



GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

**SALE NAME:** *Rockwood*

**AGREEMENT NO:** *36-105001*

**AUCTION:** July 26th, 2023 starting at 10:00 a.m.,  
Northwest Region Office, Sedro Wooley, WA

**COUNTY:** King County

**SALE LOCATION:** Sale located approximately 10 miles East of North Bend. Elevation range: 1200'- 3600'

**PRODUCTS SOLD  
AND SALE AREA:**

Unit 1: All timber described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging and the existing road FS-9020000. Opening is bounded by blue special management tags and pink flagging.

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

Unit 3: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, pink flagging, and the existing road FS-9020000.

Unit 4: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging and existing road FS-9020000.

Unit 5: All timber described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging and the existing roads FS-9021000 and FS-9021110. Opening is bounded by blue special management tags and pink flagging.

Unit 6: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

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

Unit 8: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, pink flagging and the existing road FS-9020000.

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

Unit 10: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

Unit 11: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging, except for 'leave trees' painted with white bands or a 'W,' indicating wildlife trees.

Unit 12: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, pink flagging and the road FS-5500000.

The above described products, located on approximately 82 acres on part(s) of Sections 7, 8, 17 and 18 in Township 22 Range 10 East, Sections 1, 2 and 12 in Township 22 Range 09 East, and Sections 34 and 35 in Township 23 Range 09 East in King County as shown on the attached timber sale map and as designated on the sale area.



GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	DBH	Total MBF	Price \$/MBF	SM	2 Saw	3 Saw	4 Saw	Utility
Douglas-fir	18.0	525	\$207.00	21	262	190	46	6
Hemlock	14.8	1,725	\$79.75		479	967	256	23
Silver Fir	16.6	81	\$79.75		22	43	9	7
Noble Fir	15.2	31	\$79.75		3	23	5	
Cedar	12.8	64	\$1,024.00			39	25	
Alder	11.1	37	\$35.00			6	30	1
<b>Sale Total</b>		<b>2,463</b>		21	766	1,266	371	37

**MINIMUM BID:** **Combined:** Hemlock, Silver Fir, and Noble Fir **\$79.75/MBF**  
(Est. total value \$322,000.00)

**BID METHOD:** Sealed Bids

**PERFORMANCE**

**SECURITY:** \$100,000.00 **SALE TYPE:** MBF Scale

**EXPIRATION DATE:** October 31, 2024 **ALLOCATION:** Export Restricted

**BIDDABLE SPECIES:** Hemlock

**BID DEPOSIT:** \$32,200.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

**HARVEST METHOD:** Ground-based harvest system. All units shall utilize a feller-buncher and skidder harvest system, unless authorized in writing by the Contract Administrator. Falling and yarding will not be permitted from October 16 to May 31 unless authorized in writing by the Contract Administrator.

**ROADS:** 35+39 stations temporary construction, 66+25 stations reconstruction, 427+35 stations pre-haul maintenance, 445+89 stations post-haul maintenance, 74+82 stations road closure, and 48+99 stations decommissioning. All road work and hauling of forest products will not be permitted from October 16<sup>th</sup> to May 31<sup>st</sup> unless authorized in writing by the Contract Administrator.

**ACREAGE DETERMINATION**

**CRUISE METHOD:** *Acres determined by GPS traverse. 82 harvestable acres, 39.8 acres of variable density thinning and 42.2 acres of gaps. Cruised using variable plot sample method. Expansion factors of 40, 46.94, 54.44 used in all units, see cruise. Sighting height was 4.5 feet. A total of 89 plots were taken. See cruise narrative for further details.*

Shapefiles or georeferenced maps are available upon request.



## GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

---

**SPECIAL REMARKS:** Timber harvest units shall have harvest activity fuels removed or piled within 200 feet of roadsides bounding units or 100 feet on either side of roads running through harvest units.

Timber harvest activity fuels shall be removed or piled for burning within 200 feet of any utility corridor. Piles shall be located a sufficient distance from utility lines to limit arcing from overhead lines to the ground in smoke or eliminate heat damage to buried lines.

Piles are required to have polyethylene plastic film 0.006 inch (6mil) minimum thickness covering no less than 30 percent of the surface area of each slash pile to maintain dryness of slash. Slash shall be placed on top of cover material to hold it in place. Covering slash shall be concurrent with slash piling.

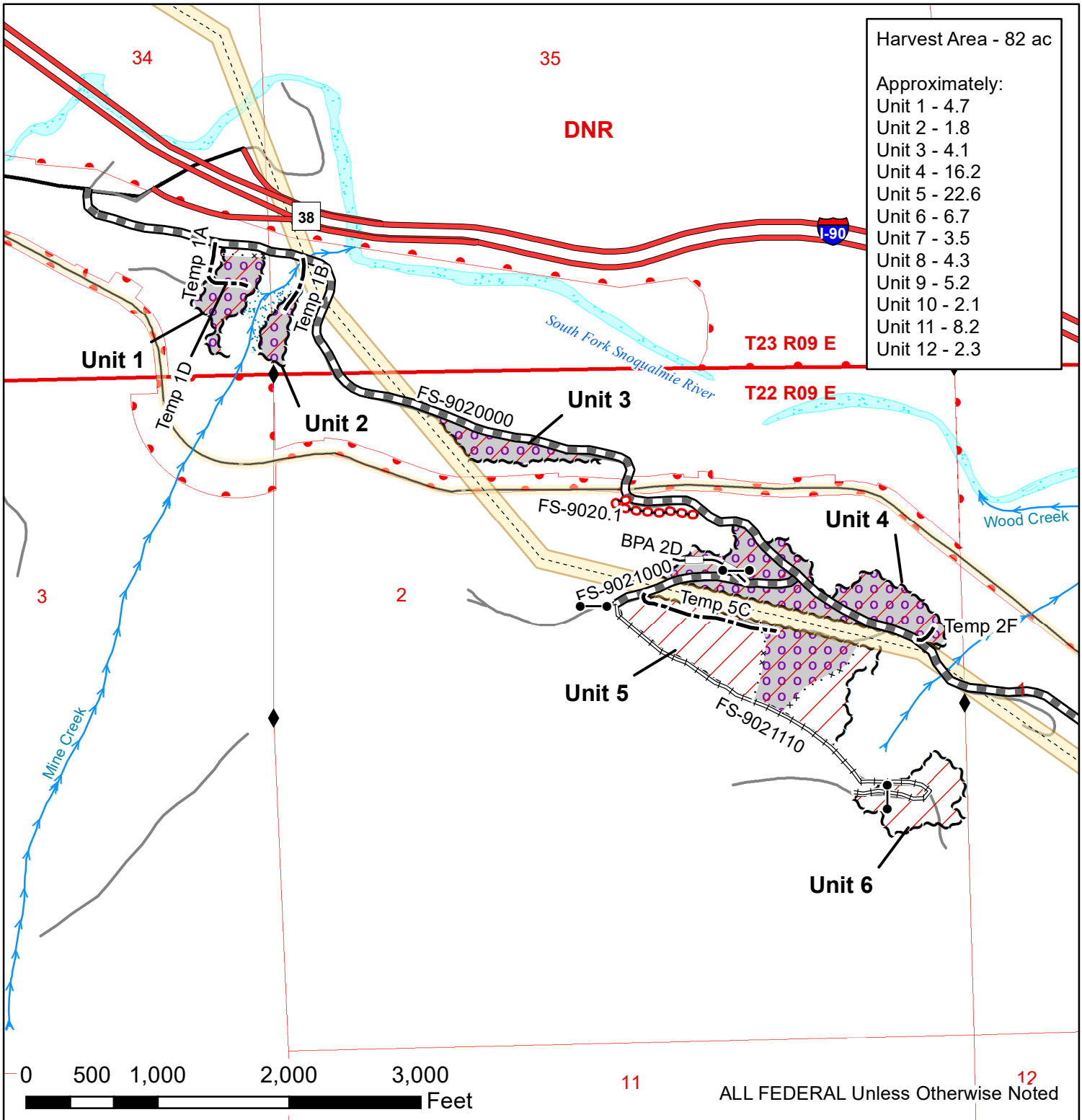
The hauling of forest products will not be permitted from October 15 to May 31 and fords along the 5500000 Rd. may only be used for log haul when fords are dry unless authorized in writing by the State.

Logging operations and haul associated with Units 11 and 12 shall not be permitted between the hours of 9pm and 8am.

# GOOD NEIGHBOR AUTHORITY TIMBER SALE UNIT MAP

SALE NAME: Rockwood  
 AGREEMENT #: 36-105001  
 TOWNSHIP(S): T22R09E, T23R09E

NATIONAL FOREST: Mount Baker-Snoqualmie  
 COUNTY: King County  
 ELEVATION RGE: 1360' - 1600'



Harvest Area - 82 ac
Approximately:
Unit 1 - 4.7
Unit 2 - 1.8
Unit 3 - 4.1
Unit 4 - 16.2
Unit 5 - 22.6
Unit 6 - 6.7
Unit 7 - 3.5
Unit 8 - 4.3
Unit 9 - 5.2
Unit 10 - 2.1
Unit 11 - 8.2
Unit 12 - 2.3

## Legend

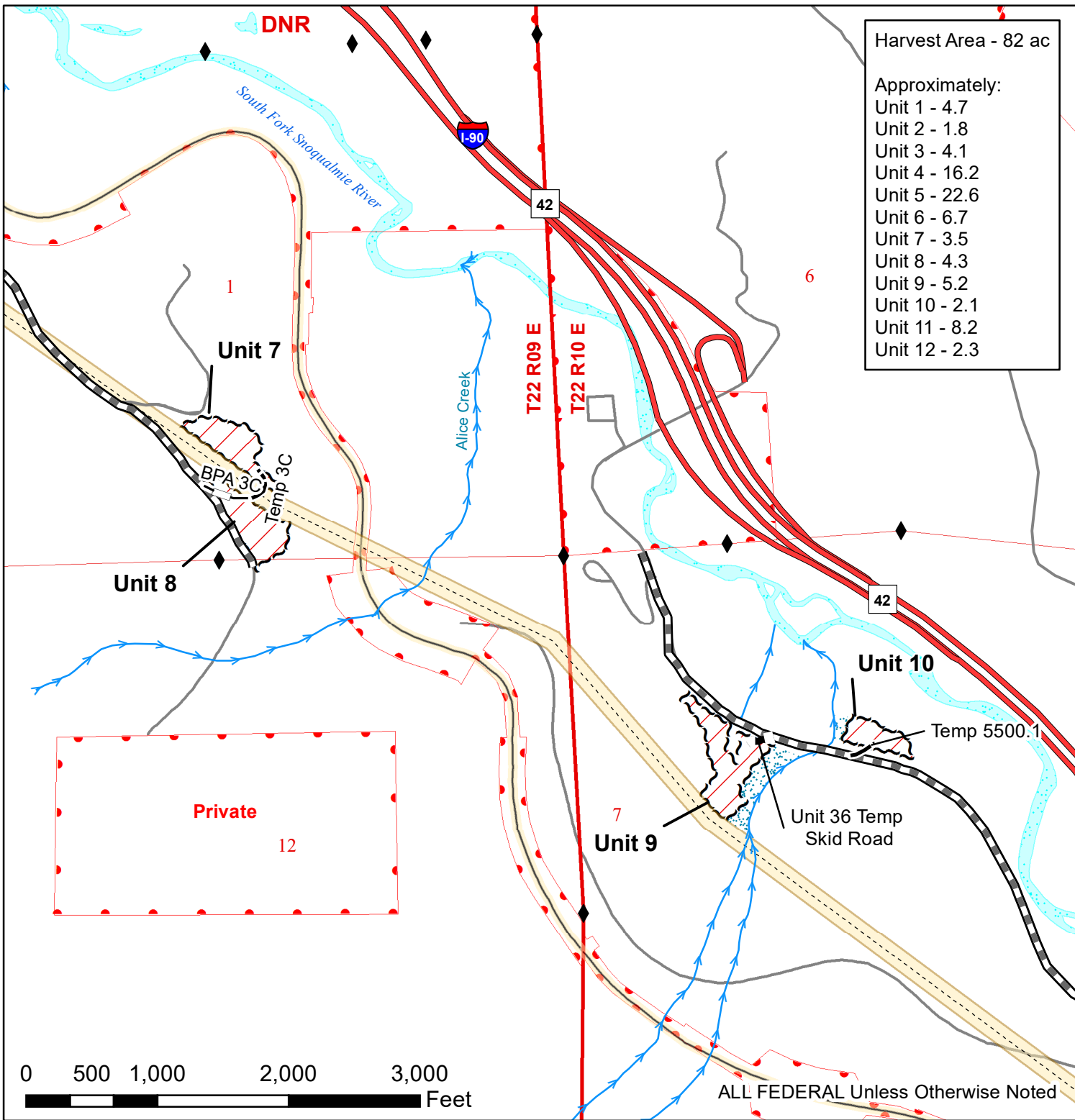
- |                       |                               |                   |
|-----------------------|-------------------------------|-------------------|
| Sale Boundary Tags    | Optional Temp Construction    | US Forest Service |
| Special Mgmt Tags     | Optional Temp Reconstruction  | Township Line     |
| Sale Area             | Optional Skid Road            | Section Line      |
| Opening with Reserves | Required Decommission         | John Wayne Trail  |
| Streams               | Required Pre-Haul Maintenance | Transmission Line |
| Riparian Area         | Required Reconstruction       | Survey Monuments  |
| Wildlife Tree         | Interstate                    |                   |



**GOOD NEIGHBOR AUTHORITY TIMBER SALE UNIT MAP**

**SALE NAME:** Rockwood  
**AGREEMENT #:** 36-105001  
**TOWNSHIP(S):** T22R09E, T22R10E

**NATIONAL FOREST:** Mount Baker-Snoqualmie  
**COUNTY:** King County  
**ELEVATION RGE:** 1360' - 1600'



Harvest Area - 82 ac

Approximately:

- Unit 1 - 4.7
- Unit 2 - 1.8
- Unit 3 - 4.1
- Unit 4 - 16.2
- Unit 5 - 22.6
- Unit 6 - 6.7
- Unit 7 - 3.5
- Unit 8 - 4.3
- Unit 9 - 5.2
- Unit 10 - 2.1
- Unit 11 - 8.2
- Unit 12 - 2.3

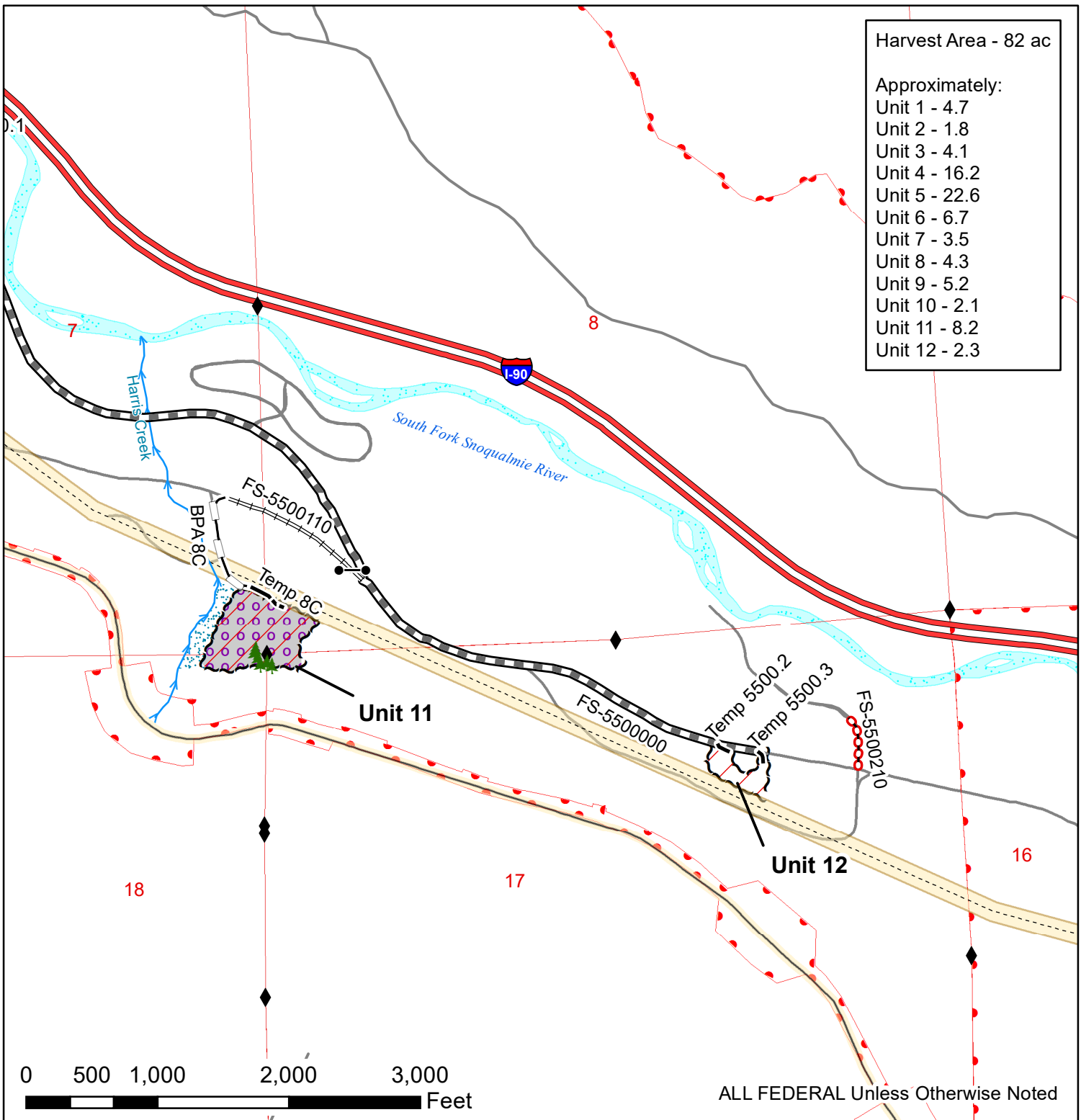
**Legend**

- |  |                       |  |                               |  |                   |
|--|-----------------------|--|-------------------------------|--|-------------------|
|  | Sale Boundary Tags    |  | Optional Temp Construction    |  | US Forest Service |
|  | Special Mgmt Tags     |  | Optional Temp Reconstruction  |  | Township Line     |
|  | Sale Area             |  | Optional Skid Road            |  | Section Line      |
|  | Opening with Reserves |  | Required Decommission         |  | John Wayne Trail  |
|  | Streams               |  | Required Pre-Haul Maintenance |  | Transmission Line |
|  | Riparian Area         |  | Required Reconstruction       |  | Survey Monuments  |
|  | Wildlife Tree         |  | Interstate                    |  |                   |

**GOOD NEIGHBOR AUTHORITY TIMBER SALE UNIT MAP**

**SALE NAME:** Rockwood  
**AGREEMENT #:** 36-105001  
**TOWNSHIP(S):** T22R10E

**NATIONAL FOREST:** Mount Baker-Snoqualmie  
**COUNTY:** King County  
**ELEVATION RGE:** 1360' - 1600'



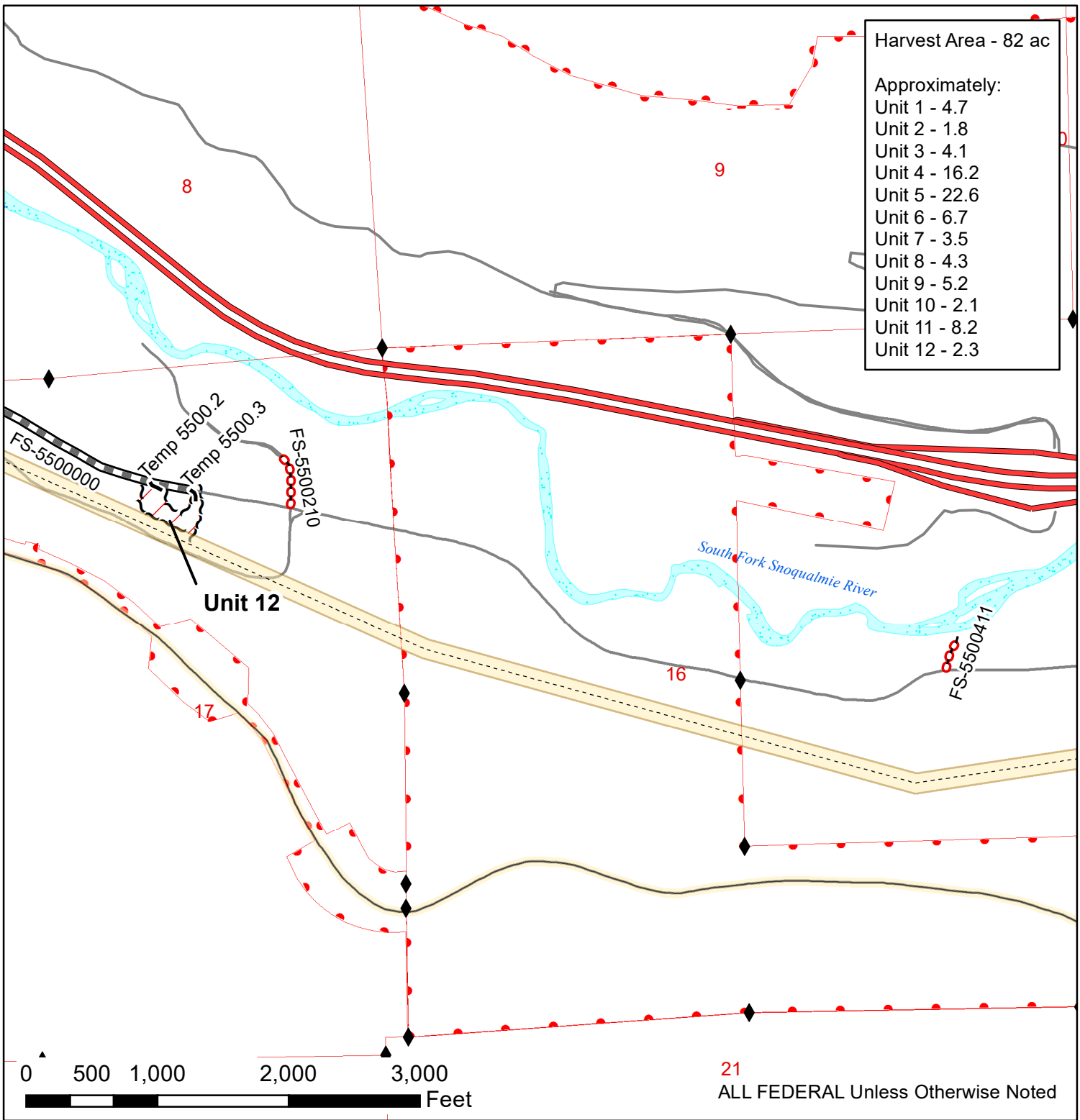
**Legend**

Sale Boundary Tags	Optional Temp Construction	US Forest Service
Special Mgmt Tags	Optional Temp Reconstruction	Township Line
Sale Area	Optional Skid Road	Section Line
Opening with Reserves	Required Decommission	John Wayne Trail
Streams	Required Pre-Haul Maintenance	Transmission Line
Riparian Area	Required Reconstruction	Survey Monuments
Wildlife Tree	Interstate	

**GOOD NEIGHBOR AUTHORITY TIMBER SALE UNIT MAP**

**SALE NAME:** Rockwood  
**AGREEMENT #:** 36-105001  
**TOWNSHIP(S):** T22R10E

**NATIONAL FOREST:** Mount Baker-Snoqualmie  
**COUNTY:** King County  
**ELEVATION RGE:** 1360' - 1600'



**Legend**

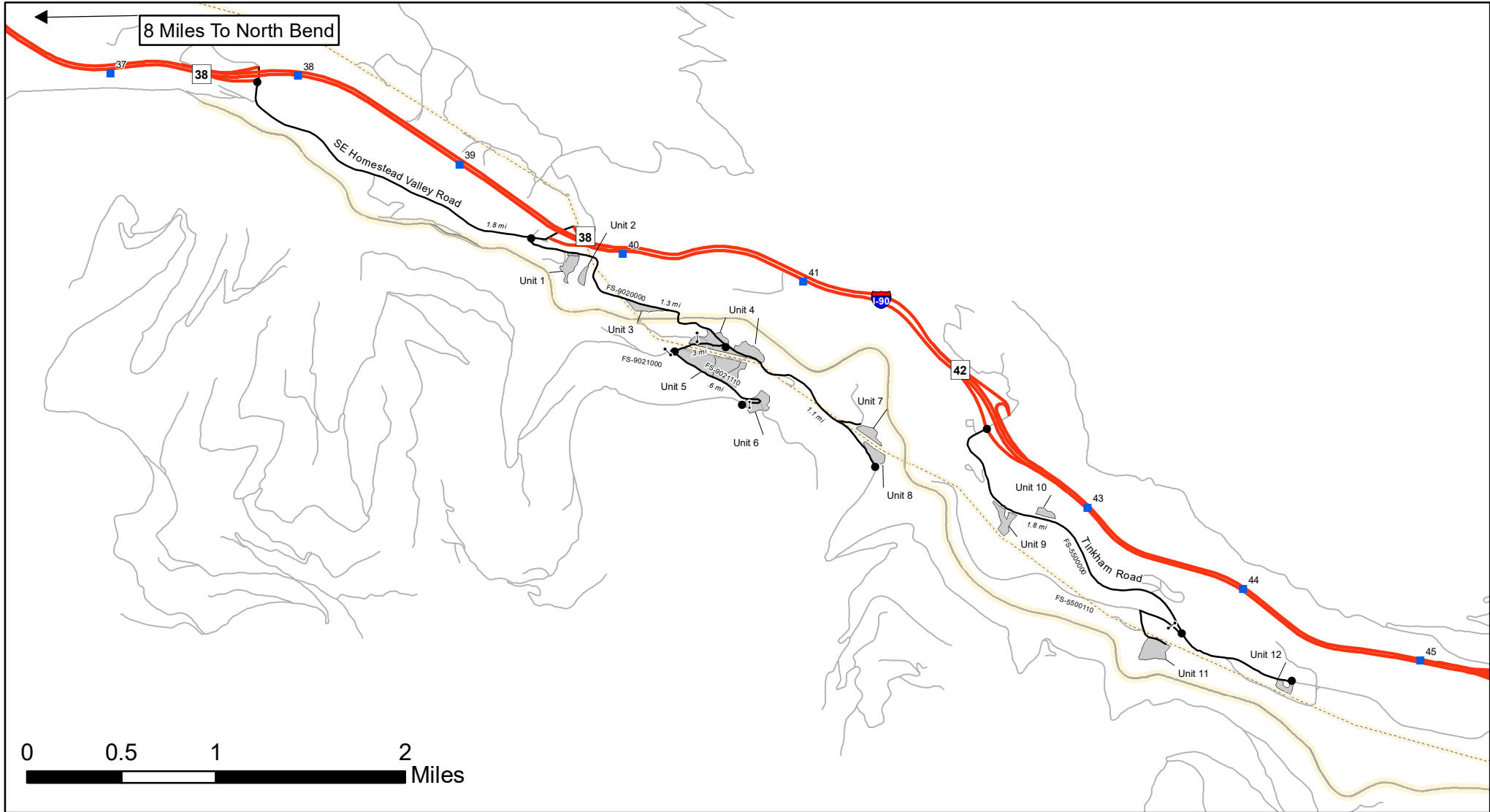
Sale Boundary Tags	Optional Temp Construction	US Forest Service
Special Mgmt Tags	Optional Temp Reconstruction	Township Line
Sale Area	Optional Skid Road	Section Line
Opening with Reserves	Required Decommission	John Wayne Trail
Streams	Required Pre-Haul Maintenance	Transmission Line
Riparian Area	Required Reconstruction	Survey Monuments
Wildlife Tree	Interstate	



# GOOD NEIGHBOR AUTHORITY DRIVING MAP

SALE NAME: Rockwood  
 AGREEMENT #: 36-105001  
 TOWNSHIP(S): T22R10E, T22R09E, T23R09E

NATIONAL FOREST: Mount Baker-Snoqualmie  
 COUNTY: King County  
 ELEVATION RGE: 1200 - 3600



## Directions:

From North Bend, take I-90 east.

For Units 1-8 - Continue for 8 miles, take exit 38 to SE Homestead Valley Rd and turn right. Continue for 1.8 miles. The road will become FS - 90200000. Units 1, 2, 3 and 4 are within the first 1.4 miles. To access units 7 and 8, continue for another 1 mile. To access units 5 and 6, turn right onto FS - 9021110 and continue for .8 miles.

For units 9 - 12 - Continue on I-90 for an additional 4 miles to Tinkham Road, exit 42. Turn right onto Tinkham and continue along FS - 5500000. Units 9 and 10 will be within the first .8 mi. To access unit 11, continue 1.8 mi and turn right on FS - 5500110. To access unit 12, continue an additional .66 mi on Tinkham Rd / FS - 5500000.



Sale Area



BPA Corridors



John Wayne Pioneer Trail



Gates

Highways

Haul Route

Other Roads

Mile Markers

Turnpoint



**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted MBF Scale AGREEMENT NO. 36-105001**

**SALE NAME: ROCKWOOD**

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

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

**SECTION G: GENERAL TERMS**

**G-001 Definitions**

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

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

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

### **G-010 Products Sold and Sale Area**

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

Unit 1: All timber described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging and the existing road FS-9020000. Opening is bounded by blue special management tags and pink flagging.

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

Unit 3: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, pink flagging, and the existing road FS-9020000.

Unit 4: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging and existing road FS-9020000.

Unit 5: All timber described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging and the existing roads FS-9021000 and FS-9021110. Opening is bounded by blue special management tags and pink flagging.

Unit 6: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

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

Unit 8: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, pink flagging and the existing road FS-9020000.

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

Unit 10: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging.

Unit 11: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and pink flagging , except for ‘leave trees’ painted with white bands or a ‘W,’ indicating wildlife trees.

Unit 12: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, pink flagging and the road FS-5500000.

The above described products, located on approximately 82 acres on part(s) of Sections 7, 8, 17 and 18 in Township 22 Range 10 East, Sections 1, 2 and 12 in Township 22 Range 09 East, and Sections 34 and 35 in Township 23 Range 09 East in King County as shown on the attached timber sale map and as designated on the sale area.

Forest products purchased under a contract that is designated as export restricted shall not be exported until processed.

**G-020 Inspection By Purchaser**

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

**G-025 Schedules**

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	Unit Name Crosswalk
B	Thinning Prescription

**G-030 Contract Term**

Unless terminated earlier as authorized under the Contract, Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to October 31, 2024, 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 \$3.00 per acre per annum for the acres on which an operating release has not been issued.
- f. In no event will the extension charge be less than \$500.00.
- g. Extension payments are non-refundable.

#### **G-051 Contract Term Extension – Market Related Conditions**

The term of this contract may be adjusted when a drastic reduction in wood product prices has occurred in accordance with 36 CFR 223.52 as determined by the U.S. Forest Service, and the Purchaser makes a written request for additional time to perform the Contract. The Producer Price Index used to determine when a drastic reduction in price has occurred shall be the Softwood Lumber Commodity Index Series (Index Code 0811) as set forth in 36 CFR 223.52(b)(i). If the drastic reduction criteria specified in 36 CFR 223.52 are met for two consecutive calendar quarters, after Contract award date, the Contract Administrator will add one year to the Contract term upon Purchaser's written request. For each additional consecutive quarter such a drastic reduction occurs, the Contract Administrator will, upon written request, add an additional three months to the term during the operating season, except that no single three month addition shall extend the term of the Contract by more than one year. For each additional consecutive quarter such a drastic reduction occurs, the Contract Administrator will, upon written request, add an additional three months to the term during the operating season. The total amount of contract term addition is limited to the lesser of twice the length of the original Contract or three years. The Contract Administrator must receive Purchaser's written request for a market-related contract term addition before the expiration of this contract. Additional contract time may not be granted for those portions of the contract: (i) with a required completion date; where the U.S. Forest Service determines that the timber is in need of urgent removal; where timber deterioration or resource damage may result from delay; or (iv) where the timber is designated by diameter and delay may change the treatment as a result of trees growing into or out of the specified diameter ranges(s).

#### **G-060 Exclusion of Warranties**

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

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

#### **G-064 Permits**

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

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

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

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

#### **G-066.1 Termination Due to Catastrophic Damage**

The Contract may be terminated by the State, in whole or in part, or the Purchaser may request in writing that the Contract be terminated in whole or in part, if the value of timber remaining to be cut is diminished materially because of catastrophic damage caused by forces beyond the control of the Purchaser. Catastrophic damage is defined as a major change or damage to timber on the sale area, or access to the sale area, or a combination thereof: (a) caused by forces beyond the control of Purchaser, occurring within a 12 month period, including, but not limited to, wind, flood, earthquake, landslide, fire, forest pest epidemic (except as provided below), or other major natural phenomenon; and (b) affecting the value of any trees or products authorized for sale under the Contract estimated to total (i) either more than half of the estimated timber volume stated in Notice of Sale; or (ii) more than 1.2 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 Purchasers' 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 Purchasers' or any subcontractors' performance or failure to perform the Contract. Purchasers' 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-152 Pollution Legal Liability**

Pollution Legal Liability (or Contractor's Pollution Liability). Purchaser and/or contractor(s) shall at its cost and expense, buy and maintain insurance of the types and amounts listed below for coverage of pollution legal liability, including investigation and defense costs, for bodily injury and property damage, including loss of use of damaged property or of property that has been physically damaged or destroyed. Failure to buy and maintain the required insurance may result in a breach and/or termination of the contract at State's option. State may suspend Purchaser operations until required insurance has been secured. Insurance coverage shall be obtained by the Purchaser and/or contractor(s) prior to operations commencing and continually maintained in full force until all contract obligations have been satisfied or an operating release is signed by the State.

Such coverage must provide coverage for both on-site and off-site cleanup costs and cover gradual and sudden pollution, and includes in its scope of coverage, natural

resource damage claims. The U.S. Forest Service, State of Washington, Department of Natural Resources, its elected and appointed officials, agents and employees shall be named as additional insured. Coverage shall be maintained in an amount of at least:

1. \$1,000,000 each occurrence for contractor's operations at the site(s) identified above, and
2. If the policy contains a general aggregate limit or policy limit, it shall be at least \$5,000,000.

Such insurance may be provided on an occurrence or claims-made basis. If such coverage is obtained as an endorsement to the CGL and is provided on a claims-made basis, the following additional conditions must be met:

- a. The Insurance Certificate must state that the insurer is covering hazardous substance removal.
- b. The policy must contain no retroactive date, or the retroactive date must precede abatement services.
- c. Coverage must be continuously maintained with the same insurance carrier throughout the entire term of the Contract.
- d. The extended reporting period (tail) must be purchased to cover a minimum of 36 months beyond completion of work.

#### **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**  
Attn: Annette Mesman  
Northwest Region  
912 N Township Street  
Sedro Wooley, 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), Mount Baker Snoqualmie National Forest, Hansen Creek Vegetation Project EA, including all applicable Mitigation Measures and Design Features in the DN Appendix A, 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 US 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 and roads for which the State has acquired easements and road use permits; FS-9020000, FS-9021000, FS-9021110, FS-5500000, FS-5500110, FS-5500210, FS-5500411,

FS-9020.1, BPA 3C, BPA 8C, BPA 2D, Temp 1B, Temp 1A, Temp 1D, Temp 2F, Temp 3C, Temp 5C, Temp 8C, Unit 36 Temp Skid Road, Temp 5500.1, Temp 5500.2, and Temp 5500.3. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

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

### **G-320 Erosion Control**

Reference Road Plan for revegetation measures.

To reduce soil damage for logging operations, the Contract Administrator may require water bars to be constructed, 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.

### **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 FS-5500000 unless authority is granted in writing by the Contract Administrator.

**G-396 County Hauling Permit**

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

**G-430 Open Fires**

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

**SECTION P: PAYMENTS AND SECURITIES**

**P-010 Initial Deposit and Periodic Payment Schedule**

Purchaser paid [TDB] 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.



Item	Contract Bid Price	Fees	Contract Payment Rate
Douglas fir	-	\$0.00	-
Hemlock	-	\$0.00	-
Silver fir	-	\$0.00	-
Red alder	-	\$0.00	-

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 Health and Resiliency Division in Olympia, WA on or before the date shown on the billing statement.

