

Updated information is being provided for FSB Timber Sale #36-099456:

Documents amended:

Brief Description	Date	Completed By
The following updates have been made to the Notice of Sale: -Estimated sale volume and quality updated -Minimum bid adjusted for increased road costs, cruise volumes, and log prices : \$228,000 -Expiration date extended to October 15, 2024 -Bid deposit updated \$22,800 -Harvest method and roads updated - Timing Restriction table added	01/07/2020	Dakota Truitt
The following updates have been made to the contract: -Expiration date updated -Timing Restriction Clauses: H-010, H-131, H-142 updated -Schedule B Thinning Prescription Updated	01/07/2020	Dakota Truitt
Forest Excise Tax Road Summary- New construction linear feet changed to 6,215	01/07/2020	Dakota Truitt
The following updates have been made to the sale area: -Unit 2 reduced to 40 acres -Unit 15 reduced to 2 acres -Unit 16 reduced to 14 acres -Unit 21 added as a 1 acre right-of-way -Right-of-way timber marked with blue dots along all existing roads	01/07/2020	Dakota Truitt
The following updates have been made to the cruise: -Acreages updated based on Sale Area changes -DF added to designated cut species for Units 11 and 12 - Total Estimated Take Volumes updated: 7,972 MBF	01/07/2020	Dakota Truitt
The following updates have been made to the road plan: - Added 3+90 spur into Unit 17 -10+20 spur, added a relief culvert @ 4+50. -2903 Added 156+90 2cy LLRR in plunge pool -2903 Added 216+40 2cy LLRR in plunge pool -2903 Culvert replacement at 216+40	01/07/2020	Justin Long



GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

SALE NAME: FSB

AGREEMENT NO: 36-099456

AUCTION: January 29, 2020 starting at 10:00 a.m.,
Olympic Region Office, Forks, WA

COUNTY: Clallam

SALE LOCATION: Sale located approximately 12 miles north of Forks, WA.

PRODUCTS SOLD

AND SALE AREA:

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2902.3 for Unit #1.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2902.6 for Unit #2.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2902 for Unit #3.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and blue management tags for Unit #4.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2903 for Units # 5, 6, 7, 9, 10, 11, 12, 17.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road Spur A for Unit #13.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road Spur B Unit #14.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and road FS-2903 for Unit #15.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and roads FS-2903 and Old 2903 for Unit #16.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, and road Old 2903 Units #18 and 20.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and roads Old 2903 and Spur C for Unit #19.

The above described products on part(s) of Sections 6, 7, 8, 9, 38, 39, 40, 43 and 44 of Township 29N, Range 12 West, containing 448 acres, more or less.



GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

ESTIMATED SALE VOLUMES AND QUALITY:

Table with columns: Species, Avg DBH, Total Take MBF, Price \$/MBF, and MBF by Grade (SM, 1S, 2S, 3S, 4S, UT). Rows include Douglas-fir, Western hemlock, Sitka spruce, Red alder, Pacific silver fir, and Subtotal.

MINIMUM BID: Hemlock, Spruce combined: \$23.00/MBF (approx. \$228,000)

BID METHOD: Sealed Bids

PERFORMANCE SECURITY:

\$100,000.00

SALE TYPE:

MBF Scale

EXPIRATION DATE: October 15, 2024

ALLOCATION:

Export Restricted

BIDDABLE SPECIES: Hemlock, Spruce combined

BID DEPOSIT: \$22,800 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Cable, shovel, forwarder, or skidder.

Harvest activities, including landing and road construction, felling, skidding, yarding, and rehabilitation will not be permitted from November 1st through May 31st in summer only units, which are units 1, 2, 3, northern part of 4, all of units 5, 6, 8, 9, 10, 11, 12, 13, southwest part of 14, all of units 15, 16, 17, and 20.

Harvest activities, including landing and road construction, felling, skidding, yarding, and rehabilitation will not be permitted from March 1st through September 23rd in winter only units, which are the southern part of unit 4, all of unit 7, the northeast part of unit 14, and all of units 18 and 19.

Harvest operations must begin 2 hours after sunrise and end 2 hours before sunset for summer only units 2, 3, northern part of 4, all of units 5, 6, 8, 9, 10, 13, southwest part of 14, all of units 16, 17 and 20 from April 1st through September 23rd.

See timing restriction document for more information.



GOOD NEIGHBOR AUTHORITY TIMBER NOTICE OF SALE

ROADS:

62+15 stations of temporary new construction. 63+31 stations of temporary reconstruction. 892+45 stations of pre-haul maintenance. 36+00 Spur requires a temporary 25' Log Stringer Bridge. Temporary construction and reconstruction will not be permitted between November 1 or September 23 unless authorized in writing by the Contract Administrator. All other road work will not be permitted between November 1 to May 30 unless a Wet Weather Agreement is authorized in writing by the Contract Administrator.

See timing restriction document for more information.

ACREAGE DETERMINATION

CRUISE METHOD: *Acres determined using GPS methods. 448 net acres, 403 acres of variable density thinning and 45 acres of gaps. Cruised using variable plot sample method. Expansion factors of 40, 54.45, 62.50, 71.11, 80.28 used in units, see cruise. Sighting height was 4.5 feet. A total of 430 plots were taken.*

Shapefiles are available upon request.

FSB Timing Restrictions

Units	Operation Condition	Purpose
1, 2, 3, N part of 4, 5, 6, 8, 9, 10, 11, 12, 13, SW part of 14, 15, 16, 17, 20, 21	Summer-only Harvest Activities Operations not permitted November 1 st -May 31 st Open June 1 st - October 31 st	High risk of detrimental soil disturbance; High risk of erosion and sediment delivery to aquatic resources.
S part of 4, 7, NE part of 14, 18, 19	Winter-only Harvest Activities Operations not permitted March 1 st - September 23 rd Open September 24 th - February 28 th	Wildlife seasonal operating restriction: Northern Spotted Owl and Marbled Murrelet breeding seasons
2, 3, N part of 4, 5, 6, 8, 9, 10, 13, SW part of 14, 16, 17, 20	Work may not commence from April 1 st - September 23 rd 2 hours after sunrise and must cease 2 hours before sunset Road work and harvest activities restricted	Marbled Murrelet breeding season

Roads	Operation Condition	Purpose
New Construction: 34+25 spur, 17+40 spur, 6+40 spur, 3+90 spur, 3+90 spur Reconstruction: 36+00 spur, 10+20 spur, 2+50 spur, 4+40 spur, 10+21 spur	New temporary road construction and reconstruction restricted November 1 st - September 23 rd Open between September 24 th - October 31 st (38 days) Operations November 1 st -May 31 st permitted with a Wet Weather agreement and mitigations to protect resources	High risk of detrimental soil disturbance; High risk of erosion and sediment delivery to aquatic resources. Wildlife seasonal operating restriction: Northern Spotted Owl and Marbled Murrelet breeding seasons
All road work	Restricted November 1 st - May 31 st ; only permitted with a wet weather haul agreement and mitigations to protect resources Open June 1 st - October 31 st	High risk of detrimental soil disturbance; High risk of erosion and sediment delivery to aquatic resources.
All Haul	Restricted November 1 st - May 31 st ; only permitted with a wet weather haul agreement and mitigations to protect resources Open June 1 st - October 31 st	High risk of erosion and sediment delivery to aquatic resources.

See clauses H-010, H131, H-142 for timing restrictions in contract. See Clauses 1-11 and 1-25 for timing restrictions in road plan.

See pages 56-58 for timing restrictions in EA.

Roads	Operation Condition	Purpose
36+00 spur Log stringer bridge install and removal	Restricted November 1 st - May 31 st Open June 1 st - October 31 st **Notify Civil Engineer or designee of plan of operations 3 days before work begins, CE must be on site during install and removal.	High risk of detrimental soil disturbance; High risk of erosion and sediment delivery to aquatic resources.
All roads Culvert installs and replacements in live waters	Restricted November 1 st - May 31 st Open June 1 st - October 31 st	High risk of detrimental soil disturbance; High risk of erosion and sediment delivery to aquatic resources.
10+20 spur	Open July 1 st - September 30 th	One Fish blockage removal during decommissioning (see Clause 1-11 in road plan)
Old 2903 at stations 9+00, 31+00, 47+85	Open September 24 th - October 15 th	Three Fish blockage removals during decommissioning (see Clause 1-11 in road plan)
FS-2902 from station 64+00 to 139+00	All Rock & Timber Haul not permitted Nov 1 st - May 30 th Open June 1 st - Oct 31 st	Bockette creek protection; High risk of detrimental soil disturbance; High risk of erosion and sediment delivery to aquatic resources.

Additional Seasonal closures to be aware of:

- Cessation of operations for RH less than or equal to 30% during summer months
- Heavy rain closures to protect aquatic and soil resources during winter months
- Snow plow agreement needed for operations to continue, if the high elevations of this sale are snowed out
- ****Every April, CA will schedule Weed-free inspection of Mary Clark Pit with Clallam County to ensure maintenance of weed-free rock status. **There is no alternative rock source.** Be highly aware of this deadline. Weed-free certification expires September of each year ****

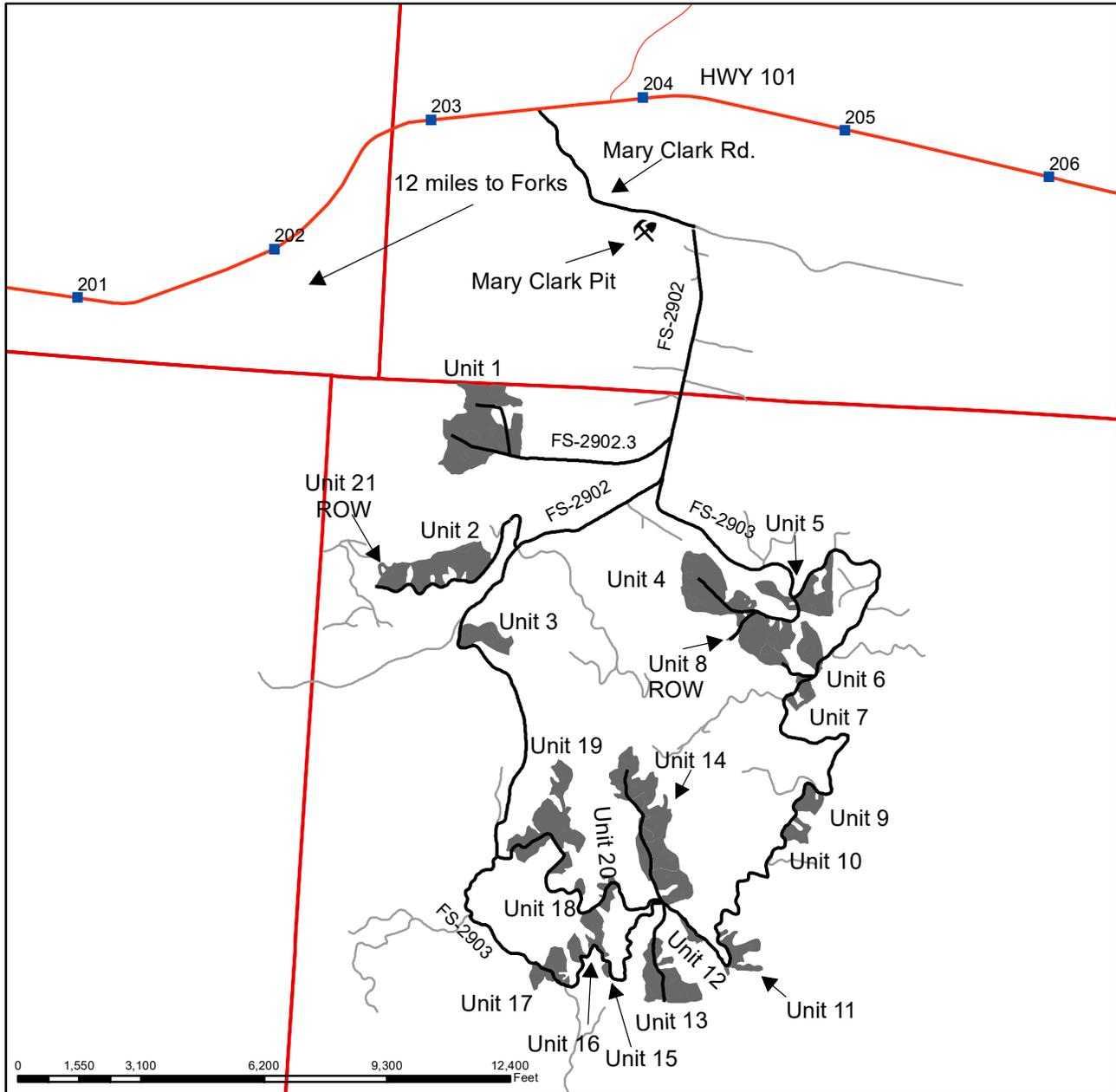
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GOOD NEIGHBOR AUTHORITY: FSB VICINITY MAP

SALE NAME: FSB
 AGREEMENT #: 36-099456
 TOWNSHIP(S): T29R12W

NATIONAL FOREST: Olympic National Forest
 COUNTY: Clallam
 ELEVATION RGE: 480' - 1640'



Legend

- Rockpits
- Sale Area
- Milepost Markers
- Survey - Township Lines
- U.S. Highway
- State Route
- Haul Route
- Other Roads

DRIVING DIRECTIONS:

From Forks: Head North on US-101 for 12 miles. Turn right onto Mary Clark Rd and travel 1 mile. Turn right onto the FS-2902 and travel 1 mile.

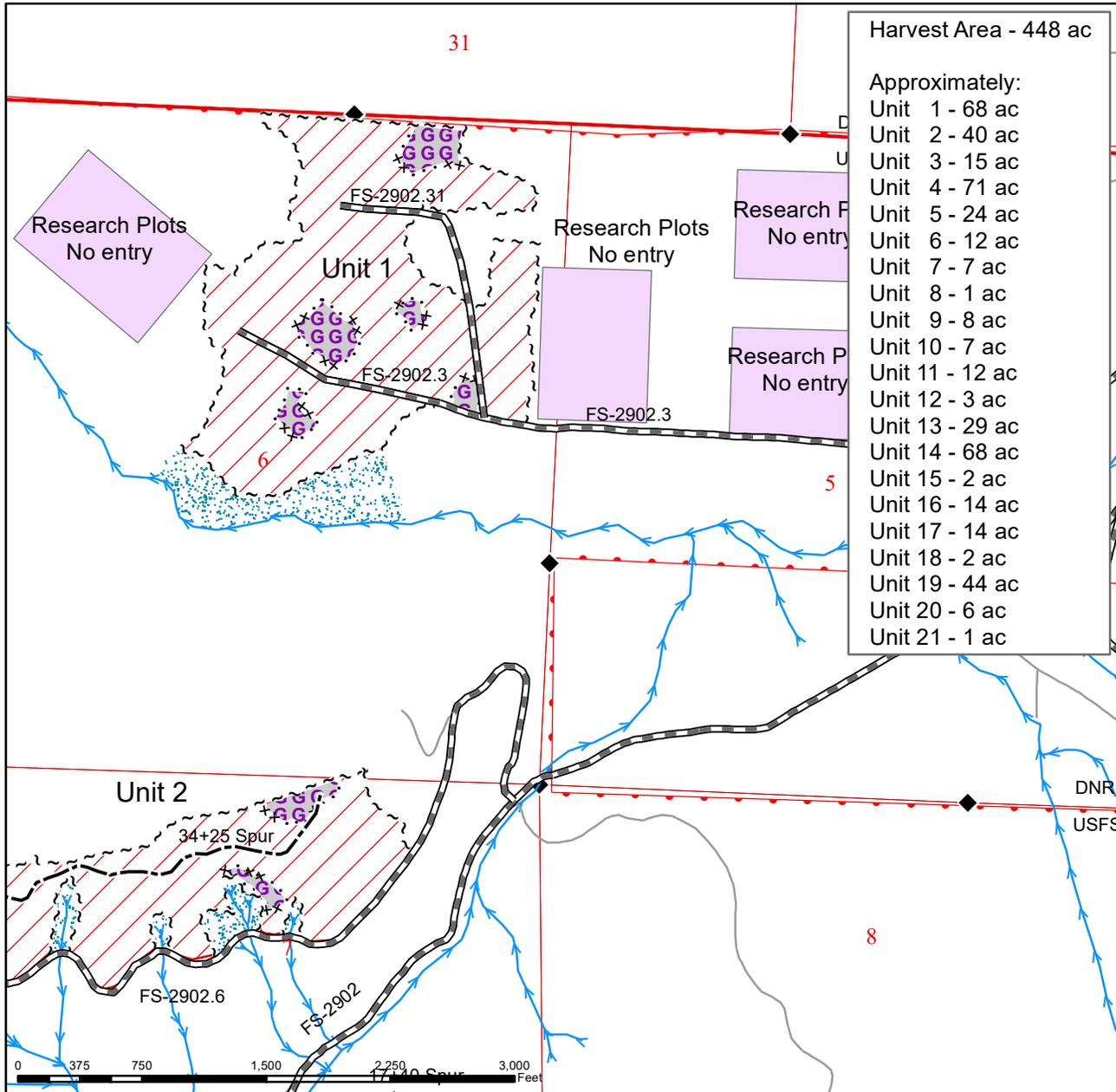
For Unit 1, turn right onto the FS-2902.3. For all other units continue on FS-2902. In 400 feet FS-2903 splits off to the left. This loop can be driven either direction to reach the remaining units.



GOOD NEIGHBOR AUTHORITY: FSB TIMBER SALE MAP

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 ELEVATION RGE: 480' - 1640'



Legend

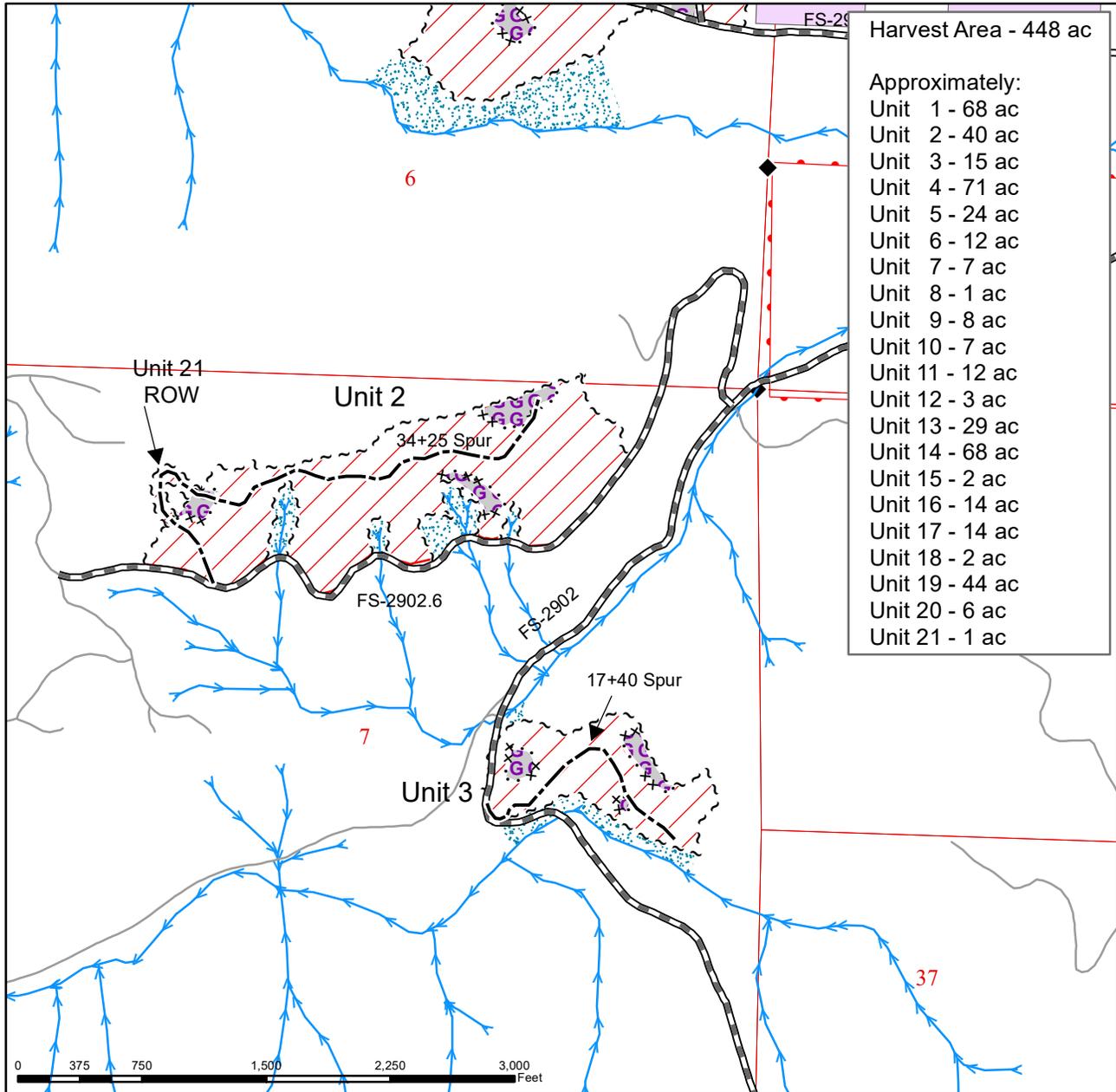
— Temporary Reconstruction	→ Streams	▨ Summer-only harvest units	◆ Survey monuments
--- Temporary New Construction	~ ~ ~ Boundary Tags	▩ Winter-only harvest units	▭ Survey - Township Lines
▬ Pre-Haul Maintenance	· · · × × Special Mgmt Area	■ Research Plots	▭ Survey - Section Lines
— Other Roads		GGG Gaps	▭ Property line
XXXX Seasonal Restriction		· Riparian Zone	



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Legend

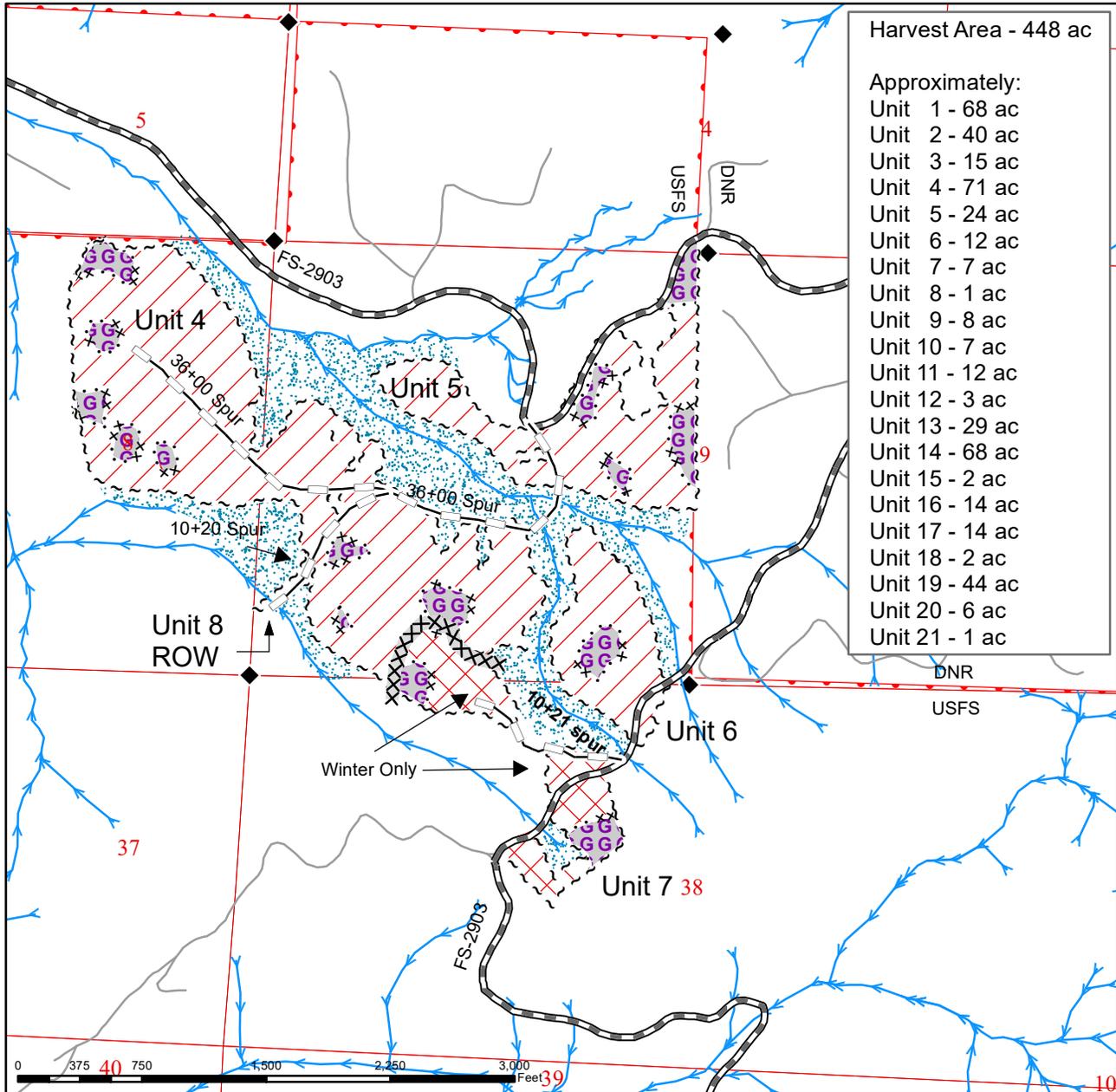
— Temporary Reconstruction	→ Streams	▨ Summer-only harvest units	◆ Survey monuments
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NATIONAL FOREST: Olympic National Forest
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ELEVATION RGE: 480' - 1640'



Harvest Area - 448 ac

Approximately:

- Unit 1 - 68 ac
- Unit 2 - 40 ac
- Unit 3 - 15 ac
- Unit 4 - 71 ac
- Unit 5 - 24 ac
- Unit 6 - 12 ac
- Unit 7 - 7 ac
- Unit 8 - 1 ac
- Unit 9 - 8 ac
- Unit 10 - 7 ac
- Unit 11 - 12 ac
- Unit 12 - 3 ac
- Unit 13 - 29 ac
- Unit 14 - 68 ac
- Unit 15 - 2 ac
- Unit 16 - 14 ac
- Unit 17 - 14 ac
- Unit 18 - 2 ac
- Unit 19 - 44 ac
- Unit 20 - 6 ac
- Unit 21 - 1 ac

Legend

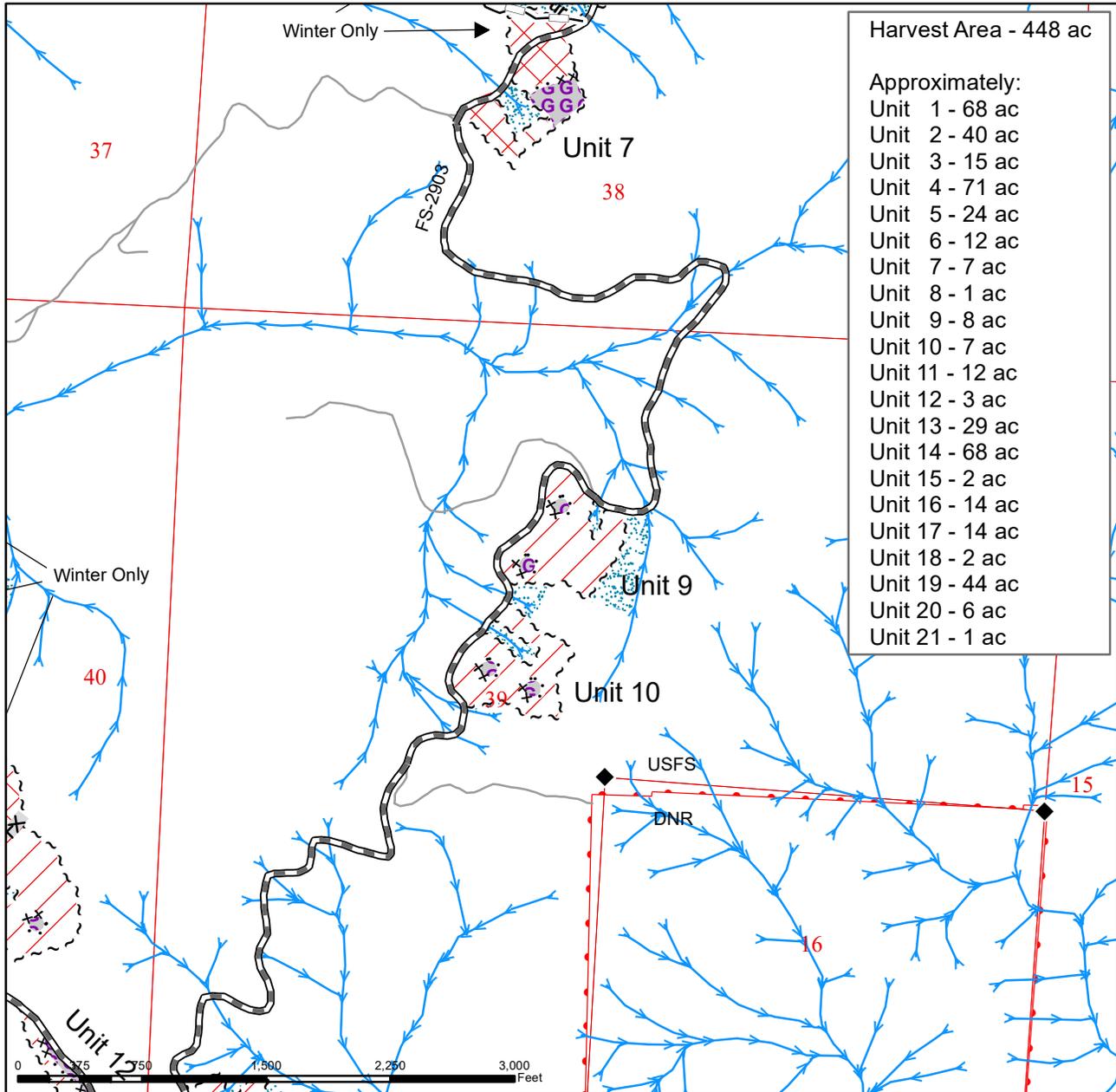
— Temporary Reconstruction	→ Streams	▨ Summer-only harvest units	◆ Survey monuments
--- Temporary New Construction	~ ~ ~ Boundary Tags	▩ Winter-only harvest units	▭ Survey - Township Lines
▬ Pre-Haul Maintenance	· · · × × Special Mgmt Area	GGG Gaps	▭ Survey - Section Lines
— Other Roads	XXXXX Seasonal Restriction	· · · Riparian Zone	▭ Property line



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Legend

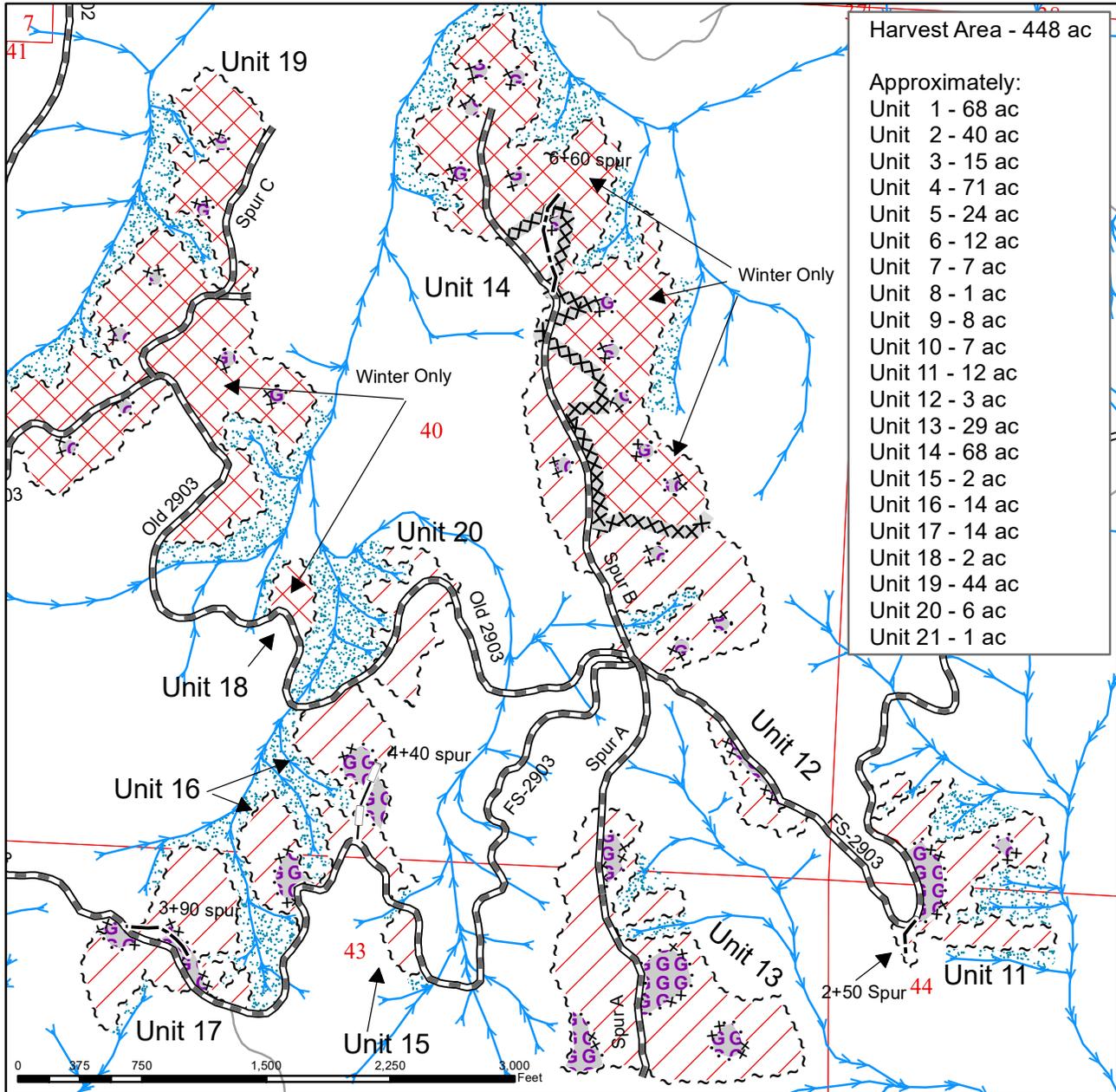
Temporary Reconstruction	Streams	Summer-only harvest units	Survey monuments
Temporary New Construction	Boundary Tags	Winter-only harvest units	Survey - Township Lines
Pre-Haul Maintenance	Special Mgmt Area	Gaps	Survey - Section Lines
Other Roads	Seasonal Restriction	Riparian Zone	Property line



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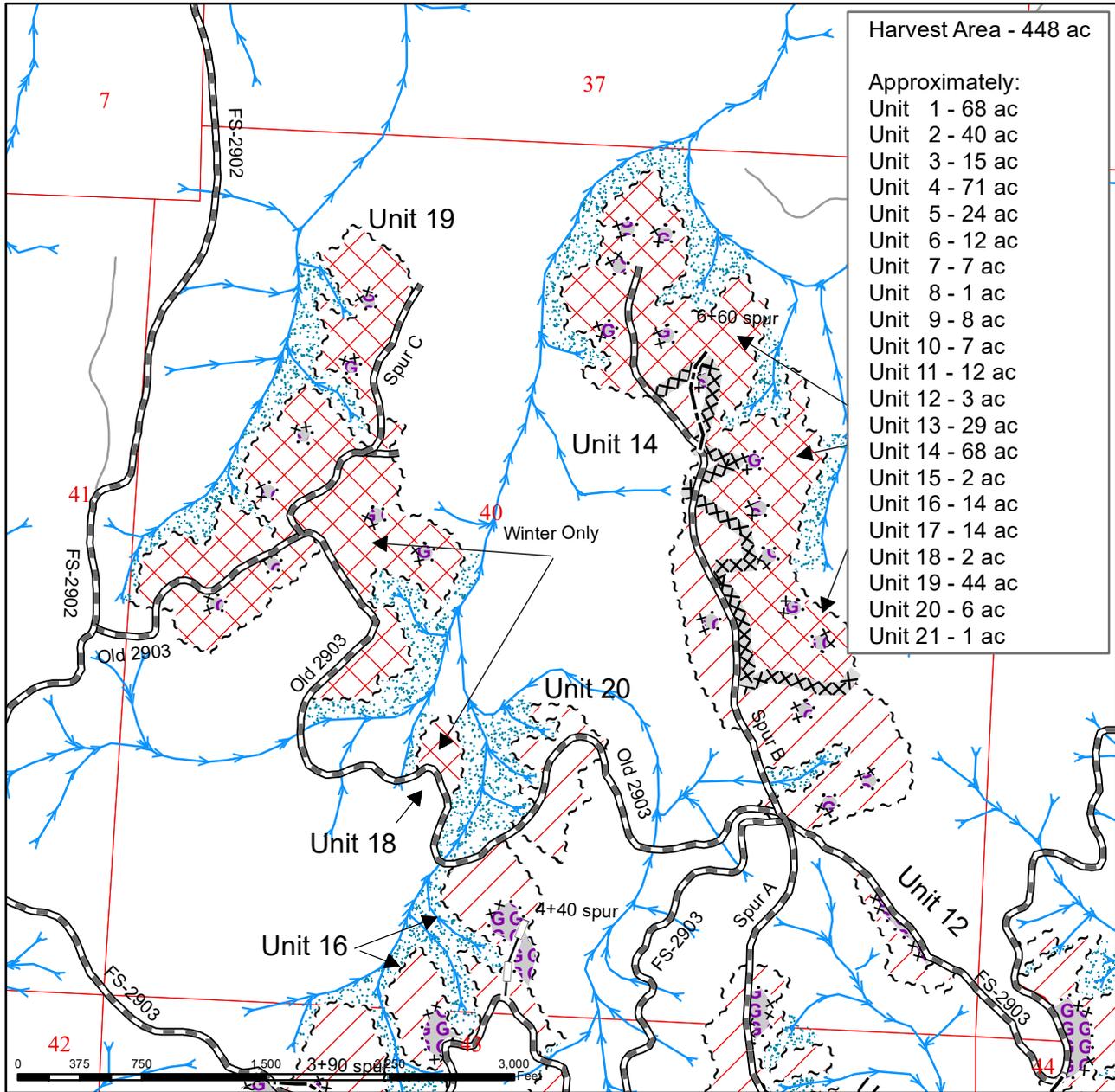


Legend			
— Temporary Reconstruction	→ Streams	▨ Summer-only harvest units	◆ Survey monuments
- - - Temporary New Construction	~ ~ ~ Boundary Tags	▩ Winter-only harvest units	▭ Survey - Township Lines
▬ Pre-Haul Maintenance	· · · ×× Special Mgmt Area	GG Gaps	▭ Survey - Section Lines
— Other Roads	XXXX Seasonal Restriction	▨ Riparian Zone	▭ Property line

GOOD NEIGHBOR AUTHORITY: FSB TIMBER SALE MAP

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Harvest Area - 448 ac

Approximately:

Unit 1 - 68 ac
Unit 2 - 40 ac
Unit 3 - 15 ac
Unit 4 - 71 ac
Unit 5 - 24 ac
Unit 6 - 12 ac
Unit 7 - 7 ac
Unit 8 - 1 ac
Unit 9 - 8 ac
Unit 10 - 7 ac
Unit 11 - 12 ac
Unit 12 - 3 ac
Unit 13 - 29 ac
Unit 14 - 68 ac
Unit 15 - 2 ac
Unit 16 - 14 ac
Unit 17 - 14 ac
Unit 18 - 2 ac
Unit 19 - 44 ac
Unit 20 - 6 ac
Unit 21 - 1 ac

Legend

Temporary Reconstruction	Streams	Summer-only harvest units	Survey monuments
Temporary New Construction	Boundary Tags	Winter-only harvest units	Survey - Township Lines
Pre-Haul Maintenance	Special Mgmt Area	Gaps	Survey - Section Lines
Other Roads	Seasonal Restriction	Riparian Zone	Property line



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

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

Export Restricted MBF Scale AGREEMENT NO. 36-099456

SALE NAME: FSB

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

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

SECTION G: GENERAL TERMS

G-001 Definitions

The following definitions apply throughout this contract;

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

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

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

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

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

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

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

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

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

G-010 Products Sold and Sale Area

Purchaser was the successful bidder on DATA MISSING and the sale was confirmed on _____. The State, as the U.S. Forest Service's agent, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue special management tags and the existing roads in all units.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2902.3 for Unit #1.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2902.6 for Unit #2.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2902 for Unit #3.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and blue management tags for Unit #4.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road FS-2903 for Units # 5, 6, 7, 9, 10, 11, 12, 17.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road Spur A for Unit #13.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and road Spur B Unit #14.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags and road FS-2903 for Unit #15.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and roads FS-2903 and Old 2903 for Unit #16.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, and road Old 2903 Units #18 and 20.

All timber as described for removal in Schedule B, bounded by white timber sale boundary tags, blue management tags, and roads Old 2903 and Spur C for Unit #19.

The above described products on part(s) of Sections 6, 7, 8, 9, 38, 39, 40, 43 and 44 of Township 29N, Range 12 West, containing 448 acres, more or less.

The above described products, located on approximately 448 acres on part(s) of Sections 6, 7, 8, 9, 38, 39, 40, 43 and 44 of in Township 29N Range 12 West, in Clallam County as shown on the attached timber sale map and as designated on the sale area.

G-020 Inspection By Purchaser

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

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
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 15, 2024 (Termination Date), unless this termination date is adjusted pursuant to G-040, or extended pursuant to G-050, in which case the new Termination Date shall be as established by the State.

G-040 Contract Term Adjustment - No Payment

Purchaser may request an adjustment in the contract term due to an interruption or delay in operations. A request for an adjustment must be submitted in writing and

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

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

G-050 Contract Term Extension – Payment

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

- a. A written request for extension of the contract term must be received prior to the Termination Date of the Contract.
- b. Purchaser has completed all required roads and is in compliance with all contract and regulatory requirements (e.g., applicable Federal, state, and local laws).
- c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the contract value based on the contract payment rate and advertised volume.

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

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

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

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

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

G-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 8.6 MMBF or equivalent.

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

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

G-070 Limitation on Damage

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

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

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

G-090 Sale Area Adjustment

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

G-100 Forest Products Not Designated

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

G-110 Title and Risk of Loss

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

Risk of Loss. If timber is destroyed or damaged by an “unexpected event” that significantly changes the nature of the timber, the party with title, right and interest to the timber shall bear the timber value loss resulting from such destruction or damage. An “unexpected event” is defined to mean fire, wind, flood, insects or disease, or any similar cause; except that such losses caused by insect or disease after felling of timber shall be borne by Purchaser, unless Purchaser is prevented from removing such timber for reasons that would qualify for a Contract Term Adjustment in G-040.

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

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

G-120 Responsibility for Work

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

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

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

G-121 Exceptions

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

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

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

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

G-140 Indemnity

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless the State, U.S. Forest Service, agencies of the State or U.S. Forest Service, and all officials, agents and employees of the State or U.S. Forest, from and against all claims arising out of, or in any way whatsoever resulting from, the Contract. "Claim" as used in this Contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury, sickness, disease or death, or injury to or destruction of tangible property including loss of use

resulting therefrom brought against the State, including without limitation claims brought against the State by 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 Product Sales and Leasing Division in Olympia, WA shall be provided written notice before cancellation or non-renewal of any insurance referred to therein, in accord with the following specifications:

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

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

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

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

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

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

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

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

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

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

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

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

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

G-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
Attn: Marcea Kato
Forest Health and Resiliency Division
1111 Washington St SE
PO Box 47014
Olympia, WA 98501

Purchaser

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

G-210 Violation of Contract

- a. If Purchaser violates any provision of this Contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt

of a suspension notice to remedy the violation. If the violation cannot be remedied or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages. Purchaser shall not be entitled to any compensation if the Contract is terminated by the State as provided in this clause.

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

G-220 State Suspends Operation

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

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

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

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

G-230 Unauthorized Activity

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

G-240 Dispute Resolution

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

a. In the event of a dispute, Purchaser must submit a written request to the State Forester for resolution of any dispute prior to seeking other relief. If the dispute involves a claim for money owed by the State, Purchaser shall submit with the written request a demand for the amount owed and any appropriate data necessary to establish that the amount requested accurately reflects what Purchaser claims is owing under the Contract for which the State is liable.

b. The State Forester will issue a written decision on Purchaser's request within ten business days for matters not involving a claim for money. In the case of a claim by Purchaser for money owed under the Contract, the State Forester shall render a decision within 30 days, or notify Purchaser of the date when a decision will be issued. The State Forester's decision shall be final unless Purchaser submits a request under c.

c. Within ten business days of receipt of the State Forester's decision, Purchaser may submit a written request for resolution of the dispute to the Department Supervisor of the Department of Natural Resources.

d. Unless otherwise agreed, a conference will be held by the Department Supervisor within 30 calendar days of the receipt of Purchaser's request for review of the State Forester's written decision. Purchaser and the State Forester will have an opportunity to present their positions. The Department Supervisor will issue a decision within a reasonable time of being presented with both Parties' positions.

G-250 Compliance with All Laws

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

G-260 Venue

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

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

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following U.S. Forest Service roads, State roads, and roads for which the State has acquired easements and road use permits; FS-2902, FS-2903, FS-2902.3, FS-2902.31, FS-2902.6, Old-2903, 34+25 Spur, 36+00 Spur, 10+20 Spur, 17+40 Spur, 2+50 Spur, 4+40 Spur, 3+90 spur, Spur A, Spur B, Spur C, and all

associated spurs. 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 cable operations and 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.

All seed must be of species native to the Olympic peninsula, and must originate from the same seed zone (as defined by U.S. Forest Service) as the project site. Seed will be provided by the Forest Service.

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 2902 or FS 2903 for more than 45 minutes unless authority is granted in writing by the Contract Administrator.

G-396 County Hauling Permit

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

G-430 Open Fires

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

SECTION P: PAYMENTS AND SECURITIES

P-010 Initial Deposit and Periodic Payment Schedule

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

P-021 Payment for Forest Products

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

[TO BE DETERMINED ON DAY OF SALE]

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

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

Harvest activities, including landing and road construction, felling, skidding, yarding, and rehabilitation will not be permitted from November 1st through May 31st in summer only units, which are units 1, 2, 3, northern part of 4, all of units 5, 6, 8, 9, 10, 11, 12, 13, southwest part of 14, all of units 15, 16, 17, and 20.

Harvest activities, including landing and road construction, felling, skidding, yarding, and rehabilitation will not be permitted from March 1st through September 23rd in winter only units, which are the southern part of unit 4, all of unit 7, the northeast part of unit 14, and all of units 18 and 19.

Harvest operations must begin 2 hours after sunrise and end 2 hours before sunset for summer only units 2, 3, northern part of 4, all of units 5, 6, 8, 9, 10, 13, southwest part of 14, all of units 16, 17 and 20 from April 1st through September 23rd.

Season changes are marked on Timber Sale Maps and with blue slashes in the field.

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 12 feet in width, including rub trees.
- b. Skid trails shall be no closer than 110 feet apart center to center, except where converging.
- c. Skid trails, skyline corridors, and roads shall not cover more than 20 percent of the total acreage on one unit.
- d. Location of the skid trails must be marked by Purchaser and approved by the Contract Administrator.
- e. Skid trails must be located outside of all no harvest buffers.
- 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 10 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. All seed must be of species native to the Olympic peninsula, and must originate from the same seed zone (as defined by U.S. Forest Service) as the project site. Seed will be provided by the Forest Service. 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.

Erosion control measures such as slash and mulch placement, seeding and water bars will be utilized where bare soil is exposed inside corridors. All seed must be of species native to the Olympic peninsula, and must originate from the same seed zone (as defined by U.S. Forest Service) as the project site. Seed will be provided by the Forest Service.

H-080 Snags Not to be Felled

Legacy snags marked with orange paint and snags greater than 30" DBH and at least 12' in height shall not be felled unless permitted by the Contract Administrator. If snags cannot be operated around safely a no-cut and equipment limitation zone buffer equal to 1.5 times the height of the snag shall be applied, including when those buffers encompass proposed gaps.

Snags that are felled shall not be removed and must remain where felled.

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be felled by hand or mechanical means and yarded by ground based equipment on slopes of 35% or less and cable based equipment on slopes greater than 35%. 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.

For skyline corridors across streams, wetlands, and perennial wet areas including seeps and springs, full log suspension and written approval by the Contract Administrator is required.

H-131 Hauling Schedule

The hauling of forest products will not be permitted from November 1 to May 31 unless a Wet Weather agreement is authorized every year in writing by the Contract Administrator.

