Washington DNR Timber Sales Program

Updated information is being provided for (Whiskey Creek Limit) timber sale documents as follows:

Documents amended:

Brief Description	DATE	Initials
Updated Road Cost sheets and rock source in road plan	7/31/2020	KP

WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: WHISKEY CREEK LIMIT* ***AGREEMENT NO**: 30-99241*

AUCTION: August 26, 2020 starting at 10:00 a.m., Olympic Region Office, Forks, WA **COUNTY:** Clallam

SALE LOCATION: Sale located approximately 13 miles west of Port Angeles

PRODUCTS SOLD AND SALE AREA: All timber except trees marked with a ring of blue paint or bounded out by Leave Tree Area tags; bounded by Timber Sale Boundary tags and red painted "take" trees in Unit 1; Timber Sale Boundary tags, the PA-J-1200 Road and the PA-J-1310 Road in Unit 2; Timber Sale Boundary tags, the PA-J-1310 Road, and the PA-J-1300 Road in Unit 3; Timber Sale Boundary tags and the PA-J-1000 road in Units 4 and 8; Timber Sale Boundary tags and a distinct timber type change in Units 5 and 6.

All timber bounded by Right Of Way tags.

Located on part(s) of Sections 5, 9, 16, 22 and 23 all in Township 30 North, Range 8 West, Sections 2 and 11 all in Township 30 North, Range 9 West, Sections 32 all in Township 31 North, Range 8 West, W.M., containing 321 acres, more or less.

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

ESTIMATED SALE VOLUMES AND QUALITY:

Species	Avg DBH	Ring Count	Total MBF	MBF by Grade 1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	16.5	9	5,968				440		2,876	1,999	625	28
Hemlock	13.4	8	1,462						224	973	253	12
Red cedar	15		1,183							951	232	
Red alder	12.7		570						62	82	346	80
Maple	13.4		341						91	39	135	76
Grand fir	24.2		168						156	9		3
Sale Total			9,692									

MINIMUM BID: $1,743,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $100,000.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: October 31, 2022 **ALLOCATION:** Export Restricted

BID DEPOSIT: $174,300.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: 20% Ground Based, 70% Uphill Cable, 10% Downhill Cable

Falling and Yarding will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

Falling and yarding will not be permitted between the hours of 8:00pm and 6:00am, and on weekends and State recognized holidays in all units unless authorized in writing by the Contract Administrator.

Timber felling, yarding, road work or operation of heavy equipment performed during the marbled murrelet nesting season (April 1 through September 23), is restricted to two hours after sunrise to two hours before sunset on the PA-J-1000 Road between stations 233+30 and 337+30. This does not apply to hauling timber, rock or equipment.

Shovels, tether logging and feller-bunchers with self-leveling cabs are allowed on slopes up to 60%. Ground-based equipment will not operate on sustained slopes over 40%.

ROADS: 54.85 stations of required construction. 48.80 stations of required reconstruction. 27.80 stations of optional construction. 31.05 stations of optional reconstruction. 895.55 stations of required prehaul maintenance. 2.50 stations of optional prehaul maintenance.

Road construction, rock haul, and timber haul will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

CRUISE METHOD: 100% GPS'd. Sale units were cruised using a variable plot sample.

FEES: $164,764.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: Unit 7 has been removed from this proposal.

Approximately 33% of the Douglas fir is high quality. See cruise for details.

Three (3) weeks' notice must be given prior to any operations beginning in Unit 4.

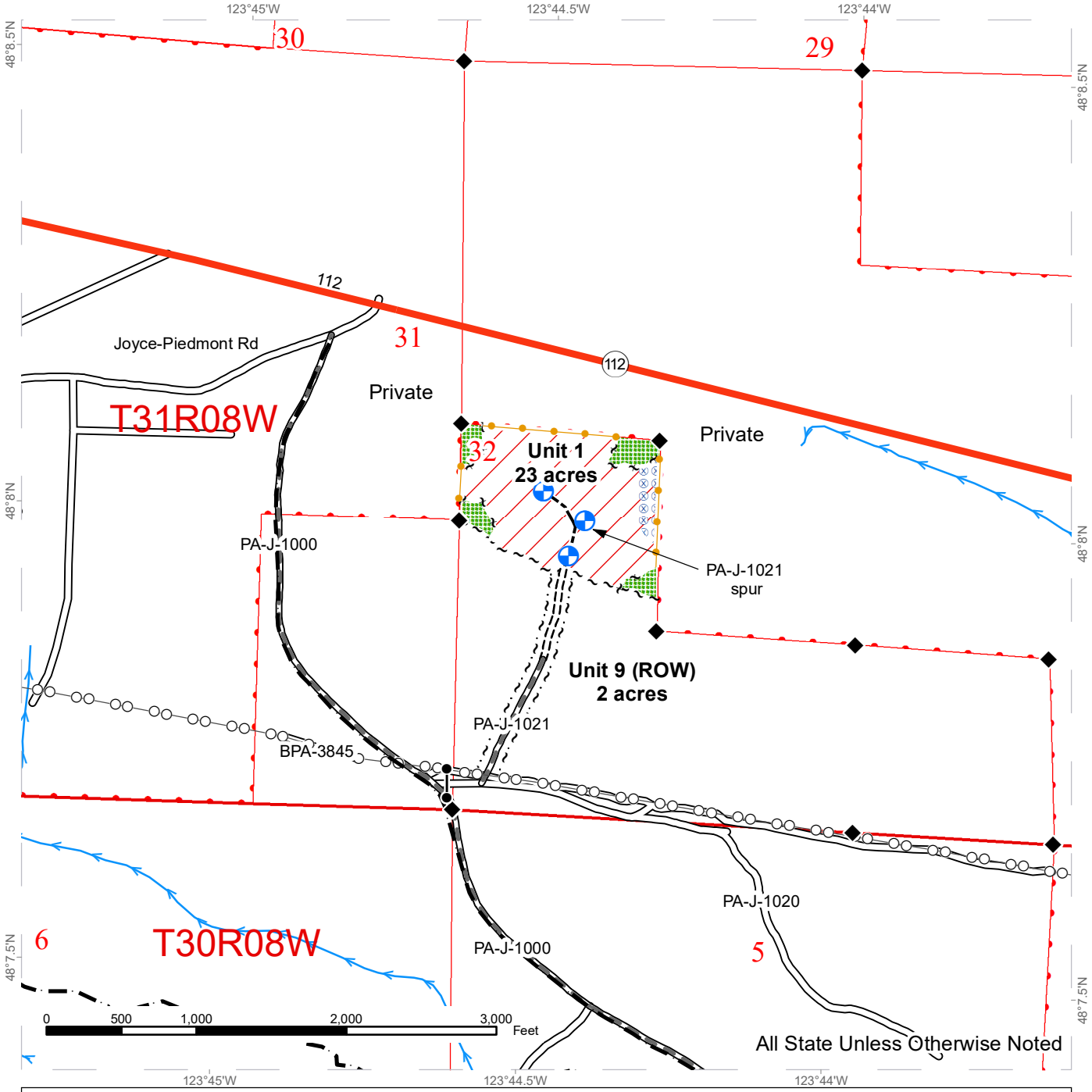
An Extreme Hazard Abatement plan is required for this sale.

There are locked gates on the PA-J-1020, PA-J-1200, PA-J-3000, and the PA-I-3000. Contact the Olympic Region Dispatch Center at 360-374-2800 to obtain an AA-1 key.

TIMBER SALE MAP

SALE NAME: WHISKEY CREEK LIMIT
AGREEMENT #: 30-099241
TOWNSHIP(S): T30R8W, T31R8W, T30R9W, T31R9W
TRUST(S): Capitol Grant (7), Common School and Indemnity (3), State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 680-2312



Variable Retention Harvest
Timing Restriction
Leave Tree Area
Riparian Mgt Zone
Hazard Abatement Area
DNR Managed Lands
Sale Boundary Tags
Leave Tree Tags
Right of Way Tags
Take / Removal Trees
Streams
Stream Type
Stream Type Break
Existing Roads
Required Pre-Haul Maintenance
Required Construction
Required Reconstruction
Optional Pre-Haul Maintenance
Optional Construction
Optional Reconstruction
Olympic Discovery Trail
Power Lines
Survey Monument
Communication Tower
Existing Rock Pit
Gate
Proposed Landing
Rock Pit

N

Prepared By: bsin490

Modification Date: bsin490 1/23/2020

TIMBER SALE MAP

SALE NAME: WHISKEY CREEK LIMIT
AGREEMENT #: 30-099241
TOWNSHIP(S): T30R8W, T31R8W, T30R9W, T31R9W
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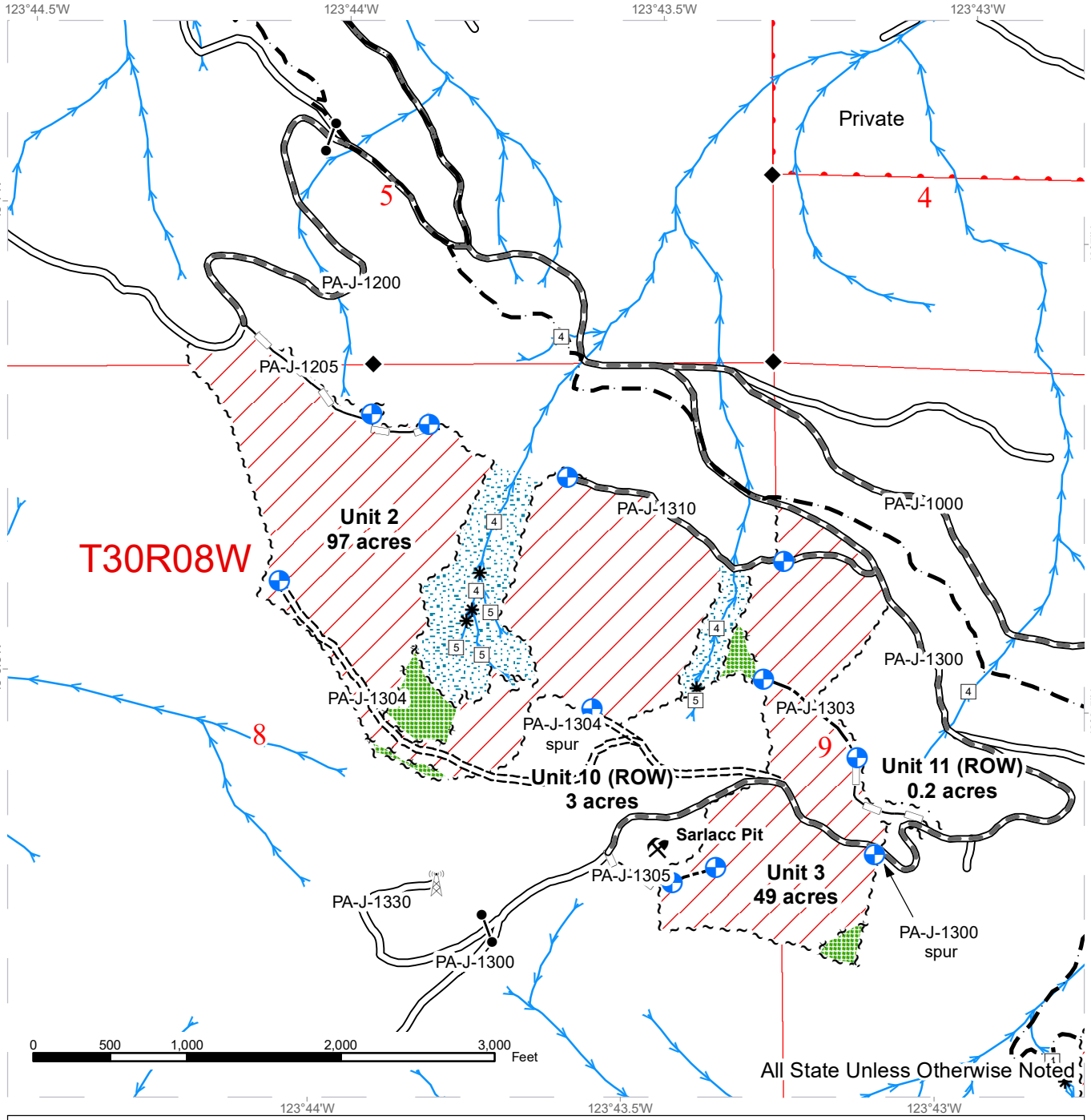

Variable Retention Harvest
Timing Restriction
Leave Tree Area
Riparian Mgt Zone
Hazard Abatement Area
DNR Managed Lands
Sale Boundary Tags
Leave Tree Tags
Right of Way Tags
Streams
Stream Type
Stream Type Break
Existing Roads
Required Pre-Haul Maintenance
Required Construction
Required Reconstruction
Optional Pre-Haul Maintenance
Optional Construction
Optional Reconstruction
Olympic Discovery Trail
Survey Monument
Communication Tower
Existing Rock Pit
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Proposed Landing
Rock Pit

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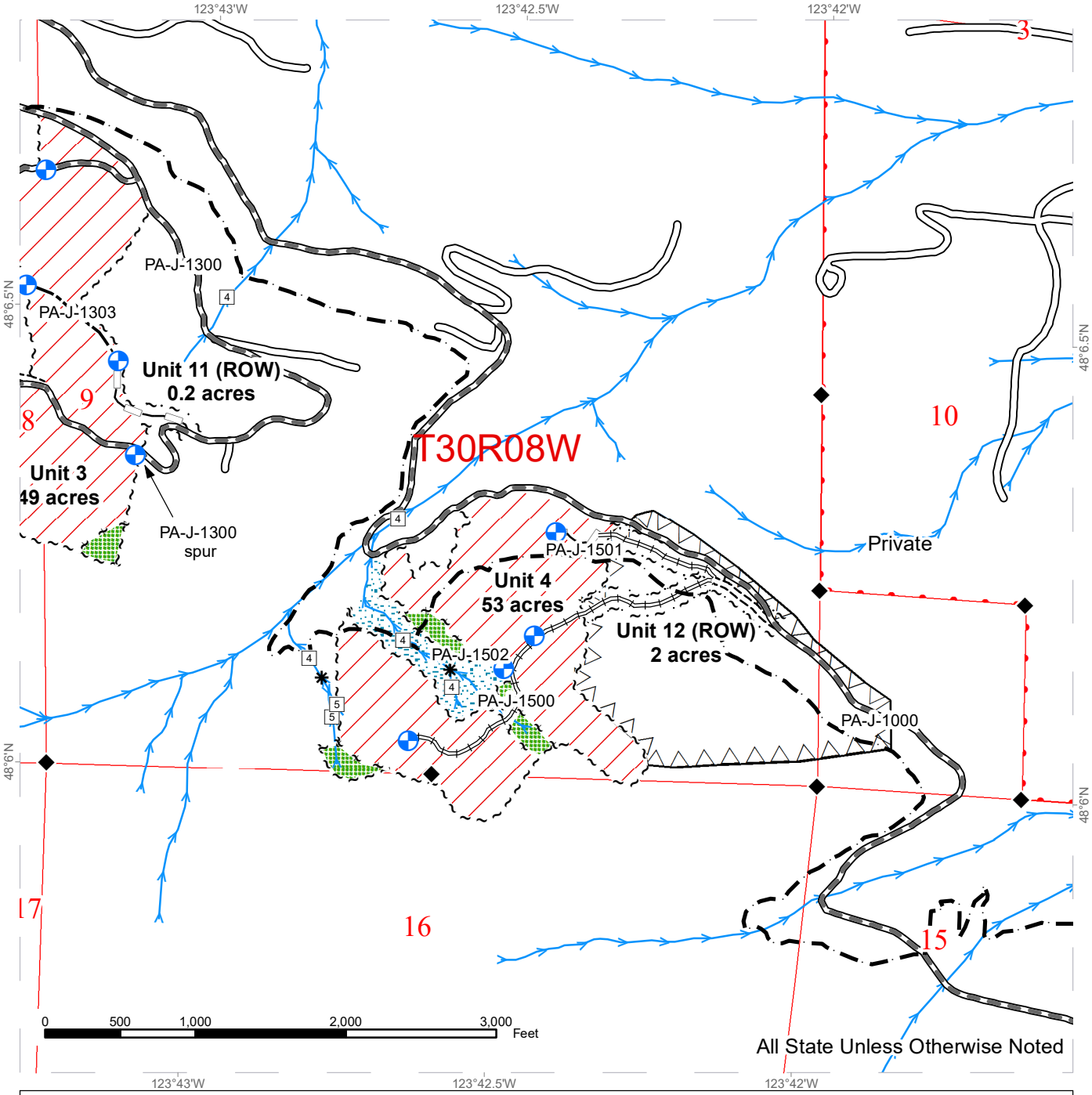

