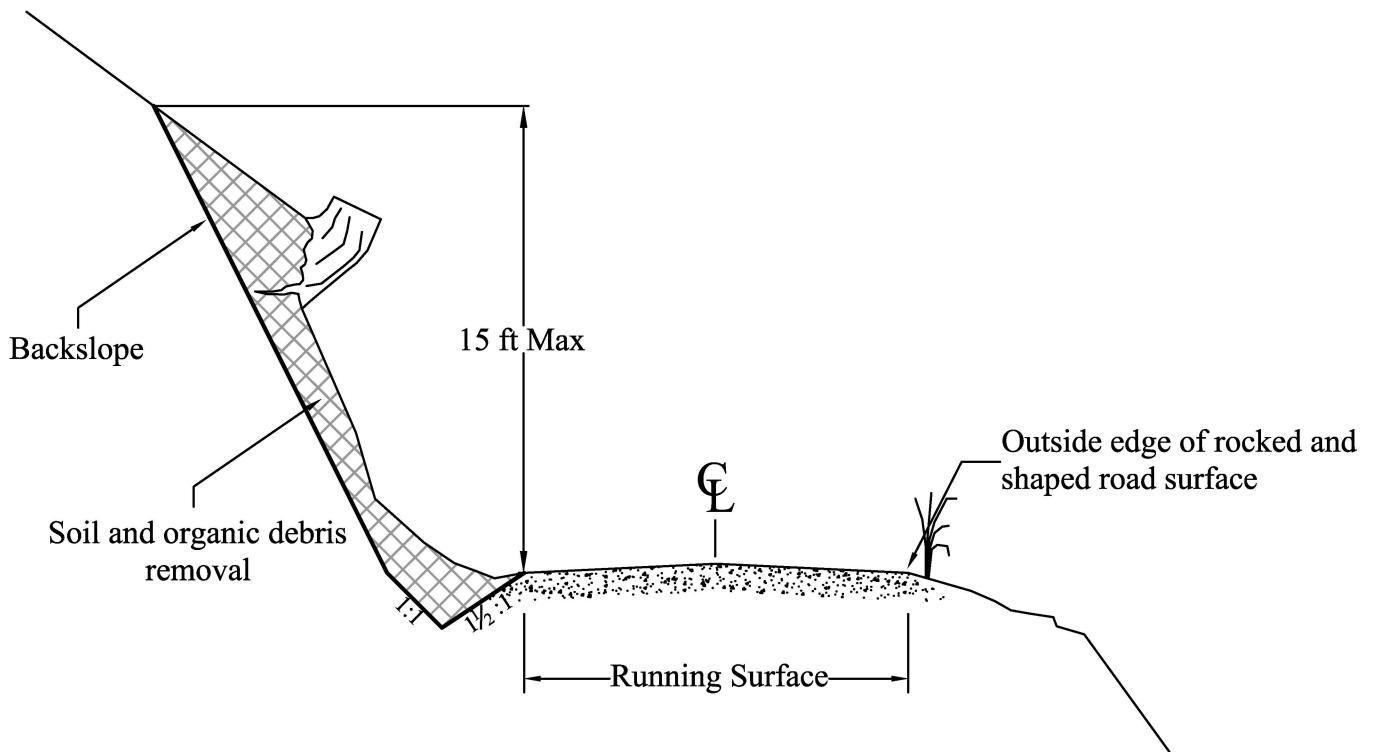
- 2 pumps, (one as a backup) The clean water pump (dam at culvert catch basin) shall have a minimum capacity of 600 gallons per minute. The dirty water pump (settling pond) and the backup pump shall each have a minimum capacity of 600 gpm. Culvert removal should not start during rain or threat of rain;
- 240 square feet plastic sheet;
- 10 bales of straw;

BRUSHING DETAIL



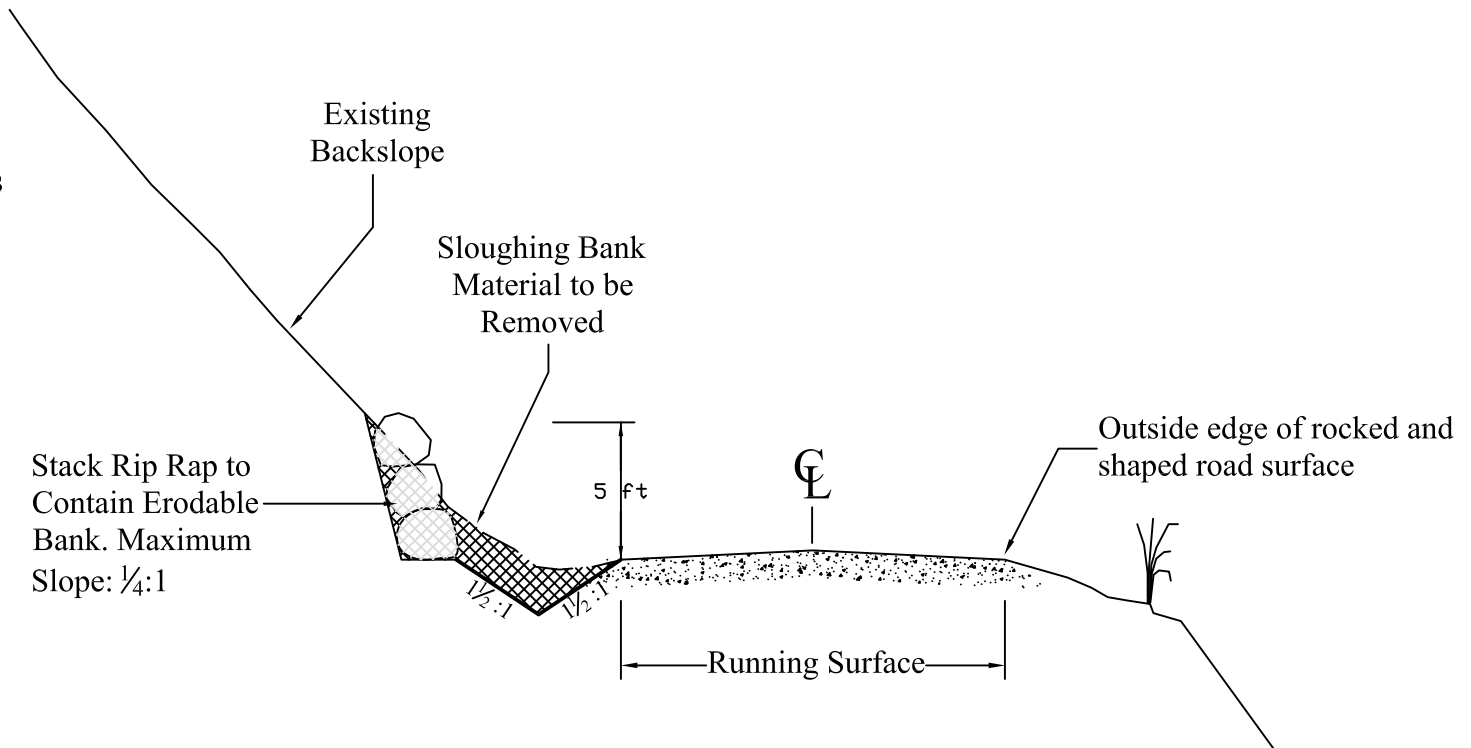
1. All vegetation within the brushing limits shall be cut to within 3 inches of the ground, unless otherwise directed by the Contract Administrator
2. All brush, trees, limbs, etc. shall be removed from the road surface, cut banks, culvert inlets/outlets, and ditch lines
3. All debris that may roll or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

Ditch Cleaning Detail



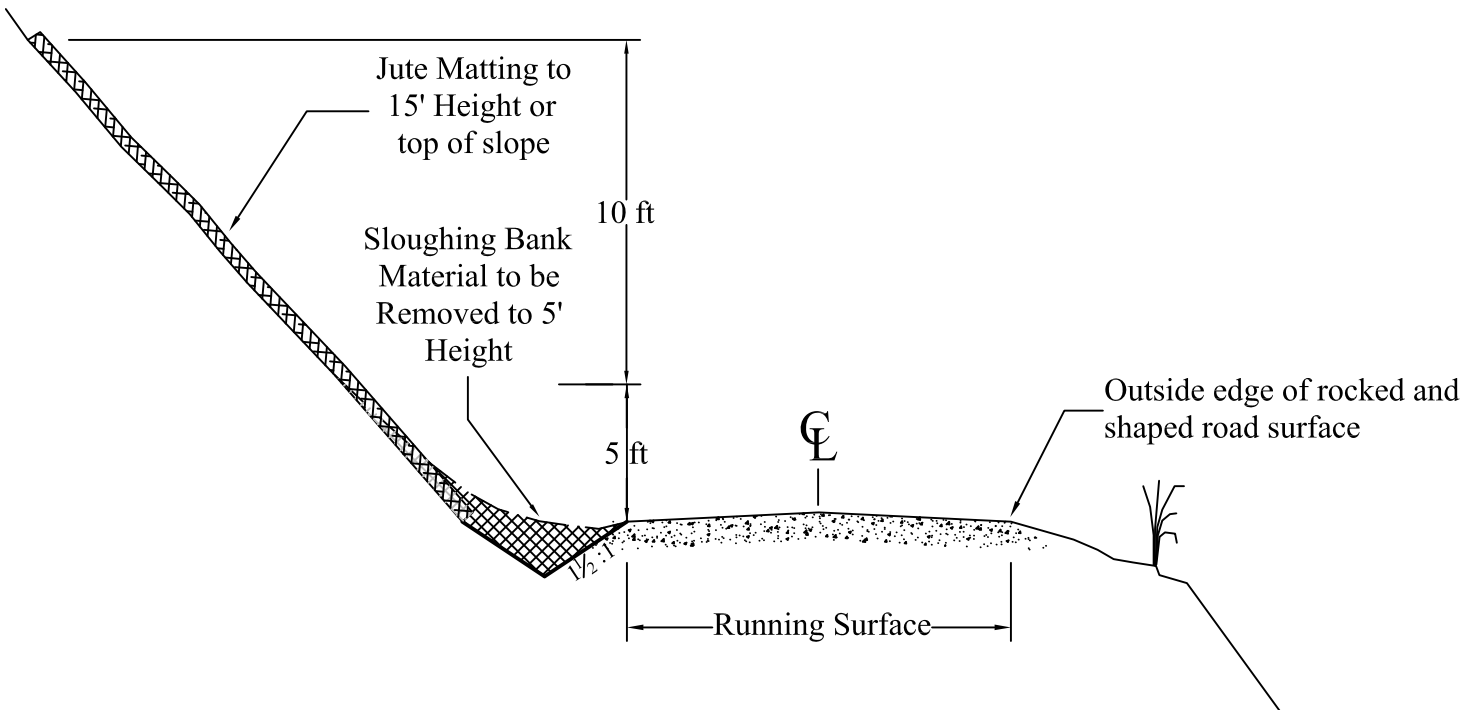
1. The backslope shall be no steeper than $\frac{1}{2}:1$, unless the material is hardpan or solid rock, in which case it may be $\frac{1}{4}:1$.
2. If there is sufficient width for the ditch without affecting the cut bank, than removing bank material is not required.
3. Bank material above the ditch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

Ditch Cleaning Detail



1. The ditch and cut bank shall be cleaned of excess soils and organic debris. Ditch depth shall be 2 feet from the edge of the running surface.
2. Additional material from the bank shall be removed to allow stacking of Rip Rap as shown.
3. Minimum height of Rip Rap above edge of road shall be 5 feet.
4. All waste materials shall be end-hauled. Grass seed in accordance with Road Plan clause 5.4-3.2
5. Ditch cleaning or construction shall not shrink the running surface of the road.

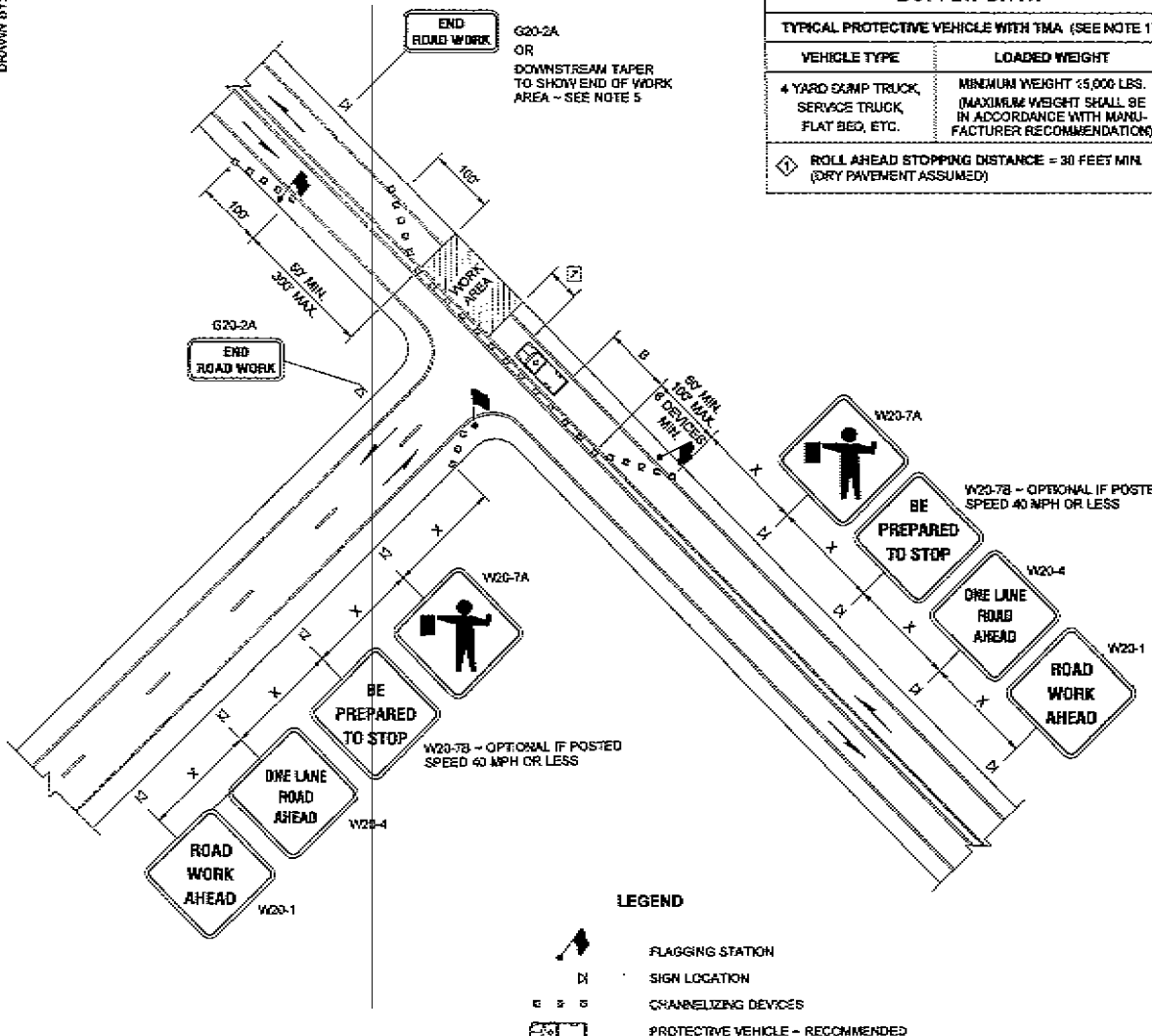
DITCH CLEANING DETAIL



1. The ditch and cut bank shall be cleaned of excess soils and organic debris. Ditch depth shall be 2 feet from the edge of the running surface.
2. The ditch and cut bank shall be cleaned to a height of 5 feet above the edge of the running surface.
3. Erosion control matting shall be installed on the cut slope above the ditch to a height of 15 feet above the edge of the running surface, or the top of the slope, whichever is higher. At the discretion of the Contract Administrator, erosion control matting may not be required where the cut slope is already heavily vegetated.
4. All waste materials shall be end-hauled. Grass seed in accordance with Road Plan clause 5.4-3.2
5. Ditch cleaning or construction shall not shrink the running surface of the road.