For units the southern part of unit 4, all of unit 7, and the NE part of unit 14, and all of units 18 and 19 haul operations will be restricted to the 2903 (eastern side of loop) to minimize sediment delivery to Bockette Creek. Unless conditions and operations at the time of implementation are able to minimize sediment delivery to Bockette Creek and authorizing is granted 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. Timber must be removed from the site and scaled within 30 days of felling operations. Tops and limbs will be redistributed in the unit to the satisfaction of the Contract Administrator.
4. Maintain legacy features wherever practical and safe, including remnant trees, snags, and large down woody debris.
5. Heavy equipment should operate on operationally-generated slash mats (limbs, tops, or otherwise unmerchantable material) to minimize soil compaction and long term soil disturbance. The slash mat will be as thick and continuous as practicable.
6. When practical, save topsoil on site from areas to be disturbed and replace over disturbed soil before replanting.
7. Immediately following their use, temporary roads, spur roads and landings will be “rehabilitated” by decompacting the road surface to a depth of 18 inches or greater. Rehabilitation will not occur during times of excessive wet conditions and/or when soil has reached saturation. Equipment will not travel across the decompacted surface. Native seed and mulch composed of certified weed free straw or onsite forest debris will be applied to the disturbed ground. Seed will be provided by the Forest Service.
8. Certified weed free straw bale catchments or silt fences will be located to intercept runoff from landings prior to reaching any road ditch or stream. Any sediment that is captured and deposited behind sediment catchments will be removed annually and deposited out on the forest floor to ensure it does not have a direct flow path to a system road ditch or stream.
9. Hazard trees that are felled along haul routes must be retained to add to large woody debris on the ground, unless otherwise approved by the Contract Administrator.
10. Operation of ground-based skidding equipment will not occur within 30 feet of harvest unit boundaries.
11. Skyline corridors will be no closer than 120 feet apart center to center except where converging and will not exceed 12 feet in width. Skyline corridors will be parallel to each other where feasible. Skyline corridors will be no closer than 150

feet apart center to center at the tailhold or trailtree and will not exceed 12 feet in width for wheeled spoked landings.

12. Coarse Woody Debris may be moved for access, however disturbance should be minimized. Large, old stumps will be kept intact and not uprooted wherever possible.
13. Trees felled in the vicinity of streams, wetlands, seeps, or springs will be felled away from aquatic features. Portions of trees falling into no-cut buffers will be left on the ground where they were felled.
14. Ground Based equipment will travel on operationally generated slash where possible. Yarding activities will be planned to make as few trips as possible.
15. 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.
16. Areas of gouging or soil displacement resulting from logging systems will 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. Seed will be provided by the Forest Service.
17. No fuel storage or refueling will occur in riparian buffers.
18. Workers shall properly store and dispose of food and garbage while working on site to minimize nest predation by corvids.

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

H-142 Wildlife Timing Restrictions

Harvest activities, including landing and road construction, felling, skidding, yarding, and rehabilitation will not be permitted from November 1st through May 31st in summer only units, which are units 1, 2, 3, northern part of 4, all of units 5, 6, 8, 9, 10, 11, 12, 13, southwest part of 14, all of units 15, 16, 17, and 20.

Harvest activities, including landing and road construction, felling, skidding, yarding, and rehabilitation will not be permitted from March 1st through September 23rd in

winter only units, which are the southern part of unit 4, all of unit 7, the northeast part of unit 14, and all of units 18 and 19.

Harvest operations must begin 2 hours after sunrise and end 2 hours before sunset for summer only units 2, 3, northern part of 4, all of units 5, 6, 8, 9, 10, 13, southwest part of 14, all of units 16, 17 and 20 from April 1st through September 23rd.

Season changes are marked on Timber Sale Maps and with blue slashes in the field.

H-150 Required Removal of Forest Products

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

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

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

H-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-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 January 7th, 2020 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-2902, FS-2903, FS-2902.3, FS-2902.31, FS-2902.6, Old-2903, 34+25 Spur, 36+00 Spur, 10+20 Spur, 17+40 Spur, 2+50 Spur, 4+40 Spur, Spur A, Spur B, Spur C, 3+90 Spur, 10+21 Spur, and 6+60 Spur. All work shall be completed to the specifications detailed in the Road Plan.

C-080 Landing Locations Approved Prior to Construction

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

C-090 Landing Location

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

New landings will be located outside of all no harvest buffers and preferably not near riparian buffers. Avoid placing landings adjacent to streams, no-cut buffers, wet areas and unstable slopes.

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

C-140 Water Bars

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

SECTION S: SITE PREPARATION AND PROTECTION

S-001 Emergency Response Plan

An Emergency Response Plan (ERP) shall be provided to the Contract Administrator containing but not limited to, a plan for the prevention and reporting of wildfires within the sale area; a communication plan for reporting wildfires; a description of fire prevention and control measures on the logging unit; and a list of qualified personnel and equipment available for implementing the plan. The ERP shall include the valid contact numbers for qualified personnel available for implementing the ERP, and the equipment available, and procedures for responding to, medical emergencies, fire, hazardous spills, forest practice violations and any unauthorized or unlawful activity occurring on, or in the vicinity of, the sale area. The Contract Administrator and the State shall be promptly notified whenever an incident occurs requiring an emergency response.

The ERP must be presented to the Contract Administrator for inspection and approval at the prework meeting and kept readily available to all personnel, including subcontractors, on site during active operations. Purchaser shall make any revisions to the ERP required by the Contract Administrator, either upon initial inspection or anytime thereafter, required for operations within the sale area during the Contract.

S-010 Fire Hazardous Conditions

Fire Precautionary Period. The fire precautionary period or “closed season” for this Contract is April 15 to October 15. 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.

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.

Slash with a diameter of 1 to 3 inches and 3 inches in length or greater, and within 100 feet of roads that are to remain open after the sale is completed, must be dispersed, piled, or removed to an approved location. If piled, piles must be at least 8 feet from adjacent timber, pile height must be at least two-thirds that of the width and free of noncombustible material including soil, rocks, and rootballs.

S-040 Noxious Weed Control

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

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

All 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.

All seed must be of species native to the Olympic peninsula, and must originate from the same seed zone (as defined by U.S. Forest Service) as the project site. Seed will be provided by the Forest Service.

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.

S-120 Stream Protection

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

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

d. Hazardous Material Release Reporting

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

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

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

S-131 Refuse Disposal

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

SECTION D: DAMAGES

D-010 Liquidated Damages

The clauses in the DAMAGES section of this contract provide for payments by Purchaser to the State for certain breaches of the terms of this contract. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State caused by Purchaser's breach. These liquidated damages provisions are agreed to by the State and Purchaser with the understanding of

the difficulty of proving loss and the inconvenience or infeasibility of obtaining an adequate remedy. These liquidated damages provisions provide greater certainty for the Purchaser by allowing the Purchaser to better assess its responsibilities under the contract.

D-020 Failure to Remove Forest Products

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

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

Where:

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

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

Where:

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

D-030 Inadequate Log Accountability

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

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

D-040 Leave Tree Excessive Damage

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

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

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

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

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

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

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

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

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

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

M-060 Payment of Taxes

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

M-070 Non-Discrimination in Employment

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

M-080 Records

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

M-090 Waiver

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

M-100 Severability Clause

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

M-110 Effective Date

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

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Print Name

State Forester

Date: _____

Date: _____

Address:

FSB
Schedule B - Thinning Prescription

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

Table 1. FSB Thinning Prescriptions 1

Unit	Trees per Acre Target	Target Relative Density	Target Basal Area	Diameter Max Cut Limit. (DBH) (Min = 7")	Designated Cut Species	No Cut
1	52	38	180	32"	WH, SS	DF,RC,RA,PSF
2	90	45	200	22"	WH	DF,RC,RA,PSF,SS
3	70	40	150	22"	WH	DF,RC,RA,PSF,SS
4	55	45	240	32"	WH, SS	DF,RC,RA,PSF
5	55	40	200	32"	WH, SS	DF,RC,RA,PSF
6	50	30	140	21"	WH	DF,RC,RA,PSF,SS
7	85	40	200	24"	WH	DF,RC,RA,PSF,SS
8 (ROW)	N/A	N/A	N/A	NA	NA	NA
9	100	40	160	20"	WH, SS, RA	DF,RC,PSF
10	110	40	180	20"	WH,SS	DF,RC,RA,PSF
11	70	35	160	24"	WH, DF	RC,RA,PSF,SS
12	60	35	190	25"	WH,DF	RC,RA,PSF,SS
13	95	40	180	21"	WH	DF,RC,RA,PSF,SS
14	130	45	190	20"	WH, DF	RC,RA,PSF,SS
15	110	45	180	21"	WH, DF	RC,RA,PSF,SS
16	100	40	180	24"	WH, DF	RC,RA,PSF,SS
17	130	45	160	20"	WH, DF	RC,RA,PSF,SS
18	120	45	180	20"	WH, DF	RC,RA,PSF,SS
19	115	45	180	20"	WH, DF	RC,RA,PSF,SS
20	120	40	180	20"	WH, DF	RC,RA,PSF,SS

DF – Douglas-fir, WH – Western Hemlock, SS-Sitka Spruce, RC-Red Cedar, PSF- Pacific Silver fir

Basal Area Target – Target of residual basal area to be left, excluding landings, temporary roads, skips, and gaps. All live conifers within the DBH limits, regardless of species, may be counted toward the leave target. Variability of +/- 40 square feet per acre in any particular point within the treatment unit of the target is permitted on any one acre, but the average for the unit needs to be within +/- 5% of Target Basal Area. Post-harvest basal area will be measured by the Contract Administrator using approximately two plots per acre and a 20 BAF prism.

Designated Cut Species – These are species to be removed if they are within the diameter limits. 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 and temporary roads

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

Thinning is to be done from below, in general, leaving the largest diameter trees with the fullest crowns and removing smaller diameter trees of the designated species, which are in excess of the target basal area per acre. Only cut live trees. Leave hardwoods (vine maple, bigleaf maple, red alder, black cottonwood), unless where red alder is specifically included as a designated cut species.

Structurally unique trees over 15" DBH, such as those with mistletoe brooms, broken tops, spike knots, cavities, and forked tops, will be favored as leave trees if available, though they should not be preferred over larger well-formed trees every time in a concentration.

Gaps

All live trees without orange paint, under the maximum diameter limit and of the permitted cut tree species will be removed from gaps. Trees over the diameter limits, no-cut species, or trees painted with orange paint will be left in the gaps undamaged and undisturbed.

CERTIFICATION OF FALLERS AND YARDER OPERATORS – SEE CLAUSE H-011 OF THE CONTRACT.

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

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

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

Cruise Narrative

GNA Sale Name: FSB	Region: Olympic
Agree. #: 36-099456	District: Olympic National Forest
Lead cruiser: Jason Michaud	Completion date: 12/24/19
Other cruisers on sale: Dakota Truitt, Kevin Peterson, Matt Llobet	

Unit acreage specifications:

Unit #	Cruised Thinning acres	Cruised Gap Acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	62	6	yes	
2	37	3	yes	
3	13	2	yes	
4	63	8	yes	
5	20	4	yes	
6	11	1	yes	
7	6	1.5	yes	
8 (ROW)	1	0	yes	
9	7.5	0.5	yes	
10	6	0.5	yes	
11	10	2	yes	
12	2.5	0.5	yes	
13	24	5	yes	
14	64	4	yes	
15	2	0	yes	
16	11	3	yes	
17	12	2	yes	
18	2	0	yes	
19	42	2	yes	
20	6	0	yes	
21 (ROW)	1	0	yes	
TOTALS	403 acres	45 acres	448 total acres	

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS,100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (cruise:count)	Number of plots
1	VP	62.50/ 40	4.5 ft	325x325	1:1	22
2	VP	71.11/ 40	4.5 ft	300x300	1:1	14
3	VP	62.50/ 40	4.5 ft	375x375	1:1	6
4	VP	80.28/ 40	4.5 ft	325x325	1:1	24
5	VP	71.11/ 40	4.5 ft	275x275	1:1	15
6	VP	71.11/ 40	4.5 ft	250x250	1:1	7
7	VP	80.28/ 40	4.5 ft	275x275	1:1	6
8 (ROW)	ITS	1:10	N/A	100%	1:10	N/A
9	VP	71.11/ 40	4.5 ft	225x225	1:1	5
10	VP	71.11/ 40	4.5 ft	225x225	1:1	4
11	VP	62.50	4.5 ft	250x250	1:1	8
12	VP	62.50	4.5 ft	150x150	1:1	3
13	VP	62.50/ 40	4.5 ft	275x275	1:1	15
14	VP	62.50/ 40	4.5 ft	275x275	1:1	38
15	VP	62.50/ 40	4.5 ft	150x150	1:1	3
16	VP	62.50/ 40	4.5 ft	300x300	1:1	12
17	VP	62.50/ 40	4.5 ft	300x300	1:1	5
18	VP	62.50/ 40	4.5 ft	170x170	1:1	4
19	VP	54.45/ 40	4.5 ft	240x240	1:1	32
20	VP	62.50/ 40	4.5 ft	180x180	1:1	6
21 (ROW)	VP	54.45	4.5 ft	450x450	Cruise all	2
Gaps	Plots from Units	N/A	N/A	N/A	N/A	N/A

Sale/Cruise Description:

Minor species cruise intensity:	Minor species sampled using same cruise plots with a 40 BAF.					
Minimum cruise spec:	Minimum DBH 7 inches; 10 Net BF; 40% of Form Factor at 16 ft. DOB or 5 inch top or merchantable top					
Avg ring count by sp:	DF =	7-9	WH =	7-9	SS =	5-7
Leave/take tree description:	<p>Variable Density Thinning- See Schedule B Thinning Prescription in Timber Sale Contract.</p> <p>Individual leave trees are marked with orange bands and orange butt marks.</p> <p>Structurally unique trees over 15" DBH, such as those with mistletoe brooms, broken tops, spike knots, cavities, and forked tops, will be favored as leave trees if available, though they should not be preferred over larger well-formed trees every time in a concentration such as a root rot pocket.</p>					

Other conditions	<p>Harvest boundaries are marked with white timber sale tags, pink flashers, red flashers, pink flagging, and/or blue paint;</p> <p>Gap boundaries are marked with blue special management tags, pink flashers, red flashers, pink flagging, and/or blue paint;</p> <p>Right-of-way unit boundaries are marked with orange tags, red flashers, pink flagging, and/or blue paint; right-of way timber for removal is marked along existing roads with blue painted dots</p>
Sort Description	<p>HB – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½” in diameter. May include logs with not more than two larger knots up to 2 ½” in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (minimum diameter 8”.)</p> <p>R – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.</p> <p>P- Hemlock Logs Meeting the following criteria: Gross diameter of 6 inches or greater sound tight knots not to exceed 1 ½” in diameter</p>

Field observations:

The FSB timber sale is a 21-unit sale with 19 units of variable density thinning and 2 units of right-of-way harvest. FSB is located on the FS 2902 and 2903 road systems. Access to all units is very good. The topography ranges from flat to steep slopes of 80% and ranges in elevation from 480’ to 1640’. The sale will be logged using ground-based operations, uphill cable, and downhill cable methods.

The timber is highly variable over the sale area. The estimated total take volume is 7,972 MBF. The **take** volume is comprised of Douglas-fir (DF) 12%, Western hemlock (WH) 72%, Sitka spruce (SS) 15%, and red alder (RA) 1%. Douglas-fir take trees have an average diameter of 13.8 inches and an average bole height of 65 feet. Western hemlock take trees have an average diameter of 14.9 inches and an average bole height of 70 feet. Sitka spruce take trees have an average diameter of 19.4 inches and an average bole height of 78 feet. Red alder take trees have an average diameter of 10.3 inches and an average bole height of 36 feet. Major defect observed was forked, broken, or multiple tops, butt rot, crooks, and spike knots.

For thinning prescriptions as well as diameter cut limits and designated cut species see contract.

Prepared by: Dakota Truitt

Title: Restoration Specialist/ Forester/ Timber Cruiser

TC PSTATS											PROJECT STATISTICS					PAGE	1
											PROJECT		GNA			DATE	12/27/2019
TWP	RGE	SC	TRACT	TYPE		ACRES		PLOTS	TREES	CuFt	BdFt						
029 29N	012 12W	12 40	GNA B99GNA	118A B99G	THR	448.00		430	2,099	S	W						
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES		PERCENT SAMPLE TREES									
TOTAL			430	2099	4.9												
CRUISE			235	1096	4.7	85,730		1.3									
DBH COUNT REFOREST COUNT			195	905	4.6												
BLANKS 100 %																	
STAND SUMMARY																	
SAMPLE TREES			TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC						
WHEMLOCK	189	37.1	18.9	76	16.6	72.0	12,019	11,182	2,856	2,856							
WHEMLOCK-T	352	77.7	14.9	70	24.4	94.3	13,362	12,883	3,322	3,323							
DOUG FIR	132	18.3	20.6	83	9.3	42.4	6,258	5,779	1,616	1,615							
DOUG FIR-T	93	18.3	13.8	65	5.1	18.9	2,145	2,033	576	576							
S SPRUCE	120	10.2	29.4	96	8.9	48.3	9,121	8,256	2,253	2,253							
S SPRUCE-T	81	9.2	19.4	78	4.3	19.0	2,992	2,725	775	775							
PS FIR	31	6.4	14.6	63	2.0	7.5	1,101	1,005	258	258							
R ALDER	39	7.5	11.9	48	1.7	5.8	497	422	137	138							
R ALDER-T	38	4.7	10.3	36	0.8	2.7	171	152	47	47							
WR CEDAR	21	1.9	15.1	42	0.6	2.3	125	95	54	54							
TOTAL	<i>1,096</i>	<i>191.4</i>	<i>17.3</i>	<i>71</i>	<i>75.3</i>	<i>313.3</i>	<i>47,790</i>	<i>44,531</i>	<i>11,895</i>	<i>11,895</i>							
CONFIDENCE LIMITS OF THE SAMPLE																	
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR																	
CL	68.1	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15								
WHEMLOCK	63.4	4.6	416	436	456												
WHEMLOCK-T	72.9	3.9	226	235	244												
DOUG FIR	88.1	7.7	397	430	463												
DOUG FIR-T	84.8	8.8	147	161	175												
S SPRUCE	62.0	5.7	1,086	1,151	1,216												
S SPRUCE-T	51.7	5.7	479	508	537												
PS FIR	127.0	22.8	421	546	670												
R ALDER	81.5	13.0	65	75	84												
R ALDER-T	49.1	8.0	65	71	76												
WR CEDAR	89.6	20.0	59	74	89												
TOTAL	<i>111.8</i>	<i>3.4</i>	<i>388</i>	<i>402</i>	<i>415</i>	<i>499</i>	<i>125</i>	<i>55</i>									
CL	68.1	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15								
WHEMLOCK	197.4	9.5	34	37	41												
WHEMLOCK-T	145.4	7.0	72	78	83												
DOUG FIR	212.0	10.2	16	18	20												
DOUG FIR-T	280.4	13.5	16	18	21												
S SPRUCE	312.1	15.0	9	10	12												
S SPRUCE-T	469.7	22.6	7	9	11												
PS FIR	521.0	25.1	5	6	8												
R ALDER	591.7	28.5	5	8	10												
R ALDER-T	850.8	41.0	3	5	7												
WR CEDAR	930.2	44.8	1	2	3												
TOTAL	<i>105.8</i>	<i>5.1</i>	<i>182</i>	<i>191</i>	<i>201</i>	<i>447</i>	<i>112</i>	<i>50</i>									
CL	68.1	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.								
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15								
WHEMLOCK	183.1	8.8	66	72	78												

PROJECT STATISTICS

PROJECT GNA

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
029 29N	012 12W	12 40	GNA B99GNA	118A B99G	THR	448.00	430	2,099	S	W
CL	68.1	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		137.1	6.6	88	94	100				
DOUG FIR		205.4	9.9	38	42	47				
DOUG FIR-T		252.1	12.1	17	19	21				
S SPRUCE		298.4	14.4	41	48	55				
S SPRUCE-T		373.0	18.0	16	19	22				
PS FIR		417.8	20.1	6	8	9				
R ALDER		510.7	24.6	4	6	7				
R ALDER-T		683.5	32.9	2	3	4				
WR CEDAR		838.3	40.4	1	2	3				
TOTAL		<i>101.6</i>	<i>4.9</i>	<i>298</i>	<i>313</i>	<i>329</i>	<i>412</i>	<i>103</i>	<i>46</i>	
CL	68.1	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		191.9	9.2	10,148	11,182	12,216				
WHEMLOCK-T		145.2	7.0	11,982	12,883	13,785				
DOUG FIR		222.5	10.7	5,159	5,779	6,398				
DOUG FIR-T		243.7	11.7	1,794	2,033	2,271				
S SPRUCE		303.7	14.6	7,048	8,256	9,464				
S SPRUCE-T		367.7	17.7	2,242	2,725	3,207				
PS FIR		420.3	20.3	801	1,005	1,208				
R ALDER		507.3	24.4	319	422	526				
R ALDER-T		787.1	37.9	94	152	209				
WR CEDAR		780.5	37.6	59	95	130				
TOTAL		<i>111.9</i>	<i>5.4</i>	<i>42,130</i>	<i>44,531</i>	<i>46,932</i>	<i>500</i>	<i>125</i>	<i>56</i>	

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																		
<div style="border: 1px solid black; padding: 5px;"> T029 R012 S12 Ty118A THRU T29N R12W S40 TyB99G </div>				Project: GNA										Page 1								
				Acres 448.00										Date 12/27/2019			Time 7:30:09AM					
S Spp	So T	Gr rt	Ad ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
WH	T	D	2S	19	7.2	2,760	2,560	1,147			3	79	17				100	40	13	252	1.70	10.2
WH	T	D	3S	50	3.8	6,621	6,369	2,853		20	65	15			0	1	99	36	9	98	0.72	65.1
WH	T	D	4S	11	.5	1,467	1,460	654		98	2			6	21	30	44	31	5	35	0.32	41.7
WH	T	D	UT	2	6.5	300	280	126		62	0	38		41	19	2	38	19	6	29	0.41	9.5
WH	T	PL	2S	3		364	364	163				55	45			100		34	14	265	1.57	1.4
WH	T	PL	3S	15		1,849	1,849	829			50	50				100		34	11	151	0.90	12.3
WH Totals				29	3.6	13,362	12,883	5,772		22	40	33	5	2	3	21	75	34	8	92	0.71	140.2
WH		D	2S	54	10.5	6,818	6,105	2,735			1	57	42			100	40	15	315	2.04	19.4	
WH		D	3S	28	3.5	3,189	3,079	1,379		12	69	19			1	0	98	36	9	111	0.81	27.8
WH		D	4S	4	2.8	507	493	221		88	12			11	56	19	14	28	6	34	0.38	14.4
WH		D	UT	2		267	267	120		53	3		44	42	25	15	17	23	6	43	0.42	6.2
WH		PL	2S	8		884	884	396				51	49			100		34	15	314	1.79	2.8
WH		PL	3S	4		355	355	159			11	89				100		34	12	186	1.11	1.9
WH Totals				25	7.0	12,019	11,182	5,010		8	20	43	28	1	3	12	83	34	10	154	1.15	72.6
RC		D	3S	42	12.7	46	41	18			86	14			14	86	36	10	101	1.52	.4	
RC		D	4S	57	4.5	56	54	24		100					28	45	27	31	5	31	0.52	1.7
RC		D	UT	1	98.8	23	0	0				100		100			20	30	10	7.50	.0	
RC Totals				0	24.5	125	95	42		57	37	6	0	0	22	26	52	32	6	44	0.79	2.2
RA		D	2S	5		24	24	11				100			100		30	13	180	1.45	.1	
RA		D	3S	19	6.1	87	82	37			55	45			100		30	11	109	1.04	.8	
RA		D	4S	63	20.0	331	265	119		59	41			2	77	21	29	7	38	0.47	7.0	
RA		D	UT	13	5.3	55	52	23		85		15		67	33		15	5	15	0.27	3.4	
RA Totals				1	15.0	497	422	189		48	36	16		10	77	13		25	7	38	0.50	11.3
RA	T	D	3S	6	4.3	11	10	5			70	30		17	83		28	10	92	0.92	.1	
RA	T	D	4S	83	12.9	144	126	56		33	67				96	1	3	30	7	48	0.51	2.6
RA	T	D	UT	11	1.4	16	16	7		96		4		78	22		11	5	5	0.12	3.1	
RA Totals				0	11.3	171	152	68		37	60	2		9	87	1	3	20	6	26	0.41	5.8
DF		D	S	1		102	102	46				100				100	40	22	840	3.77	.1	
DF		D	2S	60	9.3	3,783	3,433	1,538		0	1	56	44	0	1	98	39	14	282	1.98	12.2	
DF		D	3S	30	5.1	1,870	1,775	795		23	75	2				100	37	9	100	0.81	17.8	
DF		D	4S	6	9.0	327	298	133		79	15	6		5	40	23	31	30	6	37	0.40	8.1
DF		D	UT	1	4.9	81	77	35		30	8	5	57	90		10	16	7	48	0.66	1.6	
DF		H	2S	2		93	93	42				100				100	40	21	760	3.82	.1	
DF Totals				13	7.7	6,258	5,779	2,589		12	24	34	30	2	3	1	94	35	10	145	1.15	39.9
DF	T	D	2S	13	1.8	275	270	121			15	81	3			100	39	12	202	1.35	1.3	
DF	T	D	3S	60	6.2	1,315	1,233	553		16	84				4	96	37	8	90	0.71	13.7	
DF	T	D	4S	23	3.3	472	457	205		100	0			5	35	22	38	29	5	31	0.30	14.9
DF	T	D	UT	3	13.5	73	63	28		70	14	16		25	45		30	23	6	32	0.35	2.0
DF	T	H	2S	1		9	9	4				100				100	40	21	760	3.82	.0	
DF Totals				5	5.2	2,145	2,033	911		35	53	11	1	2	9	7	82	32	7	64	0.56	31.9
SF		D	S	5		51	51	23				100				100	40	19	600	3.28	.1	
SF		D	2S	32	4.8	346	329	148			5	17	78			100	39	17	458	2.52	.7	

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T029 R012 S12 Ty118A THRU T29N R12W S40 TyB99G				Project:		GNA											Page		2		
				Acres		448.00											Date		12/27/2019		
																	Time		7:30:09AM		
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
SF	D	3S		30	14.7	344	293	131		96	4					100	37	10	117	0.92	2.5
SF	D	4S		20	12.5	237	207	93	93	4	3		7	7	43	43	32	6	38	0.37	5.4
SF	D	UT		2		17	17	8	87	13			75	25			13	5	8	0.18	2.3
SF	PL	2S		7		73	73	33			49	51			100		34	15	282	1.57	.3
SF	PL	3S		2		18	18	8		100					100		34	8	70	0.45	.3
SF	PL	4S		2		16	16	7	100						100		34	7	60	0.35	.3
SF Totals				2	8.8	1,101	1,005	450	22	33	11	34	3	2	19	76	30	7	85	0.73	11.8
SS	D	S		7	3.3	675	653	293							100		40	23	888	5.31	.7
SS	D	2S		82	10.2	7,479	6,715	3,008		0	19	80		0	100		40	17	479	3.28	14.0
SS	D	3S		5	4.2	482	461	207	5	85	10				100		37	9	115	0.87	4.0
SS	D	4S		5	10.4	444	398	178	16	66	16	2	12	63	12	13	25	9	63	0.83	6.4
SS	D	UT		1	28.5	40	28	13	60	40			60		40		16	7	26	0.52	1.1
SS Totals				19	9.5	9,121	8,256	3,699	1	8	17	73	1	3	1	95	35	14	315	2.47	26.2
SS	T	D	S	3	1.0	106	105	47							100		40	17	489	2.73	.2
SS	T	D	2S	63	11.2	1,927	1,711	767		6	48	46			100		40	14	290	2.10	5.9
SS	T	D	3S	25	5.6	706	667	299	11	81	8				100		36	9	111	0.86	6.0
SS	T	D	4S	8	4.2	247	237	106	87	13			14	29	19	38	27	6	37	0.40	6.4
SS	T	D	UT	1		5	5	2	41	59			100				12	7	11	0.29	.4
SS Totals				6	8.9	2,992	2,725	1,221	10	25	32	33	1	2	2	94	34	10	144	1.21	19.0
Totals					6.8	47,790	44,531	19,950	14	27	31	29	2	4	10	84	33	9	123	0.99	360.7

Estimated Take Volume (MBF)

WH= 5,772

DF= 911

SS= 1,221

RA= 68

TOTAL= 7,972 MBF

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B100 - Unit 1	62.00	22	91	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		22	91	4.1						
CRUISE		12	49	4.1	6,427		.8			
DBH COUNT										
REFOREST										
COUNT		10	39	3.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	11	34.6	19.0	69	15.6	68.2	11,397	10,016	2,662	2,659
WHEMLOCK-T	11	44.6	15.7	65	15.1	59.7	7,975	7,551	2,026	2,027
S SPRUCE	21	16.4	33.8	105	17.6	102.3	20,544	17,652	4,876	4,876
S SPRUCE-T	4	6.8	24.8	97	4.6	22.7	4,284	3,632	1,031	1,030
DOUG FIR	2	1.3	28.3	104	1.1	5.7	1,139	1,061	249	249
TOTAL	49	103.7	21.4	75	55.9	258.5	45,338	39,913	10,843	10,840
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	48.7	15.4		406	480	554				
WHEMLOCK-T	56.7	17.9		193	235	277				
S SPRUCE	51.3	11.5		1,188	1,342	1,496				
S SPRUCE-T	30.0	17.1		472	570	668				
DOUG FIR	51.9	48.6		455	885	1,315				
TOTAL	81.8	11.7		723	818	914	267	67	30	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	110.1	24.0		26	35	43				
WHEMLOCK-T	116.6	25.4		33	45	56				
S SPRUCE	64.2	14.0		14	16	19				
S SPRUCE-T	179.8	39.2		4	7	9				
DOUG FIR	332.1	72.4		0	1	2				
TOTAL	75.1	16.4		87	104	121	236	59	26	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	84.4	18.4		56	68	81				
WHEMLOCK-T	94.1	20.5		47	60	72				
S SPRUCE	66.8	14.6		87	102	117				
S SPRUCE-T	180.9	39.4		14	23	32				
DOUG FIR	323.7	70.6		2	6	10				
TOTAL	30.1	6.6		242	259	275	38	9	4	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	84.6	18.4		8,169	10,016	11,864				
WHEMLOCK-T	96.9	21.1		5,956	7,551	9,147				
S SPRUCE	63.5	13.8		15,211	17,652	20,094				
S SPRUCE-T	180.7	39.4		2,202	3,632	5,063				
DOUG FIR	328.2	71.5		302	1,061	1,819				
TOTAL	30.2	6.6		37,289	39,913	42,537	38	10	4	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B10G- Unit 1 gaps	6.00	22	91	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		22	91	4.1						
CRUISE		12	49	4.1	625		7.8			
DBH COUNT										
REFOREST										
COUNT		10	39	3.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	1	1.0	32.5	90	1.0	5.7	967	799	231	231
WHEMLOCK-T	21	79.3	16.8	66	29.8	122.2	18,260	16,682	4,434	4,433
S SPRUCE	14	8.1	40.1	106	11.2	71.0	13,821	11,692	3,370	3,370
S SPRUCE-T	11	14.5	26.1	101	10.6	54.0	11,030	9,614	2,544	2,542
DOUG FIR	1	.5	32.0	95	0.5	2.8	646	615	121	121
DOUG FIR-T	1	.8	25.6	110	0.6	2.8	493	445	128	128
TOTAL	49	104.2	21.3	75	56.0	258.5	45,216	39,847	10,827	10,825
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	0			
WHEMLOCK										
WHEMLOCK-T	61.1	13.6		290	336	382				
S SPRUCE	42.2	11.7		1,428	1,616	1,805				
S SPRUCE-T	30.9	9.8		642	712	781				
DOUG FIR										
DOUG FIR-T										
TOTAL	81.8	11.7		723	818	914	267	67	30	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	323.7	70.6		0	1	2				
WHEMLOCK-T	108.1	23.6		61	79	98				
S SPRUCE	107.3	23.4		6	8	10				
S SPRUCE-T	118.1	25.7		11	15	18				
DOUG FIR	469.0	102.2			1	1				
DOUG FIR-T	469.0	102.2			1	2				
TOTAL	75.3	16.4		87	104	121	237	59	26	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	323.7	70.6		2	6	10				
WHEMLOCK-T	82.8	18.0		100	122	144				
S SPRUCE	102.7	22.4		55	71	87				
S SPRUCE-T	108.9	23.7		41	54	67				
DOUG FIR	469.0	102.2			3	6				
DOUG FIR-T	469.0	102.2			3	6				
TOTAL	30.1	6.6		242	259	275	38	9	4	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	323.7	70.6		235	799	1,363				
WHEMLOCK-T	84.6	18.4		13,607	16,682	19,757				
S SPRUCE	96.5	21.0		9,232	11,692	14,153				
S SPRUCE-T	109.6	23.9		7,317	9,614	11,910				
DOUG FIR	469.0	102.2			615	1,245				
DOUG FIR-T	469.0	102.2			445	900				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B10G- Unit 1 gaps	6.00	22	91	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		30.8	6.7	37,172	39,847	42,522	40	10	4	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B63- Unit 2	37.00	14	73	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		14	73	5.2						
CRUISE		8	42	5.3	7,098	.6				
DBH COUNT										
REFOREST										
COUNT		6	25	4.2						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	14	58.5	20.7	93	30.1	137.1	26,373	24,855	5,705	5,706
WHEMLOCK-T	14	99.8	15.9	79	34.4	137.1	21,611	21,167	5,179	5,178
DOUG FIR	3	6.0	33.1	111	6.2	35.6	8,209	7,174	1,713	1,713
R ALDER	4	12.1	14.7	55	3.7	14.3	1,205	737	352	354
R ALDER-T	2	7.4	11.9	46	1.7	5.7	448	405	128	128
WR CEDAR	4	7.5	16.7	37	2.8	11.4	563	284	244	243
S SPRUCE	1	.6	40.3	107	0.8	5.1	895	803	243	243
TOTAL	42	191.8	18.2	80	81.2	346.3	59,303	55,425	13,563	13,565
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	41.8	11.6		421	476	532				
WHEMLOCK-T	33.8	9.4		216	239	261				
DOUG FIR	56.8	39.3		850	1,400	1,950				
R ALDER	68.5	39.1		32	53	73				
R ALDER-T	70.7	66.2		20	60	100				
WR CEDAR	122.6	70.0		23	78	132				
S SPRUCE										
TOTAL	110.3	17.0		321	387	453	486	121	54	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	74.0	20.5		46	58	70				
WHEMLOCK-T	61.6	17.1		83	100	117				
DOUG FIR	166.7	46.2		3	6	9				
R ALDER	222.4	61.6		5	12	20				
R ALDER-T	374.2	103.6			7	15				
WR CEDAR	311.5	86.3		1	8	14				
S SPRUCE	374.2	103.6			1	1				
TOTAL	35.3	9.8		173	192	211	54	13	6	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	68.9	19.1		111	137	163				
WHEMLOCK-T	59.2	16.4		115	137	160				
DOUG FIR	171.0	47.4		19	36	52				
R ALDER	235.7	65.3		5	14	24				
R ALDER-T	374.2	103.6			6	12				
WR CEDAR	288.9	80.0		2	11	21				
S SPRUCE	374.2	103.6			5	10				
TOTAL	29.6	8.2		318	346	375	38	9	4	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	68.3	18.9		20,156	24,855	29,554				
WHEMLOCK-T	62.1	17.2		17,523	21,167	24,811				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
029	012	12	GNA	B63- Unit 2	37.00		14	73	S	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		177.5	49.2	3,647	7,174	10,701				
R ALDER		215.8	59.8	296	737	1,177				
R ALDER-T		374.2	103.6		405	824				
WR CEDAR		323.1	89.5	30	284	539				
S SPRUCE		374.2	103.6		803	1,635				
TOTAL		<i>40.8</i>	<i>11.3</i>	<i>49,165</i>	<i>55,425</i>	<i>61,684</i>	<i>71</i>	<i>18</i>	<i>8</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B63G- Unit 2 gaps	3.00	14	73	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		14	73	5.2						
CRUISE		8	42	5.3	572		7.3			
DBH COUNT										
REFOREST										
COUNT		6	25	4.2						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	5	14.5	25.4	95	10.1	50.8	10,197	9,716	2,203	2,203
WHEMLOCK-T	23	143.2	16.9	83	54.3	223.5	37,844	36,358	8,688	8,689
DOUG FIR	3	5.1	33.1	111	5.3	30.5	7,037	6,149	1,468	1,468
R ALDER-T	6	19.9	13.6	51	5.4	20.0	1,647	1,159	478	480
WR CEDAR	4	7.5	16.7	37	2.8	11.4	563	284	244	243
S SPRUCE	1	.6	40.3	107	0.8	5.1	895	803	243	243
TOTAL	42	190.8	18.1	80	80.2	341.3	58,182	54,470	13,324	13,326
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	18.4	9.1		621	684	747				
WHEMLOCK-T	39.7	8.5		262	287	311				
DOUG FIR	56.8	39.3		850	1,400	1,950				
R ALDER-T	61.7	27.5		40	55	70				
WR CEDAR	122.6	70.0		23	78	132				
S SPRUCE										
TOTAL	110.3	17.0		321	387	453	486	121	54	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	117.1	32.4		10	14	19				
WHEMLOCK-T	63.7	17.6		118	143	168				
DOUG FIR	170.7	47.3		3	5	8				
R ALDER-T	264.2	73.2		5	20	35				
WR CEDAR	311.5	86.3		1	8	14				
S SPRUCE	374.2	103.6			1	1				
TOTAL	34.9	9.7		172	191	209	52	13	6	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	115.6	32.0		35	51	67				
WHEMLOCK-T	61.0	16.9		186	223	261				
DOUG FIR	176.4	48.9		16	30	45				
R ALDER-T	268.9	74.5		5	20	35				
WR CEDAR	288.9	80.0		2	11	21				
S SPRUCE	374.2	103.6			5	10				
TOTAL	21.4	5.9		321	341	361	20	5	2	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	114.0	31.6		6,649	9,716	12,783				
WHEMLOCK-T	65.7	18.2		29,743	36,358	42,973				
DOUG FIR	184.9	51.2		2,999	6,149	9,300				
R ALDER-T	254.7	70.5		342	1,159	1,977				
WR CEDAR	323.1	89.5		30	284	539				
S SPRUCE	374.2	103.6			803	1,635				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT		GNA		DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B63G- Unit 2 gaps	3.00	14	73	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		32.4	9.0	49,582	54,470	59,358	45	11	5	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B62- Unit 3	13.00	6	39	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		6	39	6.5						
CRUISE		4	17	4.3	3,549	.5				
DBH COUNT										
REFOREST										
COUNT		2	14	7.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	1	32.7	21.6	100	17.9	83.3	18,339	18,339	3,868	3,868
WHEMLOCK-T	10	206.0	14.0	80	58.6	218.8	36,571	35,575	8,302	8,306
DOUG FIR	4	22.7	24.3	108	14.8	72.9	16,941	14,970	3,529	3,525
S SPRUCE	2	11.6	22.2	92	6.6	31.3	5,096	4,514	1,320	1,318
TOTAL	17	273.0	16.5	85	100.0	406.3	76,947	73,399	17,019	17,016
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	0			
WHEMLOCK										
WHEMLOCK-T	51.9	17.3		186	225	264				
DOUG FIR	68.3	39.0		537	880	1,223				
S SPRUCE	25.4	23.8		297	390	483				
TOTAL	93.8	23.4		320	418	516	374	93	42	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	131.3	58.5		14	33	52				
WHEMLOCK-T	68.8	30.6		143	206	269				
DOUG FIR	138.4	61.6		9	23	37				
S SPRUCE	109.6	48.8		6	12	17				
TOTAL	58.2	25.9		202	273	344	161	40	18	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	131.3	58.5		35	83	132				
WHEMLOCK-T	39.4	17.5		180	219	257				
DOUG FIR	126.2	56.2		32	73	114				
S SPRUCE	109.5	48.8		16	31	46				
TOTAL	28.8	12.8		354	406	458	39	10	4	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	131.3	58.5		7,614	18,339	29,064				
WHEMLOCK-T	44.1	19.6		28,594	35,575	42,556				
DOUG FIR	126.1	56.2		6,564	14,970	23,377				
S SPRUCE	111.2	49.5		2,278	4,514	6,751				
TOTAL	36.7	16.4		61,393	73,399	85,404	64	16	7	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B62G- Unit 3 gaps	2.00	6	39	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		6	39	6.5						
CRUISE		4	17	4.3	488	3.5				
DBH COUNT										
REFOREST										
COUNT		2	14	7.0						
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE		TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
TREES		/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK-T		11	213.6	14.3	81	63.3	239.6	41,206	40,214	9,277
DOUG FIR		4	22.7	24.3	108	14.8	72.9	16,941	14,970	3,529
S SPRUCE-T		2	7.8	22.2	92	4.4	20.8	3,397	3,010	880
TOTAL		17	244.1	15.8	84	83.8	333.3	61,544	58,194	13,686
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		58.7	18.5	208	255	303				
DOUG FIR		68.3	39.0	537	880	1,223				
S SPRUCE-T		25.4	23.8	297	390	483				
TOTAL		93.8	23.4	320	418	516	374	93	42	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		67.0	29.8	150	214	277				
DOUG FIR		138.4	61.6	9	23	37				
S SPRUCE-T		155.0	69.0	2	8	13				
TOTAL		65.0	28.9	173	244	315	201	50	22	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		38.4	17.1	199	240	281				
DOUG FIR		126.2	56.2	32	73	114				
S SPRUCE-T		154.9	69.0	6	21	35				
TOTAL		42.2	18.8	271	333	396	85	21	9	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		45.7	20.4	32,026	40,214	48,402				
DOUG FIR		126.1	56.2	6,564	14,970	23,377				
S SPRUCE-T		157.6	70.2	897	3,010	5,122				
TOTAL		52.9	23.6	44,489	58,194	71,899	133	33	15	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B40A- Unit 4	63.00	24	118	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		40.7	8.5	55,017	60,110	65,202	69	17	8	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT		GNA		DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	A40G- Unit 4 gaps	8.00	24	118	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		46.9	9.8	51,962	57,589	63,216	92	23	10	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B40B- Unit 5	20.00	15	72	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		15	72	4.8						
CRUISE		7	33	4.7	2,778		1.2			
DBH COUNT										
REFOREST										
COUNT		8	39	4.9						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
S SPRUCE	17	24.3	31.1	100	23.0	128.0	22,775	20,818	5,889	5,891
S SPRUCE-T	5	17.6	22.2	86	10.1	47.4	7,535	7,138	2,036	2,040
WHEMLOCK	2	13.7	19.5	88	6.4	28.4	4,630	4,536	1,163	1,163
WHEMLOCK-T	4	66.3	17.0	70	25.3	104.3	13,955	13,088	3,797	3,801
R ALDER	3	12.3	14.1	61	3.5	13.3	1,223	1,100	369	369
WR CEDAR	2	4.7	19.2	67	2.2	9.5	720	655	301	299
TOTAL	33	138.9	20.9	78	72.4	331.0	50,838	47,335	13,555	13,562
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
S SPRUCE		54.2	13.5	859	994	1,129				
S SPRUCE-T		48.2	24.0	336	442	548				
WHEMLOCK				330	330	330				
WHEMLOCK-T		71.2	40.7	197	333	468				
R ALDER		32.7	22.6	72	93	114				
WR CEDAR		24.4	22.8	112	145	178				
TOTAL		82.0	14.3	563	657	750	268	67	30	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
S SPRUCE		81.9	21.9	19	24	30				
S SPRUCE-T		127.3	34.0	12	18	24				
WHEMLOCK		160.9	43.0	8	14	20				
WHEMLOCK-T		128.9	34.4	43	66	89				
R ALDER		212.4	56.7	5	12	19				
WR CEDAR		272.9	72.9	1	5	8				
TOTAL		57.0	15.2	118	139	160	139	35	15	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
S SPRUCE		81.9	21.9	100	128	156				
S SPRUCE-T		122.5	32.7	32	47	63				
WHEMLOCK		158.1	42.2	16	28	40				
WHEMLOCK-T		128.5	34.3	68	104	140				
R ALDER		217.1	58.0	6	13	21				
WR CEDAR		263.9	70.5	3	9	16				
TOTAL		42.3	11.3	294	331	368	77	19	9	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
S SPRUCE		80.3	21.4	16,354	20,818	25,282				
S SPRUCE-T		123.3	32.9	4,788	7,138	9,489				
WHEMLOCK		160.9	43.0	2,587	4,536	6,484				
WHEMLOCK-T		129.5	34.6	8,562	13,088	17,614				
R ALDER		210.4	56.2	482	1,100	1,719				
WR CEDAR		264.8	70.7	192	655	1,118				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B40B- Unit 5	20.00	15	72	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		44.7	11.9	41,688	47,335	52,983	85	21	9	

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	GNA			DATE	12/27/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
029	012	12	GNA	B40G- Unit 5 gaps	4.00	15	72	S	W		
				TREES	ESTIMATED	PERCENT					
				PER PLOT	TOTAL	SAMPLE					
				PLOTS	TREES	TREES	TREES				
TOTAL		15	72	4.8							
CRUISE		7	33	4.7	530		6.2				
DBH COUNT											
REFOREST											
COUNT		8	39	4.9							
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
S SPRUCE	6	6.2	37.3	112	7.8	47.4	10,078	9,432	2,324	2,324	
S SPRUCE-T	16	34.3	26.1	92	25.0	128.0	20,353	18,593	5,622	5,626	
WHEMLOCK-T	6	74.9	17.7	75	30.4	128.0	18,363	17,512	4,851	4,855	
R ALDER-T	3	12.3	14.1	61	3.5	13.3	1,223	1,100	369	369	
WR CEDAR	2	4.7	19.2	67	2.2	9.5	720	655	301	299	
TOTAL	33	132.4	21.3	80	70.8	326.2	50,736	47,291	13,467	13,473	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
S SPRUCE	26.5	11.8	1,395	1,582	1,768						
S SPRUCE-T	41.5	10.7	537	601	666						
WHEMLOCK-T	55.3	24.6	250	332	413						
R ALDER-T	32.7	22.6	72	93	114						
WR CEDAR	24.4	22.8	112	145	178						
TOTAL	82.0	14.3	563	657	750	268	67	30			
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
S SPRUCE	125.2	33.4	4	6	8						
S SPRUCE-T	87.9	23.5	26	34	42						
WHEMLOCK-T	123.9	33.1	50	75	100						
R ALDER-T	212.4	56.7	5	12	19						
WR CEDAR	272.9	72.9	1	5	8						
TOTAL	55.3	14.8	113	132	152	131	33	15			
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
S SPRUCE	122.5	32.7	32	47	63						
S SPRUCE-T	87.1	23.3	98	128	158						
WHEMLOCK-T	121.0	32.3	87	128	169						
R ALDER-T	217.1	58.0	6	13	21						
WR CEDAR	263.9	70.5	3	9	16						
TOTAL	42.2	11.3	289	326	363	76	19	8			
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15			
S SPRUCE	125.3	33.5	6,275	9,432	12,588						
S SPRUCE-T	86.3	23.1	14,306	18,593	22,879						
WHEMLOCK-T	121.1	32.3	11,850	17,512	23,174						
R ALDER-T	210.4	56.2	482	1,100	1,719						
WR CEDAR	264.8	70.7	192	655	1,118						
TOTAL	45.1	12.1	41,590	47,291	52,993	87	22	10			