Variable Retention Harvest
Timing Restriction
Leave Tree Area
Riparian Mgt Zone
Hazard Abatement Area
DNR Managed Lands
Sale Boundary Tags
Leave Tree Tags
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Stream Type
Stream Type Break
Existing Roads
Required Pre-Haul Maintenance
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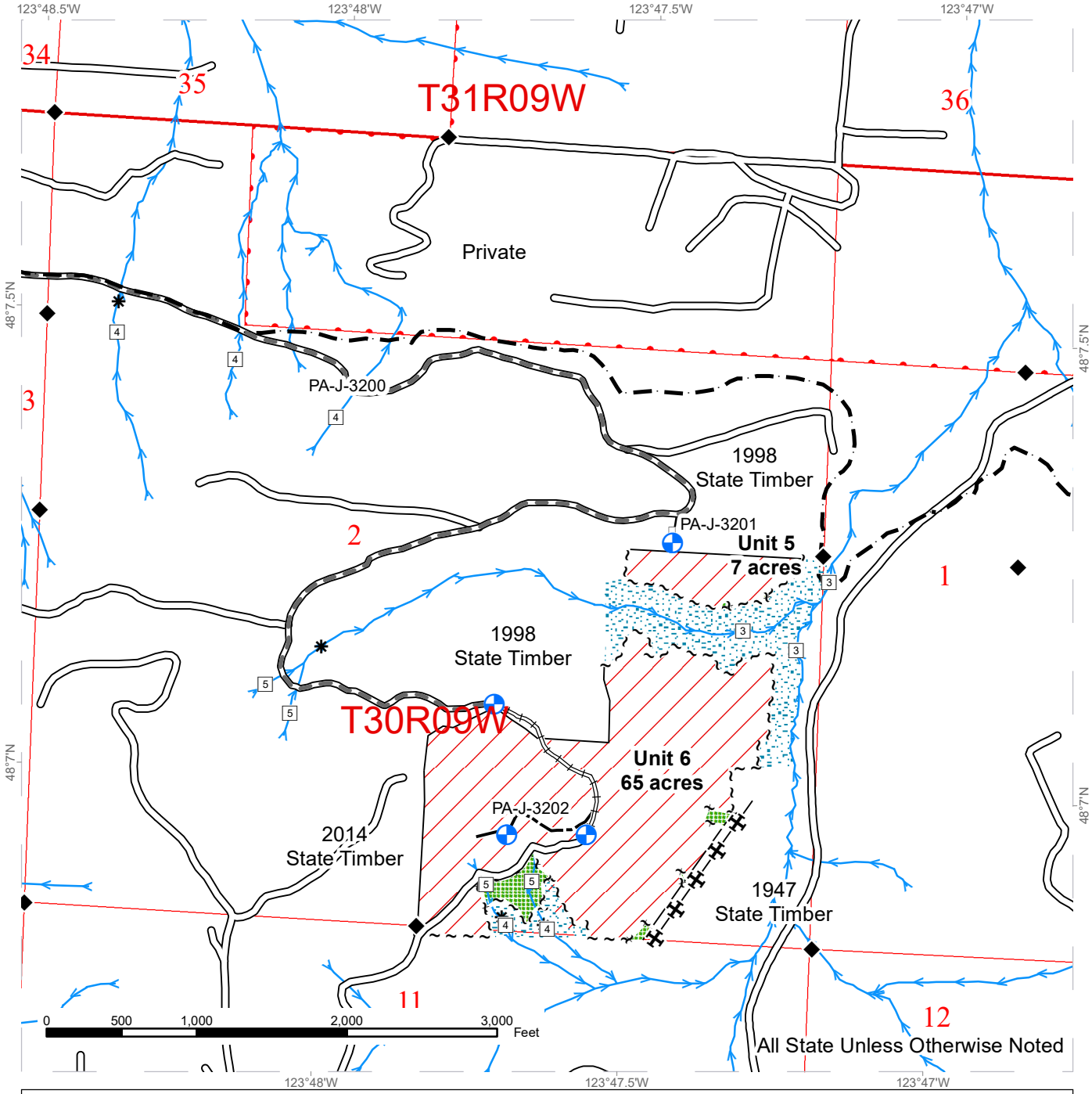

Variable Retention Harvest	Sale Boundary Tags	Existing Roads	Survey Monument
Timing Restriction	Leave Tree Tags	Required Pre-Haul Maintenance	Communication Tower
Leave Tree Area	Timber Type Change	Required Construction	Existing Rock Pit
Riparian Mgt Zone	Streams	Required Reconstruction	Gate
Hazard Abatement Area	Stream Type	Optional Pre-Haul Maintenance	Proposed Landing
DNR Managed Lands	Stream Type Break	Optional Construction	Rock Pit
		Optional Reconstruction	
		Olympic Discovery Trail	
		Abandoned ROW	

N

Prepared By: bsin490

Modification Date: bsin490 1/23/2020

TIMBER SALE MAP

SALE NAME: WHISKEY CREEK LIMIT
AGREEMENT #: 30-099241
TOWNSHIP(S): T30R8W, T31R8W, T30R9W, T31R9W
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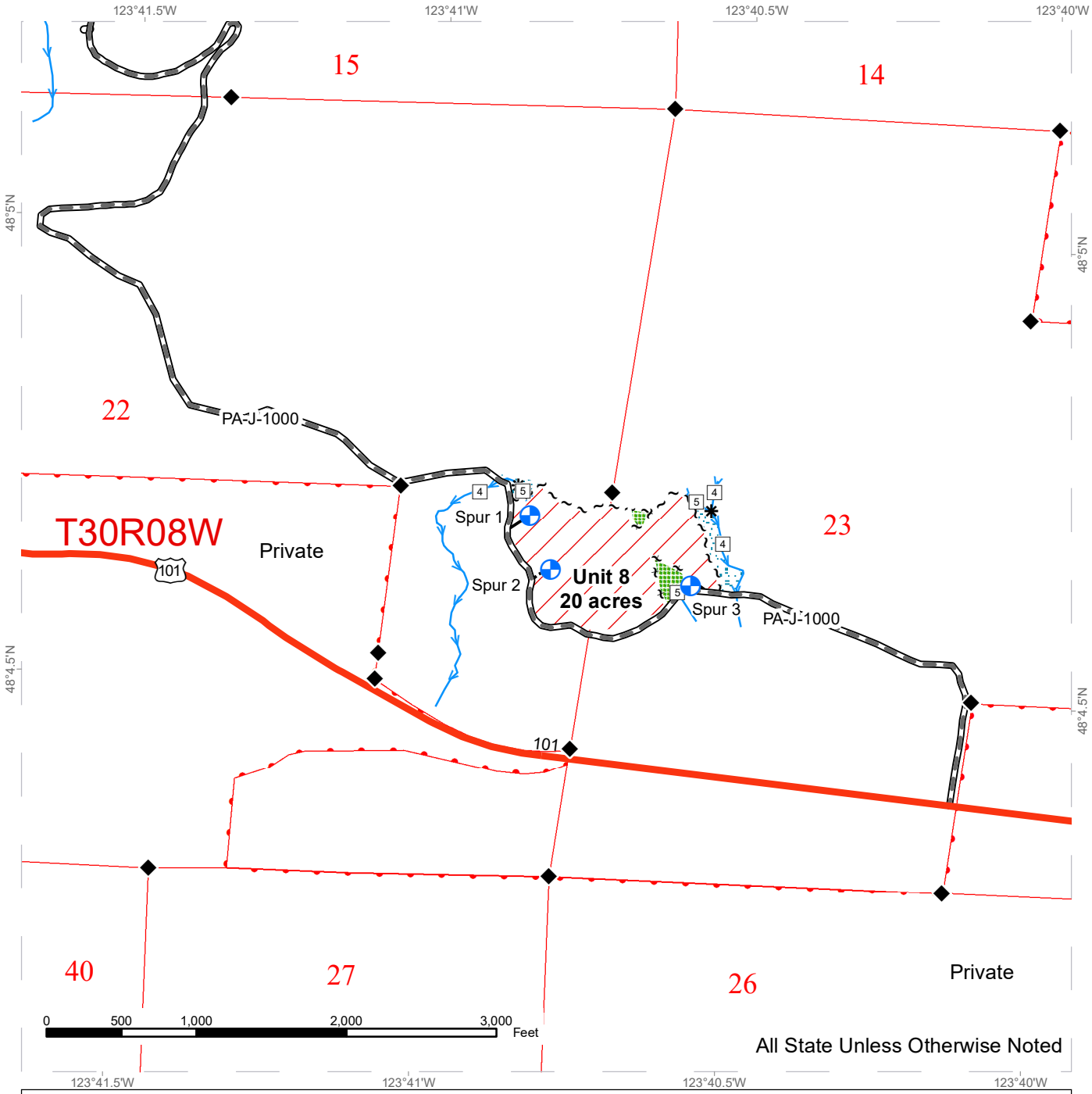

Variable Retention Harvest
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Hazard Abatement Area
DNR Managed Lands
Sale Boundary Tags
Leave Tree Tags
Streams
Stream Type
Stream Type Break
Existing Roads
Required Pre-Haul Maintenance
Required Construction
Required Reconstruction
Optional Pre-Haul Maintenance
Optional Construction
Optional Reconstruction
Olympic Discovery Trail
Survey Monument
Communication Tower
Existing Rock Pit
Gate
Proposed Landing
Rock Pit

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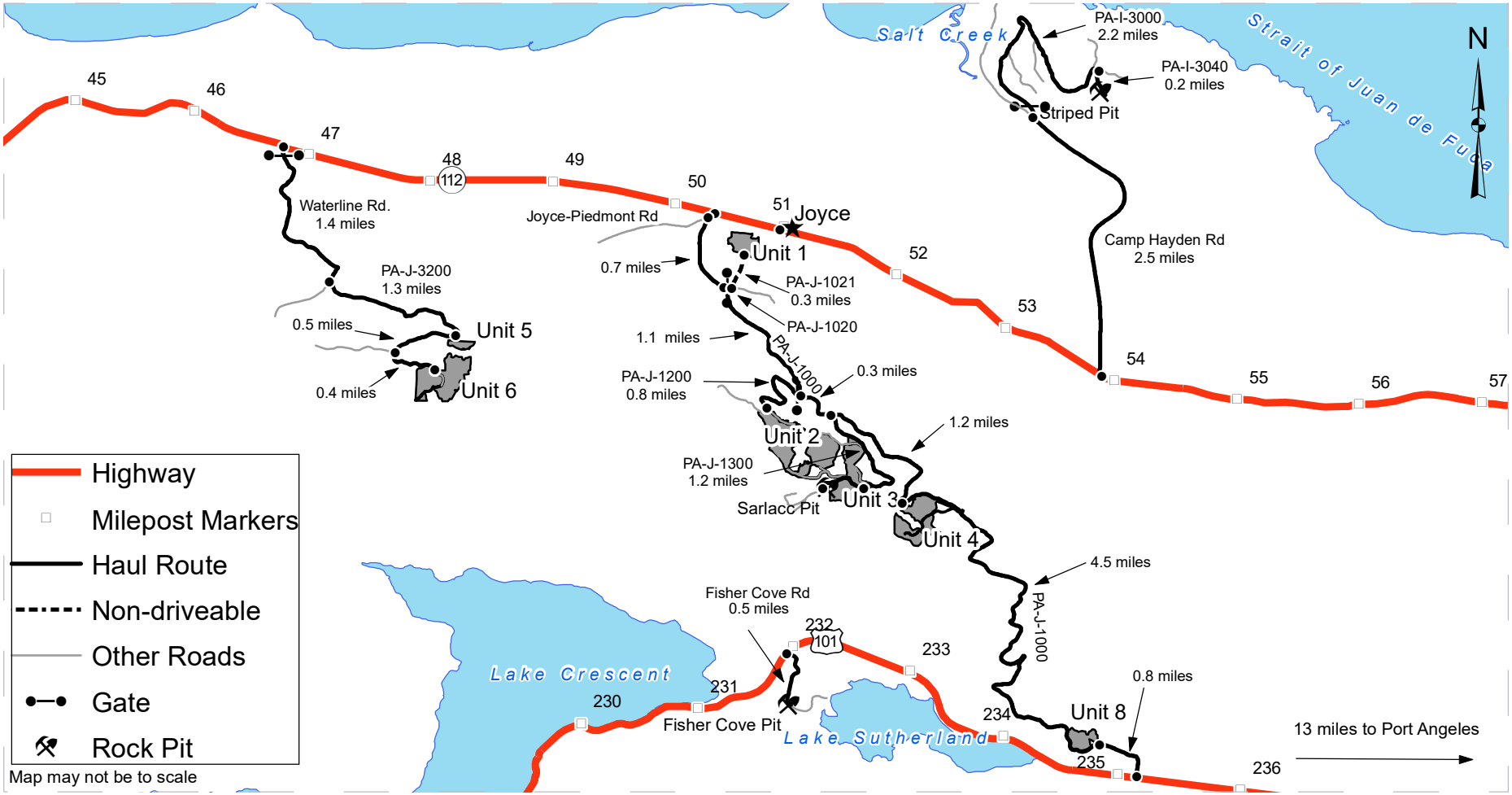
Prepared By: bsin490

Modification Date: bsin490 1/23/2020

DRIVING MAP

SALE NAME: WHISKEY CREEK LIMIT
AGREEMENT#: 30-099241
TOWNSHIP(S): T30R8W, T30R9W, T31R8W, T31R9W
TRUST(S): Capitol Grant (7), Common School and Indemnity (3), State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 680-2312



DRIVING DIRECTIONS:

Units 1-4: From Joyce, head west for 0.6 miles. Turn left on Joyce-Piedmont Rd and continue for 450 ft. Turn left onto Joyce Access Rd (PA-J-1000).
Unit 1: Continue on Joyce Access Rd, for 0.7 miles. Turn left onto PA-J-1020 and proceed through locked gate (AA-1 key). Continue 300 ft to reach the PA-J-1021. Continue north on foot for 0.3 miles and arrive at Unit 1.
Unit 2: From Joyce Piedmont, continue on Joyce Access road for 1.8 miles. Take a sharp right onto PA-J-1200 and proceed through the locked gate (AA-1 key). After 0.8 miles arrive at Unit 2.
Unit 3: From Joyce Piedmont, continue on Joyce Access road for 2.1 miles and turn right onto PA-J-1300. Continue for 1.2 miles and you will have arrived in Unit 3.
Unit 4: From Joyce Piedmont, continue on Joyce Access road for 3.3 miles and Unit 4 will be on your right.
Units 5-6: From Joyce, head west for 4.1 miles. Turn left on Waterline Rd (PA-J-3000) and proceed through locked gate (AA-1 key). Continue for 1.4 miles and turn left onto Waterline Rd.
Unit 5: From Waterline Rd, continue on PA-J-3200 for 1.3 miles before arriving at unit 5.
Unit 6: From Waterline Rd, continue on PA-J-3200 for 2.2 miles before arriving at units 6.
Unit 8: From Port Angeles, take US-101 west for 13 miles. Turn right on Joyce Access road (PA-J-1000). Continue for 0.8 miles and unit 8 will be on your right.
Sarlacc Pit: From Unit 3, continue uphill on the PA-J-1300 for 0.4 miles before arriving at Sarlacc Pit
Striped Pit: From Joyce, go east on Hwy 112 for 2.9 miles. Turn left on Camp Hayden Rd. Continue for 2.5 miles before turning right on PA-I-3000. Proceed 2.0 miles and then turn right on PA-I-3040 and continue for 0.2 miles before arriving at Striped Pit
Fisher Cove Pit: From Port Angeles, go west on US-101 for 16.3 miles. Turn left on Fisher Cove Rd and continue for 0.5 miles before arriving at Fisher Cove Pit

Prepared By: bsin490

Modification Date:bsin490 1/23/2020

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

BILL OF SALE AND CONTRACT FOR FOREST PRODUCTS

Export Restricted Lump Sum AGREEMENT NO. 30-099241

SALE NAME: WHISKEY CREEK LIMIT

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

Bill of Sale and Contract for Forest Products: 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. The Bill of Sale and Contract for Forest Products may include a Road Plan for any road construction or reconstruction, where applicable.

Contract Administrator: Region Manager'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 a Bill of Sale and Contract for Forest Products with the State for the right to harvest and remove forest products from the timber sale area.

Road Construction: Includes building new and maintaining existing forest roads and associated work that may be optional or required as described in the Road Plan.

State: The Washington State Department of Natural Resources, landowner and seller of Forest Products from the timber sale area. The State is represented by the Region Manager as designated on the contract signature page. Contractual obligations to the State are enforced by the Region Manager or the designated Contract Administrator.

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

G-011 Right to Remove Forest Products and Contract Area

Purchaser was the successful bidder on August 26, 2020 and the sale was confirmed on _____. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase as much of the following forest products as can be cut and removed during the term of this contract: All timber except trees marked with a ring of blue paint or bounded out by Leave Tree Area tags; bounded by Timber Sale Boundary tags and red painted "take" trees in Unit 1; Timber Sale Boundary tags, the PA-J-1200 Road and the PA-J-1310 Road in Unit 2; Timber Sale Boundary tags, the PA-J-1310 Road, and the PA-J-1300 Road in Unit 3; Timber Sale Boundary tags and the PA-J-1000 road in Units 4 and 8; Timber Sale Boundary tags and a distinct timber type change in Units 5 and 6.

All timber bounded by Right Of Way tags.

Located

All forest products above located on approximately 321 acres on part(s) of Sections 5, 9, 16, 22, and 23 all in Township 30 North, Range 8 West, Sections 2, and 11 all in Township 30 North, Range 9 West, Section 32 in Township 31 North, Range 8 West W.M. in Clallam County(s) as designated on the sale area and as shown on the attached timber sale map.

All forest products described above from the bole of the tree that meet or exceed 2 inches diameter inside bark on the small end are eligible for removal. Above ground components of a tree that remain as by-products after the manufacture of logs, including but not limited to tree tops, branches, limbs, needles, leaves, stumps, are eligible for removal under the terms of this contract.

Forest products purchased under a contract that is designated as export restricted shall not be exported until processed. Forest products purchased under a contract that is designated as exportable may be exported prior to processing.

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.

G-025 Schedules

The following attached schedules are hereby incorporated by reference:

Schedule	Title
A	SLASH PILING SPECIFICATIONS
B	Green Tree Retention Plan

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2022.

G-040 Contract Term Adjustment - No Payment

Purchaser may request an adjustment in the contract term. A claim must be submitted in writing and received by the State within 30 days after the start of interruption or delay. The claim 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. The cause must be one of the following and the adjustment may be granted only if operations or planned operations under this contract are actually interrupted or delayed:

a. Road and bridge failures which deny access.

b. Access road closures imposed by road owner.

c. Excessive suspensions as provided in clause G-220.

d. Regulatory actions not arising from Purchaser's failure to comply with this contract which will prevent timber harvest for a period less than 6 months.