LONGITUDINAL BUFFER SPACE = B									
POSTED SPEED (MPH)	25	30	35	40	45	50	55	60	65
LENGTH B (FEET)	155	200	250	305	360	425	495	570	645

BUFFER DATA	
TYPICAL PROTECTIVE VEHICLE WITH TMA (SEE NOTE 1)	
VEHICLE TYPE	LOADED WEIGHT
4 YARD SCAMP TRUCK, SERVICE TRUCK, FLAT BED, ETC.	MINIMUM WEIGHT 15,000 LBS. (MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION)
◇ ROLL AHEAD STOPPING DISTANCE = 30 FEET MIN. (DRY PAVEMENT ASSUMED)	



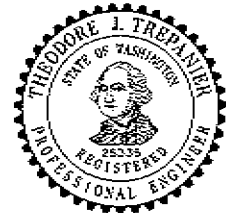
NOTES

1. A Protective Vehicle is recommended regardless if a Truck Mounted Attenuator (TMA) is available; a work vehicle may be used. When no TMA is used, the Protective Vehicle shall be strategically located to shield workers, with a specific Roll-Ahead distance.
2. Night work requires additional roadway lighting at flagging stations. See WSDOT Standard Specifications for additional details.
3. Extend Channelizing Device taper across shoulder - recommended.
4. Sign sequence is the same for both directions of travel on the roadway.
5. Channelizing Device spacing for the downstream taper option shall be 20' O.C.
6. For signs size refer to Manual on Uniform Traffic Control Devices (MUTCD) and WSDOT Sign Fabrication Manual MS5-05.

SIGN SPACING = X {1}		
RURAL HIGHWAYS	60 / 65 MPH	800' ±
RURAL ROADS	45 / 55 MPH	600' ±
RURAL ROADS & URBAN ARTERIALS	25 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 40 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
ALL SIGNS ARE BLACK OR ORANGE UNLESS DESIGNATED OTHERWISE		

- (1) ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS, AND DRIVEWAYS.
- (2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

**FOR LOCAL AGENCY USE ONLY
NOT FOR USE ON STATE ROUTES**



EXPIRES AUGUST 9, 2037

**LANE CLOSURE
WITH FLAGGER CONTROL
STANDARD PLAN K-20.40-00**

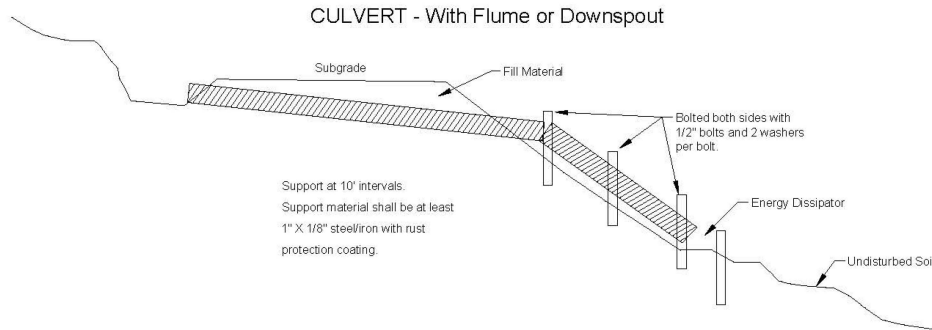
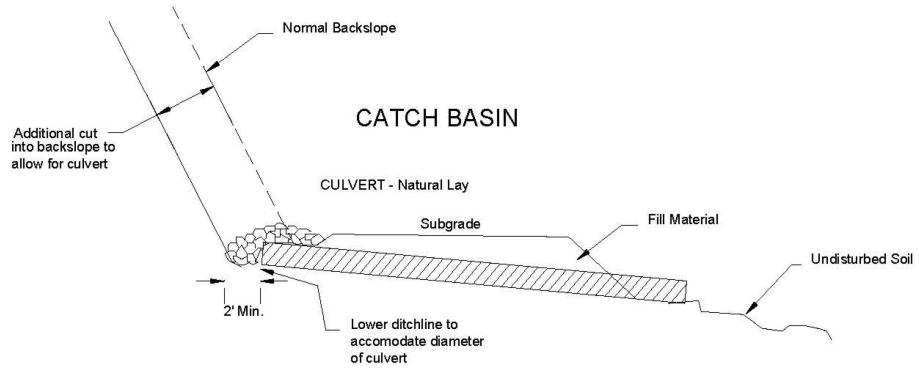
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION

Ken L. Smith 02-15-07
STATE DESIGN ENGINEER SEAL

Washington State Department of Transportation

CULVERT AND DRAINAGE SPECIFICATION DETAIL

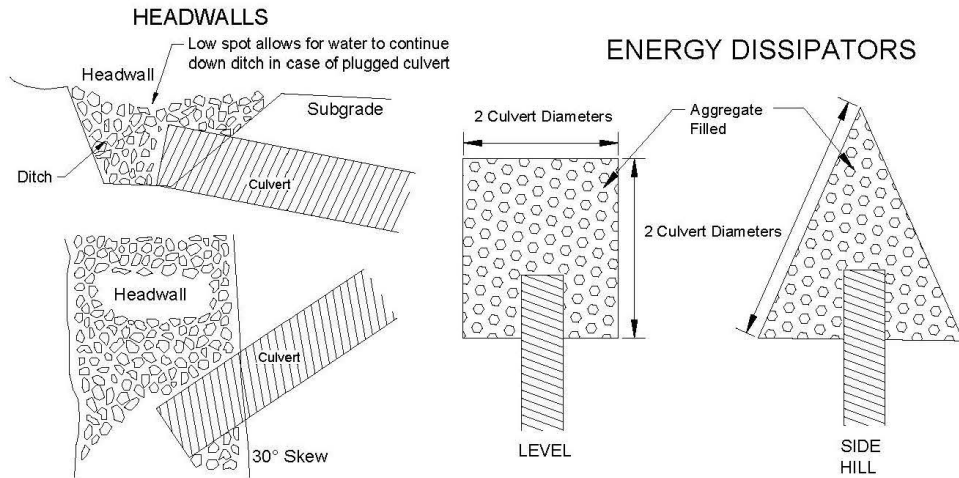
(Page 1 of 3)



CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 3)

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



Headwalls to be constructed of material that will resist erosion.

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

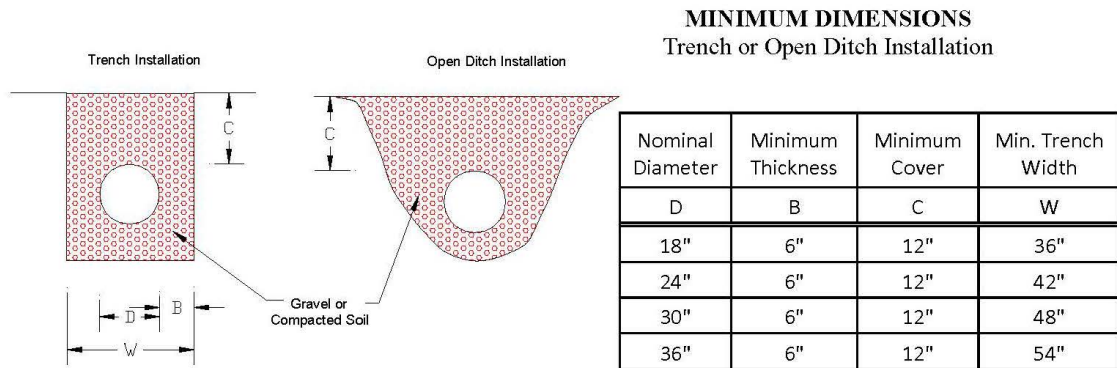
CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 3 of 3)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

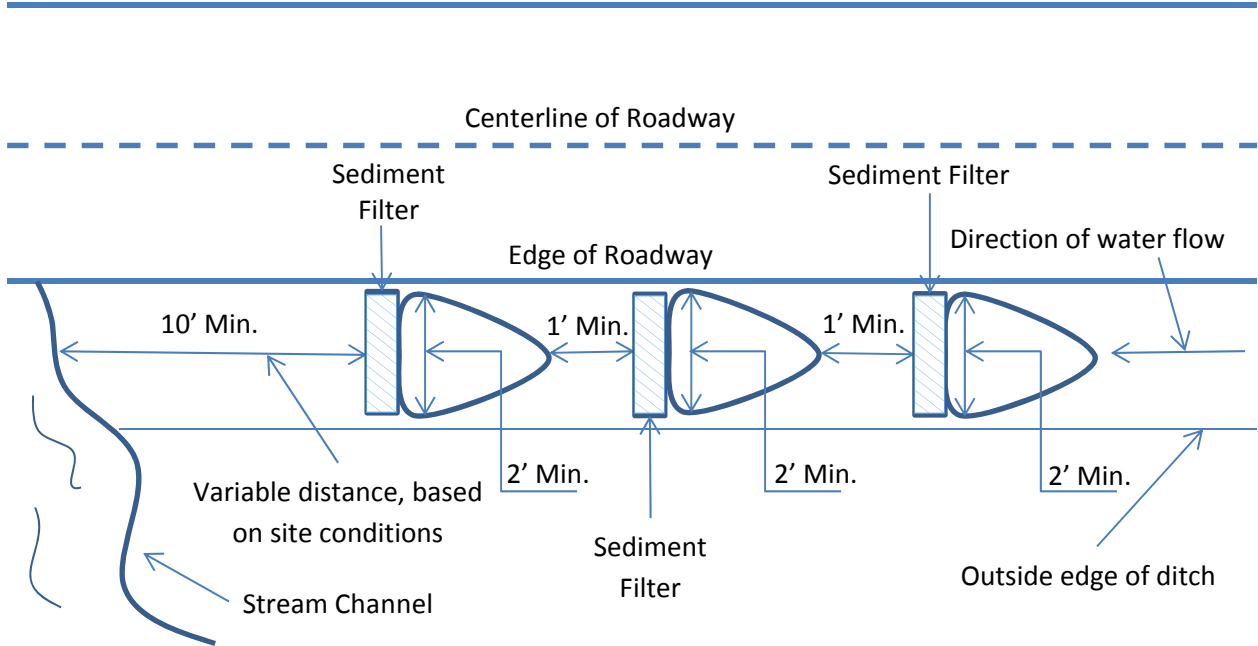
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.
2. The corrugated pipe shall be laid on grade, on a layer of bedding material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