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

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

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

**P-080 Payment Account Refund**

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

**P-090 Performance Security**

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

**P-100 Performance Security Reduction**

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

## **SECTION L: LOG DEFINITIONS AND ACCOUNTABILITY**

### **L-010 Forest Products Conveyed**

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

### **L-020 Short Logs - Peeler Blocks**

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

### **L-040 Utility Logs**

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

### **L-060 Load Tickets**

Purchaser shall complete and use load tickets as directed by the Contract Administrator and, if required, use other identification as directed by the State to ensure accounting of forest products removed from the sale area. A load ticket must be fixed, as designated by the Contract Administrator, to each truck and trailer load prior to leaving the landing.

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

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

### **L-070 Purchaser to Furnish Log Scale Information**

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

### **L-071 Log and Load Reporting Service**

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

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

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

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

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

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

Forest Product measurement and weighing facilities required by this Contract must be approved by the State. Forest products sold under the Contract which require log scaling shall be scaled, measured, or counted by a State approved third party log scaling organization.

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

### **L-120 Long Log Taper Distribution**

Forest products over 40 feet long plus trim shall be segment scaled and the lower segment diameters shall be determined using actual taper. In order to utilize taper rules for determining segment diameters for poles and pilings greater than 40 feet in length plus trim, Purchaser must request use of a Pole and Piling Scaling Specification

Agreement on file in the region office. Approval for usage of a special Pole and Piling Scaling Specification Agreement may be granted at the sole discretion of the State.

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

### **L-130 Conversion Factors**

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

## **SECTION H: HARVESTING OPERATIONS**

### **H-001 Operations outside the Sale Boundaries**

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

### **H-010 Cutting and Yarding Schedule**

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

### **H-011 Certification of Fallers and Yarder Operators**

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

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

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

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

### **H-012 Leave Tree Damage Definition**

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

Leave tree damage exists when more than 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 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 the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a leave tree has been cut or damaged, the 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. A skid trail will not exceed 15 feet in width, including rub trees.
- 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. Wherever possible, skid trails will be located a minimum of 25 feet away from riparian no-cut buffers.
- d. If it is necessary for equipment to travel away from approved corridors or temporary roads, the machines will operate on a slash mat of limbs and tops that is deposited directly in front of the machine. This mat will be as thick and continuous as practicable. Activities will be planned to make as few trips as possible.
- e. 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.
- f. Skid trails should 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.

- g. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- h. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- i. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- j. Purchaser will not have more than two skid trails open to active skidding at any one time. All other skid trails used for skidding timber will be closed.
- k. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- l. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.
- m. Heavily impacted skid trails, including those subjected to multiple passes of heavy equipment, those lacking sufficient slash cover, and/or those running parallel to stream courses, will be decompacted to a depth of at least 12 inches and logging slash will be placed across the decompacted surface.

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 as measured from the natural ground line, or when ground conditions are unfavorable.

To reduce soil damage, the Contract Administrator may require water bars to be constructed, weed-free certified grass seed 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-060 Skid Trail Locations**

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

Skid trails will generally be no closer than 100 feet apart, center-to-center, and be only as wide as necessary for the equipment to travel (No more than 15 feet). Wherever possible, skid trails will be located a minimum of 25 feet away from riparian no-cut buffers. Erosion control devices such as waterbars and/or slash will be used as necessary on sloped skid roads.



**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. Stump height shall not exceed 12 inches in height measured on the uphill side, or 2 inches above the root collar, whichever is higher.

**H-120 Harvesting Equipment**

Forest products sold under this contract shall be felled by hand or mechanical means and yarded by ground-based equipment. Ground-based yarding shall not occur on slopes exceeding 35% and mechanical felling activities shall not occur on slopes exceeding 50%. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

**H-125 Log Suspension Requirements**

Lead-end suspension is required for all yarding activities.

**H-131 Hauling Schedule**

The hauling of forest products will not be permitted from October 15 to May 31 and fords along the 5500000 Rd. may only be used for log haul when fords are dry unless authorized in writing by the State.

**H-140 Special Harvest Requirements**

Purchaser shall accomplish the following during the harvest operations:

1. Fall and yard away from all waters when possible.
2. A copy of the timber sale prospectus map and contract shall be present onsite during active operations.
3. Purchaser shall accommodate tours of the project area, a minimum of 10 business days throughout the term of the contract. Tour dates shall be agreed upon by the Purchaser and the Contract Administrator at least one week in advance.
4. Tail holds outside the unit boundaries shall be approved by the Contract Administrator.

5. Timber in the ground-based yarding corridor must be felled and yarded prior to the falling of adjacent timber.
6. Timber must be removed from the site and scaled within 30 days of felling operations. Tops and limbs shall be redistributed in the unit to the satisfaction of the Contract Administrator.
7. Maintain legacy features wherever practical and safe, including remnant trees, snags, and large down woody debris.
8. Heavy equipment shall operate over slash whenever possible to minimize soil compaction and soil disturbance.
9. Immediately following their use, temporary roads, spur roads and landings must be rehabilitated by decompacting the road surface to a depth of 18 inches or greater. Equipment shall not travel across the decompacted surface. Native grass seed and mulch composed of certified weed free straw or onsite forest debris shall be applied to the disturbed ground.
10. Certified weed free straw bale catchments or silt fences 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 must 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. Catchments and captured sediment shall be removed following one wet season after logging.
11. 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.
12. Trees felled in the vicinity of Riparian Reserves 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. Mechanical harvesters, when traveling away from approved skid trails or roads, must operate on a slash mat of limbs and tops as thick and continuous as practical. Activity would be planned to make as few trips as possible. 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.
14. Areas of gouging or soil displacement resulting from logging systems shall be treated to prevent rill and gully erosion and potential sediment delivery to stream courses. Off-road trails used for equipment fueling and servicing will be rehabilitated post use by moving the soil back to the natural contour of the hillslope (re-contour) and placing slash or vegetation on exposed mineral soils.

Steep slopes will not be decompacted to prevent further soil disturbance. Erosion control treatment may include, but is not limited to, repositioning displaced soil to restore the hillslope contour of disturbed sites, creating small ditches or diversions to redirect surface water movement, seeding, and scattering slash material to disrupt flow and provide soil surface stability.

15. No fuel storage or refueling shall occur in Riparian Reserves.
16. Raptor nest sites incidentally located during the course of project implementation shall be considered for protective buffers (200 foot minimum) following an assessment by a Forest Service wildlife biologist.
17. For marbled murrelet potential nest trees (PNTs), maintain surrounding trees that have interlocking branches or are within the drip-line of the PNT within thinning units. Identified PNTs are marked with white paint, either as a band or a 'W' indicating wildlife trees.
18. Logging operations and haul associated with Units 11 and 12 shall not be permitted between the hours of 9pm and 8am.

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

#### **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 dimensions:

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

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

#### **H-157 Optional Removal of Forest Products Not Designated**

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

Forest products designated as optional shall be decked separately from forest products designated as required for removal. Prior to removal from the sale area, optional forest

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

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

#### **H-160 Mismatch**

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

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

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

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

#### **H-190 Completion of Settings**

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

#### **H-210 Log Length Hauling Restrictions**

The maximum log length hauled from the sale area shall not exceed 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 May 21, 2022 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 FS-9020000, FS-9021000, FS-9021110, FS-5500000, FS-5500110, FS-5500210, FS-5500411, BPA 3C, BPA 8C, Temp 1B, and FS-9020.1. 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.

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

### **C-130 Dust Abatement**

Purchaser shall abate dust on the following roads July 1 through September 30 unless waived by the Contract Administrator in writing: FS-9020000, FS-9021000, FS-9021110, FS-5500000, FS-5500110, FS-5500210, FS-5500411, and FS-9020.1. Water sources for dust abatement shall be approved by Contract Administrator prior to any drafting or use. The Contract Administrator may require Purchaser, by written notice, when deemed necessary to: (1) abate dust on the roads designated even after a waiver has been granted if conditions change, or during any time before or after the period specified; and (2) require Purchaser to abate dust on any other roads affected by the operations under this Contract. Materials used for dust abatement, other than water, will require approval of the State and shall meet specifications furnished by the U.S. Forest Service.

### **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 are; 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 or “closed season” for this Contract is April 1 to October 31. The Contract Administrator may change the dates of the closed season 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.

Logging slash not needed for erosion control, or in excess of the amounts listed in S-035, shall be piled at landings.

#### **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.

Timber harvest units shall have harvest activity fuels removed or piled within 200 feet of roadsides bounding units or 100 feet on either side of roads running through harvest units.

Timber harvest activity fuels shall be removed or piled for burning within 200 feet of any utility corridor. Piles shall be located a sufficient distance from utility lines to limit arcing from overhead lines to the ground in smoke or eliminate heat damage to buried lines.

Piles are required to have polyethylene plastic film 0.006 inch (6mil) minimum thickness covering no less than 30 percent of the surface area of each slash pile to maintain dryness of slash. Slash shall be placed on top of cover material to hold it in place. Covering slash shall be concurrent with slash piling.

Piles shall not exceed 25 feet wide and 20 feet tall and shall not be within 25 feet of residual trees without written permission from 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, service vehicles, water trucks, pickup trucks, cars and similar vehicles.

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

**S-060 Pump Truck or Pump Trailer**

Purchaser shall provide a fully functional pump truck or pump trailer equipped to meet the specifications of WAC 332-24-005 and WAC 332-24-405 during the "closed season" or as extended by the State and shall provide trained personnel to operate this equipment on the sale area during all operating periods. Any water drafting sources shall be approved by the Contract Administrator prior to any drafting or use.

**S-120 Stream Protection**

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

**S-130 Hazardous Materials**

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology (ECY). It is the responsibility of the Purchaser to have all emergency contact information readily available and a means of remote communication for purposes of quick notification. In the event of a spill, the Purchaser is responsible for notifying the following:

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

(Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties)

ECY - Southwest Region:

1-360-407-6300

(Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)

ECY - Central Region:

1-509-575-2490

(Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)

ECY - Eastern Region:

1-509-329-3400

(Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)

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

### **S-131 Refuse Disposal**

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

## **SECTION D: DAMAGES**

### **D-010 Liquidated Damages**

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State caused by Purchaser's breach. These liquidated damages provisions are agreed to by the State and Purchaser with the understanding of the difficulty of proving loss and the inconvenience or infeasibility of obtaining an adequate remedy. These liquidated damages provisions provide greater

certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

#### **D-020 Failure to Remove Forest Products**

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

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

Where:

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

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

Where:

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

#### **D-030 Inadequate Log Accountability**

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

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

#### **D-040 Leave Tree Excessive Damage**

When Purchaser's operations exceed the damage limits set forth in clause H-012, Leave Tree Damage Definition, the trees damaged result in substantial injury to the National Forest. The value of the damaged leave trees at the time of the breach is not readily ascertainable. Therefore, Purchaser agrees to pay the State as liquidated damages at the rate of \$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 § 1531et seq. prohibits a person from taking any Federally listed threatened or endangered species. Taking under the Federal ESA may include alteration of habitat. Neither this Contract, or the State's approval of Purchaser's Plan of Operations, is certification that Purchaser's operations under the plan are lawful under the ESA. Purchaser's compliance with the plan is not in lieu of compliance with any Federal requirements under the ESA or its implementing regulations.

The Purchaser shall comply with the Mount Baker Snoqualmie National Forest Inadvertent Discovery Plan and have a copy of the Plan on site at all times.

**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 domestically processed; 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 Washington and certifies by execution of the Contract that it is not, nor are its principals, presently debarred, suspended, proposed for debarment or suspension, declared ineligible, or excluded from participation in any transaction with the Federal government. Purchaser shall immediately notify the State without undue delay if it receives a notice from the Federal government that it or its principals are proposed for debarment or suspension, or are debarred, suspended, declared ineligible, or excluded from participating in a transaction with the Federal government.

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

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

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

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

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

The Purchaser shall comply with the Mount Baker Snoqualmie National Forest Native American Graves Protection and Repatriation Act Protocol and have a copy of Protocol on site at all times.

**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

\_\_\_\_\_  
George L. Geissler  
State Forester

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

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

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

Address:  
14353 McFarland Road  
Mount Vernon, WA 98273

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 \_\_\_\_\_

**Rockwood Unit Name Crosswalk**

<b>Rockwood Unit Number</b>	<b>Hansen Creek Vegetation Project Environmental Assessment Unit Number</b>
<b>1</b>	<b>1</b>
<b>1a</b>	<b>O1A</b>
<b>2</b>	<b>1b</b>
<b>3</b>	<b>2e/O2.1A</b>
<b>4</b>	<b>2j/2m/O2.2A</b>
<b>5</b>	<b>5i/5c/5k</b>
<b>5a</b>	<b>O5A</b>
<b>6</b>	<b>5d/5g/5m</b>
<b>7</b>	<b>3e</b>
<b>8</b>	<b>6b</b>
<b>9</b>	<b>17a</b>
<b>10</b>	<b>17b</b>
<b>11</b>	<b>8o/O8.4A</b>
<b>12</b>	<b>8ah</b>

**Rockwood**  
**Schedule B – Prescriptions**

**Thinning Prescription:**

Thinning shall be primarily from below to a residual stand density of 35-40 percent of maximum SDI or target basal area outlined in Table 1. When implementing a thin from below, remove trees that are generally the smallest merchantable suppressed or intermediate, less vigorous individuals with the smallest crowns; with the two exceptions being smaller western redcedar or occasional hardwoods. Those minor components will be favored even if their size and form are lower than the more common tree species. Some dominant and co-dominant trees shall be removed in the process to attain a variable density across stands, though large tree harvest will be uncommon. Select leave trees with well-formed crowns with a live crown ratio of greater than 30%. Leave tree order of preference is Douglas-fir, western hemlock, Pacific silver fir, red alder. Do not cut western redcedar.

Coarse woody debris already on the ground shall be retained and will not be considered included timber in the Timber Sale Contract. Existing snags shall be protected either through clumping of leave trees around significant snags or within the Timber Sale Contract except where they might compromise logger safety.

**Do not cut:**

1. **Western red cedar**
2. Trees greater than the maximum DBH of 30 inches.
3. Trees marked with orange or white paint.
4. Pacific yew or hardwoods, except red alder.

Table 1. Rockwood Thinning Prescriptions

Unit	Basal Area Target	Designated DBH Limits (min - max inches)	Designated Leave Tree Species in Order of Preference
5, 6, 8	130	7.0” – 30”	1. DF
1, 7, 12	130		2. WH
9 and 10	150		3. SF
			4. RA

DF – Douglas-fir, WH – Western Hemlock,  
SF – Pacific silver fir, and RA – Red Alder

**Early-Seral Wildlife Openings:**

Create openings with reserves in Sale Units 2, 3, 4 and 11, as well as portions within Units 1 and 5. Regeneration harvest in the openings includes removing most of the existing cover to promote the growth of forage plants, as well as small trees. Openings within units are identified with blue Special Management Unit boundary tags and pink flagging.

In the opening with reserves, purchaser shall cut all trees greater than 7 inches DBH except:

Green tree retention in openings shall be five trees per acre, included in the residual stocking and be in clumps or individuals. Where possible, target existing snags, or large Douglas-fir trees >20” DBH for leave trees.

Table 2. Rockwood Openings with Reserves Prescription

Unit	Trees Per Acre Target	Designated DBH Limits (min - max inches)	Designated Leave Tree Species in Order of Preference
2, 3, 4, 11	5	7.0” – 30”	1. DF 2. WH 3. SF 4. RA

**Basal Area Target** – Target basal area of live conifers per acre to be left, exclusive of landings, temporary roads, skips, and gaps. All live conifers, regardless of species, may be counted toward the leave target. Variability of up to 20% of the target is permitted on any one acre, but the average for the unit needs to equal the target.

**Designated Species** – These are species to be removed if they are within the diameter limits. Preference applies to leave species when mixed species are of similar diameter. All other non-designated tree species are to be left, as are all trees outside of the diameter limits, including within gaps, and excepting on landings, temporary roads, the center trees of gaps.

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



## WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

### FOREST EXCISE TAX ROAD SUMMARY SHEET

**Region:** South Puget Sound

**Timber Sale Name:** Rockwood

**Application Number:** 36-105001

#### EXCISE TAX APPLICABLE ACTIVITIES

**Construction:**                    **0**                                   **linear feet**  
*Road to be constructed (optional and required) but not abandoned*

**Reconstruction:**               **6,625**                               **linear feet**  
*Road to be reconstructed (optional and required) but not abandoned*

**Abandonment:**                   **7,482**                               **linear feet**  
*Abandonment of existing roads not reconstructed under the contract*

**Decommission:**                 **4,899**                               **linear feet**  
*Road to be made undriveable but not officially abandoned.*

**Pre-Haul Maintenance:** **42,735**                               **linear feet**  
*Existing road to receive maintenance work (optional and required) prior to haul*

#### EXCISE TAX EXEMPT ACTIVITIES

**Temporary Construction:**               **3,539**                               **linear feet**  
*Roads to be constructed (optional and required) and then abandoned*

**Temporary Reconstruction:**  
*Roads to be reconstructed (optional and required) and then abandoned*

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

(Revised 9/18)

## Timber Sale Cruise Report Rockwood -GNA

**Sale Name:** Rockwood -GNA

**Sale Type:** MBF SCALE

**Lead Cruiser:** Matt Lobet

**Other Cruisers:** Aaron Coleman

**Cruise Narrative:**

Rockwood Timber Sale is located east of North Bend, WA off I-90. To access units 1-9, take I-90 Exit 38 to the USFS 9020 road. To access units 10-12, take I-90 Exit 42 to USFS 5500 road. Rockwood consists of 6 opening units and 9 thinning units - see schedule B for thinning prescriptions and management objectives. Topography is relatively mild with undulating terrain - making for productive operator ground. Forest roads provide good driving and walking access to all of the units.

- Conifer log lengths were cruised in 2 foot multiples - maximizing 32-40 ft. lengths
- Hardwood log lengths were cruised in 10 foot multiples - no longer than 30 feet long

The stand characteristics throughout Rockwood showed a homogenous timber type with minor vegetation throughout the understory. Rockwood cruised out at 28,829 bf per acre and all live timber showed excellent form. The species composition consists of Douglas-fir, Western hemlock, Pacific silver fir, Noble fir, Western redcedar, and scattered hardwoods. The Western hemlock, Pacific silver fir and Noble fir made up 75% of the sale volume amounting to 1,836 mbf. The Douglas-fir made up 21% of the unit volume amounting to 525 mbf.

**Douglas fir Sawlog Sorts:**

CNS- 67 mbf  
 8-11" - 161 mbf  
 12-15" - 140 mbf  
 16-19" - 78 mbf  
 20"+ - 6 mbf  
 HQ 8"+ - 67 mbf

**WhiteWoodSawlogSorts:**

CNS- 511 mbf  
 8-11" - 784 mbf  
 12-15" - 384 mbf  
 16-19" - 102 mbf  
 20"+ - 25 mbf

In the thinning units, thin from below leaving an average of 130 Sq. Ft. of Basal Area. Variability of up to 20% of the target is permitted on any one acre, but the average for the unit needs to equal the target. Leave tree preference from highest to lowest is RC, DF, WH, SF/NF, RA. All other tree species are to be left.

In the openings, cut all trees greater than 9.0 inches stump diameter except:

1. Leave one clump of approximately 3 to 10 (average of 7) trees (>9.0 inches stump diameter) for each acre in the opening.
2. Where possible, designate the leave tree clump surrounding a defective tree habitat such as a large snag or large tree with obvious decay.

3. Do not cut:
  - a. Trees greater than the maximum stump diameter of 34.0 inches.
  - b. Pacific yew or hardwoods, except red alder.
  - c. Trees marked with orange or white tracer paint

Logging and Stand Conditions:

Approximately 100% of the sale is ground-based harvest. Rockwood consists of an open understory with mild/ gentle terrain, making for productive operator ground.



**Timber Sale Notice Volume (MBF)**

Sp	DBH	Rings/In	Age	MBF Volume by Grade					
				All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
WH	14.8			1,725		479	967	256	23
DF	18.0	6		525	21	262	190	46	6
SF	16.6			81		22	43	9	7
RC	12.8			64			39	25	
RA	11.1			37			6	30	1
NF	15.2			31		3	23	5	
ALL	15.0			2,463	21	766	1,266	371	37

**Timber Sale Notice Weight (tons)**

Sp	Tons by Grade					
	All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
WH	15,264		3,956	8,698	2,418	193
DF	3,857	126	1,753	1,526	409	43
SF	638		164	347	87	40
RC	521			311	210	
RA	283			43	230	10
NF	270		32	191	48	
ALL	20,832	126	5,905	11,114	3,402	286

**Timber Sale Overall Cruise Statistics (Cut + Leave Trees)**

BA (sq ft/acre)	BASE (%)	V-BAR (bf/sq ft)	V-BARSE (%)	Net Vol (bf/acre)	Vol SE (%)
287.9	3.4	129.4	1.8	38,013	3.9

**Notice - Cruise units 1 and 1A are combined Sale Unit 1, and Cruise Units 5A, 5B and 5C are Sale Unit 5.**

### Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
Unit 1A	B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5 ft	4.3		5	3	0
Unit 2	B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5ft	1.8		2	2	0
Unit 3	B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5ft	4.0		5	5	0
Unit 4	B1C: VR, 1 BAF (40) Measure/Count Plots, Sighting Ht = 4.5 ft	20.0		17	9	0
Unit 5A	B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5 ft	10.6		9	4	0
Unit 6	B1: VR, 1 BAF (40) Measure All, Sighting Ht = 4.5 ft	6.7		7	7	0
Unit 7	B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5ft	3.5		4	4	0
Unit 8	B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5ft	4.3		5	5	0
Unit 9	B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5ft	5.2		6	6	0
Unit 10	B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5ft	2.1		3	3	0
Unit 11	B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft	8.2		9	6	0
Unit 12	B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5ft	2.3		3	3	0
Unit 1B	B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5 ft	0.4		1	1	0
Unit 5B	B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 0 ft	7.3		8	5	0
Unit 5C	B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5 ft	4.7		5	3	0
All		85.4		89	66	0

**Timber Sale Log Grade x Sort Summary**

<b>Sp</b>	<b>Status</b>	<b>Grade</b>	<b>Sort</b>	<b>Dia</b>	<b>Len</b>	<b>BF Gross</b>	<b>BF Net</b>	<b>Defect %</b>	<b>Tons</b>	<b>MBF Net</b>
DF	LIVE	2 SAW	Domestic	14.7	34	2,654	2,594	2.3	1,480.9	221.5
DF	LIVE	2 SAW	HQ-A	13.9	36	362	360	0.4	210.8	30.8
DF	LIVE	2 SAW	HQ-B	15.1	34	117	117	0.0	61.6	10.0
DF	LIVE	3 SAW	Domestic	9.1	36	2,233	2,168	2.9	1,490.8	185.1
DF	LIVE	3 SAW	HQ-B	10.4	40	56	55	2.6	35.0	4.7
DF	LIVE	4 SAW	Domestic	5.9	25	547	536	1.9	409.1	45.8
DF	LIVE	CULL	Cull	14.0	6	28	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	18.4	37	248	248	0.0	125.5	21.2
DF	LIVE	UTILITY	Pulp	7.5	32	64	64	0.0	43.1	5.5

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
NF	LIVE	2 SAW	Domestic	13.1	40	51	38	25.2	31.8	3.2
NF	LIVE	3 SAW	Domestic	9.0	38	275	267	2.8	190.7	22.8
NF	LIVE	4 SAW	Domestic	5.3	25	63	61	2.6	47.6	5.2
RA	LIVE	3 SAW	Domestic	11.4	18	74	68	7.5	43.0	5.8
RA	LIVE	4 SAW	Domestic	6.4	22	362	351	2.9	230.1	30.0
RA	LIVE	CULL	Cull	6.1	22	44	0	100.0	0.0	0.0
RA	LIVE	UTILITY	Pulp	5.2	22	16	16	0.0	9.7	1.4
RC	LIVE	3 SAW	Domestic	9.3	33	457	451	1.4	310.7	38.5
RC	LIVE	4 SAW	Domestic	5.4	28	294	293	0.3	210.2	25.0
RC	LIVE	CULL	Cull	6.5	35	91	0	100.0	0.0	0.0
SF	LIVE	2 SAW	Domestic	12.9	40	263	261	0.5	163.8	22.3
SF	LIVE	3 SAW	Domestic	8.7	40	502	499	0.7	346.6	42.6
SF	LIVE	4 SAW	Domestic	5.7	29	107	107	0.0	87.0	9.1
SF	LIVE	UTILITY	Pulp	18.1	32	83	83	0.0	40.3	7.1
WH	LIVE	2 SAW	Domestic	14.1	39	5,981	5,603	6.3	3,956.1	478.5
WH	LIVE	3 SAW	Domestic	8.7	37	11,483	11,318	1.4	8,697.5	966.5
WH	LIVE	4 SAW	Domestic	5.5	27	3,056	2,999	1.9	2,417.5	256.2
WH	LIVE	CULL	Cull	14.3	18	231	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	8.0	30	268	268	0.0	193.3	22.9

### Timber Sale Log Sort x Diameter Bin Summary

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
DF	5 - 7	LIVE	Domestic	6.2	30	793	1.4	599.3	67.7
DF	5 - 7	LIVE	Pulp	7.5	32	64	0.0	43.1	5.5
DF	8 - 11	LIVE	Domestic	9.7	36	1,888	3.3	1,284.7	161.3
DF	8 - 11	LIVE	HQ-B	10.4	40	55	2.6	35.0	4.7
DF	8 - 11	LIVE	Cull	11.5	10	0	100.0	0.0	0.0
DF	12 - 15	LIVE	HQ-B	12.9	36	62	0.0	35.1	5.3
DF	12 - 15	LIVE	Cull	13.6	5	0	100.0	0.0	0.0
DF	12 - 15	LIVE	Domestic	13.7	36	1,641	2.8	997.6	140.1
DF	12 - 15	LIVE	HQ-A	13.9	37	360	0.4	210.8	30.8
DF	16 - 19	LIVE	Cull	16.6	2	0	100.0	0.0	0.0
DF	16 - 19	LIVE	HQ-A	17.4	37	190	0.0	97.2	16.2
DF	16 - 19	LIVE	Domestic	17.5	37	910	0.9	465.7	77.7
DF	16 - 19	LIVE	HQ-B	18.5	32	54	0.0	26.5	4.6
DF	20+	LIVE	Domestic	21.7	32	66	6.3	33.4	5.7
DF	20+	LIVE	HQ-A	21.7	34	58	0.0	28.3	5.0

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
NF	5 - 7	LIVE	Domestic	5.4	27	71	6.5	59.4	6.1
NF	8 - 11	LIVE	Domestic	9.3	39	257	1.7	178.9	21.9
NF	12 - 15	LIVE	Domestic	13.1	40	38	25.2	31.8	3.2
RA	5+	LIVE	Pulp	5.2	22	16	0.0	9.7	1.4
RA	5+	LIVE	Cull	6.8	18	0	100.0	0.0	0.0
RA	5+	LIVE	Domestic	7.3	24	420	3.7	273.1	35.8
RC	5+	LIVE	Cull	6.1	32	0	100.0	0.0	0.0
RC	5+	LIVE	Domestic	6.9	30	744	1.0	520.9	63.5
SF	5 - 7	LIVE	Domestic	6.3	34	265	0.0	208.1	22.6
SF	8 - 11	LIVE	Domestic	10.0	38	340	1.0	225.4	29.1
SF	12 - 15	LIVE	Domestic	13.0	40	261	0.5	163.8	22.3
SF	16 - 19	LIVE	Pulp	18.1	32	83	0.0	40.3	7.1
WH	5 - 7	LIVE	Pulp	5.2	28	51	0.0	37.2	4.4
WH	5 - 7	LIVE	Domestic	5.9	29	5,640	1.3	4,502.6	481.7
WH	8 - 11	LIVE	Domestic	9.7	37	8,585	1.7	6,563.6	733.2
WH	8 - 11	LIVE	Pulp	9.7	32	165	0.0	132.5	14.1
WH	12 - 15	LIVE	Domestic	13.7	37	4,195	6.9	3,081.7	358.2
WH	12 - 15	LIVE	Cull	14.3	15	0	100.0	0.0	0.0
WH	16 - 19	LIVE	Domestic	16.9	38	1,192	5.0	751.4	101.8
WH	20+	LIVE	Pulp	20.2	24	52	0.0	23.5	4.4
WH	20+	LIVE	Domestic	22.4	40	308	2.5	171.7	26.3

## Cruise Unit Report Unit 1A

### Unit Sale Notice Volume (MBF): Unit 1A

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	12.5			88	68	20
DF	13.8			45	34	11
ALL	13.0			133	102	32

### Unit Cruise Design: Unit 1A

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5ft	4.3		5	3	0

### Unit Cruise Summary: Unit 1A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	8	18	3.6	0
DF	6	11	2.2	0
ALL	14	29	5.8	0

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

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	169.0	113.9	50.9	121.4	7.7	2.7	20,509	114.1	51.0
DF	103.3	93.2	41.7	112.0	21.4	8.7	11,562	95.6	42.6
ALL	272.3	39.3	17.6	117.8	14.5	3.9	32,071	41.9	18.0

### Unit Summary: Unit1A

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	6	ALL	14.8	64	80	10,536	10,511	0.2	78.6	93.9	24.4	45.2
DF	LIVE	LEA	1	ALL	16.7	74	93	1,054	1,051	0.2	6.2	9.4	2.3	4.5
WH	LIVE	CUT	8	ALL	11.5	65	81	20,509	20,509	0.0	234.3	169.0	49.8	88.2
ALL	LIVE	LEA	1	ALL	16.7	74	93	1,054	1,051	0.2	6.2	9.4	2.3	4.5
ALL	LIVE	CUT	14	ALL	12.4	65	81	31,045	31,020	0.1	312.9	262.9	74.2	133.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	ALL	ALL	15	ALL	12.5	65	81	32,098	32,071	0.1	319.1	272.3	76.5	137.9

## Cruise Unit Report Unit 2

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

Sp	DBH	Rings/In	Age	MBF Volume by Grade				Utility
				All	2 Saw	3 Saw	4 Saw	
WH	13.6			15		14	1	
RA	12.4			8			7	1
DF	19.6			6	4	2		
ALL	13.7			28	4	15	8	1

### Unit Cruise Design: Unit 2

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5 ft	1.8		2	2	0

### Unit Cruise Summary: Unit 2

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	3	4	2.0	0
RA	2	2	1.0	0
DF	1	1	0.5	0
ALL	6	7	3.5	0

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

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	93.9	70.7	50.0	117.4	37.9	21.9	11,022	80.2	54.6
RA	46.9	141.4	100.0	95.3	14.9	10.6	4,474	142.2	100.6
DF	23.5	141.4	100.0	129.8	0.0	0.0	3,046	141.4	100.0
ALL	164.3	20.2	14.3	112.9	28.4	11.6	18,542	34.8	18.4

### Unit Summary: Unit2

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	19.6	85	108	3,382	3,046	9.9	11.2	23.5	5.3	5.5
RA	LIVE	CUT	2	ALL	12.4	60	74	4,683	4,474	4.5	56.0	46.9	13.3	8.1
WH	LIVE	CUT	3	ALL	13.6	64	79	8,595	8,267	3.8	69.8	70.4	19.1	14.9



Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	LEA	1	ALL	19.5	86	108	2,865	2,756	3.8	11.3	23.5	5.3	5.0
ALL	LIVE	LEA	1	ALL	19.5	86	108	2,865	2,756	3.8	11.3	23.5	5.3	5.0
ALL	LIVE	CUT	6	ALL	13.7	64	79	16,661	15,787	5.2	137.0	140.8	37.7	28.4
ALL	ALL	ALL	7	ALL	14.3	66	81	19,526	18,542	5.0	148.3	164.3	43.0	33.4

## Cruise Unit Report Unit 3

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

Sp	DBH	Rings/In	Age	MBF Volume by Grade					
				All	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	20.9			119	11	71	34	4	
WH	20.2			68		41	19	3	4
ALL	20.6			187	11	112	53	7	4

### Unit Cruise Design: Unit 3

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5 ft			5	5	0

### Unit Cruise Summary: Unit 3

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	16	17	3.4	0
WH	11	11	2.2	0
ALL	27	28	5.6	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
DF	159.6	49.2	22.0	198.1	16.6	4.2	31,609	52.0	22.4
WH	103.3	67.4	30.2	163.9	19.1	5.8	16,930	70.1	30.7
ALL	262.9	29.9	13.4	184.7	19.5	3.8	48,539	35.7	13.9

### Unit Summary: Unit3

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	16	ALL	20.9	103	132	30,032	29,750	0.9	63.1	150.2	32.9	119.0
DF	LIVE	LEA	1	ALL	17.5	90	114	1,877	1,859	0.9	5.6	9.4	2.2	7.4
WH	LIVE	CUT	11	ALL	20.2	85	107	17,326	16,930	2.3	46.4	103.3	23.0	67.7
ALL	LIVE	CUT	27	ALL	20.6	96	121	47,359	46,680	1.4	109.5	253.5	55.8	186.7
ALL	LIVE	LEA	1	ALL	17.5	90	114	1,877	1,859	0.9	5.6	9.4	2.2	7.4

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	ALL	ALL	28	ALL	20.5	95	121	49,236	48,539	1.4	115.1	262.9	58.1	194.2

## Cruise Unit Report Unit 4

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

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	14.9			369	115	199	56
DF	16.0			161	87	53	21
RC	10.7			41		19	22
RA	8.8			12			12
SF	17.0			7		7	
ALL	14.0			590	202	278	110

### 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 = 4.5ft	20.0		17	9	0

### Unit Cruise Summary: Unit 4

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	30	64	3.8	0
DF	17	23	1.4	0
RC	7	23	1.4	0
RA	2	3	0.2	0
SF	1	1	0.1	0
ALL	57	114	6.7	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
WH	150.6	57.5	14.0	122.6	14.8	2.7	18,457	59.4	14.2
DF	54.1	127.9	31.0	148.6	27.9	6.8	8,040	130.9	31.7
RC	54.1	82.4	20.0	66.7	62.2	23.5	3,611	103.2	30.9
RA	7.1	222.7	54.0	87.3	38.3	27.1	616	225.9	60.4
SF	2.4	412.3	100.0	154.2	0.0	0.0	363	412.3	100.0
ALL	268.2	26.2	6.4	115.9	33.7	4.5	31,086	42.7	7.8

**Unit Summary: Unit4**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	17	ALL	16.4	67	88	8,373	8,040	4.0	36.9	54.1	13.4	160.8
RA	LIVE	CUT	2	ALL	9.1	24	56	649	616	5.1	15.6	7.1	2.3	12.3
RC	LIVE	CUT	7	ALL	10.9	46	71	2,362	2,041	13.6	47.2	30.6	9.3	40.8
RC	LIVE	LEA	6	ALL	21.8	71	87	1,817	1,570	13.6	9.1	23.5	5.0	31.4
SF	LIVE	CUT	1	ALL	17.0	88	112	363	363	0.0	1.5	2.4	0.6	7.3
WH	LIVE	CUT	30	ALL	14.7	70	86	19,956	18,457	7.5	127.8	150.6	39.3	369.1
ALL	LIVE	CUT	57	ALL	14.0	62	82	31,703	29,516	6.9	229.0	244.7	64.8	590.3
ALL	LIVE	LEA	6	ALL	21.8	71	87	1,817	1,570	13.6	9.1	23.5	5.0	31.4
ALL	ALL	ALL	63	ALL	14.4	62	82	33,520	31,086	7.3	238.1	268.2	69.9	621.7

## Cruise Unit Report Unit 5A

### Unit Sale Notice Volume (MBF): Unit 5A

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	13.6			152	19	104	30	
NF	14.8			18		14	4	
SF	24.6			11	3		1	7
RA	12.4			7		4	3	
ALL	13.9			187	22	122	37	7

### Unit Cruise Design: Unit 5A

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5ft	10.6		9	4	0

### Unit Cruise Summary: Unit 5A

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF		4	0.4	0
RC		6	0.7	0
WH	7	37	4.1	0
SF	1	2	0.2	0
NF	1	3	0.3	0
RA	2	2	0.2	0
ALL	11	54	6.0	0