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B40C- Unit 6	11.00	7	21	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		7	21	3.0						
CRUISE		3	7	2.3	871		.8			
DBH COUNT										
REFOREST										
COUNT		4	14	3.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	6	50.2	22.8	92	29.9	142.9	23,481	21,768	6,008	6,011
WHEMLOCK-T	1	29.0	16.8	88	10.9	44.6	7,250	6,960	1,757	1,744
TOTAL	7	79.2	20.8	90	41.1	187.5	30,731	28,729	7,764	7,755
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		29.8	13.3	398	458	519				
WHEMLOCK-T										
TOTAL		35.0	14.2	366	427	488	57	14	6	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		65.8	26.8	37	50	64				
WHEMLOCK-T		105.8	43.1	17	29	41				
TOTAL		70.7	28.8	56	79	102	232	58	26	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		65.5	26.6	105	143	181				
WHEMLOCK-T		105.8	43.1	25	45	64				
TOTAL		66.7	27.1	137	188	238	206	52	23	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		65.9	26.8	15,934	21,768	27,603				
WHEMLOCK-T		105.8	43.1	3,963	6,960	9,958				
TOTAL		67.8	27.6	20,800	28,729	36,657	213	53	24	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	C40G- Unit 6 gaps	1.00	7	21	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		7	21	3.0						
CRUISE		3	7	2.3	80		8.7			
DBH COUNT										
REFOREST										
COUNT		4	14	3.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	5	34.8	23.7	95	22.0	107.1	18,324	17,093	4,535	4,536
WHEMLOCK-T	2	45.5	18.0	85	18.9	80.4	11,562	10,720	3,159	3,152
TOTAL	7	80.3	20.7	89	41.2	187.5	29,887	27,813	7,695	7,688
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	17.3	8.6		457	500	543				
WHEMLOCK-T	3.0	2.8		228	235	242				
TOTAL	34.7	14.1		364	424	484	56	14	6	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	57.5	23.4		27	35	43				
WHEMLOCK-T	107.5	43.8		26	45	65				
TOTAL	76.2	31.0		55	80	105	269	67	30	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	55.5	22.6		83	107	131				
WHEMLOCK-T	107.3	43.7		45	80	115				
TOTAL	66.7	27.1		137	188	238	206	52	23	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	56.7	23.1		13,149	17,093	21,038				
WHEMLOCK-T	107.6	43.8		6,026	10,720	15,414				
TOTAL	65.8	26.8		20,365	27,813	35,261	201	50	22	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B64- Unit 7	6.00	6	29	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		6	29	4.8						
CRUISE		4	16	4.0	1,298		1.2			
DBH COUNT										
REFOREST										
COUNT		2	10	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	7	61.3	21.5	91	33.2	154.1	28,435	25,537	6,847	6,836
WHEMLOCK-T	6	131.0	14.1	73	37.9	142.2	20,248	17,649	4,897	4,924
DOUG FIR	1	8.4	22.8	99	5.0	23.7	4,347	3,929	1,016	1,015
S SPRUCE	1	8.5	16.0	80	3.0	11.9	1,867	1,188	445	445
WR CEDAR	1	7.2	17.4	55	2.8	11.9	574	431	327	330
TOTAL	16	216.3	17.1	79	83.2	343.7	55,472	48,734	13,532	13,551
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	49.4	20.1		439	550	661				
WHEMLOCK-T	60.1	26.8		129	177	224				
DOUG FIR										
S SPRUCE										
WR CEDAR										
TOTAL	77.7	20.0		279	349	419	257	64	29	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	71.1	31.7		42	61	81				
WHEMLOCK-T	81.3	36.2		84	131	178				
DOUG FIR	154.9	69.0		3	8	14				
S SPRUCE	244.9	109.1			8	18				
WR CEDAR	244.9	109.1			7	15				
TOTAL	60.1	26.8		158	216	274	172	43	19	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	67.9	30.3		107	154	201				
WHEMLOCK-T	77.5	34.5		93	142	191				
DOUG FIR	154.9	69.0		7	24	40				
S SPRUCE	244.9	109.1			12	25				
WR CEDAR	244.9	109.1			12	25				
TOTAL	44.2	19.7		276	344	411	93	23	10	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	68.1	30.3		17,796	25,537	33,278				
WHEMLOCK-T	79.8	35.5		11,380	17,649	23,917				
DOUG FIR	154.9	69.0		1,219	3,929	6,640				
S SPRUCE	244.9	109.1			1,188	2,484				
WR CEDAR	244.9	109.1			431	900				
TOTAL	47.1	21.0		38,510	48,734	58,959	106	26	12	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B64G- Unit 7 gaps	1.50	6	29	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		6	29	4.8						
CRUISE		4	16	4.0	318		5.0			
DBH COUNT										
REFOREST										
COUNT		2	10	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	3	16.6	28.0	108	13.4	71.1	14,289	12,434	3,402	3,396
WHEMLOCK-T	10	171.4	15.5	76	57.2	225.2	34,753	31,081	8,425	8,446
DOUG FIR	1	8.4	22.8	99	5.0	23.7	4,347	3,929	1,016	1,015
S SPRUCE	1	8.5	16.0	80	3.0	11.9	1,867	1,188	445	445
WR CEDAR	1	7.2	17.4	55	2.8	11.9	574	431	327	330
TOTAL	16	212.0	17.2	79	82.8	343.7	55,831	49,063	13,615	13,632
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	27.8	19.2		622	770	918				
WHEMLOCK-T	65.1	21.7		204	260	316				
DOUG FIR										
S SPRUCE										
WR CEDAR										
TOTAL	77.7	20.0		279	349	419	257	64	29	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	85.8	38.2		10	17	23				
WHEMLOCK-T	82.7	36.8		108	171	234				
DOUG FIR	154.9	69.0		3	8	14				
S SPRUCE	244.9	109.1			8	18				
WR CEDAR	244.9	109.1			7	15				
TOTAL	64.0	28.5		152	212	272	195	49	22	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	89.4	39.8		43	71	99				
WHEMLOCK-T	78.4	34.9		147	225	304				
DOUG FIR	154.9	69.0		7	24	40				
S SPRUCE	244.9	109.1			12	25				
WR CEDAR	244.9	109.1			12	25				
TOTAL	44.2	19.7		276	344	411	93	23	10	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	90.4	40.2		7,431	12,434	17,437				
WHEMLOCK-T	79.3	35.3		20,102	31,081	42,059				
DOUG FIR	154.9	69.0		1,219	3,929	6,640				
S SPRUCE	244.9	109.1			1,188	2,484				
WR CEDAR	244.9	109.1			431	900				
TOTAL	46.2	20.6		38,959	49,063	59,166	102	25	11	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	40	GNA	Unit 8 ROW	1.00	1	12	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		1	12	12.0						
CRUISE		1	12	12.0	120		10.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
R ALDER-T	12	120.0	13.3	55	31.8	116.0	11,000	10,300	3,075	3,074
TOTAL	<i>12</i>	<i>120.0</i>	<i>13.3</i>	<i>55</i>	<i>31.8</i>	<i>116.0</i>	<i>11,000</i>	<i>10,300</i>	<i>3,075</i>	<i>3,074</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
R ALDER-T		42.3	12.7	75	86	97				
TOTAL		42.3	12.7	75	86	97	78	19	9	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B42A- Unit 9	7.50	5	25	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		5	25	5.0						
CRUISE		4	15	3.8	1,687		.9			
DBH COUNT										
REFOREST										
COUNT		1	5	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	3	27.9	23.7	88	17.5	85.3	14,305	13,434	3,330	3,324
WHEMLOCK-T	1	73.4	14.6	75	22.3	85.3	14,679	13,945	3,365	3,365
R ALDER	4	47.3	11.1	53	9.6	32.0	3,097	2,812	783	788
R ALDER-T	4	53.1	11.7	55	11.7	40.0	3,720	3,355	974	967
DOUG FIR	3	23.2	21.2	91	12.4	56.9	8,990	8,211	2,214	2,214
TOTAL	<i>15</i>	<i>224.9</i>	<i>15.6</i>	<i>69</i>	<i>75.8</i>	<i>299.6</i>	<i>44,791</i>	<i>41,758</i>	<i>10,666</i>	<i>10,658</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF					# OF TREES REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	29.1	20.1	400	500	600					
WHEMLOCK-T										
R ALDER	60.1	34.4	49	75	101					
R ALDER-T	29.5	16.8	54	65	76					
DOUG FIR	40.2	27.8	284	393	503					
TOTAL	<i>90.9</i>	<i>24.3</i>	<i>173</i>	<i>229</i>	<i>284</i>	<i>354</i>	<i>88</i>	<i>39</i>		
CL: 68.1 %	COEFF	TREES/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	108.7	54.0	13	28	43					
WHEMLOCK-T	108.7	54.0	34	73	113					
R ALDER	139.7	69.4	14	47	80					
R ALDER-T	126.2	62.7	20	53	86					
DOUG FIR	163.0	81.0	4	23	42					
TOTAL			<i>225</i>	<i>225</i>	<i>225</i>					
CL: 68.1 %	COEFF	BASAL AREA/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	108.7	54.0	39	85	131					
WHEMLOCK-T	108.7	54.0	39	85	131					
R ALDER	136.9	68.0	10	32	54					
R ALDER-T	122.5	60.9	16	40	64					
DOUG FIR	163.0	81.0	11	57	103					
TOTAL			<i>300</i>	<i>300</i>	<i>300</i>					
CL: 68.1 %	COEFF	NET BF/ACRE					# OF PLOTS REQ.		INF. POP.	
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	108.7	54.0	6,181	13,434	20,687					
WHEMLOCK-T	108.7	54.0	6,416	13,945	21,475					
R ALDER	137.0	68.1	898	2,812	4,726					
R ALDER-T	134.8	67.0	1,108	3,355	5,602					
DOUG FIR	163.0	81.0	1,561	8,211	14,861					
TOTAL			<i>41,758</i>	<i>41,758</i>	<i>41,758</i>					

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B4AG- Unit 9 gaps	0.50	5	25	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		5	25	5.0						
CRUISE		4	15	3.8	117	12.9				
DBH COUNT										
REFOREST										
COUNT		1	5	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	3	23.2	23.7	88	14.6	71.1	11,921	11,195	2,775	2,770
WHEMLOCK-T	1	85.6	14.6	75	26.1	99.6	17,126	16,270	3,926	3,926
R ALDER-T	8	101.0	11.4	54	21.3	72.0	6,832	6,183	1,757	1,757
DOUG FIR	3	23.2	21.2	91	12.4	56.9	8,990	8,211	2,214	2,214
TOTAL	15	233.1	15.4	69	76.5	299.6	44,869	41,859	10,672	10,667
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	29.1	20.1		400	500	600				
WHEMLOCK-T										
R ALDER-T	46.4	17.5		58	70	82				
DOUG FIR	40.2	27.8		284	393	503				
TOTAL	90.9	24.3		173	229	284	354	88	39	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	141.4	70.3		7	23	40				
WHEMLOCK-T	119.5	59.4		35	86	136				
R ALDER-T	117.1	58.2		42	101	160				
DOUG FIR	163.0	81.0		4	23	42				
TOTAL				233	233	233				
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	141.4	70.3		21	71	121				
WHEMLOCK-T	119.5	59.4		40	100	159				
R ALDER-T	120.4	59.9		29	72	115				
DOUG FIR	163.0	81.0		11	57	103				
TOTAL				300	300	300				
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	141.4	70.3		3,328	11,195	19,062				
WHEMLOCK-T	119.5	59.4		6,606	16,270	25,933				
R ALDER-T	123.5	61.4		2,389	6,183	9,978				
DOUG FIR	163.0	81.0		1,561	8,211	14,861				
TOTAL				41,859	41,859	41,859				

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B42B- Unit 10	6.00	4	20	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		4	20	5.0						
CRUISE		2	9	4.5	1,124		.8			
DBH COUNT										
REFOREST										
COUNT		2	11	5.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	6	100.3	17.1	75	38.7	160.0	29,067	24,022	6,717	6,718
WHEMLOCK-T	1	57.6	19.9	90	27.9	124.4	18,437	17,284	4,894	4,890
DOUG FIR-T	1	21.9	12.2	67	5.1	17.8	2,190	1,971	520	520
PS FIR	1	7.5	20.9	100	3.9	17.8	4,029	4,029	823	823
TOTAL	9	187.3	17.7	80	76.1	320.0	53,723	47,307	12,954	12,951
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	107.3	47.8		298	570	842				
WHEMLOCK-T										
DOUG FIR-T										
PS FIR										
TOTAL	106.2	37.5		302	483	664	506	126	56	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	67.0	38.3		62	100	139				
WHEMLOCK-T	85.7	49.0		29	58	86				
DOUG FIR-T	200.0	114.3			22	47				
PS FIR	200.0	114.3			7	16				
TOTAL	37.0	21.1		148	187	227	71	18	8	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	55.9	32.0		109	160	211				
WHEMLOCK-T	85.7	49.0		63	124	185				
DOUG FIR-T	200.0	114.3			18	38				
PS FIR	200.0	114.3			18	38				
TOTAL	28.7	16.4		268	320	372	43	11	5	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	59.7	34.1		15,832	24,022	32,212				
WHEMLOCK-T	85.7	49.0		8,820	17,284	25,749				
DOUG FIR-T	200.0	114.3			1,971	4,223				
PS FIR	200.0	114.3			4,029	8,634				
TOTAL	38.2	21.8		36,976	47,307	57,638	76	19	8	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B4BG- Unit 10 gaps	0.50	4	20	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		4	20	5.0						
CRUISE		2	9	4.5	139		6.5			
DBH COUNT										
REFOREST										
COUNT		2	11	5.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	4	17.6	27.3	104	13.6	71.1	14,448	11,084	3,325	3,326
WHEMLOCK-T	3	230.1	13.0	69	59.1	213.3	30,257	29,598	7,407	7,405
DOUG FIR-T	1	21.9	12.2	67	5.1	17.8	2,190	1,971	520	520
PS FIR	1	7.5	20.9	100	3.9	17.8	4,029	4,029	823	823
TOTAL	9	277.0	14.6	72	83.9	320.0	50,924	46,683	12,076	12,074
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	78.8	45.0		442	805	1,168				
WHEMLOCK-T	69.3	47.9		87	167	247				
DOUG FIR-T										
PS FIR										
TOTAL	106.2	37.5		302	483	664	506	126	56	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	200.0	114.3			18	38				
WHEMLOCK-T	66.1	37.8		143	230	317				
DOUG FIR-T	200.0	114.3			22	47				
PS FIR	200.0	114.3			7	16				
TOTAL	37.9	21.6		217	277	337	75	19	8	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	200.0	114.3			71	152				
WHEMLOCK-T	60.9	34.8		139	213	288				
DOUG FIR-T	200.0	114.3			18	38				
PS FIR	200.0	114.3			18	38				
TOTAL	28.7	16.4		268	320	372	43	11	5	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	200.0	114.3			11,084	23,750				
WHEMLOCK-T	60.9	34.8		19,308	29,598	39,889				
DOUG FIR-T	200.0	114.3			1,971	4,223				
PS FIR	200.0	114.3			4,029	8,634				
TOTAL	38.8	22.1		36,344	46,683	57,022	78	20	9	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	40	GNA	B52- Unit 11	10.00	8	36	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		8	36	4.5						
CRUISE		4	17	4.3	1,902	.9				
DBH COUNT										
REFOREST										
COUNT		4	19	4.8						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	3	24.9	24.0	96	16.0	78.1	12,225	11,397	3,143	3,145
DOUG FIR-T	4	59.4	13.9	74	16.8	62.5	8,168	7,968	2,023	2,023
PS FIR	5	24.4	23.0	92	14.7	70.3	15,239	14,870	3,184	3,183
WHEMLOCK-T	3	64.9	12.4	55	15.5	54.7	5,977	5,683	1,633	1,633
R ALDER	2	16.6	13.1	48	4.3	15.6	1,164	998	349	348
TOTAL	17	190.2	16.5	70	69.3	281.3	42,773	40,916	10,331	10,333
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	40.6	28.1		379	527	675				
DOUG FIR-T	24.7	14.1		120	140	160				
PS FIR	84.4	42.0		678	1,168	1,658				
WHEMLOCK-T	102.9	71.2		41	143	245				
R ALDER	23.6	22.1		47	60	73				
TOTAL	136.9	34.2		330	502	673	795	199	88	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	90.7	34.2		16	25	33				
DOUG FIR-T	99.6	37.5		37	59	82				
PS FIR	87.2	32.9		16	24	32				
WHEMLOCK-T	90.8	34.2		43	65	87				
R ALDER	282.8	106.6			17	34				
TOTAL	35.2	13.3		165	190	215	56	14	6	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	93.2	35.1		51	78	106				
DOUG FIR-T	92.6	34.9		41	63	84				
PS FIR	88.1	33.2		47	70	94				
WHEMLOCK-T	95.4	36.0		35	55	74				
R ALDER	282.8	106.6			16	32				
TOTAL	23.8	9.0		256	281	306	26	6	3	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	93.7	35.3		7,372	11,397	15,421				
DOUG FIR-T	94.3	35.5		5,136	7,968	10,800				
PS FIR	86.2	32.5		10,040	14,870	19,700				
WHEMLOCK-T	107.0	40.3		3,391	5,683	7,975				
R ALDER	282.8	106.6			998	2,063				
TOTAL	21.6	8.2		37,577	40,916	44,255	21	5	2	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	40	GNA	B52G- Unit 11 gaps	2.00	8	36	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		8	36	4.5						
CRUISE		4	17	4.3	396		4.3			
DBH COUNT										
REFOREST										
COUNT		4	19	4.8						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	2	7.2	28.3	100	5.9	31.3	5,082	4,662	1,274	1,276
DOUG FIR-T	5	94.1	14.6	76	28.6	109.4	14,591	14,201	3,688	3,688
PS FIR	5	24.4	23.0	92	14.7	70.3	15,239	14,870	3,184	3,183
WHEMLOCK-T	3	55.6	12.4	55	13.3	46.9	5,123	4,871	1,400	1,400
R ALDER	2	16.6	13.1	48	4.3	15.6	1,164	998	349	348
TOTAL	17	197.8	15.9	71	68.5	273.4	41,198	39,603	9,895	9,895
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	2.2	2.0		637	650	663				
DOUG FIR-T	41.3	20.5		134	168	202				
PS FIR	84.4	42.0		678	1,168	1,658				
WHEMLOCK-T	102.9	71.2		41	143	245				
R ALDER	23.6	22.1		47	60	73				
TOTAL	136.9	34.2		330	502	673	795	199	88	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	185.2	69.8		2	7	12				
DOUG FIR-T	82.4	31.1		65	94	123				
PS FIR	87.2	32.9		16	24	32				
WHEMLOCK-T	87.9	33.1		37	56	74				
R ALDER	282.8	106.6			17	34				
TOTAL	40.4	15.3		168	198	228	74	19	8	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	185.2	69.8		9	31	53				
DOUG FIR-T	79.4	29.9		77	109	142				
PS FIR	88.1	33.2		47	70	94				
WHEMLOCK-T	94.3	35.5		30	47	64				
R ALDER	282.8	106.6			16	32				
TOTAL	24.2	9.1		248	273	298	27	7	3	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	185.2	69.8		1,407	4,662	7,917				
DOUG FIR-T	79.7	30.1		9,932	14,201	18,470				
PS FIR	86.2	32.5		10,040	14,870	19,700				
WHEMLOCK-T	109.9	41.4		2,852	4,871	6,890				
R ALDER	282.8	106.6			998	2,063				
TOTAL	22.2	8.4		36,290	39,603	42,915	22	6	2	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	40	GNA	B60- Unit 12	2.50	3	21	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		3	21	7.0						
CRUISE		2	7	3.5	760		.9			
DBH COUNT										
REFOREST										
COUNT		1	6	6.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	3	65.4	20.2	84	32.4	145.8	20,163	18,828	5,250	5,241
DOUG FIR-T	1	81.4	13.7	79	22.5	83.3	14,653	14,653	3,149	3,149
WHEMLOCK-T	2	146.0	14.5	59	43.8	166.7	17,358	16,384	5,239	5,235
PS FIR	1	11.3	26.0	97	8.2	41.7	8,363	7,572	1,867	1,866
TOTAL	7	304.1	16.2	71	108.6	437.5	60,536	57,437	15,505	15,490
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		44.4	30.7	236	340	444				
DOUG FIR-T										
WHEMLOCK-T		81.4	76.2	39	165	291				
PS FIR										
TOTAL		65.6	26.7	230	314	398	199	50	22	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		89.2	61.7	25	65	106				
DOUG FIR-T		43.3	30.0	57	81	106				
WHEMLOCK-T		78.1	54.0	67	146	225				
PS FIR		86.6	59.9	5	11	18				
TOTAL				304	304	304				
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		89.2	61.7	56	146	236				
DOUG FIR-T		43.3	30.0	58	83	108				
WHEMLOCK-T		78.1	54.0	77	167	257				
PS FIR		86.6	59.9	17	42	67				
TOTAL				438	438	438				
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		89.2	61.7	7,207	18,828	30,449				
DOUG FIR-T		43.3	30.0	10,263	14,653	19,043				
WHEMLOCK-T		78.1	54.0	7,536	16,384	25,233				
PS FIR		86.6	59.9	3,035	7,572	12,108				
TOTAL				57,437	57,437	57,437				

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	40	GNA	B60G- Unit 12 gaps	0.50	3	21	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		3	21	7.0						
CRUISE		2	7	3.5	149		4.7			
DBH COUNT										
REFOREST										
COUNT		1	6	6.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	1	10.7	26.7	90	8.1	41.7	5,787	5,358	1,526	1,521
DOUG FIR-T	3	129.0	16.3	81	46.4	187.5	28,233	27,159	6,822	6,818
WHEMLOCK-T	2	146.0	14.5	59	43.8	166.7	17,358	16,384	5,239	5,235
PS FIR	1	11.3	26.0	97	8.2	41.7	8,363	7,572	1,867	1,866
TOTAL	7	297.0	16.4	71	107.9	437.5	59,741	56,474	15,455	15,440
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	0			
DOUG FIR										
DOUG FIR-T	32.5	22.5		181	233	286				
WHEMLOCK-T	81.4	76.2		39	165	291				
PS FIR										
TOTAL	65.6	26.7		230	314	398	199	50	22	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	86.6	59.9		4	11	17				
DOUG FIR-T	66.7	46.1		70	129	189				
WHEMLOCK-T	78.1	54.0		67	146	225				
PS FIR	86.6	59.9		5	11	18				
TOTAL				297	297	297				
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	86.6	59.9		17	42	67				
DOUG FIR-T	66.7	46.1		101	188	274				
WHEMLOCK-T	78.1	54.0		77	167	257				
PS FIR	86.6	59.9		17	42	67				
TOTAL				438	438	438				
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	86.6	59.9		2,148	5,358	8,568				
DOUG FIR-T	66.7	46.1		14,633	27,159	39,686				
WHEMLOCK-T	78.1	54.0		7,536	16,384	25,233				
PS FIR	86.6	59.9		3,035	7,572	12,108				
TOTAL				56,474	56,474	56,474				

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B55- Unit 13	24.00	15	67	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		15	67	4.5						
CRUISE		7	35	5.0	4,941	.7				
DBH COUNT										
REFOREST										
COUNT		8	32	4.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	11	46.7	18.5	91	20.3	87.5	16,173	15,336	3,737	3,739
WHEMLOCK-T	15	108.1	14.1	75	31.1	116.7	18,012	17,607	4,199	4,204
DOUG FIR	5	30.3	16.6	81	11.2	45.8	5,782	5,464	1,595	1,595
R ALDER	3	11.9	14.4	61	3.5	13.3	1,247	1,102	375	376
PS FIR	1	8.9	13.1	75	2.3	8.3	1,246	1,246	287	287
TOTAL	35	205.9	15.6	79	68.9	271.7	42,460	40,756	10,192	10,200
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	35.2	11.1		314	354	393				
WHEMLOCK-T	54.3	14.5		160	187	215				
DOUG FIR	41.3	20.5		168	212	256				
R ALDER	79.3	54.8		50	110	170				
PS FIR										
TOTAL	56.2	9.5		213	235	257	126	31	14	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	67.9	18.1		38	47	55				
WHEMLOCK-T	68.3	18.2		88	108	128				
DOUG FIR	96.0	25.6		23	30	38				
R ALDER	244.9	65.4		4	12	20				
PS FIR	263.9	70.5		3	9	15				
TOTAL	44.7	11.9		181	206	230	86	21	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	65.0	17.4		72	88	103				
WHEMLOCK-T	66.7	17.8		96	117	137				
DOUG FIR	96.0	25.6		34	46	58				
R ALDER	244.9	65.4		5	13	22				
PS FIR	263.9	70.5		2	8	14				
TOTAL	40.6	10.9		242	272	301	71	18	8	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	67.0	17.9		12,591	15,336	18,080				
WHEMLOCK-T	70.8	18.9		14,277	17,607	20,938				
DOUG FIR	93.8	25.1		4,095	5,464	6,834				
R ALDER	244.9	65.4		381	1,102	1,823				
PS FIR	263.9	70.5		368	1,246	2,125				
TOTAL	48.1	12.8		35,524	40,755	45,987	99	25	11	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B55G- Unit 13 gaps	5.00	15	67	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
PLOTS		TREES		TREES		TREES				
TOTAL	15	67	4.5							
CRUISE	7	35	5.0	1,021	3.4					
DBH COUNT										
REFOREST										
COUNT	8	32	4.0							
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	3	7.7	22.3	101	4.4	20.8	4,160	3,871	958	957
WHEMLOCK-T	23	148.7	15.0	79	47.3	183.3	29,891	28,969	6,948	6,957
DOUG FIR	5	27.6	16.6	81	10.2	41.7	5,256	4,968	1,450	1,450
R ALDER	2	8.4	15.2	65	2.7	10.7	1,149	1,033	340	341
R ALDER-T	1	2.9	13.0	55	0.7	2.7	174	145	55	55
PS FIR	1	8.9	13.1	75	2.3	8.3	1,246	1,246	287	287
TOTAL	35	204.2	15.5	79	68.0	267.5	41,876	40,231	10,038	10,046
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	19.9	13.7		437	507	576				
WHEMLOCK-T	46.8	10.0		203	225	248				
DOUG FIR	41.3	20.5		168	212	256				
R ALDER	70.7	66.2		47	140	233				
R ALDER-T										
PS FIR										
TOTAL	56.2	9.5		213	235	257	126	31	14	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	146.7	39.2		5	8	11				
WHEMLOCK-T	61.0	16.3		125	149	173				
DOUG FIR	92.7	24.7		21	28	34				
R ALDER	222.6	59.5		3	8	13				
R ALDER-T	387.3	103.4			3	6				
PS FIR	263.9	70.5		3	9	15				
TOTAL	44.8	12.0		180	204	229	86	22	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	146.4	39.1		13	21	29				
WHEMLOCK-T	58.3	15.6		155	183	212				
DOUG FIR	92.6	24.7		31	42	52				
R ALDER	222.6	59.5		4	11	17				
R ALDER-T	387.3	103.4			3	5				
PS FIR	263.9	70.5		2	8	14				
TOTAL	41.1	11.0		238	268	297	72	18	8	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	147.2	39.3		2,348	3,871	5,393				
WHEMLOCK-T	60.3	16.1		24,300	28,969	33,638				
DOUG FIR	89.9	24.0		3,775	4,968	6,161				
R ALDER	222.6	59.5		419	1,033	1,647				
R ALDER-T	387.3	103.4			145	294				
PS FIR	263.9	70.5		368	1,246	2,125				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT		GNA		DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B55G- Unit 13 gaps	5.00	15	67	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		48.4	12.9	35,027	40,231	45,436	100	25	11	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
29N	12W	40	B99GNA	B99- Unit 14	64.00	38	197	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		38	197	5.2						
CRUISE		20	106	5.3	18,449		.6			
DBH COUNT										
REFOREST										
COUNT		18	91	5.1						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	35	61.2	15.7	60	20.8	82.2	10,553	10,088	2,836	2,838
WHEMLOCK-T	28	109.1	12.4	58	26.1	92.1	11,009	10,914	2,820	2,820
DOUG FIR	17	30.8	20.8	80	15.9	72.4	9,085	8,575	2,603	2,604
DOUG FIR-T	13	43.7	13.4	62	11.7	42.8	4,676	4,523	1,291	1,291
PS FIR	3	24.0	11.8	50	5.3	18.1	1,490	1,135	428	427
R ALDER	5	13.2	10.7	37	2.5	8.2	586	577	165	165
S SPRUCE	3	2.0	21.2	60	1.1	4.9	658	622	164	164
WR CEDAR	2	4.4	11.7	34	1.0	3.3	131	131	55	55
TOTAL	106	288.3	14.4	60	85.5	324.0	38,189	36,566	10,361	10,362
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	95.7	16.2		263	314	364				
WHEMLOCK-T	60.3	11.6		119	134	150				
DOUG FIR	60.1	15.0		276	325	373				
DOUG FIR-T	59.3	17.1		115	139	163				
PS FIR	77.9	53.9		29	63	97				
R ALDER	105.2	52.3		41	86	131				
S SPRUCE	72.0	49.8		179	357	534				
WR CEDAR				30	30	30				
TOTAL	98.8	9.6		203	225	246	390	97	43	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	119.3	19.3		49	61	73				
WHEMLOCK-T	76.3	12.4		96	109	123				
DOUG FIR	91.7	14.9		26	31	35				
DOUG FIR-T	138.6	22.5		34	44	53				
PS FIR	243.3	39.4		15	24	33				
R ALDER	536.0	86.9		2	13	25				
S SPRUCE	491.7	79.7		0	2	4				
WR CEDAR	616.4	99.9		0	4	9				
TOTAL	45.7	7.4		267	288	310	84	21	9	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	110.5	17.9		68	82	97				
WHEMLOCK-T	73.6	11.9		81	92	103				
DOUG FIR	93.2	15.1		61	72	83				
DOUG FIR-T	118.2	19.2		35	43	51				
PS FIR	239.7	38.9		11	18	25				
R ALDER	438.9	71.1		2	8	14				
S SPRUCE	454.5	73.7		1	5	9				
WR CEDAR	616.4	99.9		0	3	7				
TOTAL	32.6	5.3		307	324	341	42	11	5	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
29N	12W	40	B99GNA	B99- Unit 14	64.00		38	197	S	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		112.1	18.2	8,254	10,088	11,921				
WHEMLOCK-T		79.1	12.8	9,514	10,914	12,314				
DOUG FIR		94.3	15.3	7,264	8,575	9,887				
DOUG FIR-T		116.5	18.9	3,669	4,523	5,377				
PS FIR		240.5	39.0	693	1,135	1,578				
R ALDER		433.2	70.2	172	577	982				
S SPRUCE		430.8	69.8	188	622	1,056				
WR CEDAR		616.4	99.9	0	131	262				
TOTAL		33.8	5.5	34,564	36,566	38,568	46	11	5	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
29N	12W	40	B99GNA	B99G- Unit 14 gaps	4.00	38	197	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		38	197	5.2						
CRUISE		20	106	5.3	1,177		9.0			
DBH COUNT										
REFOREST										
COUNT		18	91	5.1						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	19	17.7	21.9	76	9.8	46.1	6,230	5,819	1,671	1,672
WHEMLOCK-T	44	151.4	12.5	57	36.3	128.3	15,360	15,193	4,008	4,010
DOUG FIR	13	16.5	22.2	82	9.4	44.4	5,727	5,382	1,631	1,632
DOUG FIR-T	17	65.2	14.1	64	18.8	70.7	7,816	7,547	2,190	2,190
PS FIR	3	24.0	11.8	50	5.3	18.1	1,490	1,135	428	427
R ALDER	5	13.2	10.7	37	2.5	8.2	586	577	165	165
S SPRUCE	3	2.0	21.2	60	1.1	4.9	658	622	164	164
WR CEDAR	2	4.4	11.7	34	1.0	3.3	131	131	55	55
TOTAL	106	294.3	14.2	59	86.0	324.0	37,999	36,405	10,312	10,313
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	79.7	18.8		359	442	525				
WHEMLOCK-T	60.7	9.1		131	144	157				
DOUG FIR	55.9	16.1		308	367	426				
DOUG FIR-T	51.6	12.9		131	151	170				
PS FIR	77.9	53.9		29	63	97				
R ALDER	105.2	52.3		41	86	131				
S SPRUCE	72.0	49.8		179	357	534				
WR CEDAR				30	30	30				
TOTAL	98.8	9.6		203	225	246	390	97	43	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	152.5	24.7		13	18	22				
WHEMLOCK-T	77.3	12.5		132	151	170				
DOUG FIR	107.4	17.4		14	16	19				
DOUG FIR-T	125.7	20.4		52	65	79				
PS FIR	243.3	39.4		15	24	33				
R ALDER	536.0	86.9		2	13	25				
S SPRUCE	491.7	79.7		0	2	4				
WR CEDAR	616.4	99.9		0	4	9				
TOTAL	47.4	7.7		272	294	317	90	22	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	166.0	26.9		34	46	58				
WHEMLOCK-T	78.4	12.7		112	128	145				
DOUG FIR	112.9	18.3		36	44	53				
DOUG FIR-T	116.5	18.9		57	71	84				
PS FIR	239.7	38.9		11	18	25				
R ALDER	438.9	71.1		2	8	14				
S SPRUCE	454.5	73.7		1	5	9				
WR CEDAR	616.4	99.9		0	3	7				
TOTAL	32.6	5.3		307	324	341	42	11	5	

TC TSTATS		STATISTICS						PAGE	2	
		PROJECT		GNA				DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
29N	12W	40	B99GNA	B99G- Unit 14 gaps	4.00	38	197	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		163.4	26.5	4,278	5,819	7,359				
WHEMLOCK-T		83.4	13.5	13,138	15,193	17,247				
DOUG FIR		114.0	18.5	4,387	5,382	6,376				
DOUG FIR-T		117.0	19.0	6,115	7,547	8,979				
PS FIR		240.5	39.0	693	1,135	1,578				
R ALDER		433.2	70.2	172	577	982				
S SPRUCE		430.8	69.8	188	622	1,056				
WR CEDAR		616.4	99.9	0	131	262				
TOTAL		33.5	5.4	34,431	36,405	38,380	45	11	5	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	118C- Unit 15	2.00	12	56	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		12	56	4.7						
CRUISE		6	28	4.7	377		7.4			
DBH COUNT										
REFOREST										
COUNT		6	28	4.7						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	11	57.5	20.0	83	28.0	125.0	21,674	20,860	4,998	4,999
WHEMLOCK-T	10	74.1	14.8	65	23.0	88.5	11,704	11,590	2,935	2,935
DOUG FIR	2	13.1	17.1	73	5.0	20.8	2,476	2,476	674	674
DOUG FIR-T	2	13.1	14.8	71	4.1	15.6	1,700	1,626	482	482
PS FIR	1	16.3	17.1	73	6.3	26.0	3,266	2,613	885	885
R ALDER	1	9.4	11.4	33	2.0	6.7	282	282	109	109
WR CEDAR	1	4.9	11.2	48	1.0	3.3	195	195	70	70
TOTAL	28	188.4	16.7	70	70.0	286.0	41,297	39,642	10,152	10,153
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	36.8	11.6		353	399	445				
WHEMLOCK-T	49.9	16.6		166	199	232				
DOUG FIR	7.4	7.0		177	190	203				
DOUG FIR-T	5.7	5.3		118	125	132				
PS FIR										
R ALDER										
WR CEDAR										
TOTAL	62.8	12.1		227	259	290	163	41	18	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	64.2	19.3		46	58	69				
WHEMLOCK-T	86.0	25.9		55	74	93				
DOUG FIR	195.4	58.8		5	13	21				
DOUG FIR-T	182.3	54.9		6	13	20				
PS FIR	279.5	84.2		3	16	30				
R ALDER	233.5	70.3		3	9	16				
WR CEDAR	346.4	104.3		5	10	10				
TOTAL	45.5	13.7		163	188	214	90	23	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	64.0	19.3		101	125	149				
WHEMLOCK-T	76.5	23.0		68	89	109				
DOUG FIR	195.4	58.8		9	21	33				
DOUG FIR-T	180.9	54.5		7	16	24				
PS FIR	279.5	84.2		4	26	48				
R ALDER	233.5	70.3		2	7	11				
WR CEDAR	346.4	104.3		3	7	7				
TOTAL	46.6	14.0		246	286	326	94	24	10	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	64.5	19.4		16,810	20,860	24,910				
WHEMLOCK-T	75.2	22.6		8,967	11,590	14,213				

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
029	012	12	GNA	118C- Unit 15	2.00		12	56	S	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		195.4	58.8	1,019	2,476	3,933				
DOUG FIR-T		181.6	54.7	737	1,626	2,516				
PS FIR		279.5	84.2	414	2,613	4,811				
R ALDER		233.5	70.3	84	282	481				
WR CEDAR		346.4	104.3		195	398				
TOTAL		48.7	14.7	33,831	39,642	45,453	103	26	11	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	118A- Unit 16	11.00	12	56	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		12	56	4.7						
CRUISE		6	28	4.7	2,073		1.4			
DBH COUNT										
REFOREST										
COUNT		6	28	4.7						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	11	57.5	20.0	83	28.0	125.0	21,674	20,860	4,998	4,999
WHEMLOCK-T	10	74.1	14.8	65	23.0	88.5	11,704	11,590	2,935	2,935
DOUG FIR	2	13.1	17.1	73	5.0	20.8	2,476	2,476	674	674
DOUG FIR-T	2	13.1	14.8	71	4.1	15.6	1,700	1,626	482	482
PS FIR	1	16.3	17.1	73	6.3	26.0	3,266	2,613	885	885
R ALDER	1	9.4	11.4	33	2.0	6.7	282	282	109	109
WR CEDAR	1	4.9	11.2	48	1.0	3.3	195	195	70	70
TOTAL	28	188.4	16.7	70	70.0	286.0	41,297	39,642	10,152	10,153
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL: 68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	36.8	11.6	353	399	445					
WHEMLOCK-T	49.9	16.6	166	199	232					
DOUG FIR	7.4	7.0	177	190	203					
DOUG FIR-T	5.7	5.3	118	125	132					
PS FIR										
R ALDER										
WR CEDAR										
TOTAL	62.8	12.1	227	259	290	163	41	18		
CL: 68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	64.2	19.3	46	58	69					
WHEMLOCK-T	86.0	25.9	55	74	93					
DOUG FIR	195.4	58.8	5	13	21					
DOUG FIR-T	182.3	54.9	6	13	20					
PS FIR	279.5	84.2	3	16	30					
R ALDER	233.5	70.3	3	9	16					
WR CEDAR	346.4	104.3	5	10	10					
TOTAL	45.5	13.7	163	188	214	90	23	10		
CL: 68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		
WHEMLOCK	64.0	19.3	101	125	149					
WHEMLOCK-T	76.5	23.0	68	89	109					
DOUG FIR	195.4	58.8	9	21	33					
DOUG FIR-T	180.9	54.5	7	16	24					
PS FIR	279.5	84.2	4	26	48					
R ALDER	233.5	70.3	2	7	11					
WR CEDAR	346.4	104.3	3	7	7					
TOTAL	46.6	14.0	246	286	326	94	24	10		
CL: 68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.		
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15		

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	118A- Unit 16	11.00	12	56	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		64.5	19.4	16,810	20,860	24,910				
WHEMLOCK-T		75.2	22.6	8,967	11,590	14,213				
DOUG FIR		195.4	58.8	1,019	2,476	3,933				
DOUG FIR-T		181.6	54.7	737	1,626	2,516				
PS FIR		279.5	84.2	414	2,613	4,811				
R ALDER		233.5	70.3	84	282	481				
WR CEDAR		346.4	104.3		195	398				
TOTAL		<i>48.7</i>	<i>14.7</i>	<i>33,831</i>	<i>39,642</i>	<i>45,453</i>	<i>103</i>	<i>26</i>	<i>11</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	18AG- Unit 16 gaps	3.00	12	56	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		12	56	4.7						
CRUISE		6	28	4.7	587		4.8			
DBH COUNT										
REFOREST										
COUNT		6	28	4.7						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	3	7.9	24.6	90	5.3	26.0	4,449	4,194	1,048	1,049
WHEMLOCK-T	18	130.4	16.2	71	46.5	187.5	28,298	27,724	6,776	6,776
DOUG FIR-T	4	26.7	15.8	72	9.2	36.5	4,150	4,064	1,152	1,152
PS FIR	1	16.3	17.1	73	6.3	26.0	3,266	2,613	885	885
R ALDER	1	9.4	11.4	33	2.0	6.7	282	282	109	109
WR CEDAR	1	4.9	11.2	48	1.0	3.3	195	195	70	70
TOTAL	28	195.7	16.4	70	70.7	286.0	40,640	39,071	10,040	10,041
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		29.0	20.1	413	517	620				
WHEMLOCK-T		50.4	12.2	236	268	301				
DOUG FIR-T		24.5	14.0	135	158	180				
PS FIR										
R ALDER										
WR CEDAR										
TOTAL		62.8	12.1	227	259	290	163	41	18	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		166.7	50.2	4	8	12				
WHEMLOCK-T		58.5	17.6	107	130	153				
DOUG FIR-T		162.7	49.0	14	27	40				
PS FIR		279.5	84.2	3	16	30				
R ALDER		233.5	70.3	3	9	16				
WR CEDAR		346.4	104.3		5	10				
TOTAL		45.9	13.8	169	196	223	92	23	10	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		160.5	48.3	13	26	39				
WHEMLOCK-T		58.6	17.6	154	188	221				
DOUG FIR-T		170.8	51.4	18	36	55				
PS FIR		279.5	84.2	4	26	48				
R ALDER		233.5	70.3	2	7	11				
WR CEDAR		346.4	104.3		3	7				
TOTAL		46.6	14.0	246	286	326	94	24	10	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		180.5	54.3	1,915	4,194	6,473				
WHEMLOCK-T		62.2	18.7	22,533	27,724	32,915				
DOUG FIR-T		170.1	51.2	1,982	4,064	6,145				
PS FIR		279.5	84.2	414	2,613	4,811				
R ALDER		233.5	70.3	84	282	481				
WR CEDAR		346.4	104.3		195	398				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT		GNA		DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	18AG- Unit 16 gaps	3.00	12	56	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL		49.2	14.8	33,283	39,071	44,860	105	26	12	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	118B- Unit 17	12.00	5	21	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		5	21	4.2						
CRUISE		2	9	4.5	2,491		.4			
DBH COUNT										
REFOREST										
COUNT		3	12	4.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	5	126.6	14.1	50	36.6	137.5	17,351	16,585	4,254	4,254
WHEMLOCK-T	3	71.8	13.8	65	20.2	75.0	8,444	8,055	2,355	2,355
DOUG FIR	1	9.1	22.4	77	5.3	25.0	3,837	3,837	909	909
TOTAL	9	207.6	14.5	56	62.4	237.5	29,632	28,477	7,519	7,519
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	90.1	44.8		162	294	426				
WHEMLOCK-T	60.1	41.6		76	130	184				
DOUG FIR										
TOTAL	85.4	30.1		177	253	330	327	82	36	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	24.6	12.2		111	127	142				
WHEMLOCK-T	81.8	40.6		43	72	101				
DOUG FIR	136.9	68.0		3	9	15				
TOTAL	28.0	13.9		179	208	236	39	10	4	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	20.3	10.1		124	138	151				
WHEMLOCK-T	69.7	34.6		49	75	101				
DOUG FIR	136.9	68.0		8	25	42				
TOTAL	28.8	14.3		203	238	272	41	10	5	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	26.2	13.0		14,423	16,585	18,746				
WHEMLOCK-T	65.4	32.5		5,436	8,055	10,674				
DOUG FIR	136.9	68.0		1,226	3,837	6,447				
TOTAL	27.6	13.7		24,578	28,477	32,376	37	9	4	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	18BG- Unit 17 gaps	2.00	5	21	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		5	21	4.2						
CRUISE		2	9	4.5	470		1.9			
DBH COUNT										
REFOREST										
COUNT		3	12	4.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	3	17.8	22.7	81	10.5	50.0	8,111	7,646	1,957	1,957
WHEMLOCK-T	5	208.3	12.0	51	47.0	162.5	15,667	15,161	4,274	4,274
DOUG FIR	1	9.1	22.4	77	5.3	25.0	3,837	3,837	909	909
TOTAL	9	235.2	13.6	55	64.4	237.5	27,614	26,645	7,140	7,140
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	41.6	28.8		327	460	593				
WHEMLOCK-T	76.0	37.8		60	96	132				
DOUG FIR										
TOTAL	85.4	30.1		177	253	330	327	82	36	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	98.9	49.2		9	18	27				
WHEMLOCK-T	42.3	21.0		164	208	252				
DOUG FIR	136.9	68.0		3	9	15				
TOTAL	35.1	17.4		194	235	276	61	15	7	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	104.6	52.0		24	50	76				
WHEMLOCK-T	43.9	21.8		127	163	198				
DOUG FIR	136.9	68.0		8	25	42				
TOTAL	28.8	14.3		203	238	272	41	10	5	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK	108.4	53.8		3,529	7,646	11,764				
WHEMLOCK-T	42.9	21.3		11,927	15,161	18,396				
DOUG FIR	136.9	68.0		1,226	3,837	6,447				
TOTAL	29.1	14.5		22,786	26,645	30,504	42	10	5	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B108- Unit 18	2.00	4	20	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		4	20	5.0						
CRUISE		4	12	3.0	439		2.7			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	2	64.9	14.9	80	20.3	78.1	12,889	12,241	2,923	2,919
WHEMLOCK-T	2	55.7	14.3	77	16.5	62.5	9,736	9,463	2,255	2,255
DOUG FIR	3	27.5	20.4	86	13.8	62.5	7,473	6,317	2,225	2,218
DOUG FIR-T	2	42.8	16.4	82	15.5	62.5	7,408	7,055	2,084	2,090
PS FIR	2	16.1	18.8	92	7.2	31.3	6,379	6,146	1,361	1,363
S SPRUCE	1	12.4	15.2	70	4.0	15.6	2,108	2,108	531	531
TOTAL	12	219.4	16.2	81	77.7	312.5	45,994	43,329	11,380	11,376
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		57.9	54.2	101	220	339				
WHEMLOCK-T				170	170	170				
DOUG FIR		25.8	17.9	192	233	275				
DOUG FIR-T		25.0	23.4	130	170	210				
PS FIR		7.4	7.0	354	380	406				
S SPRUCE										
TOTAL		39.3	11.8	202	229	256	67	17	7	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		46.0	26.3	48	65	82				
WHEMLOCK-T		81.7	46.7	30	56	82				
DOUG FIR		78.8	45.0	15	27	40				
DOUG FIR-T		115.5	66.0	15	43	71				
PS FIR		200.0	114.3		16	35				
S SPRUCE		200.0	114.3		12	27				
TOTAL				219	219	219				
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		40.0	22.9	60	78	96				
WHEMLOCK-T		81.6	46.7	33	63	92				
DOUG FIR		81.6	46.7	33	63	92				
DOUG FIR-T		115.5	66.0	21	63	104				
PS FIR		200.0	114.3		31	67				
S SPRUCE		200.0	114.3		16	33				
TOTAL				313	313	313				
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		40.3	23.0	9,424	12,241	15,057				
WHEMLOCK-T		81.7	46.7	5,048	9,463	13,879				
DOUG FIR		91.2	52.1	3,025	6,317	9,608				
DOUG FIR-T		115.5	66.0	2,401	7,055	11,709				
PS FIR		200.0	114.3		6,146	13,169				
S SPRUCE		200.0	114.3		2,108	4,517				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	B108- Unit 18	2.00	4	20	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL				43,329	43,329	43,329				

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	40	GNA	B94- Unit 19	42.00	32	177	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
		PLOTS	TREES	PER PLOT	TREES	TREES				
TOTAL		32	177	5.5						
CRUISE		17	89	5.2	9,413	.9				
DBH COUNT										
REFOREST										
COUNT		15	82	5.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	35	75.9	18.7	78	33.5	144.6	18,377	17,087	5,080	5,079
DOUG FIR-T	21	76.1	13.4	62	20.4	74.9	7,767	7,188	2,124	2,123
WHEMLOCK	6	8.8	18.8	76	3.9	17.0	2,124	2,046	623	623
WHEMLOCK-T	14	30.9	15.2	67	10.0	39.1	5,093	5,048	1,315	1,315
R ALDER	5	14.7	9.7	50	2.4	7.5	862	751	178	177
R ALDER-T	1	2.8	12.8	45	0.7	2.5	168	140	48	48
S SPRUCE	5	9.4	12.9	58	2.4	8.5	800	766	221	221
PS FIR	2	5.5	10.6	57	1.0	3.4	439	439	95	95
TOTAL	89	224.1	15.6	67	75.3	297.6	35,629	33,465	9,684	9,681
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		52.4	8.8	240	263	286				
DOUG FIR-T		43.3	9.7	103	114	125				
WHEMLOCK		20.9	9.3	221	243	266				
WHEMLOCK-T		35.0	9.7	172	191	209				
R ALDER		70.4	35.0	42	64	86				
R ALDER-T										
S SPRUCE		59.3	29.5	63	90	117				
PS FIR		17.7	16.6	67	80	93				
TOTAL		64.3	6.8	175	188	200	165	41	18	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		69.1	12.2	67	76	85				
DOUG FIR-T		97.8	17.3	63	76	89				
WHEMLOCK		216.2	38.2	5	9	12				
WHEMLOCK-T		140.1	24.8	23	31	39				
R ALDER		355.9	62.9	5	15	24				
R ALDER-T		393.5	69.5	1	3	5				
S SPRUCE		373.7	66.0	3	9	16				
PS FIR		565.7	99.9	0	6	11				
TOTAL		37.4	6.6	209	224	239	56	14	6	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		68.7	12.1	127	145	162				
DOUG FIR-T		88.1	15.6	63	75	87				
WHEMLOCK		206.2	36.4	11	17	23				
WHEMLOCK-T		146.7	25.9	29	39	49				
R ALDER		315.9	55.8	3	8	12				
R ALDER-T		393.5	69.5	1	3	4				
S SPRUCE		367.4	64.9	3	9	14				
PS FIR		565.7	99.9	0	3	7				
TOTAL		34.3	6.1	280	298	316	47	12	5	