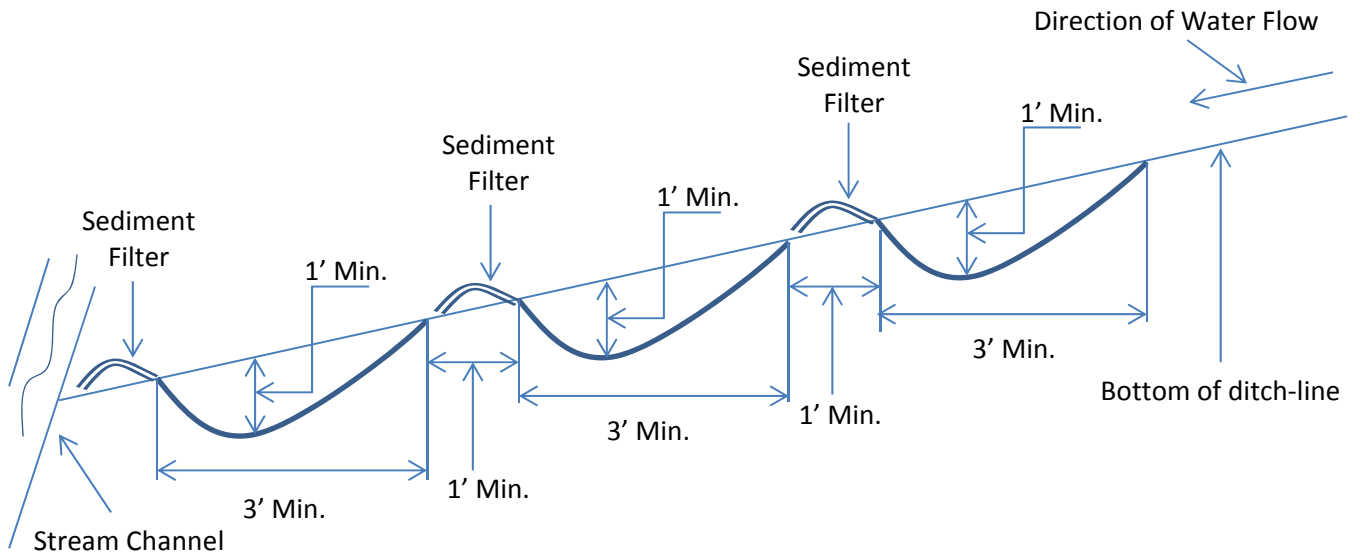
SEDIMENT TRAP DETAIL

Plan View

NOT TO SCALE



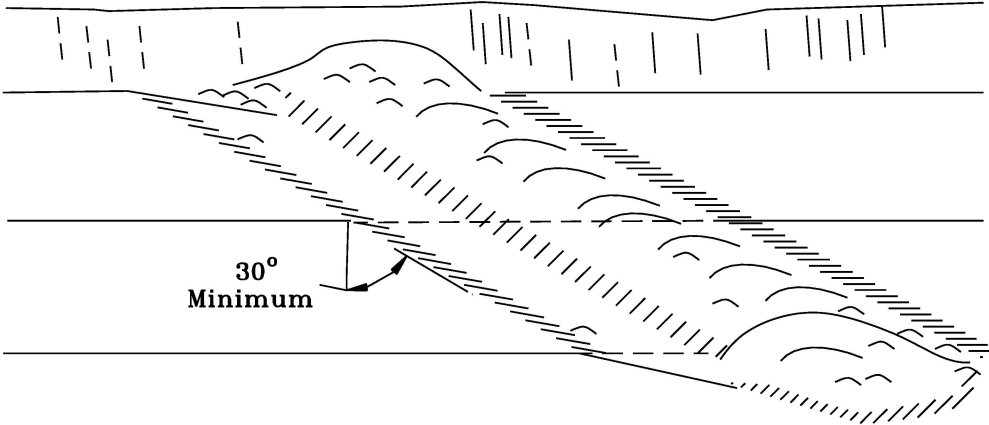
Profile View



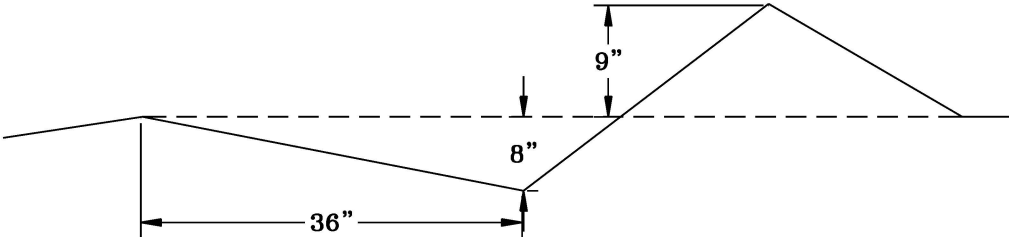
*Note. Sediment Filter's shall consist of either straw waddles, or a CLEAN ROCK berm.

Drivable Water Bar Detail


Cross Ditch



Cross Section at Centerline

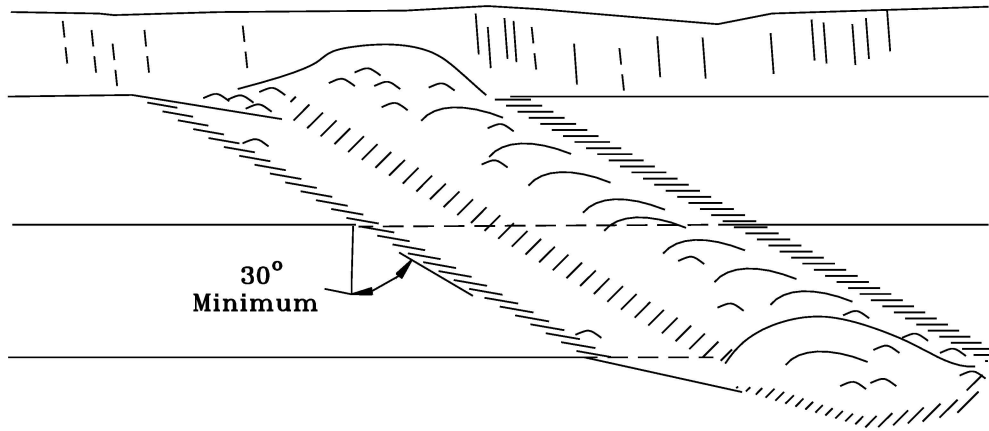


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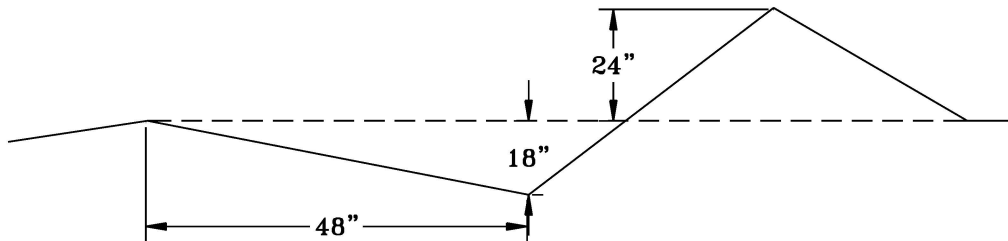
Water Bar Detail	
	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
<small>SPS REGION</small>	

Non-Drivable Water Bar Detail

Cross Ditch



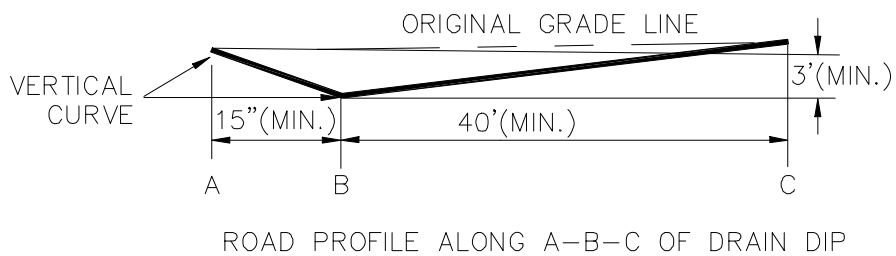
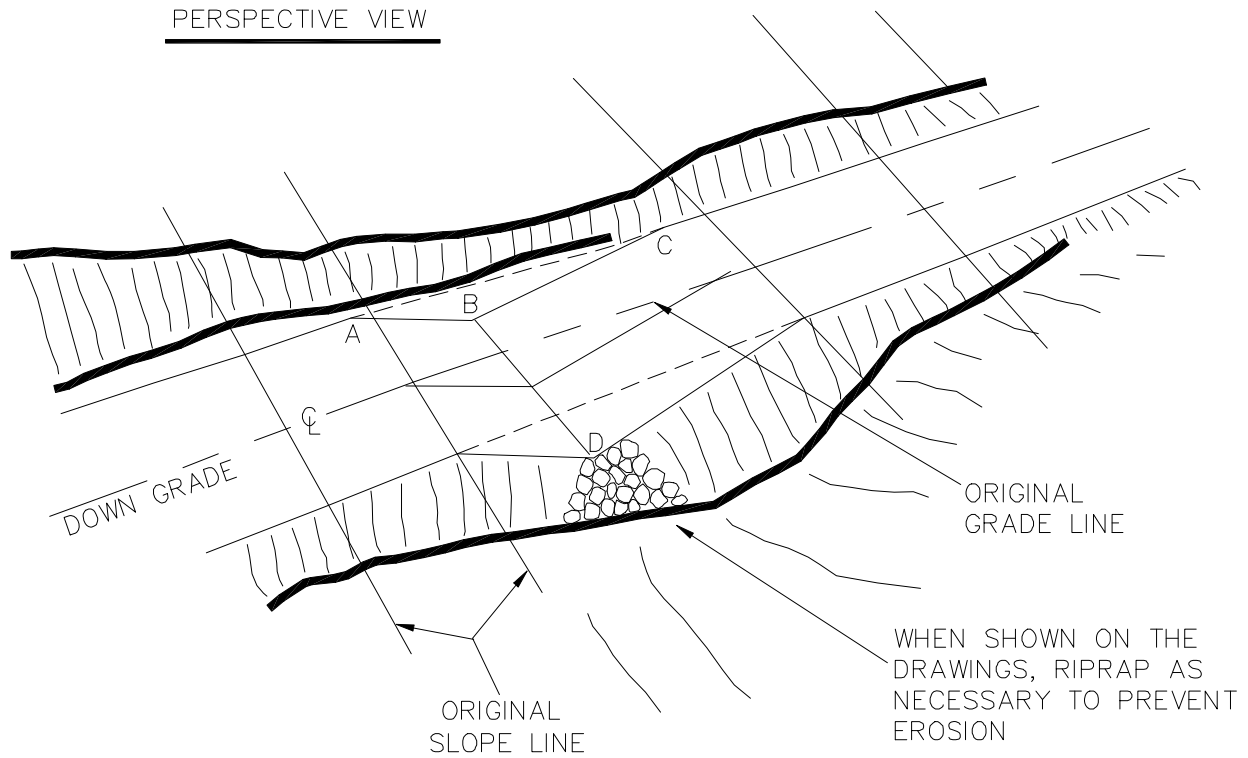
Cross Section at Centerline



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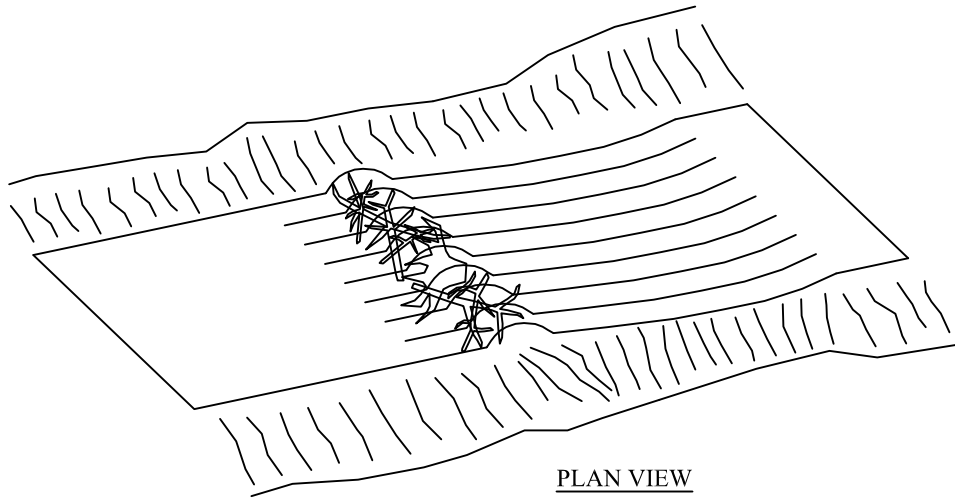
Water Bar Detail	
	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
<small>SPS REGION</small>	

DRIVABLE DIP DETAIL

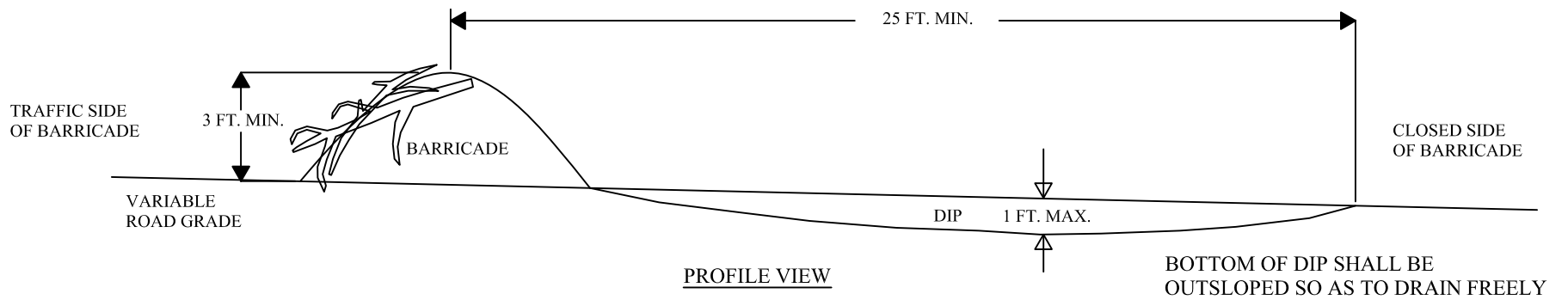


- Notes: 1) Plan shown is for outsloped dip. Dips may be either insloped or outsloped.
- 2) When insloped, dips shall discharge into a culvert, drop inlet, or ditch out.
- 3) The minimum cross grade from "B" to "D" shall be 6%.
- 4) Skew line B-D to fit low point in draw if located in natural drain.
- 5) Preferred construction is to excavate entire dip. If embankment is used, it shall be rock.

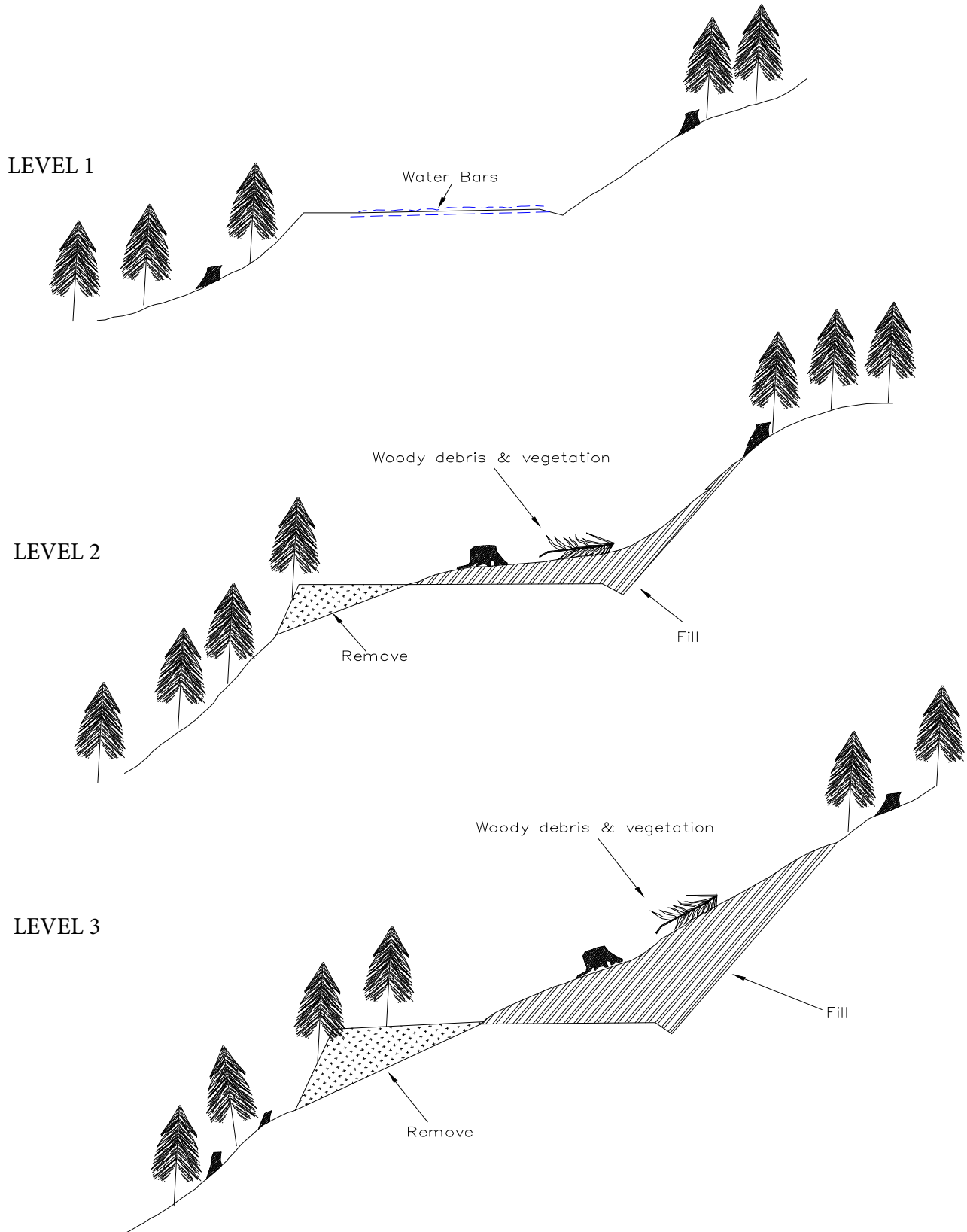
EARTHEN BARRICADE DETAIL



SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.