G-051 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 is endeavoring to remove the forest products conveyed. The term of this contract may be extended for a reasonable time by the State if all of the following conditions are satisfied:

a. A written request for extension of the contract term must be received prior to the expiration date of the contract.

b. Completion of all required roads and compliance with all contract and regulatory requirements.

c. For the first extension, not to exceed 1 year, payment of at least 25 percent of the total contract price.

For the second extension, not to exceed 1 year, payment of at least 90 percent of the total contract price.

The payments shall not include the initial deposit which shall be held according to the provisions of RCW 79.15.100.

d. Payment of an amount based on 12 percent interest per annum on the unpaid portion of the total contract price.

All payments, except the initial deposit, will be deducted from the total contract price to determine the unpaid portion of the contract.

e. Payment of $467.00 per acre per annum for the acres on which an operating release has not been issued.

f. In no event will the extension charge be less than $200.00.

g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

Whenever the State determines that a survey for sensitive, threatened, or endangered species is prudent, or when Purchaser determines a survey is prudent and the State agrees, Purchaser shall perform such surveys at Purchaser's expense and to the standards required by the State. The survey information shall be supplied to the State.

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 SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.

g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.

h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

The State has entered into a Habitat Conservation Plan (HCP) with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services) to address state trust land management issues relating to compliance with the Federal Endangered Species Act. The activities to be carried out under this contract are located within the State's HCP area and are subject to the terms and conditions of the HCP, and the Services' Incidental Take Permit Nos. TE812521-1 and 1168 (collectively referred to as ITP), or as amended hereafter by the Services. The ITP authorizes the incidental take of certain federally listed threatened and endangered species, as specified in the ITP conditions. All HCP materials, including the ITP, are available for review at the State's Regional Offices and the administrative headquarters in Olympia, Washington.

By signing this contract, Purchaser agrees to comply with the terms and conditions of the ITP, and the HCP, which shall become terms of this contract. The State agrees to authorize the lawful activities of the Purchaser carried out pursuant to this contract, PROVIDED the Purchaser remains in compliance with the terms and conditions of both the HCP and ITP. The requirements set forth in this contract are intended to comply with the terms and conditions of the HCP and ITP. Accordingly, non-compliance with the terms and conditions of the HCP and ITP will render the authorization provided in

this paragraph void, be deemed a breach of the contract and may subject Purchaser to liability for violation of the Endangered Species Act.

Any modifications to the contract shall be proposed in writing by Purchaser, shall continue to meet the terms and conditions of the HCP and ITP, and shall require the prior written approval of the Region Manager before taking effect.

G-063 Incidental Take Permit Notification Requirements

a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.

b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.

c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.

d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

G-064 Permits

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

Approval permits obtained by the State shall be transferred to Purchaser. Purchaser is responsible for all permits, amendments and renewals.

G-065 Regulatory Disclaimer

The State disclaims any responsibility for, or liability relating to, regulatory actions by any government agency, including actions pursuant to the Forest Practices Act, Ch. 76.09 RCW that may affect the operability of the timber sale.

G-066 Governmental Regulatory Actions

a. Risk

Purchaser shall be responsible for any increased operational costs arising from any applicable foreign or domestic governmental regulation or order that does not cause contract performance to become commercially impracticable or that does not substantially frustrate the purpose of the contract. If impracticability or frustration results from Purchaser's failure to comply with this contract, Purchaser shall remain responsible for payment of the total contract price notwithstanding the impracticability or frustration.

b. Sale Area

When portions of the sale area become subject to a foreign or domestic governmental regulation or order that will likely prevent timber harvest for a period that will exceed the expiration date of this contract, and Purchaser has complied with this contract, the following shall apply:

i. RCW 79.15.140 shall govern all adjustments to the contract area.

c. Adjustment of Price

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 subject to governmental regulation or order to be measured. The State shall calculate the percentage of the total sale area subject to the governmental regulation or order. 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 was unable to fully 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-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,

unapplied payments, and credit for unamortized improvements made by Purchaser. The State shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State Advice

No advice by any agent, employee, or representative of the State regarding the method or manner of performing 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 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 shall not be liable for any injuries resulting from Purchaser's reliance on any State advice regarding the method or manner of performance.

G-091 Sale Area Adjustment

The Parties may agree to adjustments in the sale area boundary. The cumulative changes to the sale area during the term of the contract shall not exceed more than four percent of the original sale area. If the sale area is increased, the added forest products become a part of this contract. The State shall determine the volume added and shall calculate the increase to the total contract price using the rates set forth in clause G-101, G-102, or G-103. If the sale area is reduced, the State shall determine the volume to be reduced. The State shall calculate the reduction to the total contract price using the rates set forth in clause G-101, G-102, or G-103.

G-101 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 the Scribner log scale volume, as defined by the Northwest Log Rules Advisory Group, shall be determined by the Contract Administrator. Added forest products shall be paid for at the following contract payment rates per Mbf Scribner log scale.

The pricing schedule has not been set for the sale.

G-106 Adding Naturally Damaged Forest Products

Any forest products not designated for removal that are seriously damaged by disease, insects or wind, or that may contribute seriously to the spread of insect or disease damage may be added to this sale by the State's Contract Administrator. Additions must be in unlogged areas of the sale and added volume shall not exceed an amount equal to 10 percent of the original advertised volume. Added forest products become a part of this contract and shall be paid for at the rate set forth in clause G-101, G-102 or G-103.

G-111 Title and Risk of Loss

Title to the forest products under this contract passes to the Purchaser after they are removed from the sale area, if adequate advance payment or payment security has been provided to the State under this contract. Purchaser bears all risk of loss of, or damage

to, and has an insurable interest in, the forest products described in this contract from the time the sale is confirmed under RCW 79.15.120. Breach of this contract shall have no effect on this provision.

G-116 Sustainable Forestry Initiative® (SFI) Certification

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

Purchaser shall have at least one person regularly on-site during active operations that have completed training according to the requirements outlined within the SFI® program Standard. Purchaser shall designate in writing the name(s) of the individual(s) who will be on-site and provide proof of their successful completion of an approved training program prior to active operations.

G-120 Responsibility for Work

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

G-121 Exceptions

Exceptions to Purchaser's responsibility in clause G-120 shall be limited exclusively to the following. 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 State will bear the cost to repair damages caused by a third party. In all other cases, the Purchaser shall bear responsibility for the costs as described below.

Road is defined as the road bed, including but not limited to its component parts, such as cut and fill slopes, subgrade, ditches, culverts, bridges, and cattle guards.

For the purposes of this clause, damage will be identified by the State and is defined as:

1. Failure of (a) required improvements or roads designated in clause C-050, or (b) required or optional construction 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.

The repair work identified by the State shall be promptly completed by Purchaser at an agreed price. The State may elect to accomplish repairs by means of State-provided resources.

For each event, Purchaser shall be solely responsible for the initial $5,000 in repairs. For repairs in excess of $5,000, the parties shall share equally the portion of costs between $5,000 and $15,000. The State shall be solely responsible for the portion of the cost of repairs that exceed $15,000.

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 Purchasers 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 State, agencies of State and all officials, agents and employees of State, from and against all claims arising out of or resulting from the performance of the contract. "Claim" as used in this contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury, sickness, disease or death, or injury to or destruction of tangible property including loss of use resulting therefrom. Purchasers' obligations to indemnify, defend, and hold harmless includes any claim by Purchasers' agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless State 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 State shall not be eliminated or reduced by any actual or alleged concurrent negligence of State or its 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 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 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 region office of sale origin 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 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, its elected and appointed officials, agents and employees shall be named as an additional insured via endorsement on all general liability, excess, umbrella, and property insurance policies.

All insurance provided in compliance with this contract shall be primary as to any other insurance or self-insurance programs afforded to or maintained by State. 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, if necessary, commercial umbrella insurance with a limit of not less than $1,000,000.00 per each occurrence. If such CGL insurance

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

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

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

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

G-160 Agents

The State's rights and duties will be exercised by the Region Manager at Forks, Washington. The Region Manager will notify Purchaser in writing who is responsible for administering the contract. The Region Manager has sole authority to waive, modify, or amend the terms of this contract in the manner prescribed in clause G-180. No agent, employee, or representative of the State has any authority to bind the State to any affirmation, representation, or warranty concerning the forest products conveyed beyond the terms of this contract.

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 from the State, and any limits to this person's authority.

G-170 Assignment and Delegation

No rights or interest in this contract shall be assigned by Purchaser without prior written permission of the State. Any attempted assignment shall be void and ineffective for all purposes unless made in conformity with this paragraph. Purchaser may perform any duty through a delegate, but Purchaser is not thereby relieved of any duty to perform or any liability. Any assignee or delegate shall be bound by the terms of the contract in the same manner as Purchaser.

G-180 Modifications

Waivers, modifications, or amendments of the terms of this contract must be in writing 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

Notices required to be given under the following clauses shall be in writing and shall be delivered to Purchaser's authorized agent or sent by certified mail to Purchaser's address of record:

G-210 Violation of Contract
G-220 State Suspends Operations

All other notices required to be given under this contract shall be in writing and delivered to the authorized agent or mailed to the Party's post office address. Purchaser agrees to notify the State of any change of address.

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 (such as a violation of WAC 240-15-015) 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.

b. If the contract expires pursuant to clause G-030 or G-031 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 when the State is suffering, or there is a reasonable expectation the State will suffer environmental, monetary, or other damage if the operation is allowed to continue.

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, Purchaser is entitled to request a contract term adjustment under clause G-040.

If it reasonably appears that the damage that the State 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 this contract, the provisions of clause G-066 shall govern just as if the harvest was prevented by an applicable foreign or domestic governmental 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 State law, is unauthorized. Such activity may subject Purchaser to liability for triple the value of said forest products under RCW 79.02.320

or RCW 79.02.300 and may result in prosecution under RCW 79.02.330 or other applicable statutes.

G-240 Dispute Resolution

The following procedures apply in the event of a dispute regarding interpretation or administration of this contract and the parties agree that these procedures must be followed before a lawsuit can be initiated.

a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.

b. The Region Manager will issue a written decision on Purchaser's request within ten business days.

c. Within ten business days of receipt of the Region Manager's decision, Purchaser may make a written request for resolution to the Deputy Supervisor - Uplands of the Department of Natural Resources.

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

G-250 Compliance with All Laws

Purchaser shall comply with all applicable statutes, regulations and laws, including, but not limited to; chapter 27.53 RCW, chapter 68.50 RCW, WAC 240-15 and WAC 296-54. Failure to comply may result in forfeiture of this contract.

G-260 Venue

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

G-270 Equipment Left on State Land

All equipment owned or in the possession of Purchaser, its employees, agents, or invitees, including independent contractors, shall be removed from the sale area and other State land by the termination date of this contract. Equipment remaining unclaimed on State land 60 days after the expiration of the contract period is subject to disposition as provided by law. Purchaser shall pay to the State all costs of moving, storing, and disposing of such equipment. The State shall not be responsible for any damages to or loss of the equipment or damage caused by the moving, storing or disposal of the equipment.

G-280 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 timber sales 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 State roads and roads for which the State has acquired easements and road use permits; Joyce Access Road (PA-J-1000), PA-J-1020, PA-J-1021, PA-J-1021 Spur, PA-J-1200, PA-J-1205, PA-J-1300, PA-J-1300 spur, PA-J-1303, PA-J-1304, PA-J-1304 spur, PA-J-1305, PA-J-1310, PA-J-1500, PA-J-1501, PA-J-1502, PA-J-1703, Waterline Rd (PA-J-3000), PA-J-3200, PA-J-3201, PA-J-3202, Spur 1, Spur 2, Spur 3, PA-I-3000, PA-I-3040, and Fisher Cove Road. The State may authorize in writing the use of other roads subject to fees, restrictions, and prior rights.

G-330 Pre-work Conference

Purchaser shall arrange with the Contract Administrator to review this contract and to examine the sale area before beginning any operations. A plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations. To the extent that the plan of operations is inconsistent with the contract, the terms of the contract shall prevail. State's acceptance and approval of 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

Any legal land subdivision survey corners and witness objects are to be preserved. If such are destroyed or disturbed, the Purchaser shall, at the Purchaser’s own expense, re-establish them through a licensed land surveyor in accordance with U.S. General Land Office standards. Corners and/or witness objects that must be disturbed or destroyed in the process of road construction or logging shall be adequately referenced and/or replaced in accordance with RCW 58.24.040(8). Such references must be approved by the Contract Administrator prior to removal of said corners and/or witness objects.

G-360 Road Use Reservation

The State shall have the right to use, without charge, all existing roads and any road constructed or reconstructed on State lands by Purchaser under this contract. The State may extend such rights to others. If the State grants such rights to others, the State shall require performance or payment, as directed by the State, for their proportionate share of maintenance based on their use.

G-370 Blocking Roads

Purchaser shall not block the Joyce Access Road (PA-J-1000), the PA-J-1300 or the BPA-3844 Road, unless authority is granted in writing by the Contract Administrator.

G-380 Road Easement and Road Use Permit Requirements

Purchaser agrees to comply with the terms and conditions of the attached:

Easement # 55-000416 with Fibre Company, currently M&R

Easement # 55-090881- with Crescent School District

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.

G-450 Encumbrances

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

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Clallam County
Disclosed by Application No.: 50-CR3201
Granted: 9/23/1985
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: State Road
In Favor of: Washington State Department of Transportation
Disclosed by Application No.: 50-SR5106
Granted: 3/13/1958
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Pipeline
In Favor of: Gerald E. Thompson
Disclosed by Application No.: 50-002707
Granted: 9/25/1953
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Overhead Communication Line
In Favor of: Pacific Telephone & Telegraph Company
Disclosed by Application No.: 50-013226

Granted: 5/26/1928
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Overhead Transmission Lines
In Favor of: Bonneville Power Administration
Disclosed by Application No.: 50-029591
Granted: 10/1/1964
Expires: Indefinite

Easement, including the terms and provisions thereof,
For: Buried Power
In Favor of: PUD No. 1 of Clallam County
Disclosed by Application No.: 50-053995
Granted: 9/28/1994
Expires: 7/1/2024

Easement, including the terms and provisions thereof,
For: Trail
In Favor of: Clallam County
Disclosed by Application No.: 50-076603
Granted: 1/6/2009
Expires: 1/5/2034

Easement, including the terms and provisions thereof,
For: Road Use Permit
In Favor of: Green Crow Timber LLC
Disclosed by Application No.: 50-098070
Granted: 12/17/2018
Expires: 10/21/2022

Easement, including the terms and provisions thereof,
For: County Road
In Favor of: Clallam County
Disclosed by Application No.: 50-091944
Granted: 11/8/2013
Expires: Indefinite

Lease, including the terms and provisions thereof,
For: Communication Site
In Favor of: New Cingular Wireless PCS, LLC
Disclosed by Application No.: 52-B69510
Granted: 9/23/1985
Expires: 7/31/2025

Covenant, including the terms and provisions thereof,

For: Agreement
In Favor of: Green Crow Corporation, Green Crow Timber
Disclosed by Application No.: 54-091098
Granted: 10/22/2013
Expires: Indefinite

Pending Applications

Lease, including the terms and provisions thereof,
For: Minor Forest Products
In Favor of: TBD
Disclosed by Application No.: 35-099715
Applied: 9/9/2019

No Region Encumbrances of Record

Section P: Payments and Securities

P-011 Initial Deposit

Purchaser paid DATA MISSING initial deposit, which will be maintained pursuant to RCW 79.15.100(3). If the operating authority on this contract expires without Purchaser's payment of the full amount specified in Clause P-020, 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-020 Payment for Forest Products

Purchaser agrees to pay the total, lump sum contract price of $251,992.00. The total contract price consists of a $0.00 contract bid price plus $251,992.00 in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause. Purchaser shall be liable for the entire purchase price, and will not be entitled to any refunds or offsets unless expressly stated in this contract.

THE PURCHASE PRICE SHALL NOT BE AFFECTED BY ANY FACTORS, INCLUDING: the amount of forest products actually present within the contract area, the actual acreage covered by the contract area, the amount or volume of forest products actually cut or removed by purchaser, whether it becomes physically impossible or uneconomic to remove the forest products, and whether the subject forest products have been lost or damaged by fire or any other cause. The only situations Purchaser may not be liable for the full purchase price are governed by clause G-066, concerning governmental regulatory actions taken during the term of the contract.

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-050 Billing Procedure

The State will compute and forward to Purchaser statements of charges provided for in the contract. Purchaser shall deliver payment to the State on or before the date shown on the billing statement.

P-080 Payment Account Refund

Advance payments made under P-045 or P-045.2 remaining on account above the value for the charges shall be returned to Purchaser within 30 days following the final report of charges. Refunds not made within the 30 day period will accrue interest at the interest rate, as established by WAC 332-100-030, computed on a daily basis until paid.

P-090 Performance Security

Purchaser agrees to furnish, within 30 days of the confirmation date, 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 5. 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 pursuant to RCW 79.15.100. 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 performance security after an operating release has been issued if the State determines that adequate security exists for any remaining obligations of Purchaser.

Section H: Harvesting Operations

H-001 Operations Outside the Sale Boundaries

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

H-010 Cutting and Yarding Schedule

Falling and Yarding will not be permitted from November 1 to April 30 and on weekends and State recognized holidays or between the hours of 8:00 pm and 6:00 am in all units unless authorized in writing by the Contract Administrator.

H-013 Reserve Tree Damage Definition

Reserve trees are trees required and designated for retention within the sale boundary. Purchaser shall protect reserve trees from being cut, damaged, or removed during operations.

Reserve tree damage exists when one or more of the following criteria occur as a result of Purchaser's operation, as determined by the Contract Administrator:

a. A reserve tree has one or more scars on its trunk exposing the cambium layer, which in total exceeds 100 square inches.

b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.

c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

If the Contract Administrator determines that a reserve tree has been cut or damaged, the Purchaser shall provide a replacement reserve tree of like condition, size, and species within the sale unit containing the damaged leave tree, as approved by the Contract Administrator. Purchaser may be required to pay liquidated damages for Excessive Reserve Tree Damage as detailed in clause D-041.