TC TSTATS				STATISTICS			PAGE	2		
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
029	012	40	GNA	B94- Unit 19	42.00		32	177	S	W
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR		73.2	12.9	14,878	17,087	19,295				
DOUG FIR-T		85.3	15.1	6,106	7,188	8,271				
WHEMLOCK		218.1	38.5	1,258	2,046	2,835				
WHEMLOCK-T		148.5	26.2	3,724	5,048	6,372				
R ALDER		364.0	64.3	268	751	1,234				
R ALDER-T		393.5	69.5	43	140	237				
S SPRUCE		365.2	64.5	272	766	1,259				
PS FIR		565.7	99.9	0	439	877				
TOTAL		<i>38.1</i>	<i>6.7</i>	<i>31,211</i>	<i>33,465</i>	<i>35,718</i>	<i>58</i>	<i>15</i>	<i>6</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	40	GNA	B94G- Unit 19 gaps	2.00	5	25	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL	5		25	5.0						
CRUISE	5		25	5.0		418	6.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	7	29.5	21.8	90	16.3	76.2	11,809	10,667	3,032	3,035
DOUG FIR-T	12	96.9	15.7	73	33.0	130.7	15,999	14,685	4,282	4,276
WHEMLOCK-T	6	82.7	12.0	49	18.8	65.3	8,561	8,213	2,080	2,083
TOTAL	25	209.1	15.4	66	69.3	272.3	36,369	33,565	9,394	9,394
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	35.0	14.2		321	374	428				
DOUG FIR-T	29.9	9.0		147	162	176				
WHEMLOCK-T	54.9	24.5		121	160	199				
TOTAL	58.2	11.9		195	221	247	141	35	16	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	82.0	40.7		17	30	42				
DOUG FIR-T	55.5	27.6		70	97	124				
WHEMLOCK-T	115.7	57.5		35	83	130				
TOTAL	38.4	19.1		169	209	249	73	18	8	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	81.4	40.5		45	76	107				
DOUG FIR-T	47.5	23.6		100	131	162				
WHEMLOCK-T	136.9	68.0		21	65	110				
TOTAL	24.5	12.2		239	272	305	30	7	3	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
DOUG FIR	96.7	48.0		5,542	10,667	15,793				
DOUG FIR-T	43.8	21.8		11,487	14,685	17,883				
WHEMLOCK-T	147.2	73.1		2,207	8,213	14,219				
TOTAL	28.8	14.3		28,757	33,565	38,373	41	10	5	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	Unit 20	6.00	6	29	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		6	29	4.8						
CRUISE		4	12	3.0	1,245	1.0				
DBH COUNT										
REFOREST										
COUNT		2	9	4.5						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK	2	77.8	14.9	80	24.3	93.8	15,467	14,689	3,508	3,503
WHEMLOCK-T	2	55.7	14.3	77	16.5	62.5	9,736	9,463	2,255	2,255
DOUG FIR	2	17.6	20.8	85	9.1	41.7	4,914	4,643	1,499	1,495
DOUG FIR-T	3	32.0	17.3	84	12.5	52.1	6,248	5,314	1,763	1,763
PS FIR	2	16.1	18.8	92	7.2	31.3	6,379	6,146	1,361	1,363
S SPRUCE	1	8.3	15.2	70	2.7	10.4	1,405	1,405	354	354
TOTAL	12	207.5	16.1	80	72.8	291.7	44,150	41,660	10,740	10,734
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		57.9	54.2	101	220	339				
WHEMLOCK-T				170	170	170				
DOUG FIR		13.3	12.5	232	265	298				
DOUG FIR-T		17.6	12.2	149	170	191				
PS FIR		7.4	7.0	354	380	406				
S SPRUCE										
TOTAL		39.3	11.8	202	229	256	67	17	7	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		57.7	25.7	58	78	98				
WHEMLOCK-T		89.5	39.8	33	56	78				
DOUG FIR		122.5	54.5	8	18	27				
DOUG FIR-T		159.5	71.0	9	32	55				
PS FIR		167.3	74.5	4	16	28				
S SPRUCE		244.9	109.1		8	17				
TOTAL				208	208	208				
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		55.8	24.8	70	94	117				
WHEMLOCK-T		89.4	39.8	38	63	87				
DOUG FIR		122.5	54.5	19	42	64				
DOUG FIR-T		159.5	71.0	15	52	89				
PS FIR		167.3	74.5	8	31	55				
S SPRUCE		244.9	109.1		10	22				
TOTAL				292	292	292				
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK		55.9	24.9	11,035	14,689	18,342				
WHEMLOCK-T		89.5	39.8	5,694	9,463	13,232				
DOUG FIR		122.5	54.5	2,111	4,643	7,175				
DOUG FIR-T		159.5	71.0	1,540	5,314	9,087				
PS FIR		167.3	74.5	1,567	6,146	10,725				
S SPRUCE		244.9	109.1		1,405	2,938				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	GNA			DATE	12/24/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	12	GNA	Unit 20	6.00	6	29	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15	
TOTAL				<i>41,660</i>	<i>41,660</i>	<i>41,660</i>				

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	GNA		DATE	12/24/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
029	012	7	GNA	Unit 21 ROW	1.00	2	8	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		2	8	4.0						
CRUISE		2	8	4.0	85	9.4				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
WHEMLOCK-T		8	84.9	21.7	82	46.8	217.8	45,624	44,292	9,214
TOTAL		8	84.9	21.7	82	46.8	217.8	45,624	44,292	9,214
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		57.6	21.7	598	764	930				
TOTAL		57.6	21.7	598	764	930	151	38	17	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		31.0	29.1	60	85	110				
TOTAL		31.0	29.1	60	85	110	68	17	8	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		35.4	33.1	146	218	290				
TOTAL		35.4	33.1	146	218	290	88	22	10	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15	
WHEMLOCK-T		51.0	47.7	23,158	44,292	65,427				
TOTAL		51.0	47.7	23,158	44,292	65,427	182	46	20	

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1									
Project: GNA												Date	12/24/2019									
												Time	8:33:37AM									
T029 R012 S12 TB100										T029 R012 S12 TB100												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
029	012	12	GNA	B100- Unit 1	62.00	22	91	S	W													
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft			
WH	D	2S		70	15.2	8,365	7,097	440			50	50				100	40	16	341	2.28	20.8	
WH	D	3S		17	6.3	1,778	1,665	103	8	85	7					100	36	9	107	0.85	15.6	
WH	D	4S		5		542	542	34	100					100			29	5	30	0.26	18.1	
WH	PL	3S		8		713	713	44			100				100		34	13	210	1.34	3.4	
WH	Totals			25	12.1	11,397	10,016	621	7	14	44	35		5	7	87	35	10	173	1.31	57.9	
WH	T	D	2S	15	9.7	1,332	1,202	75			100					100	40	14	260	1.74	4.6	
WH	T	D	3S	54	6.7	4,360	4,067	252	8	48	44					100	36	10	121	0.89	33.6	
WH	T	D	4S	15		1,131	1,131	70	100					46	54		35	5	40	0.34	28.3	
WH	T	D	UT	8		573	573	36			100					100	40	15	360	2.46	1.6	
WH	T	PL	3S	8		578	578	36			100				100		34	12	170	1.18	3.4	
WH	T Totals			19	5.3	7,975	7,551	468	19	26	55			15	85		36	8	106	0.79	71.5	
SS	D	2S		93	14.3	19,260	16,500	1,023			17	83				100	40	19	541	3.70	30.5	
SS	D	3S		2		313	313	19		100						100	36	10	140	0.89	2.2	
SS	D	4S		5	13.5	971	840	52		64	29	7		75	25		26	10	82	1.06	10.3	
SS	Totals			44	14.1	20,544	17,652	1,094		5	17	78		4	1	95	37	16	410	3.10	43.0	
SS	T	D	2S	85	13.1	3,568	3,100	192			42	58				100	39	15	333	2.31	9.3	
SS	T	D	3S	12	29.2	627	444	28		100						100	36	10	105	0.97	4.2	
SS	T	D	4S	3		89	89	6	42	58				100			22	8	35	0.58	2.5	
SS	T Totals			9	15.2	4,284	3,632	225	1	14	35	50		2	98		36	13	226	1.79	16.1	
DF	D	2S		64	10.2	766	688	43		18		82				100	40	15	328	2.06	2.1	
DF	D	3S		5		51	51	3		100						100	36	9	100	1.21	.5	
DF	D	4S		3		32	32	2	100					100			27	7	40	0.46	.8	
DF	D	UT		28		290	290	18			100		100				20	25	570	4.33	.5	
DF	Totals			3	6.9	1,139	1,061	66	3	17		80		27	3	70	34	14	271	1.86	3.9	
Type Totals					12.0	45,338	39,913	2,475	6	12	32	50		1	3	5	91	36	11	207	1.58	192.4

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1								
												Date	12/24/2019								
												Time	8:33:37AM								
T029 R012 S12 TB10G												T029 R012 S12 TB10G									
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
029	012	12	GNA	B10G- Unit 1 gaps	6.00	22	91	S	W												
Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf	
	T	D	2S	42	14.0	8,289	7,132	43			62	38			100	40	15	317	2.09	22.5	
WH	T	D	3S	36	6.6	6,345	5,924	36	8	57	34				100	36	10	117	0.88	50.6	
WH	T	D	4S	10		1,722	1,722	10	100				30	32	38	33	5	36	0.31	47.3	
WH	T	D	UT	4		614	614	4			100				100	40	15	360	2.46	1.7	
WH	T	PL	3S	8		1,289	1,289	8			100				100	34	12	189	1.26	6.8	
WH	T	Totals		42	8.6	18,260	16,682	100	13	20	50	16		3	11	86	35	9	129	0.97	129.0
WH		D	2S	100	17.3	967	799	5			25	75			100	38	17	405	3.08	2.0	
WH	T	Totals		2	17.3	967	799	5			25	75			100	38	17	405	3.08	2.0	
SS		D	2S	95	15.4	13,146	11,119	67			5	95			100	40	21	687	4.91	16.2	
SS		D	4S	5	15.2	676	573	3		45	44	11		78	22	27	12	112	1.38	5.1	
SS	T	Totals		29	15.4	13,821	11,692	70		2	7	91		4	1	95	37	19	549	4.28	21.3
SS	T	D	2S	88	12.5	9,771	8,547	51			39	61			100	40	16	370	2.40	23.1	
SS	T	D	3S	8	18.5	856	698	4		100					100	36	10	118	0.94	5.9	
SS	T	D	4S	4	8.2	402	369	2	9	91			75	25		24	8	49	0.71	7.6	
SS	T	Totals		24	12.8	11,030	9,614	58	0	11	35	54		3	1	96	36	13	262	1.93	36.6
DF		D	2S	44	10.0	305	275	2				100			100	40	19	540	2.70	.5	
DF		D	3S	8		51	51	0		100					100	36	9	100	1.21	.5	
DF		D	UT	48		290	290	2				100	100			20	25	570	4.33	.5	
DF	T	Totals		2	4.7	646	615	4		8	92		47		53	32	18	403	2.48	1.5	
DF	T	D	2S	92	10.3	461	413	2		31	69				100	40	14	260	1.85	1.6	
DF	T	D	4S	8		32	32	0	100				100			27	7	40	0.46	.8	
DF	T	Totals		1	9.7	493	445	3	7	29	64		7		93	36	11	187	1.50	2.4	
Type Totals					11.9	45,216	39,847	239	6	12	32	50	1	3	5	91	36	11	207	1.57	192.8

T029 R012 S12 TB63 **T029 R012 S12 TB63**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 029 012 12 GNA B63- Unit 2 37.00 14 73 S W

S Sp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
WH	D	2S	49	8.9	13,514	12,318	456			43	57					100	40	15	328	1.92	37.6
WH	D	3S	28	4.5	7,220	6,898	255		79	21					100	36	10	130	0.89	53.2	
WH	D	4S	1		275	275	10	100					100			27	6	30	0.43	9.2	
WH	D	UT			92	92	3	100					100			19	6	20	0.37	4.6	
WH	PL	2S	17		4,123	4,123	153			100				100	34	15	300	1.60	13.7		
WH	PL	3S	5		1,149	1,149	43			100				100	34	12	170	1.01	6.8		
WH	Totals		45	5.8	26,373	24,855	920	1	22	48	28	0	1	21	77	36	12	199	1.28	125.1	
WH	T	D	2S	10	5.8	2,390	2,252	83			100				100	40	13	228	1.49	9.9	
WH	T	D	3S	49	2.9	10,602	10,296	381	14	57	29				100	36	9	98	0.74	105.5	
WH	T	D	4S	4		907	907	34	100				32	68		33	5	36	0.32	25.1	
WH	T	D	UT	1		121	121	4	100				100			22	5	20	0.29	6.1	
WH	T	PL	3S	36		7,590	7,590	281		32	68			100	34	12	174	0.99	43.7		
WH	T	Totals		38	2.1	21,611	21,167	783	12	39	49		2	39	59	35	9	111	0.78	190.2	
DF	D	2S	93	12.5	7,624	6,675	247			6	94				100	40	19	560	3.24	11.9	
DF	D	3S	3	21.4	271	213	8		100						100	36	10	110	1.06	1.9	
DF	D	4S	4	8.8	314	286	11		29	71			100			24	10	71	0.96	4.0	
DF	Totals		13	12.6	8,209	7,174	265		4	8	88		4	96		36	16	401	2.67	17.9	
RA	D	4S	91	41.1	1,139	671	25	29	71				29	71		37	9	55	0.74	12.1	
RA	D	UT	9		66	66	2	100					100			21	5	20	0.29	3.3	
RA	Totals		1	38.9	1,205	737	27	36	64				36	64		34	8	48	0.68	15.4	
RA	T	D	4S	84	11.2	387	344	13	38	62				100		30	7	47	0.50	7.4	
RA	T	D	UT	16		61	61	2	100				100			20	5	20	0.29	3.1	
RA	T	Totals		1	9.7	448	405	15	47	53			15	85		27	7	39	0.45	10.4	
RC	D	3S	22		65	65	2			100				100		30	14	210	2.99	.3	
RC	D	4S	76	11.5	245	217	8	100						61	39	34	5	30	0.70	7.2	
RC	D	UT	2	98.8	253	3	0			100		100				20	30	10	7.50	.3	
RC	Totals		1	49.4	563	284	11	76	23	1		1	23	46	30	33	6	36	0.94	7.8	
SS	D	2S	94	10.2	843	757	28			100				100		40	21	660	4.97	1.1	
SS	D	4S	6	11.1	52	46	2		100				100			24	10	80	1.06	.6	
SS	Totals		1	10.3	895	803	30		6	94			6	94		35	17	467	4.07	1.7	
Type	Totals			6.5	59,303	55,425	2,051	6	27	42	25	0	3	25	72	35	10	150	1.05	368.6	

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
	Project: GNA										Date 12/24/2019										
											Time 8:33:37AM										
T029 R012 S12 TB63G										T029 R012 S12 TB63G											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
029	012	12	GNA	B63G- Unit 2 gaps	3.00	14	73	S	W												
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd	
	T	D	2S	18	11.6	7,451	6,588	20	5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft		
WH	T	D	2S	18	11.6	7,451	6,588	20									40	13	235	1.52	28.1
WH	T	D	3S	43	3.8	16,249	15,627	47	9	66	25						36	9	105	0.77	148.8
WH	T	D	4S	3		1,173	1,173	4	100					48	52		31	5	34	0.35	34.0
WH	T	D	UT			211	211	1	100				43	57			21	5	20	0.32	10.6
WH	T	PL	2S	12		4,090	4,090	12			100						34	15	300	1.60	13.6
WH	T	PL	3S	24		8,669	8,669	26		28	72						34	12	173	1.00	50.0
WH	T	Totals		67	3.9	37,844	36,358	109	8	35	57		0	2	37	61	35	10	128	0.87	285.1
WH		D	2S	84	5.5	8,702	8,222	25			12	88					40	16	414	2.29	19.9
WH		D	3S	16		1,494	1,494	4		70	30						36	11	166	1.19	9.0
WH	T	Totals		18	4.7	10,197	9,716	29		11	15	75					39	15	336	1.97	28.9
DF		D	2S	93	12.5	6,535	5,721	17			6	94					40	19	560	3.24	10.2
DF		D	3S	3	21.4	232	183	1		100							36	10	110	1.06	1.7
DF		D	4S	4	8.8	269	245	1		29	71			100			24	10	71	0.96	3.5
DF	T	Totals		11	12.6	7,037	6,149	18		4	8	88		4	96		36	16	401	2.67	15.3
RA	T	D	4S	88	32.2	1,515	1,027	3	33	67				57	43		34	8	51	0.65	19.9
RA	T	D	UT	12		133	133	0	100				54	46			20	5	20	0.29	6.6
RA	T	Totals		2	29.6	1,647	1,159	3	40	60			6	56	38		31	7	44	0.59	26.6
RC		D	3S	22		65	65	0			100			100			30	14	210	2.99	.3
RC		D	4S	76	11.5	245	217	1	100						61	39	34	5	30	0.70	7.2
RC		D	UT	2	98.8	253	3	0			100		100				20	30	10	7.50	.3
RC	T	Totals		1	49.4	563	284	1	76	23	1		1	23	46	30	33	6	36	0.94	7.8
SS		D	2S	94	10.2	843	757	2			100						40	21	660	4.97	1.1
SS		D	4S	6	11.1	52	46	0		100				100			24	10	80	1.06	.6
SS	T	Totals		1	10.3	895	803	2		6	94		6		94		35	17	467	4.07	1.7
Type Totals					6.4	58,182	54,470	163	6	27	42	25	0	3	25	72	35	10	149	1.05	365.5

T029 R012 S12 TB62										T029 R012 S12 TB62				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	B62- Unit 3	13.00	6	39	S	W					

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia
					5-7	8-11	12-15							16+	12-20	21-30	31-35	36-99	Ft	In			
WH	T	D	2S	20	7.2	7,783	7,221	94	100				100				40	13	245	1.66	29.5		
WH	T	D	3S	31	3.7	11,603	11,169	145	35	46	19	100				36	8	91	0.69	123.3			
WH	T	D	4S	15		5,374	5,374	70	100					21	79	35	5	50	0.28	108.4			
WH	T	D	UT	1		275	275	4	100				100				21	7	30	0.46	9.2		
WH	T	PL	3S	33		11,535	11,535	150	100				100				34	10	117	0.64	98.9		
WH	T	Totals		48	2.7	36,571	35,575	462	27	47	26		1	36	64	35	8	96	0.64	369.3			
WH		D	3S	32		5,895	5,895	77	100				100				36	12	180	1.09	32.7		
WH		D	4S	7		1,310	1,310	17	100				100				27	7	40	0.53	32.7		
WH		PL	2S	61		11,134	11,134	145			100	100				34	16	340	1.90	32.7			
WH	T	Totals		25		18,339	18,339	238	7	32	61		7	61	32	32	12	187	1.22	98.2			
DF		D	S	20		3,058	3,058	40	100				100				40	22	840	3.77	3.6		
DF		D	2S	60	16.0	10,701	8,988	117		20	80	100				40	16	348	2.10	25.8			
DF		D	3S	15	10.2	2,534	2,276	30		71	29	100				37	10	116	0.84	19.6			
DF		D	4S	5		648	648	8	37	63			37	63		29	8	71	0.70	9.2			
DF	T	Totals		20	11.6	16,941	14,970	195	2	14	16	69		2	3	96	37	13	257	1.62	58.2		
SS		D	2S	74	10.8	3,769	3,364	44	100				100				40	14	289	2.07	11.6		
SS		D	3S	26	13.3	1,327	1,151	15	100				100				38	9	99	0.80	11.6		
SS	T	Totals		6	11.4	5,096	4,514	59		25	75	100				39	12	194	1.45	23.3			
Type	Totals				4.6	76,947	73,399	954	15	27	29	29		2	33	65	35	9	134	0.88	549.0		

T029 R012 S12 TB62G	T029 R012 S12 TB62G
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
029 012 12 GNA B62G- Unit 3 gaps 2.00 6 39 S	W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	T	D	2S	17	7.2	7,750	7,190	14	100				100				40	13	245	1.66	29.3
WH	T	D	3S	32	3.3	13,094	12,662	25	31	40	29	100				36	8	96	0.71	131.3	
WH	T	D	4S	14		5,693	5,693	11	100				6	20	74	35	6	49	0.30	116.5	
WH	T	D	UT	1		274	274	1	100				100				21	7	30	0.46	9.1
WH	T	PL	2S	7		2,910	2,910	6	100				100				34	16	340	1.90	8.6
WH	T	PL	3S	29		11,485	11,485	23	100				100				34	10	117	0.64	98.5
WH	T	Totals		69	2.4	41,206	40,214	80	25	41	27	7	2	39	60	35	8	102	0.67	393.4	
DF		D	S	20		3,058	3,058	6	100				100				40	22	840	3.77	3.6
DF		D	2S	60	16.0	10,701	8,988	18	20 80				100				40	16	348	2.10	25.8
DF		D	3S	15	10.2	2,534	2,276	5	71 29				100				37	10	116	0.84	19.6
DF		D	4S	5		648	648	1	37	63					37	63	29	8	71	0.70	9.2
DF	T	Totals		26	11.6	16,941	14,970	30	2	14	16	69	2	3	96	37	13	257	1.62	58.2	
SS	T	D	2S	74	10.8	2,513	2,243	4	100				100				40	14	289	2.07	7.8
SS	T	D	3S	26	13.3	884	767	2	100				100				38	9	99	0.80	7.8
SS	T	Totals		5	11.4	3,397	3,010	6	25 75				100				39	12	194	1.45	15.5
Type Totals					5.4	61,544	58,194	116	17	33	27	23	1	27	71	35	9	125	0.83	467.1	

T029 R012 S12 TB40A **T029 R012 S12 TB40A**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 029 012 12 GNA B40A- Unit 4 63.00 24 118 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99							
SS		D	S	12	2.3	3,495	3,414	215											40	23	916	5.24	3.7
SS		D	2S	76	7.4	23,458	21,720	1,368			19	81							40	17	452	3.05	48.1
SS		D	3S	7	3.3	1,986	1,920	121	7	80	13								38	9	120	0.90	16.0
SS		D	4S	4	10.1	1,339	1,204	76	9	84	8		22	65					23	9	59	0.85	20.4
SS		D	UT	1		106	106	7	100										13	7	20	0.36	5.3
SS	Totals			47	6.6	30,385	28,365	1,787	1	9	16	74	1	3					34	14	303	2.36	93.5
SS	T	D	2S	44	12.4	4,297	3,763	237			72	28							40	14	272	2.01	13.8
SS	T	D	3S	41	1.8	3,450	3,389	213	11	81	8								36	9	113	0.85	29.9
SS	T	D	4S	15	3.1	1,278	1,238	78	95	5			12	20	22	46			29	6	38	0.37	32.9
SS	T	Totals		14	7.0	9,024	8,390	529	18	33	36	13	2	3	3	92			34	9	110	0.93	76.6
WH		D	2S	78	10.8	9,326	8,322	524			57	43							40	16	356	2.30	23.4
WH		D	3S	20	2.3	2,124	2,076	131	9	91									37	9	110	0.87	18.9
WH		D	4S	1		163	163	10	46	54			100						16	7	27	0.52	5.9
WH		D	UT	1		48	48	3		100			100						12	8	20	0.50	2.4
WH	Totals			18	9.0	11,661	10,610	668	2	19	45	34	2						35	12	210	1.60	50.6
WH	T	D	2S	29	8.4	3,362	3,078	194			100								40	14	266	1.84	11.6
WH	T	D	3S	47	4.0	5,202	4,996	315	18	82									36	9	96	0.79	51.9
WH	T	D	4S	6		617	617	39	100					29	38	33			34	5	36	0.33	16.9
WH	T	D	UT	1		84	84	5	100				100						19	7	30	0.46	2.8
WH	T	PL	2S	9		949	949	60			100								34	16	340	1.90	2.8
WH	T	PL	3S	8		787	787	50			100								34	12	170	1.09	4.6
WH	T	Totals		17	4.5	11,001	10,511	662	15	39	37	9	1	2	19	79			35	9	116	0.90	90.6
DF		D	2S	58	11.1	1,478	1,315	83			41	59							40	15	322	2.30	4.1
DF		D	3S	7		144	144	9			100								36	8	80	0.64	1.8
DF		D	4S	5	17.9	137	112	7			100			38					32	9	71	0.85	1.6
DF		H	2S	30		664	664	42				100							40	21	760	3.82	.9
DF	Totals			4	7.8	2,423	2,235	141			11	24	64	2					38	13	268	1.89	8.3
RA	T	D	UT																8	5		0.00	16.3
RA	T	Totals																	8	5		0.00	16.3
Type	Totals				6.8	64,494	60,110	3,787	6	19	28	46	1	2	4	93			33	10	179	1.45	335.9

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
	Project: GNA										Date 12/27/2019											
											Time 7:20:24AM											
T029 R012 S12 TB40G										T029 R012 S12 TB40G												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
029	012	12	GNA	B40G- Unit 5 gaps	4.00	15	72	S	W													
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf
	T	D	S	16	3.5	3,247	3,133	13	5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	40	19	553	3.44	5.7	
SS	T	D	2S	75	9.6	15,374	13,893	56		15	32	53				100	40	14	289	2.22	48.0	
SS	T	D	3S	5	6.1	999	938	4	34	43	23					100	36	8	86	0.86	10.9	
SS	T	D	4S	3	15.0	690	586	2	40	60			42	58			22	7	32	0.55	18.5	
SS	T	D	UT	1		43	43	0		100			100				12	7	9	0.26	4.9	
SS T Totals				39	8.6	20,353	18,593	74	3	15	25	57	2	2	97		34	12	211	1.87	88.0	
SS		D	S	9	9.6	991	896	4								100	40	25	1040	7.73	.9	
SS		D	2S	85	5.9	8,520	8,021	32			5	95				100	37	20	644	4.07	12.5	
SS		D	4S	6	9.3	567	514	2		53	47			56	44		27	10	96	1.15	5.4	
SS Totals				20	6.4	10,078	9,432	38		3	7	90			3	2	95	35	18	505	3.60	18.7
WH	T	D	2S	43	8.5	8,370	7,656	31		18	25	57				100	40	13	255	2.02	30.1	
WH	T	D	3S	37	2.1	6,535	6,398	26	47	53						100	36	8	83	0.63	77.1	
WH	T	D	4S	2		345	345	1	100				100				16	7	30	0.41	11.5	
WH	T	D	UT	1		271	271	1	100				100				19	5	20	0.29	13.5	
WH	T	PL	3S	17		2,842	2,842	11			100				100		34	13	210	1.16	13.5	
WH T Totals				37	4.6	18,363	17,512	70	21	27	27	25	4		16	80	33	9	120	1.00	145.7	
RA	T	D	3S	56	4.3	653	625	2					100			100	30	9	81	0.82	7.7	
RA	T	D	4S	39	18.0	525	430	2	47	53						100	28	7	35	0.47	12.3	
RA	T	D	UT	5		45	45	0	100				100				14	5	10	0.24	4.5	
RA T Totals				2	10.0	1,223	1,100	4	23	77			4	96			26	7	45	0.57	24.5	
RC		D	3S	78	11.2	579	514	2								100	36	10	109	1.51	4.7	
RC		D	4S	22		142	142	1	100					62	38		27	5	30	0.34	4.7	
RC Totals				1	9.0	720	655	3	22	78				13	8	78	32	7	69	1.01	9.4	
Type Totals					6.8	50,736	47,291	189	10	20	21	50	2	4	7	88	33	10	165	1.42	286.3	

T029 R012 S12 TB40C										T029 R012 S12 TB40C				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	B40C- Unit 6	11.00	7	21	S	W					

Spp	T	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs		
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia
					5-7	8-11	12-15							16+	12-20	21-30	31-35	36-99	Ft	In			
WH		D	2S	57	10.6	13,926	12,454	137			34	66			100	40	15	308	2.26	40.4			
WH		D	3S	29	3.6	6,590	6,350	70	11	89					100	37	9	126	0.85	50.2			
WH		D	4S	2		476	476	5	100					100	19	7	30	0.44	15.9				
WH		D	UT	1		135	135	1	100					100	12	7	20	0.41	6.8				
WH		PL	2S	11		2,353	2,353	26			100			100	34	14	240	1.85	9.8				
WH	Totals			76	7.3	23,481	21,768	239	6	26	30	38	3	11	86	34	11	177	1.44	123.0			
WH	T	D	3S	29	12.5	2,320	2,030	22		100				100	36	8	70	0.56	29.0				
WH	T	PL	3S	71		4,930	4,930	54		100				100	34	12	170	1.18	29.0				
WH	T Totals			24	4.0	7,250	6,960	77		29	71			71	29	35	10	120	0.86	58.0			
Type Totals					6.5	30,731	28,729	316	5	27	40	29	2	25	73	34	11	159	1.25	181.0			

T029 R012 S12 TC40G										T029 R012 S12 TC40G				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	C40G- Unit 6 gaps	1.00	7	21	S	W					

Spp	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf			
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99							
WH	D	2S	55	9.7	10,467	9,452	9			21	79					100		40	16	363	2.52	26.0
WH	D	3S	30	4.1	5,311	5,095	5		100							100		37	10	146	0.95	34.8
WH	D	4S	2		429	429	0	100					100					19	7	30	0.44	14.3
WH	PL	2S	13		2,118	2,118	2			100					100			34	14	240	1.85	8.8
WH	Totals		61	6.7	18,324	17,093	17	3	30	24	43		3		12	85		35	12	204	1.56	84.0
WH	T	D	2S	30	15.0	3,875	3,293	3			100					100		40	12	170	1.60	19.4
WH	T	D	3S	28	8.0	3,250	2,989	3	39	61						100		36	7	66	0.53	45.5
WH	T	PL	3S	42		4,437	4,437	4			100				100			34	12	170	1.18	26.1
WH	T	Totals	39	7.3	11,562	10,720	11	11	17	72					41	59		36	10	118	0.96	90.9
Type	Totals			6.9	29,887	27,813	28	6	25	43	27		2		24	75		35	11	159	1.24	174.9

T029 R012 S12 TB64 **T029 R012 S12 TB64**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 029 012 12 GNA B64- Unit 7 6.00 6 29 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH		D	2S	71	11.3	20,454	18,139	109			58	42				100	40	15	331	2.23	54.9
WH		D	3S	13	8.4	3,726	3,413	20			100					100	38	10	142	0.87	24.0
WH		D	4S	11	8.5	3,190	2,920	18	19	81			91	9		25	8	57	0.62	51.7	
WH		D	UT	5		1,065	1,065	6	100						18	82	29	5	34	0.35	31.4
WH	Totals			52	10.2	28,435	25,537	153	6	23	41	30	1	10	4	84	33	10	158	1.28	162.0
WH	T	D	3S	51	13.5	10,539	9,111	55	39	31	30					100	36	8	75	0.59	122.1
WH	T	D	4S	5		926	926	6	100							100	35	5	40	0.29	23.2
WH	T	D	UT	15	31.0	3,780	2,608	16	55		45		55			45	22	6	32	0.51	82.5
WH	T	PL	2S	15		2,688	2,688	16			100					100	34	14	240	1.52	11.2
WH	T	PL	3S	14		2,315	2,315	14		100						100	34	9	100	0.76	23.2
WH	T Totals			36	12.8	20,248	17,649	106	34	29	37		8		34	58	31	7	67	0.60	262.1
DF		D	2S	68	11.1	3,010	2,675	16			100					100	40	15	320	2.05	8.4
DF		D	3S	27	7.1	1,170	1,087	7			100					100	36	10	130	0.89	8.4
DF		D	UT	5		167	167	1	100				100				20	6	20	0.37	8.4
DF	Totals			8	9.6	4,347	3,929	24	4	28	68		4		96		32	10	157	1.26	25.1
SS		D	4S	42		509	509	3	100							100	36	6	60	0.43	8.5
SS		D	UT	58	50.0	1,358	679	4			100					100	36	11	80	1.03	8.5
SS	Totals			2	36.4	1,867	1,188	7	43	57					100		36	9	70	0.73	17.0
RC		D	3S	100	25.0	574	431	3			100					100	36	8	60	1.28	7.2
RC	Totals			1	25.0	574	431	3			100					100	36	8	60	1.28	7.2
Type Totals					12.1	55,472	48,734	292	17	27	41	16	4	5	15	76	32	9	103	0.89	473.3

T029 R012 S40 TROW	T029 R012 S40 TROW																				
<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">Twp</td><td style="width:10%;">Rge</td><td style="width:10%;">Sec</td><td style="width:10%;">Tract</td><td style="width:10%;">Type</td><td style="width:10%;">Acres</td><td style="width:10%;">Plots</td><td style="width:10%;">Sample Trees</td><td style="width:10%;">CuFt</td><td style="width:10%;">BdFt</td> </tr> <tr> <td>029</td><td>012</td><td>40</td><td>GNA</td><td>Unit 8 ROW</td><td>1.00</td><td>1</td><td>12</td><td>S</td><td>W</td> </tr> </table>	Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt	029	012	40	GNA	Unit 8 ROW	1.00	1	12	S	W	
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
029	012	40	GNA	Unit 8 ROW	1.00	1	12	S	W												

Spp	T	D	Gr	%	Bd. Ft. per Acre				Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre						
										Net	BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/Lf	
																5-7	8-11	12-15	16+	12-20	21-30		31-35					36-99
RA	T	D	3S	21	4.3	2,300	2,200	2	36	64					36	64			25	12	110	1.12	20.0					
RA	T	D	4S	63	8.5	7,100	6,500	7	29	71						85	9	6	31	8	54	0.57	120.0					
RA	T	D	UT	16		1,600	1,600	2	100						38	63			21	5	23	0.26	70.0					
RA T Totals				100	6.4	11,000	10,300	10	34	52	14				14	77	6	4	27	7	49	0.54	210.0					
Type Totals					6.4	11,000	10,300	10	34	52	14				14	77	6	4	27	7	49	0.54	210.0					

T029 R012 S12 TB42A										T029 R012 S12 TB42A				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	B42A- Unit 9	7.50	5	25	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre				Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
				Net BdFt	Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf			
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99							
WH	T	D	3S	78	6.3	11,744	11,010	83	100				100				36	11	150	0.86	73.4		
WH	T	D	4S	22		2,936	2,936	22	100				100				37	5	40	0.40	73.4		
WH	T	Totals		33	5.0	14,679	13,945	105	21	79					100				37	8	95	0.63	146.8
WH		D	2S	59	7.7	8,718	8,050	60	57 43				100				40	14	289	2.01	27.9		
WH		D	3S	17	8.5	2,396	2,194	16	100				100				36	9	108	0.85	20.3		
WH		D	UT	24		3,191	3,191	24	100				100				20	22	420	3.02	7.6		
WH	T	Totals		32	6.1	14,305	13,434	101	16	34	50	24		76		36	14	241	1.66	55.8			
RA	T	D	4S	91	10.6	3,443	3,078	23	37	63					100				29	7	48	0.49	63.7
RA	T	D	UT	9		277	277	2	100				100				18	5	20	0.24	13.9		
RA	T	Totals		8	9.8	3,720	3,355	25	42	58	8		92		27	7	43	0.46	77.5				
RA		D	4S	75	5.0	2,225	2,114	16	74	26					100				30	7	45	0.39	47.3
RA		D	UT	25	19.9	872	698	5	32	68					100				24	7	45	0.63	15.4
RA	T	Totals		7	9.2	3,097	2,812	21	63	20	17	100				28	7	45	0.44	62.7			
DF		D	2S	49	10.5	4,548	4,069	31	47 53				100				40	15	340	2.22	12.0		
DF		D	3S	48	7.0	4,264	3,964	30	17	83					100				36	10	115	0.88	34.4
DF		D	4S	3		178	178	1	100				100				21	7	30	0.46	5.9		
DF	T	Totals		20	8.7	8,990	8,211	62	10	40	24	26	2		98		35	11	157	1.20	52.3		
Type	Totals				6.8	44,791	41,758	313	17	45	17	21	8	15	77	33	9	106	0.81	395.1			

T029 R012 S12 TB4AG										T029 R012 S12 TB4AG				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	B4AG- Unit 9 gaps	.50	5	25	S	W					

Spp	So	Gr	ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/			
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf			
WH	T	D	3S	78	6.3	13,701	12,844	6	100				100				36	11	150	0.86	85.6		
WH	T	D	4S	22		3,425	3,425	2	100				100				37	5	40	0.40	85.6		
WH T Totals				39	5.0	17,126	16,270	8	21	79					100				37	8	95	0.63	171.3
WH		D	2S	59	7.7	7,265	6,708	3	57 43				100				40	14	289	2.01	23.2		
WH		D	3S	17	8.5	1,997	1,828	1	100				100				36	9	108	0.85	16.9		
WH		D	UT	24		2,659	2,659	1	100				100				20	22	420	3.02	6.3		
WH Totals				27	6.1	11,921	11,195	6	16	34	50	24	76				36	14	241	1.66	46.5		
RA	T	D	4S	83	8.1	5,602	5,148	3	54	46	100				29	7	47	0.44	110.5				
RA	T	D	UT	17	15.8	1,230	1,035	1	48	52	24	76				22	6	35	0.50	29.8			
RA T Totals				15	9.5	6,832	6,183	3	53	38	9	4	96				28	7	44	0.45	140.3		
DF		D	2S	49	10.5	4,548	4,069	2	47 53				100				40	15	340	2.22	12.0		
DF		D	3S	48	7.0	4,264	3,964	2	17	83	100				36	10	115	0.88	34.4				
DF		D	4S	3		178	178	0	100				100				21	7	30	0.46	5.9		
DF Totals				20	8.7	8,990	8,211	4	10	40	24	26	2				98	35	11	157	1.20	52.3	
Type Totals					6.7	44,869	41,859	21	18	49	15	18	7	15				78	33	9	102	0.78	410.3

T029 R012 S12 TB42B										T029 R012 S12 TB42B				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	B42B- Unit 10	6.00	4	20	S	W					

Spp	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
								Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia
				5-7	8-11	12-15							16+	12-20	21-30	31-35	36-99	Ft	In			
WH	D	2S	64	24.0	20,478	15,571	93		16	7	77				100	40	15	296	2.20	52.7		
WH	D	3S	25		5,916	5,916	35		100						100	36	8	80	0.50	74.0		
WH	D	4S	9	5.8	2,412	2,273	14	72	28			7	77	16		22	6	25	0.34	91.6		
WH	D	UT	2		261	261	2	100							100	17	7	30	0.46	8.7		
WH	Totals		51	17.4	29,067	24,022	144	8	38	5	50	2	7	2	89	30	9	106	0.97	226.9		
WH	T	D	2S	73	8.3	13,828	12,675	76		100					100	40	13	220	1.55	57.6		
WH	T	D	3S	27		4,609	4,609	28		100					100	36	8	80	0.64	57.6		
WH	T	Totals	37	6.3	18,437	17,284	104		27	73					100	38	11	150	1.12	115.2		
DF	T	D	3S	77	12.5	1,752	1,533	9		100					100	36	8	70	0.50	21.9		
DF	T	D	4S	23		438	438	3	100					100		23	5	20	0.24	21.9		
DF	T	Totals	4	10.0	2,190	1,971	12	22	78				22		78	30	7	45	0.40	43.8		
SF	D	3S	29		1,194	1,194	7		100						100	36	11	160	1.03	7.5		
SF	D	UT	8		298	298	2	100					100			27	7	40	0.46	7.5		
SF	PL	2S	63		2,537	2,537	15			100				100		34	16	340	1.79	7.5		
SF	Totals		9		4,029	4,029	24	7	30		63		7	63	30	32	11	180	1.14	22.4		
Type	Totals			11.9	53,723	47,307	284	6	35	29	31	1	5	6	88	33	9	116	0.97	408.3		

T029 R012 S12 TB4BG										T029 R012 S12 TB4BG				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	B4BG- Unit 10 gaps	.50	4	20	S	W					

Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
WH	T	D	2S	24	8.3	7,901	7,243	4	100				100				40	13	220	1.55	32.9
WH	T	D	3S	62		18,411	18,411	9	100				100				36	8	80	0.52	230.1
WH	T	D	4S	14		3,944	3,944	2	100				100				21	5	20	0.24	197.2
WH T Totals				63	2.2	30,257	29,598	15	13	62	24	13				87	30	7	64	0.54	460.3
WH		D	2S	93	24.0	13,652	10,381	5	16 7 77				100				40	15	296	2.20	35.1
WH		D	4S	5	14.9	622	529	0	20	80	20 34 46				22	8	45	0.74	11.7		
WH		D	UT	2		174	174	0	100				100				17	7	30	0.46	5.8
WH Totals				24	23.3	14,448	11,084	6	3	19	7	72	3	2	2	94	34	13	211	1.88	52.7
DF	T	D	3S	77	12.5	1,752	1,533	1	100				100				36	8	70	0.50	21.9
DF	T	D	4S	23		438	438	0	100				100				23	5	20	0.24	21.9
DF T Totals				4	10.0	2,190	1,971	1	22	78	22				78	30	7	45	0.40	43.8	
SF		D	3S	29		1,194	1,194	1	100				100				36	11	160	1.03	7.5
SF		D	UT	8		298	298	0	100				100				27	7	40	0.46	7.5
SF		PL	2S	63		2,537	2,537	1	100				100				34	16	340	1.79	7.5
SF Totals				9		4,029	4,029	2	7	30	63	7 63 30				32	11	180	1.14	22.4	
Type Totals					8.3	50,924	46,683	23	11	50	17	23	1	10	6	83	30	8	81	0.69	579.1

Species, Sort Grade - Board Foot Volumes (Type)											Page 1										
T TSPCSTGR											Date 12/24/2019										
Project: GNA											Time 8:33:37AM										
T029 R012 S40 TB52											T029 R012 S40 TB52										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
029	012	40	GNA	B52- Unit 11	10.00	8	36	S	W												
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd	
DF	D	2S		88	6.5	10,746	10,047	100		45	55		11		89		38	14	273	1.94	36.8
DF	D	3S		8	12.5	1,036	907	9		100					100		36	8	70	0.57	13.0
DF	D	4S		2		313	313	3		100			100				27	8	50	0.64	6.3
DF	D	UT		2		130	130	1	100				100				13	5	10	0.24	13.0
DF	Totals			28	6.8	12,225	11,397	114	1	11	40	48	1	12	87		32	11	165	1.42	69.0
DF	T	D	2S	17	6.7	1,505	1,404	14		100					100		40	10	140	1.06	10.0
DF	T	D	3S	64	1.9	5,182	5,081	51	10	90					100		36	8	85	0.56	59.4
DF	T	D	4S	19		1,482	1,482	15	100				37	63			30	5	30	0.27	49.4
DF	T	Totals		19	2.5	8,168	7,968	80	25	75			7	12	81		34	7	67	0.50	118.9
SF	D	S		12		1,918	1,918	19			100				100		40	19	600	3.28	3.2
SF	D	2S		65	3.2	9,916	9,595	96		7	7	86			100		38	17	509	2.80	18.8
SF	D	3S		13		1,868	1,868	19		100					100		36	10	140	0.73	13.3
SF	D	4S		10	3.2	1,537	1,488	15	62	22	16		8	38	54		29	7	61	0.54	24.4
SF	Totals			36	2.4	15,239	14,870	149	6	19	6	68	1	4	95		34	12	249	1.56	59.8
WH	T	D	2S	36	4.2	2,153	2,064	21			100				100		40	13	230	1.45	9.0
WH	T	D	3S	38	8.7	2,350	2,146	21		100					100		36	8	73	0.64	29.4
WH	T	D	4S	26		1,474	1,474	15	100				28	72			29	5	26	0.28	55.9
WH	T	D	UT														11	6		0.00	9.0
WH	T	Totals		14	4.9	5,977	5,683	57	26	38	36		7	19	74		30	7	55	0.52	103.2
RA	D	4S		83	16.7	994	829	8		100					100		30	8	50	0.63	16.6
RA	D	UT		17		170	170	2	100						100		13	5	10	0.15	16.6
RA	Totals			2	14.2	1,164	998	10	17	83			17	83			22	7	30	0.49	33.1
Type	Totals				4.3	42,773	40,916	409	11	32	19	38	1	9	5	85	32	8	107	0.85	384.0

T029 R012 S40 TB52G										T029 R012 S40 TB52G				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	40	GNA	B52G- Unit 11 gaps	2.00	8	36	S	W					

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs		
									Net	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln	Dia
					5-7	8-11	12-15							16+	12-20	21-30	31-35	36-99	Ft	In			
DF	T	D	2S	29	3.3	4,282	4,142	8	47	53					100	40	11	166	1.20	24.9			
DF	T	D	3S	55	3.1	8,125	7,875	16	9	91					100	36	8	84	0.56	94.1			
DF	T	D	4S	15		2,075	2,075	4	100				37	63		30	5	30	0.27	69.2			
DF	T	D	UT	1		109	109	0	100						100	13	5	10	0.24	10.9			
DF T Totals				36	2.7	14,591	14,201	28	20	64	15				1	5	9	85	33	7	71	0.56	199.1
DF		D	2S	95	8.6	4,894	4,474	9		26	74				14			312	2.26	14.3			
DF		D	4S	5		188	188	0	100						100	27	8	50	0.64	3.8			
DF Totals				12	8.3	5,082	4,662	9	4	25	71				18			82	35	14	258	2.00	18.1
SF		D	S	12		1,918	1,918	4			100				100	40	19	600	3.28	3.2			
SF		D	2S	65	3.2	9,916	9,595	19		7	7	86			100	38	17	509	2.80	18.8			
SF		D	3S	13		1,868	1,868	4		100					100	36	10	140	0.73	13.3			
SF		D	4S	10	3.2	1,537	1,488	3	62	22	16				8	38		54	29	7	61	0.54	24.4
SF Totals				38	2.4	15,239	14,870	30	6	19	6	68			1	4		95	34	12	249	1.56	59.8
WH	T	D	2S	36	4.2	1,846	1,769	4			100				100	40	13	230	1.45	7.7			
WH	T	D	3S	38	8.7	2,014	1,839	4		100					100	36	8	73	0.64	25.2			
WH	T	D	4S	26		1,263	1,263	3	100							29	5	26	0.28	47.9			
WH	T	D	UT													11	6		0.00	7.7			
WH T Totals				12	4.9	5,123	4,871	10	26	38	36				7	19	74		30	7	55	0.52	88.5
RA		D	4S	83	16.7	994	829	2		100					100	30	8	50	0.63	16.6			
RA		D	UT	17		170	170	0	100						100	13	5	10	0.15	16.6			
RA Totals				3	14.2	1,164	998	2	17	83					17	83			22	7	30	0.49	33.1
Type Totals					3.9	41,198	39,603	79	13	37	15	34			1	8	6	85	32	8	99	0.78	398.5

T029 R012 S40 TB60										T029 R012 S40 TB60				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	40	GNA	B60- Unit 12	2.50	3	21	S	W					

S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
DF	D	2S	46	11.9	9,845	8,676	22			48	52			100	40	15	297	2.35	29.2	
DF	D	3S	42	2.0	8,149	7,982	20		100					100	36	9	122	0.86	65.4	
DF	D	4S	12		2,170	2,170	5	100						100	36	6	60	0.37	36.2	
DF	Totals		33	6.6	20,163	18,828	47	12	42	22	24			100	37	10	144	1.09	130.7	
DF	T	D	3S	77		11,397	11,397	28		100				100	36	10	140	0.73	81.4	
DF	T	D	4S	23		3,256	3,256	8	100					100	36	5	40	0.34	81.4	
DF	T	Totals	26		14,653	14,653	37	22	78					100	36	8	90	0.54	162.8	
WH	T	D	2S	43	8.3	7,787	7,138	18		100				100	40	13	220	1.90	32.4	
WH	T	D	3S	42		6,813	6,813	17	100					100	36	7	60	0.46	113.5	
WH	T	D	4S	8	20.0	1,622	1,298	3	100				100	33	6	40	0.56	32.4		
WH	T	D	UT	7		1,135	1,135	3	100			100		12	5	10	0.20	113.5		
WH	T	Totals	29	5.6	17,358	16,384	41	56	44			7	8	85	27	7	56	0.67	292.0	
SF	D	2S	71	9.4	5,990	5,424	14			100				100	40	18	480	2.73	11.3	
SF	D	3S	24	11.1	2,034	1,808	5		100					100	36	12	160	1.28	11.3	
SF	D	UT	5		339	339	1	100			100			18	8	30	0.57	11.3		
SF	Totals		13	9.5	8,363	7,572	19	4	24	72		4		96	31	13	223	1.76	33.9	
Type	Totals			5.1	60,536	57,437	144	26	34	23	17	3		2	95	32	8	93	0.79	619.4

T029 R012 S40 TB60G										T029 R012 S40 TB60G				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	40	GNA	B60G- Unit 12 gaps	.50	3	21	S	W					