ROAD DECOMMISSIONING DETAIL

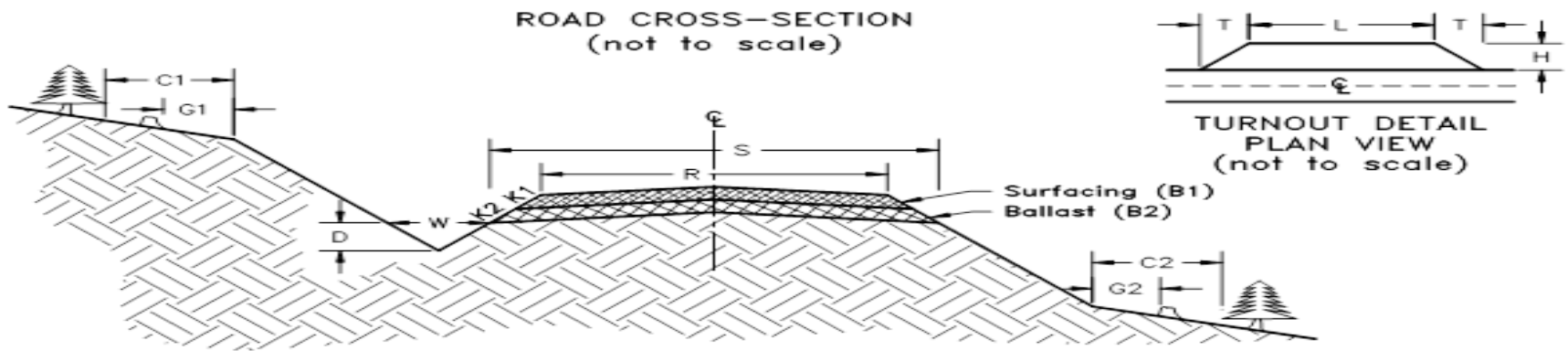


COMPACTION LIST

Page 1 of 1

Road Name	Stations		Type	Max. Depth per Left (in.)	Equipment Type	Equipment Weight (pounds)	Minimum # of Passes	Maximum Operating Speed
	From	To						
ML-3 and higher	-	-	Maintenance grading	-	Vibratory Smooth Drum	12000	3 Low Freq. Vibe on	3
System Roads	-	-	Subgrade	-	Vibratory Smooth Drum	12000	3 Low Freq. Vibe on	3
All	-	-	Embankment	24	Vibratory Smooth Drum	12000	3 Low Freq. Vibe on	3
All	-	-	Rock	6	Vibratory Smooth Drum	12000	3 Low Freq. Vibe on	3
All	-	-	Waste Area	24	Excavator	30000	-	-

ROCK LIST
3-Inch jaw
Page 1 of 3



Rock Sources

A

Commercial

L = 50'

T = 25'

H = 12'

Road Name		Stations		Rock Slope K1	Compacted Depth (in) B1	C. Y./ Sta	Number of Stations	C.Y. Needed	Rock Source
		From	To						
Temp 28-000.1		7+74	11+32	1.5 to 1	6	26	3.58	93.1	A
Temp 28-000.2			5+00	1.5 to 1	6	26	1.00	26.0	A
			15+91	1.5 to 1	6	26	1.00	26.0	A
			20+45	1.5 to 1	6	26	1.00	26.0	A
Temp 2809.2			3+97	1.5 to 1	6	26	1.00	26.0	A
Temp 2809.3			19+22	1.5 to 1	6	26	1.00	26.0	A
			25+43	1.5 to 1	6	26	1.00	26.0	A
			26+02	1.5 to 1	6	26	1.00	26.0	A
Landings	**					20	21	420	A
Turnaround/Turnout	**					20	3	60	A

OPTIONAL 3-INCH JAW BALLAST ROCK TOTAL

480 CUBIC YARDS

REQUIRED 3-INCH JAW BALLAST ROCK TOTAL

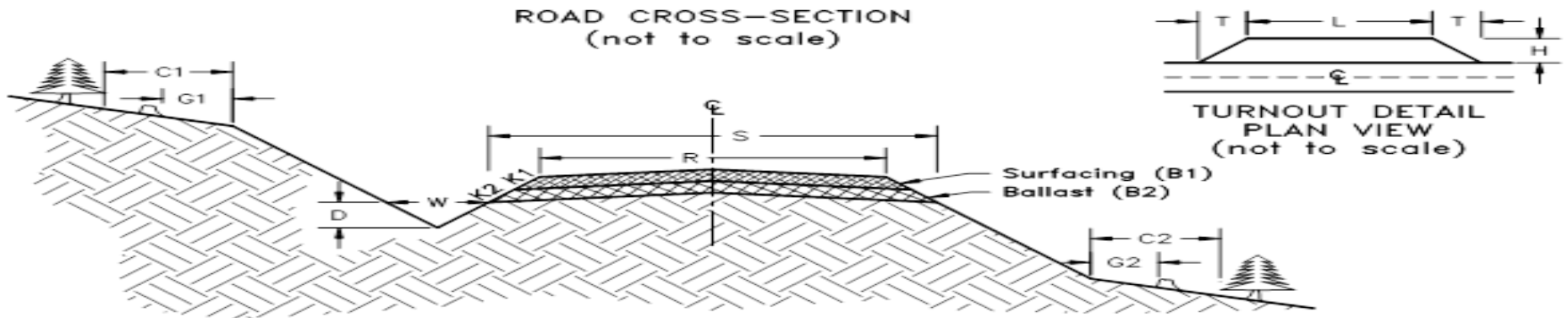
275 CUBIC YARDS

3-INCH JAW BALLAST ROCK TOTAL

755 CUBIC YARDS

** Optional rock, see Road Plan Clause 6-75

ROCK LIST
 1 1/4" Minus Crushed Surfacing
 Page 2 of 3



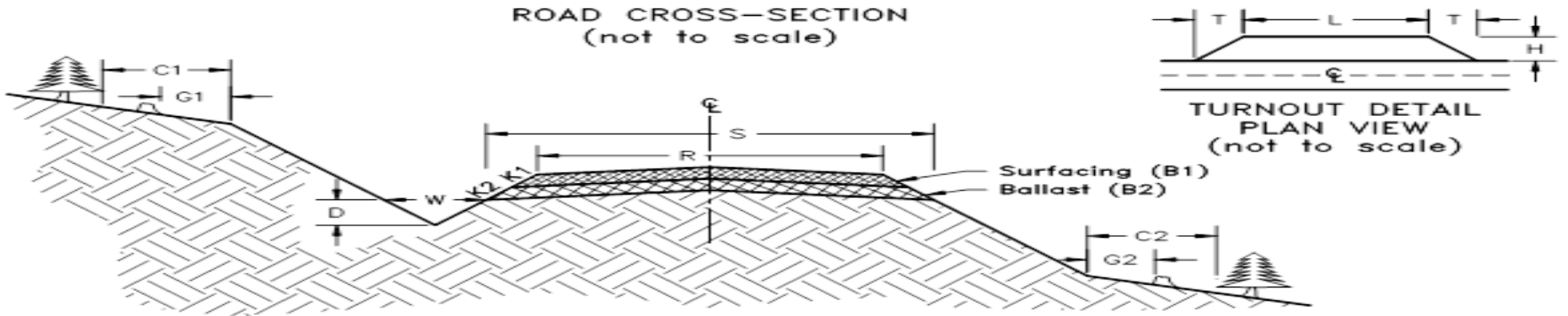
L = 50' T = 25' H = 12'

Road Name	Stations		Rock Slope K1	Compacted Depth (in) B1	C. Y./ Sta	Number of Stations	C.Y. Needed	Rock Source
	From	To						
2800000 Spot Rock	72+70	128+95	1.5 to 1				400	A
		133+00	1.5 to 1				10	A
		133+92	1.5 to 1				10	A
Spot Rock	132+67	138+98	1.5 to 1				50	A
		189+63	1.5 to 1				30	A
		198+46	1.5 to 1				10	A
		200+92	1.5 to 1				10	A
		266+87	1.5 to 1				30	A
		228+74	1.5 to 1				20	A
		293+60	1.5 to 1				20	A
		300+94	1.5 to 1				20	A
Spot Rock	414+94	417+00	1.5 to 1				20	A
		418+62	1.5 to 1				30	A
Spot Rock	449+62	460+34	1.5 to 1				40	A
Spot Rock	456+05	480+48	1.5 to 1				180	A
		484+98	1.5 to 1				10	A
Spot Rock	511+17	515+38	1.5 to 1				30	A
Spot Rock	547+03	556+64	1.5 to 1				70	A
2800000 Pipe Bedding							150	A
2809000 Spot Rock	0+00	157+95	1.5 to 1				210	A
2809000 Pipe Bedding							330	A
2810000 Spot Rock	0+00	86+89	1.5 to 1				100	A
		9+16	1.5 to 1				20	A
		64+79	1.5 to 1				20	A
2810000 Pipe Bedding							60	A
Temp 2909.2 Pipe Bedding	**						20	A
Temp 2909.3 Pipe Bedding	**						80	A

** Optional rock, see Road Plan Clause 6-75

TOTAL OPTIONAL 1 1/4" MINUS CRUSHED ROCK	100 CUBIC YARDS
TOTAL REQUIRED 1 1/4" MINUS CRUSHED ROCK	1880 CUBIC YARDS
TOTAL 1 1/4" MINUS CRUSHED ROCK	1980 CUBIC YARDS

ROCK LIST
 Light Loose Rip Rap/Quarry Spalls
 Page 3 of 3
 Source



L = 50' T = 25' H = 12'

Road Name	Stations		Rock Slope K1	Compacted Depth (in) B1	C. Y./ Sta	Number of Stations	C.Y. Needed	Rock Source
	From	To						
2800000 Light Loose Riprap							100	
2800000 Quarry Spalls							19	
2809000 Light Loose Riprap							170	
2809000 Quarry Spalls							22	
2810000 Light Loose Riprap							70	
2810000 Quarry Spalls							8	
Temp 28-000.2 Light Loose Riprap							30	
Temp 2809.2 Light Loose Riprap							10	
Temp 2809.3 Light Loose Riprap							60	
Temp 2809.3 Quarry Spalls							10	

Rock Summary

TOTAL LIGHT LOOSE RIP RAP	440 CUBIC YARDS
TOTAL QUARRY SPALLS	59 CUBIC YARDS
3-INCH JAW BALLAST ROCK TOTAL	755 CUBIC YARDS
OPTIONAL 3-INCH JAW BALLAST ROCK TOTAL	480 CUBIC YARDS
TOTAL 1¼" MINUS CRUSHED ROCK	1980 CUBIC YARDS
TOTAL OPTIONAL 1¼" MINUS CRUSHED ROCK	100 CUBIC YARDS

CULVERT AND DRAINAGE LIST

Road	Location	Culvert		Length (feet)	Energy Dissapater (CY)/Armoring (CY)						Backfill Material			Remarks	
		Diameter (in.)	Gauge		Culvert	Inlet	Outlet	Type	Armoring	Type	Source	Type	Volume (CY)		1 1/4"
2800000	203+51														Clean Inlet & Outlet
	266+24	24		40	2.5	2.5	QS	5	LLRR	A or B	NT		10	A	Replace Cross Drain
	269+57	60		60	10	10	LLRR	20	LLRR	A or B	1 1/4" Minus		60	A	Replace, Live Water, Set Outlet to Grade
	303+00	24		40	2.5	2.5	QS	5	LLRR	A or B	NT		10	A	Install Cross Drain
	305+44	18		40	1	1	QS			A or B	NT		10	A	Replace Cross Drain
	371+80	36		60	5	5	LLRR	10	LLRR	A or B	1 1/4" Minus		20	A	Replace, Live Water, See Closure Period Clause 1-25
	373+88	18		40	1	1	QS			A or B	NT		10	A	Install Cross Drain
	421+88	24		60	2.5	2.5	LLRR	5	LLRR	A or B	NT		10	A	Install Cross Drain
	477+95	24		40	2.5	2.5	LLRR	5	LLRR	A or B	NT		10	A	Replace Cross Drain
	505+62	24		40	2.5	2.5	QS	5	LLRR	A or B	NT		10	A	Replace Cross Drain
	556+64														Clean Inlet & Outlet
	562+19					5	LLRR								Install 5 CY LLRR at Outlet
2809000	34+41	60		80	10	10	LLRR	20	LLRR	A or B	1 1/4" Minus		60	A	Replace, Live Water, Reuse Trash Rack, See Closure Period Clause 1-25
	38+69	18		30	1	1	QS			A or B	NT				Install Cross Drain
	58+99	18		40	1	1	QS			A or B	NT				Replace Cross Drain
	63+80	18		50	1	1	QS			A or B	NT				Replace Cross Drain
	74+78	60		50	10	10	LLRR			A or B	1 1/4" Minus		60	A	Replace, Live Water
	79+74														Clean Outlet
	85+41														Clean Outlet
	91+43	60		90	10	10	LLRR	20	LLRR	A or B	NT & 1 1/4" Minus	865	100	A	Replace, Live Water, 865 CY Cut
	93+03	18		30	1	1	QS			A or B	NT				Install Cross Drain
	95+79	18		30	1	1	QS			A or B	NT				Replace Cross Drain
	104+38	18		30	1	1	QS			A or B	NT				Replace Cross Drain
	108+66	36		70	5	5	LLRR	10	LLRR	A or B	1 1/4" Minus		20	A	Replace, Live Water, Add Sediment Traps
	111+53	18		30	1	1	QS			A or B	NT				Replace Cross Drain
	122+41														Clean Inlet & Outlet
	123+85	18		30	1	1	QS			A or B	NT				Install Cross Drain