### Unit Cruise Statistics (Cut + Leave Trees): Unit 5A

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	20.9	118.6	39.5						
RC	31.3	167.7	55.9						
WH	193.0	49.3	16.4	119.4	12.8	4.9	23,033	51.0	17.1
SF	10.4	198.4	66.1	198.1	0.0	0.0	2,067	198.4	66.1
NF	15.6	150.0	50.0	108.0	0.0	0.0	1,689	150.0	50.0
RA	10.4	300.0	100.0	59.3	12.5	8.8	619	300.3	100.4

---

ALL	281.6	39.1	13.0	119.4	32.2	9.7	33,637	50.6	16.2
-----	-------	------	------	-------	------	-----	--------	------	------

**Unit Summary: Unit5A**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	LEA	2	ALL	14.1	67	85				19.2	20.9	5.6	
NF	LIVE	CUT	1	ALL	16.8	65	82	1,703	1,689	0.8	10.2	15.6	3.8	17.9
RA	LIVE	CUT	2	ALL	12.4	52	63	958	619	35.4	12.4	10.4	3.0	6.6
RC	LIVE	LEA	2	ALL	23.7	69	85				10.2	31.3	6.4	
SF	LIVE	CUT	1	ALL	24.6	95	122	1,033	1,033	0.0	1.6	5.2	1.1	11.0
SF	LIVE	LEA	0	ALL	17.4			1,033	1,033	0.0	3.2	5.2	1.3	11.0
WH	LIVE	CUT	7	ALL	14.3	65	81	14,371	14,318	0.4	107.6	120.0	31.7	151.8
WH	LIVE	LEA	4	ALL	19.5	75	94	8,748	8,715	0.4	35.2	73.0	16.5	92.4
ALL	LIVE	CUT	11	ALL	14.5	64	79	18,065	17,660	2.2	131.8	151.3	39.6	187.2
ALL	LIVE	LEA	8	ALL	18.8	72	90	9,781	9,749	0.3	67.8	130.4	29.8	103.3
ALL	ALL	ALL	19	ALL	16.1	67	83	27,846	27,408	1.6	199.6	281.6	69.3	290.5



## Cruise Unit Report Unit 6

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

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	14.4			81	25	39	18
SF	13.7			34	9	20	5
NF	15.8			13	3	8	2
RC	17.0			4		3	1
DF	13.7			3		3	
ALL	14.4			135	37	73	25

### Unit Cruise Design: Unit 6

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	6.7		7	7	0

### Unit Cruise Summary: Unit 6

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	19	22	3.1	0
NF	3	11	1.6	0
SF	7	9	1.3	0
RC	1	10	1.4	0
DF	1	2	0.3	0
ALL	31	54	7.7	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
WH	125.7	62.1	23.5	111.2	44.2	10.1	13,979	76.2	25.6
NF	62.9	96.2	36.4	116.2	21.2	12.3	7,305	98.5	38.4
SF	51.4	97.5	36.9	126.7	34.0	12.8	6,514	103.3	39.0
RC	57.1	150.4	56.9	107.9	0.0	0.0	6,164	150.4	56.9
DF	11.4	170.8	64.5	70.3	0.0	0.0	804	170.8	64.5
ALL	308.6	31.5	11.9	112.7	39.4	7.1	34,766	50.4	13.8

## Unit Summary: Unit6

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	1	ALL	13.7	69	86	609	402	33.9	5.6	5.7	1.5	2.7
DF	LIVE	LEA	1	ALL	16.4	65	81	609	402	33.9	3.9	5.7	1.4	2.7
NF	LIVE	CUT	3	ALL	15.8	72	90	2,254	1,992	11.6	12.6	17.1	4.3	13.3
NF	LIVE	LEA	8	ALL	21.7	97	124	6,011	5,313	11.6	17.8	45.7	9.8	35.6
RC	LIVE	CUT	1	ALL	17.0	69	87	616	616	0.0	3.6	5.7	1.4	4.1
RC	LIVE	LEA	9	ALL	17.4	61	76	5,547	5,547	0.0	31.1	51.4	12.3	37.2
SF	LIVE	CUT	7	ALL	13.7	68	99	5,129	5,066	1.2	39.1	40.0	10.8	33.9
SF	LIVE	LEA	2	ALL	19.0	79	100	1,465	1,448	1.2	5.8	11.4	2.6	9.7
WH	LIVE	CUT	19	ALL	14.4	65	80	14,506	12,073	16.8	96.0	108.6	28.6	80.9
WH	LIVE	LEA	3	ALL	20.4	82	103	2,290	1,906	16.8	7.6	17.1	3.8	12.8
ALL	LIVE	CUT	31	ALL	14.4	66	86	23,114	20,150	12.8	156.9	177.1	46.7	135.0
ALL	LIVE	LEA	23	ALL	19.1	75	95	15,922	14,616	8.2	66.2	131.4	30.0	97.9
ALL	ALL	ALL	54	ALL	15.9	69	88	39,036	34,766	10.9	223.1	308.6	76.6	232.9

## Cruise Unit Report Unit 7

### Unit Sale Notice Volume (MBF): Unit 7

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	14.2			40		31	9
DF	19.2			25	19	7	
SF	16.5			5		4	1
ALL	15.4			70	19	42	10

### Unit Cruise Design: Unit 7

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5 ft	3.5		4	4	0

### Unit Cruise Summary: Unit 7

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	4	10	2.5	0
WH	9	14	3.5	0
SF	1	1	0.3	0
ALL	14	25	6.3	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
DF	117.4	124.4	62.2	154.6	2.1	1.0	18,139	124.4	62.2
WH	164.3	54.7	27.4	108.4	27.6	9.2	17,815	61.3	28.9
SF	11.7	200.0	100.0	115.2	0.0	0.0	1,351	200.0	100.0
ALL	293.4	42.1	21.0	127.2	25.0	6.7	37,305	49.0	22.1

### Unit Summary: Unit7

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	19.2	92	118	7,288	7,255	0.5	23.3	46.9	10.7	25.4
DF	LIVE	LEA	5	ALL	22.0	82	103	10,933	10,883	0.5	26.7	70.4	15.0	38.1

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
SF	LIVE	CUT	1	ALL	16.5	70	88	1,351	1,351	0.0	7.9	11.7	2.9	4.7
WH	LIVE	CUT	9	ALL	14.2	65	80	11,704	11,453	2.1	96.0	105.6	28.0	40.1
WH	LIVE	LEA	4	ALL	19.2	72	90	6,502	6,363	2.1	29.2	58.7	13.4	22.3
ALL	LIVE	CUT	14	ALL	15.4	70	88	20,344	20,059	1.4	127.2	164.3	41.6	70.2
ALL	LIVE	LEA	9	ALL	20.6	77	97	17,435	17,246	1.1	55.9	129.1	28.4	60.4
ALL	ALL	ALL	23	ALL	17.1	72	90	37,778	37,305	1.3	183.1	293.4	70.0	130.6

## Cruise Unit Report Unit 8

### Unit Sale Notice Volume (MBF): Unit 8

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	13.6			28		21	7
DF	15.7			15	8	7	0
SF	19.6			11	5	5	1
RA	10.0			7			7
ALL	13.6			61	13	33	15

### Unit Cruise Design: Unit 8

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (46.94) Measure All, Sighting Ht = 4.5 ft	4.3		5	5	0

### Unit Cruise Summary: Unit 8

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC		8	1.6	0
DF	3	8	1.6	0
WH	6	6	1.2	0
SF	2	3	0.6	0
RA	2	2	0.4	0
ALL	13	27	5.4	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
RC	75.1	94.8	42.4						
DF	75.1	34.2	15.3	124.1	26.2	15.1	9,319	43.1	21.5
WH	56.3	37.3	16.7	113.6	21.2	8.7	6,400	42.9	18.8
SF	28.2	91.3	40.8	139.8	5.7	4.0	3,938	91.5	41.0
RA	18.8	223.6	100.0	87.1	9.4	6.7	1,635	223.8	100.2
ALL	253.5	16.6	7.4	119.4	21.9	6.1	30,257	27.4	9.6

**Unit Summary: Unit8**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	15.7	66	81	3,610	3,495	3.2	20.9	28.2	7.1	15.0
DF	LIVE	LEA	5	ALL	17.2	69	86	6,017	5,824	3.2	29.1	46.9	11.3	25.0
RA	LIVE	CUT	2	ALL	10.0	40	61	1,673	1,635	2.3	34.4	18.8	5.9	7.0
RC	LIVE	LEA	8	ALL	19.0	61	68				38.1	75.1	17.2	
SF	LIVE	CUT	2	ALL	19.6	79	101	2,625	2,625	0.0	9.0	18.8	4.2	11.3
SF	LIVE	LEA	1	ALL	16.0	64	80	1,313	1,313	0.0	6.7	9.4	2.3	5.6
WH	LIVE	CUT	6	ALL	13.6	64	75	6,400	6,400	0.0	55.8	56.3	15.3	27.5
ALL	LIVE	LEA	14	ALL	18.1	64	76	7,330	7,137	2.6	73.9	131.4	30.9	30.7
ALL	LIVE	CUT	13	ALL	13.6	59	74	14,309	14,155	1.1	120.1	122.0	32.6	60.9
ALL	ALL	ALL	27	ALL	15.5	61	75	21,638	21,292	1.6	194.0	253.5	63.5	91.6

## Cruise Unit Report Unit 9

### Unit Sale Notice Volume (MBF): Unit 9

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	14.7			240	106	100	34
DF	22.9			19	14	4	1
RC	15.4			5		4	1
RA	16.0			3		2	1
ALL	15.0			267	120	111	37

### Unit Cruise Design: Unit 9

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5 ft	5.2		6	6	0

### Unit Cruise Summary: Unit 9

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
NF		1	0.2	0
WH	26	35	5.8	0
DF	2	7	1.2	0
RC	1	4	0.7	0
RA	1	1	0.2	0
ALL	30	48	8.0	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
NF	9.1	244.9	100.0						
WH	317.6	41.2	16.8	175.7	22.8	4.5	55,791	47.1	17.4
DF	63.5	84.3	34.4	196.9	18.6	13.2	12,509	86.3	36.8
RC	36.3	181.7	74.2	101.3	0.0	0.0	3,676	181.7	74.2
RA	9.1	244.9	100.0	69.5	0.0	0.0	630	244.9	100.0
ALL	435.5	20.9	8.5	170.3	26.3	4.8	74,151	33.6	9.8

**Unit Summary: Unit9**

<b>Sp</b>	<b>Status</b>	<b>Rx</b>	<b>N</b>	<b>D</b>	<b>DBH</b>	<b>BL</b>	<b>THT</b>	<b>BF Gross</b>	<b>BF Net</b>	<b>Defect %</b>	<b>TPA</b>	<b>BA</b>	<b>RD</b>	<b>MBF Net</b>
DF	LIVE	CUT	2	ALL	22.9	103	132	3,698	3,574	3.4	6.3	18.1	3.8	18.6
DF	LIVE	LEA	5	ALL	22.4	104	132	9,246	8,935	3.4	16.6	45.4	9.6	46.5
NF	LIVE	LEA	1	ALL	34.1	120	155				1.4	9.1	1.6	
RA	LIVE	CUT	1	ALL	16.0	53	64	695	630	9.3	6.5	9.1	2.3	3.3
RC	LIVE	CUT	1	ALL	15.4	65	82	919	919	0.0	7.0	9.1	2.3	4.8
RC	LIVE	LEA	3	ALL	19.0	66	95	2,757	2,757	0.0	13.8	27.2	6.2	14.3
WH	LIVE	CUT	26	ALL	14.5	81	99	47,785	46,227	3.3	229.5	263.1	69.1	240.4
WH	LIVE	LEA	6	ALL	22.6	100	126	9,887	9,564	3.3	19.5	54.4	11.5	49.7
ALL	LIVE	CUT	30	ALL	14.8	80	98	53,098	51,350	3.3	249.3	299.4	77.5	267.0
ALL	LIVE	LEA	15	ALL	22.0	92	120	21,889	21,256	2.9	51.3	136.1	28.8	110.5
ALL	ALL	ALL	45	ALL	16.3	82	102	74,987	72,606	3.2	300.6	435.5	106.3	377.6



## 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
WH	18.2			74	38	30	6
ALL	18.2			74	38	30	6

### Unit Cruise Design: Unit 10

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5 ft	2.1		3	3	0

### Unit Cruise Summary: Unit 10

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF		3	1.0	0
RC		1	0.3	0
WH	11	14	4.7	0
ALL	11	18	6.0	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
DF	54.4	100.0	57.7						
RC	18.1	173.2	100.0						
WH	254.1	24.7	14.3	175.3	14.6	4.4	44,526	28.7	14.9
ALL	326.6	16.7	9.6	175.3	14.6	4.4	57,248	22.2	10.6

### Unit Summary: Unit10

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	LEA	3	ALL	28.0	124	150				12.7	54.4	10.3	
RC	LIVE	LEA	1	ALL	10.6	47	58				29.6	18.1	5.6	
WH	LIVE	CUT	11	ALL	18.2	92	116	36,768	34,985	4.9	110.5	199.6	46.8	73.5
WH	LIVE	LEA	3	ALL	26.1	108	137	10,028	9,541	4.9	14.7	54.4	10.7	20.0

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
ALL	LIVE	LEA	7	ALL	20.2	80	99	10,028	9,541	4.9	57.0	127.0	26.5	20.0
ALL	LIVE	CUT	11	ALL	18.2	92	116	36,768	34,985	4.9	110.5	199.6	46.8	73.5
ALL	ALL	ALL	18	ALL	18.9	88	110	46,796	44,526	4.9	167.5	326.6	73.3	93.5

## 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	Utility
WH	16.0			288	101	170	18	
DF	18.2			69	29	28	6	6
RC	18.3			11		9	1	
SF	11.5			7		5	2	
ALL	16.1			375	130	213	27	6

### Unit Cruise Design: Unit 11

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5ft	8.2		9	6	0

### Unit Cruise Summary: Unit 11

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	21	38	4.2	0
DF	3	10	1.1	0
RC	2	5	0.6	0
SF	1	1	0.1	0
ALL	27	54	6.0	0

### Unit Cruise Statistics (Cut + Leave Trees): 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 (%)
WH	229.9	57.7	19.2	161.5	17.1	3.7	37,118	60.2	19.6
DF	60.5	83.5	27.8	154.1	33.2	19.2	9,319	89.9	33.8
RC	30.2	182.5	60.8	72.0	40.1	28.4	2,177	186.8	67.1
SF	6.0	300.0	100.0	135.9	0.0	0.0	822	300.0	100.0
ALL	326.6	37.3	12.4	151.3	24.7	4.7	49,436	44.7	13.3

**Unit Summary: Unit11**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	17.1	85	108	8,742	8,387	4.1	34.1	54.4	13.2	68.8
DF	LIVE	LEA	1	ALL	36.7	120	154	971	932	4.1	0.8	6.0	1.0	7.6
RC	LIVE	CUT	2	ALL	18.5	63	79	1,551	1,306	15.8	9.7	18.1	4.2	10.7
RC	LIVE	LEA	2	ALL	17.3	54	66	1,034	871	15.8	7.4	12.1	2.9	7.1
SF	LIVE	CUT	1	ALL	11.5	80	102	822	822	0.0	8.4	6.0	1.8	6.7
WH	LIVE	CUT	21	ALL	15.8	84	106	36,021	35,164	2.4	159.9	217.8	54.8	288.3
WH	LIVE	LEA	1	ALL	31.7	98	124	2,001	1,954	2.4	2.2	12.1	2.1	16.0
ALL	LIVE	CUT	27	ALL	16.0	83	105	47,136	45,679	3.1	212.1	296.4	74.0	374.6
ALL	LIVE	LEA	4	ALL	23.0	68	85	4,007	3,756	6.2	10.4	30.2	6.1	30.8
ALL	ALL	ALL	31	ALL	16.4	83	104	51,142	49,436	3.3	222.5	326.6	80.0	405.4

## Cruise Unit Report Unit 12

### Unit Sale Notice Volume (MBF): Unit 12

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	Spec Mill	2 Saw	3 Saw	4 Saw
WH	16.4			51		29	19	3
DF	20.7			33	11	14	7	2
ALL	17.6			84	11	43	26	5

### Unit Cruise Design: Unit 12

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1: VR, 1 BAF (54.44) Measure All, Sighting Ht = 4.5 ft			3	3	0

### Unit Cruise Summary: Unit 12

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC		2	0.7	0
DF	4	9	3.0	0
WH	7	7	2.3	0
ALL	11	18	6.0	0

### Unit Cruise Statistics (Cut + Leave Trees): Unit 12

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	36.3	173.2	100.0						
DF	163.3	66.7	38.5	197.1	18.5	9.3	32,196	69.2	39.6
WH	127.0	49.5	28.6	175.7	25.2	9.5	22,322	55.5	30.1
ALL	326.6	57.7	33.3	187.8	21.9	6.6	61,332	61.8	34.0

### Unit Summary: Unit12

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	4	ALL	20.7	99	126	14,364	14,309	0.4	31.1	72.6	16.0	32.9
DF	LIVE	LEA	5	ALL	32.1	119	153	17,955	17,887	0.4	16.1	90.7	16.0	41.1
RC	LIVE	LEA	2	ALL	25.5	94	121				10.2	36.3	7.2	

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	7	ALL	16.4	72	94	22,882	22,322	2.4	86.6	127.0	31.4	51.3
ALL	LIVE	LEA	7	ALL	29.7	109	140	17,955	17,887	0.4	26.3	127.0	23.2	41.1
ALL	LIVE	CUT	11	ALL	17.6	79	102	37,246	36,631	1.7	117.7	199.6	47.3	84.3
ALL	ALL	ALL	18	ALL	20.4	85	109	55,201	54,518	1.2	144.0	326.6	70.5	125.4

## Cruise Unit Report Unit 1B

### Unit Sale Notice Volume (MBF): Unit 1B

Sp	DBH	Rings/In	Age	MBF Volume by Grade		
				All	3 Saw	4 Saw
WH	12.7			7	5	2
ALL	12.7			7	5	2

### Unit Cruise Design: Unit 1B

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5ft	0.4		1	1	0

### Unit Cruise Summary: Unit 1B

Sp	CruisedTrees	All Trees	Trees/Plot	Ring-Count Trees
WH	3	4	4.0	0
ALL	3	4	4.0	0

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

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	187.8	0.0	0.0	126.7	3.2	1.9	23,784	3.2	1.9
ALL	187.8	0.0	0.0	126.7	3.2	1.9	23,784	3.2	1.9

### Unit Summary: Unit1B

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
WH	LIVE	CUT	3	ALL	12.7	71	89	17,838	17,838	0.0	160.1	140.8	39.5	7.1
WH	LIVE	LEA	1	ALL	8.2	48	58	5,946	5,946	0.0	128.0	46.9	16.4	2.4
ALL	LIVE	LEA	1	ALL	8.2	48	58	5,946	5,946	0.0	128.0	46.9	16.4	2.4
ALL	LIVE	CUT	3	ALL	12.7	71	89	17,838	17,838	0.0	160.1	140.8	39.5	7.1
ALL	ALL	ALL	4	ALL	10.9	61	75	23,784	23,784	0.0	288.1	187.8	55.9	9.5

Cruise Unit Report  
Unit 5B

**Unit Sale Notice Volume (MBF): Unit 5B**

Sp	DBH	Rings/In	Age	MBF Volume by Grade				
				All	2 Saw	3 Saw	4 Saw	Utility
WH	12.6			129	5	77	29	19
DF	17.5			31	17	12	2	
RC	12.0			3		3		
ALL	13.0			163	22	92	31	19

**Unit Cruise Design: Unit 5B**

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 0 ft	7.3		8	5	0

**Unit Cruise Summary: Unit 5B**

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
WH	20	30	3.8	0
DF	3	6	0.8	0
RC	1	3	0.4	0
ALL	24	39	4.9	0

**Unit Cruise Statistics (Cut + Leave Trees): Unit 5B**

Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
WH	176.0	60.1	21.2	100.2	22.4	5.0	17,637	64.1	21.8
DF	35.2	118.2	41.8	119.4	8.5	4.9	4,203	118.5	42.1
RC	17.6	198.4	70.1	72.6	0.0	0.0	1,278	198.4	70.1
ALL	228.8	29.9	10.6	101.0	22.2	4.5	23,118	37.3	11.5

**Unit Summary: Unit5B**

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	3	ALL	16.2	72	90	4,214	4,203	0.2	24.6	35.2	8.7	30.7
RC	LIVE	CUT	1	ALL	12.0	51	63	426	426	0.0	7.5	5.9	1.7	3.1



Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RC	LIVE	LEA	0	ALL	15.9			852	852	0.0	8.5	11.7	2.9	6.2
WH	LIVE	CUT	20	ALL	13.3	55	67	17,769	17,637	0.7	182.5	176.0	48.3	128.8
ALL	LIVE	LEA	0	ALL	15.9			852	852	0.0	8.5	11.7	2.9	6.2
ALL	LIVE	CUT	24	ALL	13.6	56	69	22,409	22,267	0.6	214.6	217.1	58.7	162.5
ALL	ALL	ALL	24	ALL	13.7	56	69	23,260	23,118	0.6	223.1	228.8	61.7	168.8

## Cruise Unit Report Unit 5C

### Unit Sale Notice Volume (MBF): Unit 5C

Sp	DBH	Rings/In	Age	MBF Volume by Grade			
				All	2 Saw	3 Saw	4 Saw
WH	12.6			94		72	23
SF	18.2			6	5	1	
ALL	12.9			101	5	73	23

### Unit Cruise Design: Unit 5C

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B1C: VR, 1 BAF (46.94) Measure/Count Plots, Sighting Ht = 4.5ft	4.7		5	3	0

### Unit Cruise Summary: Unit 5C

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
RC		2	0.4	0
DF		2	0.4	0
WH	9	27	5.4	0
SF	1	1	0.2	0
ALL	10	32	6.4	0

### Unit Cruise Statistics (Cut + Leave Trees): Unit 5C

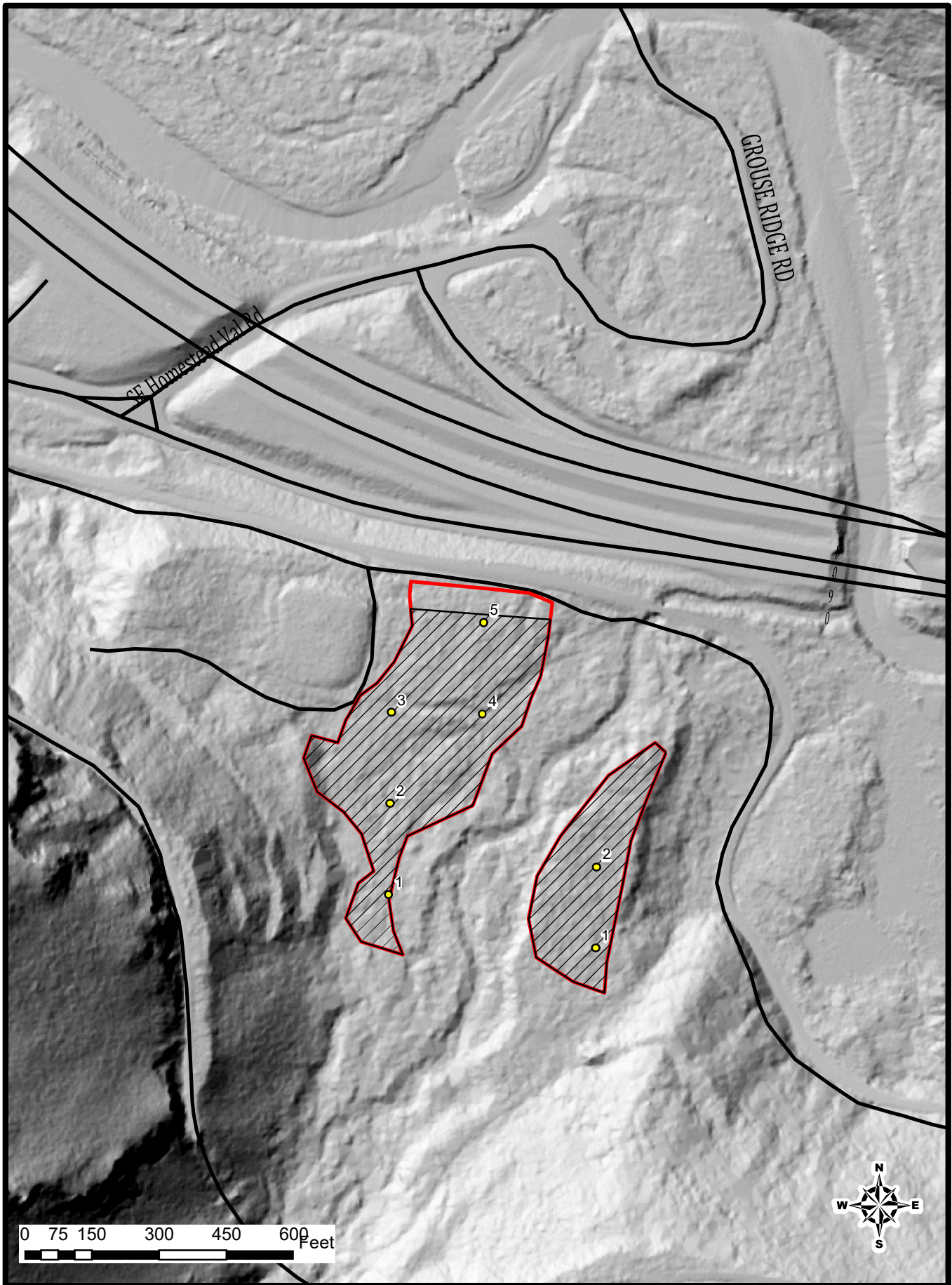
Sp	BA (sq ft/acre)	BA CV (%)	BA SE (%)	V-BAR (bf/sq ft)	V-BAR CV (%)	V-BAR SE (%)	Net Vol (bf/acre)	Vol CV (%)	Vol SE (%)
RC	18.8	136.9	61.2						
DF	18.8	223.6	100.0						
WH	253.5	16.6	7.4	125.9	15.5	5.2	31,912	22.7	9.0
SF	9.4	223.6	100.0	140.6	0.0	0.0	1,320	223.6	100.0
ALL	300.4	8.6	3.8	126.4	15.0	4.7	37,979	17.3	6.1

### Unit Summary: Unit5C

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	LEA	2	ALL	18.8	82	104				9.7	18.8	4.3	

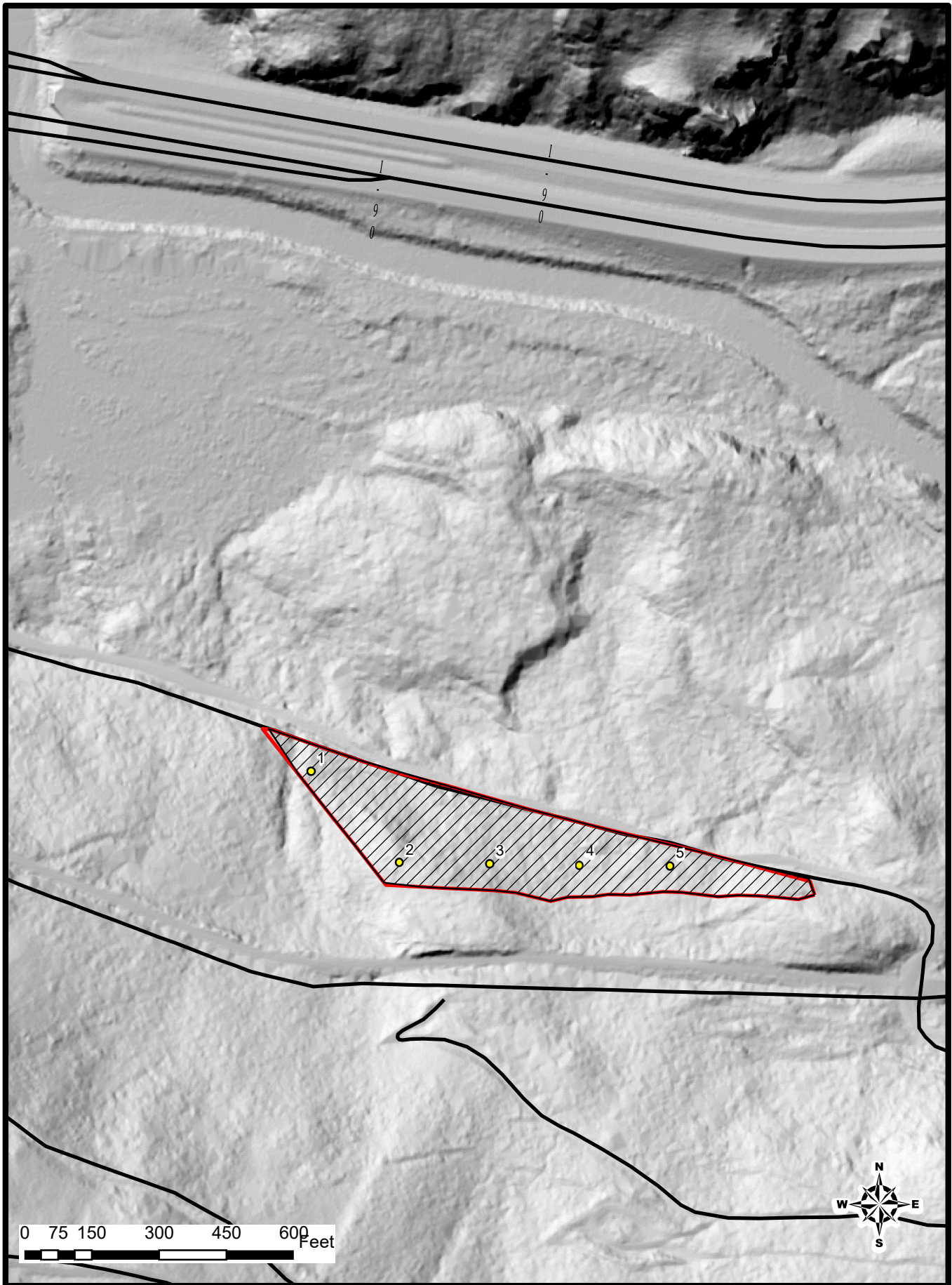
Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
RC	LIVE	LEA	1	ALL	24.2	73	93				5.9	18.8	3.8	
SF	LIVE	CUT	1	ALL	18.2	83	106	1,320	1,320	0.0	5.2	9.4	2.2	6.2
WH	LIVE	CUT	9	ALL	13.0	67	83	20,092	20,092	0.0	173.1	159.6	44.3	94.4
WH	LIVE	LEA	6	ALL	18.5	78	97	11,819	11,819	0.0	50.3	93.9	21.8	55.5
ALL	LIVE	LEA	9	ALL	19.1	78	97	11,819	11,819	0.0	65.9	131.4	30.0	55.5
ALL	LIVE	CUT	10	ALL	13.2	68	84	21,412	21,412	0.0	178.3	169.0	46.5	100.6
ALL	ALL	ALL	19	ALL	15.0	70	87	33,231	33,231	0.0	244.2	300.4	76.4	156.2