Removal of designated reserve trees from the sale area is unauthorized, and may invoke the use of the G-230 'Trespass and Unauthorized Activity' clause. Purchaser is required to leave all cut or damaged reserve trees on site.

H-015 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. Skid trails will not exceed 12 feet in width, including rub trees.

b. Skid trails shall not cover more than 10 percent of the total acreage on one unit.

c. Skid trail location will be pre-approved by the Contract Administrator.

d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.

e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.

f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.

g. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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 when soil rutting exceeds 12 inches as measured from the natural ground line. To reduce soil damage, the Contract Administrator may require water bars to be constructed, grass seed to be placed on exposed soils, or other mitigation measures. Suspended operations shall not resume unless approval to do so has been given, in writing, by the Contract Administrator.

H-035 Fall Trees Into Sale Area

Trees shall be felled into the sale area unless otherwise approved 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-051 Branding and Painting

Purchaser shall provide a State of Washington registered log brand, acceptable to the State, unless the State agrees to furnish the brand. All purchased timber shall be branded in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

For pulp loads purchased under a contract designated as export restricted, Purchaser shall brand at least 3 logs with legible brands at one end. Also, 10 logs shall be painted at one end with durable red paint.

H-080 Snags Not to be Felled

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using ground and cable methods. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-130 Hauling Schedule

The hauling of forest products will not be permitted on State roads from November 1 to April 30 unless authorized in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

1. Purchaser shall have utility lines located:
   a. Before beginning operations.
   b. Before beginning road construction or reconstruction.
   c. Before digging next to the PA-J-1000 Road, PA-J-1300 Road, or the BPA 3844 Road.

2. Yarding equipment shall not cross live streams without an FPHP.

3. Purchaser shall immediately repair all gate damage resulting from operations to an equal or better condition than existed at the time of the sale.

4. While felling timber, two (2) Warning signs must be posted on the PA-J-1000 Road and the Olympic Discovery Trail.

5. The Purchaser shall notify all employees and contractors working on this sale that any danger tree, marked or unmarked, may be felled. Any felled marked danger tree shall be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.

6. The Purchaser shall notify the Contract Administrator a minimum of three (3) weeks prior to operations beginning in Unit 4.

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

H-142 Wildlife Timing Restrictions

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

Timber felling, road work or operation of heavy equipment performed during the marbled murrelet nesting season (April 1 through September 23), is restricted to two hours after sunrise to two hours before sunset on the PA-J-1000 Road between stations 233+30. This does not apply to hauling timber, rock or equipment.

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

H-190 Completion of Settings

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

H-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 Boundary

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

Section C: Construction and Maintenance

C-040 Road Plan

Road construction and associated work provisions of the Road Plan for this sale, dated 9/17/2019 are hereby made a part of this contract.

C-050 Purchaser Road Maintenance and Repair

Purchaser shall perform work at their own expense on the PA-J-1020, PA-J-1021, PA-J-1021 Spur, PA-J-1200, PA-J-1205, PA-J-1300, PA-J-1300 spur, PA-J-1303, PA-J-1304, PA-J-1304 spur, PA-J-1305, PA-J-1310, PA-J-1500, PA-J-1501, PA-J-1502, PA PA-J-3200, PA-J-3201, PA-J-3202, Spur 1, Spur 2, Spur 3 roads. All work shall be completed to the specifications detailed in the Road Plan.

C-060 Designated Road Maintainer

If required by the State, Purchaser shall perform maintenance and replacement work as directed by the Contract Administrator on the Joyce Access Road (J-1000), Waterline Road (PA-J-3000), PA-I-3000, PA-I-3040, Fisher Cove Road, and any other roads used and not covered in clause C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-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, valid contact numbers and procedures for medical emergencies, fire, hazardous spills, forest practice violations and any unauthorized or

unlawful activity on or in the vicinity of the sale area. The Contract Administrator and the State shall be promptly notified whenever an incident occurs requiring an emergency response.

The ERP must be presented for inspection at the prework meeting and kept readily available to all personnel, including subcontractors, on site during active operations.

S-010 Fire Hazardous Conditions

Purchaser acknowledges that operations under this Contract may increase the risk of fire. Purchaser shall conduct all operations under this agreement following the requirements of WAC 332-24-005 and WAC 332-24-405 and further agrees to use the highest degree of care to prevent uncontrolled fires from starting.

In the event of an uncontrolled fire, Purchaser agrees to provide equipment and personnel working at the site to safely and effectively engage in first response fire suppression activity.

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

S-020 Extreme Hazard Abatement

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

S-030 Landing Debris Clean Up

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

S-035 Logging Debris Clean Up

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

S-050 Cessation of Operations for Low Humidity

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

S-060 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-070 Water Supply

Purchaser shall provide, during the "closed season", a water supply with a minimum capacity of 250 gallons for rapid filling of pump trucks or trailers at a location designated by the Contract Administrator.

S-100 Stream Cleanout

Slash or debris which enters any typed water as a result of operations under this contract and which is identified by the Contract Administrator shall be removed and deposited in a stable position. Removal of slash or debris shall be accomplished in a manner that avoids damage to the natural stream bed and bank vegetation.

S-110 Resource Protection

No equipment may operate within 30' of any typed water unless authority is granted in writing by the Contract Administrator.

S-120 Stream Protection

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

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 or other releases of hazardous material/waste during operations conducted under this contract.

b. Hazardous Materials Spill Prevention

All operations shall be conducted in a manner that avoids the release of hazardous materials, including petroleum products, into the environment (water, air or land).

c. Hazardous 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 10 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. If large quantities of bulk fuel/other hazardous materials are stored on site,

Purchaser must be able to effectively control a container leak and contain & recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology (DOE). It is the responsibility of the 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 covered in part a., the Purchaser is responsible for immediately notifying all the following:

-Department of Emergency Management (contact information below).
-National Response Center (contact information below).
-Appropriate Department of Ecology (DOE) regional office (contact information below).
-DNR Contract Administrator

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

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

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

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

Department of Emergency Management 24-hour Number: 1-800-258-5990

National Response Center: 1-800-424-8802

S-131 Refuse Disposal

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

S-150 Recreation Trail Cleanout

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

Section D: Damages

D-013 Liquidated Damages or Failure to Perform

The following clauses provide for payments by Purchaser to the State for breaches of the terms of this contract other than failure to perform. These payments are agreed to as liquidated damages and not as penalties. They are reasonable estimates of anticipated harm to the State, which will be 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.

Clause P-020 governs Purchaser's liability in the event Purchaser fails to perform any of the contract requirements other than the below liquidated damage clauses without written approval by the State. Purchaser's failure to pay for all or part of the forest products sold in this contract prior to expiration of the contract term results in substantial injury to the State. Therefore, Purchaser agrees to pay the State the full lump sum contract price in P-020 in the event of failure to perform.

D-041 Reserve Tree Excessive Damage

When Purchaser's operations exceed the damage limits set forth in clause H-013, Reserve Tree Damage Definition, and when the Contract Administrator determines that a suitable replacement for a damaged reserve tree is not possible, the damaged trees result in substantial injury to the State. The value of the damaged reserve trees at the time of the breach is not readily ascertainable. Therefore, the Purchaser agrees to pay the State as liquidated damages at the rate of $1,000.00 per tree for all damaged reserve trees that are not replaced in the sale area.

SIGNATURES

This agreement may be executed in any number of counterparts (including by electronic mail in portable document format (.pdf), or by facsimile) each of which shall be deemed an original but all of which, when taken together, shall constitute one and the same Agreement binding on all parties.

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

	STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES
_____ Purchaser	_____ Mona Griswold Olympic Region Manager
_____ Print Name	
Date: _____ Address:	Date: _____

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

STATE OF _____)
)
COUNTY OF _____)

On this _____ day of _____, 20___, before me personally appeared _____
_____ to me known to be the _____ of the corporation that executed the within and foregoing instrument and acknowledged said instrument to be the free and voluntary act and deed of the corporation, for the uses and purposes therein mentioned, and on oath stated that (he/she was) (they were) authorized to execute said instrument.

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

_____
Notary Public in and for the State of

_____

My appointment expires _____

Schedule A
SLASH PILING SPECIFICATIONS

The areas shall be piled by creating circular piles of slash and brush conforming to the following specifications:

1. Piles shall be a minimum of 12 feet tall by 8 feet wide to a maximum of 30 feet tall and 16 feet wide. Piles shall be cone shaped and stable.

2. Piles shall be free of topsoil, large rotten logs and large stumps. No material larger than 8 inches in diameter shall be piled. Any burnable material shall be well scattered.

3. Piles shall not be placed on large stumps or logs.

4. Piles shall be stacked a minimum of 50 feet from all unit boundaries, Riparian Management Zones, leave tree areas and any standing timber; a minimum of 100 feet from any public roads and highways; and a minimum of 200 feet from any structures.

5. Piling shall be completed using an approved hydraulic shovel and grapples.

6. Slash and displaced soil shall be removed from swales and natural drainage channels concurrent with yarding.

7. Slash shall be placed in skid roads or ahead of machinery. Slash which accumulates on landings and/or roads shall be lopped and scattered within the harvest area or as designated by the Contract Administrator.

8. Slash generated during cable yarding shall be stacked in dirt free piles and shall not block roads or interfere with functioning of drainage structures, ditches, or stream channels.

9. Purchaser may remove slash as biofuels.

Schedule B
Green Tree Retention Plan

Leave the following:

All trees banded with blue paint and all leave tree area clumps shall remain standing. The perimeter of the leave tree clumps are designated by Leave Tree Area Tags. The tags face outward from the leave tree clumps.

Unit #	# of Individually Marked Trees	# of Clumps	# of Trees Clumped	Total # of Leave Trees
1	8	4	212	220
2	31	2	753	784
3	28	2	367	395
4	29	4	451	480
5	0	3	55	55
6	79	5	455	534
8	15	2	146	161

Permission to substitute leave trees must be granted by the Contract Administrator.

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region: Olympic

Timber Sale Name: Whiskey Creek Limit

Application Number: 30- 099241

EXCISE TAX APPLICABLE ACTIVITIES

Construction: 8,265 **linear feet**
Road to be constructed (optional and required) but not abandoned

Reconstruction: 7,985 **linear feet**
Road to be reconstructed (optional and required) but not abandoned

Abandonment: 0 **linear feet**
Abandonment of existing roads not reconstructed under the contract

Decommission: 0 **linear feet**
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: 89,805 **linear feet**
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: 0 **linear feet**
Roads to be constructed (optional and required) and then abandoned

Temporary Reconstruction: 0 **linear feet**
Roads to be reconstructed (optional and required) and then abandoned

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contact. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.
(Revised 9/18)

PRE-CRUISE NARRATIVE

Sale Name: **Whiskey Creek Limit**	Region: **Olympic**
Agreement #: **30-099241**	District: Straits
Contact Forester: Ben Stein Phone / Location: (360)640-8794	County(s): Clallam
Alternate Contact:Cody Pagel Phone / Location: (360)640-9996	Other information: Click here to enter text.

Type of Sale: Lump Sum	
Harvest System: Ground based Click here to enter text.	20
Harvest System: Downhill Cable Click here to enter text. Enter % of sale acres	10
Harvest System: Uphill Cable Click here to enter text.	70

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec. 32 T31 R8W	01	26.4		3.5			22.9	GPS (Garmin)
2	Sec. 8 T30 R8W	01	122.3	18	4.3	2.2		97.8	GPS (Garmin)
3	Sec. 8/9 T30 R8W	01, 03	54.5	1.9	2.1	1.6		48.9	GPS (Garmin)
4	Sec. 9&16 T30 R8W	01, 03	68.6	7.8	4	1.7		55.1	GPS (Garmin)
5	Sec. 2 T30 R9W	07	14.3	6.8				7.5	GPS (Garmin)
6	Sec. 2 T30 R9W	07	43.8	2.2	1.8	1.5		38.3	GPS (Garmin)
7	Sec. 2 T30 R9W	07	41.5	9.0		0.6		31.9	GPS (Garmin)
8	Sec. 22/23 T30 R8W	07	23.8	2.2	1.3			20.3	GPS (Garmin)
9	Sec. 32 T31 R8W	01	1.6					1.6	GPS (Garmin)

10	Sec. 8 T30 R8W	01	3.2					3.2	GPS (Garmin)
11	Sec. 9 T30 R8W	03	0.2					0.2	GPS (Garmin)
12	Sec. 9 T30 R8W	01	2.3					2.3	GPS (Garmin)
13	Sec. 2 T30 R9W	07	0.6					0.6	GPS (Garmin)
TOTAL ACRES			403.1	47.9	17.0	7.6		330.6	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	White Timber Sale boundary tags, pink flagging, pink flashers, blue butt marks. Take trees on the east management line are marked with red paint at eye height and red butt marks.		Leave tree groups are marked with yellow leave tree tags, pink ribbon and blue paint. Individual trees are marked with a single blue band around the tree at eye level and blue dots at the base of the tree. 212 trees are in four leave tree groups, with 8 individual leave trees.
2	White Timber Sale boundary tags, pink flagging, pink flashers, blue paint		Leave tree groups are marked with yellow leave tree tags, pink ribbon and blue paint. Individual trees are marked with a single blue band around the tree at eye level and blue dots at the base of the tree. 753 trees are in two leave tree groups, with 31 individual leave trees.
3	White Timber Sale boundary tags, pink flagging, pink flashers, blue paint		Leave tree groups are marked with yellow leave tree tags, pink ribbon and blue paint. Individual trees are marked with a single blue band around the tree at eye level and blue dots at the base of the tree. 367 trees are in two leave tree groups, with 28 individual leave trees.
4	White Timber Sale boundary tags, pink flagging, pink flashers, blue paint		Leave tree groups are marked with yellow leave tree tags, pink ribbon and blue paint. Individual trees are marked with a single blue band around the tree at eye level and blue dots at the base of the tree. 451 trees are in four leave tree groups, with 29 individual leave trees.
5	White Timber Sale boundary tags, pink		Leave tree groups are marked with yellow leave tree tags, pink ribbon and blue paint. Individual trees are marked with a single blue

	flagging, pink flashers, blue paint		band around the tree at eye level and blue dots at the base of the tree. 67 trees are in three leave tree groups.
6	White Timber Sale boundary tags, pink flagging, pink flashers, blue paint		Leave tree groups are marked with yellow leave tree tags, pink ribbon and blue paint. Individual trees are marked with a single blue band around the tree at eye level and blue dots at the base of the tree. 273 trees are in two leave tree groups, with 59 individual leave trees.
7	Blue Special Managemennt Unit tags, pink flagging, pink flashers, blue paint		
8	White Timber Sale boundary tags, pink flagging, pink flashers, blue paint		Leave tree groups are marked with yellow leave tree tags, pink ribbon and blue paint. Individual trees are marked with a single blue band around the tree at eye level and blue dots at the base of the tree. 146 trees are in five leave tree groups, with 15 individual leave trees.
9	Orange Right-of-Way boundary tags, orange flagging, orange flashers, orange paint		
10	This is a prescriptive harvest for the ROW. ROW of will be 50' wide (25' from centerline). Centerline is flagged in with orange flagging.		
11	Orange Right-of-Way boundary tags, orange flagging, orange flashers, orange paint		
12	Orange Right-of-Way boundary tags, orange flagging, orange flashers, orange paint		
13	Orange Right-of-Way boundary tags, orange flagging, orange flashers, orange paint		

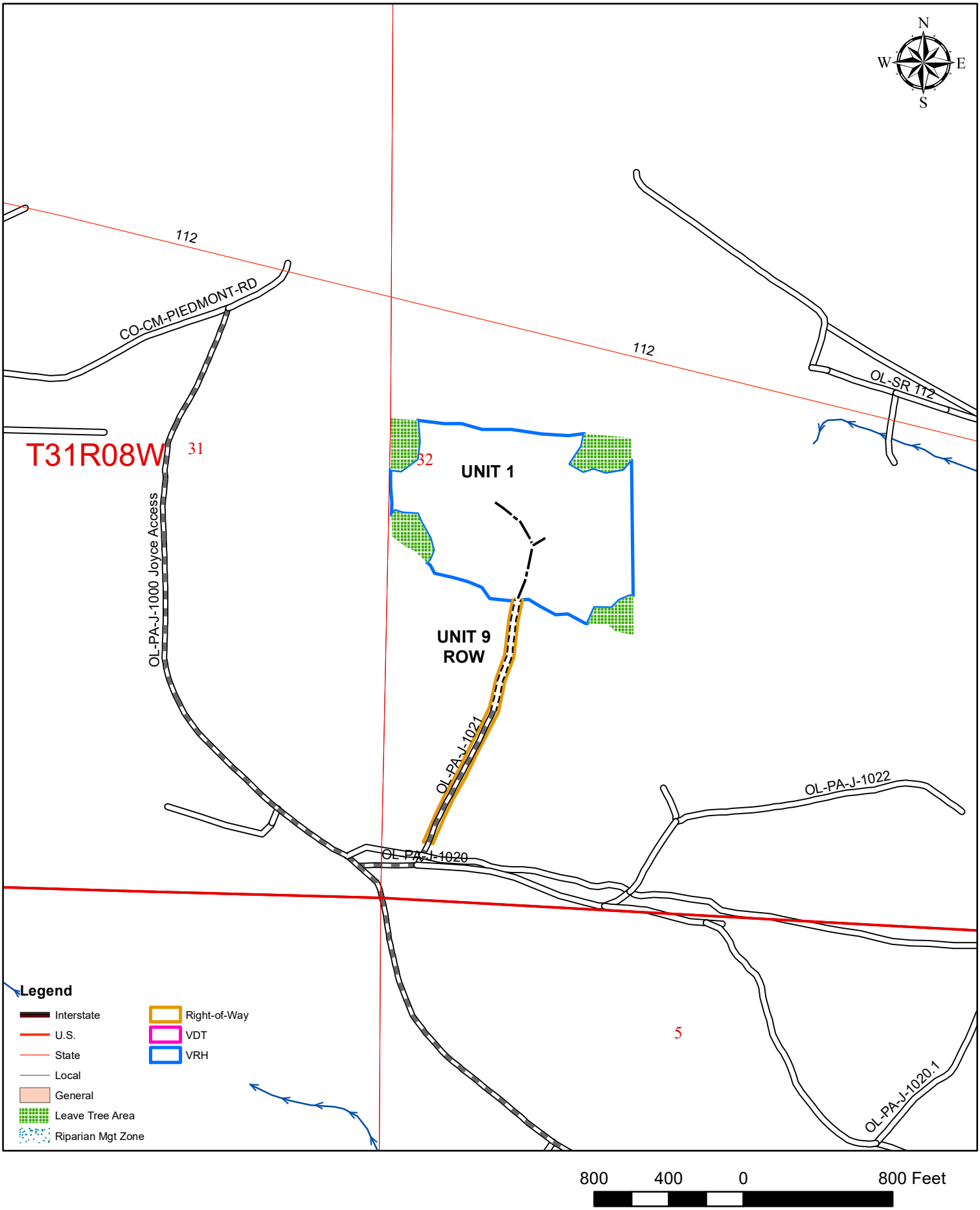
OTHER PRE-CRUISE INFORMATION:

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	575	Joyce Pedmont Rd, Joyce Access Rd, J-1020, J-1021	Cruise Map
2	2,940	Joyce Pedmont Rd, Joyce Access Rd, J-1200 (AA1 Lock)	Cruise Map
3	1,200	Joyce Pedmont Rd, Joyce Access Rd, J-1300	Cruise Map
4	1,650	Joyce Pedmont Rd, Joyce Access Rd	Cruise Map
5	190	Hwy 112, Waterline Rd (AA1 lock)	Cruise Map
6	384	Hwy 112, J-3000, J3300 (AA1 lock)	Cruise Map
7	720	Hwy 112, J-3000, J3300 (AA1 lock)	Cruise Map
8	400	Hwy 101, Joyce Access Rd	Cruise Map
9	10	Access to Unit 1	Cruise Map
10	15	Access to Unit 2	Cruise Map
11	5	Access to Unit 3	Cruise Map
12	10	Access to Unit 4	Cruise Map
13	10	Access across Unit 7	Cruise Map
TOTAL MBF	8,109		

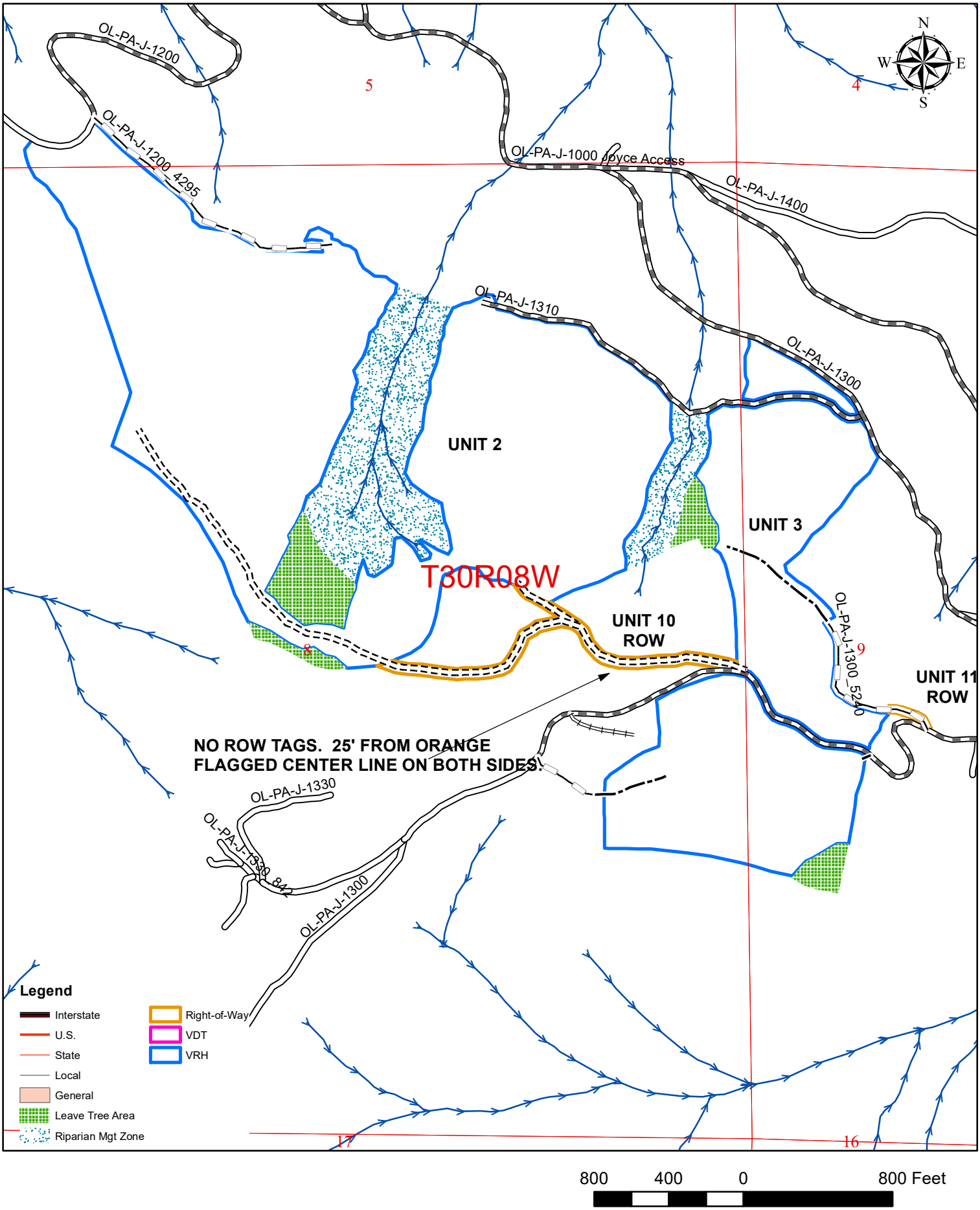
REMARKS:

Prepared By: Ben Stein **Date: 8/26/19**	**Title: Forester**	**CC:**

Whiskey Creek Limit

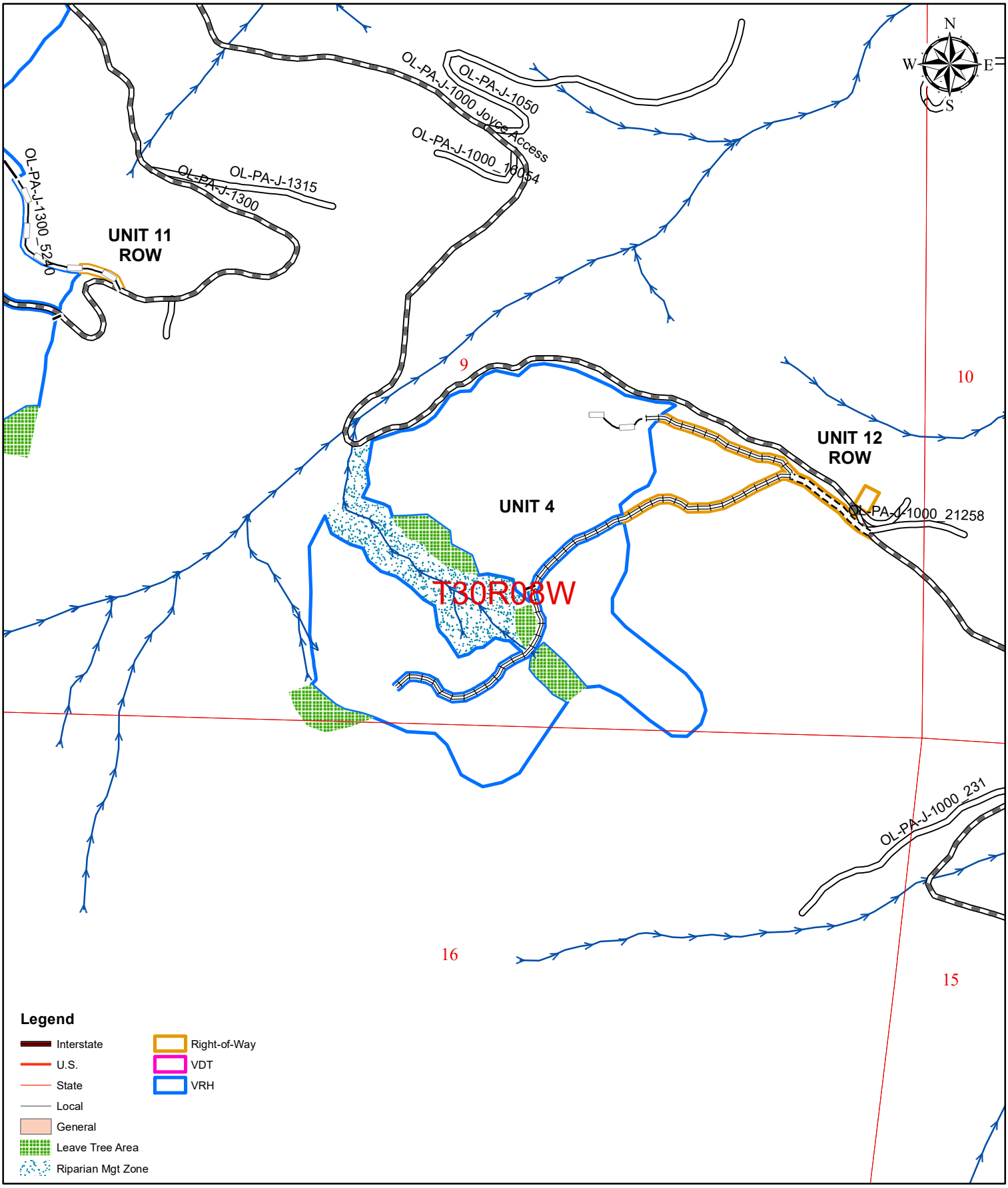


Whiskey Creek Limit



800 400 0 800 Feet

Whiskey Creek Limit



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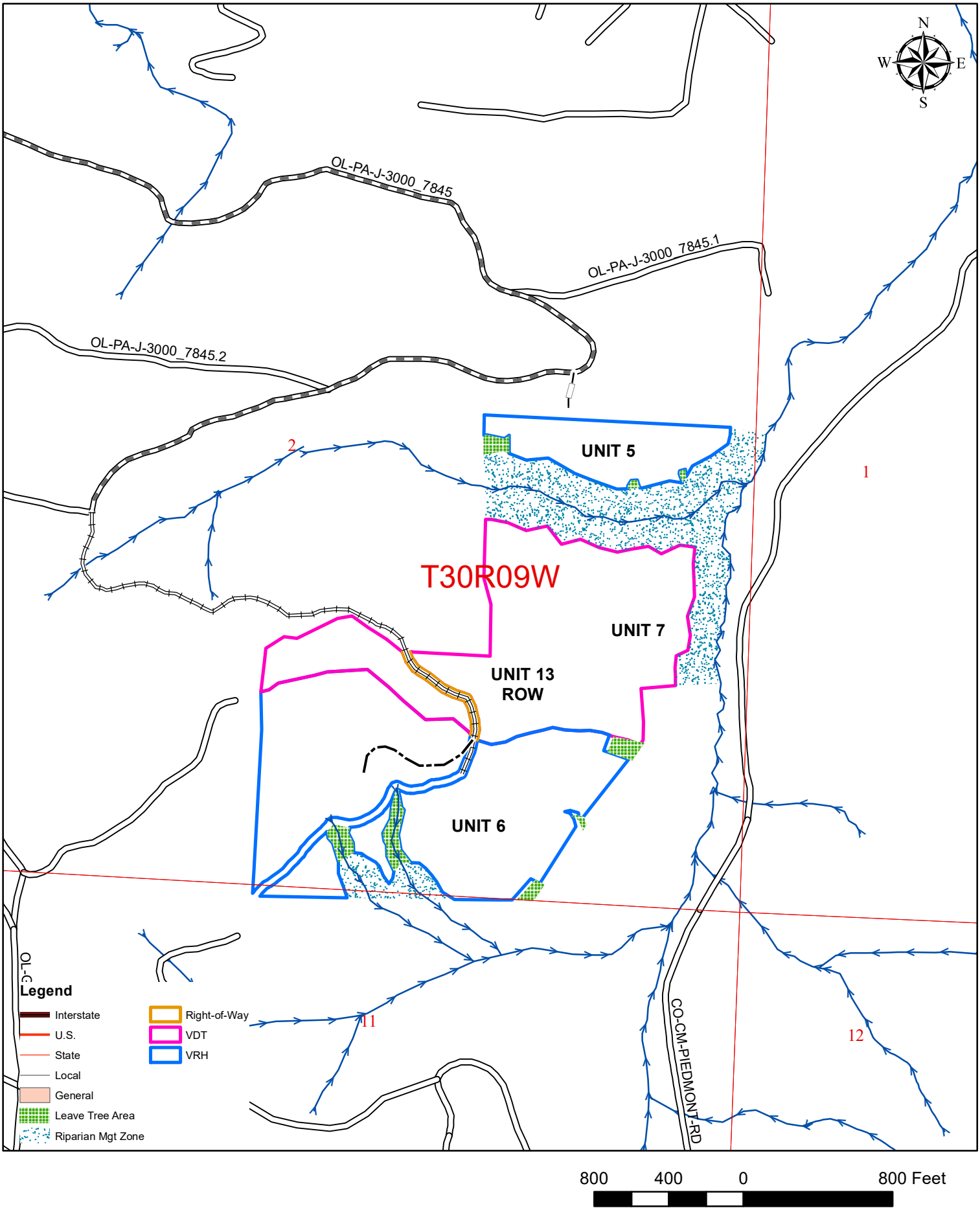
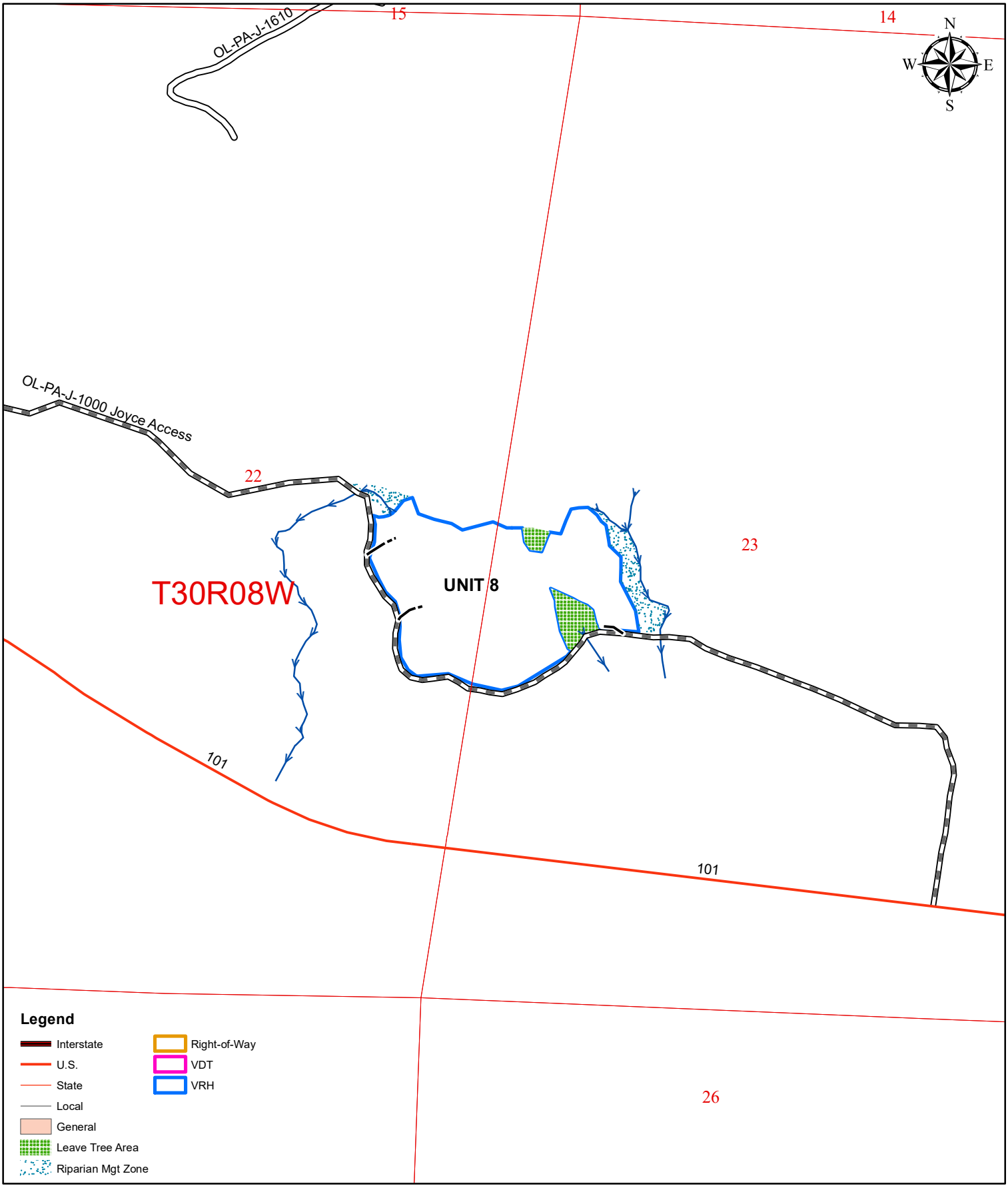
Whiskey Creek Limit



Whiskey Creek Limit



800 400 0 800 Feet

Cruise Narrative

Sale Name: Whiskey Creek Limit	**Region:** Olympic
Agreement #: 30-099241	**District**: Straits
Lead Cruiser: Kevin Peterson	**Completion Date**: 10/22/19 Revised 1/23/20
Other Cruisers: none	

Unit acreage specifications:

Unit #	Cruised Acres	Cruised acres agree with sale acres? Y/N	If acres do not agree explain why.
1	23	Y	
2	97	Y	
3	49	Y	
4	53	Y	
5	7	Y	
6	65	Y	
8	20	Y	
9	1.6	Y	
10	3.2	Y	
11	0.2	Y	
12	2.3	Y	
Total	321.3	Y	

Unit cruise specifications:

Unit #	Sample Type (VP,FP,ITS,100%)	Expansion Factor (baf,full/half)	Sighting Height (4.5', 16')	Grid Size (plot spacing)	Plot Ratio (cruise/count)	Number of plots
1	VP	40/80.27	4.5'	290 X 290	1:1	10
2	VP	62.5/40	4.5'	290 X 290	1:2	48
3	VP	71.11/40	4.5'	290 X 290	1:1	24
4	VP	62.5/40	4.5'	400 X 400	1:1	26
5	VP	54.44/40	4.5'	290 X 290	All	4
6	VP	54.44/40	4.5'	290 X 290	1:1	27
8	VP	54.44/40	4.5'	290 X 290	1:1	10
9	VP	54.44/40	4.5'	Random	All	1
10	VP	20	4.5'	Random	All	2
11	VP	40	4.5'	Random	All	1
12	VP	54.44/40	4.5'	Random	All	1

Sale/Cruise Description:

Minor species cruise intensity	Minor species sampled using same cruise plots. Red Cedar, Bigleaf Maple and Red Alder were cruised at a 40 BAF on most units.					
Minimum cruise spec:	40% of Form Factor at 16 ft. D.O.B or 5 inch top.					
Average ring count:	**DF** =	8-10	**WH** =	8	**SS** =	
Leave/take tree description:	Leave tree clumps are bounded out with yellow tags, pink flashers and blue paint. Individual leave trees are marked with blue bands and two blue butt marks.					
Other conditions:	Exterior boundaries are marked with white tags and pink flashers					

Sort Description:	**HA–** Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½" in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½" in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (minimum diameter 8".) **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.