	15+91	48		40	7.5	7.5	LLRR				NT			Install, Live Water, See Closure Period Clause 1-25
	16+42	18		30							NT			Install Cross Drain
	18+09	24		40							NT			Install Cross Drain
	20+45	96		50							NT			Install, Live Water, See Closure Period Clause 1-25
	22+28													Install Drivable Dip
Temp 28-000.3	2+13													Ditchout Left and Right
	8+81													Ditchout Left and Right
	12+32													Ditchout Left and Right
Temp 2809.1	4+08	18		40							NT			Install Cross Drain
	6+52	18		30							NT			Install Cross Drain
Temp 2809.2	2+72	18		30							NT			Install Cross Drain
	3+97	36		40	5	5	LLRR		A or B		NT & 1 1/4" Minus	20	A	Install, Live Water
	8+63	18		30							NT			Install Cross Drain
	11+71	18		30							NT			Install Cross Drain
	17+98	18		30							NT			Install Cross Drain
	19+74													Install Dip
	21+23	18		30							NT			Install Cross Drain
Temp 2809.3	2+24													Ditchout
	6+28	18		30							NT			Install Cross Drain
	7+00	18		30							NT			Install Cross Drain
	10+00	18		30							NT			Install Cross Drain
	14+14	18		30							NT			Install Cross Drain
	19+22	24		40	2.5	2.5	QS		A or B		NT & 1 1/4" Minus	10	A	Install Live Water
	19+90	18		30							NT			Install Cross Drain
	21+39	18		30							NT			Install Cross Drain
	25+43	24		50	2.5	2.5	QS		A or B		NT & 1 1/4" Minus	10	A	Install, Live Water
	26+02	60		60	10	20	LLRR	30	LLRR	A or B	NT & 1 1/4" Minus	60	A	Install, Live Water
	31+08	18		30							NT			Install Cross Drain
	33+65													Ditchout
Temp 2809.31	2+63	18		30							NT			Install Cross Drain
	5+03	18		30							NT			Install Cross Drain

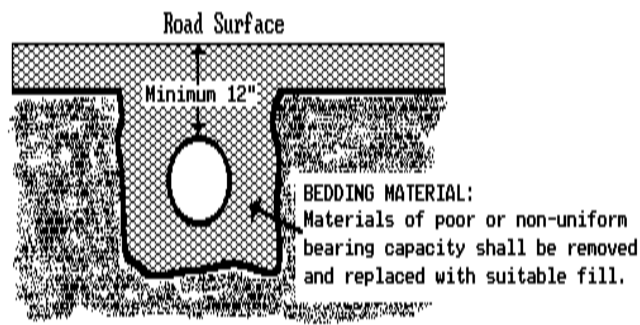
	6+58	18		30							NT				Install Cross Drain
	9+94	18		30							NT				Install Cross Drain
Temp 2809.5	2+55	18		30							NT				Install Cross Drain
	4+59	18		30							NT				Install Cross Drain
	6+63	18		30							NT				Install Cross Drain
	8+80														Ditchout R
	12+93	18		30							NT				Install Cross Drain

Culvert Totals

Type	Length (ft)
18-INCH CMP	570
18-INCH TEMP	840
24-INCH CMP	220
24-INCH TEMP	130
36-INCH CMP	300
36-INCH TEMP	40
48-INCH CMP	110
48-INCH TEMP	100
60-INCH CMP	280
60-INCH TEMP	60
96-INCH TEMP	50

* Optional rock, see Road Plan Clause 6-75

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



Key:

- SR - Shot Rock
- NT - Native (bank run)
- SL - Select Fill
- HLRR - Heavy Loose Rip Rap
- LLRR - Light Loose Rip Rap
- Flume - Half round pipe
- Downspout - Full round pipe
- DOL- Ditchout Left
- DOR- Ditchout Right

**GREY TOWERS TIMBER SALE
SUMMARY - Road Development Costs**

GOOD NEIGHBOR AUTHORITY
GIFFORD PINCHOT NATIONAL FOREST

COWLITZ RANGER DISTRICT
SKAMANIA COUNTY WASHINGTON

Compiled By CHAD VANDEHEY

Agreement # 36-106480

Date June 25, 2024

ROAD NUMBERS: Temp: 28-000.1, 28-000.02, 28-000.3, 28-000.31, 28-000.32, 2809.1, 2809.2, 2809.3, 2809.31, 2809.4, 2809.5	2300000, 2800000, 2809000, 2810000
--	---------------------------------------

ROAD STANDARD:	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:	154+94	0+00	1130+77
CLEARING & GRUBBING:	\$ 25,322.40	\$ -	\$ -
EXCAVATION AND FILL:	\$ 63,129.73	\$ -	\$ -
ROAD & LANDING ROCK:	\$ 26,056.16	\$ -	\$ 87,251.29
CULVERTS AND FLUMES:	\$ 107,993.07	\$ -	\$ 229,568.97
MISC. MAINTENANCE:	\$ 1,097.73	\$ -	\$ 106,052.29
STRUCTURES:	-	\$ -	-
MOBILIZATION:	\$ 5,516.50	\$ -	\$ 5,516.50
POST HAUL MAINTENANCE:	\$ -	\$ -	\$ -
DECOMMISSIONING & CLOSURE	\$ 33,716.15	\$ -	\$ -
MANAGEMENT & OVERHEAD (10%)	\$ 26,283.17	\$ -	\$ 42,838.90
COST PER STATION:	\$ 1,648.37	\$ -	\$ 416.73
TOTAL COSTS:	\$ 289,114.90	\$ -	\$ 471,227.95
		TOTAL (All Roads):	\$760,342.86
		SALE VOLUME MBF:	2446
		TOTAL \$/MBF:	\$310.85

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: 2300000

Total road length (feet): 31967

Distance to Pit (feet) 24288

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (light)	319.67 stations @	\$26.45 per station	\$	8,455.27
Cleaning Inlets & Outlets	319.67 stations @	\$4.95 per station	\$	1,582.37
		Misc. Maintenance Total	\$	10,037.64

PREHAUL MAINTENANCE TOTAL \$ 10,037.64
\$/STA \$ 31.40

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: 2800000

Total road length (feet): 56626

Distance to Pit (feet) 56255

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (light)	566.26 stations @	\$26.45 per station	\$	14,977.58
Cleaning Inlets & Outlets	566.26 stations @	\$4.95 per station	\$	2,802.99
Pull and clean ditch (one side, scatter)	337.52 stations @	\$70.95 per station	\$	23,947.04
Pull and clean ditch (two sides, scatter)	4.32 stations @	\$123.75 per station	\$	534.60
Maintenance grading & compacting	493.56 stations @	\$24.25 per station	\$	11,970.80
Posthaul Grading and Compacting	493.56 stations @	\$24.25 per station	\$	11,970.80
		Misc. Maintenance Total	\$	66,203.82

ROCK

1½" Minus Purchase Price w/ tax	1140 CY @	\$16.20 per CY	\$	18,468.00
Load dump truck	1140 CY @	\$ 0.73 per CY	\$	836.00
Rock haul	Round Trip (feet) 169136	155 Hours @	\$ 145.00 per hour	\$ 22,515.12
Process/Compacting Surfacing (6" Lift)	1140 CY @	\$ 2.06 per CY	\$	2,351.25
Quarry Spalls	19 CY @	\$ 16.50 per CY	\$	313.50
Light Loose Rip Rap	100 CY @	\$ 15.00 per CY	\$	1,500.00
		Rock Total	\$	45,983.87

CULVERTS & FLUMES

18" CMP	80 feet @	\$50.04	per foot	\$	4,002.80
24" CMP	220 feet @	\$ 69.34	per foot	\$	15,254.89
36" CMP	60 feet @	\$ 131.66	per foot	\$	7,899.60
60" Corrugated Metal Pipe	60 feet @	\$ 425.18	per foot	\$	25,510.70
		Culvert & Flume Total	\$	\$	52,667.99

PREHAUL MAINTENANCE TOTAL \$ 164,855.67
\$/STA \$ 291.13

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: 2809000

Total road length (feet): 15795

Distance to Pit (feet) 100651

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (medium)	157.95 stations @	\$46.00 per station	\$	7,265.70
Cleaning Inlets & Outlets	157.95 stations @	\$4.95 per station	\$	781.85
Pull and clean ditch (one side, scatter)	157.95 stations @	\$70.95 per station	\$	11,206.55
Maintenance grading & compacting	157.95 stations @	\$24.25 per station	\$	3,830.92
Posthaul Grading and Compacting	157.95 stations @	\$24.25 per station	\$	3,830.92
		Misc. Maintenance Total	\$	26,915.94

ROCK

1½" Minus Purchase Price w/ tax	540 CY @	\$16.20 per CY	\$	8,748.00
Load dump truck	540 CY @	\$ 0.73 per CY	\$	396.00
Rock haul	Round Trip (feet) 217097	112 Hours @	\$ 145.00 per hour	\$ 16,200.68
Process/Compacting Surfacing (6" Lift)	540 CY @	\$ 2.06 per CY	\$	1,113.75
Quarry Spalls	22 CY @	\$ 16.50 per CY	\$	363.00
Light Loose Rip Rap	170 CY @	\$ 15.00 per CY	\$	2,550.00
Process/Compacting Surfacing (6" Lift)	192 CY @	\$ 2.06 per CY	\$	396.00
		Rock Total	\$	29,767.43

CULVERTS & FLUMES

18" CMP	360 feet @	\$50.04	per foot	\$ 18,012.60
36" CMP	160 feet @	\$ 131.66	per foot	\$ 21,065.60
48" CMP	70 feet @	\$ 247.09	per foot	\$ 17,296.16
60" Corrugated Metal Pipe	220 feet @	\$ 425.18	per foot	\$ 93,539.25
		Culvert & Flume Total	\$	149,913.61

PREHAUL MAINTENANCE TOTAL \$ 206,596.98
\$/STA \$ 1,307.99

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: 2810000

Total road length (feet): 8689

Distance to Pit (feet) 106641

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (medium)		86.89 stations @	\$46.00 per station	\$	3,996.94
Cleaning Inlets & Outlets		86.89 stations @	\$4.95 per station	\$	430.11
Pull and clean ditch (one side, scatter)		50.41 stations @	\$70.95 per station	\$	3,576.59
Pull and clean ditch (two sides, scatter)		5.77 stations @	\$123.75 per station	\$	714.04
Maintenance grading & compacting		86.89 stations @	\$24.25 per station	\$	2,107.43
Posthaul Grading and Compacting		86.89 stations @	\$24.25 per station	\$	2,107.43
			Misc. Maintenance Total	\$	12,932.53

ROCK

1¼" Minus Purchase Price w/ tax		200 CY @	\$16.20 per CY	\$	3,240.00
Load dump truck		278 CY @	\$ 0.73 per CY	\$	203.87
Rock haul	Round Trip (feet) 221971	43 Hours @	\$ 145.00 per hour	\$	6,272.75
Quarry Spalls		8 CY @	\$ 20.00 per CY	\$	160.00
Light Loose Rip Rap		70 CY @	\$ 15.00 per CY	\$	1,050.00
Process/Compacting Surfacing (6" Lift)	Round Trip (feet)	278 CY @	\$ 2.06 per CY	\$	573.38
			Rock Total	\$	11,499.99

CULVERTS & FLUMES

18" CMP		130 feet @	\$50.04	per foot	\$	6,504.55
36" CMP		80 feet @	\$ 131.66	per foot	\$	10,532.80
48" CMP		40 feet @	\$ 247.09	per foot	\$	9,883.52
Ditchout		1 each @	\$ 66.50	each	\$	66.50
			Culvert & Flume Total	\$	26,987.37	

PREHAUL MAINTENANCE TOTAL \$ 51,419.90
\$/STA \$ 591.78

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 28-000.1

Total road length (feet): 1132

Distance to Pit (feet) 98390

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	11.32 stations @	\$	110.44	per station	\$	1,250.18
					C & G Total	\$ 1,250.18

EXCAVATION AND FILL

Reconstruction (medium)	11.32 stations @	\$	262.43	per station	\$	2,970.70
Landing (small)	2 each @	\$	219.75	each	\$	439.50
Turnaround	1 each @	\$	215.86	each	\$	215.86
					Excavation Total	\$ 3,626.05

ROCK

3 INCH Jaw Purchase Price	93 CY @	\$	14.50	per CY	\$	1,349.66
Load dump truck	513 CY @	\$	0.73	per CY	\$	376.26
Rock haul	Round Trip (feet) 197912	62.239 Hours @	\$	145.00	per Hour	\$ 9,024.59
Process/Compacting Ballast (12" Lift)	513 CY @	\$	1.57	per CY	\$	807.00
					Road Rock Total	\$ 11,557.51

CULVERTS & FLUMES

18" CMP	40 feet @	\$50.04	per foot	\$2,001.40
Ditchout/Waterbar	2.00 each @	\$66.50	each	\$133.00
1¼" Minus Purchase Price w/ tax	CY @	\$16.20	per CY	\$0.00
			Culvert, Flume, & Pipe Bedding Total	\$2,134.40

MISC. MAINTENANCE

Grass seed (spread by hand)	24 pounds @	\$	3.34	per pound	\$	80.20
					Misc Maintenance Total	\$ 80.20

Construction Total	\$	18,648.34
	\$/sta	\$ 1,647.38

SALE/PROJECT NAME: Grey Towers
 CONTRACT #: 36-106480
 ROAD NUMBER: Temp 28-000.2
 Total road length (feet): 2440
 Distance to Pit (feet) 109305
 Average Haul Speed (mph) 31
 Truck Load/Unload Time (minutes) 12
 Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

MEDIUM Clearing and Grubbing	24.40 stations @	\$	204.00	per station	\$	4,977.60
					C & G Total	\$ 4,977.60

EXCAVATION AND FILL

Reconstruction (medium)	24.40 stations @	\$	262.43	per station	\$	6,403.27
Landing (small)	3 each @	\$	219.75	each	\$	659.25
Turnaround	1 each @	\$	215.86	each	\$	215.86
					Excavation Total	\$ 7,278.38