# Rockwood Cruise Map



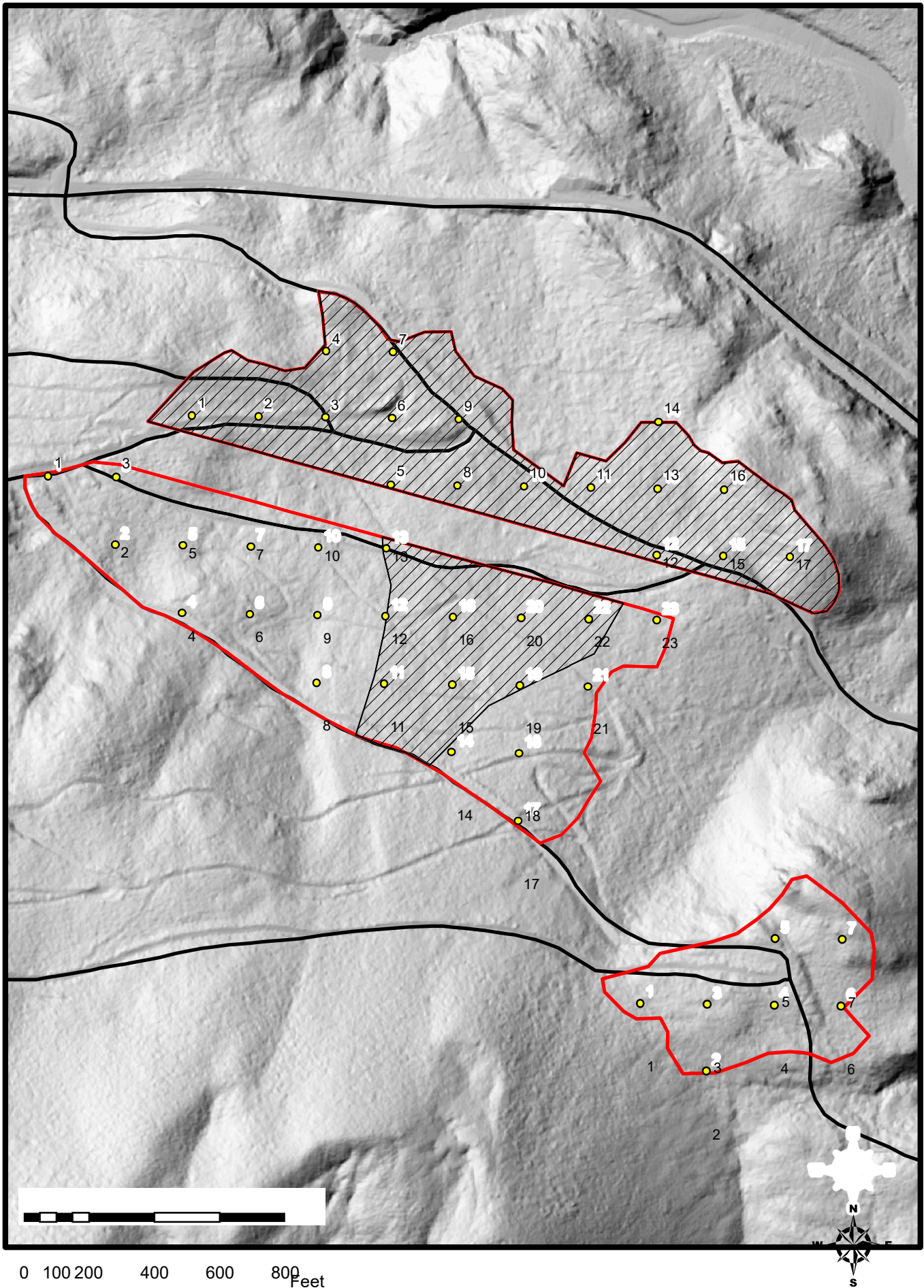


# Rockwood Cruise Map

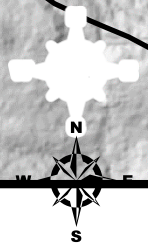




# Rockwood Cruise Map

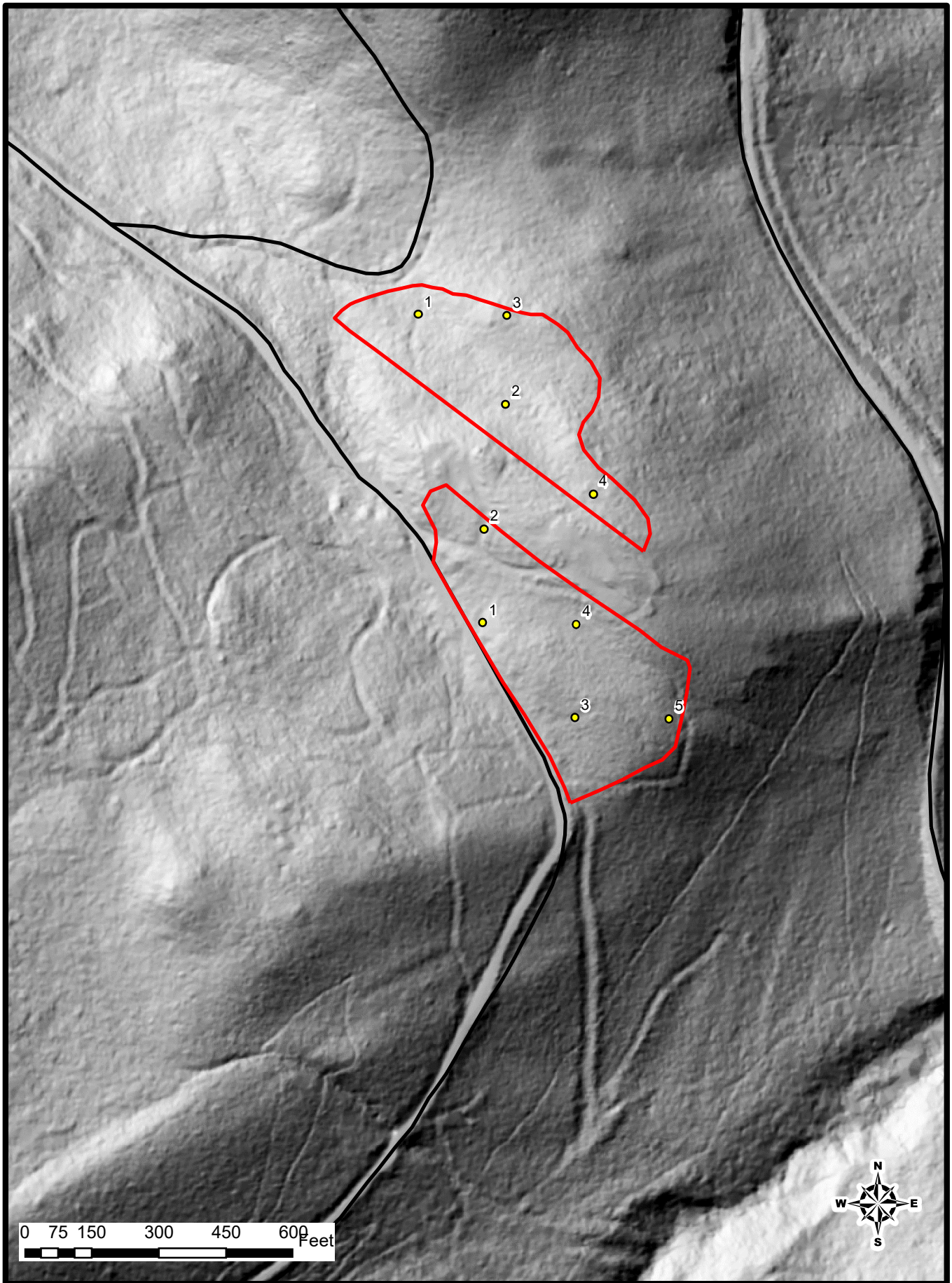


0 100 200 400 600 800 Feet



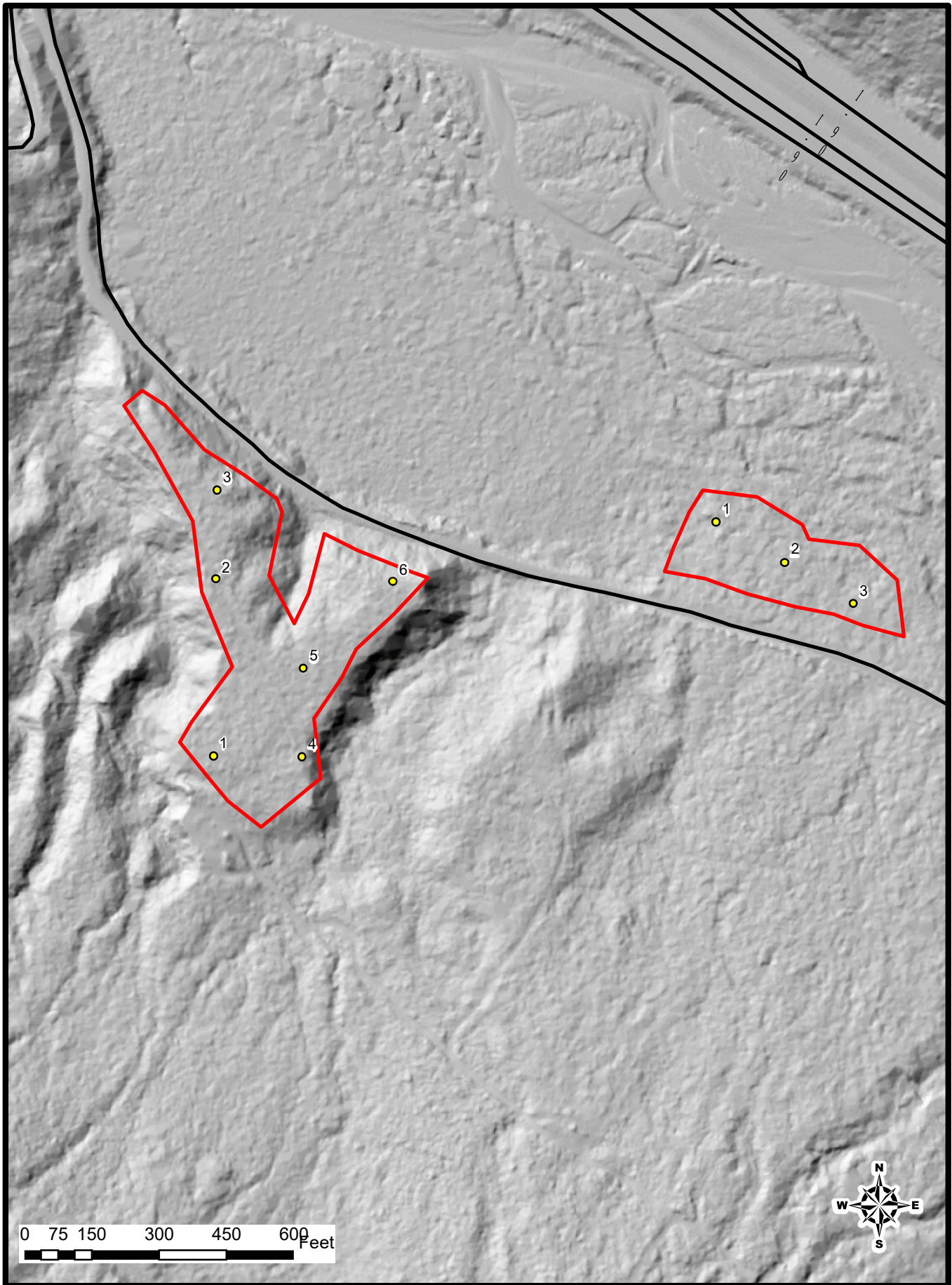


# Rockwood Cruise Map



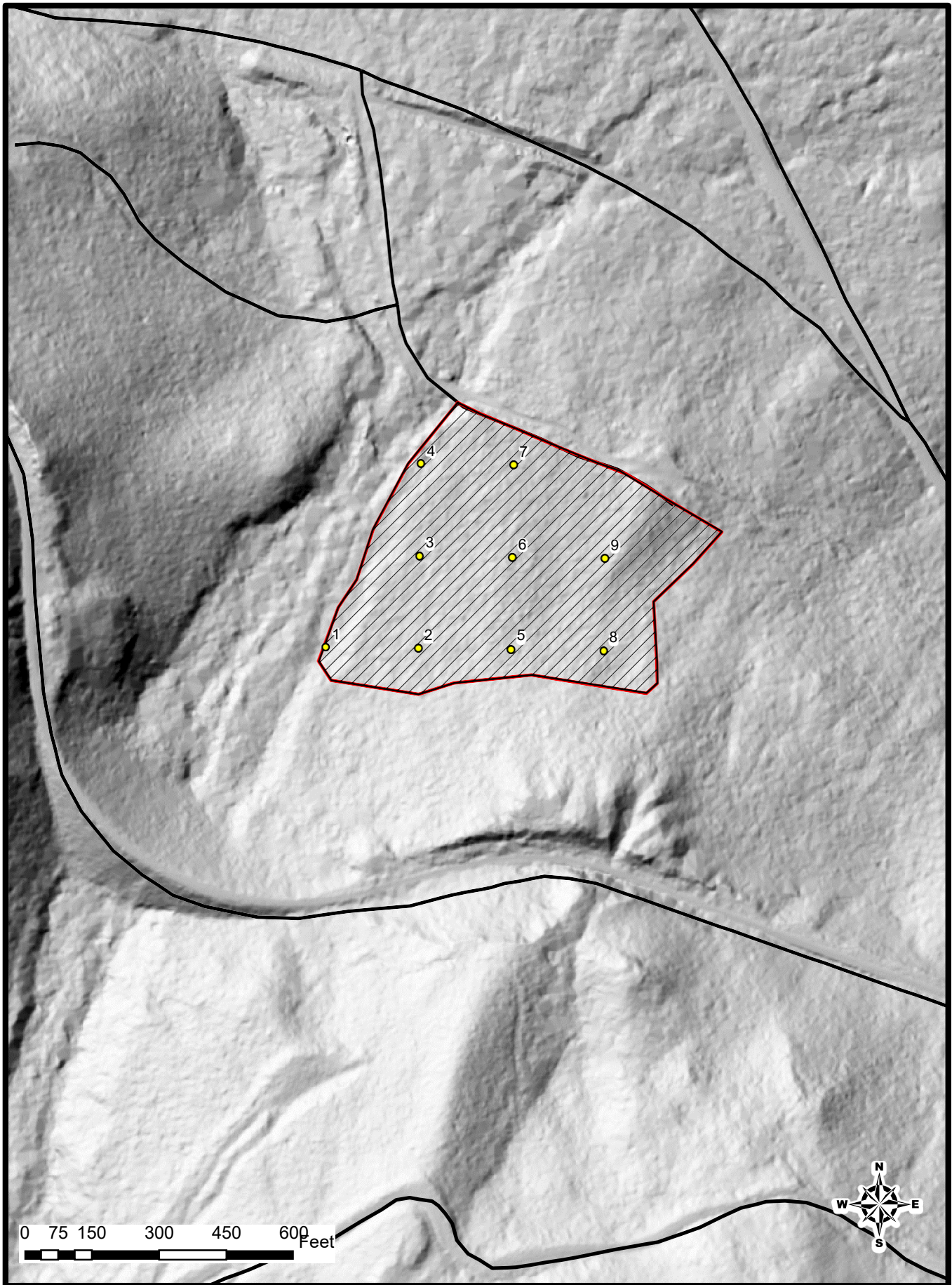


# Rockwood Cruise Map



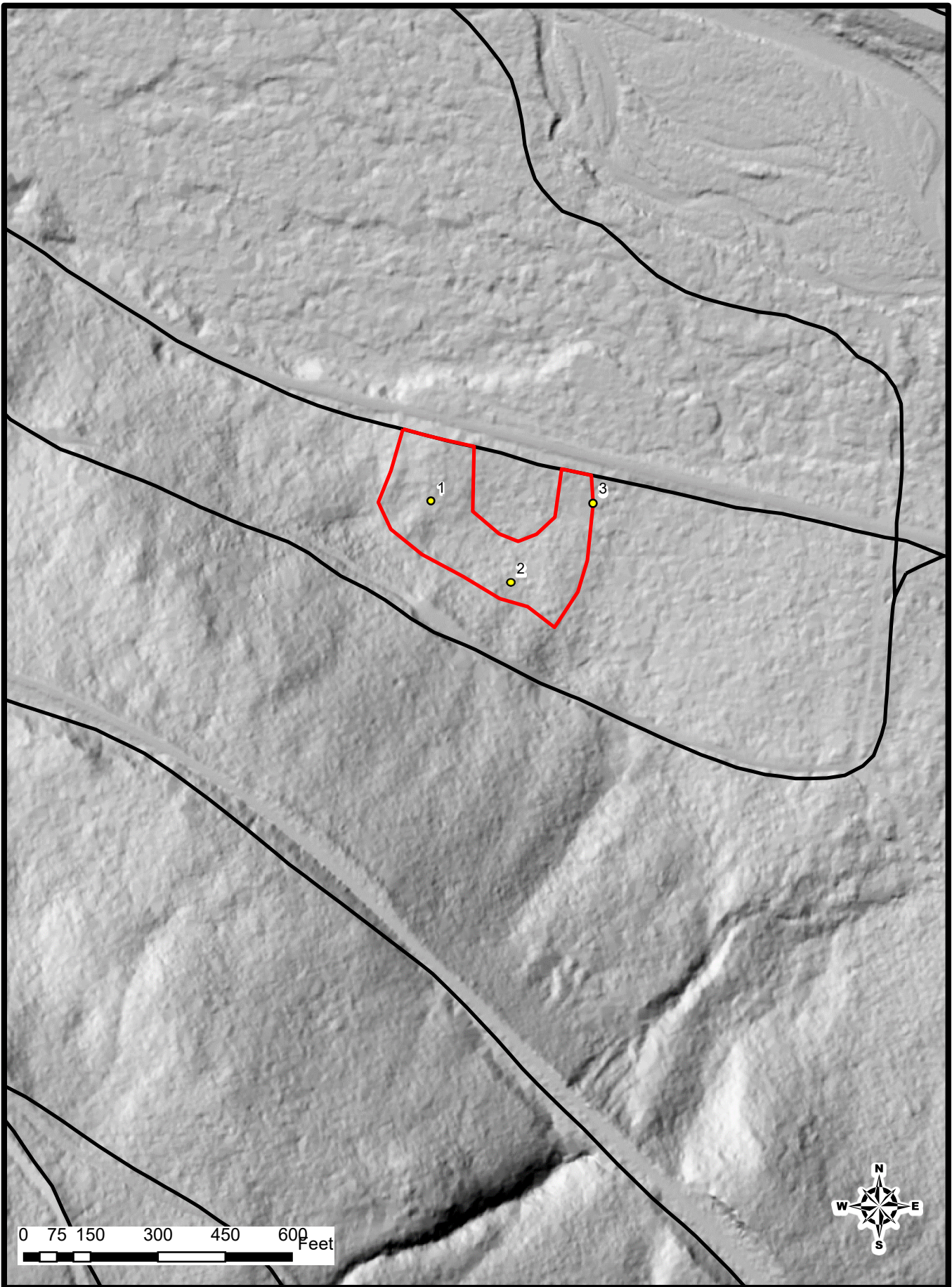


# Rockwood Cruise Map

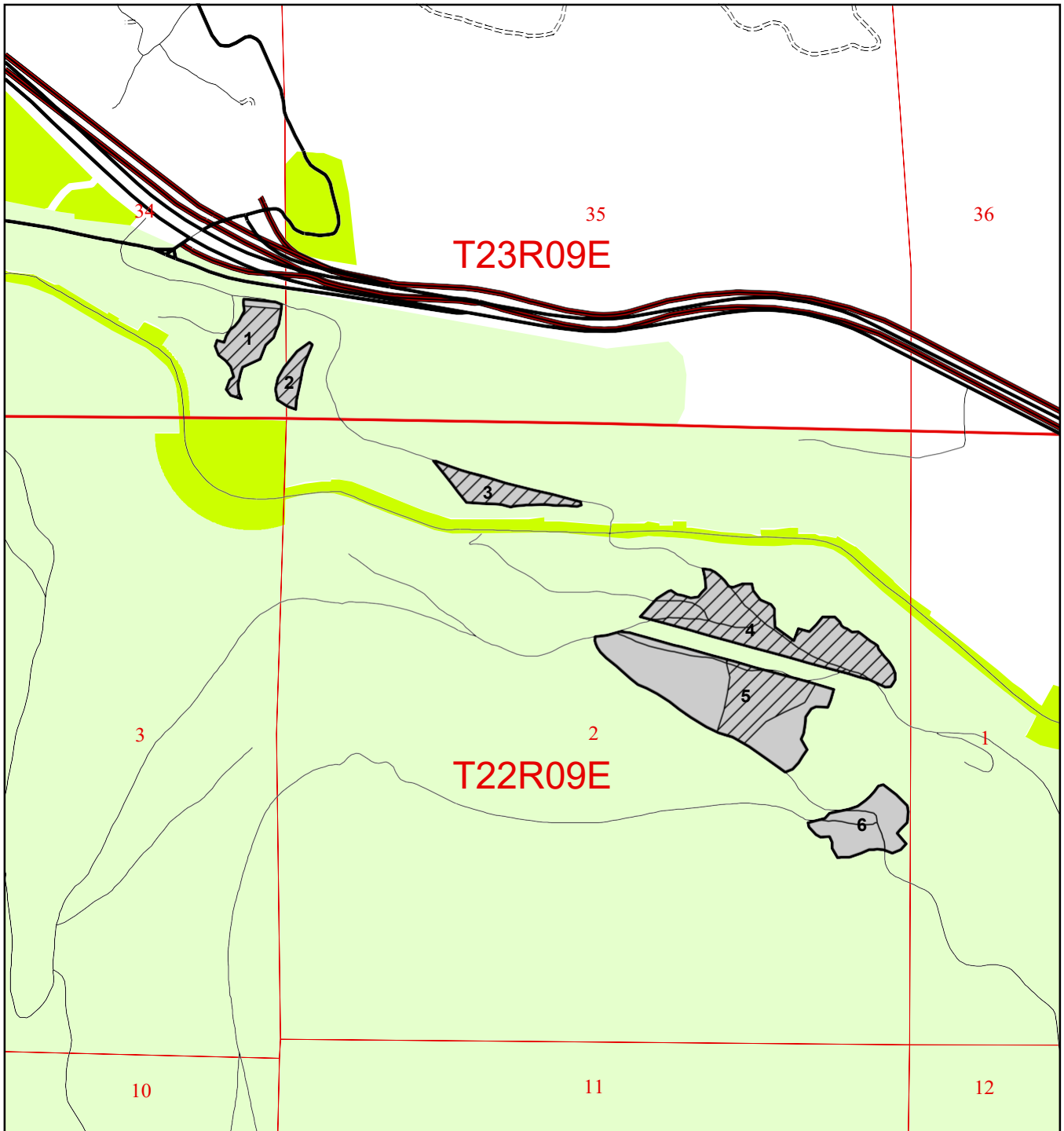






# Rockwood Cruise Map

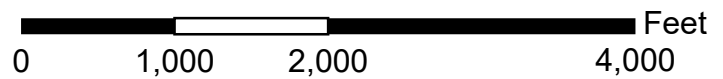


# Rockwood TS

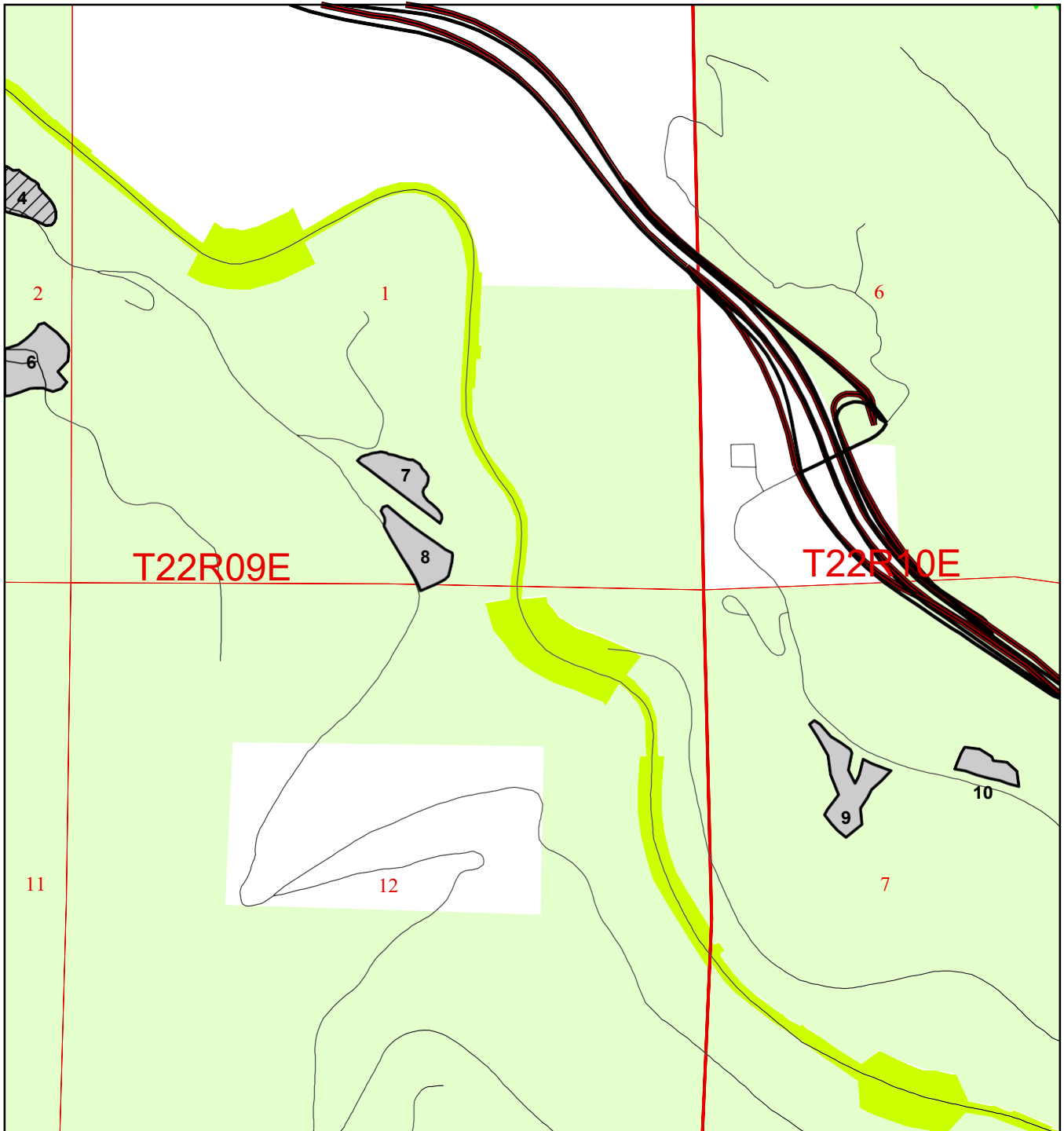


## Legend



-  Rockwood\_Openings\_6.23.22
-  Rockwood\_Units\_6.23.22

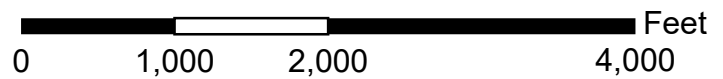


# Rockwood TS

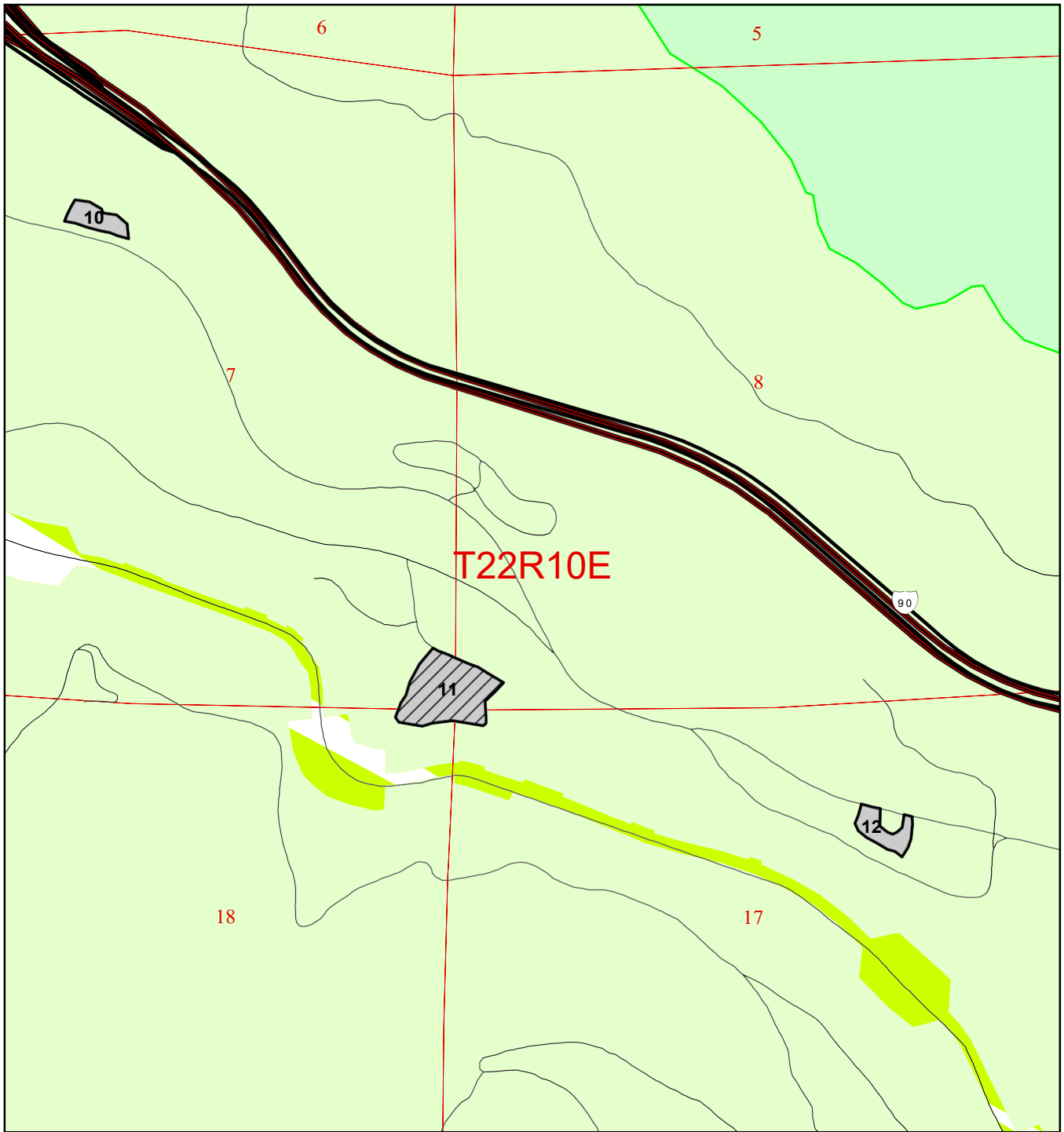


## Legend



-  Rockwood\_Openings\_6.23.22
-  Rockwood\_Units\_6.23.22

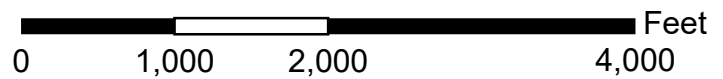


# Rockwood TS



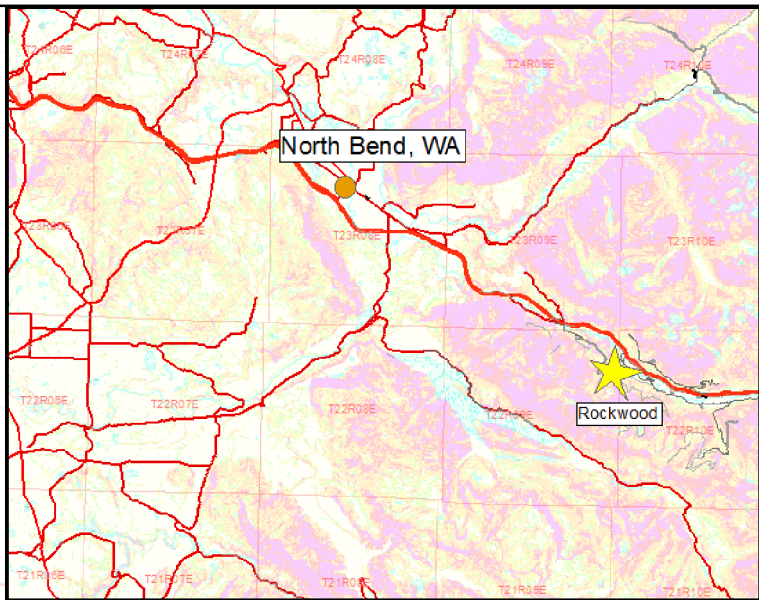
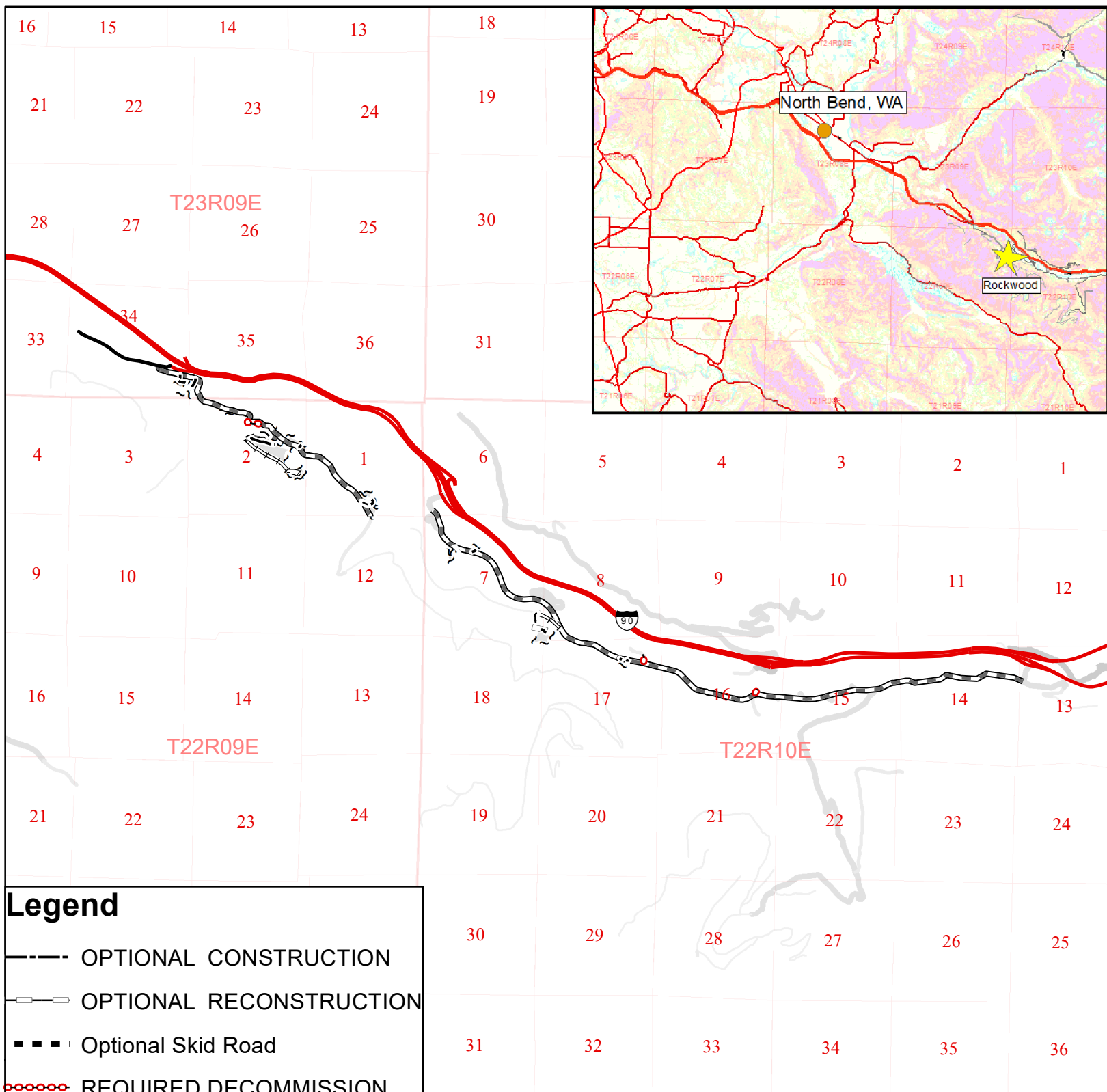
## Legend

-  Rockwood\_Openings\_6.23.22
-  Rockwood\_Units\_6.23.22





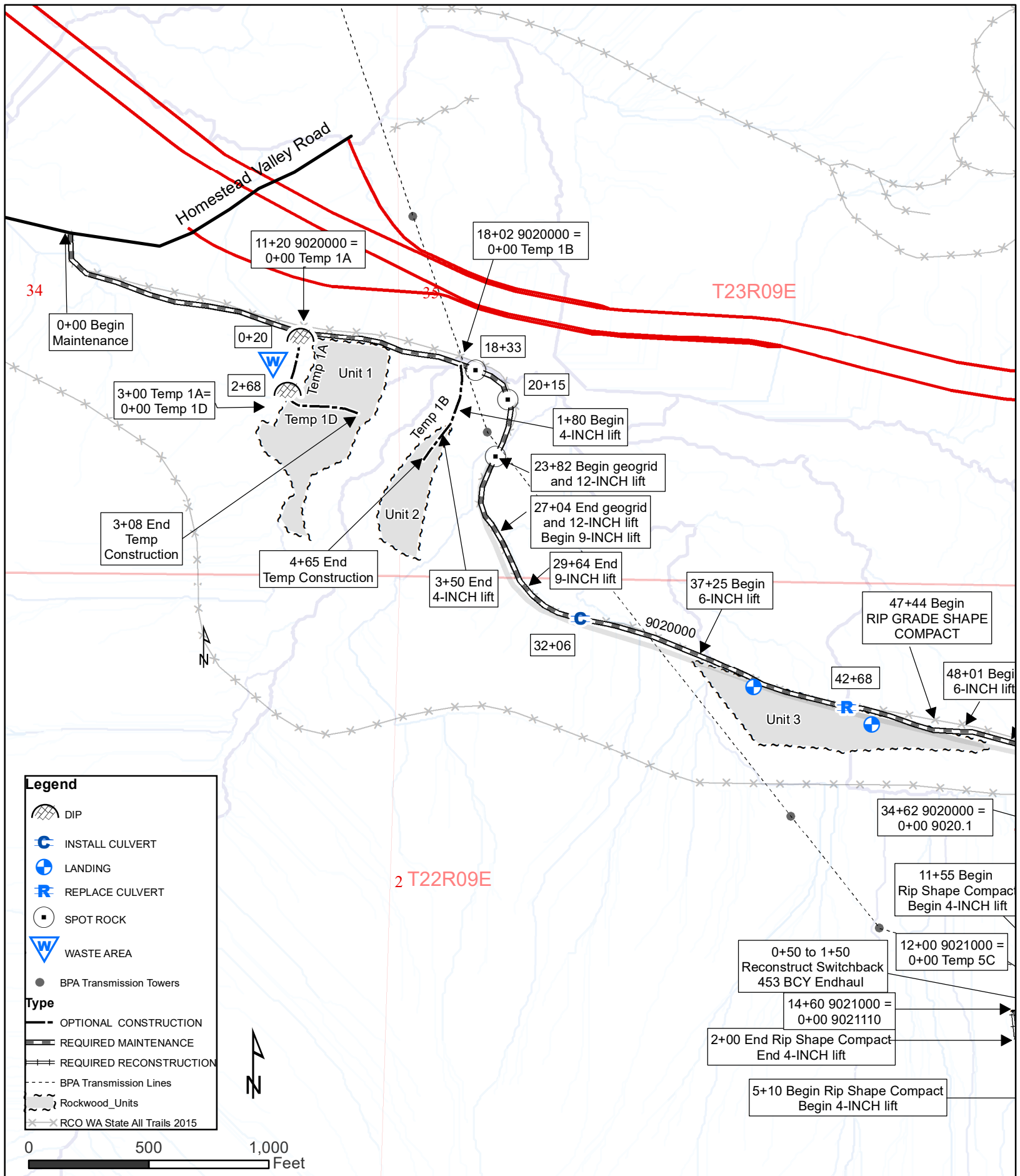
# Rockwood Timber Sale Page 1 of 11



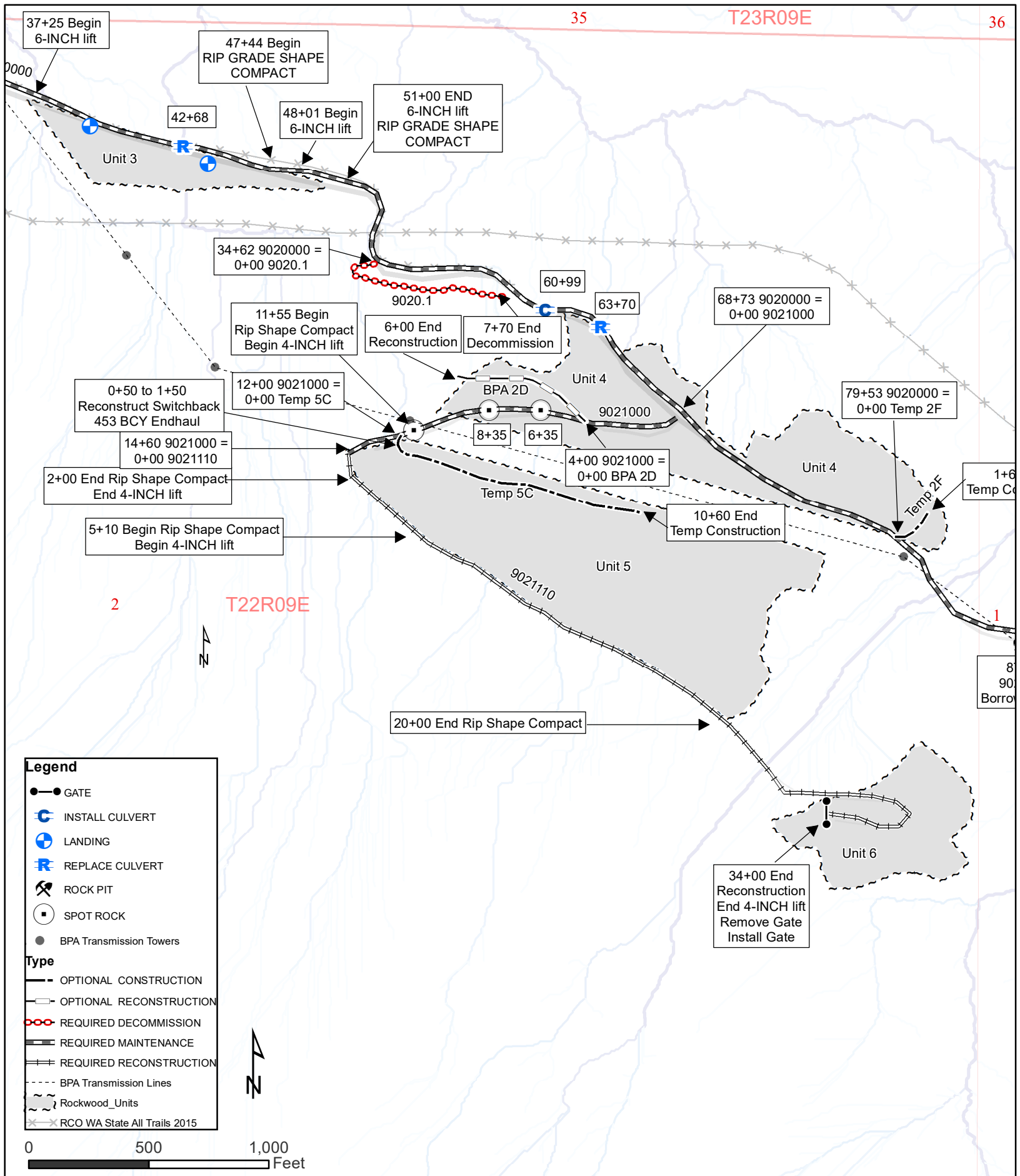
**Legend**

- OPTIONAL CONSTRUCTION
- - - OPTIONAL RECONSTRUCTION
- - - Optional Skid Road
- o-o-o-o REQUIRED DECOMMISSION
- REQUIRED MAINTENANCE
- REQUIRED RECONSTRUCTION
- Rockwood\_Units