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
									Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/Lf	
														5-7	8-11	12-15	16+	12-20	21-30	31-35						36-99
DF	T	D	2S	19	13.8	6,228	5,369	3	100				100				40	14	250	2.10	21.5					
DF	T	D	3S	61	1.3	16,774	16,559	8	100				100				36	10	128	0.78	129.0					
DF	T	D	4S	20		5,232	5,232	3	100				100				36	5	49	0.35	107.5					
DF T Totals				48	3.8	28,233	27,159	14	19	61	20					100	36	8	105	0.73	258.0					
DF		D	2S	72	10.0	4,286	3,858	2	100				100				40	16	360	2.68	10.7					
DF		D	3S	28		1,500	1,500	1	100				100				36	10	140	0.97	10.7					
DF Totals				9	7.4	5,787	5,358	3	28		72					100	38	13	250	1.87	21.4					
WH	T	D	2S	43	8.3	7,787	7,138	4	100				100				40	13	220	1.90	32.4					
WH	T	D	3S	42		6,813	6,813	3	100				100				36	7	60	0.46	113.5					
WH	T	D	4S	8	20.0	1,622	1,298	1	100				100				33	6	40	0.56	32.4					
WH	T	D	UT	7		1,135	1,135	1	100				100				12	5	10	0.20	113.5					
WH T Totals				29	5.6	17,358	16,384	8	56		44	7		8	85	27	7	56	0.67	292.0						
SF		D	2S	71	9.4	5,990	5,424	3	100				100				40	18	480	2.73	11.3					
SF		D	3S	24	11.1	2,034	1,808	1	100				100				36	12	160	1.28	11.3					
SF		D	UT	5		339	339	0	100				100				18	8	30	0.57	11.3					
SF Totals				13	9.5	8,363	7,572	4	4	24	72	4			96	31	13	223	1.76	33.9						
Type Totals					5.5	59,741	56,474	28	26	33	25	16	3		2	95	32	8	93	0.81	605.4					

T029 R012 S12 TB55 **T029 R012 S12 TB55**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 029 012 12 GNA B55- Unit 13 24.00 15 67 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	T	D	3S	77	2.9	13,989	13,584	326	18	69	14				100	36	9	99	0.67	137.1	
WH	T	D	4S	9		1,629	1,629	39	100				24	37	39	31	5	33	0.29	49.2	
WH	T	D	UT	2		350	350	8	100				100			23	5	23	0.23	15.2	
WH	T	PL	3S	12		2,044	2,044	49		47	53			100		34	12	204	1.13	10.0	
WH	T	Totals		43	2.2	18,012	17,607	423	25	58	17		4	15	81	34	8	83	0.59	211.5	
WH		D	2S	30	8.9	5,140	4,682	112			79	21			100	40	14	282	1.79	16.6	
WH		D	3S	60	3.2	9,486	9,186	220	12	40	48				100	36	10	126	0.82	72.8	
WH		D	4S	3	12.9	607	529	13	100				18	60	22	25	6	32	0.41	16.7	
WH		PL	2S	7		940	940	23			100			100		34	14	240	1.63	3.9	
WH	T	Totals		38	5.2	16,173	15,336	368	11	24	59	7	1	2	7	90	35	10	139	0.97	110.1
DF		D	2S	33		1,838	1,838	44			100				100	40	13	222	1.57	8.3	
DF		D	3S	62	5.6	3,600	3,397	82	44	56					100	36	8	83	0.69	40.9	
DF		D	4S	5	33.3	344	230	6	100				100			24	5	20	0.20	11.5	
DF	T	Totals		13	5.5	5,782	5,464	131	32	35	34		4	96		34	8	90	0.77	60.7	
RA		D	3S	33	6.7	395	368	9			100		100			30	12	140	1.27	2.6	
RA		D	4S	58	15.7	756	637	15	42	58			58	42		34	8	54	0.64	11.9	
RA		D	UT	9		97	97	2	100				100			13	5	14	0.22	7.0	
RA	T	Totals		3	11.6	1,247	1,102	26	33	34	33		9	67	24	27	7	51	0.66	21.5	
SF		D	3S	71		890	890	21			100				100	36	9	100	0.61	8.9	
SF		D	4S	29		356	356	9	100					100		35	5	40	0.29	8.9	
SF	T	Totals		3		1,246	1,246	30	29	71			29	71		36	7	70	0.45	17.8	
Type Totals					4.0	42,460	40,755	978	21	42	35	2	0	5	10	85	34	8	97	0.71	421.7

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
	Project: GNA										Date 12/24/2019										
											Time 8:33:37AM										
T029 R012 S12 TB55G										T029 R012 S12 TB55G											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
029	012	12	GNA	B55G- Unit 13 gaps	5.00	15	67	S	W												
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft		
WH	T	D	2S	6	7.6	2,075	1,917	10									40	14	245	1.54	7.8
WH	T	D	3S	75	3.1	22,435	21,750	109	17	56	27						36	9	106	0.71	204.6
WH	T	D	4S	7	4.0	1,986	1,908	10	100					27	39	34	31	5	33	0.30	58.4
WH	T	D	UT	1		359	359	2	100					100			23	5	23	0.23	15.6
WH	T	PL	2S	3		942	942	5									34	14	240	1.63	3.9
WH	T	PL	3S	8		2,095	2,095	10		47	53						34	12	204	1.13	10.3
WH	T	Totals		72	3.1	29,891	28,969	145	20	46	34			3	13	84	34	8	96	0.67	300.6
WH		D	2S	62	9.8	2,680	2,417	12			64	36					40	15	313	2.00	7.7
WH		D	3S	31	2.2	1,226	1,199	6		65	35						36	11	155	0.94	7.7
WH		D	4S	7		254	254	1	100				32	68			22	7	33	0.45	7.7
WH	Totals			10	7.0	4,160	3,871	19	7	20	51	23	2	4	93		33	11	167	1.26	23.1
DF		D	2S	33		1,671	1,671	8									40	13	222	1.57	7.5
DF		D	3S	62	5.6	3,273	3,088	15	44	56							36	8	83	0.69	37.2
DF		D	4S	5	33.3	313	209	1	100					100			24	5	20	0.20	10.4
DF	Totals			12	5.5	5,256	4,968	25	32	35	34			4	96		34	8	90	0.77	55.1
RA		D	3S	42	6.7	474	442	2						100			30	12	140	1.27	3.2
RA		D	4S	46	15.1	559	475	2	67	33				33	67		36	7	56	0.64	8.4
RA		D	UT	12		116	116	1	100					100			13	5	14	0.22	8.4
RA	Totals			3	10.1	1,149	1,033	5	42	15	43			11	58	31	26	7	52	0.67	20.0
RA	T	D	4S	100	16.7	174	145	1		100							30	8	50	0.64	2.9
RA	T	Totals		0	16.7	174	145	1		100				100			30	8	50	0.64	2.9
SF		D	3S	71		890	890	4									36	9	100	0.61	8.9
SF		D	4S	29		356	356	2	100								35	5	40	0.29	8.9
SF	Totals			3		1,246	1,246	6	29	71				29	71		36	7	70	0.45	17.8
Type	Totals				3.9	41,876	40,231	201	21	42	35	2	0	5	10	84	34	8	96	0.71	419.6

T29N R12W S40 TB99 **T29N R12W S40 TB99**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 29N 12W 40 B99GNA B99- Unit 14 64.00 38 197 S W

S Sp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf					
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99									
WH	T	D	2S	11		1,210	1,210	77	100				100				39	13	219	1.29	5.5				
WH	T	D	3S	65	1.3	7,195	7,100	454	25	75					1	4	95	38	8	95	0.65	74.5			
WH	T	D	4S	21		2,365	2,365	151	96	4					16	40	17	26	26	5	27	0.28	87.3		
WH	T	D	UT	3		239	239	15	100					100				14	5	15	0.19	15.6			
WH	T	Totals		30	.9	11,009	10,914	698	39	49	11					6	10	6	79	30	7	60	0.51	182.9	
WH		D	2S	51	6.9	5,576	5,190	332	79				21	100				40	14	261	1.78	19.9			
WH		D	3S	31	1.7	3,211	3,156	202	21	79					8	3	88	37	8	95	0.77	33.1			
WH		D	4S	10	2.5	975	951	61	96	4					7	40	24	29	30	5	33	0.34	28.5		
WH		D	UT	8		791	791	51	49	51				20	16	26	39	26	6	44	0.44	18.0			
WH	T	Totals		28	4.4	10,553	10,088	646	20	25	41	15					2	8	5	85	33	8	101	0.85	99.6
DF		D	2S	59	7.8	5,555	5,124	328	1	79	20					1	3	96		36	13	220	1.81	23.3	
DF		D	3S	37	1.7	3,173	3,118	200	32	68					100				39	8	101	0.83	30.7		
DF		D	4S	4	6.7	357	333	21	100					24	39	37			27	5	29	0.34	11.5		
DF	T	Totals		23	5.6	9,085	8,575	549	16	25	47	12					2	3	1	94	36	9	131	1.11	65.6
DF	T	D	2S	23		1,058	1,058	68	100				100				40	13	227	1.42	4.7				
DF	T	D	3S	55	4.1	2,585	2,480	159	38	62					12				88	38	8	80	0.65	31.1	
DF	T	D	4S	19	5.0	933	886	57	100					16	59	20	5	24	5	24	0.27	37.1			
DF	T	D	UT	3		100	100	6	100					100				15	5	20	0.20	5.0			
DF	T	Totals		12	3.3	4,676	4,523	289	43	34	23					5	12	10	73	30	7	58	0.55	77.9	
SF		D	3S	29	33.3	506	338	22	100				100				40	10	100	1.15	3.4				
SF		D	4S	71	18.9	984	798	51	100					8	35				57	32	5	33	0.35	24.0	
SF		D	UT														9	5	0.00		9.3				
SF	T	Totals		3	23.8	1,490	1,135	73	70	30					6	25				69	27	6	31	0.43	36.6
RA		D	2S	26		155	155	10	100				100				30	13	180	1.45	.9				
RA		D	3S	20	7.7	124	114	7	100				100				30	11	120	1.21	1.0				
RA		D	4S	50		288	288	18	88	12					12	88			24	5	24	0.29	12.2		
RA		D	UT	4		19	19	1	100					100				20	5	20	0.40	1.0			
RA	T	Totals		2	1.6	586	577	37	47	26	27					9	91			24	6	39	0.45	15.0	
SS		D	2S	78	6.9	527	490	31	56				44	20				80	32	14	243	1.96	2.0		
SS		D	3S	22		132	132	8	100				100				36				9	111	0.86	1.2	
SS	T	Totals		2	5.5	658	622	40	21	44	35					16	84				34	12	195	1.53	3.2
RC		D	4S	100		131	131	8	100								51	49			29	5	30	0.43	4.4
RC	T	Totals		0		131	131	8	100								51	49			29	5	30	0.43	4.4
Type	Totals				4.2	38,189	36,566	2,340	30	33	30	8					4	9	6	81	31	7	75	0.68	485.1

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1													
		Project: GNA										Date 12/24/2019													
												Time 8:33:37AM													
T29N R12W S40 TB99G										T29N R12W S40 TB99G															
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt																
29N	12W	40	B99GNA	B99G- Unit 14 gaps	4.00	38	197	S	W																
S Sp	So T	Gr rt	ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre				
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf					
WH	T	D	2S	17		2,705	2,705	11	100				100				39	12	212	1.31	12.8				
WH	T	D	3S	58	1.5	8,830	8,693	35	22	78					3	3	95	38	8	98	0.68	88.8			
WH	T	D	4S	20	1.0	3,171	3,140	13	97	3					13	41	19	27	27	5	29	0.29	109.6		
WH	T	D	UT	5		654	654	3	100				38	24	38					21	5	21	0.24	31.7	
WH T Totals				42	1.1	15,360	15,193	61	37	45	18					4	11	7	78	31	7	63	0.53	242.9	
WH		D	2S	68	9.1	4,395	3,997	16	72 28				100				39	14	286	2.01	14.0				
WH		D	3S	22	1.0	1,273	1,260	5	36	64					13	8	79	36	8	83	0.75	15.3			
WH		D	4S	2		113	113	0	65	35					35	35	30	33	6	43	0.62	2.6			
WH		D	UT	8		448	448	2	7	93				29	71				20	9	122	1.40	3.7		
WH Totals				16	6.6	6,230	5,819	23	10	15	49	27					2	4	2	92	35	10	164	1.33	35.5
DF	T	D	2S	23		1,735	1,735	7	100				100				40	13	220	1.41	7.9				
DF	T	D	3S	57	4.1	4,504	4,318	17	31	69					9 91				39	8	87	0.71	49.4		
DF	T	D	4S	18	5.7	1,451	1,367	5	100				13	58	25	4	25 5 25 0.28				55.0				
DF	T	D	UT	2		126	126	1	100				100				15	5	20	0.20	6.3				
DF T Totals				21	3.4	7,816	7,547	30	37	40	23					4	10	9	76	31	7	64	0.60	118.6	
DF		D	2S	70	8.4	4,131	3,785	15	1	77	22	1 3 96				35	13	222	1.85	17.1					
DF		D	3S	28		1,532	1,532	6	46	54					100				39	8	93	0.77	16.4		
DF		D	4S	2		64	64	0	100				100				19	6	24	0.44	2.7				
DF Totals				15	6.0	5,727	5,382	22	15	15	54	16	2 2 96				36	10	149	1.27	36.2				
SF		D	3S	29	33.3	506	338	1	100				100				40	10	100	1.15	3.4				
SF		D	4S	71	18.9	984	798	3	100				8	35 57				32	5	33	0.35	24.0			
SF		D	UT														9	5		0.00	9.3				
SF Totals				3	23.8	1,490	1,135	5	70	30					6	25 69				27	6	31	0.43	36.6	
RA		D	2S	26		155	155	1	100				100				30	13	180	1.45	.9				
RA		D	3S	20	7.7	124	114	0	100				100				30	11	120	1.21	1.0				
RA		D	4S	50		288	288	1	88	12					12	88	24 5 24 0.29				12.2				
RA		D	UT	4		19	19	0	100				100				20	5	20	0.40	1.0				
RA Totals				2	1.6	586	577	2	47	26	27					9	91	24 6 39 0.45				15.0			
SS		D	2S	78	6.9	527	490	2	56 44				20 80				32	14	243	1.96	2.0				
SS		D	3S	22		132	132	1	100				100				36	9	111	0.86	1.2				
SS Totals				2	5.5	658	622	2	21	44	35					16	84				34	12	195	1.53	3.2
RC		D	4S	100		131	131	1	100				51 49				29	5	30	0.43	4.4				
RC Totals				0		131	131	1	100				51 49				29	5	30	0.43	4.4				
Type Totals					4.2	37,999	36,405	146	30	33	29	7	4 9 6 81				31	7	74	0.67	492.4				

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1									
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T029 R012 S12 T118C												T029 R012 S12 T118C										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
029	012	12	GNA	118C- Unit 15	2.00	12	56	S	W													
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft			
WH	D	2S		45	6.5	10,126	9,466	19			82	18				100	40	15	310	1.80	30.6	
WH	D	3S		21	3.3	4,639	4,485	9	7	62	30					100	36	9	115	0.89	39.1	
WH	D	4S		6		1,121	1,121	2	100					25	75		35	6	53	0.52	21.3	
WH	PL	2S		15		3,137	3,137	6				100				100	34	17	419	2.28	7.5	
WH	PL	3S		13		2,650	2,650	5		49	51					100	34	11	160	0.97	16.6	
WH	Totals			53	3.8	21,674	20,860	42	7	20	50	23			29	71	37	11	181	1.19	115.1	
WH	T	D	2S	8		1,004	1,004	2			100					100	40	13	240	1.55	4.2	
WH	T	D	3S	52	.8	6,022	5,972	12	5	78	16					100	36	10	120	0.86	49.7	
WH	T	D	4S	21	2.6	2,486	2,421	5	100				13	24	62		34	5	44	0.37	54.8	
WH	T	PL	2S	19		2,193	2,193	4			100					100	34	13	225	1.33	9.7	
WH	T	Totals		29	1.0	11,704	11,590	23	24	40	36			3	24	73	35	8	98	0.71	118.4	
DF	D	3S		78		1,952	1,952	4			100					100	36	10	149	1.08	13.1	
DF	D	4S		22		524	524	1	100							56	44	34	5	40	0.37	13.1
DF	Totals			6		2,476	2,476	5	21	79					12	88	35	8	94	0.73	26.2	
DF	T	D	3S	75	5.7	1,308	1,234	2			100					100	36	9	94	0.78	13.1	
DF	T	D	4S	25		392	392	1	100				57	43			30	5	30	0.29	13.1	
DF	T	Totals		4	4.4	1,700	1,626	3	24	76				14	10	76	33	7	62	0.56	26.2	
SF	D	3S		75	25.0	2,613	1,959	4			100					100	36	11	120	1.12	16.3	
SF	D	4S		25		653	653	1	100							100	35	5	40	0.40	16.3	
SF	Totals			7	20.0	3,266	2,613	5	25	75				25	75		36	8	80	0.76	32.7	
RA	D	4S		100		282	282	1	100					100			29	5	30	0.40	9.4	
RA	Totals			1		282	282	1	100					100			29	5	30	0.40	9.4	
RC	D	4S		100		195	195	0	100							100	36	5	40	0.40	4.9	
RC	Totals			0		195	195	0	100							100	36	5	40	0.40	4.9	
Type Totals					4.0	41,297	39,642	79	16	35	37	12		2	25	73	35	9	119	0.86	332.8	

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1									
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T029 R012 S12 T118A										T029 R012 S12 T118A												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
029	012	12	GNA	118A- Unit 16	11.00	12	56	S	W													
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Net	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/Lf
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
WH	D		2S	45	6.5	10,126	9,466	104			82	18				100	40	15	310	1.80	30.6	
WH	D		3S	21	3.3	4,639	4,485	49	7	62	30					100	36	9	115	0.89	39.1	
WH	D		4S	6		1,121	1,121	12	100					25	75		35	6	53	0.52	21.3	
WH	PL		2S	15		3,137	3,137	35				100				100	34	17	419	2.28	7.5	
WH	PL		3S	13		2,650	2,650	29		49	51					100	34	11	160	0.97	16.6	
WH	Totals			53	3.8	21,674	20,860	229	7	20	50	23			29	71	37	11	181	1.19	115.1	
WH	T	D	2S	8		1,004	1,004	11				100				100	40	13	240	1.55	4.2	
WH	T	D	3S	52	.8	6,022	5,972	66	5	78	16					100	36	10	120	0.86	49.7	
WH	T	D	4S	21	2.6	2,486	2,421	27	100				13	24	62		34	5	44	0.37	54.8	
WH	T	PL	2S	19		2,193	2,193	24				100				100	34	13	225	1.33	9.7	
WH	T	Totals		29	1.0	11,704	11,590	127	24	40	36			3	24	73	35	8	98	0.71	118.4	
DF	D		3S	78		1,952	1,952	21				100				100	36	10	149	1.08	13.1	
DF	D		4S	22		524	524	6	100							56	44	34	5	40	0.37	13.1
DF	Totals			6		2,476	2,476	27	21	79				12	88		35	8	94	0.73	26.2	
DF	T	D	3S	75	5.7	1,308	1,234	14				100				100	36	9	94	0.78	13.1	
DF	T	D	4S	25		392	392	4	100				57	43			30	5	30	0.29	13.1	
DF	T	Totals		4	4.4	1,700	1,626	18	24	76			14	10	76		33	7	62	0.56	26.2	
SF	D		3S	75	25.0	2,613	1,959	22				100				100	36	11	120	1.12	16.3	
SF	D		4S	25		653	653	7	100							100	35	5	40	0.40	16.3	
SF	Totals			7	20.0	3,266	2,613	29	25	75				25	75		36	8	80	0.76	32.7	
RA	D		4S	100		282	282	3	100							100	29	5	30	0.40	9.4	
RA	Totals			1		282	282	3	100							100	29	5	30	0.40	9.4	
RC	D		4S	100		195	195	2	100							100	36	5	40	0.40	4.9	
RC	Totals			0		195	195	2	100							100	36	5	40	0.40	4.9	
Type Totals					4.0	41,297	39,642	436	16	35	37	12		2	25	73	35	9	119	0.86	332.8	

T029 R012 S12 T18AG **T029 R012 S12 T18AG**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 029 012 12 GNA 18AG- Unit 16 gaps 3.00 12 56 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	T	D	2S	30	3.8	8,850	8,516	26			82	18				100	40	15	316	1.70	27.0
WH	T	D	3S	37	1.6	10,487	10,323	31	7	70	23					100	36	9	117	0.87	88.1
WH	T	D	4S	14	1.9	3,952	3,876	12	100				10	25	66		34	6	46	0.41	84.0
WH	T	PL	2S	10		2,580	2,580	8			100				100		34	13	225	1.33	11.5
WH	T	PL	3S	9		2,430	2,430	7		49	51				100		34	11	160	0.97	15.2
WH	T	Totals		71	2.0	28,298	27,724	83	16	30	48	5		1	22	77	36	9	123	0.84	225.8
WH		D	2S	26	16.8	1,344	1,119	3			100					100	40	13	225	2.07	5.0
WH		D	3S	16	4.2	708	679	2		100						100	38	10	132	0.99	5.2
WH		PL	2S	58		2,397	2,397	7				100			100		34	17	419	2.28	5.7
WH	T	Totals		11	5.7	4,449	4,194	13		16	27	57			57	43	37	14	265	1.78	15.8
DF	T	D	3S	77	2.7	3,234	3,147	9			100					100	36	10	118	0.91	26.7
DF	T	D	4S	23		917	917	3	100					28	49	22	32	5	34	0.33	26.7
DF	T	Totals		10	2.1	4,150	4,064	12	23	77				6	11	82	34	7	76	0.64	53.5
SF		D	3S	75	25.0	2,613	1,959	6			100					100	36	11	120	1.12	16.3
SF		D	4S	25		653	653	2	100							100	35	5	40	0.40	16.3
SF	T	Totals		7	20.0	3,266	2,613	8	25	75				25	75		36	8	80	0.76	32.7
RA		D	4S	100		282	282	1	100							100	29	5	30	0.40	9.4
RA	T	Totals		1		282	282	1	100							100	29	5	30	0.40	9.4
RC		D	4S	100		195	195	1	100							100	36	5	40	0.40	4.9
RC	T	Totals		0		195	195	1	100							100	36	5	40	0.40	4.9
Type Totals					3.9	40,640	39,071	117	17	36	37	10		2	24	73	35	9	114	0.83	342.1

T029 R012 S12 T118B										T029 R012 S12 T118B				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	12	GNA	118B- Unit 17	12.00	5	21	S	W					

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
									Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In
					5-7	8-11	12-15							16+	12-20	21-30	31-35	36-99					
WH	D		2S	62	6.0	10,979	10,320	124			63	37			100	40	15	351	2.00	29.4			
WH	D		3S	26	2.4	4,505	4,398	53	76	24					100	36	7	68	0.66	64.4			
WH		D	UT	12		1,867	1,867	22	100					100	24	5	30	0.24	62.2				
WH	Totals			58	4.4	17,351	16,585	199	31	6	39	23			11	89	32	8	106	0.85	156.0		
WH	T	D	3S	76	5.9	6,564	6,176	74	32	27	41				100	36	8	86	0.72	71.8			
WH	T	D	4S	15		1,221	1,221	15	100					39	61	26	5	31	0.36	38.9			
WH	T	D	UT	9		658	658	8	100				100			18	5	20	0.20	32.9			
WH	T	Totals		28	4.6	8,444	8,055	97	48	21	31			8	6	9	77	29	7	56	0.56	143.6	
DF		D	2S	85		3,289	3,289	39			100				100	40	15	360	1.82	9.1			
DF		D	3S	15		548	548	7	100						100	36	7	60	0.75	9.1			
DF	Totals			13		3,837	3,837	46	14		86				100	38	11	210	1.31	18.3			
Type	Totals				3.9	29,632	28,477	342	34	10	43	13			2	8	3	87	31	8	90	0.76	317.9

T029 R012 S12 T18BG	T029 R012 S12 T18BG
Twp 029 Rge 012 Sec 12 Tract GNA Type 18BG- Unit 17 gaps Acres 2.00 Plots 5 Sample Trees 21 CuFt S BdFt W	

Spp	T	So	Gr	%	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
									Net BdFt	Def%	Gross	Net	Log Scale Dia.				Log Length					Ln Ft
					5-7	8-11	12-15						16+	12-20	21-30	31-35	36-99					
WH	T	D	3S	69	4.6	11,016	10,511	21	48	21	31				100	36	8	78	0.66	134.7		
WH	T	D	4S	10		1,588	1,588	3	100					39	61	26	5	31	0.36	50.5		
WH	T	D	UT	21		3,063	3,063	6	100			28	72			22	5	26	0.23	116.4		
WH T Totals				57	3.2	15,667	15,161	30	64	14	22			6	19	6	69	29	6	50	0.49	301.6
WH		D	2S	81	6.0	6,654	6,254	13			63	37			100	40	15	351	2.00	17.8		
WH		D	3S	19	4.5	1,457	1,392	3	53	47					100	37	7	78	0.81	17.8		
WH Totals				29	5.7	8,111	7,646	15	10	8	52	30			100	38	11	215	1.43	35.6		
DF		D	2S	85		3,289	3,289	7			100				100	40	15	360	1.82	9.1		
DF		D	3S	15		548	548	1	100						100	36	7	60	0.75	9.1		
DF Totals				14		3,837	3,837	8	14		86				100	38	11	210	1.31	18.3		
Type Totals					3.5	27,614	26,645	53	41	11	39	9		3	11	4	83	30	7	75	0.66	355.5

T029 R012 S12 TB108 **T029 R012 S12 TB108**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 029 012 12 GNA B108- Unit 18 2.00 4 20 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	D	2S		39	4.2	5,077	4,865	10	100				100				40	13	230	1.25	21.2
WH	D	3S		46	7.2	6,064	5,627	11	100				100				36	9	87	0.62	64.9
WH	D	4S		15		1,749	1,749	3	100				100				33	5	40	0.29	43.7
WH	Totals			28	5.0	12,889	12,241	24	14	46	40			14	86	36	8	94	0.63	129.7	
WH	T	D	3S	37	7.1	3,815	3,543	7	100				100				36	10	130	0.81	27.3
WH	T	D	4S	23		2,227	2,227	4	100				100				36	5	40	0.34	55.7
WH	T	PL	3S	40		3,694	3,694	7	100				100				34	10	130	0.81	28.4
WH	T	Totals		22	2.8	9,736	9,463	19	24	76				39	61	35	8	85	0.57	111.3	
DF	T	D	3S	85	5.5	6,403	6,050	12	15	85				100		36	9	100	0.84	60.5	
DF	T	D	4S	15		1,005	1,005	2	100				100				36	5	40	0.29	25.1
DF	T	Totals		16	4.8	7,408	7,055	14	27	73				100		36	8	82	0.68	85.6	
DF	D	2S		56	7.0	3,856	3,585	7	100				100				40	12	203	1.62	17.6
DF	D	3S		17		1,058	1,058	2	100				100				36	7	60	0.56	17.6
DF	D	UT		27	34.6	2,559	1,673	3	47	53				100		36	10	85	1.02	19.7	
DF	Totals			15	15.5	7,473	6,317	13	17	12	71			100		37	10	115	1.08	55.0	
SF	D	2S		32	10.3	2,254	2,021	4	100				100				40	14	260	1.42	7.8
SF	D	3S		32		1,949	1,949	4	100				100				36	10	121	0.78	16.1
SF	D	UT		3		167	167	0	100				100				20	6	20	0.37	8.4
SF	PL	2S		33		2,009	2,009	4	100				100				34	14	240	1.42	8.4
SF	Totals			14	3.7	6,379	6,146	12	3	32	66		3	33	65	33	11	151	1.01	40.7	
SS	D	3S		82		1,736	1,736	3	100				100				36	10	140	0.89	12.4
SS	D	4S		18		372	372	1	100				100				32	5	30	0.34	12.4
SS	Totals			5		2,108	2,108	4	18	82				18	82	34	8	85	0.63	24.8	
Type Totals					5.8	45,994	43,329	87	17	52	31		0	18	82	36	8	97	0.72	447.1	

T029 R012 S40 TB94 **T029 R012 S40 TB94**
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt
 029 012 40 GNA B94- Unit 19 42.00 32 177 S W

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre		
									Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In
					5-7	8-11	12-15							16+	12-20	21-30	31-35	36-99					
DF	D	2S		46	7.4	8,541	7,906	332			82	18					100	40	13	235	1.70	33.6	
DF	D	3S		44	6.5	8,143	7,616	320	17	81	2					100	36	9	103	0.84	73.9		
DF	D	4S		8	8.6	1,490	1,361	57	100				3	24	23	50	33	5	34	0.36	40.5		
DF	D	UT		2		204	204	9	85	15			100				14	6	20	0.35	10.4		
DF	Totals			51	7.0	18,377	17,087	718	16	36	39	8	1	2	2	95	35	9	108	0.92	158.4		
DF	T	D	2S	4		355	355	15			100					100	36	12	180	1.28	2.0		
DF	T	D	3S	61	10.4	4,883	4,376	184	6	94						100	36	9	94	0.81	46.8		
DF	T	D	4S	30	3.2	2,222	2,151	90	100				22	18	61		32	5	37	0.33	58.7		
DF	T	D	UT	5		306	306	13	100				100				26	5	30	0.20	10.2		
DF	T	Totals		21	7.5	7,767	7,188	302	38	57	5		11	5	84		33	7	61	0.55	117.6		
WH	T	D	2S	31		1,570	1,570	66			100					100	39	12	204	1.27	7.7		
WH	T	D	3S	10	5.5	543	513	22	18	82						100	36	9	100	0.91	5.1		
WH	T	D	4S	22	1.3	1,154	1,140	48	100				14	16	70		34	5	41	0.38	27.5		
WH	T	D	UT	1		39	39	2	100				100				19	5	20	0.34	1.9		
WH	T	PL	2S	6		285	285	12			100				100		34	12	170	1.18	1.7		
WH	T	PL	3S	30		1,503	1,503	63		100					100		34	10	125	0.81	12.0		
WH	T	Totals		15	.9	5,093	5,048	212	25	38	37		1	3	39	57	35	8	90	0.68	55.9		
WH	D	2S		51	1.4	1,074	1,059	44			100					100	40	12	215	1.70	4.9		
WH	D	3S		42	6.8	914	852	36	32	68						100	36	8	97	0.75	8.8		
WH	D	4S		7		136	136	6	100				42		58		33	5	35	0.40	3.9		
WH	Totals			6	3.6	2,124	2,046	86	20	28	52		3		97		36	9	116	0.97	17.6		
RA	D	3S		17	6.7	138	129	5			100					100	30	12	140	1.18	.9		
RA	D	4S		55	19.6	519	417	18	100							100	25	7	30	0.31	13.8		
RA	D	UT		28		205	205	9	100				100				15	5	15	0.20	13.8		
RA	Totals			2	12.9	862	751	32	83	17			27	73			20	6	26	0.31	28.6		
RA	T	D	4S	100	16.7	168	140	6		100						100	30	8	50	0.57	2.8		
RA	T	Totals		0	16.7	168	140	6		100						100	30	8	50	0.57	2.8		
SS	D	3S		54	7.5	453	419	18			100					100	36	9	89	0.70	4.7		
SS	D	4S		42		323	323	14	100				12	29	59		29	6	41	0.42	7.9		
SS	D	UT		4		23	23	1	100				100				13	5	10	0.20	2.3		
SS	Totals			2	4.2	800	766	32	45	55			8	12	80		29	7	51	0.51	14.9		
SF	D	UT		18		82	82	3	100				100				16	5	15	0.22	5.5		
SF	PL	3S		43		187	187	8		100						100	34	8	70	0.45	2.7		
SF	PL	4S		39		170	170	7	100							100	34	7	60	0.35	2.8		

T029 R012 S40 TB94										T029 R012 S40 TB94				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	40	GNA	B94- Unit 19	42.00	32	177	S	W					

S Spp	So T	Gr rt	ad	% Net BdFt	Bd. Ft. per Acre				Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
										Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
										5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
SF	Totals			1	439	439	18	57	43			19	81			25	6	40	0.34	11.0		
Type	Totals				6.1	35,629	33,465	1,406	25	40	30	4	2	6	9	83	33	8	82	0.73	406.7	

T029 R012 S40 TB94G										T029 R012 S40 TB94G				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	40	GNA	B94G- Unit 19 gaps	2.00	5	25	S	W					

Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre					
									Net BdFt	Def%	Gross	Net	Net MBF	Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
														5-7	8-11	12-15	16+	12-20	21-30	31-35						36-99
DF	T	D	2S	6	10.0	1,050	945	2	100				100				40	12	180	1.48	5.3					
DF	T	D	3S	74	7.7	11,781	10,870	22	9	91					100				36	9	112	0.85	97.3			
DF	T	D	4S	20	9.4	3,168	2,870	6	100				9	21	27	43	31	5	31	0.34	91.2					
DF	T	Totals		44	8.2	15,999	14,685	29	26	67	6	2	4	5	89	34	7	76	0.65	193.8						
DF		D	2S	71	10.3	8,533	7,654	15	82 18				100				40	14	259	1.83	29.5					
DF		D	3S	24	4.6	2,646	2,525	5	100				100				36	9	102	0.78	24.8					
DF		D	4S	2	37.5	376	235	0	100				40	60				26	6	25	0.43	9.4				
DF		D	UT	3		253	253	1	100				100				16	7	23	0.39	10.8					
DF	T	Totals		32	9.7	11,809	10,667	21	5	24	59	13	3	97				33	10	143	1.22	74.6				
WH	T	D	3S	28	13.1	2,666	2,317	5	13	87					100				36	9	89	0.74	26.0			
WH	T	D	4S	17		1,451	1,451	3	100				23 77				36	5	40	0.36	35.8					
WH	T	D	UT	10		815	815	2	100				100				16	5	20	0.17	40.7					
WH	T	PL	2S	29		2,378	2,378	5	100				100				34	12	190	1.31	12.5					
WH	T	PL	3S	16		1,252	1,252	3	100				100				34	10	130	0.81	9.6					
WH	T	Totals		24	4.1	8,561	8,213	16	31	40	29	10	48 42				29	7	66	0.58	124.7					
Type	Totals					7.7	36,369	33,565	67	21	47	29	4	4	2	14	80	32	8	85	0.74	393.1				

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1								
												Date		12/24/2019							
												Time		8:33:37AM							
T029 R012 S12 TU20										T029 R012 S12 TU20											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
029	012	12	GNA	Unit 20	6.00	6	29	S	W												
Spp	S	So	Gr	%	Bd. Ft. per Acre			Total	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
					Net BdFt	Def%	Gross		Net	Log Scale Dia.				Log Length				Ln	Dia	Bd	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft		
WH	D	2S		39	4.2	6,092	5,839	35								100	40	13	230	1.25	25.4
WH	D	3S		46	7.2	7,276	6,752	41		100						100	36	9	87	0.62	77.8
WH	D	4S		15		2,098	2,098	13	100						100		33	5	40	0.29	52.5
WH	Totals			35	5.0	15,467	14,689	88	14	46	40			14	86		36	8	94	0.63	155.7
WH	T	D	3S	37	7.1	3,815	3,543	21		100						100	36	10	130	0.81	27.3
WH	T	D	4S	23		2,227	2,227	13	100							100	36	5	40	0.34	55.7
WH	T	PL	3S	40		3,694	3,694	22		100					100		34	10	130	0.81	28.4
WH	T Totals			23	2.8	9,736	9,463	57	24	76				39	61		35	8	85	0.57	111.3
DF	T	D	3S	63	5.5	3,557	3,361	20	15	85						100	36	9	100	0.84	33.6
DF	T	D	4S	10		558	558	3	100							100	36	5	40	0.29	14.0
DF	T	D	UT	27	34.6	2,133	1,394	8		47	53					100	36	10	85	1.02	16.4
DF	T Totals			13	15.0	6,248	5,314	32	20	66	14					100	36	8	83	0.77	64.0
DF	D	2S		77	7.0	3,856	3,585	22		100						100	40	12	203	1.62	17.6
DF	D	3S		23		1,058	1,058	6	100							100	36	7	60	0.56	17.6
DF	Totals			11	5.5	4,914	4,643	28	23	77						100	38	10	132	1.12	35.3
SF	D	2S		32	10.3	2,254	2,021	12		100						100	40	14	260	1.42	7.8
SF	D	3S		32		1,949	1,949	12		100						100	36	10	121	0.78	16.1
SF	D	UT		3		167	167	1	100				100				20	6	20	0.37	8.4
SF	PL	2S		33		2,009	2,009	12		100						100	34	14	240	1.42	8.4
SF	Totals			15	3.7	6,379	6,146	37	3	32	66		3	33	65		33	11	151	1.01	40.7
SS	D	3S		82		1,157	1,157	7		100						100	36	10	140	0.89	8.3
SS	D	4S		18		248	248	1	100							100	32	5	30	0.34	8.3
SS	Totals			3		1,405	1,405	8	18	82						18	34	8	85	0.63	16.5
Type Totals					5.6	44,150	41,660	250	16	49	34		0	19	80		36	8	98	0.71	423.5

T029 R012 S7 TROW2										T029 R012 S7 TROW2				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
029	012	7	GNA	Unit 21 ROW	1.00	2	8	S	W					

S Spp	So T	Gr rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
WH	T	D	2S	77	3.7	35,842	34,510	35			15	85			100	40	18	526	2.47	65.7	
WH	T	D	3S	20		8,601	8,601	9	11	89					100	36	9	115	0.90	74.7	
WH	T	D	4S	3		1,181	1,181	1	100					100	28	6	32	0.29	36.4		
WH	T	D	UT													9	9		0.00	26.3	
WH T Totals				100	2.9	45,624	44,292	44	5	17	11	66			3	97	32	11	218	1.40	203.0
Type Totals					2.9	45,624	44,292	44	5	17	11	66			3	97	32	11	218	1.40	203.0

Species Summary - Trees, Logs, Tons, CCF, MBF

T029 R012 S12 Ty118A	11.0
T029 R012 S12 Ty118B	12.0
T29N R12W S40 TyB99	4.0

Project **GNA**
Acres **448.00**

Page No **1**
Date: **12/24/2019**
Time **12:10:15PM**

Species	s T	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
WHEMLOCK	T	34,802	62,788	47,629	42.78	23.71	0.71	14,884	14,887	5,986	5,772
WHEMLOCK		16,641	32,518	40,945	76.89	39.35	1.16	12,795	12,796	5,385	5,010
S SPRUCE		4,586	11,760	26,239	220.06	85.82	2.51	10,092	10,092	4,086	3,699
DOUG FIR		8,184	17,870	20,628	88.43	40.49	1.15	7,238	7,236	2,803	2,589
S SPRUCE	T	4,132	8,495	9,028	84.04	40.87	1.22	3,472	3,472	1,340	1,221
DOUG FIR	T	8,177	14,281	7,355	31.55	18.06	0.57	2,581	2,580	961	911
PS FIR		2,884	5,283	3,312	40.07	21.88	0.72	1,156	1,156	493	450
R ALDER		3,370	5,045	1,693	18.30	12.23	0.50	616	617	223	189
R ALDER	T	2,110	2,584	583	10.01	8.17	0.41	212	211	77	68
WR CEDAR		824	931	542	27.92	24.72	0.77	230	230	53	40
WR CEDAR	T	19	38	28	63.44	31.72	0.99	12	12	3	3
Totals		85,730	161,594	157,981	62.16	32.98	1.00	53,288	53,289	21,410	19,950

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF		
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net	
A	5,480	7,629	2,275	15.11	10.85	0.47	827	828	299	257	
B	51,444	95,307	88,573	53.81	29.05	0.87	27,679	27,683	11,371	10,781	
C	843	969	570	28.72	25.00	0.78	242	242	56	42	
D	16,361	32,151	27,983	60.00	30.53	0.91	9,819	9,816	3,764	3,500	
O	8,718	20,255	35,267	155.59	66.97	1.98	13,564	13,565	5,426	4,919	
W	2,884	5,283	3,312	40.07	21.88	0.72	1,156	1,156	493	450	
Totals		85,730	161,594	157,981	62.16	32.98	1.00	53,288	53,289	21,410	19,950

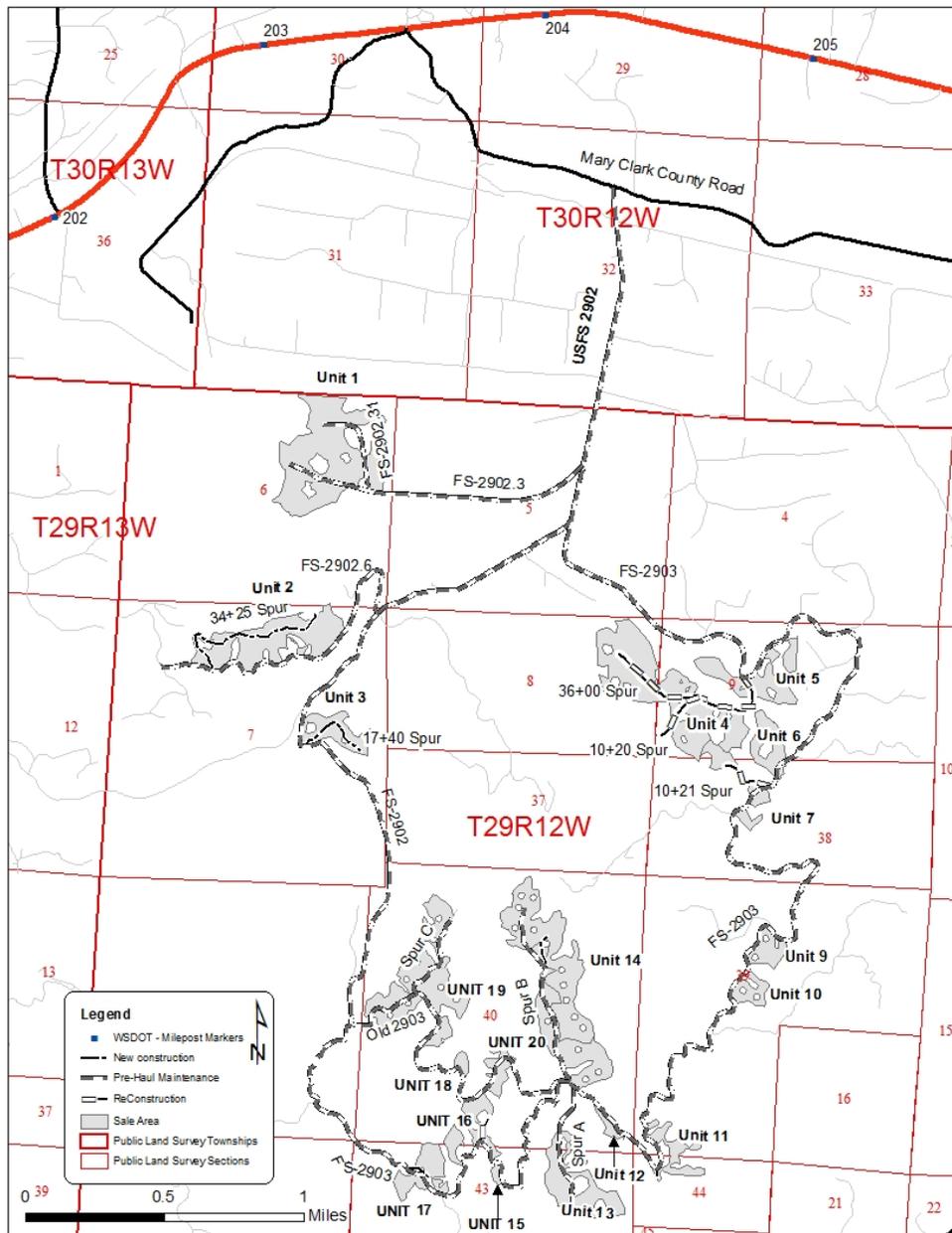
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OLYMPIC NATIONAL FOREST
PACIFIC RANGER DISTRICT

FSB TIMBER SALE ROAD PLAN
CLALLAM COUNTY, WASHINGTON

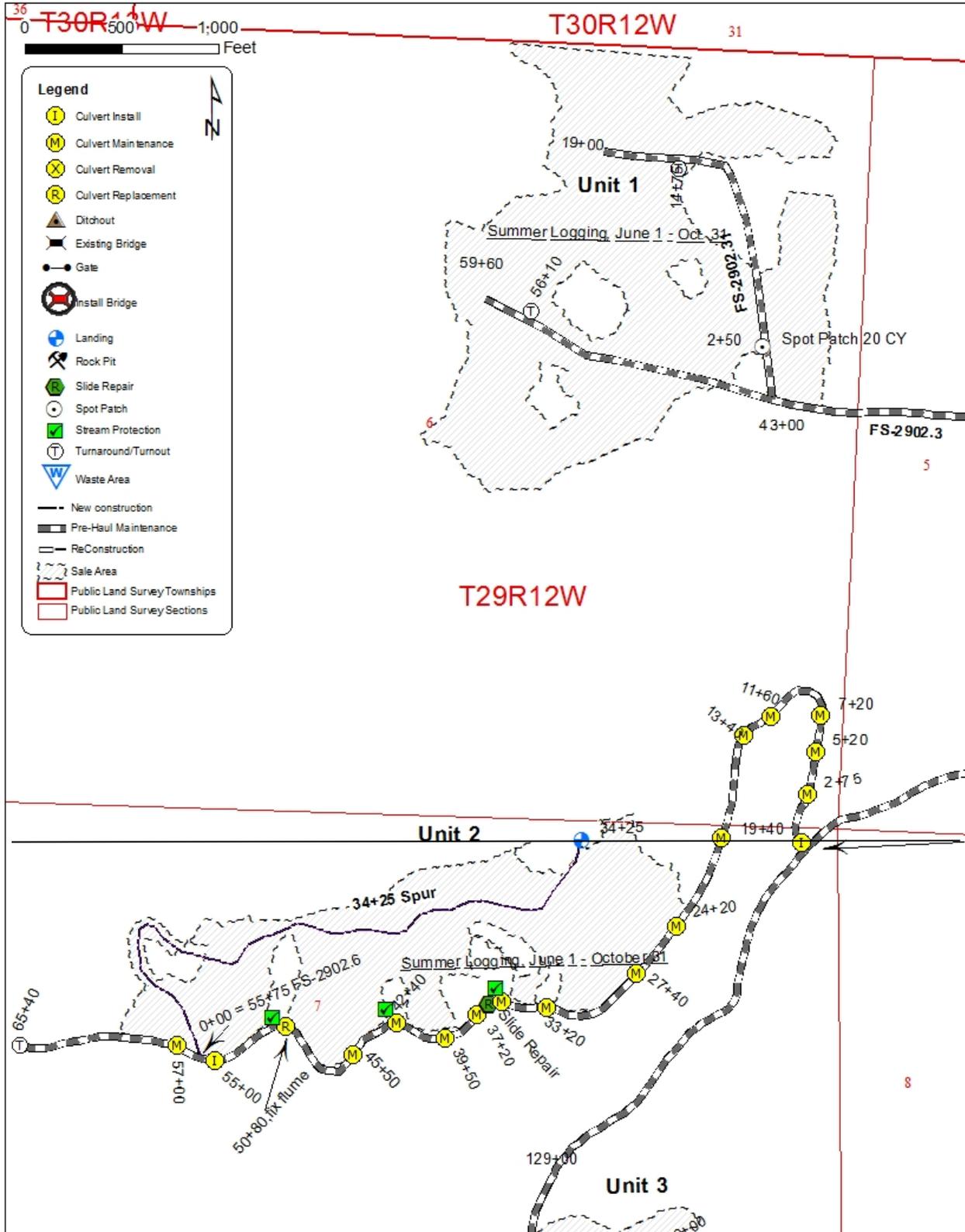
AGREEMENT NO.:36-099456
DATE: 07 JANUARY 2020