ROCK

3 INCH Jaw Purchase Price	78 CY @	\$	14.50	per CY	\$	1,131.00
Load dump truck	108 CY @	\$	0.73	per CY	\$	79.20
Rock haul	Round Trip (feet) 221050	14.785 Hours @	\$	145.00	per Hour	\$ 2,143.88
Process/Compacting Ballast (12" Lift)	108 CY @	\$	1.57	per CY	\$	169.87
Light Loose Rip Rap	30 CY @	\$	15.00	per CY	\$	450.00
					Road Rock Total	\$ 3,973.95

CULVERTS & FLUMES

18" Polyethylene, double wall	130 feet @	\$25.25	per foot	\$3,282.50
24" Polyethylene, double wall	40 feet @	\$31.97	per foot	\$1,278.82
48" Polyethylene, double wall	100 feet @	\$113.87	per foot	\$11,387.00
96" Corrugated Metal Pipe	50.00 feet @	\$820.15	per foot	\$41,007.40
Ditchout/Waterbar/Dip	3.00 each @	\$66.50	each	\$199.50
			Culvert, Flume, & Pipe Bedding Total	\$57,155.22

MISC. MAINTENANCE

Grass seed (spread by hand)	52 pounds @	\$	3.34	per pound	\$	172.87
					Misc Maintenance Total	\$ 172.87

Construction Total	\$	73,558.02
\$/sta	\$	3,014.67

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 28-000.3

Total road length (feet): 1764

Distance to Pit (feet) 112881

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	17.64 stations @	\$	110.44 per station	\$	1,948.16
				C & G Total	\$ 1,948.16

EXCAVATION AND FILL

Reconstruction (light)	15.51 stations @	\$	169.68 per station	\$	2,631.72
Construction (balanced, heavy)	2.13 stations @	\$	754.09 per station	\$	1,606.21
Landing (small)	2 each @	\$	219.75 each	\$	439.50
Turnaround	1 each @	\$	215.86 each	\$	215.86
				Excavation Total	\$ 4,893.29

CULVERTS & FLUMES

Ditchout/Waterbar/Dip	5.00 each @		\$66.50 each		\$332.50
				Culvert, Flume, & Pipe Bedding Total	\$332.50

MISC. MAINTENANCE

Grass seed (spread by hand)	37 pounds @	\$	3.34 per pound	\$	124.98
				Misc Maintenance Total	\$ 124.98

Construction Total	\$	7,298.93
\$/sta	\$	413.77

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 28-000.31

Total road length (feet): 203

Distance to Pit (feet) 114140

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	2.03 stations @	\$	110.44	per station	\$	224.19
					C & G Total	\$ 224.19

EXCAVATION AND FILL

Construction (balanced, light)	2.03 stations @	\$	340.00	per station	\$	690.20
Landing (small)	1 each @	\$	219.75	each	\$	219.75
					Excavation Total	\$ 909.95

CULVERTS & FLUMES

Ditchout/Waterbar/Dip	1.00 each @		\$66.50	each		\$66.50
					Culvert, Flume, & Pipe Bedding Total	\$66.50

MISC. MAINTENANCE

Grass seed (spread by hand)	4 pounds @	\$	3.34	per pound	\$	14.38
					Misc Maintenance Total	\$ 14.38

Construction Total	\$	1,215.03
	\$/sta	\$ 598.53

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 28-000.32

Total road length (feet): 185

Distance to Pit (feet) 114345

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	1.85 stations @	\$	110.44	per station	\$	204.31
					C & G Total	\$ 204.31

EXCAVATION AND FILL

Construction (balanced, light)	1.85 stations @	\$	340.00	per station	\$	629.00
Landing (small)	1 each @	\$	219.75	each	\$	219.75
					Excavation Total	\$ 848.75

CULVERTS & FLUMES

Ditchout/Waterbar/Dip	1.00 each @		\$66.50	each		\$66.50
					Culvert, Flume, & Pipe Bedding Total	\$66.50

MISC. MAINTENANCE

Grass seed (spread by hand)	4 pounds @	\$	3.34	per pound	\$	13.11
					Misc Maintenance Total	\$ 13.11

Construction Total	\$	1,132.67
	\$/sta	\$ 612.25

SALE/PROJECT NAME: Grey Towers
 CONTRACT #: 36-106480
 ROAD NUMBER: Temp 2809.1
 Total road length (feet): 805
 Distance to Pit (feet) 105019
 Average Haul Speed (mph) 31
 Truck Load/Unload Time (minutes) 12
 Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	8.05 stations @	\$	110.44	per station	\$	889.04
					C & G Total	\$ 889.04

EXCAVATION AND FILL

Reconstruction (medium)	8.05 stations @	\$	262.43	per station	\$	2,112.55
Landing (small)	1 each @	\$	219.75	each	\$	219.75
Turnaround	1 each @	\$	215.86	each	\$	215.86
					Excavation Total	\$ 2,548.16

CULVERTS & FLUMES

18" Polyethylene, double wall	70 feet @		\$25.25	per foot		\$1,767.50
					Culvert, Flume, & Pipe Bedding Total	\$1,767.50

MISC. MAINTENANCE

Grass seed (spread by hand)	17 pounds @	\$	3.34	per pound	\$	57.03
					Misc Maintenance Total	\$ 57.03

					Construction Total	\$ 5,261.74
					\$/sta	\$ 653.63

SALE/PROJECT NAME: Grey Towers
 CONTRACT #: 36-106480
 ROAD NUMBER: Temp 2809.2
 Total road length (feet): 2282
 Distance to Pit (feet) 106965
 Average Haul Speed (mph) 31
 Truck Load/Unload Time (minutes) 12
 Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	22.82 stations @	\$	110.44	per station	\$	2,520.24
					C & G Total	\$ 2,520.24

EXCAVATION AND FILL

Construction (balanced, medium)	22.82 stations @	\$	514.09	per station	\$	11,731.56
Landing (small)	3 each @	\$	219.75	each	\$	659.25
Turnaround	1 each @	\$	215.86	each	\$	215.86
					Excavation Total	\$ 12,606.66

ROCK

1¼" Minus Purchase Price w/ tax	20 CY @	\$	16.20	per CY	\$	324.00
3 INCH Jaw Purchase Price	26 CY @	\$	14.50	per CY	\$	377.00
Load dump truck	56 CY @	\$	0.73	per CY	\$	41.07
Rock haul	Round Trip (feet) 216212	7.597 Hours @	\$	145.00	per Hour	\$ 1,101.61
Process/Compacting Ballast (12" Lift)	56 CY @	\$	1.57	per CY	\$	88.08
Light Loose Rip Rap	10 CY @	\$	15.00	per CY	\$	150.00
					Road Rock Total	\$ 2,081.75

CULVERTS & FLUMES

18" Polyethylene, double wall	150 feet @	\$25.25	per foot	\$3,787.50
36" Polyethylene, double wall	40 feet @	\$66.66	per foot	\$2,666.40
Ditchout/Waterbar/Dip	1.00 each @	\$66.50	each	\$66.50
			Culvert, Flume, & Pipe Bedding Total	\$6,520.40

MISC. MAINTENANCE

Grass seed (spread by hand)	48 pounds @	\$	3.34	per pound	\$	161.68
					Misc Maintenance Total	\$ 161.68

Construction Total	\$	23,890.73
\$/sta	\$	1,046.92

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 2809.3

Total road length (feet): 3365

Distance to Pit (feet) 107515

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

MEDIUM Clearing and Grubbing	33.65 stations @	\$	204.00 per station	\$	6,864.60
				C & G Total	\$ 6,864.60

EXCAVATION AND FILL

Reconstruction (heavy)	21.39 stations @	\$	403.85 per station	\$	8,638.37
Construction (balanced, medium)	12.26 stations @	\$	514.09 per station	\$	6,302.76
Landing (small)	2 each @	\$	219.75 each	\$	439.50
Turnaround	2 each @	\$	215.86 each	\$	431.72
				Excavation Total	\$ 15,812.34

ROCK

1¼" Minus Purchase Price w/ tax	80 CY @	\$	16.20 per CY	\$	1,296.00
3 INCH Jaw Purchase Price	78 CY @	\$	14.50 per CY	\$	1,131.00
Load dump truck	228 CY @	\$	0.73 per CY	\$	167.20
Rock haul	Round Trip (feet) 218395	30.622 Hours @	\$	145.00 per Hour	\$ 4,440.13
Process/Compacting Ballast (12" Lift)	228 CY @	\$	1.57 per CY	\$	358.61
Light Loose Rip Rap	70 CY @	\$	15.00 per CY	\$	1,050.00
				Road Rock Total	\$ 8,442.94

CULVERTS & FLUMES

18" Polyethylene, double wall	210 feet @	\$25.25 per foot	\$5,302.50
24" Polyethylene, double wall	90 feet @	\$31.97 per foot	\$2,877.35
60" Corrugated Metal Pipe	60 feet @	\$425.18 per foot	\$25,510.70
Ditchout/Waterbar/Dip	2.00 each @	\$66.50 each	\$133.00
		Culvert, Flume, & Pipe Bedding Total	\$33,823.55

MISC. MAINTENANCE

Grass seed (spread by hand)	71 pounds @	\$	3.34 per pound	\$	238.41
				Misc Maintenance Total	\$ 238.41

Construction Total	\$	65,181.84
\$/sta	\$	1,937.05

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 2809.31

Total road length (feet): 1321

Distance to Pit (feet) 109304

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

MEDIUM Clearing and Grubbing	13.21 stations @	\$	204.00 per station	\$	2,694.84
				C & G Total	\$ 2,694.84

EXCAVATION AND FILL

Reconstruction (medium)	13.21 stations @	\$	262.43 per station	\$	3,466.69
Landing (small)	2 each @	\$	219.75 each	\$	439.50
Turnaround	1 each @	\$	215.86 each	\$	215.86
				Excavation Total	\$ 4,122.05

CULVERTS & FLUMES

18" Polyethylene, double wall	120 feet @		\$25.25 per foot		\$3,030.00
Ditchout/Waterbar/Dip	1.00 each @		\$66.50 each		\$66.50
				Culvert, Flume, & Pipe Bedding Total	\$3,096.50

MISC. MAINTENANCE

Grass seed (spread by hand)	28 pounds @	\$	3.34 per pound	\$	93.59
Straw mulching (spread by hand)	0.00 acres @	\$	3,151.00 per acre	\$	-
				Misc Maintenance Total	\$ 93.59

Construction Total	\$	10,006.98
\$/sta	\$	757.53

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 2809.4

Total road length (feet): 347

Distance to Pit (feet) 112068

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	3.47 stations @	\$	110.44	per station	\$	383.23
					C & G Total	\$ 383.23

EXCAVATION AND FILL

Reconstruction (medium)	3.47 stations @	\$	262.43	per station	\$	910.63
Landing (small)	1 each @	\$	219.75	each	\$	219.75
Turnaround	1 each @	\$	215.86	each	\$	215.86
					Excavation Total	\$ 1,346.24

MISC. MAINTENANCE

Grass seed (spread by hand)	7 pounds @	\$	3.34	per pound	\$	24.58
					Misc Maintenance Total	\$ 24.58

Construction Total	\$	1,754.05
\$/sta	\$	505.49

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NUMBER: Temp 2809.5

Total road length (feet): 1650

Distance to Pit (feet) 114152

Average Haul Speed (mph) 31

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

MEDIUM Clearing and Grubbing	16.50 stations @	\$	204.00	per station	\$	3,366.00
					C & G Total	\$ 3,366.00

EXCAVATION AND FILL

Construction (balanced, medium)	16.50 stations @	\$	514.09	per station	\$	8,482.50
Landing (small)	2 each @	\$	219.75	each	\$	439.50
Turnaround	1 each @	\$	215.86	each	\$	215.86
					Excavation Total	\$ 9,137.86

CULVERTS & FLUMES

18" Polyethylene, double wall	120 feet @		\$25.25	per foot		\$3,030.00
					Culvert, Flume, & Pipe Bedding Total	\$3,030.00

MISC. MAINTENANCE

Grass seed (spread by hand)	35 pounds @	\$	3.34	per pound	\$	116.90
					Misc Maintenance Total	\$ 116.90

Construction Total	\$	15,650.76
\$/sta	\$	948.53

SALE/PROJECT NAME: Grey Towers

CONTRACT #: 36-106480

ROAD NAMES: Temp: 28-000.1, 28-000.2, 28-000.3, 28-000.31, 28-000.32,
2809.1, 2809.2, 2809.3, 2809.31, 2809.4, 2809.5

DECOMMISSIONING

Decommissioning

Level 1 Decom	52.61 stations @	\$117.15 per station	\$	6,163.26
Level 2 Decom	102.33 stations @	\$ 244.80 per station	\$	25,050.38
Fill Removal - Shallow	500 CY @	\$ 3.03 per CY	\$	1,512.50
Earthen Barricade	8 Barricades	\$ 123.75 per each	\$	990.00
		Decommissioning Cost	\$	33,716.15
		DECOM & CLOSURE TOTAL	\$	33,716.15

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 Grey Towers

Sale Name:

Sale Type: LUMP SUM

Region:

District:

Lead Cruiser: AMDouglas

Other Cruisers:KPeterson, BEWarnstadt

Cruise Narrative:

Location:

Grey Towers is located in Gifford Pinchot National Forest 12 miles southeast of Randle, WA. Access is provided via SR-12, Cispus Road, and the NF28 Forest Road network. Most units have direct access from NF28 roads. Some require short walk-ins.

Cruise Design:

198 variable radius plots were used to cruise 1087 trees.

Bole heights were measured to a 5" top or estimated break point. Trees were segmented into lengths based on a preference for long logs and taking into account location of defect. Preferred length for conifers is 40'. Preferred length for hardwoods is 30'.

Timber Quality:

The majority of Grey Towers is composed of Douglas-fir. Bole condition varies. Some trees display excellent form and contain high quality segments. Others contain high amounts of defect from dead tops, spike knots, and fungal decay.

Logging and Stand Conditions:

Projected harvesting methods are 35% uphill cable, 65% ground-based. Some parts of the sale are laid out on considerable slopes. Understory conditions vary by unit. Some units contain high amounts of blowdown and/or hemlock regeneration. Others are mostly brush free.

General Remarks:

Units 12-14 and 15-17 are small, of similar composition, and located close to one another. They were combined into two units instead of six.

Cut preference is given to smaller and more defected trees.