Field Observations:

Whiskey Creek Limit is a 7 VRH unit timber sale with 4 associated Right of Ways. The sale is located near Joyce, along the Joyce Access Road and Piedmont Rd. The sale has 321.3 total harvest acres. Access to the units is fairly good and an AA1 key and OO1 are need to access some units.

The total take volume for the sale is 9,693 MBF and is comprised of 62% Douglas-fir (33% of DF is of High Quality), 15% Western Hemlock, 12% Western Red Cedar, 6% Red Alder and 4% Bigleaf Maple; with traces of Grand-fir and Sitka Spruce. The average DF has DBH of 16.5" and a bole height of 67'. The average WH has a DBH of 13.4" and a bole height of 59'. The Average RC has a DBH of 15 and a bole height of 47'. Common defects were sweep, forks and some butt rot. Some unit have small amounts of root rot pockets.

This sale is 20% Ground based harvest and 80% cable harvest.

Grants: 01, 03 and 07

Prepared By: Kevin Peterson – Olympic Region Cruiser

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T000 R000 S00 TyU1
THRU
T000 R000 S00 TyU9

Project: **WHISKEY**

Acres **321.30**

Page **1**
Date **1/23/2020**
Time **9:21:13AM**

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RC		CU	CU														6	6		0.00	5.1
RC	D	3S		80	19.4	3,674	2,961	951	11	29	31	28		2	1	97	35	11	144	1.49	20.6
RC	D	4S		20	.3	724	721	232	99	1			34	36	20	9	24	5	27	0.32	27.0
RC	**Totals**			12	16.3	4,397	3,682	1,183	28	24	25	23	7	9	5	80	27	7	70	0.92	52.7
RA	D	2S		10	9.6	214	193	62			100					100	40	13	239	1.87	.8
RA	D	3S		15	11.0	286	255	82	5	95				73		27	32	10	111	1.01	2.3
RA	D	4S		60	8.8	1,179	1,076	346	65	35				60	14	27	32	7	46	0.51	23.2
RA	D	UT		15		252	252	81	100				60	28	12		17	5	16	0.24	16.1
RA	**Totals**			6	8.1	1,931	1,776	570	54	35	11		9	51	10	31	27	6	42	0.51	42.4
DF		CU	CU		100.0	18											3	7		0.00	5.5
DF		HQ	SM	7	1.5	1,390	1,369	440				100			11	89	40	18	547	3.17	2.5
DF		HQ	2S	12	1.9	2,272	2,229	716			70	30				100	40	14	306	1.96	7.3
DF		HQ	3S	2		431	431	139		100						100	40	9	131	0.97	3.3
DF		HQ	2S	8	5.1	1,537	1,458	469			56	44				100	40	15	324	2.16	4.5
DF		HQ	3S	4	1.9	783	768	247		100						100	40	10	135	1.01	5.7
DF	D	2S		29	7.5	5,689	5,262	1,691			58	42		1		99	40	14	291	1.96	18.1
DF	D	3S		27	3.7	5,214	5,019	1,613	34	66				0	14	86	38	8	87	0.71	57.5
DF	D	4S		10		1,945	1,945	625	97	3			20	50	16	14	24	5	26	0.30	73.4
DF	D	UT		1		92	92	30	100				15	65	19		13	5	8	0.15	11.8
DF	**Totals**			62	4.1	19,373	18,573	5,968	20	25	29	26	2	6	6	85	30	8	98	0.89	189.6
WH		CU	CU															6		0.00	1.3
WH	D	2S		15	4.0	728	699	224			76	24				100	40	14	267	1.85	2.6
WH	D	3S		66	1.5	3,077	3,030	973	39	61					15	85	38	8	86	0.68	35.1
WH	D	4S		18	3.9	821	789	253	95	5			19	47	20	14	24	5	26	0.32	30.1
WH	D	UT		1		34	34	11	100				63	37			11	5	3	0.06	13.4
WH	**Totals**			15	2.3	4,660	4,551	1,462	43	42	12	4	4	8	13	74	28	6	55	0.58	82.5
BM	D	2S		26	28.6	396	283	91			77	23		54		46	34	14	186	2.21	1.5
BM	D	3S		12	11.0	137	122	39		100				33		67	37	10	106	0.93	1.1
BM	D	4S		39	9.7	466	420	135	70	30			7	65	15	14	30	7	43	0.50	9.8
BM	D	UT		23		236	236	76	94	6			37	39	4	20	21	5	23	0.33	10.4
BM	**Totals**			4	14.1	1,235	1,061	341	49	25	21	6	11	53	7	30	26	7	46	0.61	22.9
GF	D	2S		92	2.2	497	486	156			32	68				100	40	15	327	1.83	1.5
GF	D	3S		6		27	27	9	61	39				39	61		30	7	56	0.57	.5
GF	D	UT		2		10	10	3	100					100			27	7	40	0.53	.3
GF	**Totals**			2	2.1	534	523	168	5	2	30	63		4	3	93	36	12	235	1.50	2.2
Totals					6.1	32,130	30,167	9,693	27	27	25	21	4	11	7	78	29	7	77	0.78	392.2

TC PSTATS

PROJECT STATISTICS

PROJECT WHISKEY

DATE 1/23/2020

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U1	THR	321.30	154	741	S	W
000	000	00	CREEK	U9						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	154	741	4.8		
CRUISE	73	357	4.9	69,501	.5
DBH COUNT					
REFOREST					
COUNT	79	380	4.8		
BLANKS	2				
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
DOUG FIR-T	172	97.4	16.5	67	35.6	144.7	19,373	18,573	5,156	5,150
WR CEDAR-T	69	34.7	15.0	47	11.1	42.9	4,397	3,682	1,306	1,283
WHEMLOCK-T	49	44.7	13.4	59	11.9	43.6	4,660	4,551	1,336	1,336
R ALDER-T	38	24.7	12.7	52	6.1	21.7	1,931	1,776	579	579
BL MAPLE-T	26	14.0	13.4	50	3.7	13.7	1,235	1,061	370	370
GRAND FI-T	3	.7	24.2	112	0.5	2.4	534	523	121	121
TOTAL	*357*	*216.3*	*15.1*	*59*	*69.2*	*269.0*	*32,130*	*30,167*	*8,868*	*8,839*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	93.9	7.6	90	97	105			
WR CEDAR-T	183.2	14.8	30	35	40			
WHEMLOCK-T	185.7	15.0	38	45	51			
R ALDER-T	230.0	18.5	20	25	29			
BL MAPLE-T	299.3	24.1	11	14	17			
GRAND FI-T	641.9	51.7	0	1	1			
TOTAL	*57.1*	*4.6*	*206*	*216*	*226*	*131*	*67*	*33*

CL 68.1	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	82.6	6.7	135	145	154			
WR CEDAR-T	174.2	14.0	37	43	49			
WHEMLOCK-T	161.0	13.0	38	44	49			
R ALDER-T	203.3	16.4	18	22	25			
BL MAPLE-T	244.7	19.7	11	14	16			
GRAND FI-T	648.5	52.3	1	2	4			
TOTAL	*39.8*	*3.2*	*260*	*269*	*278*	*64*	*32*	*16*

CL 68.1	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	90.6	7.3	17,217	18,573	19,929			
WR CEDAR-T	188.2	15.2	3,124	3,682	4,240			
WHEMLOCK-T	157.7	12.7	3,973	4,551	5,130			
R ALDER-T	198.2	16.0	1,492	1,776	2,059			
BL MAPLE-T	241.4	19.5	855	1,061	1,268			
GRAND FI-T	650.1	52.4	249	523	798			
TOTAL	*49.8*	*4.0*	*28,957*	*30,167*	*31,377*	*99*	*51*	*25*

CL 68.1	COEFF		**V_BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T			119	128	138			
WR CEDAR-T	100.6	8.1	73	86	99			
WHEMLOCK-T	76.3	6.2	91	104	118			
R ALDER-T	120.1	9.7	69	82	95			

TC PSTATS

PROJECT STATISTICS

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U1	THR	321.30	154	741	S	W
000	000	00	CREEK	U9						

CL 68.1 COEFF

SD: 1.00 VAR.

			V_BAR/ACRE			# OF PLOTS REQ.		INF. POP.
		S.E.%	LOW	AVG	HIGH	5	7	10
BL MAPLE-T	149.8	12.1	62	77	93			
GRAND FI-T	455.3	36.7	105	220	335			
TOTAL	*45.6*	*3.7*	*108*	*112*	*117*	*83*	*42*	*21*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU1

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U1	23.00	10	23	S	W

T000 R000 S00 TU1

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RC		CU	CU														5	11		0.00	7.0
RC		D	3S	96	18.8	21,483	17,448	401	6	16	21	56		2		98	35	12	213	2.18	82.0
RC		D	4S	4	4.3	734	703	16	85	15			60		40		20	6	22	0.33	31.7
RC	**Totals**			76	18.3	22,218	18,151	417	9	16	20	54	2	2	2	94	30	10	150	1.83	120.7
RA		D	4S	85	6.4	5,150	4,822	111	80	20				77	11	12	31	6	42	0.46	115.8
RA		D	UT	15		831	831	19	100				100				14	5	13	0.19	65.9
RA	**Totals**			24	5.5	5,981	5,653	130	83	17			15	65	10	10	25	6	31	0.40	181.7
Type Totals					15.6	28,199	23,804	547	27	17	15	41	5	17	3	74	27	8	79	1.03	302.3

TC TSTATS

STATISTICS

PAGE 1
DATE 1/23/2020

PROJECT **WHISKEY**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U1	23.00	10	42	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	10	42	4.2		
CRUISE	5	23	4.6	3,933	.6
DBH COUNT					
REFOREST COUNT	5	19	3.8		
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
WR CEDAR-T	15	55.2	24.8	69	37.1	184.6	22,218	18,151	6,531	6,533
R ALDER-T	8	115.8	11.3	46	23.9	80.0	5,981	5,653	1,812	1,812
TOTAL	*23*	*171.0*	*16.8*	*54*	*64.5*	*264.6*	*28,199*	*23,804*	*8,343*	*8,345*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WR CEDAR-T	92.8	30.9	38	55	72			
R ALDER-T	104.7	34.9	75	116	156			
TOTAL	*56.8*	*18.9*	*139*	*171*	*203*	*143*	*73*	*36*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WR CEDAR-T	79.5	26.5	136	185	234			
R ALDER-T	102.7	34.2	53	80	107			
TOTAL	*37.3*	*12.4*	*232*	*265*	*298*	*62*	*32*	*15*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WR CEDAR-T	80.8	26.9	13,263	18,151	23,038			
R ALDER-T	104.7	34.9	3,682	5,653	7,624			
TOTAL	*45.9*	*15.3*	*20,161*	*23,804*	*27,447*	*94*	*48*	*23*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WR CEDAR-T	43.8	14.6	72	98	125			
R ALDER-T	2.8	.9	46	71	95			
TOTAL	*157.5*	*52.5*	*76*	*90*	*104*	*1,101*	*562*	*275*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU2

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U2	97.00	48	78	S	W

T000 R000 S00 TU2

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU														2	6		0.00	6.9
DF		HQ	SM	8		2,146	2,146	208				100				100	40	18	512	3.02	4.2
DF		HQ	2S	17	1.7	4,228	4,156	403			71	29				100	40	14	311	1.99	13.4
DF		HQ	3S	5		1,185	1,185	115		100						100	40	9	134	1.00	8.9
DF		HQ	2S	8	4.0	1,935	1,858	180			57	43				100	40	15	327	2.15	5.7
DF		HQ	3S	5		1,199	1,199	116		100						100	40	9	130	0.97	9.2
DF		D	2S	22	6.9	5,948	5,534	537			67	33				100	40	14	265	1.67	20.9
DF		D	3S	22	2.7	5,537	5,388	523	33	67					16	84	38	8	88	0.67	60.9
DF		D	4S	12		2,933	2,933	284	98	2			12	57	21	10	25	5	28	0.30	105.6
DF		D	UT	1		72	72	7	100				18		82		11	5	4	0.12	17.0
DF	**Totals**			76	2.8	25,182	24,471	2,374	19	25	32	24	2	7	6	85	30	8	97	0.85	252.6
WH		CU	CU															7		0.00	2.0
WH		D	2S	22		1,039	1,039	101			46	54				100	40	14	306	1.97	3.4
WH		D	3S	59	5.4	2,894	2,739	266	54	46					22	78	37	7	79	0.67	34.9
WH		D	4S	17	11.8	905	798	77	82	18			30	30	27	12	24	5	25	0.40	32.2
WH		D	UT	2		71	71	7	100				100				11	5	5	0.09	15.8
WH	**Totals**			14	5.3	4,909	4,647	451	48	30	10	12	7	5	18	70	27	7	53	0.61	88.3
RC		CU	CU														6	6		0.00	6.9
RC		D	3S	85	16.4	3,169	2,649	257	14	38	34	14			3	97	36	10	126	1.28	21.1
RC		D	4S	15		433	433	42	100				33	55		12	25	5	26	0.31	16.4
RC	**Totals**			10	14.4	3,602	3,082	299	26	33	29	12	5	8	3	85	27	8	69	0.91	44.3
Type Totals					4.4	33,693	32,200	3,123	24	26	28	21	3	7	8	83	29	7	84	0.81	385.2

TC TSTATS

STATISTICS

PAGE 1

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U2	97.00	48	216	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	48	216	4.5		
CRUISE	16	78	4.9	19,910	.4
DBH COUNT					
REFOREST					
COUNT	31	138	4.5		
BLANKS	1				
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
DOUG FIR-T	53	133.0	15.7	66	45.0	178.4	25,182	24,471	6,536	6,535
WHEMLOCK-T	11	46.5	13.8	58	13.0	48.2	4,909	4,647	1,455	1,455
WR CEDAR-T	14	25.8	15.8	52	8.8	35.0	3,602	3,082	1,093	1,093
TOTAL	*78*	*205.3*	*15.3*	*62*	*66.9*	*261.6*	*33,693*	*32,200*	*9,083*	*9,083*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	75.3	10.9	119	133	147			
WHEMLOCK-T	113.5	16.4	39	46	54			
WR CEDAR-T	154.7	22.3	20	26	32			
TOTAL	*52.8*	*7.6*	*190*	*205*	*221*	*112*	*57*	*28*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	65.4	9.4	162	178	195			
WHEMLOCK-T	111.1	16.0	40	48	56			
WR CEDAR-T	146.5	21.1	28	35	42			
TOTAL	*45.0*	*6.5*	*245*	*262*	*279*	*81*	*41*	*20*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	77.1	11.1	21,748	24,471	27,193			
WHEMLOCK-T	116.7	16.8	3,864	4,647	5,430			
WR CEDAR-T	147.9	21.3	2,424	3,082	3,739			
TOTAL	*56.1*	*8.1*	*29,594*	*32,200*	*34,805*	*126*	*64*	*31*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T			122	137	152			
WHEMLOCK-T			80	96	113			
WR CEDAR-T	54.4	7.9	69	88	107			
TOTAL	*296.4*	*42.8*	*113*	*123*	*133*	*3,515*	*1,793*	*879*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU3