STAFF ENGINEER: JUSTIN LONG
DRAWN & COMPILED BY: BILL MEHL

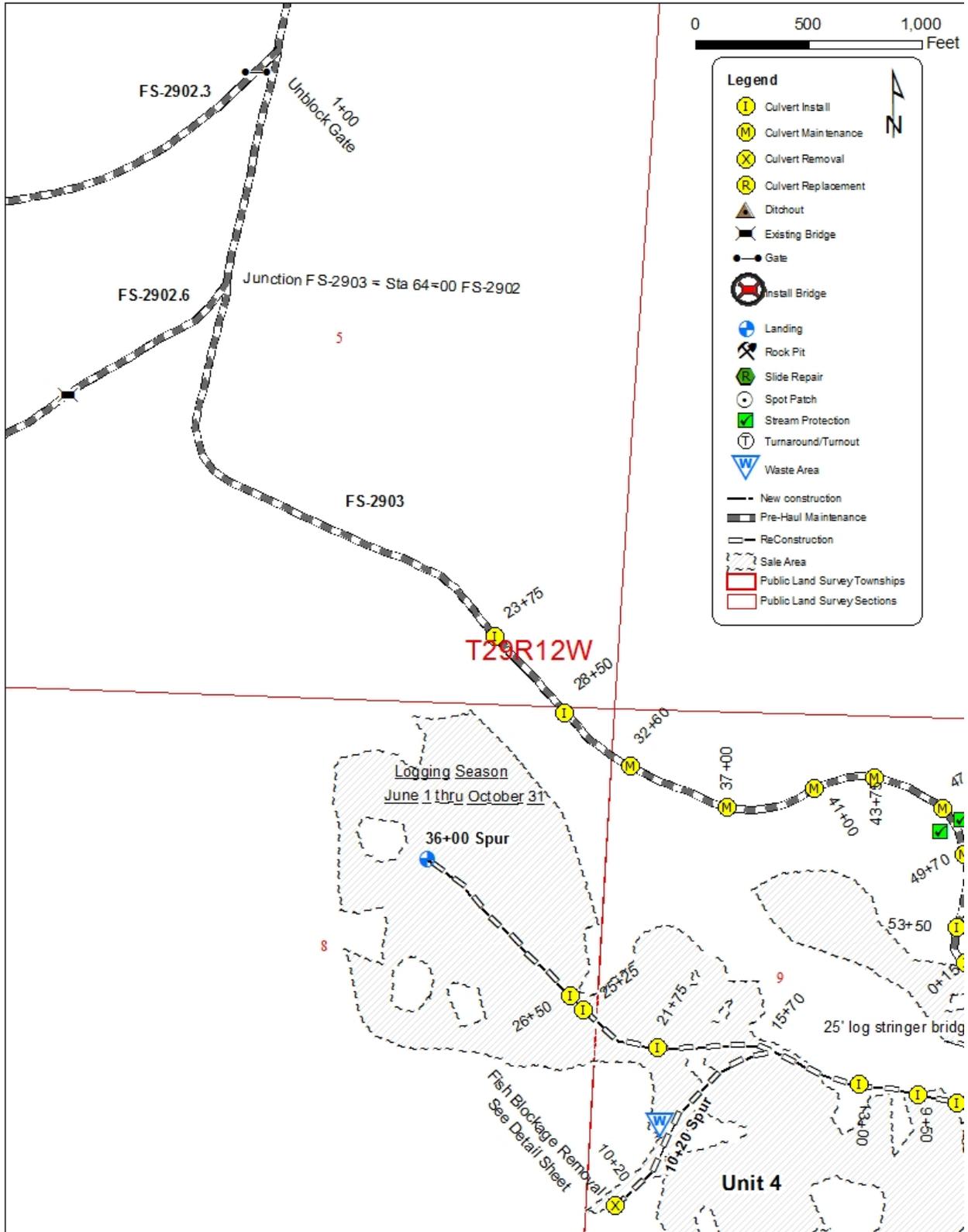
VICINITY MAP
MAP 1 OF 12



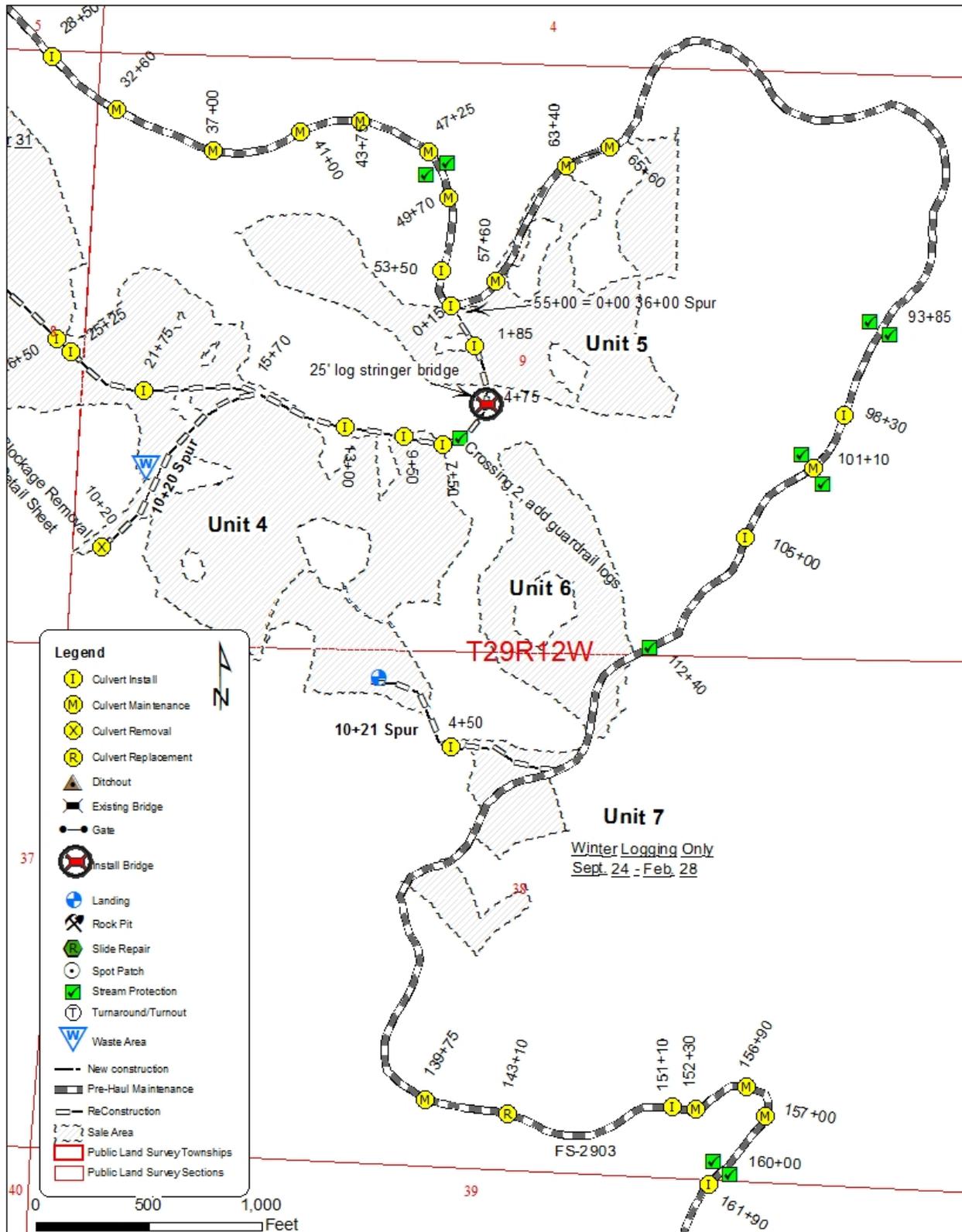
MAP 2 OF 12



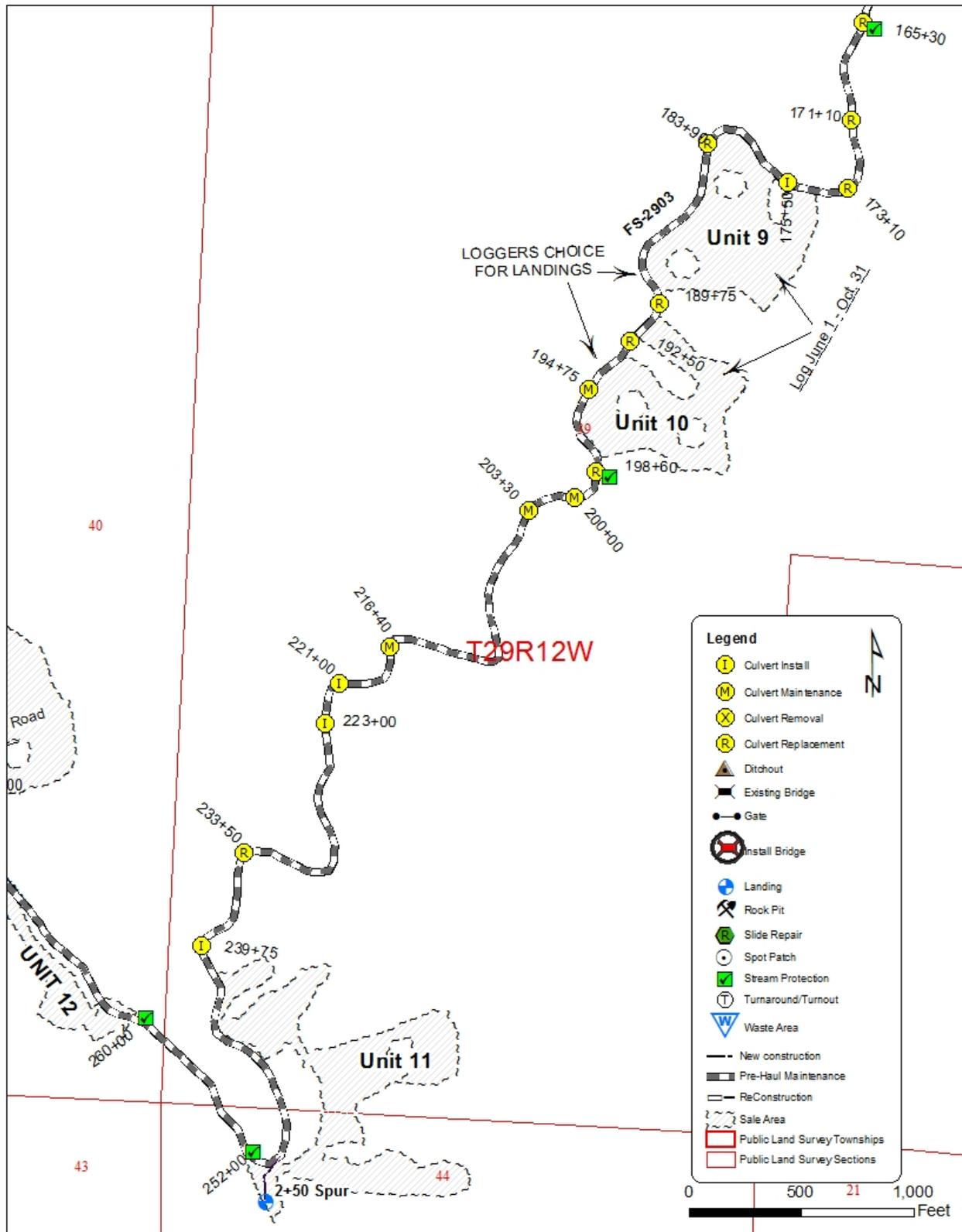
MAP 3 OF 12



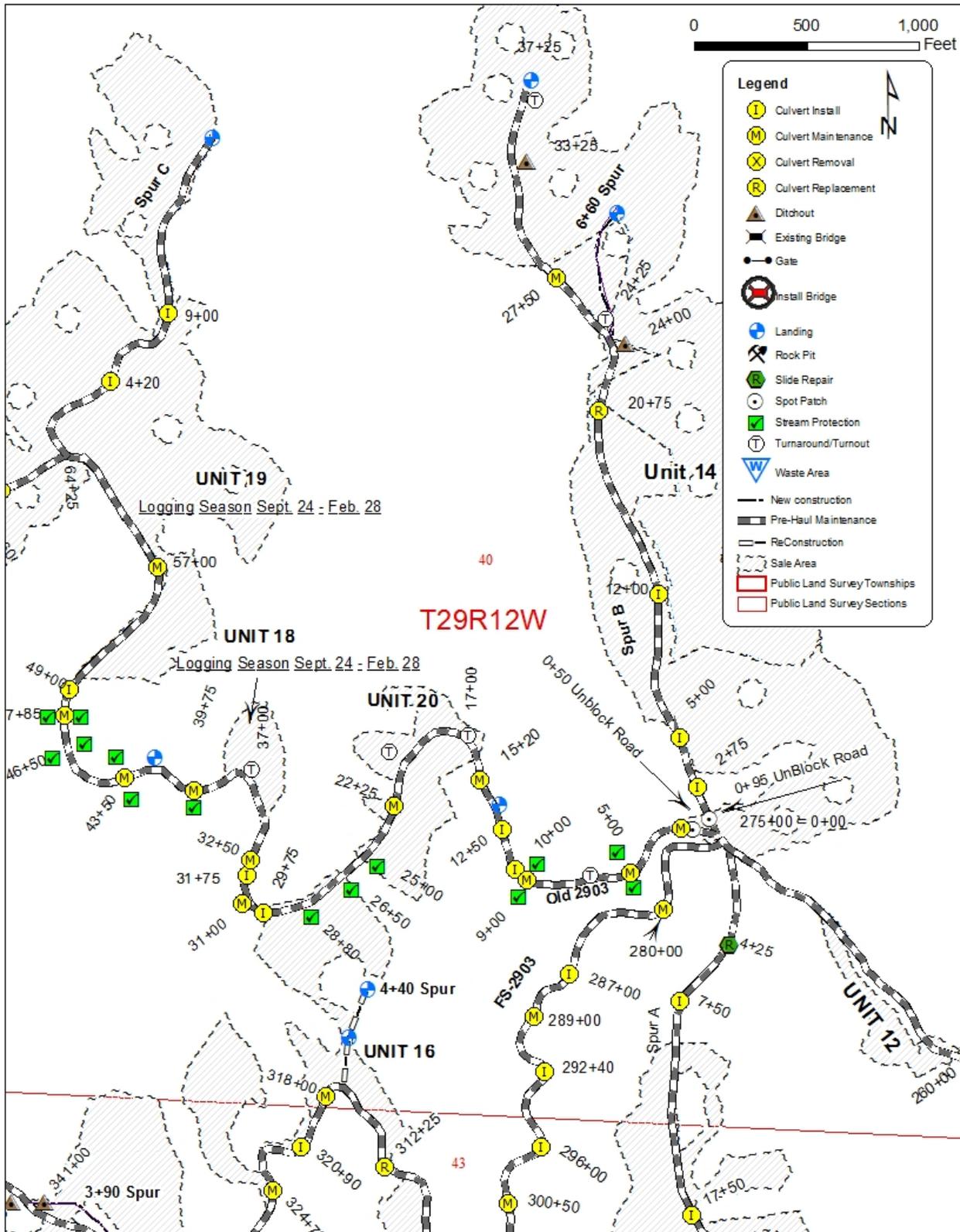
MAP 4 OF 12



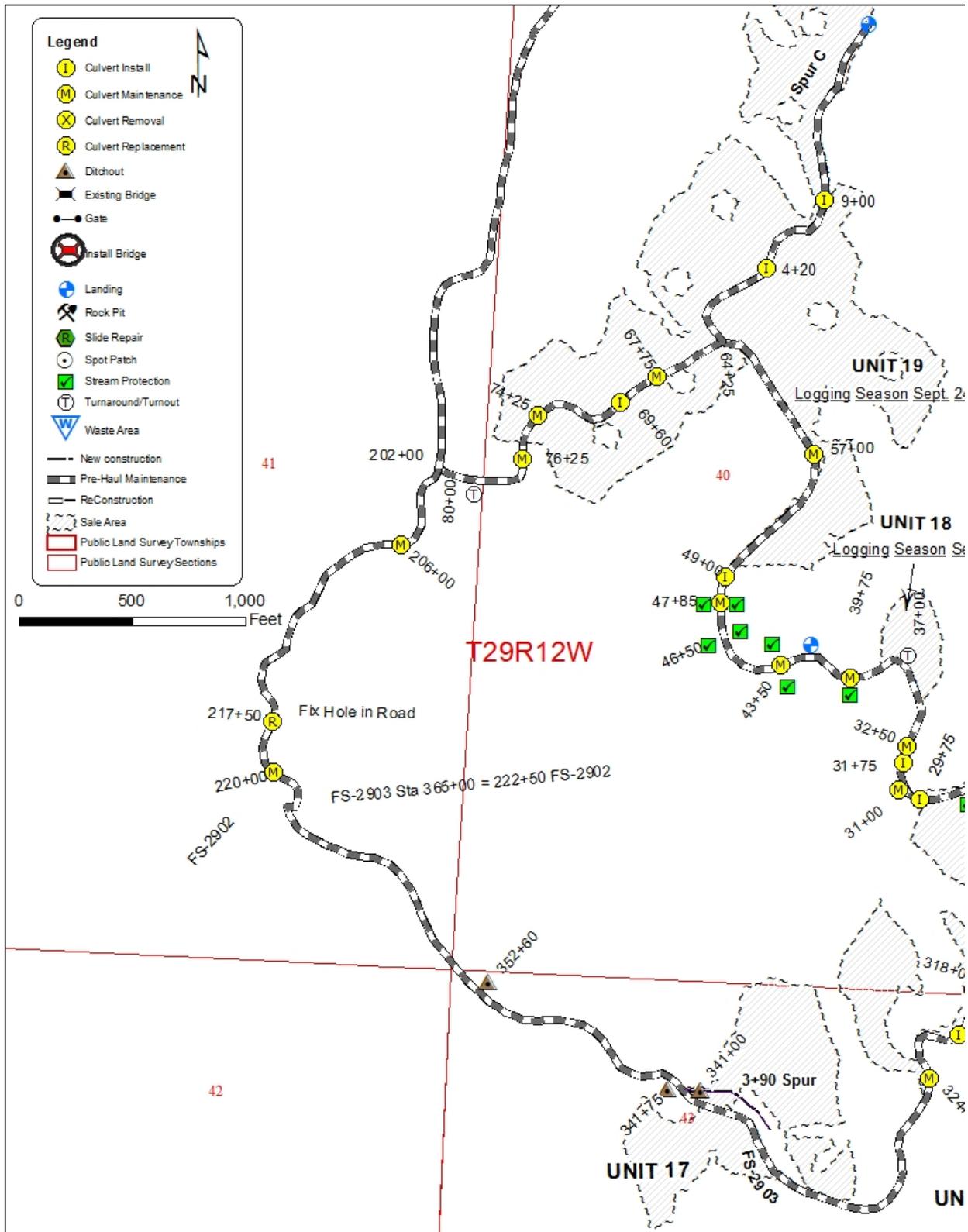
MAP 5 OF 12



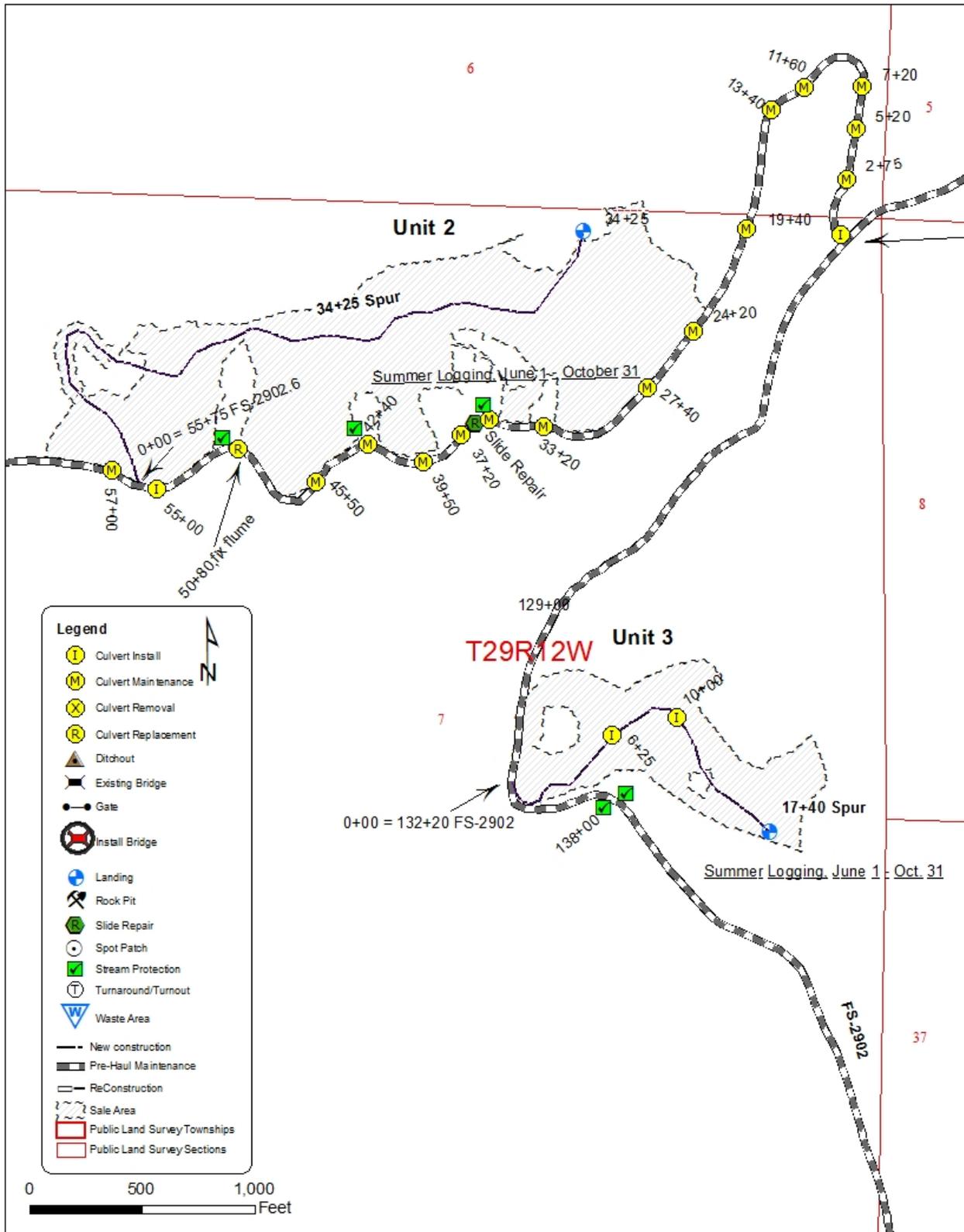
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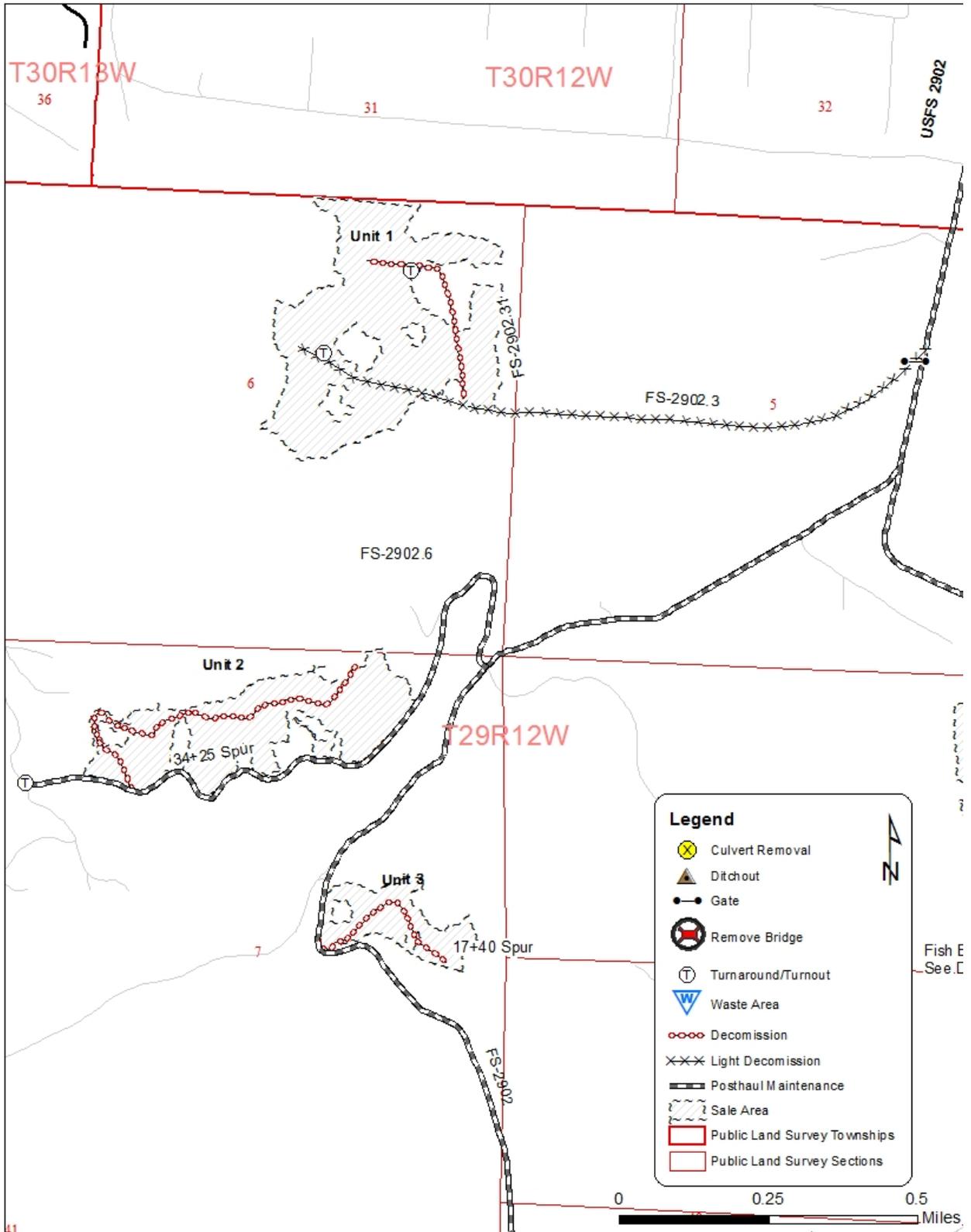
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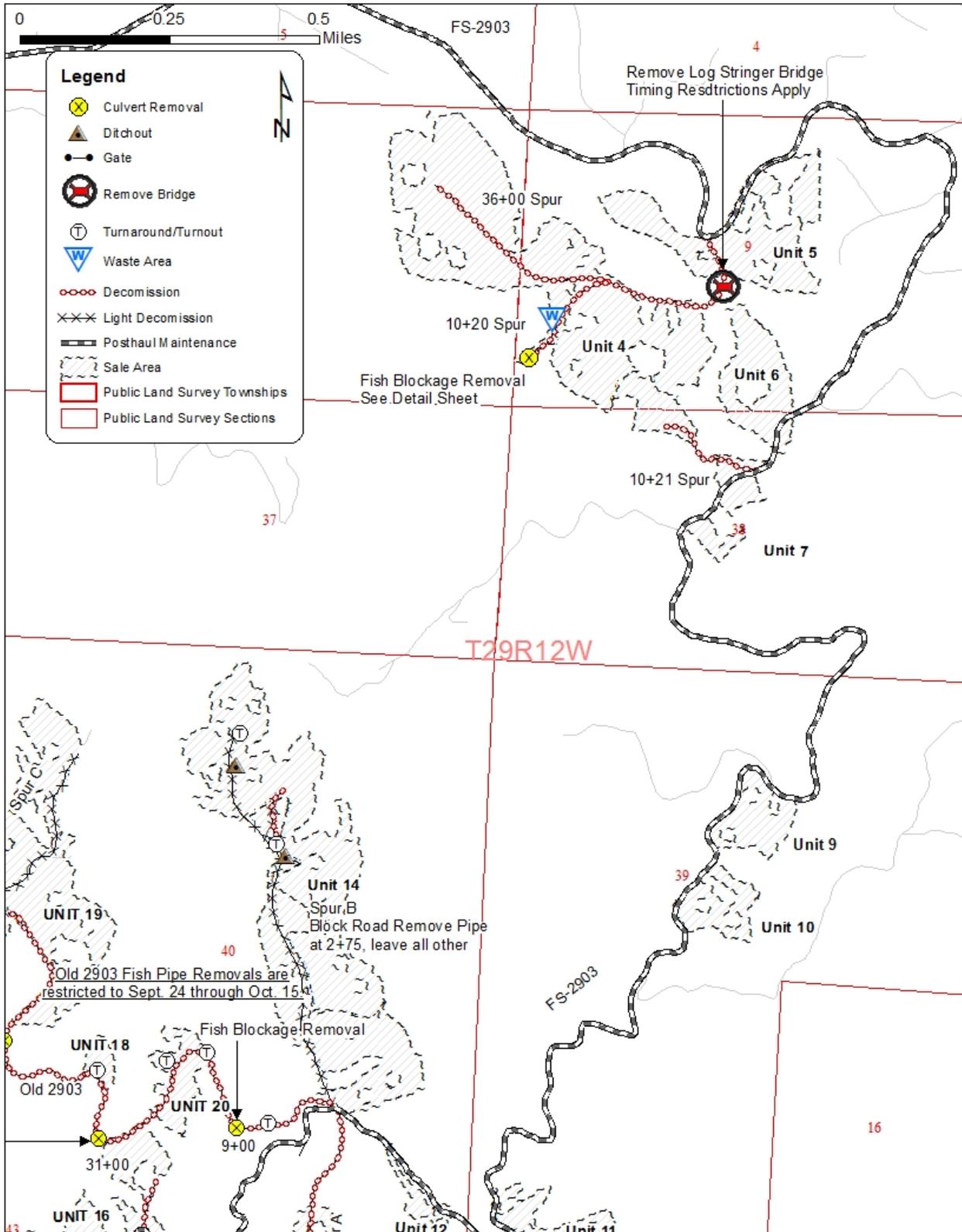
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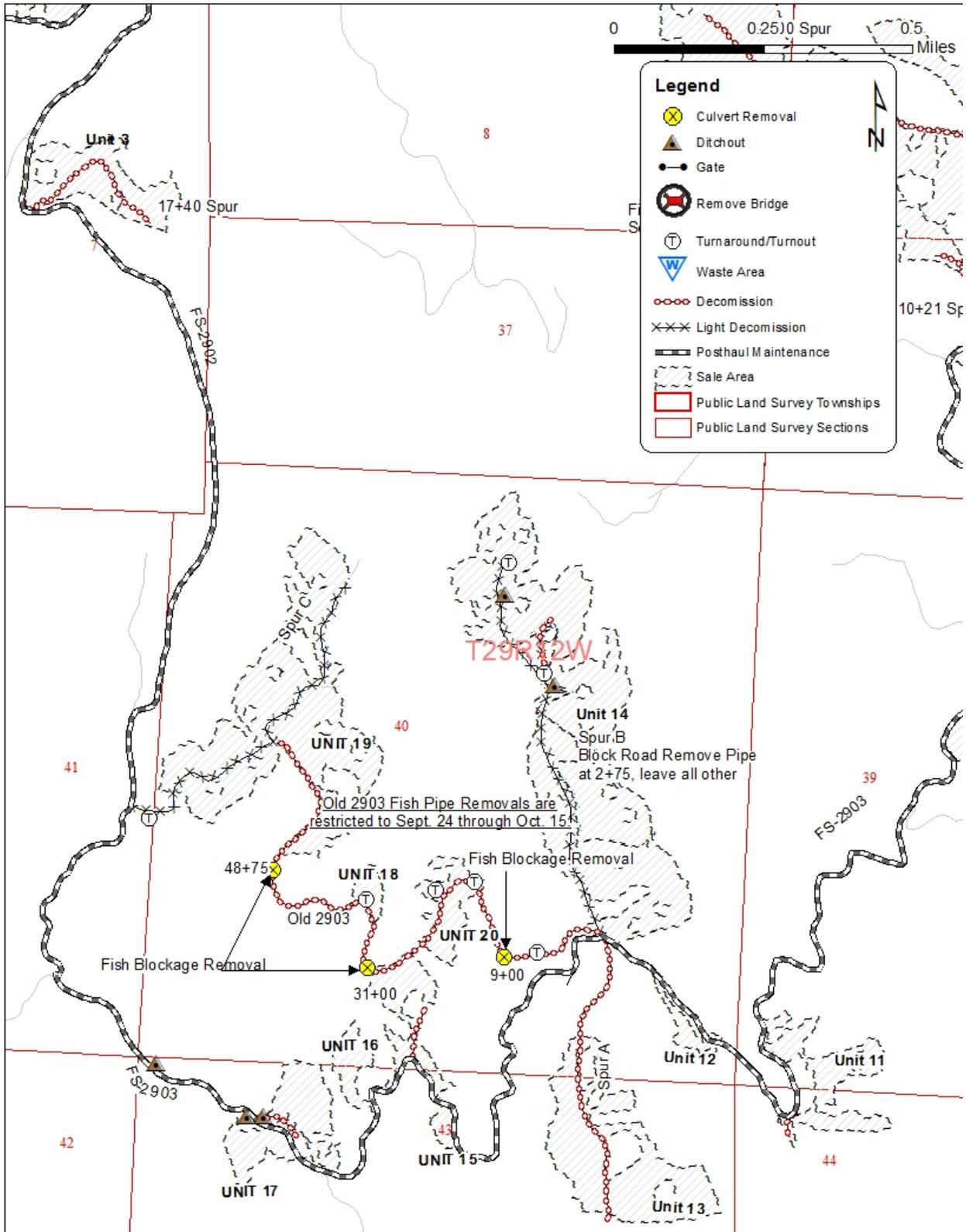
DECOMMISSIONING
MAP 10 OF 12



DECOMMISSIONING MAP 11 OF 12



DECOMMISSIONING
MAP 12 OF 12



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>Post Haul Final Road Status</u>
FS-2902	222.50	Pre-haul Maintenance	Maintain
FS-2903	365.00	Pre-haul Maintenance	Maintain
FS-2902.3	59.60	Pre-haul Maintenance	Light Decom
FS-2902.31	19.00	Pre-haul Maintenance	TEMP
FS-2902.6	65.40	Pre-haul Maintenance	Maintain
Old-2903	64.25	Pre-haul Maintenance	Heavy Decom
Old-2903	15.75	Pre-haul Maintenance	Light Decom
34+25 Spur	34.25	New Temp. Construction	TEMP
36+00 Spur	36.00	Reconstruction	TEMP
10+20 Spur	10.20	Reconstruction	TEMP
17+40 Spur	17.40	New Temp. Construction	TEMP
2+50 Spur	2.50	Reconstruction	TEMP
4+40 Spur	4.40	Reconstruction	TEMP
Spur A	26.50	Pre-haul Maintenance	TEMP
Spur B	37.25	Pre-haul Maintenance	Light Decom
Spur C	17.20	Pre-haul Maintenance	Light Decom
10+21 Spur	10.21	Reconstruction	TEMP
6+60 Spur	6.60	New Temp. Construction	TEMP
Total:	1014.01 STAs		

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>
34+25 Spur	0+00 to 34+25	See below
17+40 Spur	0+00 to 17+40	See below
6+60 Spur	0+00 to 6+60	See below
3+90 Spur	0+00 to 3+90	See below
Total:	62.15 STAs	

Construction includes, but is not limited to:

Clearing, grubbing, right-of-way debris disposal, excavation and/or embankment to subgrade, end hauling material for construction, compacting road surfaces, constructing ditchlines, constructing ditchouts, constructing turnouts and turnarounds, curve widening, acquisition and installation of drainage structures, application of rock, spreading grass seed and straw.

0-5 RECONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
36+00 Spur	0+00 – 36+00	Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Clear and grub in accordance with Clauses 3-5 and 3-10 and Typical Section Sheet. Construct log stringer bridge at Sta 4+75 in accordance to detail sheet. Add guardrail logs to pipe at Sta 7+00. (see detail sheet) Construct ditches in accordance with Clause 2-7 and 4-38. Install culverts in accordance with Culvert List. Add rock in accordance with rock list.
10+20 Spur	0+00 – 10+20	Clear and grub in accordance with Clauses 3-5 and 3-10 and Typical Section Sheet. Remove culvert in accordance with detail sheet, Seed and straw in accordance with Clause 8-2.
2+50 Spur	0+00 – 2+50	Clear and grub in accordance with Clauses 3-5 and 3-10 and Typical Section Sheet. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Add rock in accordance with rock list.
4+40 Spur	0+00 – 4+40	Clear and grub in accordance with Clauses 3-5 and 3-10 and Typical Section Sheet. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Add rock in accordance with rock list.
10+21 Spur	0+00 – 10+21	Clear and grub in accordance with Clauses 3-5 and 3-10 and Typical Section Sheet. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Add rock in accordance with rock list.
Total:	63.31 STAs	

Reconstruction includes, but is not limited to:
 Installing additional culvert, realigning road segments, application of rock, removing culvert.

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>Requirements</u>
-------------	-----------------	---------------------

FS-2902	0+00 – 222+50	Brush road in accordance with Clause 3-1 and Brushing Detail. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Add rock in accordance with rock list. Do bridge maintenance in accordance with Clause 7-30.
FS-2903	0+00 – 365+00	Brush road in accordance with Clause 3-1 and Brushing Detail. Grade and shape road in accordance with Clause 2-5. Add rock in accordance with rock list. Compact surface in accordance with Compaction List. Construct ditches in accordance with Clause 2-7 and 4-38. Construct Ditch Outs in accordance with Clause 4-29 and 4-38. Add culverts in accordance with culvert list. Add silt fence in accordance to Clause 8-1.
FS-2902.3	0+00 – 59+60	Unblock Road at Sta 1+00. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Brush road in accordance with Clause 3-1 and Brushing Detail. Construct ditches in accordance with Clause 2-7 and 4-38. Unblock road at Sta 1+00. Add rock in accordance with rock list.
FS-2902.31	0+00 – 19+00	Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Brush road in accordance with Clause 3-1 and Brushing Detail.
FS-2902.6	0+00 - 65+40	Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Brush road in accordance with Clause 3-1 and Brushing Detail. Apply rock in accordance with Rock List. Install and maintain culverts in accordance with Culvert List. Add silt fence in accordance with Clause 8-1. Construct ditches in accordance with Clause 2-7 and 4-38.
Old-2903	0+00 - 80+00	Unblock road. Remove all vegetative material with a minimum loss of rock in accordance with Clause 2-9 and 3-23. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Brush road in accordance with Clause 3-1 and Brushing Detail. Apply rock in accordance with Rock List. Install culverts in accordance with Culvert List. Construct ditches in accordance with Clause 2-7 and 4-38. Install sediment control structures in accordance with 8-1 and 2-7. Move road over at Sta. 31+00. Remove Fish Blocking Culverts Post-Haul in accordance with detail sheets.
Spur A	0+00 – 26+50	Remove all vegetative material with a minimum loss of rock in accordance with Clause 2-9 and 3-23. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Brush road in accordance with Clause 3-1 and

		Brushing Detail. Apply rock in accordance with Rock List. Install culverts in accordance with Culvert List. Construct ditches in accordance with Clause 2-7 and 4-38.
Spur B	0+00 – 37+25	Unblock road at sta 0+95. Remove all vegetative material with a minimum loss of rock in accordance with Clause 2-9 and 3-23. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Brush road in accordance with Clause 3-1 and Brushing Detail. Apply rock in accordance with Rock List. Install culverts in accordance with Culvert List. Construct ditches in accordance with Clause 2-7 and 4-38. Install sediment control structures in accordance with 8-1 and 2-7.
Spur C	0+00 – 17+20	Remove all vegetative material with a minimum loss of rock in accordance with Clause 2-9 and 3-23. Grade and shape road in accordance with Clause 2-5. Compact surface in accordance with Compaction List. Brush road in accordance with Clause 3-1 and Brushing Detail. Apply rock in accordance with Rock List. Install culverts in accordance with Culvert List. Construct ditches in accordance with Clause 2-7 and 4-38.
Total:	892.45 STAs	

Maintenance includes, but is not limited to:

Brushing right-of-way, right-of-way debris disposal, cleaning ditches, constructing ditches, installing additional culverts, widening road segments, constructing headwalls, cleaning culvert inlets and outlets, cross drain culvert replacement, installing erosion control materials and sediment removal structures, spot rocking, grading and shaping existing road surface and turnouts, constructing additional turnouts, compaction of road surface, application of rock, acquisition and application of grass seed and hay.

0-7 POST-HAUL MAINTENANCE

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

0-9 DECOMMISSIONING

This project includes, but is not limited to decommissioning listed in Clause 9-20 ROAD DECOMMISSIONING.

0-13 STRUCTURES

The Purchaser shall acquire and install all structures. Requirements for these structures are listed in Section 7 Structures.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

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

Unless controlled by construction stakes or design data (plan, profile, and cross-sections), road work shall be performed in accordance with the dimensions shown on the Typical Section Sheet and the specifications within this Road Plan.

1-4 ROAD USE

All road use, waste material management and construction activities must meet State BMP requirements by the Forest Service State Fish and Wildlife requirements under the MPU for Forest Service activities unless otherwise agreed.

1-5 DESIGN DATA

Design data is available upon request at the Department of Natural Resources Olympic Region Office in Forks, WA.

1-6 ORDER OF PRECEDENCE

Any conflict or inconsistency in this Road Plan shall be resolved by giving the documents precedence in the following order:

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

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

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

The Purchaser is responsible for the repair or replacement of all materials, roadway infrastructure, and road components damaged during roadwork or operation activities. Repairs and replacements shall be directed by the Contract Administrator. Repairs to structural materials will be made according to the manufacturer’s recommendation, and shall not begin without written approval from the Contract Administrator.

1-9 DAMAGED METALLIC COATING

Any 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.

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).

1-11 FISH TIMING WINDOW REQUIREMENTS

The following Hydraulic work is subject to the following timing window and requirements listed under “FISH STREAM WORK PROVISIONS” located in this document.

<u>Road</u>	<u>Stations</u>	<u>Work Type</u>	<u>Timing Window</u>
10+20 Spur	10+20	Fish blockage culvert removal. See Detail sheets.	July 1 – Sept. 30
36+00 Spur	4+75	Bridge Install	June 1- October 31
Old 2903	9+00, 31+00, 47+85	Fish blockage culvert removals. See Detail sheets.	Sept. 24 th –October 15 th

1-12 SURVEY MONUMENTS

At no time during construction, reconstruction, or maintenance shall survey monuments, witness trees, or bearing trees be disturbed or damaged. If damaged or disturbed, Purchaser shall hire a licensed land surveyor to repair, replace, and/or reset them.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

Road work must be in accordance with the State’s marked location. All road work is marked as follows:

- Orange ribbon and paint for construction centerlines.
- Construction stakes for everything else.

1-18 REFERENCE POINT DAMAGE

Purchaser shall reset reference points (RPs) that were moved or damaged at any time during construction to their original locations. Excavation and embankment may not

proceed on road segments controlled by said RPs until Purchaser resets all moved or damaged RPs.

SUBSECTION TIMING

1-20 COMPLETE BY DATE

Purchaser shall complete all pre-haul road work, reconstruction, and construction before the start of timber haul.

1-21 HAUL APPROVAL

The Purchaser shall not use roads under this Road Plan without written approval from the Contract Administrator.

1-22 WORK NOTIFICATIONS

On all roads, the Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before work begins.

1-23 ROAD WORK PHASE APPROVAL

Written approval by Contract Administrator needs to be given at these phases of road work:

- Subgrade approval
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

On the following road(s), the specified activities are not permitted during the listed closure period(s) unless authorized in writing by the Contract Administrator. Fish Stream work may only be conducted between July 1 and September 30th except for the Old 2903 road, see Clause 1-11.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
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FS-2902	64+00 – 139+00	Rock and Timber Haul	November 1 st – May 30 th
All	All	Construction & reconstruction	November 1 – Sept. 23 rd
All Remaining Roads	All remaining stations	Road Work including reconstruction, new construction, decommissioning,	November 1 st – May 30 th (Additional Restrictions for fish stream work may apply)

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 Activity Timing Restriction, the Purchaser shall provide a maintenance plan to include further protection of Federal resources. The Contract Administrator must approve the maintenance plan in writing, and preventative measures shall be put in place, before operation in the closure period. The Purchaser shall be required to maintain all haul roads at their own expense.

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

In accordance with the NEPA, the Contract Administrator shall suspend road work or hauling of right-of-way timber, forest products, or rock under the following conditions:

- 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, the Purchaser will be required to cease operations, or perform corrective maintenance or repairs, subject to specifications within this Road Plan. Before and during any suspension, the Purchaser shall protect the work from damage or deterioration.

1-32 BRIDGE AND ASPHALT SURFACE RESTRICTION

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

If tracked equipment is used on bridge or asphalt surfaces, Purchaser shall immediately cease all road work and hauling operations. Any dirt, rock, or other material tracked or spilled on bridge or asphalt surface(s) shall be removed immediately. Any damage to the

surface(s) shall be repaired at the Purchaser’s expense as directed by the Contract Administrator.

SUBSECTION OTHER INFRASTRUCTURE

1-43 ROAD WORK AROUND UTILITIES

It is the Purchaser’s responsibility to identify any utilities not listed. The Purchaser shall work in accordance with all applicable laws or rules concerning utilities. The Purchaser is responsible for all notification, including “call before you dig”, and liabilities associated with the utilities and their rights-of-way.

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 this Road Plan or hauled upon in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

2-4 PASSAGE OF LIGHT VEHICLES

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

<u>Road</u>	<u>Stations</u>
FS-2902	All

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), a dozer or motor grader shall be used to shape the existing surface.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
36+00 Spur	0+00 – 4+75	Grade, shape, and remove shoulder and surface vegetation.
10+20 Spur	0+00 – 10+20	
2+50 Spur	0+00 – 2+50	
4+40 Spur	0+00 – 4+40	
FS-2902	0+00 – 222+50	

FS-2903	0+00 – 365+00	Grade, shape, and remove shoulder and surface vegetation.
FS-2902.3	0+00 – 59+60	
FS-2902.31	0+00 – 19+00	
FS-2902.6	0+00 – 65+40	
Old-2903	0+00 – 80+00	
Spur A	0+00 – 26+50	
Spur B	0+00 – 37+25	
Spur C	0+00 – 17+20	

2-6 CLEANING CULVERTS

On the following road(s), all inlets and outlets of culverts shall be cleaned before the start of timber haul and shall be subject to the written approval of the Contract Administrator.

<u>Road</u>	<u>Stations</u>
FS-2902	0+00 – 222+50
FS-2903	0+00 – 365+00

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean and/or construct the ditches, headwalls, and catch basins. Work shall be completed before the start of timber haul and shall be done in accordance with the Typical Section Sheet. Pulling ditch material across the road or mixing in with the road surface will not be allowed. Ditchlines, headwalls, and catch basins shall not encroach into the existing road.

<u>Road</u>	<u>Stations</u>	<u>Left or Right</u>	<u>Comments</u>
FS-2903	219+00 – 220+75	L	Ditching
FS-2903	252+00 – 260+00	R	Ditching
FS-2903	303+00 – 304+00	R	Ditching
FS-2902.3	0+00 – 59+60	L	Ditching
FS-2902.6	7+60 – 11+30	L	Ditching
FS-2902.6	15+00 – 19+00	R	Ditching
Old 2903	0+00 -80+00	L & R	Ditching as needed
Spur A	0+00 – 26+50	R	Ditching
Spur B	0+00 – 37+25	R	Ditching
Spur C	0+00 – 17+20	R	Ditching

2-8 MAINTAINING EROSION CONTROL STRUCTURES

On the following road(s), Purchaser shall clean and maintain all erosion control devices. Work shall be completed before the start of timber haul and shall be done in accordance with all pertaining clauses contained in this Road Plan. Excavated material shall be disposed of in accordance with Clause 4-35 through Clause 4-38.

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), vegetative material up to 5 inches in diameter, including limbs, shall be cut as shown on the Brushing Detail. Brushing shall be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation shall not be disturbed unless directed by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
FS-2902	0+00 – 222+50
FS-2903	0+00 – 365+00
FS-2902.6	0+00 – 65+40

3-2 BRUSHING RESTRICTION

Pulling, digging, pushing over, and other non-cutting methods used for vegetation removal shall not be used for brushing. Excavator buckets, log loaders and similar equipment shall not be used for brushing.

3-3 BRUSH REMOVAL

Remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets. Brush should be disposed of so that it will not fall back onto the road prism.

SUBSECTION CLEARING

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 5 inches DBH or over 15 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

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

3-8 PROHIBITED DECKING AREAS

Right-of-way timber shall not be decked in the following areas:

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 40%.
- Against standing trees unless approved by the Contract Administrator.

SUBSECTION GRUBBING

3-10 GRUBBING

Remove all stumps between the grubbing limits specified on the Typical Section Sheet. Those stumps outside the grubbing limits but with undercut roots shall also be removed. Stump removal shall be accomplished using a hydraulic mounted excavator unless authorized, in writing, by the Contract Administrator. Grubbing shall be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Grubbed stumps shall be placed outside of the clearing limits, as directed by the Contract Administrator and in compliance with all other clauses in this road plan. Stumps shall be positioned upright with root wads in contact with the forest floor and on stable locations.

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all vegetative material not eligible for removal by Contract Clauses 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 grubbing Typical Section Sheet.

3-21 DISPOSAL COMPLETION

All disposal of organic debris, shall be completed before the application of rock.

3-23 PROHIBITED DISPOSAL AREAS

Organic debris shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades road prism 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 will fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

Organic debris shall not be buried unless otherwise stated in this Road Plan.