Timber Sale Notice Volume (MBF)

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	11.9			1,934	155	1,089	672	19
WH	11.5			379	11	235	126	7
RA	10.7			125		6	118	
SF	8.0			4			4	
MA	13.0			3			3	
ALL	11.6			2,446	165	1,330	924	26

Timber Sale Notice Weight (tons)

Sp	Tons by Grade				
	All	2 Saw	3 Saw	4 Saw	Utility
DF	15,702	1,204	9,157	5,253	88
WH	3,481	92	2,175	1,167	46
RA	1,226		55	1,172	
MA	41			41	
SF	29			29	
ALL	20,479	1,296	11,388	7,661	134

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 (%)
215.3	2.3	108.2	1.5	23,150	2.8

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
Unit 1	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	6.0		6	6	0
Unit 2	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	10.0		9	9	0
Unit 3	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	25.0		17	8	0
Unit 4	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	28.0		19	10	0
Unit 5	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	23.0		17	9	1

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
Unit 6	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	23.0		17	9	0
Unit 7	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	14.0		12	6	0
Unit 8	B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	4.0		4	4	0
Unit 9	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	26.0		19	10	0
Unit 10	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	6.0		6	6	0
Unit 11	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	59.0		40	20	0
Units 12-14	B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	16.3		17	17	0
Units 15-17	B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	15.0		15	15	1
All		255.3		198	129	2

Timber Sale Log Grade x Sort Summary

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
DF	LIVE	2 SAW	Domestic	13.2	40	523	515	1.5	1,017.9	131.5
DF	LIVE	2 SAW	HQ-B	12.3	40	51	51	0.0	109.3	13.0
DF	LIVE	2 SAW	Pole	12.6	40	40	40	0.0	76.5	10.1
DF	LIVE	3 SAW	Domestic	7.8	40	3,754	3,677	2.1	7,939.2	938.5
DF	LIVE	3 SAW	HQ-B	9.3	40	342	335	2.1	692.4	85.5
DF	LIVE	3 SAW	Pole	8.5	39	254	254	0.0	525.8	64.7
DF	LIVE	4 SAW	Domestic	5.1	29	2,658	2,634	0.9	5,252.7	672.3
DF	LIVE	CULL	Cull	5.1	6	22	0	100.0	0.0	0.0
DF	LIVE	UTILITY	Pulp	5.1	13	74	74	0.0	87.9	18.8
MA	LIVE	4 SAW	Domestic	6.1	35	13	13	1.1	40.6	3.3
RA	LIVE	3 SAW	Domestic	10.4	30	32	25	21.1	54.9	6.4
RA	LIVE	4 SAW	Domestic	5.6	34	475	463	2.4	1,171.6	118.3
SF	LIVE	4 SAW	Domestic	5.2	24	17	17	0.0	29.1	4.4
WH	LIVE	2 SAW	Domestic	12.8	40	42	42	0.0	92.3	10.7
WH	LIVE	3 SAW	Domestic	7.9	40	930	921	0.9	2,175.3	235.2
WH	LIVE	4 SAW	Domestic	5.2	27	502	494	1.6	1,167.4	126.0
WH	LIVE	CULL	Cull	5.0	5	11	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	5.0	13	29	29	0.0	45.9	7.3

Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 8	LIVE	Pulp	5.0	13	70	0.0	82.5	17.9
DF	5 - 8	LIVE	Cull	5.1	7	0	100.0	0.0	0.0
DF	5 - 8	LIVE	Domestic	5.7	32	5,328	1.3	11,136.1	1,360.1
DF	5 - 8	LIVE	Pole	8.0	39	173	0.0	379.3	44.1
DF	5 - 8	LIVE	HQ-B	8.3	40	98	1.3	213.1	25.1
DF	9 - 11	LIVE	HQ-B	9.7	40	237	2.4	479.4	60.4
DF	9 - 11	LIVE	Pole	9.8	40	81	0.0	146.5	20.6
DF	9 - 11	LIVE	Domestic	10.3	40	982	3.2	2,055.8	250.7
DF	12 - 14	LIVE	HQ-B	12.3	40	51	0.0	109.3	13.0
DF	12 - 14	LIVE	Pulp	12.3	15	4	0.0	5.4	0.9
DF	12 - 14	LIVE	Pole	12.6	40	40	0.0	76.5	10.1
DF	12 - 14	LIVE	Domestic	13.0	40	482	1.6	962.3	123.0
DF	15 - 19	LIVE	Domestic	16.1	40	33	0.0	55.7	8.5
MA	5 - 8	LIVE	Domestic	6.1	35	13	1.1	40.6	3.3
RA	5 - 8	LIVE	Domestic	5.4	34	454	2.4	1,150.5	115.8
RA	9 - 11	LIVE	Domestic	10.0	30	35	16.1	76.0	8.9
SF	5 - 8	LIVE	Domestic	5.2	24	17	0.0	29.1	4.4
WH	5 - 8	LIVE	Cull	5.0	5	0	100.0	0.0	0.0
WH	5 - 8	LIVE	Pulp	5.0	13	29	0.0	45.9	7.3
WH	5 - 8	LIVE	Domestic	5.9	31	1,080	1.2	2,581.5	275.7
WH	9 - 11	LIVE	Domestic	9.5	40	335	1.0	761.2	85.4
WH	12 - 14	LIVE	Domestic	12.8	40	42	0.0	92.3	10.7

Cruise Unit Report Unit 1

Unit Sale Notice Volume (MBF): Unit 1

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
DF	9.7			33	11	22
RA	10.9			10		10
ALL	10.0			43	11	32

Unit Cruise Design: Unit 1

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	6.0		6	6	0

Unit Cruise Summary: Unit 1

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	10	28	4.7	0
RA	4	7	1.2	0
ALL	14	35	5.8	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 (%)
DF	186.7	35.0	14.3	75.4	20.7	6.5	14,081	40.6	15.7
RA	46.7	175.0	71.4	61.9	7.9	4.0	2,886	175.1	71.5
ALL	233.3	16.9	6.9	72.7	20.1	5.4	16,968	26.3	8.7

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	10	ALL	9.5	43	52	5,532	5,532	0.0	149.0	73.3	23.8	33.2
DF	LIVE	LEA	17	ALL	15.4	65	81	8,549	8,549	0.0	87.6	113.3	28.9	51.3
RA	LIVE	CUT	4	ALL	10.9	47	56	1,649	1,649	0.0	41.2	26.7	8.1	9.9
RA	LIVE	LEA	3	ALL	13.9	55	66	1,237	1,237	0.0	19.0	20.0	5.4	7.4
ALL	LIVE	CUT	14	ALL	9.8	44	53	7,181	7,181	0.0	190.2	100.0	31.9	43.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	LEA	20	ALL	15.1	63	78	9,786	9,786	0.0	106.6	133.3	34.2	58.7
ALL	ALL	ALL	34	ALL	12.0	51	62	16,968	16,968	0.0	296.8	233.3	66.1	101.8

Cruise Unit Report Unit 2

Unit Sale Notice Volume (MBF): Unit 2

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
DF	10.2			56	24	32
RA	10.9			13		13
ALL	10.3			70	24	46

Unit Cruise Design: Unit 2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	10.0		9	9	0

Unit Cruise Summary: Unit 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	15	43	4.8	0
RA	3	8	0.9	0
ALL	18	51	5.7	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 (%)
DF	191.1	38.8	12.9	79.1	17.5	4.5	15,123	42.6	13.7
RA	35.6	190.3	63.4	60.7	8.9	5.1	2,160	190.5	63.6
ALL	226.7	26.5	8.8	76.2	19.0	4.5	17,283	32.6	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	15	ALL	10.3	49	59	5,627	5,627	0.0	122.9	71.1	22.2	56.3
DF	LIVE	LEA	24	ALL	15.2	66	82	9,496	9,496	0.0	95.2	120.0	30.8	95.0
RA	LIVE	CUT	3	ALL	10.7	48	55	1,350	1,350	0.0	35.6	22.2	6.8	13.5
RA	LIVE	LEA	3	ALL	13.9	56	68	810	810	0.0	12.7	13.3	3.6	8.1
ALL	LIVE	LEA	27	ALL	15.1	65	81	10,306	10,306	0.0	107.9	133.3	34.4	103.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	18	ALL	10.4	49	58	6,977	6,977	0.0	158.5	93.3	29.0	69.8
ALL	ALL	ALL	45	ALL	12.5	55	67	17,283	17,283	0.0	266.4	226.7	63.3	172.8

Cruise Unit Report Unit 3

Unit Sale Notice Volume (MBF): Unit 3

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	11.6			231	14	146	69	2
WH	10.2			14		6	8	
ALL	11.4			245	14	152	77	2

Unit Cruise Design: Unit 3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	25.0		17	8	0

Unit Cruise Summary: Unit 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RA		2	0.1	0
DF	12	74	4.4	0
WH	2	10	0.6	0
ALL	14	86	5.1	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 (%)
RA	4.7	412.3	100.0						
DF	174.1	54.4	13.2	140.0	16.9	4.9	24,371	57.0	14.1
WH	23.5	135.2	32.8	119.5	28.9	20.4	2,811	138.2	38.6
ALL	202.4	40.4	9.8	137.5	18.1	4.8	27,829	44.3	10.9

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	12	ALL	12.0	67	109	9,398	9,221	1.9	83.9	65.9	19.0	230.5
DF	LIVE	LEA	22	ALL	16.0	77	97	15,439	15,149	1.9	77.5	108.2	27.1	378.7
RA	LIVE	LEA	2	ALL	12.0	44	57				6.0	4.7	1.4	

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	2	ALL	10.2	57	86	580	562	3.0	8.3	4.7	1.5	14.1
WH	LIVE	LEA	4	ALL	14.4	66	85	2,318	2,249	3.0	16.6	18.8	5.0	56.2
ALL	LIVE	LEA	28	ALL	15.5	73	93	17,757	17,398	2.0	100.1	131.8	33.4	435.0
ALL	LIVE	CUT	14	ALL	11.8	66	107	9,977	9,784	1.9	92.2	70.6	20.5	244.6
ALL	ALL	ALL	42	ALL	13.9	69	100	27,735	27,182	2.0	192.3	202.4	53.9	679.5

Cruise Unit Report Unit 4

Unit Sale Notice Volume (MBF): Unit 4

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
DF	11.5			150	74	77
RA	9.9			59		59
WH	11.0			6	6	
ALL	10.8			215	79	135

Unit Cruise Design: Unit 4

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	28.0		19	10	0

Unit Cruise Summary: Unit 4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	12	70	3.7	0
RA	7	35	1.8	0
WH	1	1	0.1	0
ALL	20	106	5.6	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 (%)
DF	147.4	78.4	18.0	88.0	24.7	7.1	12,973	82.2	19.3
RA	73.7	109.0	25.0	71.0	18.3	6.9	5,228	110.5	25.9
WH	2.1	435.9	100.0	95.5	0.0	0.0	201	435.9	100.0
ALL	223.2	30.7	7.0	82.5	24.4	5.5	18,403	39.2	8.9

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	12	ALL	11.8	56	69	5,406	5,375	0.6	80.4	61.1	17.8	150.5
DF	LIVE	LEA	17	ALL	17.5	73	92	7,642	7,599	0.6	51.7	86.3	20.6	212.8

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	7	ALL	10.0	44	53	2,164	2,091	3.4	54.0	29.5	9.3	58.6
RA	LIVE	LEA	15	ALL	13.0	54	65	3,246	3,137	3.4	48.0	44.2	12.3	87.8
WH	LIVE	CUT	1	ALL	11.0	60	73	201	201	0.0	3.2	2.1	0.6	5.6
ALL	LIVE	CUT	20	ALL	11.1	52	63	7,770	7,667	1.3	137.6	92.6	27.7	214.7
ALL	LIVE	LEA	32	ALL	15.5	64	79	10,888	10,736	1.4	99.7	130.5	32.9	300.6
ALL	ALL	ALL	52	ALL	13.1	57	70	18,659	18,403	1.4	237.3	223.2	60.6	515.3

Cruise Unit Report Unit 5

Unit Sale Notice Volume (MBF): Unit 5

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
DF	12.9			125	91	34
WH	12.2			18	16	3
ALL	12.7			143	106	37

Unit Cruise Design: Unit 5

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	23.0		17	9	1

Unit Cruise Summary: Unit 5

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RA		2	0.1	0
DF	13	65	3.8	0
WH	3	12	0.7	0
ALL	16	79	4.6	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 (%)
RA	4.7	412.3	100.0						
DF	152.9	71.2	17.3	115.2	18.5	5.1	17,622	73.5	18.0
WH	28.2	148.3	36.0	113.6	26.3	15.2	3,206	150.6	39.0
ALL	185.9	54.3	13.2	115.0	19.1	4.8	21,369	57.6	14.0

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	13	ALL	13.1	65	90	5,669	5,422	4.4	50.3	47.1	13.0	124.7
DF	LIVE	LEA	23	ALL	16.1	79	99	12,756	12,200	4.4	74.9	105.9	26.4	280.6
RA	LIVE	LEA	2	ALL	15.0	60	73				3.8	4.7	1.2	

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	3	ALL	12.2	57	76	815	802	1.6	8.7	7.1	2.0	18.4
WH	LIVE	LEA	6	ALL	12.8	62	78	2,444	2,405	1.6	23.7	21.2	5.9	55.3
ALL	LIVE	LEA	31	ALL	15.4	75	93	15,200	14,605	3.9	102.4	131.8	33.5	335.9
ALL	LIVE	CUT	16	ALL	13.0	64	88	6,484	6,224	4.0	59.0	54.1	15.0	143.1
ALL	ALL	ALL	47	ALL	14.5	71	91	21,684	20,828	3.9	161.4	185.9	48.5	479.1

Cruise Unit Report Unit 6

Unit Sale Notice Volume (MBF): Unit 6

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	3 Saw	4 Saw	Utility
DF	11.1			197	133	55	9
WH	12.0			69	54	13	2
ALL	11.3			266	187	68	10

Unit Cruise Design: Unit 6

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	23.0		17	9	0

Unit Cruise Summary: Unit 6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	18	86	5.1	1
WH	7	14	0.8	0
ALL	25	100	5.9	1

Unit Cruise Statistics: Unit 6

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
DF	202.4	40.4	9.8	121.3	20.2	4.8	24,552	45.2	10.9
WH	32.9	150.2	36.4	127.3	8.1	3.1	4,193	150.4	36.5
ALL	235.3	22.4	5.4	122.2	17.6	3.5	28,745	28.5	6.5