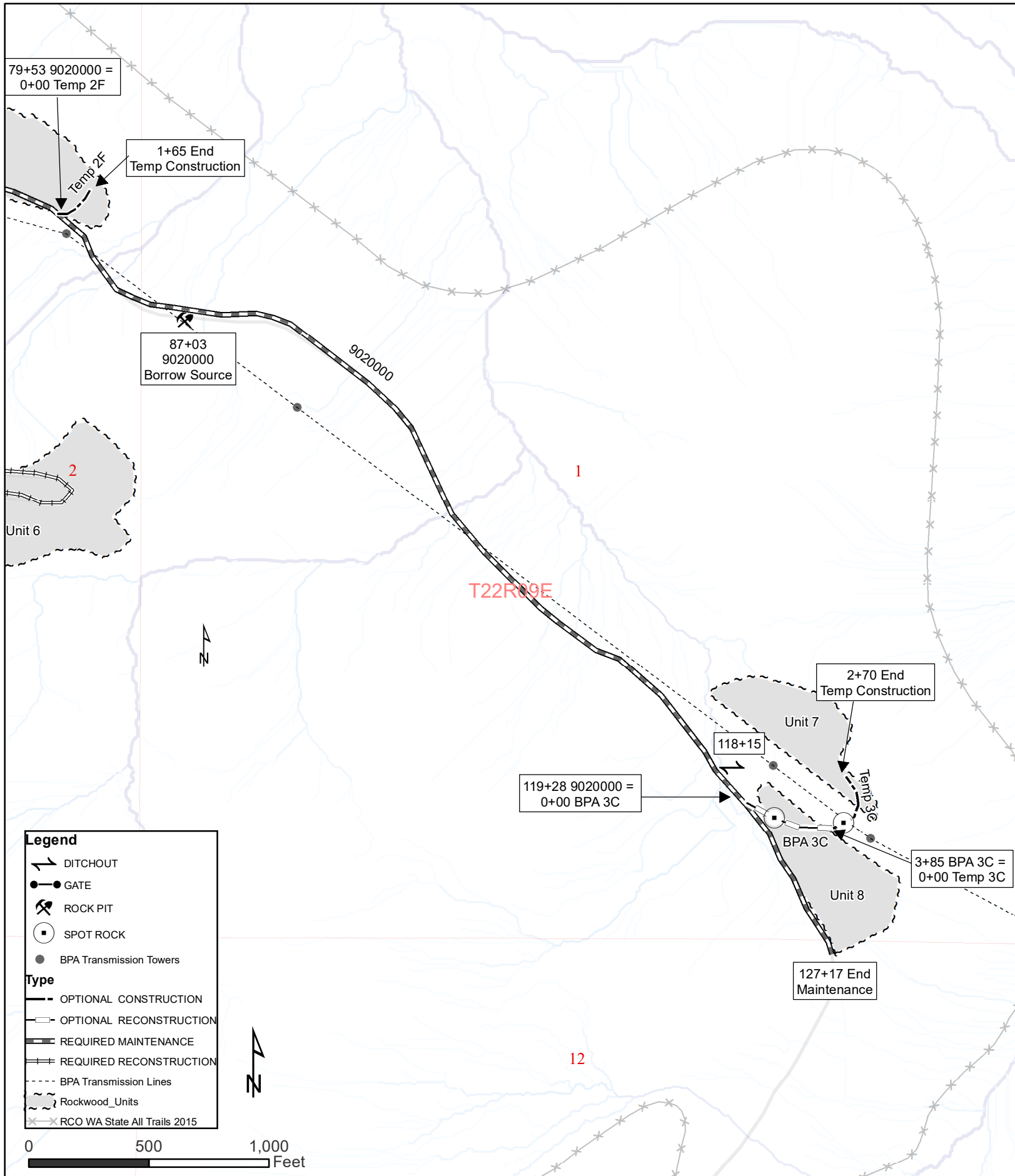
# Rockwood Timber Sale Page 2 of 11

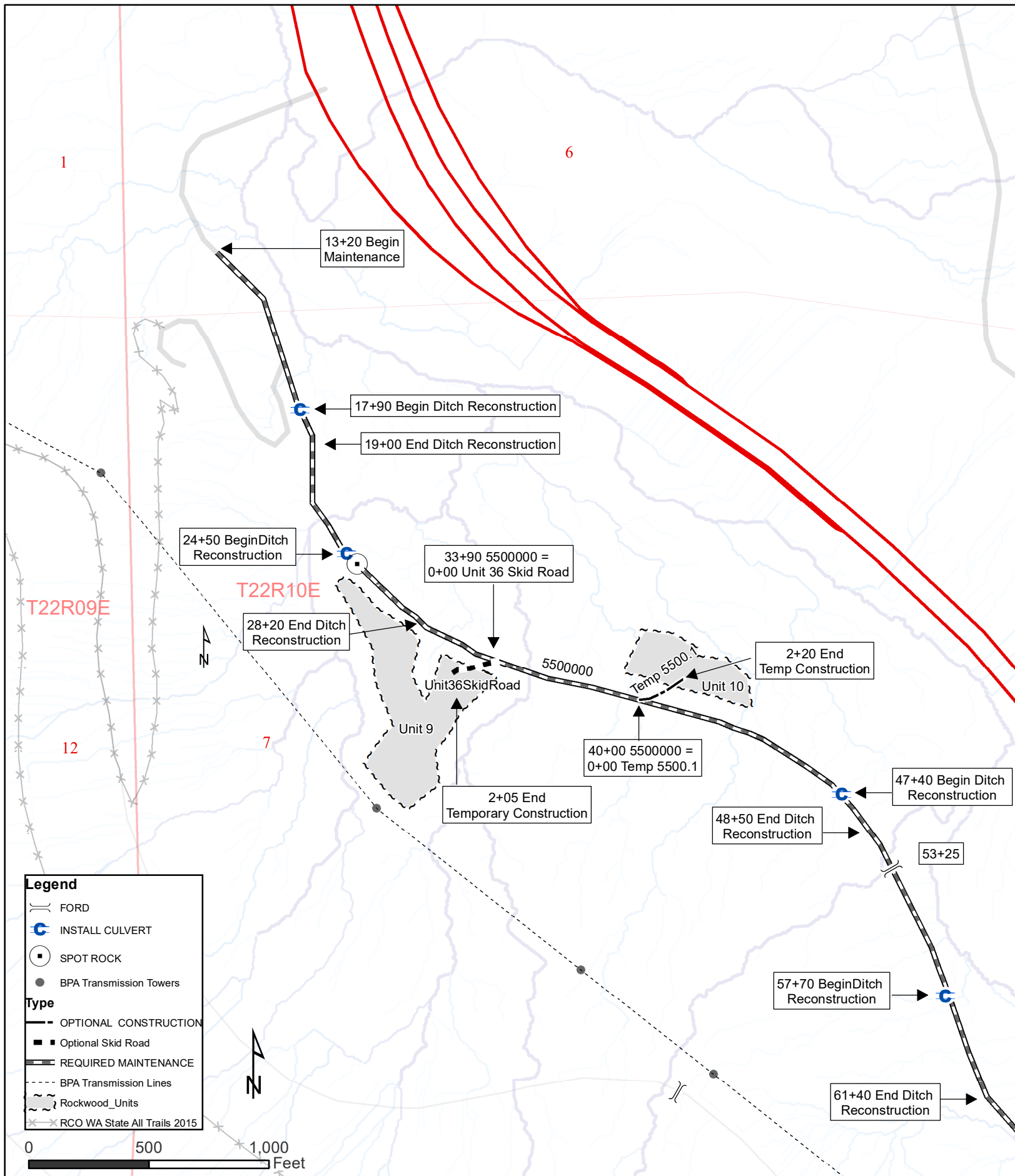


# Rockwood Timber Sale Page 3 of 11

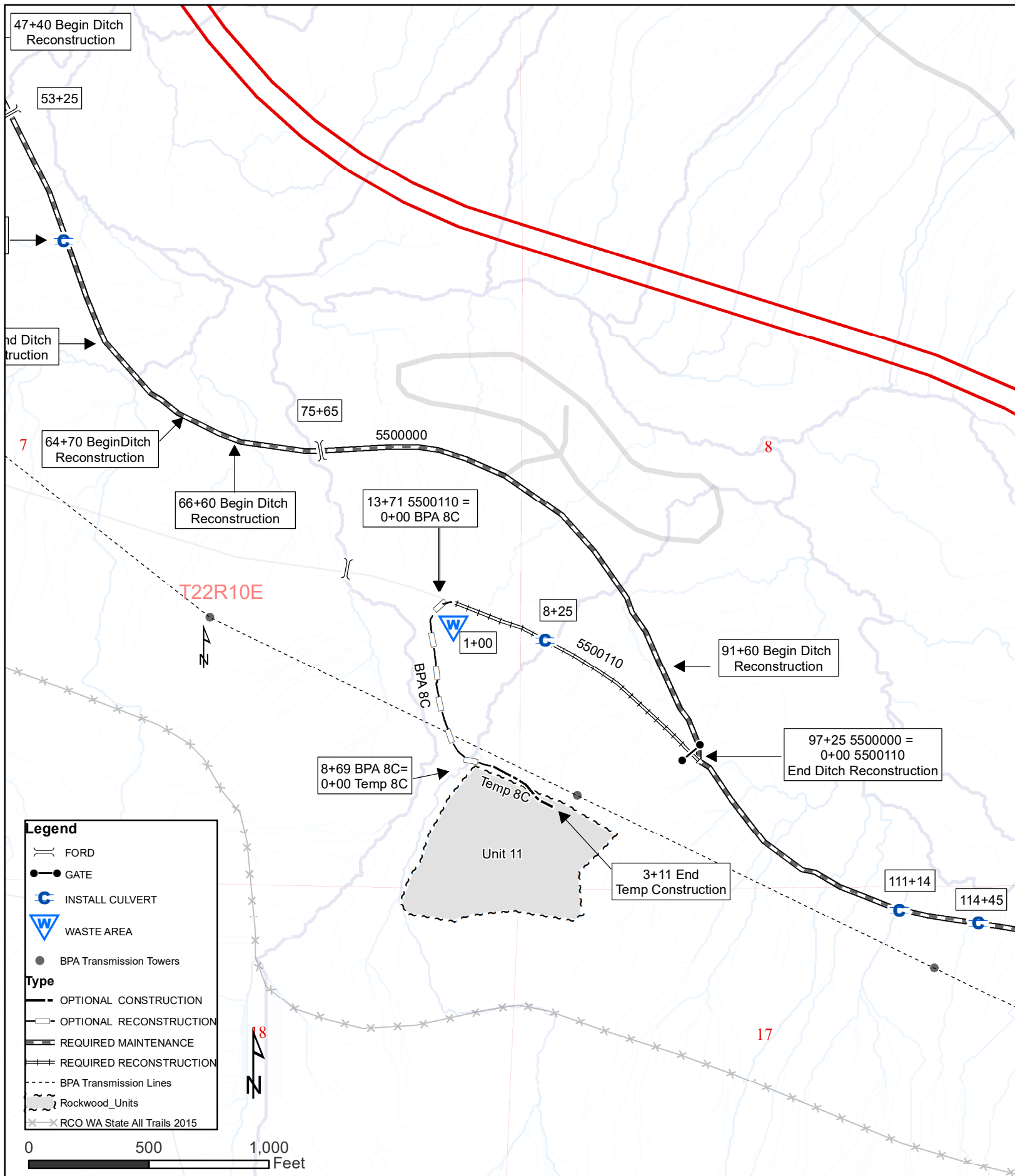


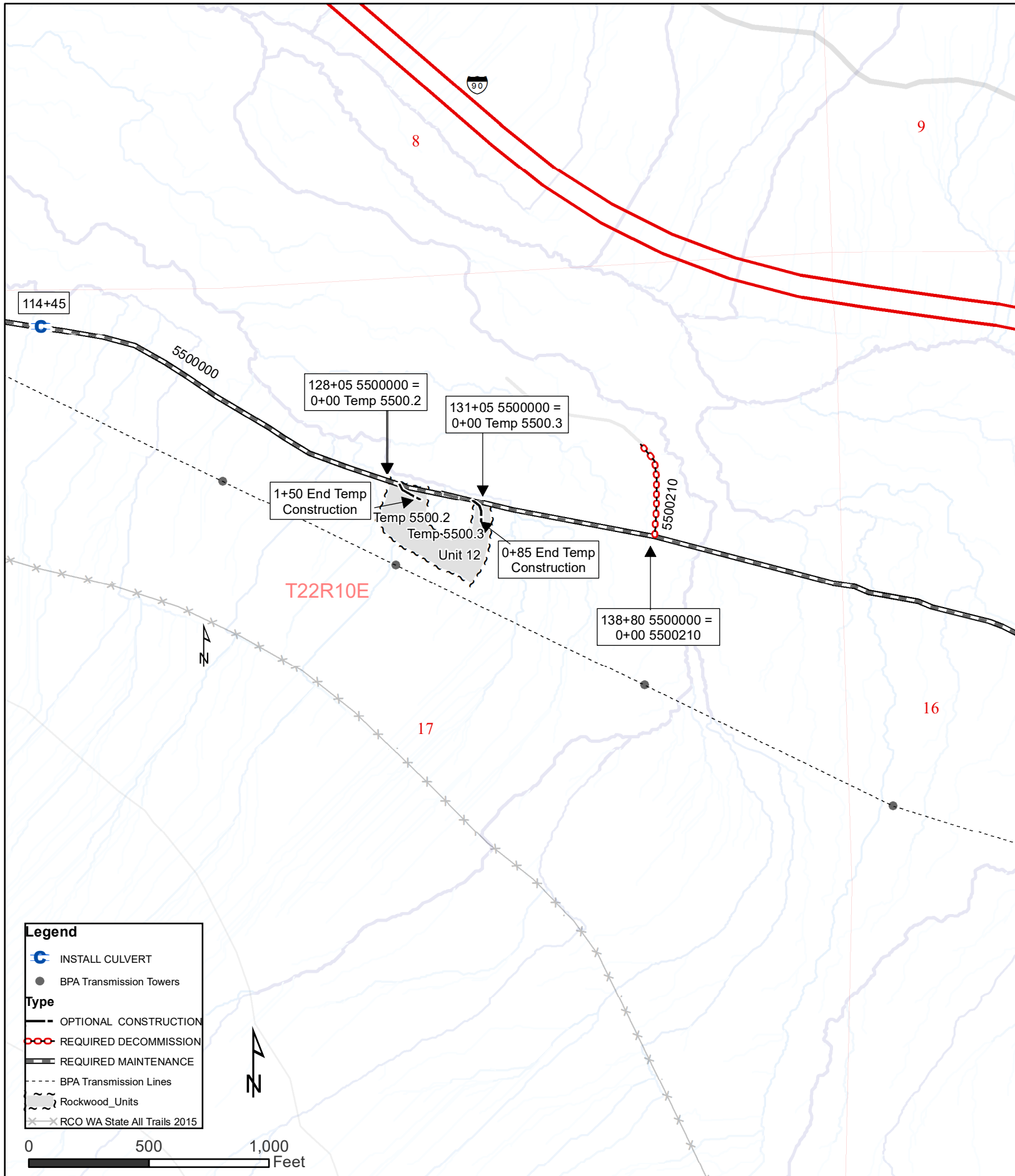


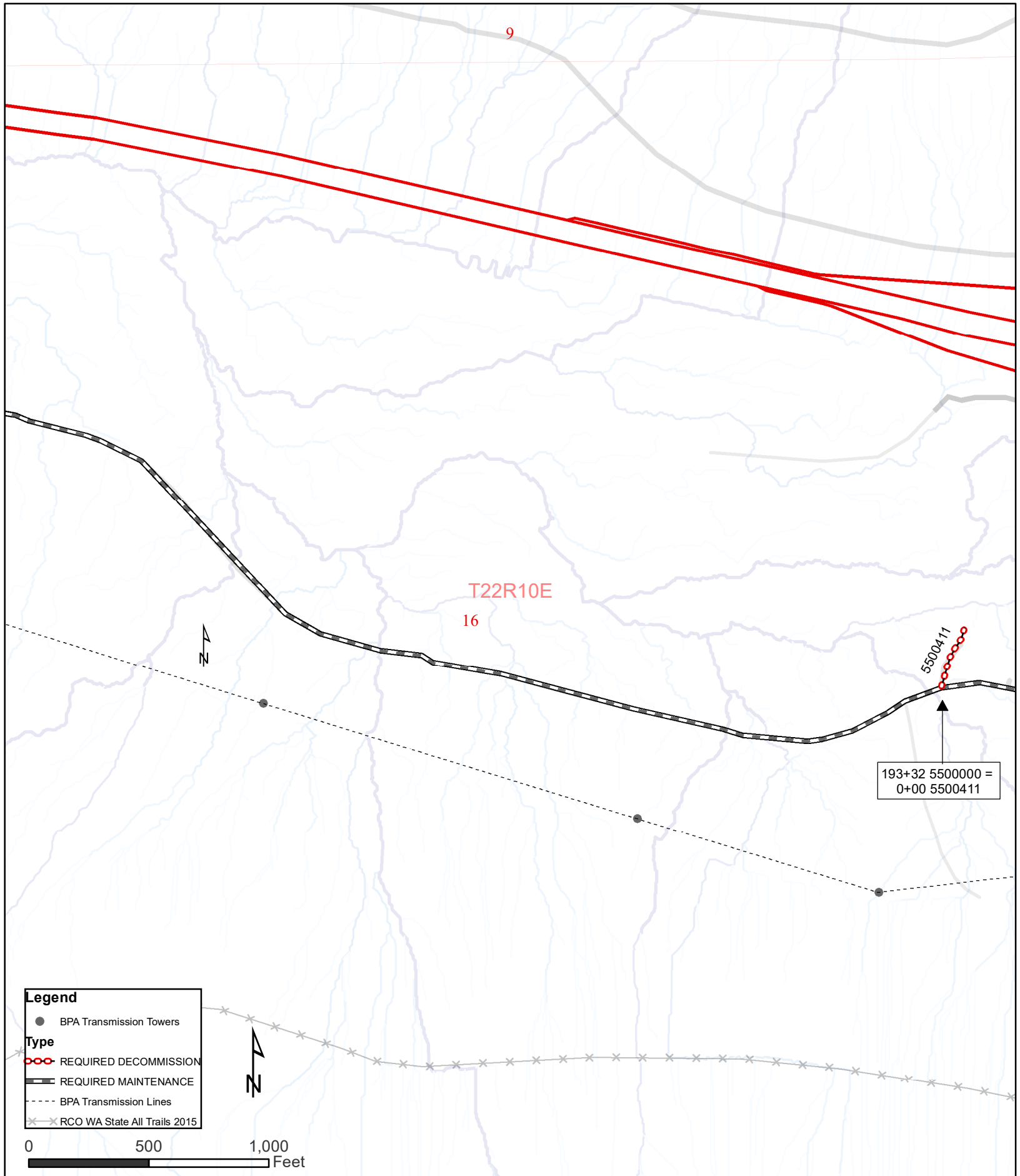


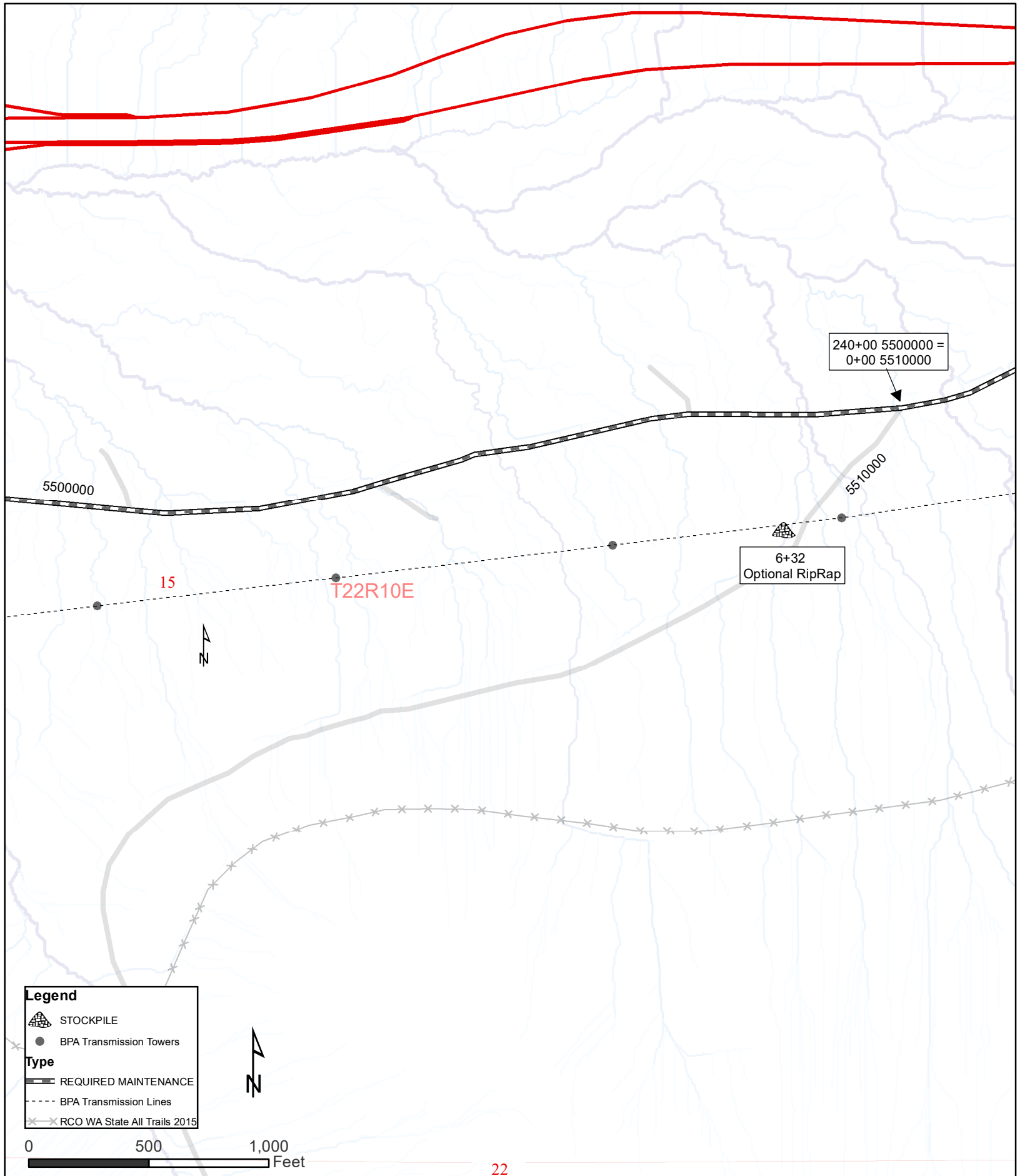


# Rockwood Timber Sale Page 6 of 11

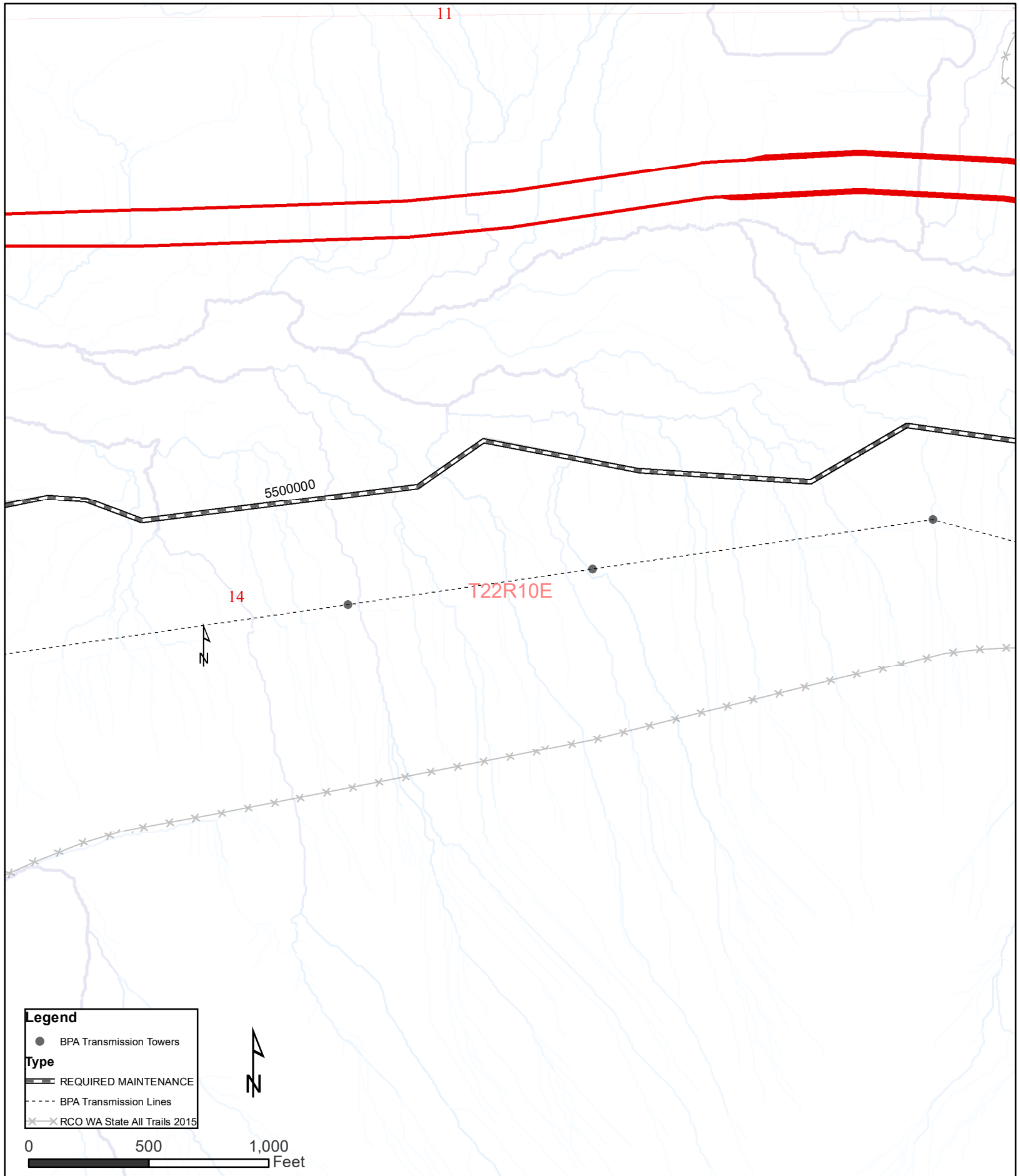


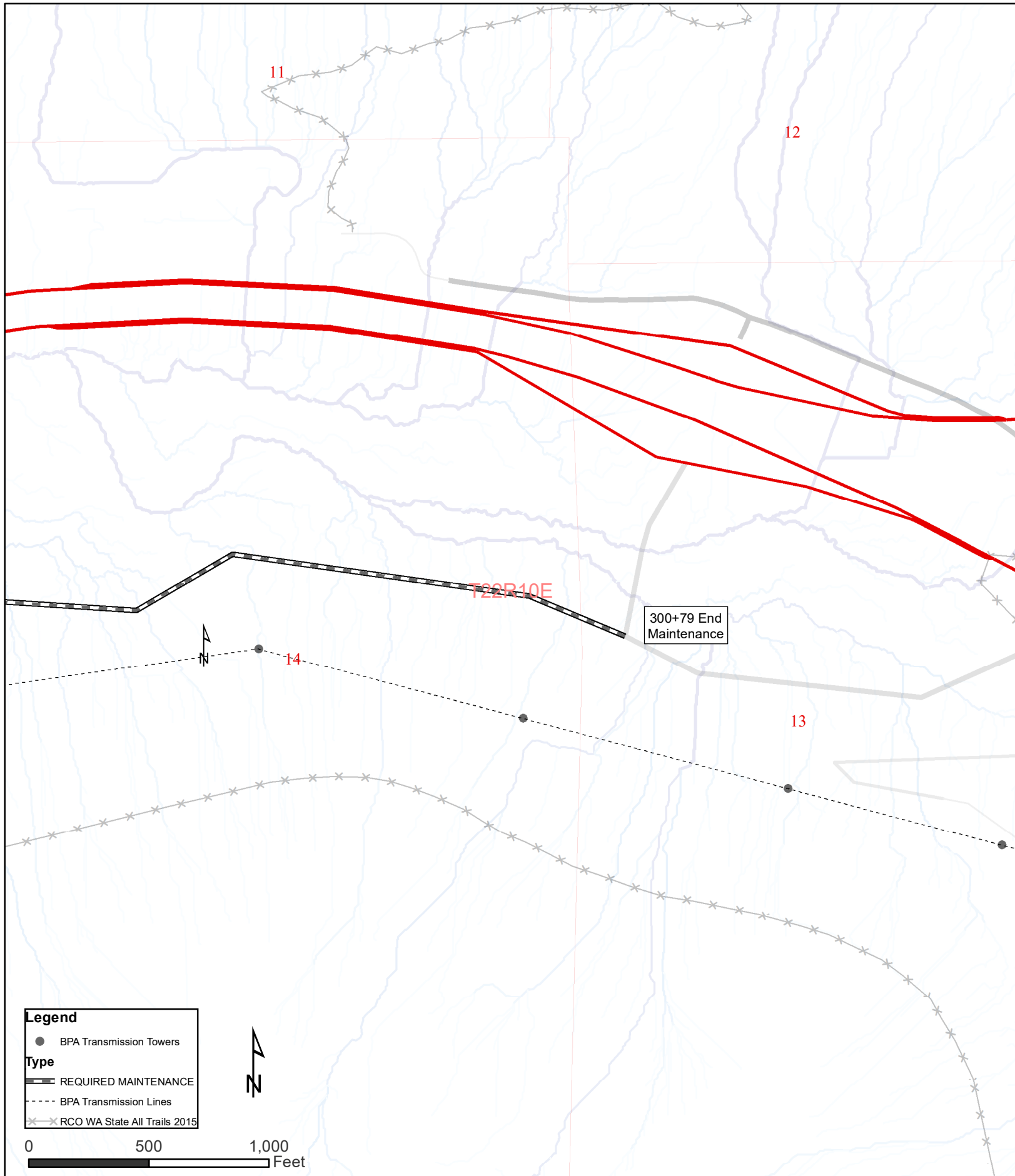














GOOD NEIGHBOR AUTHORITY  
 MT. BAKER-SNOQUALMIE NATIONAL FOREST  
 SNOQUALMIE RANGER DISTRICT

ROCKWOOD TIMBER SALE ROAD PLAN  
 KING COUNTY

AGREEMENT NO.: 36-105001  
 DATE: 5/15/2023

STAFF ENGINEER: JULIA COLANTONIO  
 DRAWN & COMPILED BY: JULIA COLANTONIO

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 Level</u>
9020000	0+00 to 73+41	Maintenance	3
9020000	73+41 to 127+17	Maintenance	2
9021000	0+00 to 14+60	Maintenance	2
9021110	0+00 to 34+00	Reconstruction	1
5500000	13+20 to 300+79	Maintenance	3
5500110	0+00 to 13+71	Reconstruction	1
BPA 3C	0+00 to 3+85	Reconstruction	NS
BPA 8C	0+00 to 8+69	Reconstruction	NS
Temp 1B	0+00 to 4+65	Temporary Construction	NS
5500210	0+00 to 4+10	Decommission	NS
5500411	0+00 to 1+80	Decommission	NS
9020.1	0+00 to 7+70	Decommission	NS

**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>
BPA 2D	0+00 to 6+00	Reconstruction
Temp 1A	0+00 to 3+00	Temporary Construction
Temp 1D	0+00 to 3+08	Temporary Construction
Temp 2F	0+00 to 1+65	Temporary Construction
Temp 3C	0+00 to 2+70	Temporary Construction

Temp 5C	0+00 to 10+60	Temporary Construction
Temp 8C	0+00 to 3+11	Temporary Construction
Unit 36 Temp Skid Road	0+00 to 2+05	Temporary Construction
Temp 5500.1	0+00 to 2+20	Temporary Construction
Temp 5500.2	0+00 to 1+50	Temporary Construction
Temp 5500.3	0+00 to 0+85	Temporary Construction