3-25 SCATTERING ORGANIC DEBRIS

Organic debris shall be scattered outside of the grubbing limits in accordance with Clause 3-23 unless otherwise detailed in this Road Plan and as directed by the Contract Administrator.

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

All roads shall be constructed, reconstructed, and maintained using a track mounted hydraulic excavator unless stated otherwise within this Road Plan, or permission to do otherwise is granted in writing by the Contract Administrator.

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 shall be taken as pioneering progresses:

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

The following road grade and alignment standards shall be followed:

- Grade and alignment shall have smooth continuity, without abrupt changes in direction.
- Maximum grade shall not exceed 18 percent favorable and 16 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Sag vertical curves shall not have a grade change greater than 5% in 100 feet.
- Crest vertical curves shall not have a grade change greater than 4% 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.

The following standards for switchbacks shall be followed:

- Adverse grades on switchbacks shall not exceed 10%.
- Favorable grades through switchbacks shall not exceed 12%.
- Transition grades entering and leaving switchbacks shall not exceed a 5% grade change.
- Transition grades required to meet switchback grade limitations shall be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

Unless construction staked or designed excavation slopes shall be constructed 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

Unless construction staked or designed embankment slopes shall be constructed 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

Excavation and embankment slopes shall be constructed 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.

Embankment widening shall be applied equally to both sides of the road to achieve the required width.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

Turnouts shall be intervisible with maximum of 1,000 feet between turnouts unless shown otherwise on drawings. Locations shall be adjusted to fit the final subgrade alignment and sight distances. Turnout locations shall be subject to written approval by the Contract Administrator.

4-22 TURNAROUNDS

Turnarounds shall be no larger than 50 feet long and 30 feet wide. Locations shall be subject to written approval by the Contract Administrator.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

The Purchaser shall construct ditches into the subgrade as specified on the Typical Section Sheet. Excavated slopes shall be consistent with Clause 4-5 Cut Slope Ratio. Ditches shall be constructed concurrently with construction of the subgrade.

4-27 DITCH WORK – MATERIAL USE PROHIBITED

On all roads, pulling ditch material across the road or mixing in with the road surface will not be allowed. Excavated material shall be disposed of as specified in Clause 4-36 through Clause 4-38.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Ditchouts shall be constructed at locations shown on the list below, and as needed to fit as built conditions. Ditchouts shall be constructed in a manner that diverts ditch water onto the forest floor and shall have excavation backslopes no steeper than a 1:1 ratio. L or R denotes ditchout left or ditchout right heading in.

<u>Road</u>	<u>Stations</u>
FS-2903	341+00 L, 341+75 L, 352+60 R,
17+40 Spur	17+40 L
Spur B	24+00 R, 33+25 R

SUBSECTION WASTE MATERIAL (DIRT)

4-35 WASTE MATERIAL DEFINITION

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

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris.

4-38 PROHIBITED WASTE DISPOSAL AREAS

Waste material shall not be deposited in the following areas:

- Within 5 feet of a cross drain culvert.

- Within 50 feet of a live stream or wetland.
- Within a riparian management zone.
- 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.

4-39 WASTE AREA COMPACTION

Excavated material may be deposited adjacent to the road prism on side slopes up to 45% if the waste material is compacted and free of debris. On side slopes of 45% or more, all excavation shall be end hauled or pushed to designated waste areas. All waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts, with the exception of side hill embankments too narrow to accommodate excavation equipment which may be placed by end-dumping or sidecasting until sufficiently wide to support the equipment.

SUBSECTION BORROW

4-46 COMMON BORROW

Common borrow shall consist of soil, and/or aggregate that is non-plastic and shall contain no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines (passes the U.S. #40 sieve) in the sample cannot be rolled between the hand and a smooth surface into a thread at any moisture content.

4-47 NATIVE MATERIAL

Native material shall be excavated material free of organic debris, trash, and rocks greater than 12" in any dimension.

4-48 BORROW MATERIAL

Borrow material shall contain no more than 5% clay, organic debris, or trash by volume.

SUBSECTION SHAPING

4-55 ROAD SHAPING

The road subgrade and surface shall be shaped as shown on the Typical Section Sheet. The subgrade and surface shape shall ensure runoff in an even, un-concentrated manner, and shall be uniform, firm, and rut-free.

4-56 DRY WEATHER SHAPING

At any time of year, the Contract Administrator may require the application of water to facilitate shaping activities. The method of water application is subject to written approval by the Contract Administrator.

SUBSECTION COMPACTION

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the Compaction List by routing equipment over the entire width of each lift. A plate compactor must be used for areas specifically requiring keyed embankment construction, and embankment segments too narrow to accommodate 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 placement of rock.

4-62 DRY WEATHER COMPACTION

At any time of the year, 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.

4-63 EXISTING SURFACE COMPACTION

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

4-64 WASTE MATERIAL COMPACTION

All waste material shall be compacted by running equipment over it or bucket tamping.

4-65 CULVERT BACKFILL COMPACTION

Culvert backfills shall be accomplished by using a jumping jack compactor, performing at least 2 passes per lift, in lifts not to exceed 8 inches.

4-66 COMPACTION BY METHOD

Compaction shall consist of three complete passes over the entire width of each lift with a vibratory drum roller weighing a minimum of 6,000 pounds at a maximum operating speed of 3 mph. For embankment segments too narrow to accommodate a drum roller, a plate compactor shall be used.

SECTION 5 – DRAINAGE

5-4 PUNCHEON RESTRICTED

At no time shall puncheon be used in the subgrade, unless approved by the Contract Administrator.

SUBSECTION CULVERTS

5-5 CULVERTS

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

5-11 UNUSED MATERIALS FEDERAL PROPERTY

On required roads, any materials listed on the Culvert List and Rock List that are not installed shall become the property of the Forest Service. Purchaser shall stockpile materials as directed by the Contract Administrator.

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Installation shall be in accordance with the Typical Cross Drain Culvert Installation Detail, Typical Type Ns Np Culvert Installation Detail, the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures", and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe shall be installed in a manner consistent with the manufacturer's recommendations.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Installation of culverts 30 inches in diameter and over shall be subject to written approval by the Contract Administrator or their designee before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

Cross drains on road grades in excess of 3% shall 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. Where the cross drain is at the low point in the road, culverts shall not be skewed. Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3% or more than 10%.

5-18 CULVERT DEPTH OF COVER

Cross drain culverts shall be installed with a depth of cover of not less than 12 inches of compacted depth over the top of the culvert at the shallowest point. Stream crossing

culverts shall be installed with a depth of cover specified in the Engineer’s design, Type Ns Np Typical Detail Sheet, or to the minimum depth recommended by the culvert manufacturer for the type of cover material over the pipe, whichever is greater.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Energy dissipaters shall be installed to prevent erosion and are subject to approval by the Contract Administrator. Rock shall weigh at least 10 pounds and be placed by zero-drop-height method. Energy dissipater shall extend a minimum of ¼ foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet.

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 10 feet shall be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts or 1 ½” X 3/16” angle iron, and fastened securely to the posts with No. 10 galvanized smooth wire, or bolted using minimum 5/16” bolts and 2 washers per bolt, in accordance with the Culvert Installation Typical Details Page.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

Catch basins shall be constructed to resist erosion. Approximate dimensions are 1-2 feet deep, 1-2 feet wide, and 2-4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Headwalls shall be constructed in accordance with the Typical Cross Drain Culvert Installation Detail at all cross drain culverts that specify the placement of rock. Rock used for headwalls shall consist of oversize or quarry spall material. Rock shall be placed on shoulders, slopes, and around culvert inlets and outlets. Rock shall not restrict the flow of water into culvert inlets or catch basins. No end dumping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the Rock List shall be obtained from any commercial source including the following source at the Purchaser's expense. Rock sources will be subject to written approval by the Contract Administrator before their use. All rock used shall be certified weed-free.

Source	Owner	Pit Run Cost (\$/cy)	1 ¼ INCH MINUS CRUSHED (\$/cy)
Mary Clark Pit	D.N.R.	\$5.50	\$12.70

SUBSECTION ROCK GRADATIONS

6-28 1 ¼-INCH MINUS CRUSHED ROCK

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

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

6-50 LIGHT LOOSE RIP RAP

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

<u>At Least/Not More Than</u>	<u>Weight Range</u>	<u>Size Range</u>
20% / 90%	300 lbs. to 1 ton	12"- 36"

SUBSECTION ROCK MEASUREMENT

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths are defined as the compacted depth(s) using the compaction methods required in this Road Plan. Estimated quantities specified in the Rock List are estimated truck yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Subgrade drainage installation including grading and compaction, shall be completed and approved in writing by the Contract Administrator, before rock application.

6-71 ROCK APPLICATION

Rock shall be applied in accordance with the specifications and quantities shown on the Rock List. Rock shall be spread, shaped, and compacted full-width concurrent with rock hauling operations. Rock shall be compacted in accordance with Compaction List, in lifts not to exceed 6 inches.

6-72 ROCK APPLICATION AFTER HAULING

On the following road(s), upon completion of all hauling operations, Contractor shall apply 1 1/2" minus crushed rock in accordance with the quantities shown on the Rock List.

<u>Road</u>	<u>Stations</u>	<u>Amount</u>
FS-2902	0+00 – 222+50	100 CY
FS-2903	0+00 – 365+00	200 CY

6-73 ROCK FOR WIDENED PORTIONS

Turnarounds, turnouts, and areas with curve widening shall have rock applied to the same depth and specifications as the traveled way.

6-78 ROCK FOR SPOT PATCHING

Rock for spot patching shall be applied before any grading is done and before any rock lifts are applied. Once applied, spot patches shall be graded into the existing running surface.

SECTION 7 – STRUCTURES

SUBSECTION SIGNS

7-2 SIGN INSTALLATION (NON-HIGHWAY)

The Purchaser shall be responsible for the purchase, installation, and maintenance of the following road signs. Signs shall be installed a minimum of 7 days before road work begins. All signs used to notify the public of timber sale activities and delineate hazards must meet the current standard of MUTCD (Manual on Uniform Traffic Control Devices) such as warning signs, delineators, gates. Required safety road closures shall be planned in advance and documented between the Purchaser and Contract Administrator.

<u>Road</u>	<u>Station</u>	<u>Sign</u>
FS-2902	Before FS-2903 JCT.	Forest Operations Ahead (or similar)

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

The Purchaser shall ensure that debris from the installation or removal of structures does not enter any stream. Components removed from the existing structures(s) shall be placed at designated site(s), as directed in writing by the Contract Administrator. The Purchaser is responsible for maintaining a clean jobsite, with all materials stored away from any high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream shall be removed immediately and placed in the site(s) designated for stockpiling or disposal. The Purchaser is responsible for retrieving all material carried downstream from the jobsite by the stream current.

7-6 STREAM CROSSING INSTALLATION

Installation of stream crossing structures shall be in accordance with the manufacturer's requirements, and as directed by the Contract Administrator or their designee.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

Bank protection shall be designed and constructed to prevent the undermining of the structure.

7-20 REQUIRED NOTIFICATION AND APPROVAL

Purchaser shall provide the District engineer or their designee 3 day notification prior to beginning road work on the 36+00 Spur. Purchaser shall receive approval for completed road work on all roads from the District engineer or their designee prior to log haul on those roads.

7-30 BRIDGE MAINTENANCE

On the following road(s), bridge maintenance, as listed below, is required as part of this contract. All old bridge material shall be removed from Federal land by the Purchaser before the termination of the contract.

<u>Road</u>	<u>Station</u>	<u>Requirements</u>	<u>Detail Sheet</u>
FS-2902	72+25	Fix delineators	No sheet
FS-2902	77+10	Fix delineators	No sheet

SUBSECTION BRIDGE INSTALLATION

7-45 PURCHASER SUPPLIED BRIDGE

On the following road(s), the Purchaser shall supply and construct a log stringer bridge, listed below, in accordance with this Road Plan. Refer to attached log stringer design sheets.

Road	Station	Length (ft)	W.B.S.R. ¹ (ft)	Loading/ Deflection Ratio	Type	Vert.Clear ² (ft)	Hor. Align ³
36+00 Spur	4+75	25	14	U-80	Log Stringer	8'	P.P.

7-47 CONTRACTOR SUPPLIED STRINGERS AND ABUTMENTS

Contractor is responsible for acquiring stringers and abutments from timber sale Unit 5 or as otherwise designated by Contract Administrator. Stringers shall meet a minimum mid-span diameter of 21 inches and abutments shall meet a minimum mid-span diameter of 21 inches. Stringers and abutments shall be constructed of spruce.

7-50 TEMPORARY LOG BRIDGE CONSTRUCTION

Purchaser shall construct a temporary bridge in accordance with this plan. Refer to Log Stringer Bridge installation design sheets for details. Spruce timber for the manufacture of stringers and cribbing is available from within the sale area. Bridge to be removed before the expiration of the Timber Sale Contract. Purchaser may salvage logs upon completion of road use except for those the Contract Administrator designates for LWD.

7-51 EMBANKMENT RETENTION

Embankment retention methods shall be provided to ensure that bridge approach embankments are stable, contained, and do not encroach on the stream channel.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following road(s), Purchaser shall install sediment control structures as listed below. (SF = Silt Fence, SP = Settling Ponds)

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
FS-2902	138+00	Add SP & Silt Fence L & R
FS-2903	48+00	Add SP & Silt Fence L & R
FS-2903	93+35 – 94+35	100' Silt Fence L & R
FS-2903	98+30	40' Berm L & R
FS-2903	10+85 – 101+35	50' Silt Fence L & R plus SP
FS-2903	112+40	Add berm & Settling ponds
FS-2903	154+70	Add SP at pipe inlet
FS-2903	160+00	50' SF L & R
FS-2903	165+30	Add SP & Silt Fence L & R
FS-2903	198+00 – 201+40	Berm L & R
FS-2903	223+00	Add SP & Silt Fence R
FS-2903	252+00	SP
FS-2903	260+00	SP
FS-2902.6	35+50	Add SP in ditch
FS-2902.6	42+40	Add SP and SF in ditch
FS-2902.6	50+80	Add SP and SF in ditch
Old FS-2903	4+50 – 5+50	100' SF L & R
Old FS-2903	9+00	100' SF L & R
Old FS-2903	10+00 – 12+50	Berm L
Old FS-2903	25+00 – 26+50	150' SF L & R
Old FS-2903	28+80	SP & SF in ditch
Old FS-2903	39+50	SP
Old FS-2903	43+50	100' SF L & R
Old FS-2903	43+00	SP
Old FS-2903	44+00	SP

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall furnish and evenly spread a 3-inch layer of straw to all exposed soils at stream culvert installations. Soils shall not be allowed to sit exposed during any rain event.

SUBSECTION REVEGETATION

8-15 REVEGETATION

Purchaser shall grass seed and hay mulch all exposed soils including, but not limited to, stream culverts, waste areas, sidecast pull back areas, stream crossing removals, bridge installations, and other areas directed by the Contract Administrator. Revegetation of exposed soils shall be accomplished by manual dispersal of grass seed unless otherwise detailed in this Road Plan. Other methods of revegetation must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

All seed shall be provided by the Forest Service, mulch, hay, matting, etc. will be provided by the Purchaser and shall be certified weed-free.

8-17 REVEGETATION TIMING

Purchaser shall perform revegetation during the first available opportunity. Soils shall not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator. Soils shall not be allowed to sit exposed during any rain event.

8-18 PROTECTION FOR SEED

Purchaser shall provide a protective cover over the revegetated area. The protective cover may consist of, but not be limited to, such items as dispersed hay mulch 3" thick or jute matting.

8-19 ASSURANCE FOR SEEDED AREA

The Purchaser shall be responsible to ensure a uniform and dense crop of grass. The Purchaser shall reapply the seed and/or mulch in areas that have been damaged through any cause, before approval from the Contract Administrator. The Purchaser shall restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and/or mulch at no additional cost to the Forest Service.

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

All grass seed shall be furnished by the Forest Service. Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 50 pounds per acre of exposed soil. Mulch will be provided by the purchaser, and must be Certified Weed Free.

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-3 REMOVAL OF CULVERT MATERIAL FROM FEDERAL LAND

Culvert material removed from roads becomes the property of the Purchaser and must be removed from Federal Land.

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

Post-haul maintenance shall be performed in accordance with the Forest Access Road Maintenance Specifications and as specified below.

<u>Road</u>	<u>Stations</u>	<u>Additional Requirements</u>
FS-2902, FS-2903, FS-2902.6	All	Clean culverts, clean ditches, grade road shape and compact as directed by the Contract Administrator
FS-2902	0+00 -222+50	Apply post haul rock as per Clause 6-72.
FS-2903	0+00–365+00	Apply post haul rock as per Clause 6-72.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

On all roads, Purchaser shall provide for drainage of the landing surface as approved in writing by the Contract Administrator.

9-11 LANDING EMBANKMENT

On all roads, landing embankments shall be sloped to original construction specifications.

SUBSECTION DECOMMISSIONING AND ABANDONMENT

9-20 ROAD DECOMMISSIONING

The following road(s) shall be decommissioned by the Purchaser before the termination of this contract.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
Old-2903	0+00 – 64+25	Heavy Decommissioning
Old-2903	64+25 – 80+00	Light Decommissioning
FS-2902.3	0+00 – 59+60	Light Decommissioning
FS-2902.31	0+00 – 19+00	Light Decommissioning
*Spur A	0+00 – 26+50	Heavy Decommissioning
Spur B	0+00 – 37+25	Light Decommissioning
Spur C	0+00 – 17+20	Light Decommissioning

34+25 Spur	0+00 – 34+25	Heavy Decommissioning
17+40 Spur	0+00 – 17+40	Heavy Decommissioning
*36+00 Spur	0+00 – 36+00	Heavy Decommissioning
*10+20 Spur	0+00 – 10+20	Heavy Decommissioning
*4+40 Spur	0+00 – 4+40	Heavy Decommissioning
2+50 Spur	0+00 – 2+50	Heavy Decommissioning
*10+21 Spur	0+00 – 10+21	Heavy Decommissioning
6+60 Spur	0+00 – 6+60	Heavy Decommissioning
3+90 Spur	0+00 – 3+90	Heavy Decommissioning
Total:	364.91 STAs	

*On these roads a two foot wide strip to be left intact for trail access on the cut bank side,
 Except at pipe and embankment removal sites.

9-22 LIGHT DECOMMISSIONING

Decommissioning shall consist of:

1. Remove culverts if specified. Resulting back slopes shall be 1:1 or shallower for cross drains and 1.5:1, or as specified in approved drawings, for all live stream culvert removals. Material removed shall be placed on the roadbed and compacted, with slopes of 2:1 or shallower, or end-hauled to designated waste areas. Culverts removed shall become the property of the Purchaser and removed from National Forest.
2. Construct non-drivable water bars as directed by the Contract Administrator. On grades in excess of 3%, non-drivable water bars shall be skewed 30 degrees from the perpendicular of the road centerline.
3. Restore all ditchouts to drain water.
4. Repair or construct ditchlines.
5. Remove any berms, except as directed.
6. Restoration of natural stream channels across road prism, as directed by the Contract Administrator.
7. Removing all fill material as approved by the Contract Administrator.
8. All material from fill removals, culvert removals, and bridge removals shall be placed on roadbed and compacted.
9. Purchaser shall apply grass seed to all areas of exposed soil, including but not limited to: water bars, waste piles, and culvert removal sites. Grass seed shall be applied at a rate of 60 pounds per acre.
10. Block road to vehicular traffic using logs, slash, and stumps, as directed by the Contract Administrator.

9-24 HEAVY DECOMMISSIONING

- Fill in ditches.
- Rip the surface to a minimum depth of 18 inches.

- Remove embankments and sidecast fill and place material into cut-banks. Shape banks to conform to the natural ground.
- Remove road shoulder berms except as directed.
- Construct non-drivable waterbars according to the attached Non-drivable Waterbar Detail at a maximum spacing which will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 300 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars shall be outsloped to provide positive drainage. Outlets shall be on stable locations.
- Permanent road closure berms will be included at road entrance along with other means such as logs, slash, and stumps, to block road to vehicular traffic as directed by the Contract Administrator.
- 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 abandonment, all exposed soils within 100 feet of any live stream with a 6-inch deep layer of straw.
- Scatter woody debris onto abandoned road surfaces.

SECTION 10 MATERIALS

SUBSECTION GEOTEXTILES

10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

Geotextiles shall meet the following minimum requirements for strength and property qualities, and shall be designed by the manufacturer to be used for filtration. Woven slit-film geotextiles will not be allowed. Material shall be free of defects, cuts, and tears.

	<u>ASTM Test</u>	<u>Requirements</u>
Type	--	Unsupported between posts
Apparent opening size	D 4751	No. 30 max., No. 100 min.
Water permittivity	D 4491	0.02 sec ⁻¹
Grab tensile strength	D 4632	180 lb in machine direction, 100lb in cross-machine direction
Grab tensile elongation	D 4632	30% max. at 180 lb or more
Ultraviolet stability	D 4355	70% retained after 500 hours of exposure

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts shall meet AASHTO M-294 specifications. Culverts shall be Type S – double walled with a corrugated exterior and smooth interior.

10-18 CORRUGATED STEEL STRUCTURAL PLATE

Structural plate culverts shall be galvanized steel meeting AASHTO M-167 (ASTM A-761) specifications.

10-19 CORRUGATED ALUMINUM STRUCTURAL PLATE

Structural plate culverts shall be aluminum alloy meeting AASHTO M-219 (ASTM A-746) specifications.

10-20 FLUME AND DOWNSPOUT

Downspouts and flumes shall meet the AASHTO specification designated for the culvert. Plastic downspouts and flumes shall be Type S – double walled with a corrugated exterior and smooth interior.

10-21 METAL BAND

Metal coupling and end bands shall meet the AASHTO specification designated for the culvert and shall have matching corrugations. On culverts 24 inches and smaller, bands shall have a minimum width of 12 inches. On culverts over 24 inches, bands shall have a minimum width of 24 inches.

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

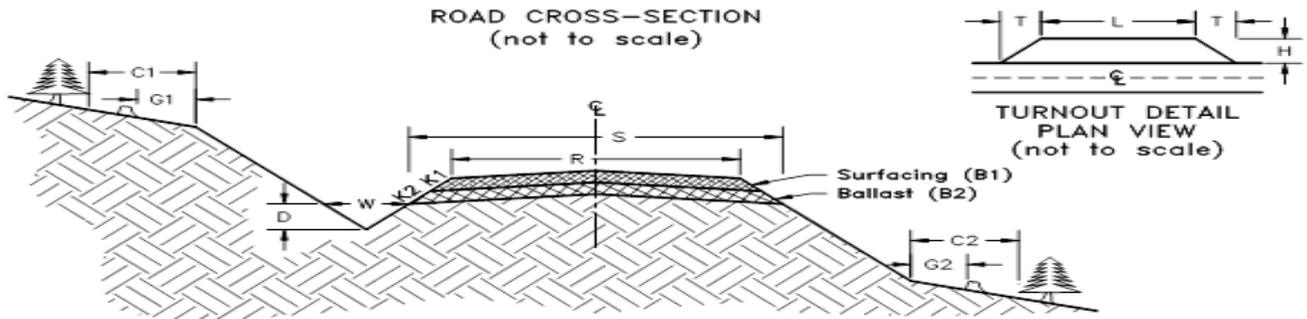
Rubber gaskets must be continuous closed cell, synthetic expanded rubber gaskets conforming to the requirements of ASTM D 1056. Rubber gaskets must be used with all corrugated metal pipe coupling bands.

10-24 GAGE AND CORRUGATION

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

<u>Diameter</u>	<u>Gage</u>	<u>Corrugation</u>
18"	16 (0.064")	2 ² / ₃ " X 1/2"
24" to 42"	14 (0.079")	2 ² / ₃ " X 1/2"
48" to 54"	12	3" X 1"
60" +	10	5" X 1"

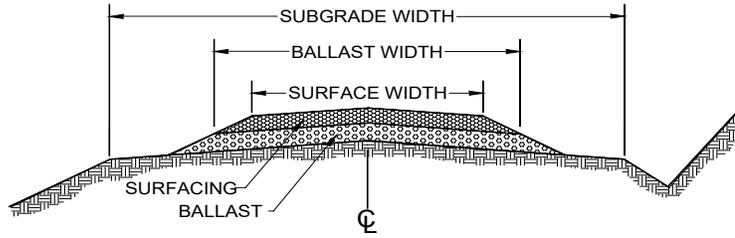
TYPICAL SECTION SHEET



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	CROWN AT CL (in)	DITCH WIDTH (W)	DITCH DEPTH (D)	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (C1)	ROAD FILL CLEARING (C2)
FS-2902	0+00	222+50	P		14	3"	3'	1'				
FS-2903	0+00	365+00	P		14	3"	3'	1'				
FS-2902.3	0+00	59+60	P		12	3"	3'	1'				
FS-2902.31	0+00	19+00	P		12	3"	3'	1'				
FS-2902.6	0+00	65+40	P		12	3"	3'	1'				
Old-2903	0+00	80+00	P		14	3"	3'	1'				
34+25 Spur	0+00	34+25	C	17'	12'	3"	3'	1'	5'	5'	10'	5'
36+00 Spur	0+00	36+00	R	17'	12'	3"	3'	1'	5'	5'	10'	5'
10+20 Spur	0+00	10+20	R	17'	12'	3"	3'	1'	5'	5'	10'	5'
17+40 Spur	0+00	17+40	C	17'	12'	3"	3'	1'	5'	5'	10'	5'
2+50 Spur	0+00	2+50	R	17'	12'	3"	3'	1'	5'	5'	10'	5'
4+40 Spur	0+00	4+40	R	17'	12'	3"	3'	1'	5'	5'	10'	5'
Spur A	0+00	26+50	P		12	3"	3'	1'				
Spur B	0+00	37+25	P		12	3"	3'	1'				
Spur C	0+00	17+20	P		12	3"	3'	1'				
10+21 Spur	0+00	10+21	R	17'	12'	3"	3'	1'	5'	5'	10'	5'
6+60 Spur	0+00	6+60	C	17'	12'	3"	3'	1'	5'	5'	10'	5'
3+90 Spur	0+00	3+90	C	14	12	3"	3'	1'	5'	5'	10'	5'

P= Prehaul Maintenance
R = Reconstruction
C= Temporary Construction

**ROCK LIST
PAGE 1 OF 5**



SECTION VIEW

1. Rock quantities, subtotals and totals are “truck measure” estimates. Rock shall be applied to at least the depths listed.
2. All depths are compacted depths.
3. Rock slopes shall be 1½ (H) : 1 (V).
4. All rock sources are subject to approval by the Contract Administrator.
5. Pitrun is defined as pitrun or ballast per Line 6. Crushed is defined as any crushed rock from ¼” minus to 4” minus per Line 6. Oversize is defined as oversize, quarry spalls, light loose rip rap, or heavy loose rip rap per Line 6.
6. Rock sources= 1: Mary Clark Pit Run, 2: Mary Clark 1 ¼” minus, 3: Mary Clark Oversize

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
FS-2902												
Misc	0+00	222+50							2	100		
Culvert	217+50								2	40		
Post Haul	0+00	222+50							2	50		
FS-2903												
Misc	0+00	365+00		1				200	2	200		
Culvert	23+75			1				20				
Culvert	28+50			1				20				
Culvert	53+50			1				20				

ROCK LIST
PAGE 2 OF 5

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
FS-2903												
Culvert	98+30			1				20				
Berm	98+10	98+50							2	10		
Culvert	105+00			1				20				
Berm	112+00	113+00							2	10		
Culvert	143+10			1				20				
Culvert	151+10			1				20				
Armor	156+90										3	3
Culvert	161+90			1				20				
Culvert	165+30			1				20			3	5
Culvert	171+10			1				20			3	5
Culvert	173+10	48"x100		1				250			3	5
Culvert	175+50			1				20			3	3
Culvert	183+90			1				20				
Culvert	189+75			1				20			3	3
Culvert	192+50			1				20				
Berm	198+00	201+40							2	20		
Culvert	198+60			1				20				
Armor	216+40										3	5
Culvert	221+00			1				20				
Armor	216+40										3	5
Culvert	223+00			1				20			3	3
Culvert	233+50			1				30				
Culvert	239+75			1				20			3	5
Culvert	280+00										3	3
Culvert	287+00			1				20			3	2
Culvert	292+40			1				20				
Culvert	296+00			1				20				

ROCK LIST
PAGE 3 OF 5

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
FS-2903												
Culvert	304+00										3	3
Culvert	306+00			1				60				
Culvert	312+25			1				20			3	3
Culvert	320+90			1				20				
Spot Patch	341+00			1				10				
Post Haul	0+00	365+00						100	2	200		
FS-2902.3												
Misc				1				300				
FS-2902.31												
Misc				1				150				
FS-2902.6												
Misc				1				200				
Culvert	50+80			1				20				
Culvert	55+00			1				20				
T/A	65+40			1				30				
Old-2903												
Lift	0+00	80+00		1	12	12	70	5600				
Un-block rd	0+50			1				20				
Culvert	10+00			1				20				
Berm	10+00	12+50							2	20		
Culvert	12+50			1				20				
Berm	25+00	26+50							2	30		
Culvert	29+75			1				20				
Slide Repair	31+00			1				50				
Culvert	31+75			1				20				
Culvert	49+00			1				20			3	3
Culvert	69+60			1				20			3	3

ROCK LIST
PAGE 4 OF 5

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
34+25 Spur												
Lift	0+00	34+25	17	1	12	6	35	1200				
36+00 Spur												
Lift	0+00	36+00	17	1	12	6	35	1260				
Culvert	0+10			1				20				
Culvert	1+85			1				20				
Bridge approach	4+75			1				200				
Culvert	7+50			1				40			3	5
Culvert	9+50			1				20				
Culvert	13+00			1				20				
Culvert	21+75			1				20				
Culvert	25+25			1				20				
Culvert	26+50			1				40				
10+20 Spur												
Misc								100				
17+40 Spur												
Lift	0+00	17+40	17	1	12	6	35	610				
Culvert	6+25							20				
17+40 Spur												
Culvert	10+00			1				20				
2+50 Spur												
Misc				1				50				
4+40 Spur												
Lift	0+00	4+40	17	1	12	12	70	310				
Spur A												
Lift	0+00	26+50		1	12	6	35	930				
Culvert	7+50			1				20				

ROCK LIST
PAGE 5 OF 5

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Pitrun SOURCE	Pitrun WIDTH (ft)	Pitrun DEPTH (in)	Pitrun Quantity(yd ³ /sta)	Pitrun SUBTOTAL(yd ³)	Crushed SOURCE	Crushed Subtotal(yd ³)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd ³)
Culvert	17+50			1				20				
Misc				1				100				
Spur B												
Lift	0+00	37+25		1	12	12	70	2610				
Fix Block	0+95			1				20				
Culvert	2+75			1				20			3	3
Culvert	5+00			1				20			3	3
Culvert	12+00			1				20			3	3
Culvert	20+75			1				20			3	3
Turnaround	24+25			1				40				
Spur C												
Lift	0+00	17+20		1	12	12	70	1200				
Culvert	4+20			1				20			3	3
Culvert	9+00			1				20			3	3
Turnaround				1				40				
10+21 Spur												
Lift	0+00	10+21		1	12	12	70	710				
6+60 Spur												
Lift	0+00	6+60		1	12	12	70	460				
Landing	6+60			1				50				
3+90 Spur	0+00	3+90	16	1	12	6	35	137				
							Total Pit Run (cy)			18047		
							Total Crushed Surfacing (cy)			680		
							Total Rip Rap (cy)			82		

CULVERT LIST
PAGE 1 OF 5

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
* All rip rap shall be oversized unless specified in the ROCK LIST, or in the field. All backfill shall be native material (NT) unless specified otherwise. CR = 1 1/4" - crushed rock, PR = Pit Run								
FS-2903	23+75	18	30				PR	Installation
	28+50	18	30				PR	Installation
	32+60							Maintain Pipe Clean inlet/outlet as needed.
	37+00							Maintain Pipe Clean inlet/outlet as needed.
	41+00							Maintain Pipe Clean inlet/outlet as needed.
	47+25							Maintain Pipe Clean inlet/outlet as needed.
	49+70							Maintain Pipe Clean inlet/outlet as needed.
	53+50	18	30				PR	Installation
	57+60							Maintain Pipe Clean inlet/outlet as needed.
	63+40							Maintain Pipe Clean inlet/outlet as needed.
	65+60							Maintain Pipe Clean inlet/outlet as needed.
	98+30	18	30				PR	Installation + 40' Berm
	101+10							Maintain Pipe Clean inlet/outlet as needed.
	105+00	18	30				PR	Installation
	139+75	18	30				PR	Pipe Replacement
	143+10	24	30				PR	Pipe Replacement
	151+10	18	30	20			PR	Installation with 20' flume
	152+30							Maintain Pipe Clean inlet/outlet as needed.
	154+70							Maintain Pipe Clean inlet/outlet as needed.
	156+90						3	Maintain Pipe Clean inlet/outlet as needed.
	161+90	18	30				PR	Installation
165+30	24	40				PR	Pipe Replacement	
171+10	24	40				PR	Pipe Replacement	
173+10	48	100				PR	Pipe Replacement	
175+50	24	30				PR	Installation	

CULVERT LIST
PAGE 2 OF 5

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
FS-2903	183+90	18	30				PR	Pipe Replacement
	189+75	24	30				PR	Pipe Replacement
	192+50	18	30				PR	Pipe Replacement
	194+75							Maintain Pipe Clean inlet/outlet as needed.
	198+60	24	30				PR	Pipe Replacement
	200+00							Maintain Pipe Clean inlet/outlet as needed.
	203+30							Maintain Pipe Clean inlet/outlet as needed.
	216+40					3		Maintain Pipe Clean inlet/outlet as needed.
	221+00	18	30				PR	Installation
	223+00	24	40			3	PR	Installation
	233+50	30	60	80		3	PR	Pipe Replacement
	239+75	18	30			3	PR	Installation
	280+00							Maintain Pipe Clean inlet/outlet as needed.
	287+00	18	30				PR	Installation
	289+00							Maintain Pipe Clean inlet/outlet as needed.
	292+40	18	30				PR	Installation
	296+00	18	30				PR	Installation
	300+50							Maintain Pipe Clean inlet/outlet as needed.
	303+00							Maintain Pipe Clean inlet/outlet as needed.
	304+00							Maintain Pipe Clean inlet/outlet as needed.
	306+00	24	80				PR	Pipe Replacement
	312+25	18	30				PR	Pipe Replacement
	318+00							Maintain Pipe Clean inlet/outlet as needed.
320+90	18	30				PR	Installation	
324+75							Maintain Pipe Clean inlet/outlet as needed.	

CULVERT LIST
PAGE 3 OF 5

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
FS-2902	220+00							Maintain Pipe Clean inlet/outlet as needed.
	217+50	18	30				PR	Pipe Replacement/fix hole
	206+00							Maintain Pipe Clean inlet/outlet as needed.
FS-2902.6	2+75							Maintain Pipe Clean inlet/outlet as needed.
	5+20							Maintain Pipe Clean inlet/outlet as needed.
	7+20							Maintain Pipe Clean inlet/outlet as needed.
	11+60							Maintain Pipe Clean inlet/outlet as needed.
	13+40							Maintain Pipe Clean inlet/outlet as needed.
	24+20							Maintain Pipe Clean inlet/outlet as needed.
	27+40							Maintain Pipe Clean inlet/outlet as needed.
	33+20							Maintain Pipe Clean inlet/outlet as needed.
	35+80							Maintain Pipe Clean inlet/outlet as needed.
	37+20							Maintain Pipe Clean inlet/outlet as needed.
	39+50							Maintain Pipe Clean inlet/outlet as needed.
	42+40							Maintain Pipe Clean inlet/outlet as needed.
	45+50							Maintain Pipe Clean inlet/outlet as needed.
	50+80							Fix or Replace Flume
55+00	18	40					PR Spur Jct, new install	
57+00								Maintain Pipe Clean inlet/outlet as needed.
Old-2903	1+50							Maintain Pipe Clean inlet/outlet as needed.
	5+00							Maintain Pipe Clean inlet/outlet as needed.
	10+00	18	30				PR	Installation

CULVERT LIST
PAGE 4 OF 5

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP -- OUTLET (cy)	BACKFILL MATERIAL	NOTES
Old-2903	12+50	18	30				PR	Installation
	15+20							Maintain Pipe Clean inlet/outlet as needed.
	22+25							Maintain Pipe Clean inlet/outlet as needed.
Old-2903	29+75	18	40				PR	Installation
Old-2903	31+75	18	40				PR	Installation
Old-2903	39+75							Maintain Pipe Clean inlet/outlet as needed.
Old-2903	43+50							Maintain Pipe Clean inlet/outlet as needed.
Old-2903	49+00	18	40				PR	Installation
Old-2903	57+00							Maintain Pipe Clean inlet/outlet as needed.
Old-2903	67+75							Maintain Pipe Clean inlet/outlet as needed.
Old-2903	69+60	18	30				PR	Installation
Old-2903	74+25							Maintain Pipe Clean inlet/outlet as needed.
Old-2903	76+25							Maintain Pipe Clean inlet/outlet as needed.
34+25 Spur	XXX	18	30					Contingency Pipe, use where needed
36+00 Spur	0+15	18	30				PR	Installation
36+00 Spur	1+86	18	26				PR	Installation
36+00 Spur	7+50	24	40			10	PR	Installation
36+00 Spur	9+50	18	30				PR	Installation
36+00 Spur	13+00	18	30				PR	Installation
36+00 Spur	21+75	18	30				PR	Installation
36+00 Spur	25+25	18	30				PR	Installation
36+00 Spur	26+50	24	30			3	PR	Installation
17+40 Spur	6+25	18	30				PR	Installation

CULVERT LIST
PAGE 5 OF 5

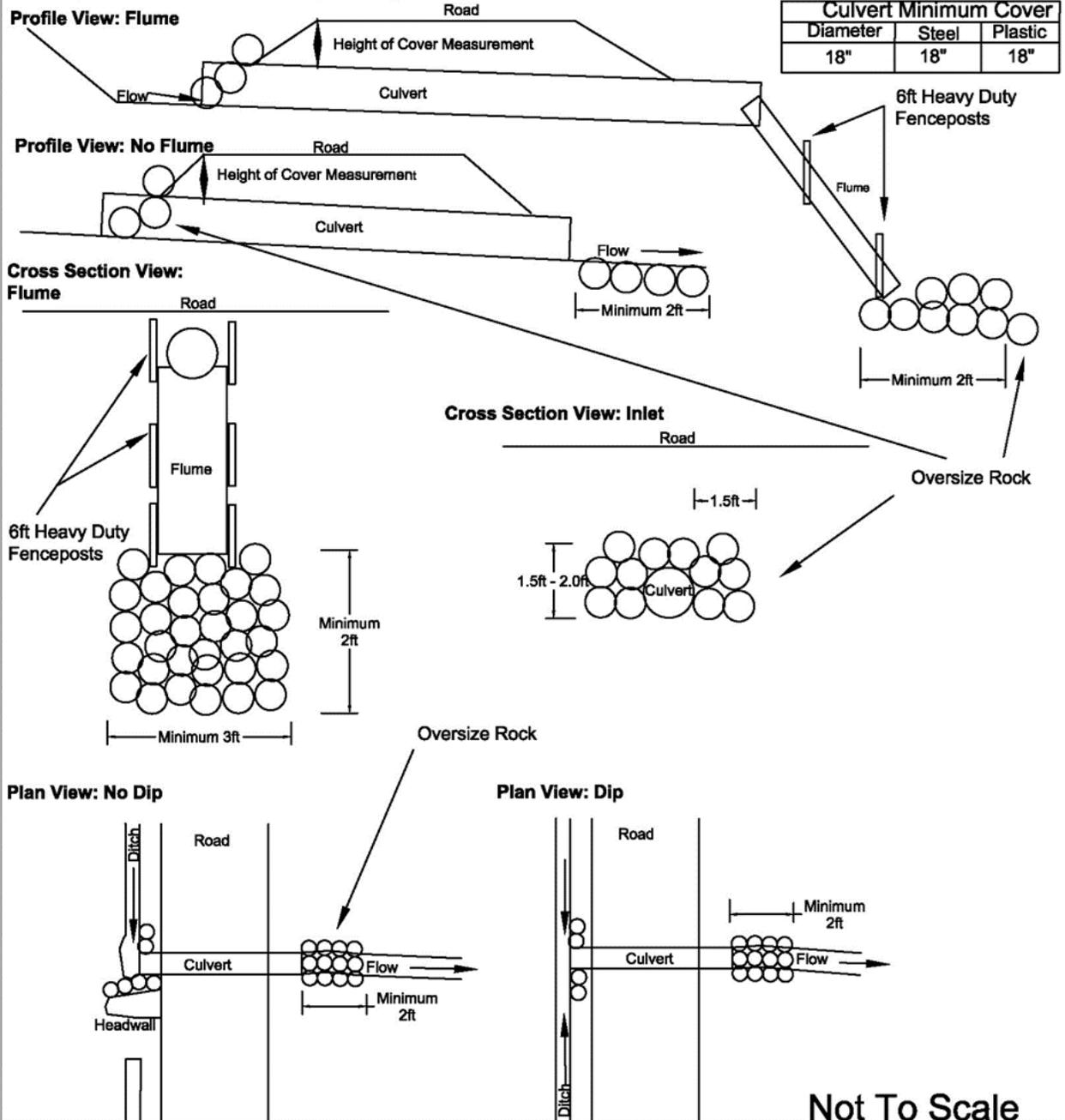
ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)	RIP RAP - INLET (cy)	RIP RAP - OUTLET (cy)	BACKFILL MATERIAL	NOTES
10+21 Spur	4+50	18	30					Installation
Spur A	7+50	18	30				PR	Installation
Spur A	17+50	18	30				PR	Installation
Spur B	2+75	24	30				PR	Installation
Spur B	5+00	18	30				PR	Installation
Spur B	12+00	18	30				PR	Installation
Spur B	20+75	18	30				PR	Installation
Spur B	27+50							Maintain Pipe Clean inlet/outlet as needed.
Spur C	4+20	18	30				PR	Installation
Spur C	9+00	18	30				PR	Installation
Total 18" Pipe (ft)		1086						
Total 24" Pipe (ft)		420						
Total 30" Pipe (ft)		60						
Total 48" Pipe (ft)		100						

COMPACTION LIST

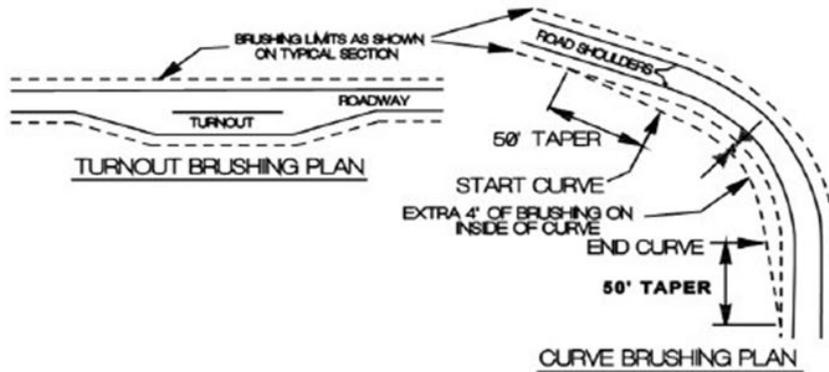
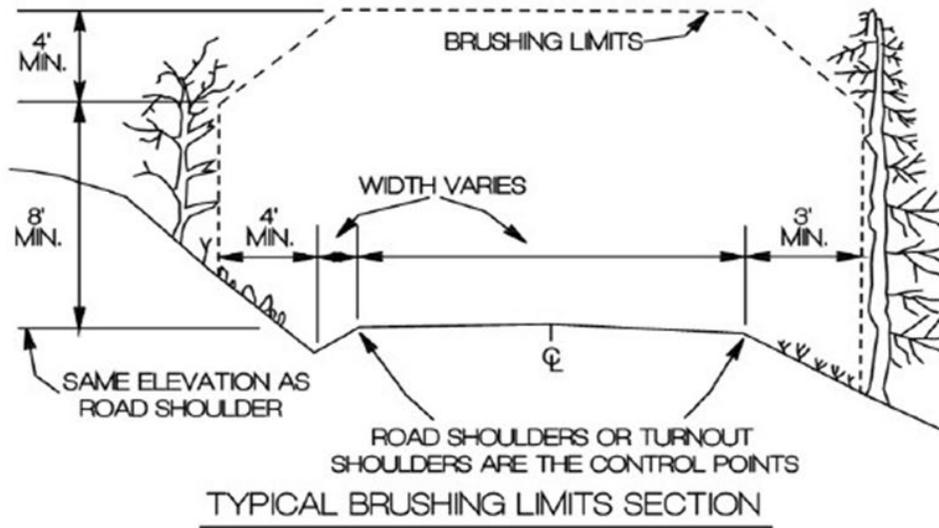
Road	Stations	Type	Max Depth Per Lift (inches)	Equipment Type	Minimum Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
Waste Areas	All	Waste Areas	24	Dozer/ Excavator	6000	2	3
Construction	All	Subgrade	6	Vibratory Smooth Drum	6000	2	3
Reconstruction	All	Fill					
Pre-Haul Maintenance	All	Pre-haul Surface					
Reconstruction, Pre-Haul Maintenance, Post-Haul Maintenance	All	Rock					
Reconstruction	Keyed Embankment	Embankment					
Post-Haul Maintenance	All	Post-haul Surfaces					
Pre-Haul Maintenance, Reconstruction	All	Culvert Backfills		Jumping Jack	N/A	3	N/A

Typical Cross Drain Culvert Installation Detail Sheet

- Culvert lay shall not exceed 10%.
- Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
- Oversize shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.
- Oversize shall be placed at headwalls, along the fill at the inlet, and at the end off flumes in accordance with this Detail. On culverts with no flume oversize shall be placed at the outlet as an energy dissipater as specified in this Detail. All oversize distance to be determined by the Contract Administrator.
- Backfill compaction for installations on existing roads shall be achieved using a jumping jack, or plate compactor on lifts not to exceed 8in. 3 complete passes per lift is required for compaction. Backfill shall be placed and compacted evenly on both sides of the culvert. Care shall be taken to ensure adequate compaction of backfill material under the haunches of the pipe. Excavation trench width shall be at least culvert diameter plus at least the width of the compactor footprint used..



BRUSHING DETAIL



- 1) ALL VEGETATION WITHIN THE BRUSHING LIMITS SHALL BE CUT TO WITHIN 8' OF THE GROUND, UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR.
- 2) ALL BRUSH, TREES, LIMBS, ETC. SHALL BE REMOVED FROM THE ROAD SURFACE.
- 3) ALL BRUSH, TREES, LIMBS, ETC. THAT MAY RESTRICT THE FLOW OF WATER SHALL BE REMOVED FROM THE DITCH LINE.
- 4) ALL DEBRIS THAT MAY ROLL OR MIGRATE INTO THE DITCH LINE SHALL BE REMOVED.

FISH STREAM WORK PROVISIONS

1. **TIMING LIMITATIONS:** The fish culvert project may begin July 1 and shall be completed by September 30 UNLESS Otherwise noted in Clause 1-11.
2. Work shall conform to plans and specifications in the road plan.
3. Prior to the commencement of in-stream work, the Purchaser shall isolate the work area in a manner that fish cannot enter the work area, capture and safely move fish and other fish life from the work area. The Purchaser shall have fish capture and transportation equipment ready and on the job site. Captured fish shall be immediately and safely transferred to free-flowing water downstream of the work area.

TEMPORARY STREAM FLOW BYPASS

4. All in-stream work shall be conducted in the dry or in isolation from the stream flow by the installation of a bypass flume/pipe or by pumping the flow around the work area, back into the stream below the work area. Waste water pumped from within the work area shall terminate on the forest floor, sufficient distance from the stream to filter sediment prior to entering the stream.
5. The temporary bypass to divert flow around the work area shall be in place prior to initiation of other work in the wetted perimeter.
6. A sandbag revetment or similar device shall be installed at the bypass inlet to divert the entire flow through the bypass.
7. The bypass shall be of sufficient size to pass all flows and debris for the duration of the project.
8. If a pump is used for diverting water from the stream where fish are present, as per RCW 77.57.010 and 77.57.070, the pump intake shall be equipped with a fish guard to prevent passage of fish into the diversion pump. The pump intake shall be screened with 1/8 inch mesh to prevent fish from entering the pump. Velocity through the screened intake shall be less than 0.4 feet per second. Screens shall be maintained to prevent injury or entrapment of juvenile fish.