Unit Summary: Unit 6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	18	ALL	10.6	57	86	8,704	8,565	1.6	115.2	70.6	21.7	197.0
DF	LIVE	LEA	28	ALL	17.9	87	111	16,248	15,988	1.6	75.4	131.8	31.1	367.7
WH	LIVE	CUT	7	ALL	11.1	63	84	3,020	2,995	0.8	35.0	23.5	7.1	68.9
WH	LIVE	LEA	4	ALL	14.7	72	89	1,208	1,198	0.8	8.0	9.4	2.5	27.6
ALL	LIVE	LEA	32	ALL	17.6	86	109	17,456	17,186	1.6	83.4	141.2	33.6	395.3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	25	ALL	10.7	59	86	11,724	11,560	1.4	150.2	94.1	28.7	265.9
ALL	ALL	ALL	57	ALL	13.6	68	94	29,180	28,745	1.5	233.6	235.3	62.3	661.1

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
DF	10.3			104	71	32	2
ALL	10.3			104	71	32	2

Unit Cruise Design: Unit 7

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	14.0		12	6	0

Unit Cruise Summary: Unit 7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RA		5	0.4	0
WH		1	0.1	0
DF	8	50	4.2	1
ALL	8	56	4.7	1

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 (%)
RA	16.7	160.5	46.3						
WH	3.3	346.4	100.0						
DF	166.7	38.1	11.0	131.1	14.3	5.1	21,853	40.7	12.1
ALL	186.7	27.9	8.1	131.1	14.3	5.1	24,476	31.4	9.5

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	8	ALL	9.1	57	90	7,579	7,430	2.0	125.5	56.7	18.8	104.0
DF	LIVE	LEA	19	ALL	13.9	72	96	14,712	14,423	2.0	104.4	110.0	29.5	201.9
RA	LIVE	LEA	5	ALL	11.6	54	73				22.7	16.7	4.9	
WH	LIVE	LEA	0	ALL	7.0						12.5	3.3	1.3	

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	8	ALL	9.1	57	90	7,579	7,430	2.0	125.5	56.7	18.8	104.0
ALL	LIVE	LEA	24	ALL	13.1	69	92	14,712	14,423	2.0	139.6	130.0	35.7	201.9
ALL	ALL	ALL	32	ALL	11.4	63	91	22,292	21,853	2.0	265.1	186.7	54.4	305.9

Cruise Unit Report Unit 8

Unit Sale Notice Volume (MBF): Unit 8

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	3 Saw	4 Saw	Utility
DF	8.3			23	7	14	1
WH	8.6			9		9	
ALL	8.4			32	7	24	1

Unit Cruise Design: Unit 8

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	4.0		4	4	0

Unit Cruise Summary: Unit 8

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	6	18	4.5	0
WH	3	6	1.5	0
ALL	9	24	6.0	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 (%)
DF	151.2	52.9	26.4	112.2	25.7	10.5	16,964	58.8	28.4
WH	50.4	158.7	79.3	91.2	23.5	13.6	4,599	160.4	80.5
ALL	201.7	0.0	0.0	106.9	25.5	8.5	21,563	25.5	8.5

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	6	ALL	8.3	37	74	5,705	5,655	0.9	134.2	50.4	17.5	22.6
DF	LIVE	LEA	12	ALL	12.3	63	88	11,409	11,309	0.9	122.2	100.8	28.7	45.2
WH	LIVE	CUT	3	ALL	8.6	38	73	2,407	2,299	4.5	62.5	25.2	8.6	9.2
WH	LIVE	LEA	3	ALL	12.3	51	69	2,407	2,299	4.5	30.5	25.2	7.2	9.2
ALL	LIVE	LEA	15	ALL	12.3	60	85	13,817	13,609	1.5	152.7	126.0	35.9	54.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	CUT	9	ALL	8.4	38	73	8,112	7,954	1.9	196.7	75.6	26.1	31.8
ALL	ALL	ALL	24	ALL	10.3	48	78	21,928	21,563	1.7	349.4	201.7	62.0	86.3

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	Utility
DF	12.2			219	19	139	57	4
WH	11.2			111		74	31	5
RA	14.1			5		4	1	
ALL	11.9			335	19	217	90	9

Unit Cruise Design: Unit 9

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	26.0		19	10	0

Unit Cruise Summary: Unit 9

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
BC		1	0.1	0
DF	18	81	4.3	0
WH	8	26	1.4	0
RA	1	1	0.1	0
ALL	27	109	5.7	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 (%)
BC	2.1	435.9	100.0						
DF	170.5	57.4	13.2	133.5	18.3	4.3	22,772	60.2	13.9
WH	54.7	73.9	17.0	126.4	25.4	9.0	6,919	78.2	19.2
RA	2.1	435.9	100.0	84.8	0.0	0.0	179	435.9	100.0
ALL	229.5	33.8	7.8	131.4	21.0	4.0	30,146	39.8	8.7

Unit Summary: Unit 9

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
BC	LIVE	LEA	1	ALL	26.3	97	122				0.6	2.1	0.4	
DF	LIVE	CUT	18	ALL	12.1	66	93	8,650	8,434	2.5	79.1	63.2	18.2	219.3
DF	LIVE	LEA	29	ALL	16.6	85	108	14,705	14,338	2.5	71.4	107.4	26.4	372.8
RA	LIVE	CUT	1	ALL	14.1	62	78	268	179	33.3	1.9	2.1	0.6	4.6
WH	LIVE	CUT	8	ALL	10.3	61	81	4,407	4,258	3.4	58.2	33.7	10.5	110.7
WH	LIVE	LEA	6	ALL	13.4	66	83	2,754	2,661	3.4	21.5	21.1	5.8	69.2
ALL	LIVE	LEA	36	ALL	16.0	81	103	17,460	16,999	2.6	93.5	130.5	32.5	442.0
ALL	LIVE	CUT	27	ALL	11.4	64	88	13,325	12,871	3.4	139.2	98.9	29.2	334.6
ALL	ALL	ALL	63	ALL	13.4	71	94	30,785	29,869	3.0	232.7	229.5	61.7	776.6

Cruise Unit Report Unit 10

Unit Sale Notice Volume (MBF): Unit 10

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	15.4			83	27	44	11
RA	11.0			3			3
ALL	14.9			85	27	44	13

Unit Cruise Design: Unit 10

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	6.0		6	6	0

Unit Cruise Summary: Unit 10

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH		4	0.7	0
DF	14	29	4.8	0
RA	1	2	0.3	0
ALL	15	35	5.8	0

Unit Cruise Statistics: Unit 10

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	26.7	122.5	50.0						
DF	193.3	30.5	12.4	147.4	13.7	3.7	28,505	33.4	13.0
RA	13.3	244.9	100.0	63.6	0.0	0.0	849	244.9	100.0
ALL	233.3	22.8	9.3	142.0	20.5	5.3	33,141	30.6	10.7

Unit Summary: Unit 10

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	14	ALL	15.4	83	109	13,989	13,761	1.6	72.2	93.3	23.8	82.6
DF	LIVE	LEA	15	ALL	17.9	90	111	14,988	14,744	1.6	57.2	100.0	23.6	88.5
RA	LIVE	CUT	1	ALL	11.0	40	57	424	424	0.0	10.1	6.7	2.0	2.5

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	LEA	1	ALL	14.0	50	62	424	424	0.0	6.2	6.7	1.8	2.5
WH	LIVE	LEA	4	ALL	18.6	81	96				14.1	26.7	6.2	
ALL	LIVE	LEA	20	ALL	17.8	85	104	15,412	15,168	1.6	77.5	133.3	31.6	91.0
ALL	LIVE	CUT	15	ALL	14.9	78	103	14,413	14,185	1.6	82.3	100.0	25.8	85.1
ALL	ALL	ALL	35	ALL	16.4	82	104	29,825	29,354	1.6	159.8	233.3	57.4	176.1

Cruise Unit Report Unit 11

Unit Sale Notice Volume (MBF): Unit 11

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
DF	10.7			467	13	230	224
WH	10.3			88		42	45
RA	12.3			12			12
SF	8.0			4			4
ALL	10.6			571	13	272	286

Unit Cruise Design: Unit 11

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	59.0		40	20	0

Unit Cruise Summary: Unit 11

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC		1	0.0	0
DF	39	202	5.1	0
WH	6	29	0.7	0
RA	3	3	0.1	0
SF	1	1	0.0	0
ALL	49	236	5.9	0

Unit Cruise Statistics: Unit 11

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RC	1.0	632.5	100.0						
DF	202.0	33.8	5.4	92.1	30.1	4.8	18,599	45.3	7.2
WH	29.0	184.8	29.2	92.7	26.8	10.9	2,689	186.7	31.2
RA	3.0	466.5	73.8	69.8	18.7	10.8	209	466.9	74.6
SF	1.0	632.5	100.0	74.5	0.0	0.0	74	632.5	100.0
ALL	236.0	22.6	3.6	91.8	29.1	4.2	21,663	36.9	5.5

Unit Summary: Unit 11

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	39	ALL	11.1	53	65	8,052	7,919	1.7	128.0	86.0	25.8	467.2
DF	LIVE	LEA	54	ALL	16.5	74	93	10,861	10,681	1.7	78.1	116.0	28.6	630.2
RA	LIVE	CUT	3	ALL	12.3	53	64	213	209	1.8	3.6	3.0	0.9	12.3
RC	LIVE	LEA	1	ALL	22.0	65	82				0.4	1.0	0.2	
SF	LIVE	CUT	1	ALL	8.0	40	48	74	74	0.0	2.9	1.0	0.4	4.4
WH	LIVE	CUT	6	ALL	11.1	55	59	1,483	1,483	0.0	23.8	16.0	4.8	87.5
WH	LIVE	LEA	9	ALL	15.2	71	89	1,205	1,205	0.0	10.3	13.0	3.3	71.1
ALL	LIVE	LEA	64	ALL	16.4	74	92	12,067	11,886	1.5	88.8	130.0	32.1	701.3
ALL	LIVE	CUT	49	ALL	11.1	53	64	9,823	9,686	1.4	158.3	106.0	31.8	571.5
ALL	ALL	ALL	113	ALL	13.2	61	74	21,890	21,572	1.5	247.1	236.0	63.9	1,272.7

Cruise Unit Report Units 12-14

Unit Sale Notice Volume (MBF): Units 12-14

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	12.5			60	7	37	17	
RA	11.8			13		3	10	
WH	10.6			11		3	8	0
ALL	11.9			85	7	43	35	0

Unit Cruise Design: Units 12-14

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	16.3		17	17	0

Unit Cruise Summary: Units 12-14

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	17	57	3.4	0
WH	6	23	1.4	0
RA	4	13	0.8	0
ALL	27	93	5.5	0

Unit Cruise Statistics: Units 12-14

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	112.7	85.0	20.6	110.6	24.6	6.0	12,463	88.5	21.5
WH	45.5	127.9	31.0	59.0	38.0	15.5	2,681	133.4	34.7
RA	25.7	224.3	54.4	100.7	32.6	16.3	2,587	226.6	56.8
ALL	183.9	36.1	8.7	96.4	34.9	6.7	17,730	50.2	11.0

Unit Summary: Units 12-14

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	17	ALL	12.5	55	82	3,738	3,717	0.6	39.4	33.6	9.5	60.4
DF	LIVE	LEA	40	ALL	16.5	67	83	8,795	8,746	0.6	53.3	79.1	19.5	142.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RA	LIVE	CUT	4	ALL	11.8	48	64	796	796	0.0	10.4	7.9	2.3	12.9
RA	LIVE	LEA	9	ALL	12.3	41	53	1,791	1,791	0.0	21.6	17.8	5.1	29.1
WH	LIVE	CUT	6	ALL	10.6	31	42	784	699	10.8	19.4	11.9	3.6	11.4
WH	LIVE	LEA	17	ALL	11.5	41	57	2,222	1,981	10.8	46.6	33.6	9.9	32.2
ALL	LIVE	CUT	27	ALL	11.9	47	68	5,318	5,212	2.0	69.2	53.4	15.5	84.7
ALL	LIVE	LEA	66	ALL	14.0	52	68	12,808	12,518	2.3	121.5	130.5	34.5	203.4
ALL	ALL	ALL	93	ALL	13.3	50	68	18,126	17,730	2.2	190.7	183.9	49.9	288.1

Cruise Unit Report Units 15-17

Unit Sale Notice Volume (MBF): Units 15-17

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
DF	15.5			186	74	83	28	1
WH	14.1			53	11	34	9	
RA	9.7			10			10	
MA	13.0			3			3	
ALL	14.5			253	85	117	50	1

Unit Cruise Design: Units 15-17

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (33.61) Measure All, Sighting Ht = 4.5 ft	15.0		15	15	1

Unit Cruise Summary: Units 15-17

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
NF		1	0.1	0
RC		1	0.1	0
DF	46	54	3.6	0
WH	15	15	1.0	0
RA	4	4	0.3	0
MA	2	2	0.1	0
ALL	67	77	5.1	0

Unit Cruise Statistics: Units 15-17

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 (%)
NF	2.2	387.3	100.0						
RC	2.2	387.3	100.0						
DF	121.0	54.4	14.0	120.4	21.2	3.1	14,563	58.3	14.4
WH	33.6	106.9	27.6	106.0	21.6	5.6	3,563	109.1	28.2
RA	9.0	299.6	77.3	76.5	22.1	11.1	686	300.4	78.1
MA	4.5	387.3	100.0	48.8	6.3	4.4	219	387.3	100.1
ALL	172.5	36.0	9.3	113.2	25.3	3.1	19,539	44.0	9.8

Unit Summary: Units 15-17

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	46	ALL	15.5	66	89	12,656	12,406	2.0	78.7	103.1	26.2	186.1
DF	LIVE	LEA	7	ALL	22.5	92	108	2,201	2,158	2.0	6.5	17.9	3.8	32.4
MA	LIVE	CUT	2	ALL	13.0	40	51	221	219	1.1	4.9	4.5	1.2	3.3
NF	LIVE	LEA	1	ALL	20.0	77	91				1.0	2.2	0.5	
RA	LIVE	CUT	4	ALL	9.7	38	57	686	686	0.0	17.5	9.0	2.9	10.3
RC	LIVE	LEA	1	ALL	15.0	65	84				1.8	2.2	0.6	
WH	LIVE	CUT	15	ALL	14.1	57	73	3,563	3,563	0.0	31.0	33.6	9.0	53.5
ALL	LIVE	CUT	67	ALL	14.4	59	79	17,127	16,874	1.5	132.1	150.1	39.3	253.1
ALL	LIVE	LEA	9	ALL	21.0	85	101	2,201	2,158	2.0	9.3	22.4	4.9	32.4
ALL	ALL	ALL	76	ALL	15.0	61	81	19,328	19,031	1.5	141.4	172.5	44.1	285.5