#### 0-4 TEMPORARY CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
Temp 1A	0+00 to 3+00	<ul style="list-style-type: none"> <li>• Brush road in accordance with the BRUSHING DETAIL.</li> <li>• Reconstruction road in accordance with the TYPICAL SECTION SHEET and Clause 4-3, ROAD GRADE AND ALIGNMENT STANDARDS.</li> <li>• Install Rolling dips as listed in the CULVERT AND DRAINAGE LIST in accordance with clause 5-31 ROLLING DIP CONSTRUCTION.</li> <li>• Place and Compact Rock as listed in the ROCK LIST.</li> <li>• Create positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as directed by the Contract Administrator.</li> </ul>
Temp 1B	0+00 to 4+65	<ul style="list-style-type: none"> <li>• Construct road from 0+00 to 2+45 including, but not limited to: clearing and grubbing, and excavation and embankment to subgrade.</li> <li>• Reconstruction road from 2+45 to 4+65 in accordance with the TYPICAL SECTION SHEET and Clause 4-3, ROAD GRADE AND ALIGNMENT STANDARDS.</li> <li>• Place and Compact Rock as listed in the ROCK LIST.</li> <li>• Create positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as directed by the Contract Administrator.</li> </ul>
Temp 1D	0+00 to 3+08	<ul style="list-style-type: none"> <li>• Construct 60' radius curve from 0+00 to 1+00 including, but not limited to: clearing and grubbing, and excavation and embankment to subgrade.</li> <li>• Brush road in accordance with the BRUSHING DETAIL.</li> <li>• Reconstruction road in accordance with the TYPICAL SECTION SHEET and Clause 4-3, ROAD GRADE AND ALIGNMENT STANDARDS.</li> <li>• Install Rolling dips as listed in the CULVERT AND DRAINAGE LIST in accordance with clause 5-31 ROLLING DIP CONSTRUCTION.</li> </ul>

		<ul style="list-style-type: none"> <li>Place and Compact Rock as listed in the ROCK LIST.</li> <li>Create positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as directed by the Contract Administrator.</li> </ul>
Temp 2F	0+00 to 1+65	<ul style="list-style-type: none"> <li>Construct road including, but not limited to: clearing and grubbing, and excavation and embankment to subgrade.</li> <li>Create positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as directed by the Contract Administrator.</li> </ul>
Temp 3C	0+00 to 2+70	<ul style="list-style-type: none"> <li>Construct road including, but not limited to: clearing and grubbing, and excavation and embankment to subgrade.</li> <li>Place and Compact Rock as listed in the ROCK LIST.</li> <li>Create positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as directed by the Contract Administrator.</li> </ul>
Temp 5C	0+00 to 10+60	<ul style="list-style-type: none"> <li>Construct 65-ft radius curve from 0+00 to 1+00 including, but not limited to: clearing and grubbing, and excavation and embankment to subgrade.</li> <li>Reconstruct road from 1+00 to 10+41 including, but not limited to: clearing and grubbing, and excavation and embankment to subgrade.</li> <li>Endhaul 560 loose cubic yards to a Waste area designated by the Contract Administrator.</li> <li>Place and Compact Rock as listed in the ROCK LIST.</li> <li>Create positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as directed by the Contract Administrator.</li> </ul>
Temp 8C	0+00 to 3+11	<ul style="list-style-type: none"> <li>Construct road including, but not limited to: clearing and grubbing, and excavation and embankment to subgrade.</li> <li>Create positive drainage using a combination of insloping, outsloping, and ditchouts as needed or as directed by the Contract Administrator.</li> </ul>
Unit 36 Temp Skid Road	0+00 to 2+05	
Temp 5500.1	0+00 to 2+20	
Temp 5500.2	0+00 to 1+50	
Temp 5500.3	0+00 to 0+85	
		<b>TOTAL – 35.39 STAs</b>

**0-5 RECONSTRUCTION**

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

<u>Road</u>	<u>Stations</u>	<u>Maint Level</u>	<u>Requirements</u>
BPA 2D	0+00 to 6+00	NS	<ul style="list-style-type: none"> <li>• Brush road in accordance with the BRUSHING DETAIL.</li> <li>• Blade and shape road surface as much as possible.</li> <li>• Place and Compact Rock as listed in the ROCK LIST.</li> </ul>
BPA 3C	0+00 to 3+85	NS	
BPA 8C	0+00 to 8+69	NS	<ul style="list-style-type: none"> <li>• Brush road in accordance with the BRUSHING DETAIL.</li> <li>• Blade and shape road surface as much as possible.</li> <li>• Construct 60-ft radius curve from 0+00 to 1+00 including but not limited to: clearing and grubbing and excavation to subgrade.</li> <li>• Waste up to 100cy of waste material at a waste area designated by the Contract Administrator.</li> </ul>
5500110	0+00 to 13+71	1	<ul style="list-style-type: none"> <li>• Brush road in accordance with the BRUSHING DETAIL.</li> <li>• Blade and shape road surface as much as possible.</li> <li>• Place and Compact Rock as listed in the ROCK LIST.</li> <li>• Install drainage structures listed in the CULVERT AND DRAINAGE LIST in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.</li> </ul>
9021110	0+00 to 34+00	1	<ul style="list-style-type: none"> <li>• Brush road in accordance with the BRUSHING DETAIL.</li> <li>• Rip, shape, and compact road surface from 0+00 to 2+00 and 5+10 to 20+00.</li> <li>• Place and Compact Rock as listed in the ROCK LIST.</li> </ul>
			<b>TOTAL – 66.25 STAs</b>

**0-6 PRE-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Maint Level</u>	<u>Requirements</u>
9020000	2+01 to 73+41	3	<ul style="list-style-type: none"> <li>• Brush Road in accordance with the BRUSHING DETAIL.</li> </ul>

			<ul style="list-style-type: none"> <li>• Blade and shape road surface as much as possible.</li> <li>• Install geogrid material from 23+82 to 27+04 in accordance to specifications in Clause 10-3 GEOGRID FOR STABILIZATION and the GEOGRID INSTALLATION DETAIL.</li> <li>• Install drainage structures listed in the CULVERT AND DRAINAGE LIST in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.</li> <li>• Place and compact rock as listed in the ROCK LIST in accordance with the COMAPCTION LIST.</li> <li>• Remove all existing woody debris within roadway that is greater than 1 cubic foot.</li> </ul>
9020000	73+41 to 127+17	3	<ul style="list-style-type: none"> <li>• Brush Road in accordance with the BRUSHING DETAIL.</li> <li>• Blade and shape road surface as much as possible.</li> <li>• Install drainage structures listed in the CULVERT AND DRAINAGE LIST in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.</li> <li>• Place and compact rock as listed in the ROCK LIST in accordance with the COMAPCTION LIST.</li> </ul>
9021000	0+00 to 14+60	2	
5500000	13+20 to 300+79	3	
<b>TOTAL – 427.35 STAs</b>			

**0-7 POST-HAUL MAINTENANCE**

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

**0-8 CLOSURE**

This project includes road closure listed in Clause **Error! Reference source not found.**

**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 or design data (plan, profile, and cross-sections).

**1-4 ROAD TOLERANCES**

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

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

**1-6 ORDER OF PRECEDENCE**

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

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

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

**1-7 TEMPORARY ROAD CLOSURE**

On the 5500000, and 9020000 road(s), road closure is not allowed from 1200 (noon) on Fridays through Monday at 0600 or any federally recognized holidays, unless authorized in writing by the Contract Administrator.

Purchaser shall notify the Contract Administrator a minimum of 5 business days before the closure of any road. Construction may not close any road for more than 1 consecutive calendar day.

**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).

**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 flags for centerline and points of interest
- Orange and blue flags for drainage control structures

**1-20 COMPLETE BY DATE**

Purchaser shall complete road work before the start of timber haul.

**1-21 HAUL APPROVAL**

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

**1-22 WORK NOTIFICATIONS**

Purchaser shall notify the Contract Administrator a minimum of 14 business days before work begins.

**1-23 ROAD WORK PHASE APPROVAL**

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

- Subgrade construction and compaction
- Drainage installation
- Rock application and compaction
- Posthaul grading and spot rock

- Decommissioning

**1-25 ACTIVITY TIMING RESTRICTION**

The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Activity</u>	<u>Closure Period</u>
All	All	October 16 – May 31
Temp 1A, Temp 1D	All	September 1 – June 30
9020000, 5500000	Live water culvert installs and replacements	October 1 – July 14
All	All	Memorial Day weekend, 4 <sup>th</sup> of July weekend (at minimum July 3 <sup>rd</sup> - 5 <sup>th</sup> ), and Labor Day weekend.

**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. If other operators are using, or desire to use these roads, a joint operating plan must be developed. All parties shall follow this plan.

**1-29 SEDIMENT RESTRICTION**

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

**1-30 CLOSURE TO PREVENT DAMAGE**

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

- Wheel track rutting exceeds 2 inches MAINTENANCE CLASS 2 roads and County 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. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

**1-32 ASPHALT SURFACE RESTRICTION**

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

If tracked equipment is used on 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 asphalt surface(s) and have surface(s) evaluated by the Lead Engineer or their designee for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

Purchaser shall have asphalt surfaces reviewed by a third party, specializing in asphalt construction and repair. The third party's scope of the damage and repairs must be agreed upon between the Purchaser and the Contract Administrator. Damage to the asphalt from transporting equipment will be repaired at the Purchaser's expense.

**1-33 SNOW PLOWING RESTRICTION**

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

**1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS**

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

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

**1-42 UTILITY ACCESS ROAD**

The following roads are used as utility access roads. Purchaser shall conduct road work so that the utility access roads are accessible at all times. Utility access roads shall have smooth transitions onto the road.

<u>Road</u>	<u>Stations</u>
BPA 2D	0+00 to 6+00
BPA 3C	0+00 to 3+85

BPA 8C	0+00 to 8+69
--------	--------------

**1-43 ROAD WORK AROUND UTILITIES**

Road work is in close proximity to a utility. Known utilities are listed, but it is the Purchaser’s responsibility to identify any utilities not listed. Purchaser shall work in accordance with all applicable laws or rules concerning utilities. Purchaser is responsible for all notification, including “call before you dig”, and liabilities associated with the utilities and their rights-of-way. Purchaser shall notify the Bonneville Power Administration before starting road work.

<u>Road</u>	<u>Stations</u>	<u>Utility</u>
9020000	ALL	Buried Fiber Optic
5500000	ALL	Buried Fiber Optic

**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 roads in a condition that will allow the passage of light administrative vehicles.

**2-5 MAINTENANCE GRADING – EXISTING ROAD**

On the following roads, Purchaser shall use a grader to shape the existing surface before timber haul. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
9020000	2+01 to 73+41	Grade shape and compact as much as possible. Large ballast material may make grading infeasible on the 9020000 and 9021000 roads.
9020000	73+41 to 127+17	
9021000	0+00 to 14+37	
5500000	13+20 to 300+79	
		<b>Total – 712.75 STAs</b>

**2-6 CLEANING CULVERTS**

Purchaser shall clean the inlets and outlets of all culverts before timber haul.

**SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL**

**3-1 BRUSHING**

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

<u>Road</u>	<u>Stations</u>
5500000	13+20 to 300+79
5500110	0+00 to 13+71
9020000	0+00 to 127+17
9021000	0+00 to 14+60
BPA 2D	0+00 to 6+00
BPA 3C	0+00 to 3+85
BPA 8C	0+00 to 8+69
9021110	0+00 to 34+00
<b>TOTAL 495.61 STAs</b>	

**3-2 BRUSHING RESTRICTION**

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

**3-5 CLEARING**

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

**3-7 RIGHT-OF-WAY DECKING**

Purchaser shall deck all right-of-way timber. Decks must be parallel to the road centerline and placed within the cleared right-of-way. Decks must be free of dirt, limbs, and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

**3-8 PROHIBITED DECKING AREAS**

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

- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- Against standing trees.

**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. Purchaser shall remove stumps using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator.

**3-20 ORGANIC DEBRIS DEFINITION**

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

**3-21 DISPOSAL COMPLETION**

Purchaser shall remove organic debris from the road surface, 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 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- 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 in natural openings as directed by the Contract Administrator. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

**3-31 PILING**

Purchaser shall pile organic debris no closer than 20 feet from standing timber in areas specified in Clause **Error! Reference source not found.** Piles must be free of rock and soil.

## SECTION 4 – EXCAVATION

### 4-2 PIONEERING

Pioneering shall not extend past construction that will be completed during the current construction season. Pioneering shall 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 19 percent favorable and 15 percent adverse.
- Minimum curve radius is 50 feet at centerline.
- Maximum grade change for sag vertical curves is 16% in 100 feet.
- Maximum grade change for crest vertical curves is 12% 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 12%.
- Maximum favorable grades for switchbacks is 15%.
- Maximum transition grades entering and leaving switchbacks is a 6% 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:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
----------------------	-----------------------------------	-------------------------------------

Common Earth (on side slopes up to 55%)	1:1	100
Common Earth (56% to 70% side slopes)	¾:1	133
Common Earth (on slopes over 70%)	½:1	200
Fractured or loose rock	½:1	200
Hardpan or solid rock	¼:1	400

**4-6 EMBANKMENT SLOPE RATIO**

Purchaser shall construct embankment slopes no steeper than shown on the following table:

<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.

**4-21 TURNOUTS**

Purchaser shall construct turnouts intervisible with a maximum distance of 1,000 feet between turnouts. Locations may be adjusted to fit the final subgrade alignment and sight distances. 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. Locations are subject to written approval by the Contract Administrator.

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

Purchaser shall reconstruct ditches listed in the CULVERT AND DRAINAGE LIST 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 ditch outs.

**4-29 DITCHOUTS**

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

**4-35 WASTE MATERIAL DEFINITION**

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

**4-36 DISPOSAL OF WASTE MATERIAL**

Purchaser may side cast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris. On side slopes greater than 55%, all waste material shall be hauled to a waste area designated by the contract administrator.

**4-37 WASTE AREA LOCATION**

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

<u>Road</u>	<u>Waste Area Location</u>
Temp 1A	1+00
BPA 8C	0+50
5500210	0+00 to 4+10
9020.1	0+00 to 7+70

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas:

- Within 25 feet of a cross drain culvert.
- Within 150 feet of a live stream or wetland.
- On side slopes steeper than 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

**4-45 SELECT BORROW**

Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume. Select borrow material must be free of rocks greater than 6 inches in any dimension.

**4-49 BORROW SOURCE**

Purchaser may obtain borrow material from the listed borrow source. Development of the borrow source must be in accordance with the BORROW SOURCE DETAIL

<u>Source</u>	<u>Location</u>	<u>Yards</u>
9020000	97+03	70

**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. Purchaser shall accomplish all shaping using a motor grader with a minimum of 175 horsepower.

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

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

**4-62 DRY WEATHER COMPACTION**

On the following roads, the Contract Administrator may require the application of water to facilitate compaction activities. The method of water application is subject to written approval by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
9020000	0+00 to 127+17

**4-63 EXISTING SURFACE COMPACTION**

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

**4-70 SUBGRADE REINFORCEMENT**

On the following road(s), Purchaser shall provide and install biaxial geogrid. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geogrid must overlap by a minimum of 2 feet at all joints. The



geogrid must be covered with a minimum of 6 inches of compacted 1-1/4-INCH CRUSHED as specified in the ROCK LIST. Purchaser shall apply rock in 6-inch lift(s) over the geogrid in accordance with the manufacturer's specifications. Geogrid must meet the specifications in Clause 10-3 GEOGRID FOR STABILIZATION. Geogrid shall be installed in accordance with the GEOGRID INSTALLATION DETAIL.

<u>Road</u>	<u>Stations</u>
9020000	23+82 to 27+04

## SECTION 5 – DRAINAGE

### 5-5 CULVERTS

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

### 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 shown in the CULVERT AND DRAINAGE LIST. Temporary stream culverts must be located in the natural channel of the stream. Temporary culverts must be removed upon completion of road use or as directed by the Contract Administrator.

<u>Road</u>	<u>Station</u>
5500110	8+25

### 5-12 UNUSED MATERIALS FOREST SERVICE PROPERTY

On required roads, any materials listed on the ROCK LIST, CULVERT AND DRAINAGE LIST and materials listed in Clause 5-13 CONTINGENCY CULVERTS that are not installed will become the property of the Forest Service. Purchaser shall stockpile materials as approved by the Contract Administrator.

**5-13 CONTINGENCY CULVERTS**

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator.

<u>Road</u>	<u>Size</u>
On any portion of road used for timber or rock haul.	60-ft of 18" HPDE and 4 Bands Stage at location approved by Contract Administrator

**5-15 CULVERT INSTALLATION**

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures". Culverts must be installed in a manner consistent with the manufacturer's recommendations. Precautions will be taken to ensure no sediment is delivered to live water

**5-17 CROSS DRAIN SKEW AND SLOPE**

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

**5-18 CULVERT DEPTH OF COVER**

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

**5-20 ENERGY DISSIPATERS**

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

**5-25 CATCH BASINS**

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

**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 used for headwalls shall meet the specifications of Light Loose Riprap. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

**5-27 ARMORING FOR 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 shall not restrict the flow of water into culvert inlets or catch basins. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed.

**5-31 ROLLING DIP CONSTRUCTION**

Purchaser shall construct rolling dips in accordance with the ROLLING DIP DETAIL as needed or as designated by Contract Administrator. 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 water barred by November 1. Purchaser shall construct water bars 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 water bars or between natural drainage paths, and with a maximum spacing of 300 feet.

SECTION 6 – ROCK AND SURFACING

**6-5 ROCK FROM COMMERCIAL SOURCE**

Rock used in accordance with the quantities on the TYPICAL SECTION SHEET may be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. Rock source(s) must be a Weed free certified source

<u>Possible Source</u>	<u>Location</u>
Cadman, Inc.	North Bend

**6-22 FRACTURE REQUIREMENT FOR ROCK**

A minimum of 100% by weight of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

**6-23 ROCK GRADATION TYPES**

Purchaser shall provide rock in accordance with the types and amounts listed in the TYPICAL SECTION SHEET. Rock must meet the following specifications for gradation and uniform quality. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

**6-28 1 ¼-INCH MINUS CRUSHED ROCK**

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

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

**6-41 SELECT BORROW**

No more than 50 percent of the rock may be larger than 2 inches in any dimension and no rock may be larger than 3 inches in any dimension. Select Borrow rock may not contain more than 7 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

**6-43 QUARRY SPALLS**

% Passing 8" square sieve	100%
% Passing U.S. #40 sieve	5% 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")

**6-57 ROCK MEASUREMENT BY TRUCK SCALE**

Measurement of all commercial rock is on scaled truck weight. Purchaser shall provide scaled weight using a commercial scale. Purchaser shall provide the Contract Administrator with all scale sheets.

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator for approved completion of subgrade and drainage installations before rock application.

**6-71 ROCK APPLICATION**

Purchaser shall apply rock in accordance with the specifications and quantities shown on the TYPICAL SECTION SHEET. 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 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.

**6-76 DRY WEATHER ROCK COMPACTION**

The Contract Administrator may require the application of water to facilitate compaction of the rock surfacing. The method of water application is subject to approval by the Contract Administrator.

**6-80 WATERING FOR DUST ABATEMENT**

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

**6-82 CHEMICAL RESTRICTION**

Purchaser shall not allow chemicals other than lignin to be used for dust abatement to enter any streams.

**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.

**SECTION 7 – STRUCTURES**

**7-1 SIGN INSTALLATION**

Purchaser shall purchase, 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>
9020000	1+00	Road Work Ahead
5500000	1+00 and 300+00	Road Work Ahead

**7-57 CULVERT SHAPE CONTROL**

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

**7-70 GATE CLOSURE**

On the following road(s), Purchaser shall keep gates closed and locked except during periods of haul. All gates must be closed at termination of use.

<u>Road</u>	<u>Station</u>	<u>Comment</u>
BPA 2D	0+50	Purchaser will be provided with a splitter to place a purchaser-supplied lock on the gate.
5500110	0+50	

**7-76 GATE INSTALLATION**

Purchaser shall install the listed gate(s).

<u>Road</u>	<u>Station</u>	<u>Type</u>	<u>Provided by</u>
9021110	34+00	LIGHT DUTY GATE	PURCHASER

LIGHT DUTY GATE installation(s) must be in accordance with the STEEL GATE DETAIL. The old gate is to be removed in usable condition and must be given back to the Forest Service unless there is written approval from the Contract Administrator.

**SECTION 8 – EROSION CONTROL**

**8-1 SEDIMENT CONTROL STRUCTURES**

Sediment control shall be accomplished using sediment traps, silt fences, settling ponds, slash windrows, or other methods as approved in writing by the Contract Administrator.

**8-2 PROTECTION FOR EXPOSED SOIL**

Purchaser shall provide and evenly spread a 4-inch layer of straw to all exposed soils within 50 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

**8-15 REVEGETATION**

Purchaser shall spread grass seed on all exposed soils within 100 feet of live water.

**8-16 REVEGETATION SUPPLY**

The Forest Service shall provide the certified weed free grass seed. The Purchaser shall provide certified weed free straw.

**8-17 REVEGETATION TIMING**

Purchaser shall revegetate after road work is completed.

**8-18 PROTECTION FOR SEED**

Purchaser shall provide a protective cover for grass seed on all exposed soils. The protective cover shall consist of certified weed free straw.

**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 certified weed free grass seed 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 certified weed free grass seed at no additional cost to the state.

**8-25 GRASS SEED**

Purchaser shall evenly spread grass seed on; all exposed soil within 100 feet of live water, and all decommissioned road prisms at a rate of 20.5 pounds per acre of exposed soil.

**SECTION 9 – POST-HAUL ROAD WORK**

**9-1 EARTHEN BARRICADES**

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

<u>Road</u>	<u>Stations</u>
9020.1	0+50
Temp 1A	0+50
Temp 1B	0+50
Temp 2F	0+50
Temp 3C	0+50
Temp 5C	0+50
Temp 8C	0+50
Unit 36 Temp Skid Road	0+50

Temp 5500.1	0+50
Temp 5500.2	0+50
Temp 5500.3	0+50
5500210	0+50
5500411	0+50

**9-2 CULVERT REMOVAL FROM LIVE STREAM**

On the following road, purchaser shall remove existing culverts from live streams and leave the resulting channel open with excavation slope and excavated channel width as specified. Place excavated material in a waste area designated in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Stations</u>	<u>Excavated Channel Width</u>	<u>Slope Ratio</u>
5500110	8+25	2	1.5:1

**9-3 CULVERT MATERIAL REMOVED FROM FEDERAL LAND**

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

**9-5 POST-HAUL MAINTENANCE**

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

<u>Road</u>	<u>Stations</u>	<u>Maintenance Level</u>	<u>Additional Requirements</u>
9020000	2+01 to 73+41	3	Grade, shape, and compact.  Apply spot rock as listed in the ROCK LIST.
9020000	73+41 to 127+17	2	
9021000	0+00 to 14+60	2	
5500000	13+20 to 300+79	3	
BPA 2D	0+00 to 6+00	Non-System	
BPA 3C	0+00 to 3+85	Non-System	
BPA 8C	0+00 to 8+69	Non-System	
<b>TOTAL – 445.89 STAs</b>			

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-20 ROAD DECOMMISSIONING**

Purchaser shall decommission the following roads at the termination of use. Roads shall be decommissioned in accordance with the ROAD DECOMMISSION DETAIL.

<u>Road</u>	<u>Stations</u>	<u>TYPE</u>
-------------	-----------------	-------------



Temp 1A	0+00 to 3+00	Level 1
Temp 1B	0+00 to 4+65	Level 1
Temp 1D	0+00 to 3+08	Level 1
Temp 2F	0+00 to 1+65	Level 1
Temp 3C	0+00 to 2+70	Level 2
Temp 5C	0+00 to 10+60	Level 1
Temp 8C	0+00 to 3+11	Level 2
Unit 36 Temp Skid Trail	0+00 to 2+05	Level 2
Temp 5500.1	0+00 to 2+20	Level 1
Temp 5500.2	0+00 to 1+50	Level 1
Temp 5500.3	0+00 to 0+85	Level 1
5500210	0+00 to 4+10	Level 1
5500411	0+00 to 1+80	Level 1
9020.1	0+00 to 7+70	Level 2
<b>TOTAL – 48.99 STAs</b>		

### 9-23 LEVEL 1 DECOMMISSIONING

- Rip the surface to a minimum depth of 18 inches using an excavator bucket.
- Outslope the surface at a minimum of 10 percent.
- Construct non-drivable water bars in accordance with the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 25 feet between water bars or between natural drainage paths and with a maximum spacing of 300 feet, or as marked in the field.
- Skew water bars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key water bars into the cut-slope to intercept the ditch. Water bars 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 culverts.
- 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 abandonment and in accordance with Section 8 EROSION CONTROL.
- Cover, concurrently with decommissioning, all exposed soils within 100 feet of any live stream, with a 4-inch deep layer of straw.
- Scatter woody debris onto abandoned road surfaces.

### 9-24 LEVEL 2 DECOMMISSIONING

- Rip the surface to a minimum depth of 18 inches using an excavator bucket.
- Outslope the surface at a minimum of 15 percent.

- Partially re-contour the native slope by removing the fill material and placing it into the ditch line and cut bank.
- Skew water bars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key water bars into the cut-slope to intercept the ditch. Water bars 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 culverts.
- 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 abandonment and in accordance with Section 8 EROSION CONTROL.
- Cover, concurrently with decommissioning, all exposed soils within 100 feet of any live stream, with a 4-inch deep layer of straw.
- Scatter woody debris onto abandoned road surfaces.

## SECTION 10 MATERIALS

### 10-3 GEOGRID FOR STABILIZATION

Geogrid must meet the following minimum requirements for strength and property qualities, and must be designed by the manufacturer to be used for stabilization or reinforcement. Material must be free of defects, cuts, and tears.

	<u>Requirements</u>
Type	Biaxial
Aperture Dimensions	1.0 in
Rib Thickness	0.05 in
Ultimate Tensile Strength	1300 lb/ft
Resistance to UV degradation	100%
Minimum width	12.5 ft

### 10-17 CORRUGATED PLASTIC CULVERT

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

### 10-22 PLASTIC BAND

Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used. Couplings must be bell and spigot connectors.

**10-23 RUBBER CULVERT GASKETS**

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

**10-24 GAUGE AND CORRUGATION**

Metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

<u>Diameter</u>	<u>Gauge</u>	<u>Corrugation</u>
18"	16 (0.064")	2 2/3" X 1/2"
24" to 48"	14 (0.079")	2 2/3" X 1/2"
54" to 96"	12 (0.109")	3" X 1"

SECTION 11 SPECIAL NOTES

**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.

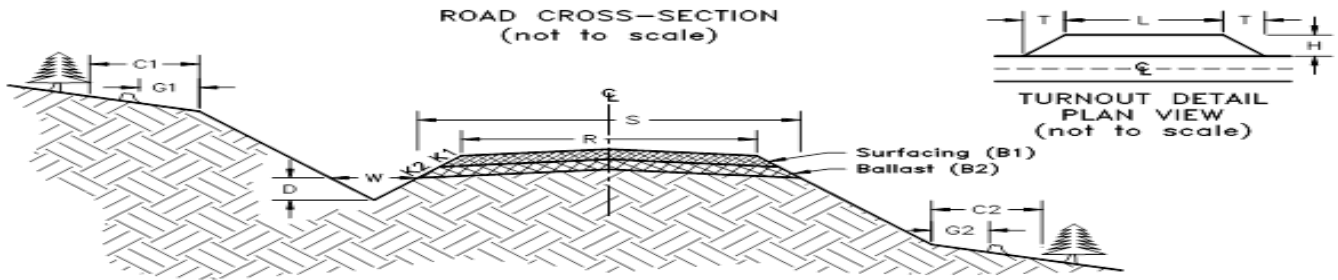


COMPACTION LIST

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						
All	-	-	Maintenance grading	-	Vibratory Smooth Drum	12000	3 Low Freq. Vibe on	3
All	-	-	Subgrade	-	Excavator	30000	-	-
5000000, 9020000	-	-	Culvert Backfill	12	Plate Compactor	-	3	-
All	-	-	Embankment	12	Vibratory Smooth Drum	12000	3 Low Freq. Vibe on	3
All	-	-	Fill	12	Vibratory Smooth Drum	30000	-	-
All	-	-	Rock	6	Vibratory Smooth Drum	12000	3 Low Freq. Vibe on	3
All	-	-	Waste Area	24	Excavator	30000	-	-

ROCK LIST  
Page 1 of 2  
1-1/4-INCH CRUSHED



Rock Sources

A 9020 Borrow Site  
B Commercial

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

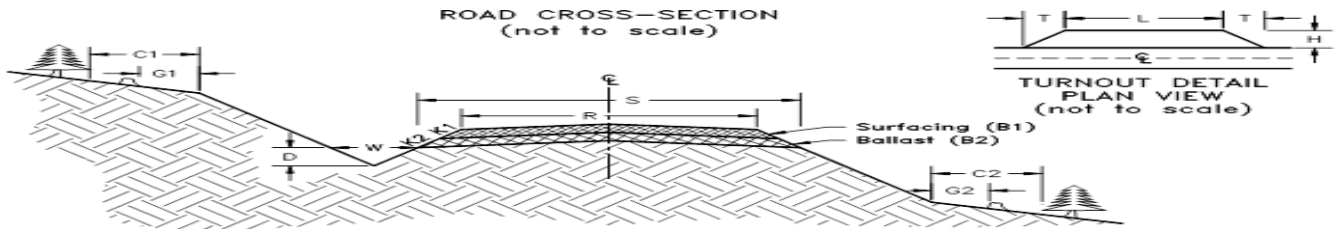
Road Name	Rock Type	Stations		Rock Slope K1	Compacted Depth (in) B1	C. Y./ Sta	Number of Stations	C.Y. Needed	Rock Source
		From	To						
<b>9020</b>	1 1/4-INCH	2+01	73+41					220	B
	1 1/4-INCH	73+41	127+17					150	B
Spot Rock	1 1/4-INCH	18+33						20	B
Spot Rock	1 1/4-INCH	20+15						50	B
Lift	1 1/4-INCH	23+82	27+04	1.5:1	12	99	3.22	318.78	B
Lift	1 1/4-INCH	27+04	29+64	1.5:1	9	73	2.60	189.80	B
Lift	1 1/4-INCH	37+25	48+01	1.5:1	6	48	10.76	516.48	B
Stump Removal	1 1/4-INCH	41+29						10	B
Stump Removal	1 1/4-INCH	43+61						10	B
Lift	1 1/4-INCH	48+01	51+00	1.5:1	6	48	2.99	143.52	B
<b>9021</b>	1 1/4-INCH	8+35						100	B
Spot Rock	1 1/4-INCH	11+55						100	B
Lift	1 1/4-INCH	11+55	14+55	1.5:1	4	24	3.00	72	B
<b>9021110</b>	1 1/4-INCH	0+00	2+00	1.5:1	4	24	2.00	48	B
	1 1/4-INCH	5+10	34+00	1.5:1	4	24	28.90	693.60	B
<b>Temp 1B</b>	1 1/4-INCH	1+80	3+50	1.5:1	4	24	1.70	40.8	B
<b>BPA 3C</b>	1 1/4-INCH	1+00						40	B
<b>Temp 5C</b>	1 1/4-INCH	0+00	1+00					20	B
<b>5500</b>	1 1/4-INCH	131+80	300+79					200	B

1-1/4-INCH CRUSHED ROCK TOTAL      2792.98 CUBIC YARDS

ROCK LIST

Page 2 of 2

BORROW, SELECT BORROW, QUARRY SPALLS



Rock Sources

A 9020 Borrow Site  
B Commercial

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

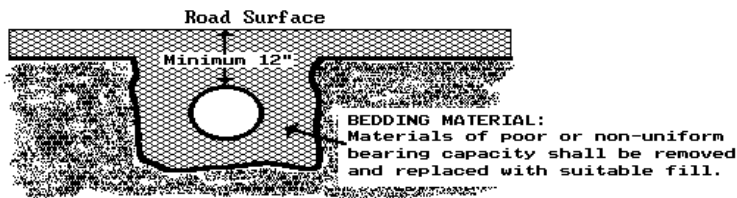
Road Name	Rock Type	Stations From	To	Rock Slope K1	Compacted Depth (in) B1	C. Y./ Sta	Number of Stations	C.Y. Needed	Rock Source
<b>9020</b>	SB	32+06						10	B
Energy Dissipator	QS	32+06						6	B
Culvert Backfill	SB	42+68						20	B
Energy Dissipator	QS	42+68						6	B
Culvert Backfill	SB	60+99						30	B
Energy Dissipator	QS	60+99						8	B
Culvert Backfill	SB	63+70						10	B
Energy Dissipator	QS	63+70						6	B
<b>9021</b>	BORROW	6+35						20	A
<b>Temp 1A</b>	BORROW	0+50						10	A
Rock Dip	BORROW	2+68						10	A
Spot Rock	SB	0+50						40	B
<b>Temp 3C</b>	BORROW	0+20						30	A
<b>5500</b>	SB	17+90						10	B
	SB	24+50						10	B
	SB	47+40						20	B
	SB	57+70						10	B
	SB	114+45						10	B
Culvert Backfill	SB	111+14						10	B
Energy Dissipator	QS	111+14						9	B
<b>5500110</b>	SB	8+25						30	B
Culvert Backfill	SB	8+25						10	B

1-1/4-INCH CRUSHED ROCK TOTAL	2793 CUBIC YARDS
SELECT BORROW TOTAL	220 CUBIC YARDS
BORROW TOTAL	70 CUBIC YARDS
QUARRY SPALLS TOTAL	35 CUBIC YARDS
TOTAL	3118 CUBIC YARDS

**CULVERT AND DRAINAGE LIST**

Road	Location	Culvert		Length (feet)		Energy Dissapater (CY)				Backfill Material			Remarks
		Diameter (in.)	Gauge	Culvert	Flume	Inlet	Outlet	Type	Source	Type	Volume (CY)	Source	
9020000	32+06	24	HDPE	35		2	4	QS	B	SB	10	B	
	42+68	24	HDPE	40		2	4	QS	B	SB	20	B	
	60+99	36	HDPE	30		2	6	QS	B	SB	30	B	
	63+70	24	HDPE	40		2	4	QS	B	SB	10	B	
	118+15			Ditch Out Left									
5500110	8+25	18	HDPE	40						SB	10	B	
Temp 1A	0+50			ROLLING DIP									
	2+68			ROLLING DIP									
5500000	17+90	24	HDPE	30							10	B	
	17+90			Reconstruct ditch to 19+00									
	24+50	24	HDPE	45							10	B	
	24+50			Reconstruct ditch to 28+20									
	47+40	24	HDPE	40							20	B	
	47+40			Reconstruct ditch to 48+50									
	57+70	24	HDPE	40							10	B	
	57+70			Reconstruct ditch to 61+40									
	64+70			Reconstruct ditch to 66+60									
	91+60			Reconstruct ditch to 97+25									
	111+14	24	HDPE	50		3	6	QS	B	SB	10	B	
	114+45	24	HDPE	40		2	4	QS	B	SB	10	B	

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



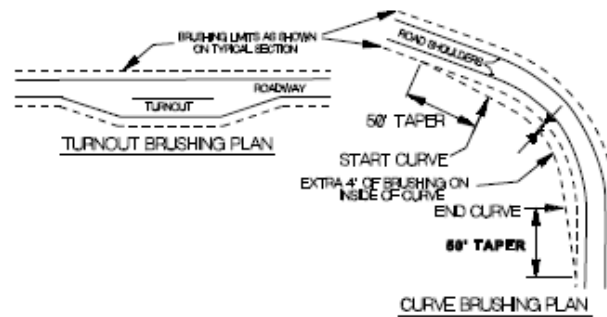
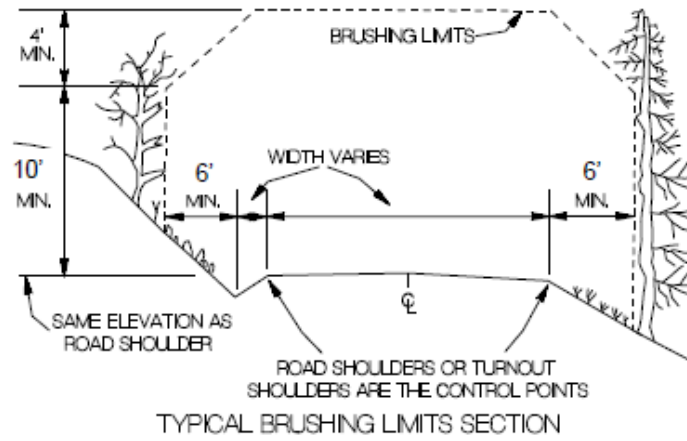
Culvert Type	Length (ft)
Total 24" HDPE	400
Total 36" HDPE	30