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U3	49.00	24	44	S	W

T000 R000 S00 TU3

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU															7		0.00	11.3
DF		HQ	SM	3	12.3	1,141	1,001	49				100			100		32	29	1070	5.83	.9
DF		HQ	2S	7		2,592	2,592	127			67	33				100	40	15	345	2.12	7.5
DF		HQ	2S	17	6.3	5,826	5,461	268			52	48				100	40	15	338	2.24	16.2
DF		HQ	3S	4		1,334	1,334	65		100						100	40	9	134	0.99	9.9
DF		D	2S	38	9.4	14,041	12,716	623			34	66		1		99	40	15	364	2.58	34.9
DF		D	3S	25	4.0	8,691	8,343	409	41	59				1	13	86	38	8	89	0.75	94.0
DF		D	4S	5		1,889	1,889	93	91	9			46	32		21	21	5	24	0.31	79.5
DF		D	UT	1		65	65	3	100				100				11	6	5	0.17	12.4
DF	**Totals**			93	6.1	35,580	33,401	1,637	16	19	27	38	3	2	6	88	31	9	125	1.16	266.6
BM		D	2S	35	25.0	558	418	21			100					100	40	12	164	1.98	2.6
BM		D	3S	21	11.1	269	239	12		100						100	40	8	80	0.79	3.0
BM		D	4S	34		403	403	20	100						100		32	5	30	0.34	13.4
BM		D	UT	10		107	107	5	100				100				15	6	19	0.41	5.5
BM	**Totals**			3	12.7	1,337	1,167	57	44	20	36		9		35	56	30	6	48	0.65	24.5
WH		D	3S	63		724	724	35	41	59					41	59	35	7	82	0.63	8.8
WH		D	4S	37		424	424	21	100					100			26	5	30	0.26	14.1
WH		D	UT														9	5		0.00	6.0
WH	**Totals**			3		1,148	1,148	56	63	37				37	26	37	25	6	40	0.40	28.9
RC		D	3S	80	14.3	296	254	12		100						100	36	10	120	1.06	2.1
RC		D	4S	20		63	63	3	100					100			30	5	30	0.34	2.1
RC	**Totals**			1	11.8	360	317	16	20	80				20		80	33	8	75	0.73	4.2
Type Totals					6.2	38,424	36,034	1,766	18	20	26	36	3	4	8	86	30	8	111	1.06	324.3

TC TSTATS

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PAGE 1

PROJECT WHISKEY

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U3	49.00	24	104	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	24	104	4.3		
CRUISE	10	44	4.4	7,734	.6
DBH COUNT					
REFOREST COUNT	13	60	4.6		
BLANKS	1				
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
DOUG FIR-T	35	116.6	20.1	75	57.4	257.8	35,580	33,401	9,436	9,435
BL MAPLE-T	5	19.0	13.3	45	5.0	18.3	1,337	1,167	478	478
WHEMLOCK-T	3	20.1	10.4	47	3.7	11.9	1,148	1,148	287	287
WR CEDAR-T	1	2.1	17.0	68	0.8	3.3	360	317	102	102
TOTAL	*44*	*157.8*	*18.4*	*68*	*67.9*	*291.3*	*38,424*	*36,034*	*10,304*	*10,303*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	45.0	9.4	106	117	128			
BL MAPLE-T	221.1	46.1	10	19	28			
WHEMLOCK-T	277.0	57.8	9	20	32			
WR CEDAR-T	338.8	70.6	1	2	4			
TOTAL	*55.5*	*11.6*	*140*	*158*	*176*	*128*	*66*	*32*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	42.1	8.8	235	258	280			
BL MAPLE-T	213.2	44.5	10	18	26			
WHEMLOCK-T	288.9	60.2	5	12	19			
WR CEDAR-T	338.8	70.6	1	3	6			
TOTAL	*35.7*	*7.4*	*270*	*291*	*313*	*53*	*27*	*13*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	44.1	9.2	30,332	33,401	36,471			
BL MAPLE-T	216.5	45.1	640	1,167	1,694			
WHEMLOCK-T	295.6	61.6	440	1,148	1,856			
WR CEDAR-T	338.8	70.6	93	317	541			
TOTAL	*37.5*	*7.8*	*33,213*	*36,034*	*38,855*	*59*	*30*	*15*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T			118	130	141			
BL MAPLE-T	133.8	27.9	35	64	92			
WHEMLOCK-T	267.9	55.9	37	97	157			
WR CEDAR-T	228.4	47.6	28	95	162			
TOTAL	*237.9*	*49.6*	*114*	*124*	*133*	*2,362*	*1,205*	*590*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU4

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U4	53.00	26	70	S	W

T000 R000 S00 TU4

Spp	ST	Sort	Grade	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	56											10	7		0.00	4.6
DF		HQ	SM	18		2,902	2,902	154				100				100	40	18	517	3.02	5.6
DF		HQ	2S	20		3,093	3,093	164			81	19				100	40	14	268	1.69	11.6
DF		HQ	3S	3		447	447	24		100						100	40	9	120	0.83	3.7
DF		HQ	3S	3		465	465	25		100						100	40	11	180	1.21	2.6
DF		D	2S	31	5.2	5,140	4,872	258			50	50				100	40	14	302	1.78	16.1
DF		D	3S	20	2.0	3,106	3,042	161	27	73				2	5	94	39	8	90	0.67	33.9
DF		D	4S	5		716	716	38	94	6			29	60	11		21	6	26	0.31	27.9
DF		D	UT														10	5		0.00	2.1
DF	**Totals**			46	2.4	15,924	15,537	823	10	20	32	38	1	3	1	94	33	9	144	1.10	108.1
RA		D	2S	18	9.6	1,296	1,172	62			100					100	40	13	239	1.87	4.9
RA		D	3S	25	11.0	1,735	1,544	82	5	95				73		27	32	10	111	1.01	13.9
RA		D	4S	42	6.7	2,751	2,567	136	43	57				55	4	41	34	7	56	0.58	46.1
RA		D	UT	15		921	921	49	100				43	38	19		21	5	20	0.27	45.7
RA	**Totals**			18	7.4	6,704	6,204	329	34	47	19		6	47	4	43	28	7	56	0.63	110.5
RC		CU	CU														2	6		0.00	5.2
RC		D	3S	66	25.6	2,542	1,890	100		73	19	8				100	36	11	119	1.31	15.9
RC		D	4S	34		940	940	50	100				40	15	16	30	23	5	29	0.33	32.3
RC	**Totals**			8	18.7	3,482	2,830	150	33	49	13	5	13	5	5	77	25	7	53	0.75	53.4
BM		D	2S	44	30.8	1,709	1,183	63			67	33		67		33	32	14	190	2.32	6.2
BM		D	3S	19	11.0	579	516	27		100				47		53	35	11	124	1.05	4.2
BM		D	4S	13	9.9	397	358	19	44	56				100			30	8	53	0.62	6.8
BM		D	UT	24		620	620	33	87	13			22	29	9	39	27	6	36	0.48	17.2
BM	**Totals**			8	19.0	3,305	2,677	142	26	30	29	15	5	59	2	34	29	8	78	0.96	34.3
WH		CU	CU															6		0.00	2.7
WH		D	2S	31	5.4	1,108	1,048	56			100					100	40	14	274	1.85	3.8
WH		D	3S	60		2,013	2,013	107	8	92					18	82	38	9	124	0.88	16.2
WH		D	4S	6		198	198	11	100				39			61	25	6	29	0.37	6.9
WH		D	UT	3		78	78	4	100					100			21	5	20	0.29	3.9
WH	**Totals**			10	1.8	3,398	3,338	177	13	55	31		2	2	11	85	31	8	99	0.89	33.6
GF		D	2S	92	2.2	3,014	2,947	156			32	68				100	40	15	327	1.83	9.0
GF		D	3S	6		165	165	9	61	39				39	61		30	7	56	0.57	3.0
GF		D	UT	2		61	61	3	100					100			27	7	40	0.53	1.5
GF	**Totals**			9	2.1	3,240	3,174	168	5	2	30	63		4	3	93	36	12	235	1.50	13.5
Type Totals					6.4	36,052	33,760	1,789	17	30	27	25	4	16	3	77	30	8	96	0.90	353.4

TC TSTATS

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PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U4	53.00	26	138	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	26	138	5.3		
CRUISE	13	70	5.4	8,725	.8
DBH COUNT					
REFOREST					
COUNT	13	68	5.2		
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
DOUG FIR-T	20	40.1	20.4	93	20.2	91.3	15,924	15,537	3,934	3,919
R ALDER-T	21	55.3	14.6	62	16.9	64.6	6,704	6,204	1,974	1,974
WR CEDAR-T	11	34.1	13.5	45	9.2	33.8	3,482	2,830	1,004	1,003
BL MAPLE-T	10	17.2	18.1	62	7.2	30.8	3,305	2,677	960	960
WHEMLOCK-T	5	13.5	18.1	79	5.7	24.0	3,398	3,338	917	917
GRAND FI-T	3	4.5	24.2	112	2.9	14.4	3,240	3,174	733	733
TOTAL	*70*	*164.6*	*17.0*	*69*	*62.9*	*259.0*	*36,052*	*33,760*	*9,522*	*9,506*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 % SD: 1.0

TREES/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
DOUG FIR-T	94.4	18.9	32	40	48			
R ALDER-T	69.2	13.9	48	55	63			
WR CEDAR-T	142.3	28.5	24	34	44			
BL MAPLE-T	122.9	24.6	13	17	21			
WHEMLOCK-T	133.1	26.6	10	14	17			
GRAND FI-T	251.5	50.3	2	5	7			
TOTAL	*34.0*	*6.8*	*153*	*165*	*176*	*48*	*25*	*12*

CL: 68.1 % SD: 1.0

BASAL AREA/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
DOUG FIR-T	95.3	19.1	74	91	109			
R ALDER-T	63.3	12.7	56	65	73			
WR CEDAR-T	123.7	24.8	25	34	42			
BL MAPLE-T	118.1	23.6	23	31	38			
WHEMLOCK-T	129.0	25.8	18	24	30			
GRAND FI-T	254.4	50.9	7	14	22			
TOTAL	*37.5*	*7.5*	*240*	*259*	*278*	*59*	*30*	*15*

CL: 68.1 % SD: 1.0

NET BF/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
DOUG FIR-T	101.2	20.2	12,391	15,537	18,683			
R ALDER-T	60.9	12.2	5,448	6,204	6,960			
WR CEDAR-T	122.2	24.5	2,138	2,830	3,522			
BL MAPLE-T	116.2	23.2	2,055	2,677	3,299			
WHEMLOCK-T	131.0	26.2	2,462	3,338	4,213			
GRAND FI-T	255.1	51.1	1,553	3,174	4,794			
TOTAL	*53.7*	*10.8*	*30,130*	*33,760*	*37,390*	*120*	*61*	*30*

CL: 68.1 % SD: 1.0

V-BAR/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	7	INF. POP. 10
DOUG FIR-T	35.3	7.1	136	170	205			
R ALDER-T			84	96	108			
WR CEDAR-T	45.7	9.1	63	84	104			
BL MAPLE-T	36.4	7.3	67	87	107			
WHEMLOCK-T	60.4	12.1	102	139	175			
GRAND FI-T	165.9	33.2	108	220	332			

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU5

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U5	7.00	4	21	S	W

T000 R000 S00 TU5

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
WH		D	2S	11	8.3	1,358	1,245	9			100					100	40	13	220	1.78	5.7
WH		D	3S	75		8,106	8,106	57	19	81						100	40	8	105	0.75	77.1
WH		D	4S	14		1,484	1,484	10	100					77		23	28	5	29	0.31	50.8
WH		D	UT														9	5		0.00	20.6
WH		**Totals**		43	1.0	10,948	10,835	76	28	60	11			11		89	32	7	70	0.65	154.2
DF		D	2S	14		1,248	1,248	9			100					100	40	12	200	1.48	6.2
DF		D	3S	53	8.1	5,094	4,681	33	30	70						100	40	8	92	0.76	51.0
DF		D	4S	33		2,846	2,846	20	100				10	41	20	29	25	5	27	0.29	104.4
DF		**Totals**		35	4.5	9,187	8,774	61	49	37	14		3	13	6	77	30	6	54	0.55	161.6
RC		CU	CU														8	5		0.00	12.7
RC		D	3S	60	9.5	3,576	3,235	23	31	17	52			7		93	33	8	104	1.08	31.2
RC		D	4S	40		2,121	2,121	15	100				27	47	26		25	5	27	0.29	79.1
RC		**Totals**		21	6.0	5,697	5,356	37	58	10	31		11	23	10	56	25	6	44	0.55	123.1
Type Totals					3.4	25,832	24,965	175	42	41	17		3	14	4	78	29	6	57	0.59	438.9

TC TSTATS

STATISTICS

PAGE 1

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U5	7.00	4	21	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	4	21	5.3		
CRUISE	4	21	5.3	2,009	1.0
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	7	77.1	15.1	69	24.6	95.3	10,948	10,835	3,151	3,151
DOUG FIR-T	7	110.6	12.6	54	26.9	95.3	9,187	8,774	2,688	2,688
WR CEDAR-T	7	99.3	11.4	42	20.8	70.0	5,697	5,356	1,689	1,688
TOTAL	*21*	*287.1*	*12.9*	*54*	*72.5*	*260.5*	*25,832*	*24,965*	*7,528*	*7,527*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK-T	117.2	67.0	25	77	129			
DOUG FIR-T	114.2	65.3	38	111	183			
WR CEDAR-T	113.3	64.8	35	99	164			
TOTAL	*39.6*	*22.6*	*222*	*287*	*352*	*82*	*42*	*20*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK-T	85.7	49.0	49	95	142			
DOUG FIR-T	85.7	49.0	49	95	142			
WR CEDAR-T	85.7	49.0	36	70	104			
TOTAL	*2.1*	*1.2*	*257*	*261*	*264*	*0*	*0*	*0*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK-T	79.6	45.5	5,900	10,835	15,770			
DOUG FIR-T	88.1	50.4	4,353	8,774	13,196			
WR CEDAR-T	76.4	43.7	3,016	5,356	7,696			
TOTAL	*9.8*	*5.6*	*23,564*	*24,965*	*26,366*	*5*	*3*	*1*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
WHEMLOCK-T	79.6	45.5	62	114	166			
DOUG FIR-T	88.1	50.4	46	92	139			
WR CEDAR-T	76.4	43.7	43	77	110			
TOTAL	*7.8*	*4.5*	*90*	*96*	*101*	*3*	*2*	*1*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU6

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U6	65.00	27	93	S	W

T000 R000 S00 TU6

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	33											5	7		0.00	3.6
DF		HQ	SM	3		443	443	29				100				100	40	18	530	3.34	.8
DF		HQ	2S	3	23.9	444	338	22				100				100	40	17	350	2.93	1.0
DF		HQ	2S	3		319	319	21			100					100	40	12	200	1.60	1.6
DF		HQ	3S	6	10.8	696	621	40		100						100	40	10	130	1.09	4.8
DF		D	2S	19	7.9	2,382	2,194	143			100			6		94	39	13	227	1.78	9.6
DF		D	3S	43	5.7	5,138	4,847	315	38	62					17	83	38	8	82	0.72	58.8
DF		D	4S	20		2,261	2,261	147	100				15	42	22	20	25	5	27	0.30	84.1
DF		D	UT	3		299	299	19	100					100			17	5	14	0.17	21.8
DF	**Totals**			42	5.8	12,016	11,322	736	39	32	22	7	3	12	12	73	29	7	61	0.65	186.1
WH		D	2S	8	8.3	996	913	59			100					100	40	13	220	1.72	4.2
WH		D	3S	72		7,559	7,559	491	40	60					11	89	39	7	83	0.64	90.8
WH		D	4S	20		2,066	2,066	134	100				16	50	21	12	24	5	26	0.27	79.1
WH		D	UT														10	5		0.00	32.7
WH	**Totals**			39	.8	10,621	10,538	685	48	43	9		3	10	12	75	28	6	51	0.52	206.7
RC		CU	CU														9	5		0.00	6.7
RC		D	3S	56	22.8	2,590	2,000	130	28	6	66			8		92	34	9	107	1.08	18.7
RC		D	4S	44		1,540	1,540	100	100				32	38	29		24	5	26	0.31	58.7
RC	**Totals**			13	14.3	4,130	3,540	230	59	4	37		14	21	13	52	25	6	42	0.54	84.0
RA		D	4S	94	14.8	1,175	1,001	65	100					54	46		31	6	36	0.43	27.6
RA		D	UT	6		58	58	4	100				100				11	5	5	0.13	11.6
RA	**Totals**			4	14.1	1,232	1,059	69	100				5	51	44		25	6	27	0.39	39.2
BM		D	4S	86	15.2	537	456	30	62	38				38		62	36	7	56	0.61	8.2
BM		D	UT	14		69	69	4	100				100				14	5	8	0.14	8.2
BM	**Totals**			2	13.5	606	525	34	67	33			13	33		54	25	6	32	0.47	16.3
Type Totals					5.7	28,605	26,984	1,754	48	31	18	3	5	14	13	68	28	6	51	0.56	532.3

TC TSTATS

STATISTICS

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PROJECT WHISKEY

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U6	65.00	27	151	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	27	151	5.6		
CRUISE	15	76	5.1	21,836	.3
DBH COUNT					
REFOREST					
COUNT	12	71	5.9		
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
DOUG FIR-T	31	114.4	13.8	56	32.0	119.0	12,016	11,322	3,507	3,493
WHEMLOCK-T	21	115.9	12.8	59	28.8	102.8	10,621	10,538	3,051	3,051
WR CEDAR-T	18	69.9	11.5	39	14.9	50.6	4,130	3,540	1,231	1,120
R ALDER-T	4	27.6	11.0	44	5.5	18.1	1,232	1,059	384	384
BL MAPLE-T	2	8.2	13.0	56	2.1	7.5	606	525	194	194
TOTAL	*76*	*335.9*	*12.8*	*52*	*83.5*	*298.0*	*28,605*	*26,984*	*8,367*	*8,241*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	91.5	18.0	94	114	135			
WHEMLOCK-T	107.2	21.0	92	116	140			
WR CEDAR-T	137.6	27.0	51	70	89			
R ALDER-T	205.6	40.3	16	28	39			
BL MAPLE-T	317.8	62.3	3	8	13			
TOTAL	*28.3*	*5.5*	*317*	*336*	*355*	*33*	*17*	*8*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	84.2	16.5	99	119	139			
WHEMLOCK-T	94.4	18.5	84	103	122			
WR CEDAR-T	117.9	23.1	39	51	62			
R ALDER-T	203.8	40.0	11	18	25			
BL MAPLE-T	317.8	62.3	3	8	12			
TOTAL	*20.6*	*4.0*	*286*	*298*	*310*	*18*	*9*	*4*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	86.4	17.0	9,402	11,322	13,242			
WHEMLOCK-T	91.8	18.0	8,640	10,538	12,436			
WR CEDAR-T	117.6	23.1	2,723	3,540	4,357			
R ALDER-T	207.6	40.7	628	1,059	1,490			
BL MAPLE-T	316.9	62.2	198	525	851			
TOTAL	*22.5*	*4.4*	*25,792*	*26,984*	*28,176*	*21*	*11*	*5*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T			79	95	111			
WHEMLOCK-T			84	102	121			
WR CEDAR-T	77.9	15.3	54	70	86			
R ALDER-T	137.3	26.9	35	58	82			
BL MAPLE-T	141.6	27.8	26	70	113			
TOTAL	*184.8*	*36.3*	*87*	*91*	*95*	*1,420*	*725*	*355*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU8