WATER QUALITY

9. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the stream.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

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

Surface

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

Drainage

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

Preventative Maintenance

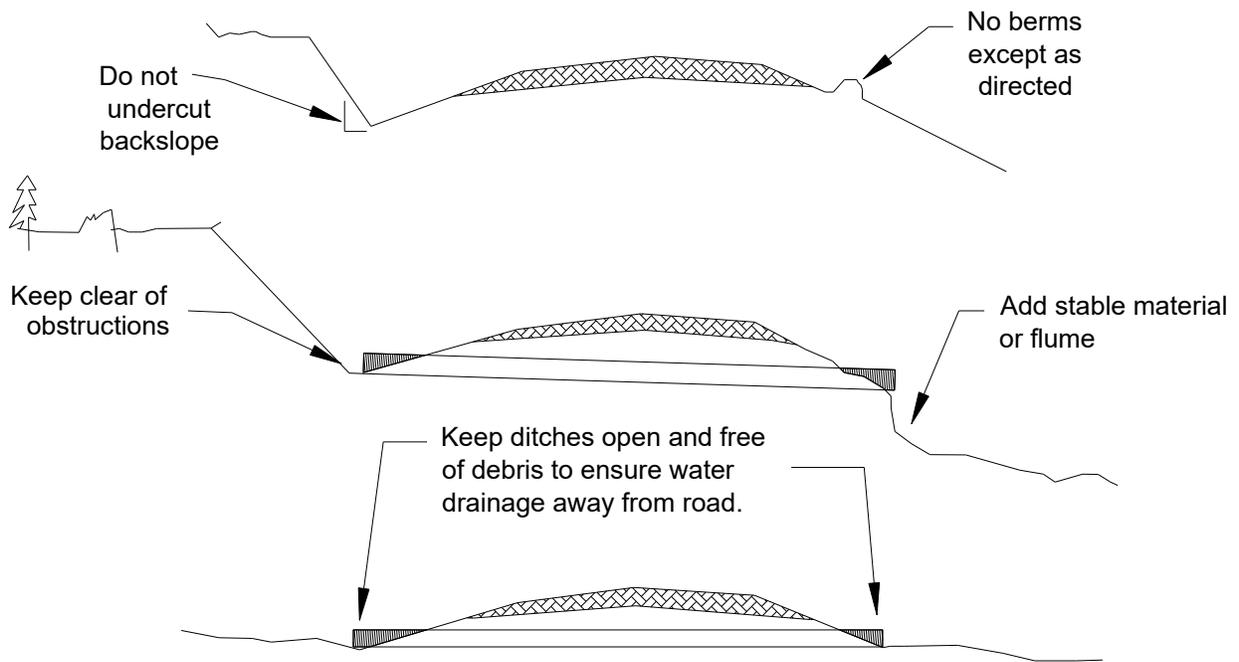
Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

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

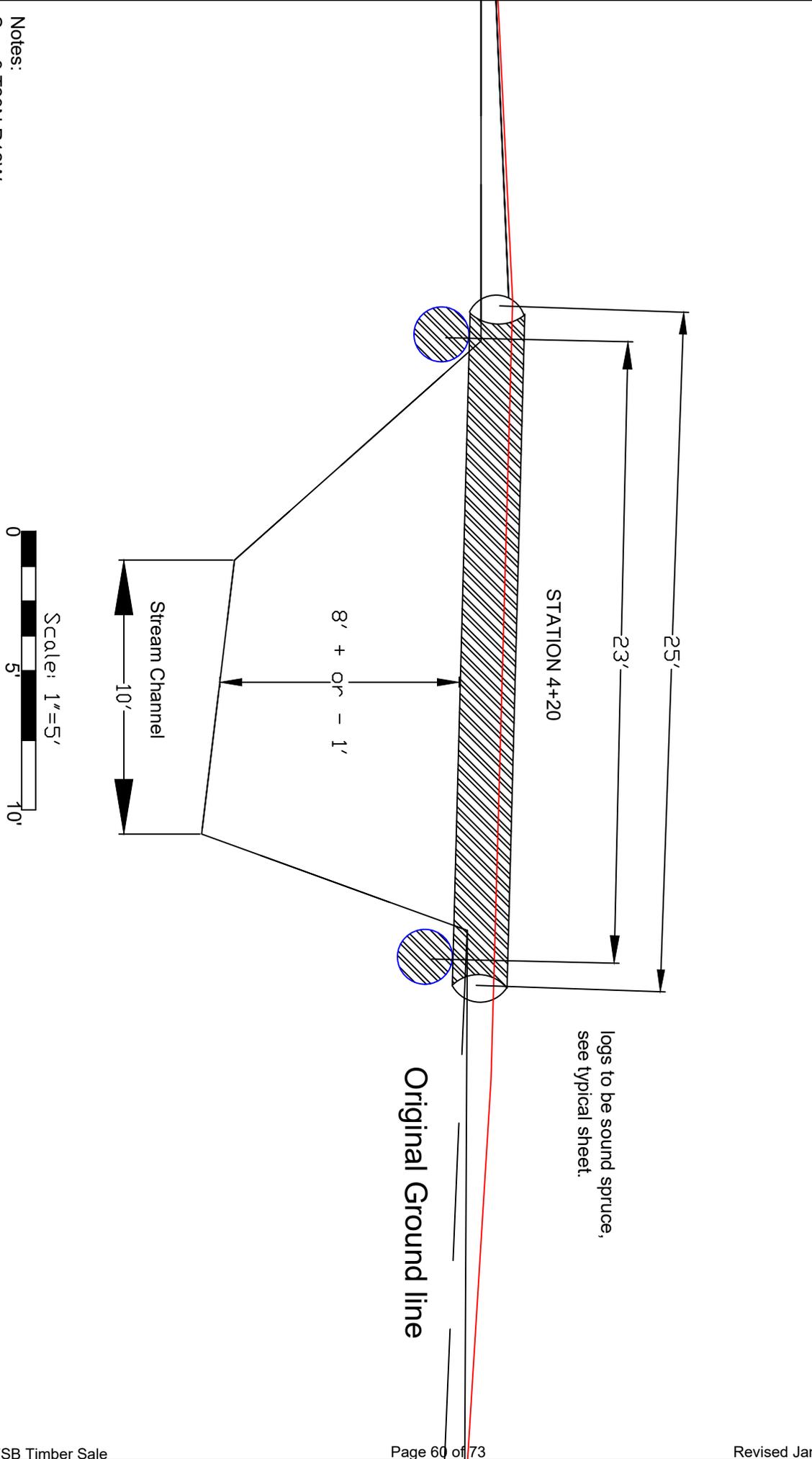
Debris

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



LOG STRINGER BRIDGE INSTALLATION

36+00 SPUR



Notes:
 Sec. 9 T29N R12W
 N48 02' 6.6" W124 15' 32.4"
 Average BFW of 10'
 To be constructed between
 July 1 and Sept. 30th.
 Average Mid-Span Diameter 22"

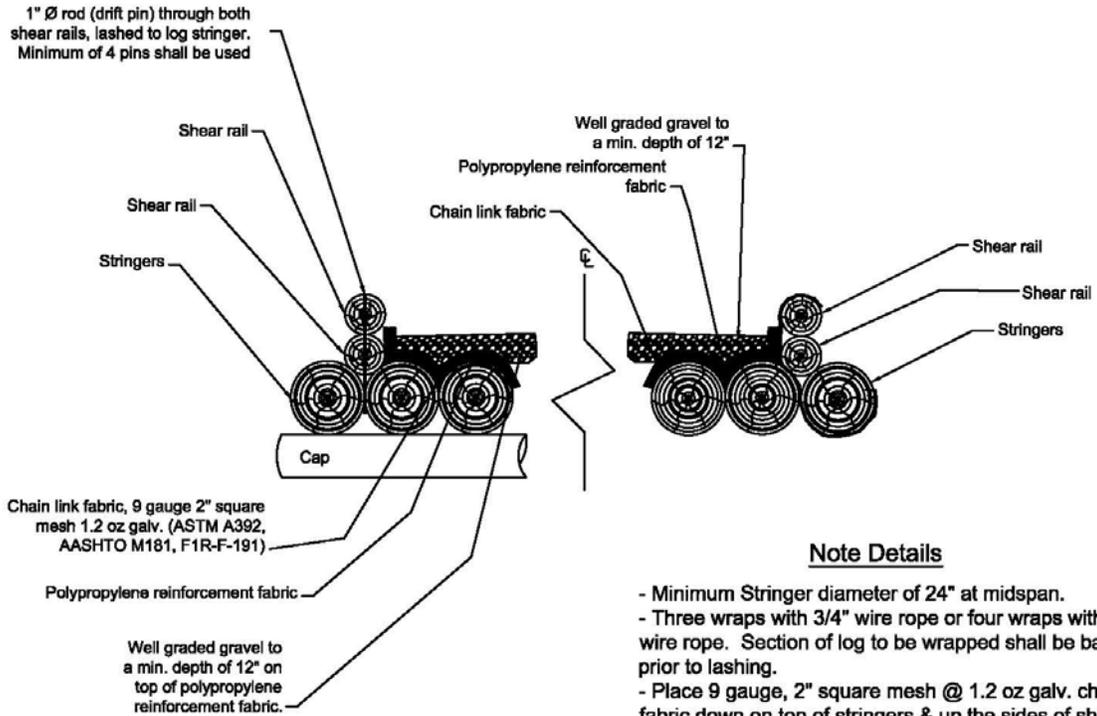


logs to be sound spruce,
 see typical sheet.

Original Ground line

Designed By: Bill Mehl
Drawn By: Bill Mehl
Date: 7/2019
Sheet 1 of 2

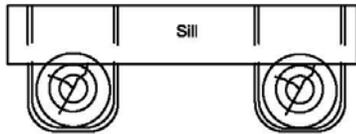
Bridge Surfacing & Shear Rail Details



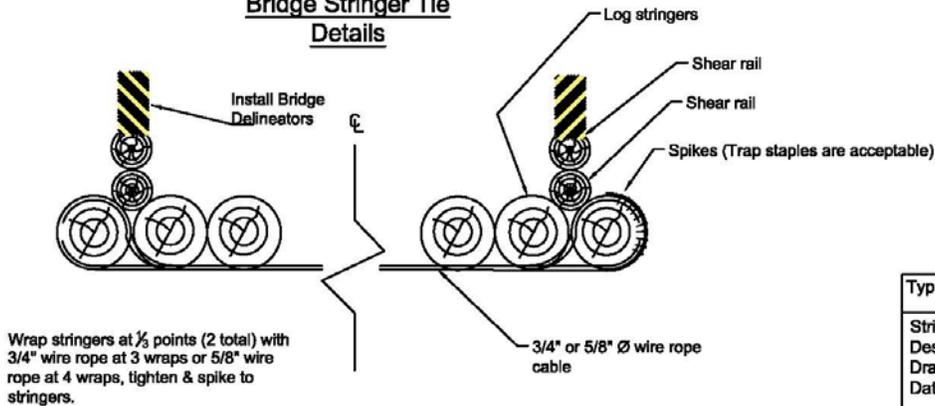
Note Details

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

Lashing Detail



Bridge Stringer Tie Details



Typical Stringer Bridge

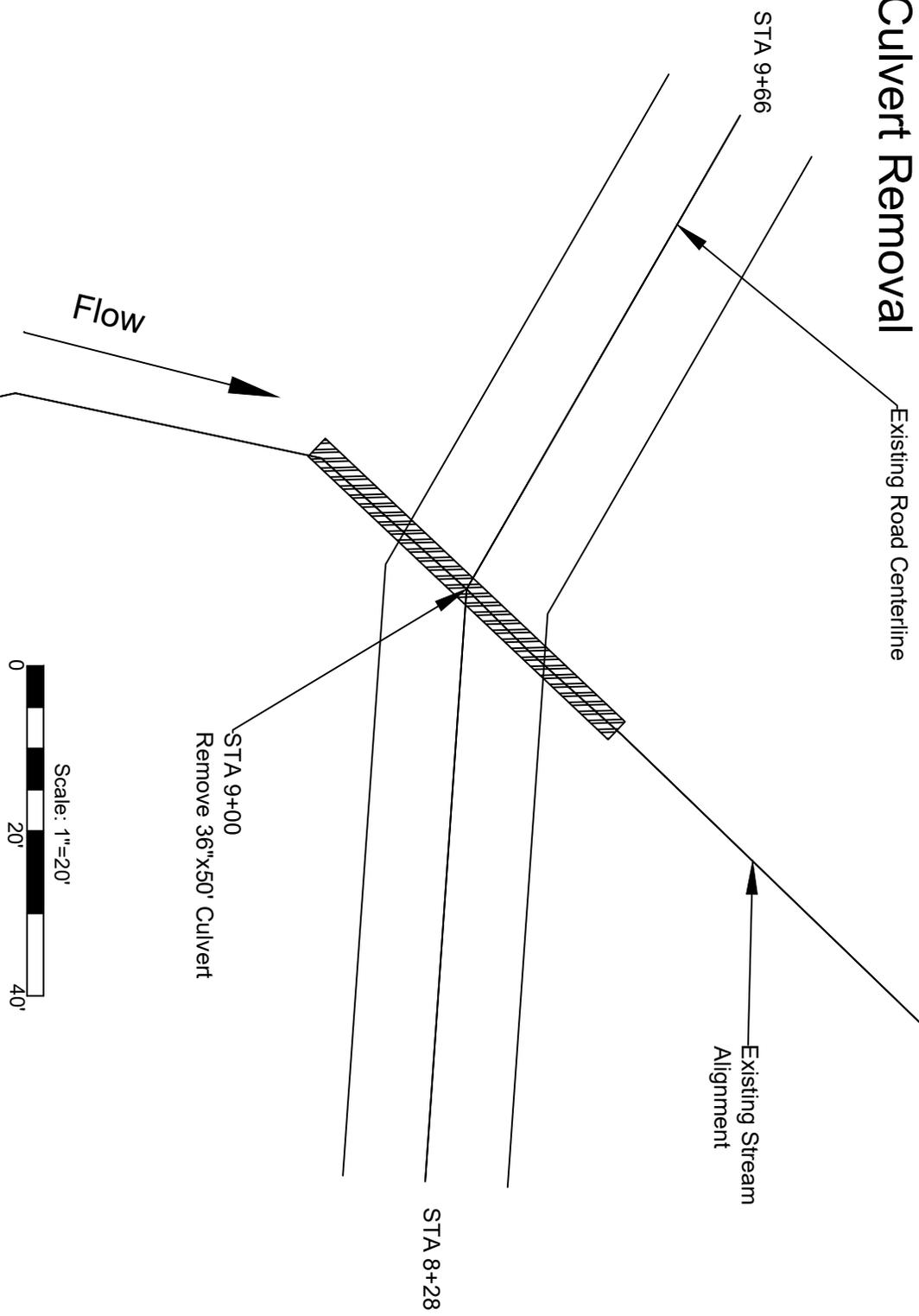
Stringer and Rail Details
Designed By: Jed Nowak
Drawn By: Jed Nowak
Date: 10/30/2018

Site Plan View

FSB Crossing REMOVAL

Old 2903 STA 9+00

Post-Haul Culvert Removal



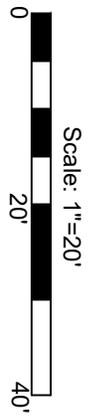
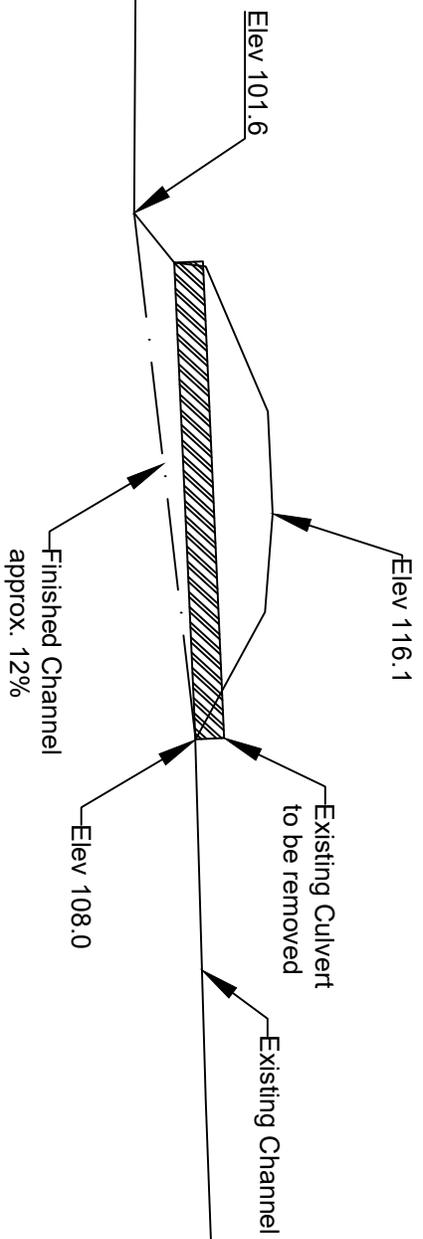
Notes:
Sec. 17 T29N R12W
N 48 0' 51.9" , W 124 16' 30.7"
Average BFW of 8'
WA DNR
To be removed between
July 1 and Sept. 30.
See Fish Stream Work Provisions.

Channel Profile View

FSB Crossing REMOVAL

Old 2903 STA 9+00

Post-Haul Culvert Removal



Notes:
Sec. 17 T29N R12W
N 48 0' 51.2", W 124 16' 30.7"
Average BFW of 8'
WA DNR
To be removed between
July 1 and Sept. 30.
See Fish Stream Work Provisions.

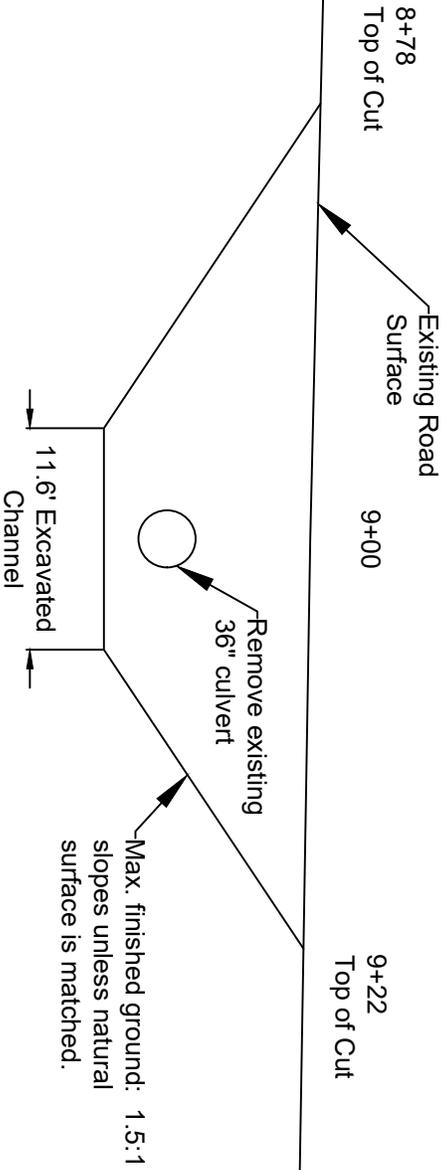
J. Nowak
Drawn 7/22/2019
Revised 7/22/2019

Road Profile View

FSB Crossing REMOVAL

Old 2903 STA 9+00

Post-Haul Culvert Removal



Notes:

Sec. 17 T29N R12W

N 48 0' 51.2", W 124 16' 30.7"

Average BFW of 8'

WA DNR

To be removed between

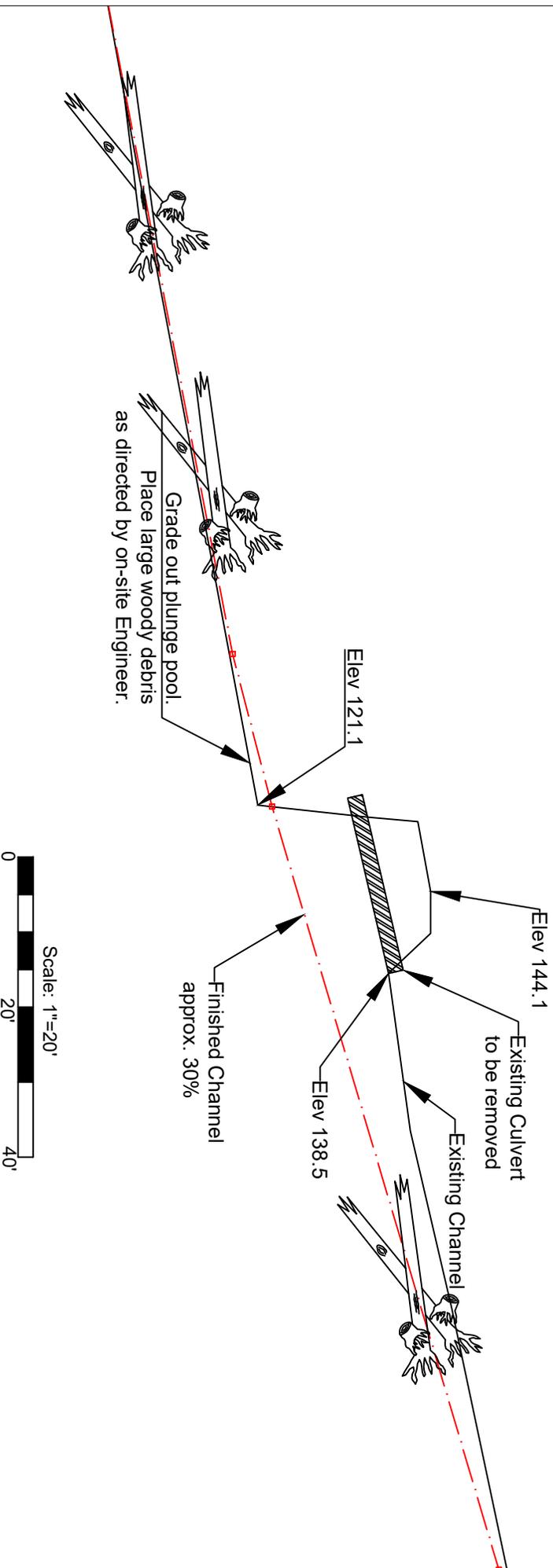
July 1 and Sept. 30.

See Fish Stream Work Provisions.

Channel Profile View

FSB Crossing REMOVAL

10+20 SPUR U8 ROW STA 10+20 Post-Haul Culvert Removal



Notes:

Sec. 9 T29N R12W

N 48 1' 59.3", W 124 15' 57.4"

Average BFW of 7'

WA DNR

To be removed between

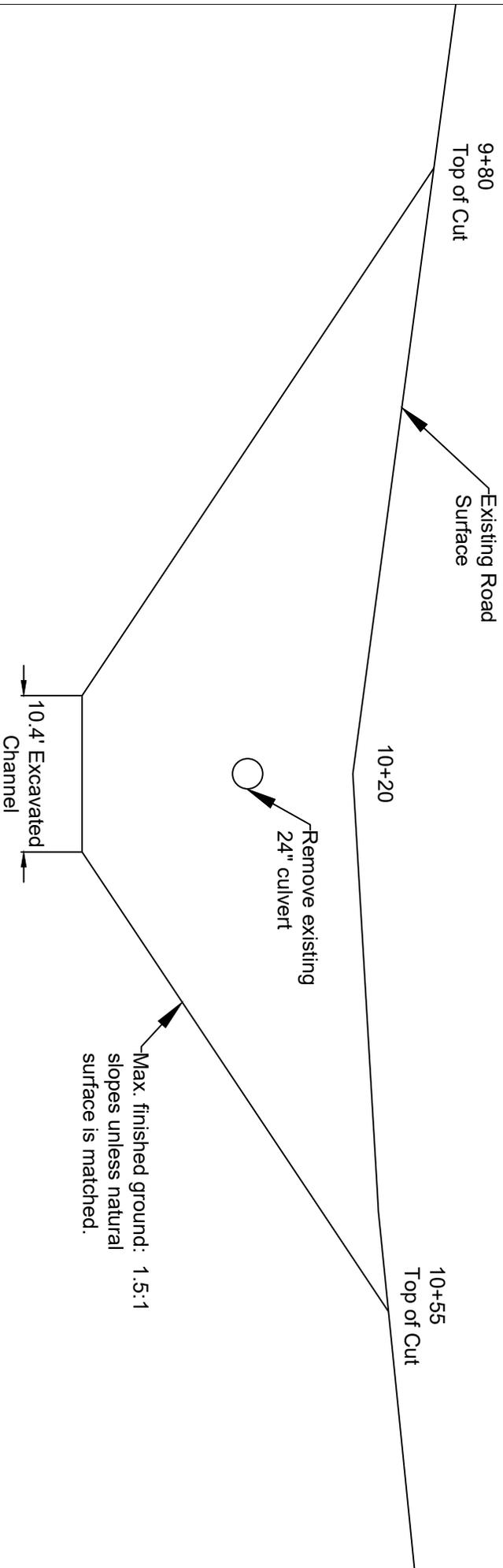
July 1 and Sept. 30.

See Fish Stream Work Provisions.

Road Profile View

FSB Crossing REMOVAL

10+20 SPUR U8 ROW STA 10+20 Post-Haul Culvert Removal



Notes:

Sec. 9 T29N R12W

N 48 1' 59.3", W 124 15' 57.4"

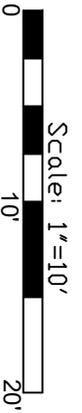
Average BFW of 7'

WA DNR

To be removed between

July 1 and Sept. 30.

See Fish Stream Work Provisions.



Site Plan View

FSB Crossing REMOVAL

10+20 SPUR U8 ROW STA 10+20

Post-Haul Culvert Removal

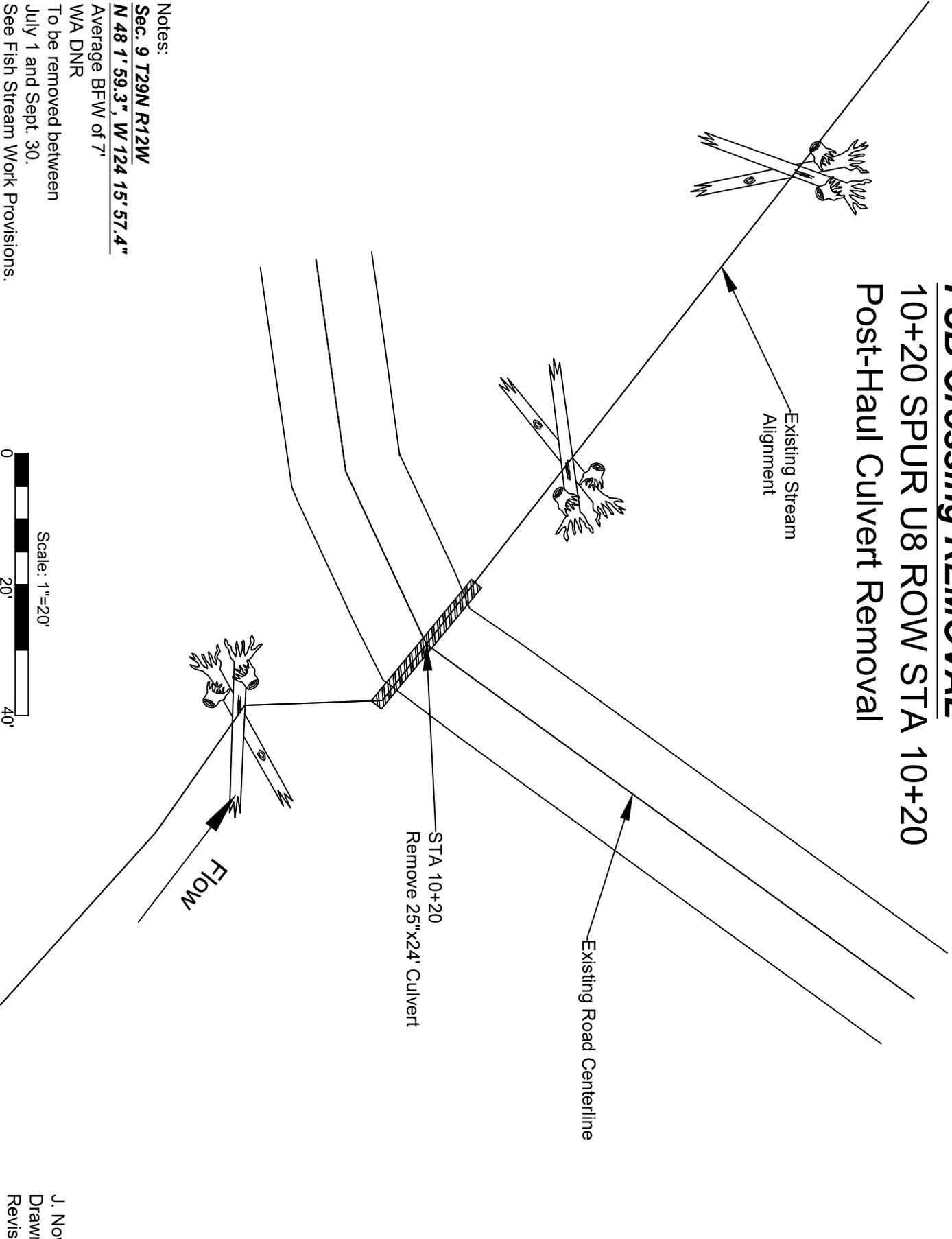


Existing Stream Alignment

Existing Road Centerline

STA 10+20
Remove 25"x24' Culvert

FLOW



Notes:
Sec. 9 T29N R12W
N 48 1' 59.3" , W 124 15' 57.4"
Average BFW of 7'
WA DNR
To be removed between
July 1 and Sept. 30.
See Fish Stream Work Provisions.



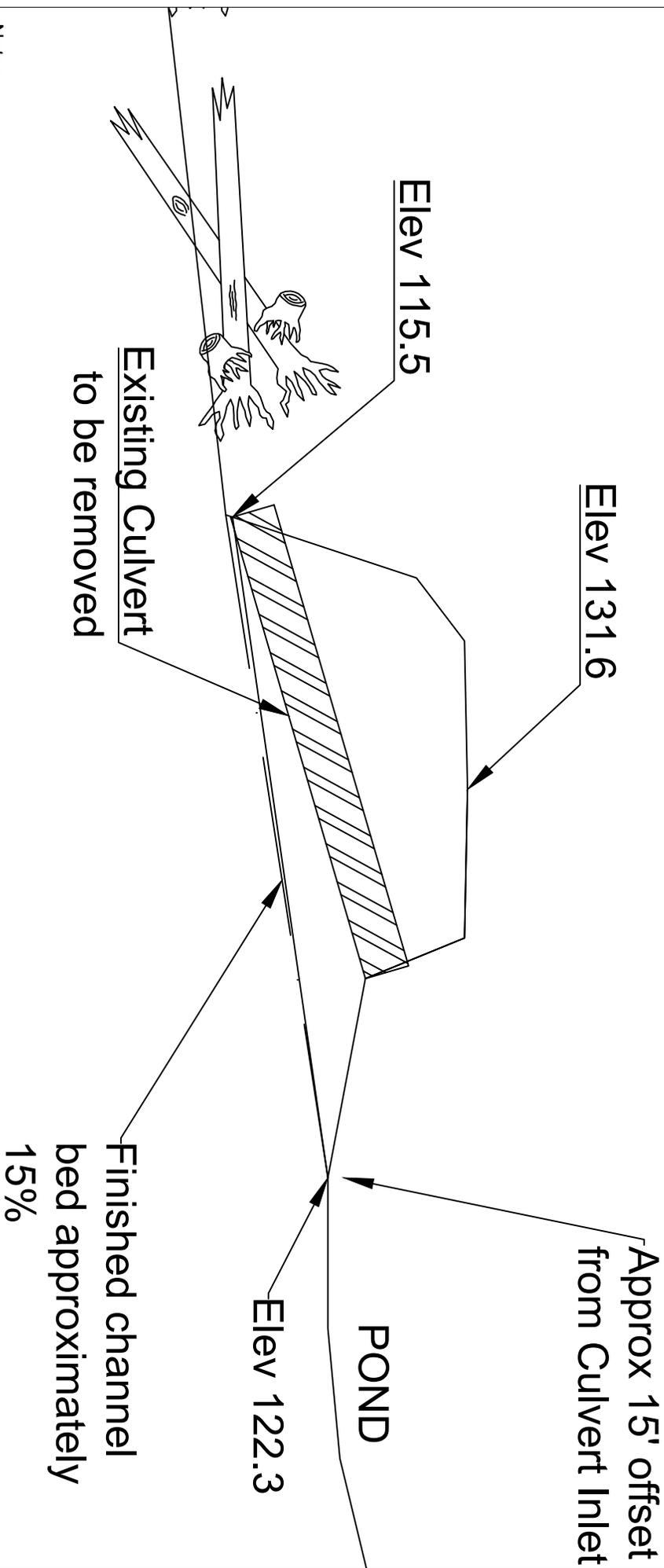
J. Nowak
Drawn 7/24/2019
Revised 7/24/2019

Channel Profile View

FSB Crossing REMOVAL

Old 2903 STA 31+00

Post-Haul Culvert Removal



Notes:

Sec. 17 T29N R12W

N 48 0' 49.6", W 124 16' 49.2"

Average BFW of 6.8'

WA DNR

To be removed between

July 1 and Sept. 30.

See Fish Stream Work Provisions.



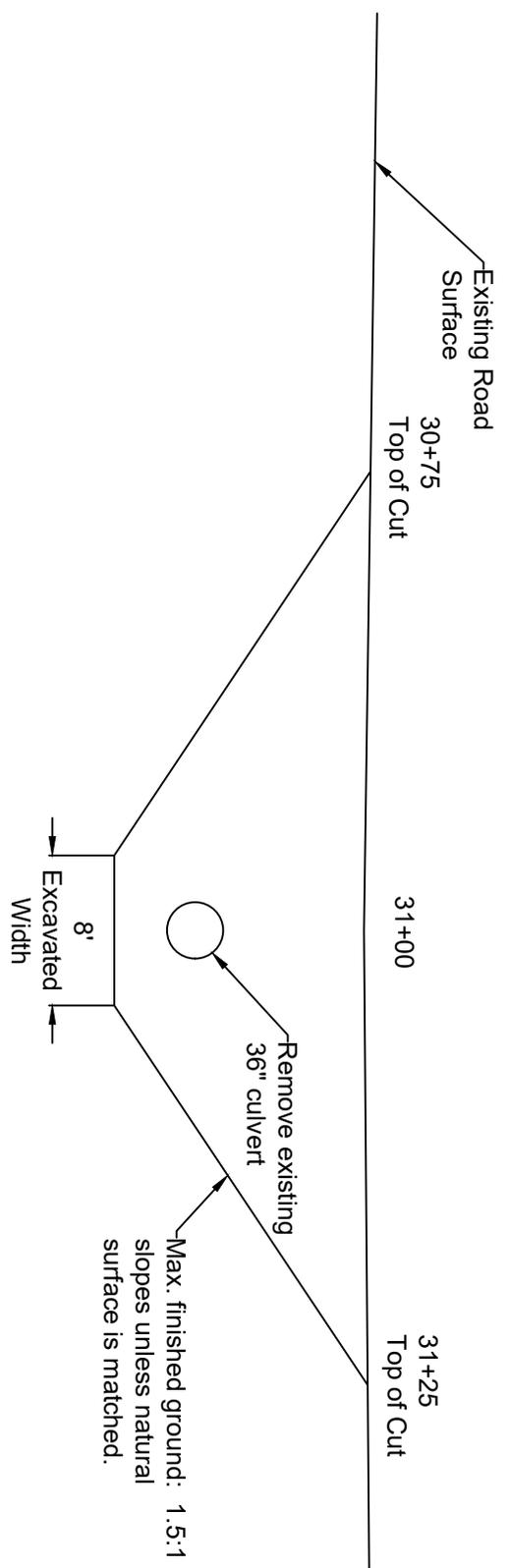
J. Nowak
Drawn 7/9/2019
Revised 7/9/2019

Road Profile View

FSB Crossing REMOVAL

Old 2903 STA 31+00

Post-Haul Culvert Removal



Notes:

Sec. 17 T29N R12W

N 48 0' 49.6", W 124 16' 49.2"

Average BFW of 6.8'

WA DNR

To be removed between

July 1 and Sept. 30.

See Fish Stream Work Provisions.



Site Plan View

FSB Crossing REMOVAL

Old 2903 STA 31+00

Post-Haul Culvert Removal

Existing Road Centerline

STA 31+00

Remove 36"x32' Culvert

STA 31+60

Place Large woody debris as directed by on-site Engineer

FLOW

Pond

STA 30+50



Scale: 1"=20'

J. Nowak
Drawn 7/9/2019
Revised 7/9/2019

Notes:

Sec. 17 T29N R12W

N 48 0' 49.6" W 124 16' 49.2"

Average BFW of 6.8'

WA DNR

To be removed between

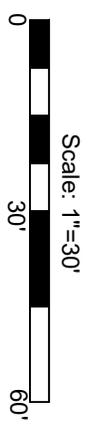
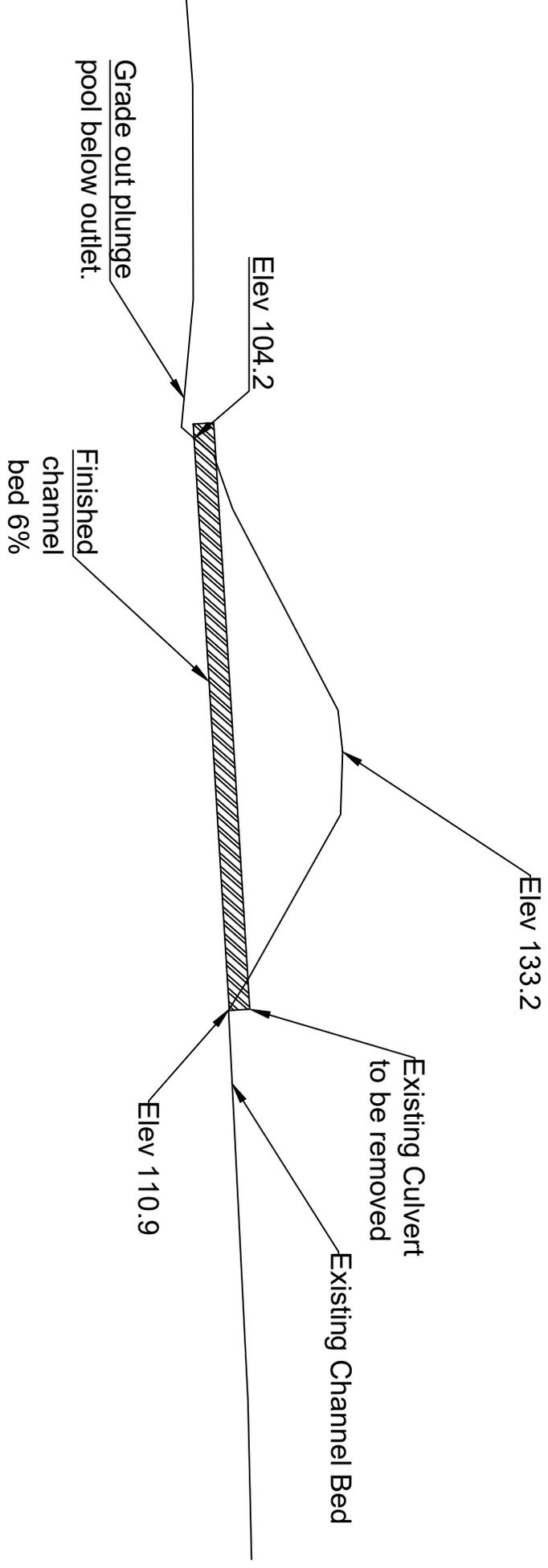
July 1 and Sept. 30.

See Fish Stream Work Provisions.

Channel Profile View

FSB Crossing REMOVAL

Old 2903 STA 47+85 Post-Haul Culvert Removal



Notes:
Sec. 17 T29N R12W
N 48 0' 57.56", W 124 17' 1.2"
Average BFW of 10.8'
WA DNR
To be removed between
July 1 and Sept. 30.
See Fish Stream Work Provisions.

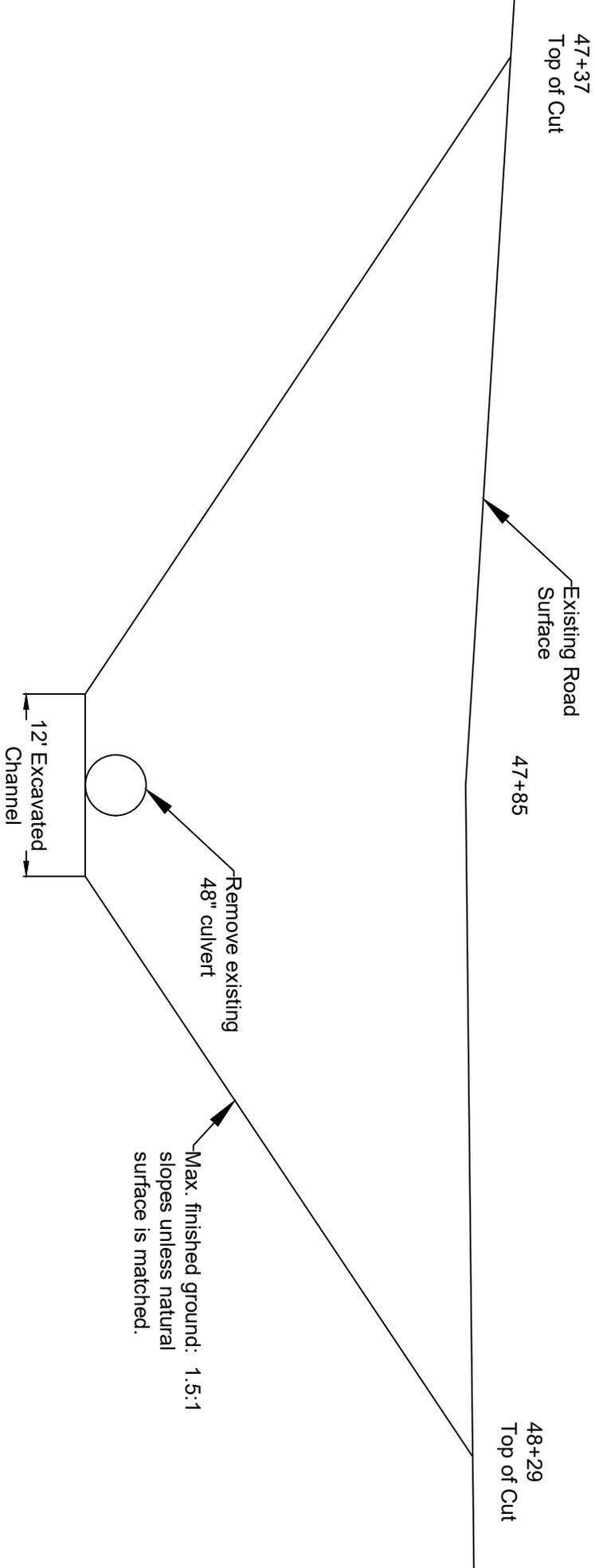
J. Nowak
Drawn 7/9/2019
Revised 7/9/2019

Road Profile View

FSB Crossing REMOVAL

Old 2903 STA 47+85

Post-Haul Culvert Removal



Notes:

Sec. 17 T29N R12W

N 48 0' 57.56" , W 124 17' 1.2"

Average BFW of 10.8'

WA DNR

To be removed between

July 1 and Sept. 30.

See Fish Stream Work Provisions.

Scale: 1"=10'



J. Nowak
Drawn 7/9/2019
Revised 7/9/2019

Site Plan View

FSB Crossing REMOVAL

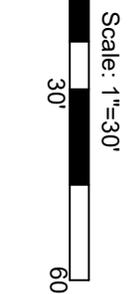
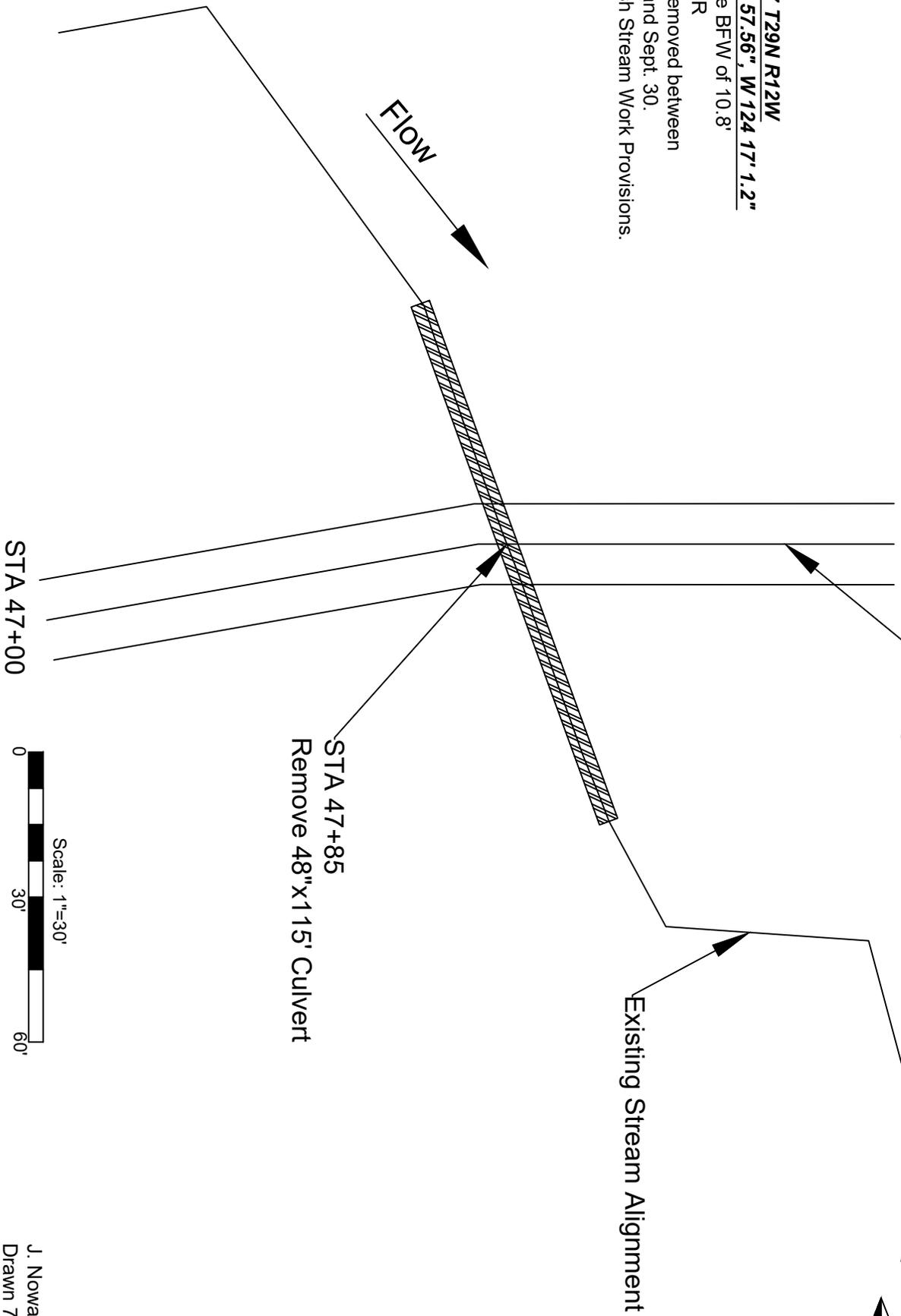
Old 2903 STA 47+85

Post-Haul Culvert Removal

STA 48+75

Existing Road Centerline

Notes:
Sec. 17 T29N R12W
N 48 0' 57.56" W 124 17' 1.2"
Average BFW of 10.8'
WA DNR
To be removed between
July 1 and Sept. 30.
See Fish Stream Work Provisions.





**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion AD-1048
 Lower Tier Covered Transactions**

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552a, as amended). This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 C.F.R. §§ 180.300, 180.335, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880. Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

According to the Paperwork Reduction Act of 1995 an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0505-0027. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The provisions of appropriate criminal and civil fraud privacy, and other statutes may be applicable to the information provided.

(Read instructions on page two before completing certification.)

- A. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency;
- B. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

ORGANIZATION NAME	PR/AWARD NUMBER OR PROJECT NAME
NAME(S) AND TITLE(S) OF AUTHORIZED REPRESENTATIVE(S)	
SIGNATURE(S)	DATE

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint \(https://www.ascr.usda.gov/filing-program-discrimination-complaint-usda-customer\)](https://www.ascr.usda.gov/filing-program-discrimination-complaint-usda-customer) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442.

Instructions for Certification

- (1) By signing and submitting this form, the prospective lower tier participant is providing the certification set out on page 1 in accordance with these instructions.
- (2) The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
- (3) The prospective lower tier participant shall provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (4) The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549, at 2 C.F.R. Parts 180 and 417. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
- (5) The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- (6) The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- (7) A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the System for Award Management (SAM) database.
- (8) Nothing contained in the foregoing shall be construed to require establishment of a system of records to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- (9) Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.