**Key:**

- NT - Native (bank run)
- SB - Select Borrow
- QS - Quarry Spalls



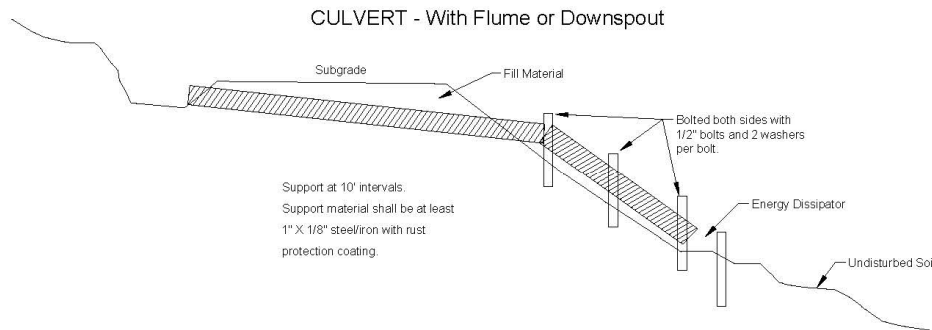
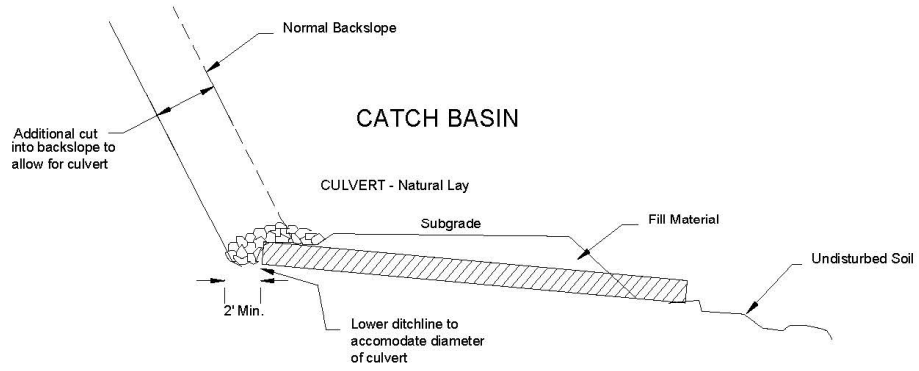
## BRUSHING DETAIL



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

# CULVERT AND DRAINAGE SPECIFICATION DETAIL

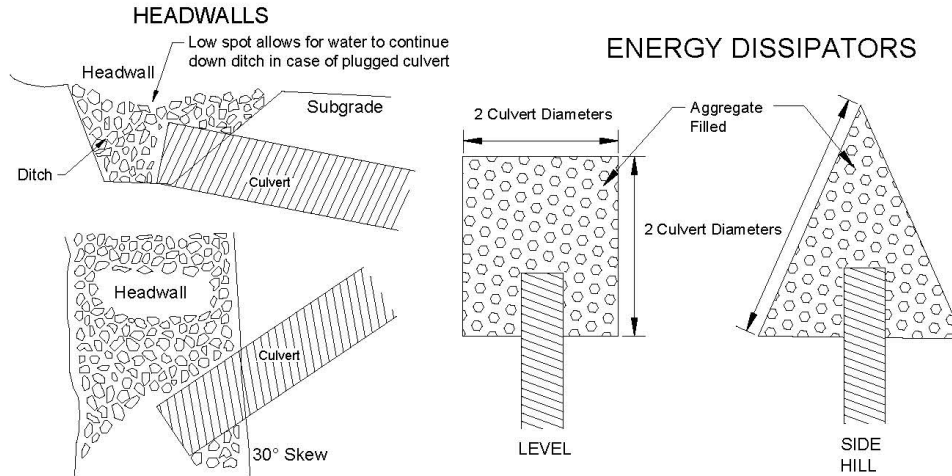
(Page 1 of 3)



## 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.

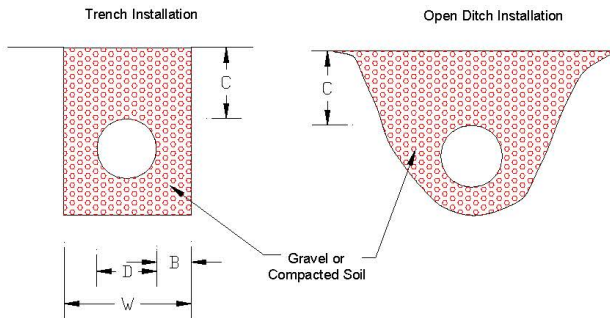
## CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 3 of 3)

### POLYETHYLENE PIPE INSTALLATION

**INSTALLATION REQUIREMENTS:**

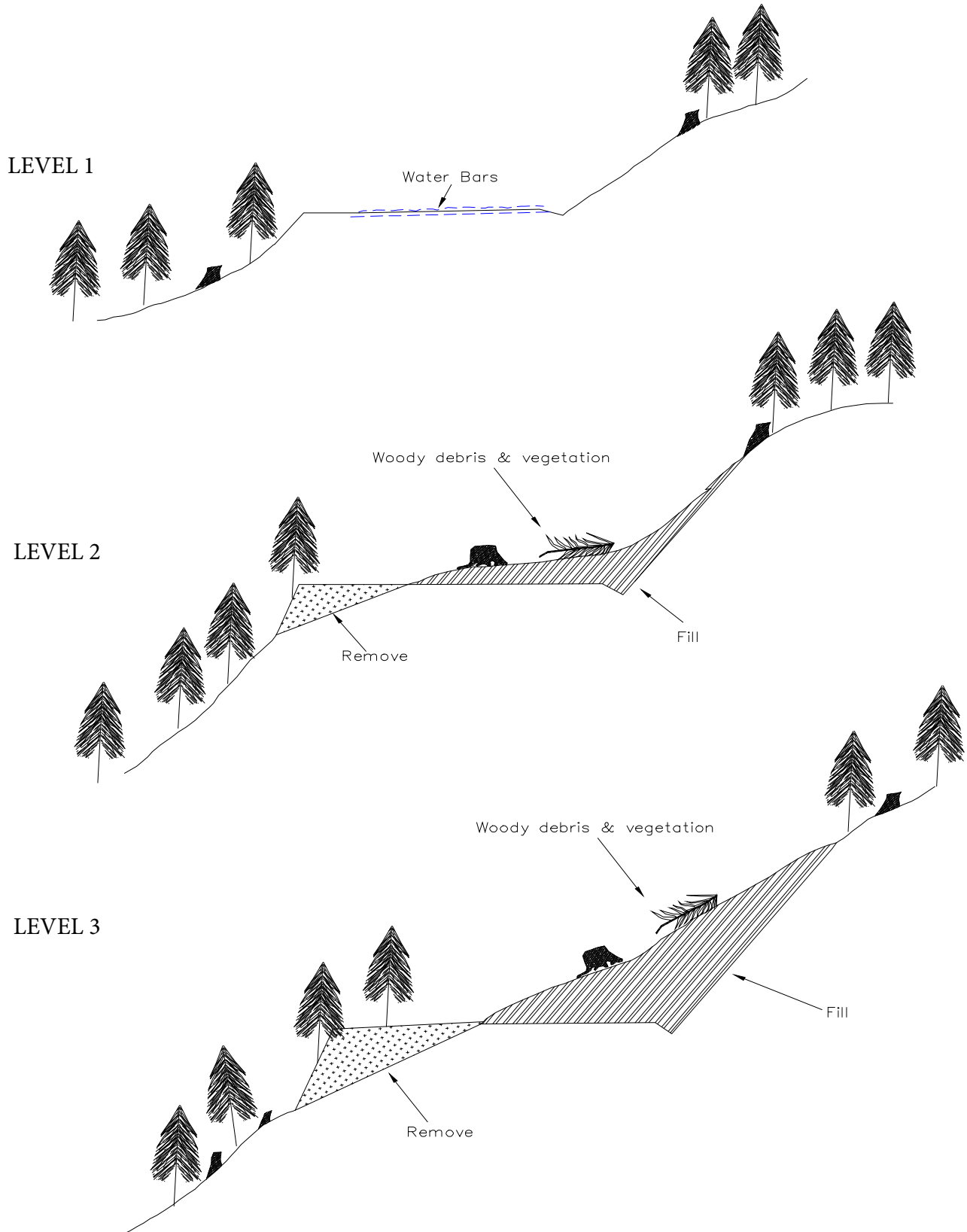
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.
2. The corrugated pipe shall be laid on grade, on a layer of bedding material 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.



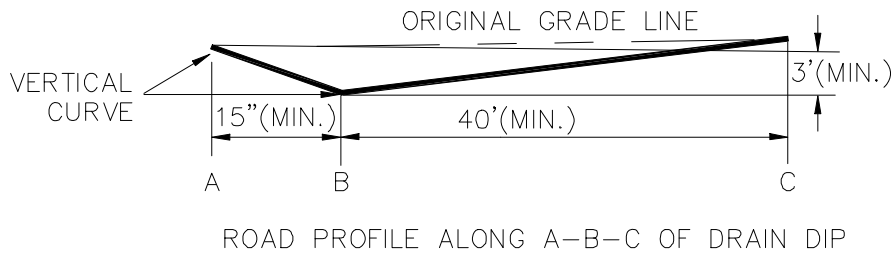
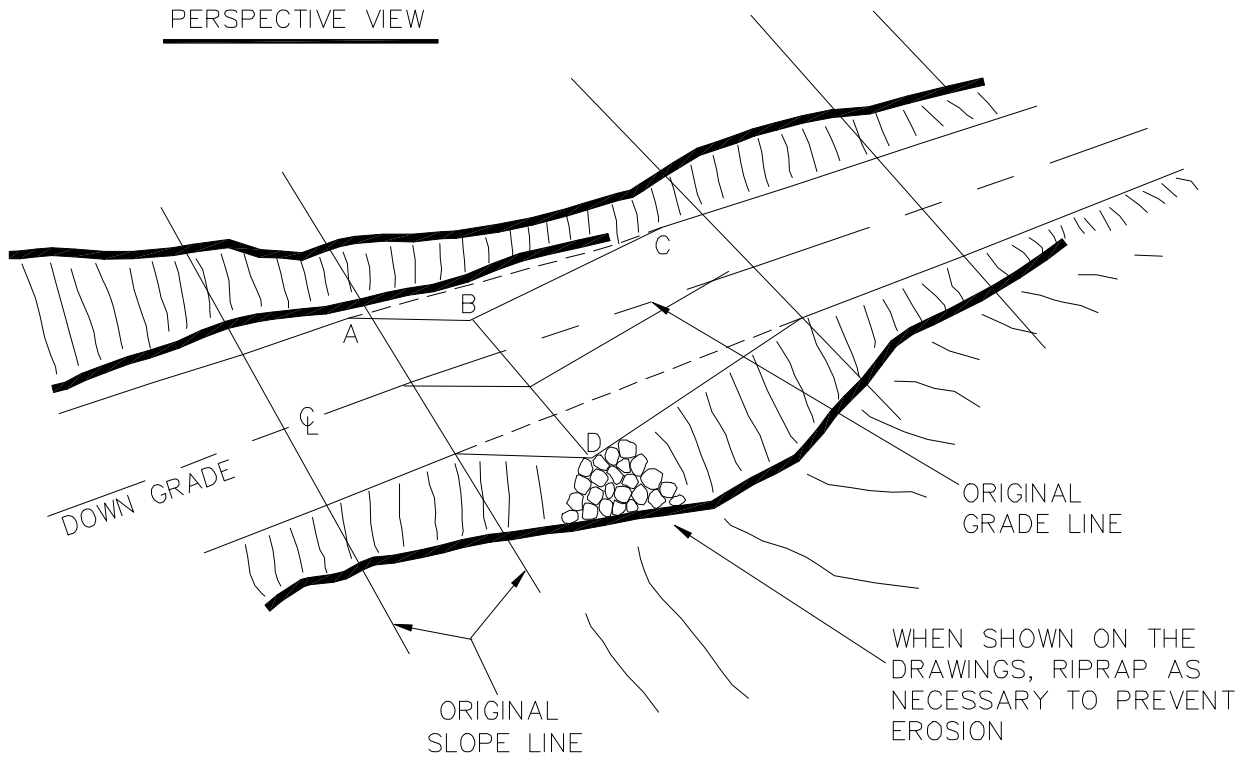
### MINIMUM DIMENSIONS Trench or Open Ditch Installation

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

# ROAD DECOMMISSIONING DETAIL

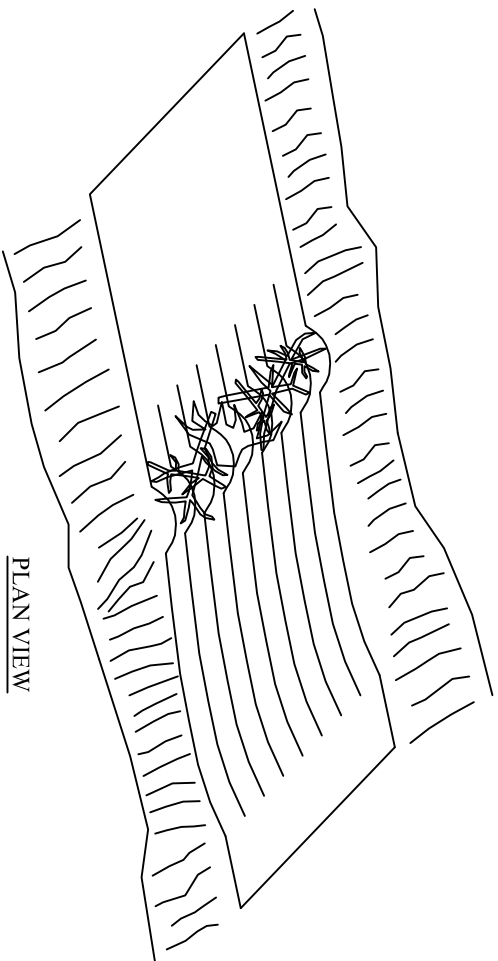


# ROLLING DIP DETAIL

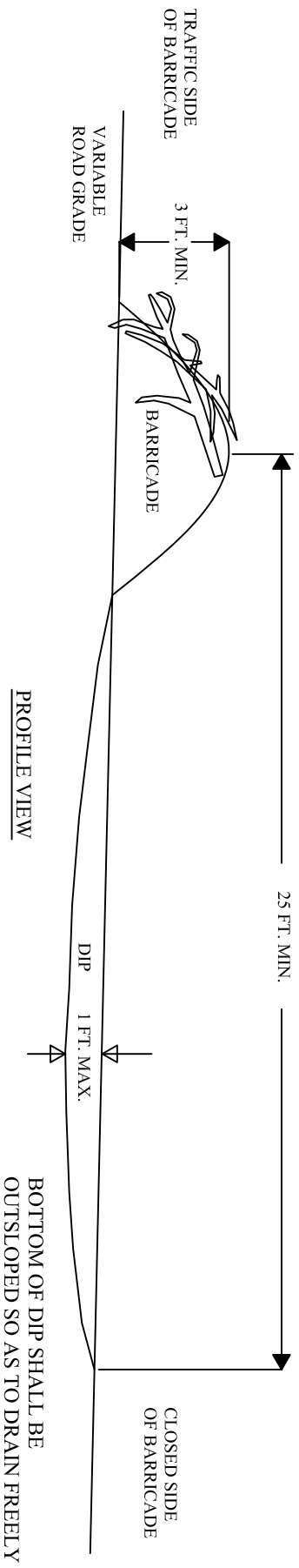


- Notes:
- 1) Plan shown is for outsloped dip. Dips may be either insloped or outsloped.
  - 2) When insloped, dips shall discharge into a culvert, drop inlet, or ditch out.
  - 3) The minimum cross grade from "B" to "D" shall be 6%.
  - 4) Skew line B-D to fit low point in draw if located in natural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



# 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

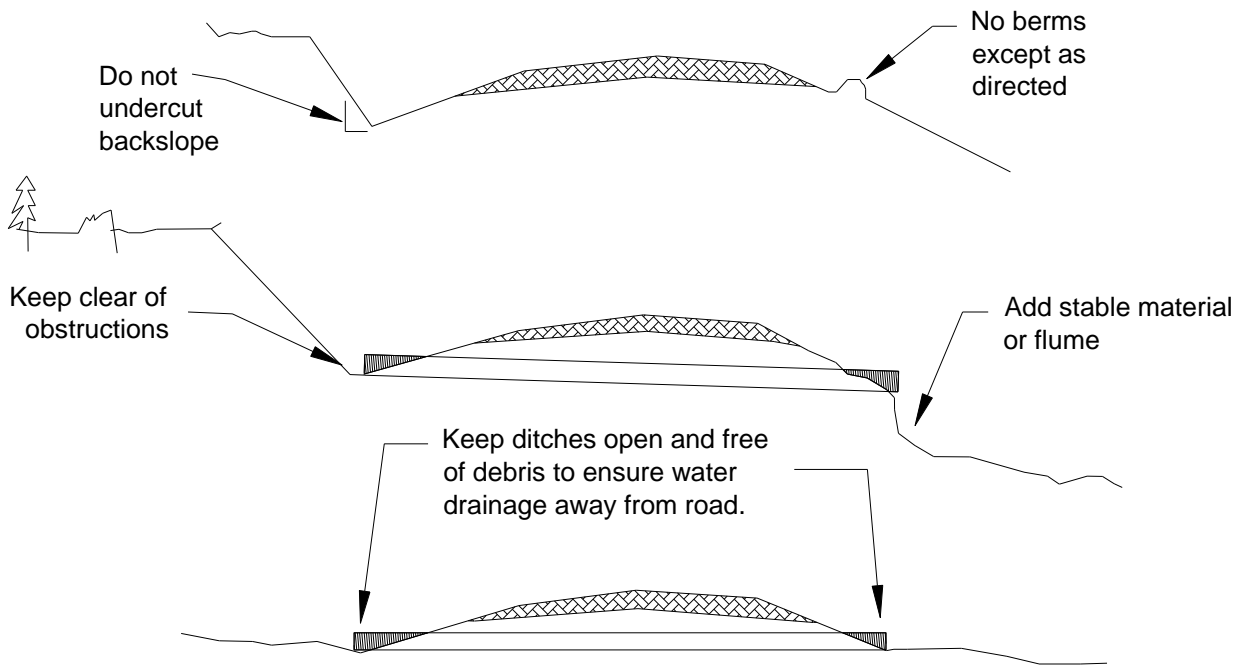
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

## Termination of Use or End of Season

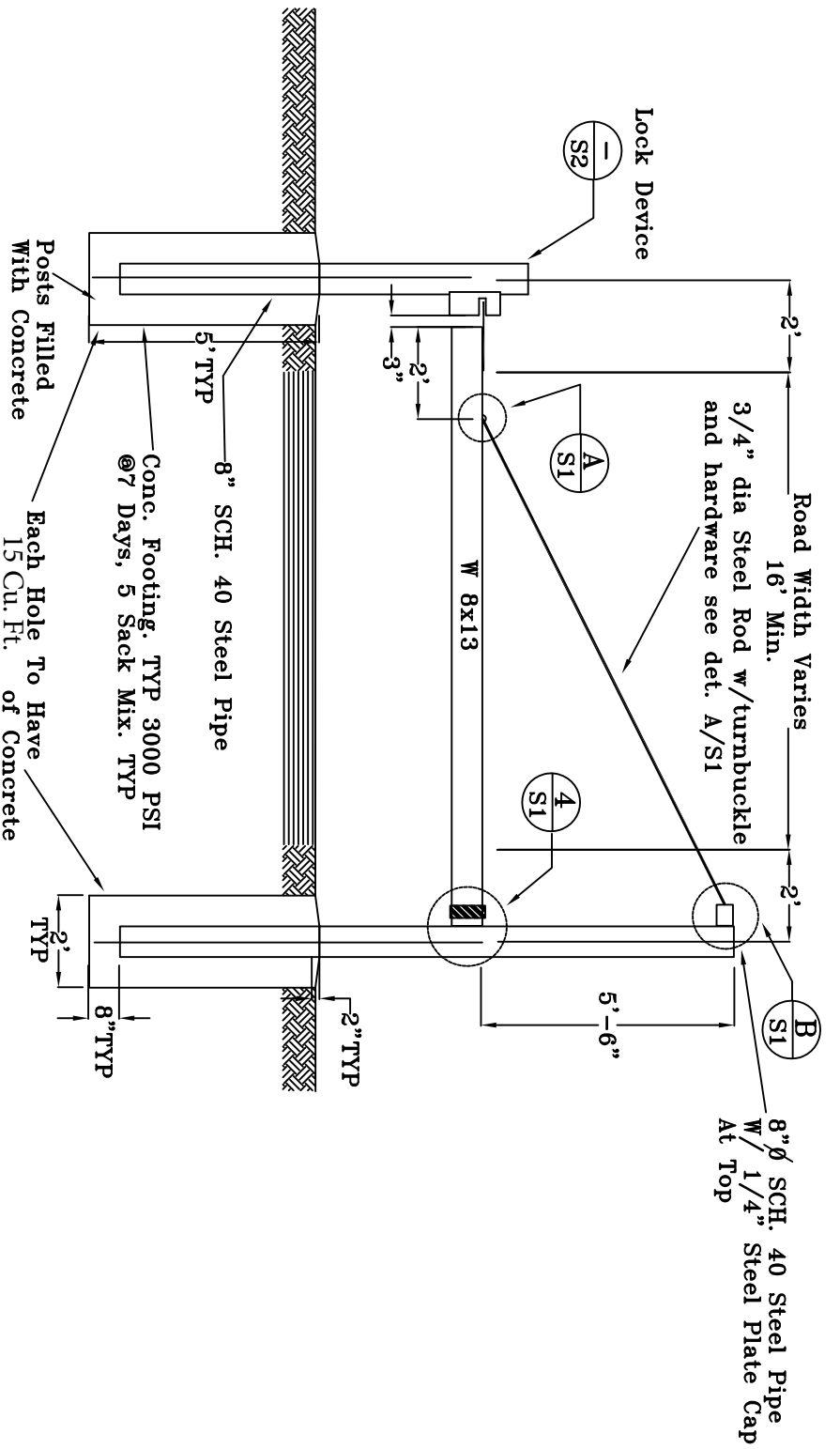
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

## Debris

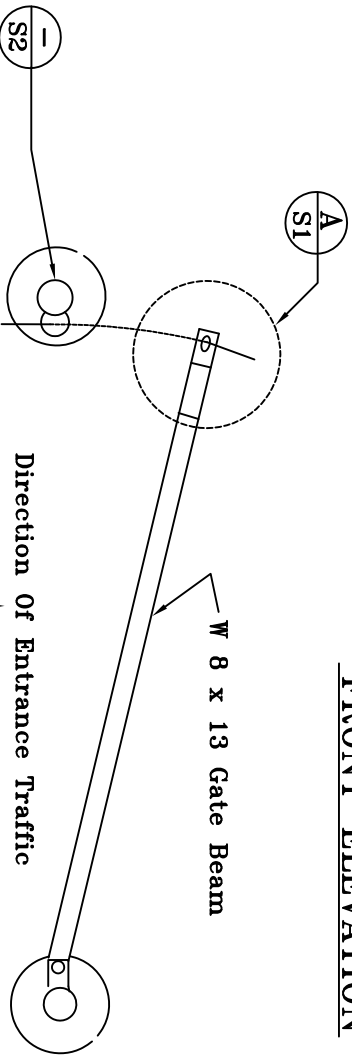
- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.



Steel Gate Detail



FRONT ELEVATION



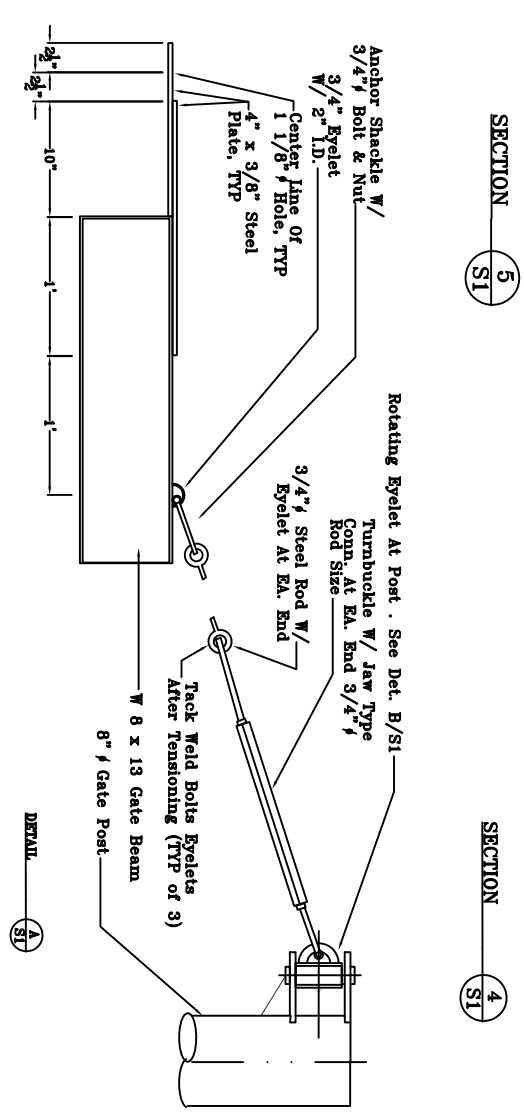
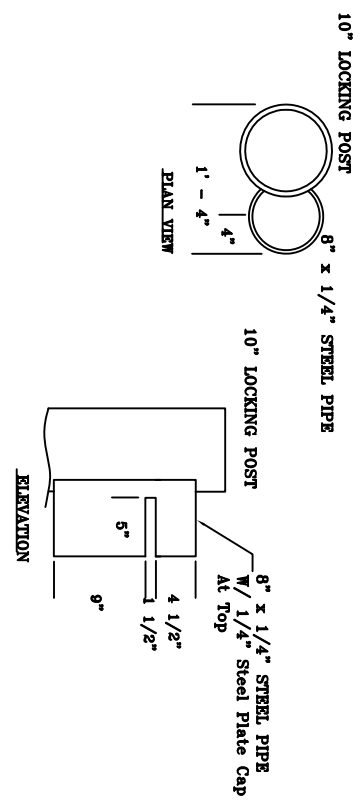
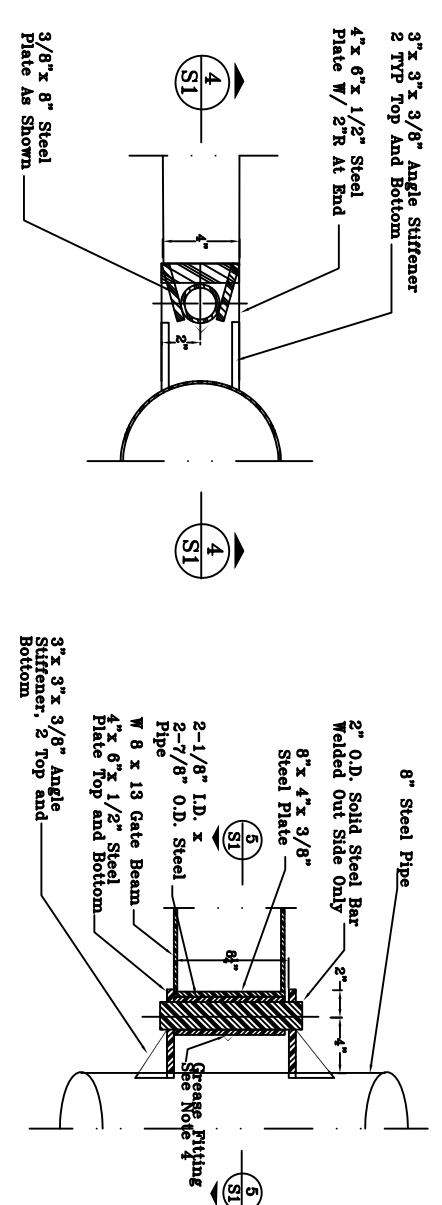
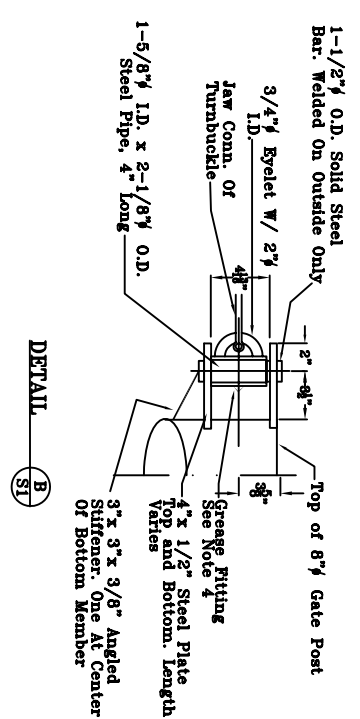
PLAN

Scale: None  
Page : 1 of 3

Gate Plan And Elevations  
Sections and Details

**GENERAL NOTES:**

1. Fabrication materials shall meet the following criteria:
  - A. Non-structural steel bars, plates and items ASTM A36 or ASTM A283 Steel.
  - B. Pipe columns ASTM A53 and ASTM A120, Grade B Steel.
  - C. Steel bolts ASTM A307, Grade A Steel.
  - D. Standard rolled steel sections ASTM A36.
  - E. Structural steel tubing ASTM A500, Grade B Steel.
2. Welding shall conform to AWS code for arc welding in building construction.
3. No drifting of bolts nor enlargement of holes will be allowed to correct misalignment. Mismatched holes shall be corrected with new material.
4. Locate grease fittings for convenient access.
5. Each gate is to be assembled to the specifications below.
  - A. Cut the vertical pipes to length & cap, and provide opening(s) to fit 2" SCH. 40 horizontal members as shown on DWG. S1, Front Elevation.
  - B. Fabricate, assemble and attach assemblies shown in detail (B/S1) and in section (4/S1) to the 8" dia SCH. 40 pipe as shown on DWG. S1, Front Elevation.
  - C. Fabricate locking device and lock open device.
  - D. Clean all surfaces of grease and oils before applying primer.
  - E. Paint gate with color: Rodda Safety Yellow.
6. All materials shown on DWG. (S1 & S2) is to be supplied.

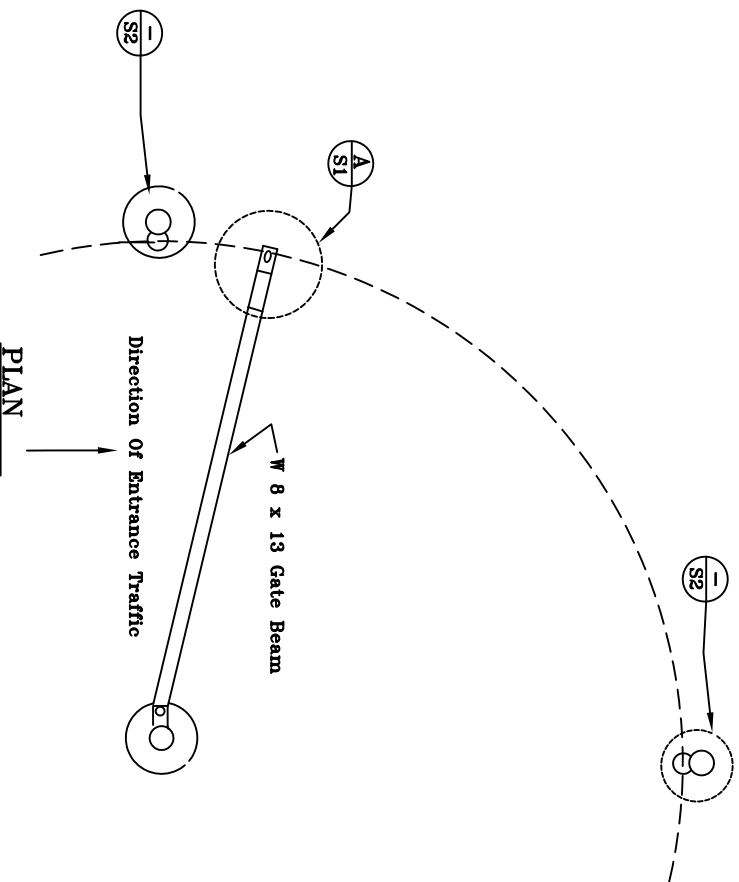


Scale : None  
Page : 2 of 3

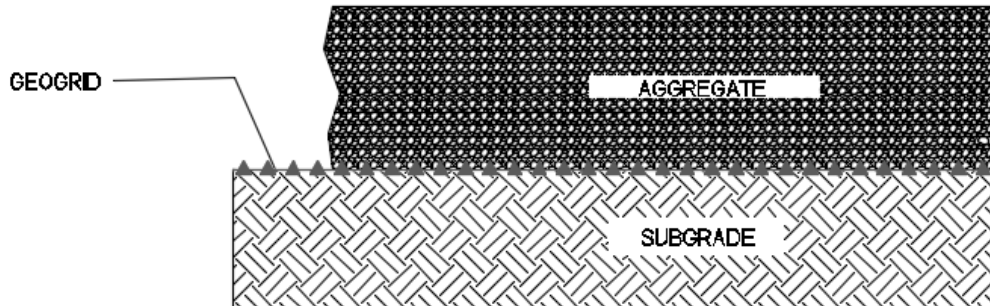
**Steel Gate Details**

# STANDARD LOCK OPEN DEVICE

LOCKING POST AND DEVICE FOR OPEN GATE POSITION, TO BE CONSTRUCTED IDENTICAL TO LOCKING POST AND DEVICE FOR CLOSED POSITION.



## GEOGRID INSTALLATION DETAIL Page 1 of 2



### Storage

1. Store geogrid in a manner that prevents contact with excessive mud, wet concrete, and other deleterious materials.
2. Store geogrid in a manner that prevents exposure to direct sunlight.

### Site preparation

1. Prepare the subgrade to the specifications listed in the TYPICAL SECTION DETAIL.
2. Compact the subgrade as listed in the COMPACTION LIST creating a smooth uniform crowned surface that is free of ruts and protruding objects such as rocks and cobbles larger than 2 inches.
3. Geogrid shall not be placed until the subgrade is smooth and uniform.

### Installation

1. Geogrid shall be laid flat directly on the prepared subgrade. Unroll the grid in the direction of traffic.
2. Geogrid shall be pre-tensioned and anchored in place at the edges using large rocks, pins, or heavy gauge staples.
3. All wrinkles and folds shall be removed prior to aggregate application.
4. Cut or fold geogrid to accommodate curves.
  - a. Folds shall be anchored in place so that the fold is flush with the subgrade.
  - b. Cut sections shall be placed with a minimum of 2 feet of overlap over the previous section.

## **GEOGRID INSTALLATION DETAIL Page 2 of 2**

5. Overlapped sections shall be placed in a shingle pattern with subsequent section placed below previous sections.
  - a. Stop aggregate placement if waving develops, remove anchors and re-tension geogrid.
  - b. Aggregate placement shall not resume until all wrinkles and folds have been eliminated.
6. Aggregate shall not be placed without written approval from the Contract Administrator or representative.

### **Aggregate Application**

1. No equipment shall drive directly on the geogrid until the minimum aggregate thickness indicated in the ROCK LIST has been achieved.
2. Trucks shall end dump only on previously placed aggregate. Dumping directly onto the geogrid is not allowed.
3. Aggregate shall be evenly spread in lifts greater than 8 inches using a dozer blade or excavator bucket. Be careful not to catch the geogrid with equipment.
4. The dozer blade shall be gradually raised during each pass to avoid creating a wave.
5. Compact the aggregate lift using a 10,000 lb. vibratory steel-wheel roller with a three passes to cover the area. Addition of water may be required to achieve optimum moisture conditions for the aggregate materials.

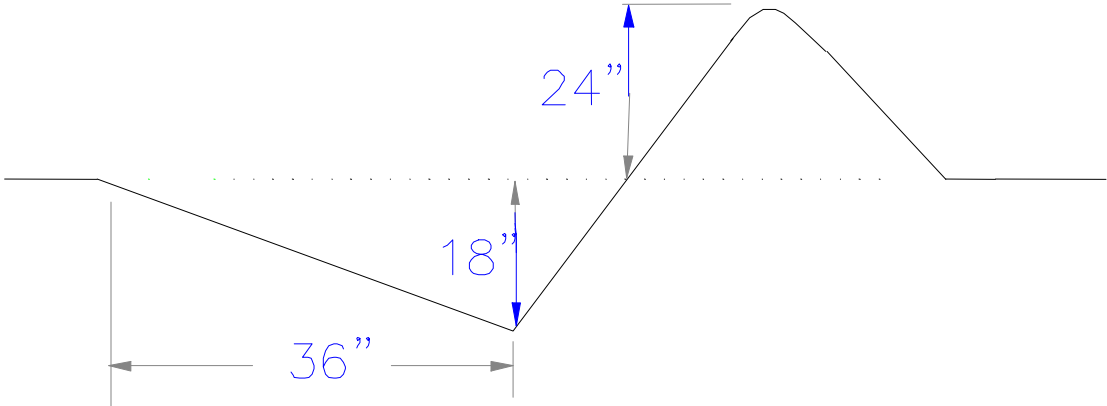
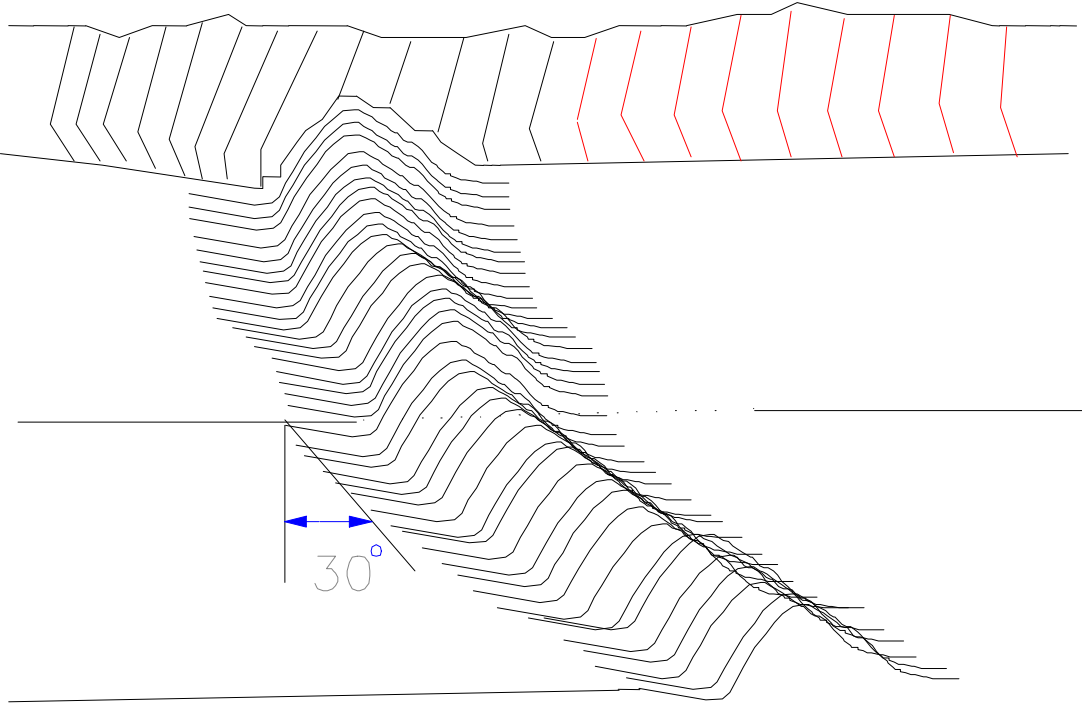
### **Special Considerations**

1. Tracked equipment shall not turn around on geogrid sections.

### **Haul Maintenance**

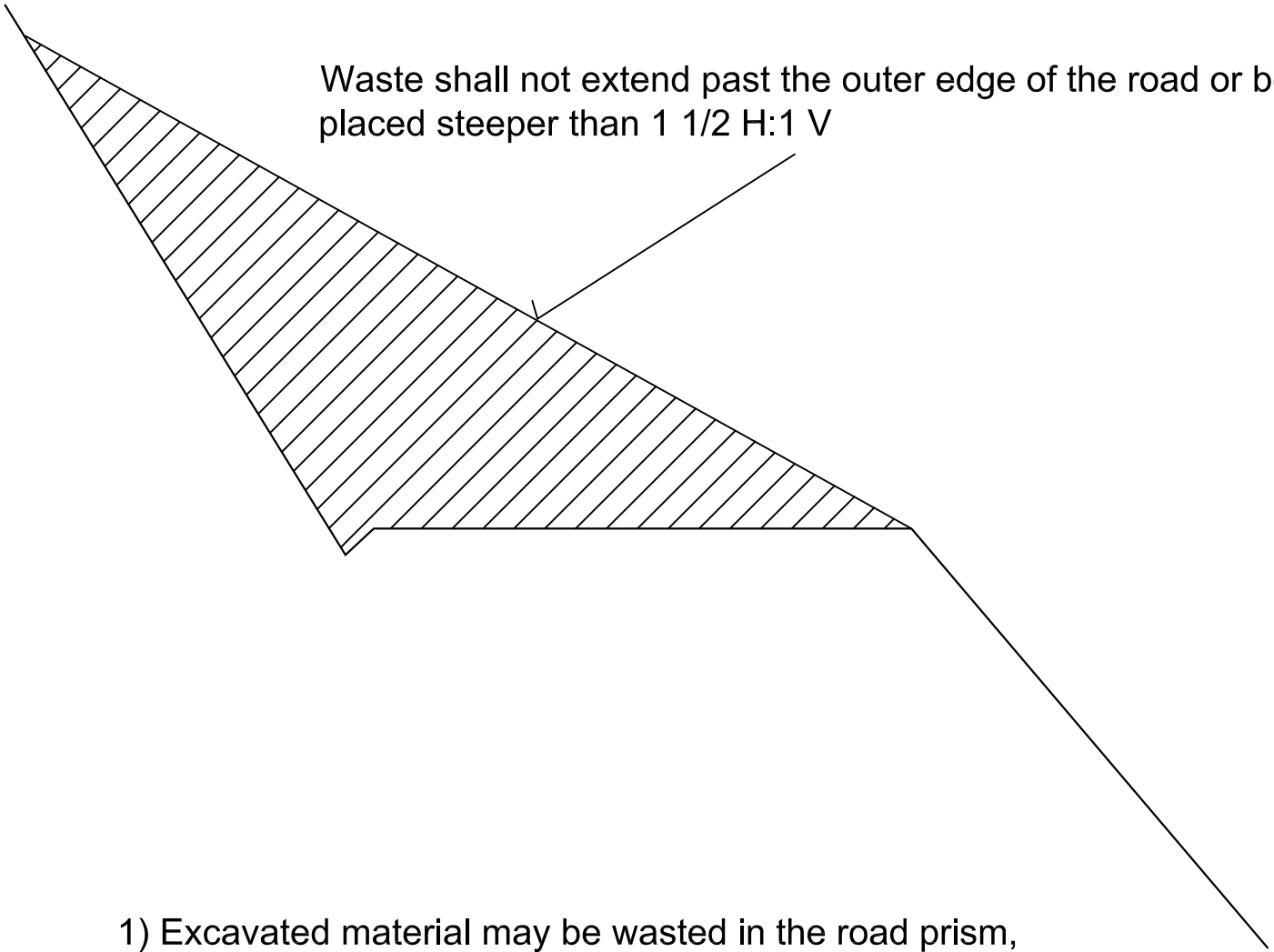
1. Apply additional aggregate to the roadway surface if the wheel rut depth exceeds 4 inches. Record the stations and the quantity of aggregate used for the repair and report on a weekly basis to the Contract Administrator.

NON-DRIVABLE WATER BAR DETAIL



# ROAD PRISM WASTE DETAIL

Waste shall not extend past the outer edge of the road or be placed steeper than 1 1/2 H:1 V



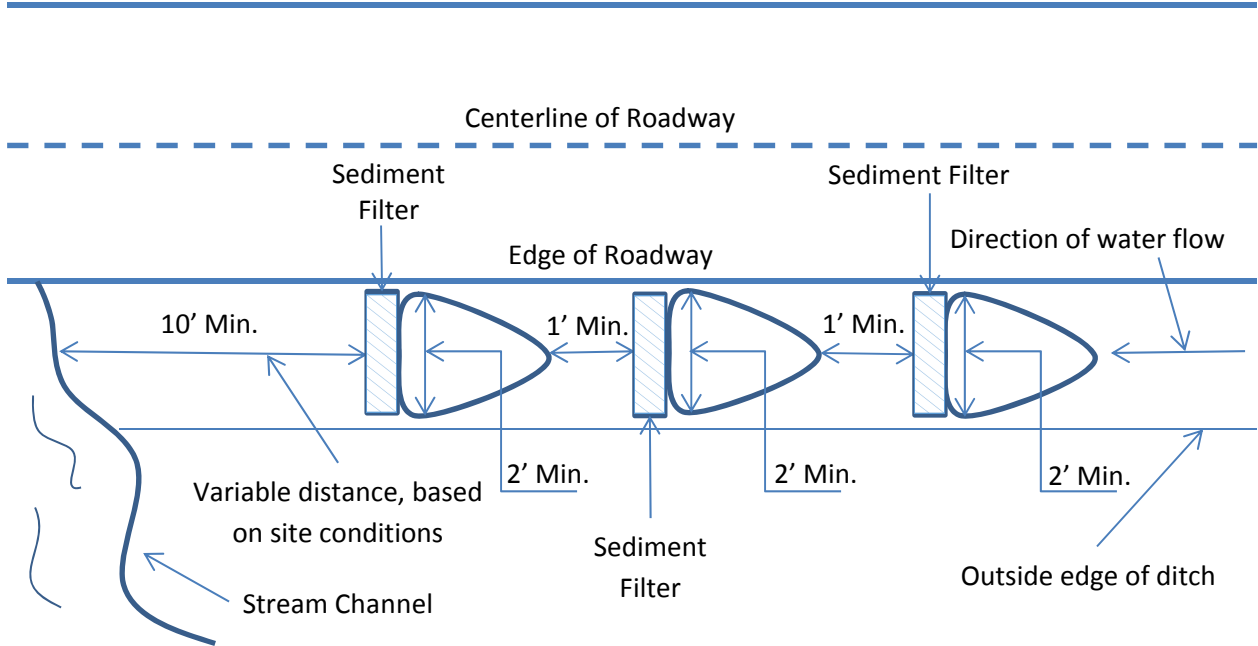
- 1) Excavated material may be wasted in the road prism, including ditchline.
- 2) Waste shall be sloped no steeper than 1 1/2 H : 1 V and placed a minimum of 10 feet from the edge of excavation limits.
- 3) Waste material shall not impede the natural drainage of water.
- 4) Waste shall be placed in 2 foot lifts and compacted by routing tracked excavation equipment over it.
- 5) A water bar shall be constructed immediately above the waste area.
- 6) Woody debris shall not be buried in waste areas. Available woody debris shall be scattered across the top of the waste area.



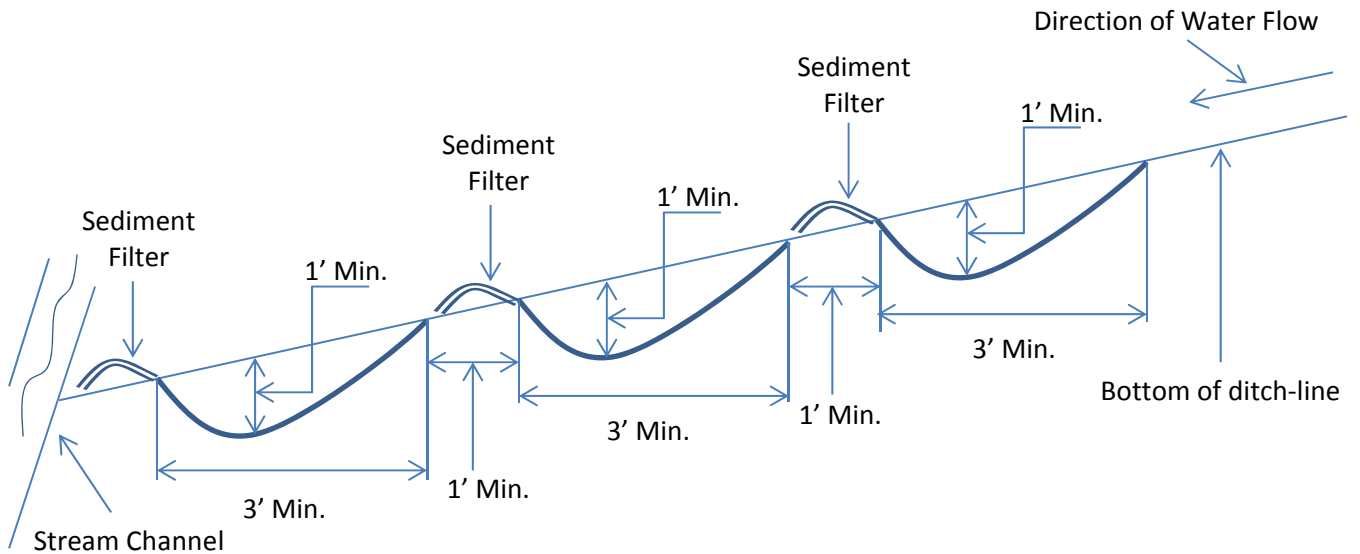
# SEDIMENT TRAP DETAIL

## Plan View

NOT TO SCALE



## Profile View



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

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 9020000

Total road length (feet): 201

Distance to Pit (feet) 28512

Average Haul Speed (mph) 30

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (light)	2.01 stations @	\$25.30 per station	\$	50.85
		Misc. Maintenance Total	\$	50.85
		PREHAUL MAINTENANCE TOTAL	\$	50.85
		\$/STA	\$	25.30

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 9020000

Total road length (feet): 7140

Distance to Pit (feet) 28512

Average Haul Speed (mph) 30

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

EXCAVATION AND FILL

Landing (medium)	2.00 each @	\$ 500.00	each	\$	1,000.00
Rip, Grade, shape, compact subgrade	3.54 stations @	\$1,600.00	each	\$	5,664.00
			Excavation Total	\$	6,664.00

MISC. MAINTENANCE

Brushing (light)	71.3967 stations @	\$25.30	per station	\$	1,806.34
Maintenance grading & compacting	71.3967 stations @	\$23.45	per station	\$	1,674.54
Posthaul Grading and Compacting	71.3967 stations @	\$23.45	per station	\$	1,674.54
			Misc. Maintenance Total	\$	5,155.41

ROCK

1-1/4-INCH CRUSHED Purchase Price	1479 CY @	\$ 24.64	per CY	\$	36,432.21
Load dump truck	1505 CY @	\$ 0.66	per CY	\$	993.02
Rock haul	Round Trip (feet) 71303.34	98 Hours @	\$ 140.00	per hour	\$ 13,694.78
Process/Compacting Surfacing (6" Lift)	1505 CY @	\$ 1.95	per hour	\$	2,930.80
Quarry Spalls	26 CY @	\$ 44.20	per CY	\$	1,149.15
SELECT BORROW PURCHASE PRICE	70 CY @	\$ 13.09	per CY	\$	916.30
Load dump truck	70 CY @	\$ 0.66	per CY	\$	46.20
Rock haul	Round Trip (feet) 71303.34	5 Hours @	\$ 140.00	per hour	\$ 637.14
Process/Compacting Surfacing (6" Lift)	70 CY @	\$ 1.95	per hour	\$	136.35
			Rock Total	\$	56,935.96

CULVERTS & FLUMES

24" Polyethylene, double wall	115 feet @	\$ 30.64	per foot	\$	3,523.20
24" Bands	3 @	\$ 31.04	Each	\$	93.12
36" Polyethylene, double wall	30 feet @	\$ 47.50	per foot	\$	1,425.00
36" Install				\$	4,000.00
36" Band	1 @	\$ 116.41	Each	\$	116.41
Biaxial Geogrid	4 rolls @	\$ 475.00	Each	\$	1,900.00
Excavator Time	2.00 laborers	\$ 22.50	per laborers	\$	45.00
	16.00 hrs	\$ 150.00	per hour	\$	2,400.00
			Culvert & Flume Total	\$	13,502.73

PREHAUL MAINTENANCE TOTAL \$ 75,594.10  
\$/STA \$ 1,058.79

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 9020000

Total road length (feet): 5377

Distance to Pit (feet) 35904

Average Haul Speed (mph) 22

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (light)	53.77 stations @	\$25.30 per station	\$	1,360.30
Pull and clean ditch (one side, scatter)	1.7 stations @	\$64.50 per station	\$	109.65
Maintenance grading & compacting	53.77 stations @	\$23.45 per station	\$	1,261.05
Posthaul Grading and Compacting	53.77 stations @	\$23.45 per station	\$	1,261.05
		Misc. Maintenance Total	\$	3,992.06

ROCK

1½" Minus Purchase Price w/ tax	150 CY @	\$ 16.20 per CY	\$	2,430.00
Load dump truck	150 CY @	\$ 0.66 per CY	\$	99.00
Rock haul	Round Trip (feet) 82561.4	14 Hours @	\$ 140.00 per hour	\$ 1,912.59
Process/Compacting Surfacing (6" Lift)	150 CY @	\$ 1.95 per CY	\$	292.19
		Rock Total	\$	5,025.96

CULVERTS & FLUMES

Ditchout	1 each @	\$ 60.00	each \$	60.00
		Culvert & Flume Total	\$	60.00

PREHAUL MAINTENANCE TOTAL \$ 9,078.02  
\$/STA \$ 168.84

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 5500000

Total road length (feet): 28759

Distance to Pit (feet) 43296

Average Haul Speed (mph) 41

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (light)	287.59 stations @	\$25.30 per station	\$	7,276.03
Pull and clean ditch (one side, scatter)	17.15 stations @	\$64.50 per station	\$	1,106.18
Maintenance grading & compacting	287.59 stations @	\$23.45 per station	\$	6,745.14
Posthaul Grading and Compacting	287.59 stations @	\$23.45 per station	\$	6,745.14
		Misc. Maintenance Total	\$	21,872.47

ROCK

1-1/4-INCH CRUSHED Purchase Price	200 CY @	\$ 24.64 per CY	\$	4,928.00
Load dump truck	209 CY @	\$ 0.66 per CY	\$	137.94
Rock haul	Round Trip (feet) 144110	18 Hours @	\$ 140.00 per hour	\$ 2,533.03
Process/Compacting Surfacing (6" Lift)	209 CY @	\$ 1.95 per CY	\$	407.11
Quarry Spalls	9 CY @	\$ 44.20 per CY	\$	397.78
SELECT BORROW PURCHASE PRICE	70 CY @	\$ 13.09 per CY	\$	916.30
Load dump truck	270 CY @	\$ 0.66 per CY	\$	178.20
Rock haul	Round Trip (feet) 144110	23 Hours @	\$ 140.00 per hour	\$ 3,272.33
Process/Compacting Surfacing (6" Lift)	270 CY @	\$ 1.95 per hour	\$	525.94
		Rock Total	\$	13,296.64

CULVERTS & FLUMES

24" Polyethylene, double wall	245 feet @	\$ 30.64 per foot	\$	7,505.94
24" Bands	5 @	\$ 31.04 each	\$	155.20
Ditchout	6 each @	\$ 60.00 each	\$	360.00
		Culvert & Flume Total	\$	8,021.14

PREHAUL MAINTENANCE TOTAL \$ 43,190.25  
\$/STA \$ 150.18

SALE/PROJECT NAME: Rockwood

CONTRACT #: 36-105001

ROAD NUMBER: 5500110

Total road length (feet): 1371

Distance to Place Pit (feet) 53856

Average Haul Speed (mph) 28.3333333

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

RECONSTRUCTION

ROCK

SELECT BORROW PURCHASE PRICE	40 CY @	\$	13.09 per CY	\$	523.60	
Load dump truck	40 CY @	\$	0.66 per CY	\$	26.40	
Rock haul	Round Trip (feet) 110454	4 Hours @	\$	140.00 per Hour	\$	525.46
Process/Compacting Surfacing (6" Lift)	40 CY @	\$	1.95 per CY	\$	77.92	
				Rock Total	\$	1,153.38

CULVERTS & FLUMES

18" Polyethylene, double wall	40 feet @	\$24.25 per foot	\$970.00
18" Bands	1 @	\$20.18 Each	\$20.18
		Culvert & Flume Total	\$990.18

MISC. MAINTENANCE

Brushing (light)	13.71 stations @	\$	25.30 per station	\$	346.86
Maintenance Grading	13.71 stations @	\$	13.60 per station	\$	186.46
			Misc Maintenance Total	\$	533.32

Reconstruction Total \$ 2,676.88  
\$/STA 195.3

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 9021000

Total road length (feet): 1460

Distance to Pit (feet) 35904

Distance to Borrow Source (feet) 2450

Average Haul Speed (mph) 25

Average Haul Speed (mph) 12

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

PREHAUL MAINTENANCE

MISC. MAINTENANCE

Brushing (light)		14.60 stations @	\$25.30 per station	\$	369.38
Maintenance Grading		11.60 stations @	\$13.60 per station	\$	157.76
Reconstruction (light)		3.00 stations @	\$157.81 per station	\$	473.44
			Misc. Maintenance Total	\$	1,000.58

ROCK

1 1/4-INCH PURCHASE PRICE		272 CY @	\$ 24.64 per CY	\$	6,702.08
Load dump truck		272 CY @	\$ 0.66 per CY	\$	179.52
Rock haul	Round Trip (feet) 74728	10 Hours @	\$ 140.00 per Hour	\$	1,340.55
Process/Compacting Surfacing (6" Lift)		272 CY @	\$ 1.95 per CY	\$	529.83

BORROW

	20 Yds				
Walk Excavator	4900 Feet	3 MPH	0.309343434 Hours	\$	46.40
Load Truck		2.0 Hours @	\$ 150.00 Per Hour	\$	300.00
Rock haul	Round Trip (feet) 7820	1 Hours @	\$ 140.00 per hour	\$	90.56
Process/Compacting Ballast (12" Lift)		20 CY @	\$ 1.48 per CY	\$	29.56
			Rock Total	\$	9,218.51

PREHAUL MAINTENANCE TOTAL \$ 10,219.09  
\$/STA \$ 699.94

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 9021110

Total road length (feet): 3400

Distance to Pit (feet) 35904

Average Haul Speed (mph) 21

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

RECONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	2 stations @	\$	108.24	per station	\$	216.48
					C & G Total	\$ 216.48

EXCAVATION AND FILL

Reconstruction (light)	20 stations @	\$	157.81	per station	\$	3,156.26
Landing (medium)	5 each @	\$	283.06	each	\$	1,415.30
					Excavation Total	\$ 4,571.56

ROCK

1 1/4-INCH PURCHASE PRICE	741.60 CY @	\$	24.64	per CY	\$	18,273.02
Load dump truck	741.60 CY @	\$	0.66	per CY	\$	489.46
Rock haul	Round Trip (feet) 78608	67 Hours @	\$	140.00	per Hour	\$ 9,437.05
Process/Compacting Surfacing (6" Lift)	741.60 CY @	\$	1.95	per CY	\$	1,444.58
					Rock Total	\$ 29,644.10

MISC. MAINTENANCE

Brushing (light)	34 stations @	\$	25.30	per station	\$	860.20
Small Gate	1 @	\$	4,000.00	EACH	\$	4,000.00
					Misc Maintenance Total	\$ 4,860.20

Reconstruction Total	\$	39,292.34
	\$/STA	1155.7



SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 1A

Total road length (feet): 300

Distance to Pit (feet) 30000

Average Haul Speed (mph) 10

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

EXCAVATION AND FILL

Construction (balanced, light)	1.00 stations @	\$	313.90	per station	\$	313.90
Reconstruction (light)	2.00 stations @	\$	157.81	per station	\$	315.63
				Excavation Total	\$	629.53

ROCK

SELECT BORROW	60 CY @	\$	13.09	per CY	\$	785.40
Load dump truck	60 CY @	\$	0.66	per CY	\$	39.60
Rock haul	Round Trip (feet) 60600	\$	140.00	per Hour	\$	992.09
Process/Compacting Surfacing (6" Lift)	60 CY @	\$	1.48	per CY	\$	88.68
				Road Rock Total	\$	1,905.77

CULVERTS & FLUMES

Dip	2 each @	\$	81.95	each	\$	163.90
				Culvert, Flume, & Pipe Bedding Total		\$163.90

MISC. MAINTENANCE

Brushing (light)	3.00 stations @	\$	25.30	per station	\$	75.90
Grass seed (spread by hand)	8 pounds @	\$	3.34	per pound	\$	27.60
Straw mulching (spread by hand)	0.08 acres @	\$	3,151.00	per acre	\$	260.41
				Misc Maintenance Total	\$	363.92

Construction Total \$ 3,063.12  
\$/sta \$ 1,021.04

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 1B

Total road length (feet): 465

Distance to Pit (feet) 29040

Average Haul Speed (mph) 27.5

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	2.00 stations @	\$	108.24	per station	\$	216.48
					C & G Total	\$ 216.48

EXCAVATION AND FILL

Reconstruction (light)	2.20 stations @	\$	157.81	per station	\$	347.19
Construction (balanced, light)	2.45 stations @	\$	313.90	per station	\$	769.06
Landing (small)	1 each @	\$	192.87	each	\$	192.87
					Excavation Total	\$ 1,309.11

ROCK

1½" Minus Purchase Price w/ tax	40.8 CY @	\$	24.64	per CY	\$	1,005.31
Load dump truck	40.8 CY @	\$	0.66	per CY	\$	26.93
Rock haul	Round Trip (feet) 59010	2 Hours @	\$	140.00	per Hour	\$ 260.14
Process/Compacting Ballast (12" Lift)	40.8 CY @	\$	1.48	per CY	\$	60.31
					Road Rock Total	\$ 1,380.68

MISC. MAINTENANCE

Grass seed (spread by hand)	13 pounds @	\$	3.34	per pound	\$	42.79
Straw mulching (spread by hand)	0.13 acres @	\$	3,151.00	per acre	\$	403.64
					Misc Maintenance Total	\$ 446.43

Construction Total	\$	3,352.70
\$/sta	\$	721.01

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 1D

Total road length (feet): 308

Distance to Pit (feet) 29040

Average Haul Speed (mph) 27.5

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing - EASTSIDE 5MBF or less	2.08 stations @	\$	41.62	per station	\$	86.57
LIGHT Clearing and Grubbing	1.00 stations @	\$	108.24	per station	\$	108.24
				C & G Total	\$	194.81

EXCAVATION AND FILL

Construction (balanced, light)	1.00 stations @	\$	313.90	per station	\$	313.90
Reconstruction (light)	2.08 stations @	\$	157.81	per station	\$	328.25
Landing (medium)	1 each @	\$	283.06	each	\$	283.06
				Excavation Total	\$	925.21

MISC. MAINTENANCE

Grass seed (spread by hand)	8 pounds @	\$	3.34	per pound	\$	28.34
Straw mulching (spread by hand)	0.08 acres @	\$	3,151.00	per acre	\$	267.36
				Misc Maintenance Total	\$	295.70

Construction Total	\$	1,415.72
\$/sta	\$	459.65

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: BPA 2D

Total road length (feet): 600

Distance to Place Pit (feet) 34320

Average Haul Speed (mph) 25

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

RECONSTRUCTION

MISC. MAINTENANCE

Brushing (light)	6 stations @	\$25.30 per station	\$	151.80
		Misc Maintenance Total	\$	151.80

EXCAVATION AND FILL

Landing (medium)	2	@ \$ 283.06	each \$	566.12
		Excavation and Fill Total	\$	566.12

Reconstruction Total	\$	717.92
	\$/STA	119.7

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 2F

Total road length (feet): 165

Distance to Pit (feet) 34848

Average Haul Speed (mph) 23.5714286

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	1.65 stations @	\$	108.24	per station	\$	178.60
					C & G Total	\$ 178.60

EXCAVATION AND FILL

Construction (balanced, light)	1.65 stations @	\$	313.90	per station	\$	517.94
Landing (medium)	1 each @	\$	283.06	each	\$	283.06
					Excavation Total	\$ 801.00

MISC. MAINTENANCE

Grass seed (spread by hand)	5 pounds @	\$	3.34	per pound	\$	15.18
					Misc Maintenance Total	\$ 15.18

Construction Total	\$	994.77
\$/sta	\$	602.89

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 5C

Total road length (feet): 1060

Distance to Pit (feet) 35904

Average Haul Speed (mph) 21.25

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	10.60 stations @	\$	108.24	per station	\$	1,147.34
					C & G Total	\$ 1,147.34

EXCAVATION AND FILL

Reconstruction (light)	10.6 stations @	\$	157.81	per station	\$	1,672.82
Landing (small)	1 each @	\$	192.87	each	\$	192.87
Landing (medium)	1 each @	\$	283.06	each	\$	283.06
Switchback Construction		\$	2,800.00		\$	2,800.00
				Excavation Total	\$	4,948.74

ROCK

1½" Minus Purchase Price w/ tax	20 CY @	\$	24.64	per CY	\$	492.80
Load dump truck	20 CY @	\$	0.66	per CY	\$	13.20
Rock haul	Round Trip (feet) 73928	\$	140.00	per Hour	\$	212.49
Process/Compacting Ballast (12" Lift)	20 CY @	\$	1.48	per CY	\$	29.56
				Road Rock Total	\$	748.05

MISC. MAINTENANCE

Grass seed (spread by hand)	54 pounds @	\$	3.34	per pound	\$	178.81
				Misc Maintenance Total	\$	178.81

Construction Total	\$	7,022.95
\$/sta	\$	662.54

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: BPA 3C

Total road length (feet): 385

Distance to Place Pit (feet) 40128

Average Haul Speed (mph) 21.1111111

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

RECONSTRUCTION

MISC. MAINTENANCE

Grade Shape Compact	3.85 Stations @	\$	23.45	Per station	\$	90.30
					Misc Maintenance Total	\$ 90.30

EXCAVATION AND FILL

Landing (medium)	1.00 each @	\$	283.06	each	\$	283.06
					Excavation Total	\$ 283.06

ROCK

1½" Minus Purchase Price w/ tax	40 CY @	\$	24.64	per CY	\$	985.60
Load dump truck	40.00 CY @	\$	0.66	per CY	\$	26.40
Rock haul	Round Trip (feet) 81026	\$	140.00	per Hour	\$	519.07
Process/Compacting Ballast (12" Lift)	40.00 CY @	\$	1.48	per CY	\$	59.12
					Rock Total	\$ 1,590.19

Reconstruction Total	\$	1,963.55
	\$/STA	510.0

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 9021000

Total road length (feet): 270

Distance to Pit (feet) 1738

Distance to Borrow Source (feet) 3725

Average Haul Speed (mph) 10

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	2.70 stations @	\$	108.24	per station	\$	292.25
					C & G Total	\$ 292.25

EXCAVATION AND FILL

Construction (balanced, light)	2.70 stations @	\$	313.90	per station	\$	847.53
Landing (small)	1 each @	\$	192.87	each	\$	192.87
					Excavation Total	\$ 1,040.40

ROCK

Borrow	30 Yds					
Walk Excavator	7450 Feet	3 MPH	0.470328283	Hours	\$	70.55
Load dump truck		30 CY @	\$	0.66	per CY	\$ 19.80
Rock haul	Round Trip (feet) 4016	0.83 Hours @	\$	140.00	per Hour	\$ 115.95
Process/Compacting Ballast (12" Lift)		30 CY @	\$	1.48	per CY	\$ 44.34
					Road Rock Total	\$ 250.64

MISC. MAINTENANCE

Grass seed (spread by hand)	7 pounds @	\$	3.34	per pound	\$	24.84
					Misc Maintenance Total	\$ 24.84

Construction Total	\$	1,608.12
\$/sta	\$	595.60



SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: 5500.1

Total road length (feet): 220

Distance to Pit (feet) 48576

Average Haul Speed (mph) 28.75

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	2.20 stations @	\$	108.24	per station	\$	238.13
					C & G Total	\$ 238.13

EXCAVATION AND FILL

Construction (balanced, light)	2.20 stations @	\$	313.90	per station	\$	690.58
Landing (small)	1 each @	\$	192.87	each	\$	192.87
					Excavation Total	\$ 883.45

MISC. MAINTENANCE

Grass seed (spread by hand)	6 pounds @	\$	3.34	per pound	\$	20.24
					Misc Maintenance Total	\$ 20.24

Construction Total	\$	1,141.82
\$/sta	\$	519.01

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 5500.2

Total road length (feet): 150

Distance to Pit (feet) 56496

Average Haul Speed (mph) 26.75

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	1.50 stations @	\$	108.24	per station	\$	162.36
					C & G Total	\$ 162.36

EXCAVATION AND FILL

Construction (balanced, light)	1.00 stations @	\$	313.90	per station	\$	313.90
Construction (balanced, heavy)	0.50 stations @	\$	662.79	per station	\$	331.40
Landing (small)	1 each @	\$	192.87	each	\$	192.87
					Excavation Total	\$ 838.16

MISC. MAINTENANCE

Grass seed (spread by hand)	4 pounds @	\$	3.34	per pound	\$	13.80
					Misc Maintenance Total	\$ 13.80

Construction Total	\$	1,014.32
\$/sta	\$	676.21

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 5500.3

Total road length (feet): 85

Distance to Pit (feet) 56496

Average Haul Speed (mph) 26.75

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	0.85 stations @	\$	108.24	per station	\$	92.00
					C & G Total	\$ 92.00

EXCAVATION AND FILL

Construction (balanced, light)	0.85 stations @	\$	313.90	per station	\$	266.82
Landing (small)	1 each @	\$	192.87	each	\$	192.87
					Excavation Total	\$ 459.68

MISC. MAINTENANCE

Grass seed (spread by hand)	2 pounds @	\$	3.34	per pound	\$	7.82
					Misc Maintenance Total	\$ 7.82

					Construction Total	\$ 559.50
					\$/sta	\$ 658.24

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Unit36SkidRoad

Total road length (feet): 205

Distance to Pit (feet) 40128

Average Haul Speed (mph) 21.1111111

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	2.05 stations @	\$	108.24	per station	\$	221.89
					C & G Total	\$ 221.89

EXCAVATION AND FILL

Construction (balanced, medium)	2.05 stations @	\$	447.45	per station	\$	917.27
Landing (small)	1 each @	\$	192.87	each	\$	192.87
					Excavation Total	\$ 1,110.14

MISC. MAINTENANCE

Grass seed (spread by hand)	6 pounds @	\$	3.34	per pound	\$	18.86
					Misc Maintenance Total	\$ 18.86

Construction Total	\$	1,350.89
<b>\$/sta</b>	<b>\$</b>	<b>658.97</b>

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: BPA 8C

Total road length (feet): 869

Distance to Place Pit (feet) 54384

Average Haul Speed (mph) 27.1052632

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

RECONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	1.00 stations @	\$	108.24	per station	\$	108.24
					C & G Total	\$ 108.24

EXCAVATION AND FILL

Construction (balanced, light)	1.00 stations @	\$	313.90	per station	\$	313.90
					Excavation Total	\$ 313.90

MISC. MAINTENANCE

Maintenance Grading	7.69 Stations @	\$	13.60	per station	\$	104.58
Brushing (light)	7.69 stations @	\$	25.30	per station	\$	194.56
					Misc Maintenance Total	\$ 299.14

					Reconstruction Total	\$ 721.28
					\$/STA	83.0

SALE/PROJECT NAME: ROCKWOOD

CONTRACT #: 36-105001

ROAD NUMBER: Temp 8C

Total road length (feet): 311

Distance to Pit (feet) 54384

Average Haul Speed (mph) 27.1052632

Truck Load/Unload Time (minutes) 12

Volume per Truck (CY) 10

CONSTRUCTION

CLEARING & GRUBBING

LIGHT Clearing and Grubbing	3.11 stations @	\$	108.24	per station	\$	336.63
					C & G Total	\$ 336.63

EXCAVATION AND FILL

Construction (balanced, light)	3.11 stations @	\$	313.90	per station	\$	976.23
Landing (small)	1 each @	\$	192.87	each	\$	192.87
					Excavation Total	\$ 1,169.09

MISC. MAINTENANCE

Grass seed (spread by hand)	9 pounds @	\$	3.34	per pound	\$	28.62
					Misc Maintenance Total	\$ 28.62

Construction Total	\$	1,534.34
\$/sta	\$	493.36