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U8	20.00	10	24	S	W

T000 R000 S00 TU8

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	2S	42	4.3	5,663	5,420	108			100					100	40	13	223	1.67	24.3
DF		D	3S	48	2.7	6,371	6,201	124	21	79					14	86	38	8	87	0.77	71.5
DF		D	4S	10		1,161	1,161	23	100				29	71			24	5	25	0.28	47.2
DF	**Totals**			62	3.1	13,196	12,783	256	19	38	42		3	6	7	84	34	8	89	0.84	143.1
BM		D	4S	68	8.8	3,400	3,101	62	69	31			15	85			27	7	42	0.48	74.6
BM		D	UT	32		1,447	1,447	29	100				30	70			20	5	19	0.24	74.6
BM	**Totals**			22	6.2	4,847	4,549	91	79	21			20	80			23	6	30	0.38	149.2
RA		D	4S	77	13.1	1,805	1,568	31	33	67				29		71	37	8	66	0.68	23.6
RA		D	UT	23		461	461	9	100				51	49			18	5	19	0.25	23.6
RA	**Totals**			10	10.4	2,266	2,029	41	48	52			12	33		55	27	6	43	0.54	47.3
RC		D	3S	86	24.1	1,404	1,066	21	9	38	53			9		91	33	9	86	1.15	12.4
RC		D	4S	14		172	172	3	100					100			25	5	30	0.29	5.7
RC	**Totals**			6	21.5	1,576	1,238	25	22	32	46			22		78	30	8	68	0.92	18.1
Type Totals					5.9	21,885	20,599	412	36	35	29		7	26	4	62	28	7	58	0.65	357.7

TC TSTATS

STATISTICS

PAGE 1

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U8	20.00	10	48	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	10	48	4.8		
CRUISE	5	24	4.8	4,068	.6
DBH COUNT					
REFOREST COUNT	5	24	4.8		
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
DOUG FIR-T	12	71.5	17.7	71	29.1	122.3	13,196	12,783	4,025	4,025
BL MAPLE-T	7	99.2	10.5	44	18.5	60.0	4,847	4,549	1,335	1,335
R ALDER-T	3	23.6	13.6	61	6.5	24.0	2,266	2,029	696	696
WR CEDAR-T	2	9.1	18.0	64	3.8	16.0	1,576	1,238	507	507
TOTAL	*24*	*203.4*	*14.2*	*56*	*59.1*	*222.3*	*21,885*	*20,599*	*6,564*	*6,563*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	89.8	29.9	50	72	93			
BL MAPLE-T	118.1	39.3	60	99	138			
R ALDER-T	141.7	47.2	12	24	35			
WR CEDAR-T	132.8	44.2	5	9	13			
TOTAL	*44.4*	*14.8*	*173*	*203*	*233*	*88*	*45*	*22*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	91.0	30.3	85	122	159			
BL MAPLE-T	118.6	39.5	36	60	84			
R ALDER-T	140.5	46.8	13	24	35			
WR CEDAR-T	129.1	43.0	9	16	23			
TOTAL	*36.1*	*12.0*	*196*	*222*	*249*	*58*	*30*	*14*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	90.7	30.2	8,922	12,783	16,644			
BL MAPLE-T	117.4	39.1	2,769	4,549	6,328			
R ALDER-T	140.6	46.8	1,079	2,029	2,980			
WR CEDAR-T	129.4	43.1	705	1,238	1,772			
TOTAL	*43.3*	*14.4*	*17,630*	*20,599*	*23,568*	*83*	*42*	*21*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T			73	105	136			
BL MAPLE-T			46	76	105			
R ALDER-T	65.9	22.0	45	85	124			
WR CEDAR-T	53.4	17.8	44	77	111			
TOTAL	*193.6*	*64.5*	*79*	*93*	*106*	*1,663*	*848*	*416*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU9

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U9	1.60	1	5	S	W

T000 R000 S00 TU9

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	3S	79	4.1	21,561	20,674	33	20	80					20	80	37	8	89	0.79	231.2
DF		D	4S	21		5,277	5,277	8	100				48	52			20	5	23	0.26	231.2
DF	**Totals**			100	3.3	26,839	25,951	42	36	64			10	11	16	64	28	6	56	0.61	462.4
Type Totals					3.3	26,839	25,951	42	36	64			10	11	16	64	28	6	56	0.61	462.4

TC TSTATS

STATISTICS

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	**000**	**00**	**CREEK**	**U9**	1.60	1	5	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	5	5.0		
CRUISE	1	5	5.0	370	1.4
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
DOUG FIR-T	5	231.2	14.7	63	71.0	272.2	26,839	25,951	7,941	7,962
TOTAL	*5*	*231.2*	*14.7*	*63*	*71.0*	*272.2*	*26,839*	*25,951*	*7,941*	*7,962*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU10

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U10	3.20	2	6	S	W

T000 R000 S00 TU10

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	4S	100		2,714	2,714	9	100					59	22	19	25	5	25	0.27	107.8
DF	**Totals**			83		2,714	2,714	9	100					59	22	19	25	5	25	0.27	107.8
RA		D	4S	100	.0	550	550	2	100					100			30	5	30	0.34	18.3
RA	**Totals**			17	.0	550	550	2	100					100			30	5	30	0.34	18.3
Type Totals						3,264	3,264	10	100					66	19	16	26	5	26	0.28	126.2

TC TSTATS

STATISTICS

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	000	00	CREEK	U10	3.20	2	6	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	2	6	3.0		
CRUISE	2	6	3.0	404	1.5
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
DOUG FIR-T	5	107.8	9.2	35	16.5	50.0	2,714	2,714	732	732
R ALDER-T	1	18.3	10.0	37	3.2	10.0	550	550	188	188
TOTAL	*6*	*126.2*	*9.3*	*35*	*19.6*	*60.0*	*3,264*	*3,264*	*920*	*920*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		**TREES/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	66.3	62.1	41	108	175			
R ALDER-T	141.4	132.6		18	43			
TOTAL	*77.2*	*72.4*	*35*	*126*	*217*	*419*	*214*	*105*

CL: 68.1 %	COEFF		**BASAL AREA/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	84.9	79.5	10	50	90			
R ALDER-T	141.4	132.6		10	23			
TOTAL	*94.3*	*88.4*	*7*	*60*	*113*	*625*	*319*	*156*

CL: 68.1 %	COEFF		**NET BF/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	81.7	76.6	635	2,714	4,793			
R ALDER-T	141.4	132.6		550	1,279			
TOTAL	*91.8*	*86.0*	*456*	*3,264*	*6,072*	*592*	*302*	*148*

CL: 68.1 %	COEFF		**V-BAR/ACRE**			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10
DOUG FIR-T	81.7	76.6	13	54	96			
R ALDER-T	141.4	132.6		55	128			
TOTAL	*91.8*	*86.0*	*8*	*54*	*101*	*592*	*302*	*148*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU11

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U11	.20	1	4	S	W

T000 R000 S00 TU11

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		D	3S	49		2,604	2,604	1	100						100		32	7	60	0.59	43.4
DF		D	4S	42	.0	2,200	2,200	0	100						100		31	5	30	0.29	73.3
DF		D	UT	9		434	434	0	100				100				13	5	10	0.20	43.4
DF	**Totals**			49		5,238	5,238	1	100				8		92		26	6	33	0.38	160.1
WH		D	3S	100		3,056	3,056	1	100						100		32	7	60	0.53	50.9
WH		D	UT														11	5		0.00	50.9
WH	**Totals**			29		3,056	3,056	1	100						100		22	6	30	0.39	101.9
RA		D	4S	100		2,292	2,292	0	100					100			22	5	20	0.24	114.6
RA	**Totals**			22		2,292	2,292	0	100					100			22	5	20	0.24	114.6
Type Totals						10,585	10,585	2	100				4	22	74		24	6	28	0.34	376.6

TC TSTATS

STATISTICS

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	**000**	**00**	**CREEK**	**U11**	0.20	1	4	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	4	4.0		
CRUISE	1	4	4.0	56	7.1
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
DOUG FIR-T	2	116.7	11.2	44	23.9	80.0	5,238	5,238	1,597	1,597
WHEMLOCK-T	1	50.9	12.0	51	11.5	40.0	3,056	3,056	858	858
R ALDER-T	1	114.6	8.0	32	14.1	40.0	2,292	2,292	612	612
TOTAL	*4*	*282.3*	*10.2*	*41*	*50.1*	*160.0*	*10,585*	*10,585*	*3,066*	*3,066*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: WHISKEY

Date 1/23/2020

Time 9:21:14AM

T000 R000 S00 TU12

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
000	000	00	CREEK	U12	2.30	1	6	S	W

T000 R000 S00 TU12

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-7	8-11	12-15	16+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
DF		CU	CU		100.0	250											12	6		0.00	25.0
DF		D	2S	42	8.3	5,989	5,490	13			100					100	40	13	220	1.55	25.0
DF		D	3S	50	7.5	6,829	6,320	15		100						100	40	8	83	0.68	75.9
DF		D	4S	8		1,019	1,019	2	100					100			23	5	20	0.24	50.9
DF	**Totals**			41	8.9	14,086	12,828	30	8	49	43			8		92	31	8	73	0.71	176.7
BM		D	2S	45	18.5	4,091	3,334	8			100			100			30	15	220	2.07	15.2
BM		D	4S	28	20.0	2,546	2,037	5	100					100			30	7	40	0.53	50.9
BM		D	UT	27		1,928	1,928	4	100				53			47	21	5	29	0.40	66.1
BM	**Totals**			23	14.8	8,565	7,299	17	54		46		14	74		12	26	7	55	0.68	132.2
WH		CU	CU															6		0.00	30.8
WH		D	3S	100		7,394	7,394	17	25	75						100	40	9	120	0.87	61.6
WH	**Totals**			24		7,394	7,394	17	25	75						100	27	8	80	0.87	92.4
RC		D	3S	73	21.4	3,553	2,791	6		100						100	36	10	110	1.16	25.4
RC		D	4S	27		1,015	1,015	2	100							100	36	5	40	0.34	25.4
RC	**Totals**			12	16.7	4,568	3,807	9	27	73						100	36	8	75	0.75	50.8
Type Totals					9.5	34,613	31,327	72	25	47	28		3	20		76	29	7	69	0.74	452.0

TC TSTATS

STATISTICS

PROJECT **WHISKEY**

DATE 1/23/2020

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
000	**000**	**00**	**CREEK**	**U12**	2.30	1	6	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	1	6	6.0		
CRUISE	1	6	6.0	456	1.3
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
DOUG FIR-T	2	75.9	16.2	78	27.0	108.9	14,086	12,828	3,993	3,912
BL MAPLE-T	2	66.1	14.9	58	20.7	80.0	8,565	7,299	2,302	2,307
WHEMLOCK-T	1	30.8	18.0	86	12.8	54.4	7,394	7,394	2,147	2,147
WR CEDAR-T	1	25.4	17.0	74	9.7	40.0	4,568	3,807	1,368	1,368
TOTAL	*6*	*198.1*	*16.2*	*72*	*70.4*	*283.3*	*34,613*	*31,327*	*9,810*	*9,733*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

TC PSPCTLTCM

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

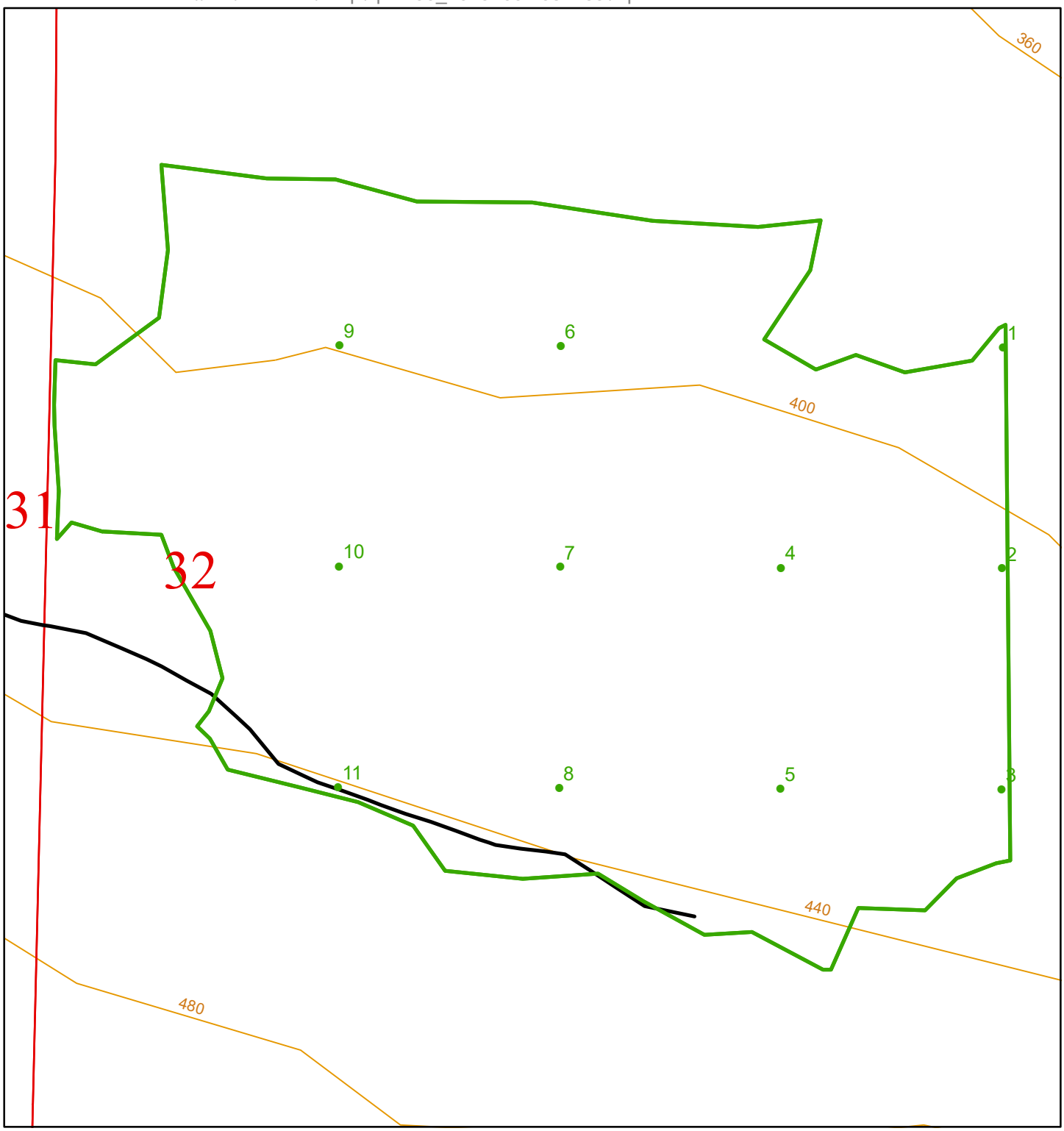
T000 R000 S00 TyU1	23.0
T000 R000 S00 TyU10	3.2
T000 R000 S00 TyU9	1.6

Project **WHISKEY**
Acres **321.30**

Page No **1**
Date: **1/23/2020**
Time **9:21:15AM**

Species	S T	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
DOUG FIR		31,290	59,146	47,214	52.88	27.98	0.91	16,566	16,547	6,224	5,968
WHEMLOCK		14,364	26,100	13,737	29.89	16.45	0.59	4,293	4,293	1,497	1,462
WR CEDAR		11,162	15,292	9,861	36.94	26.96	0.95	4,196	4,123	1,413	1,183
R ALDER		7,940	13,608	5,113	23.42	13.66	0.52	1,859	1,859	620	570
BL MAPLE		4,507	7,373	3,150	26.39	16.13	0.62	1,189	1,189	397	341
GRAND FI		239	716	932	162.80	54.27	1.51	388	388	172	168
Totals		69,501	122,234	80,008	40.86	23.23	0.80	28,492	28,400	10,323	9,693

Wood Type Species	Total Trees	Total Logs	Total Tons	Net Cubic Ft/ Tree	Net Cubic Ft/ Log	CF/ LF	Total CCF Gross	Total CCF Net	Total MBF Gross	Total MBF Net
C	57,054	101,253	71,744	44.43	25.04	0.85	25,444	25,351	9,306	8,781
H	12,446	20,980	8,264	24.49	14.53	0.55	3,048	3,049	1,017	911
Totals	69,501	122,234	80,008	40.86	23.23	0.80	28,492	28,400	10,323	9,693



Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T31R08W
POLY ID:	1	Total Sample Points:	11
Acres:	23	Spacing Between Points:	300
		Point Rotation Degrees:	0

N

0 65 130 260 390 520 Feet

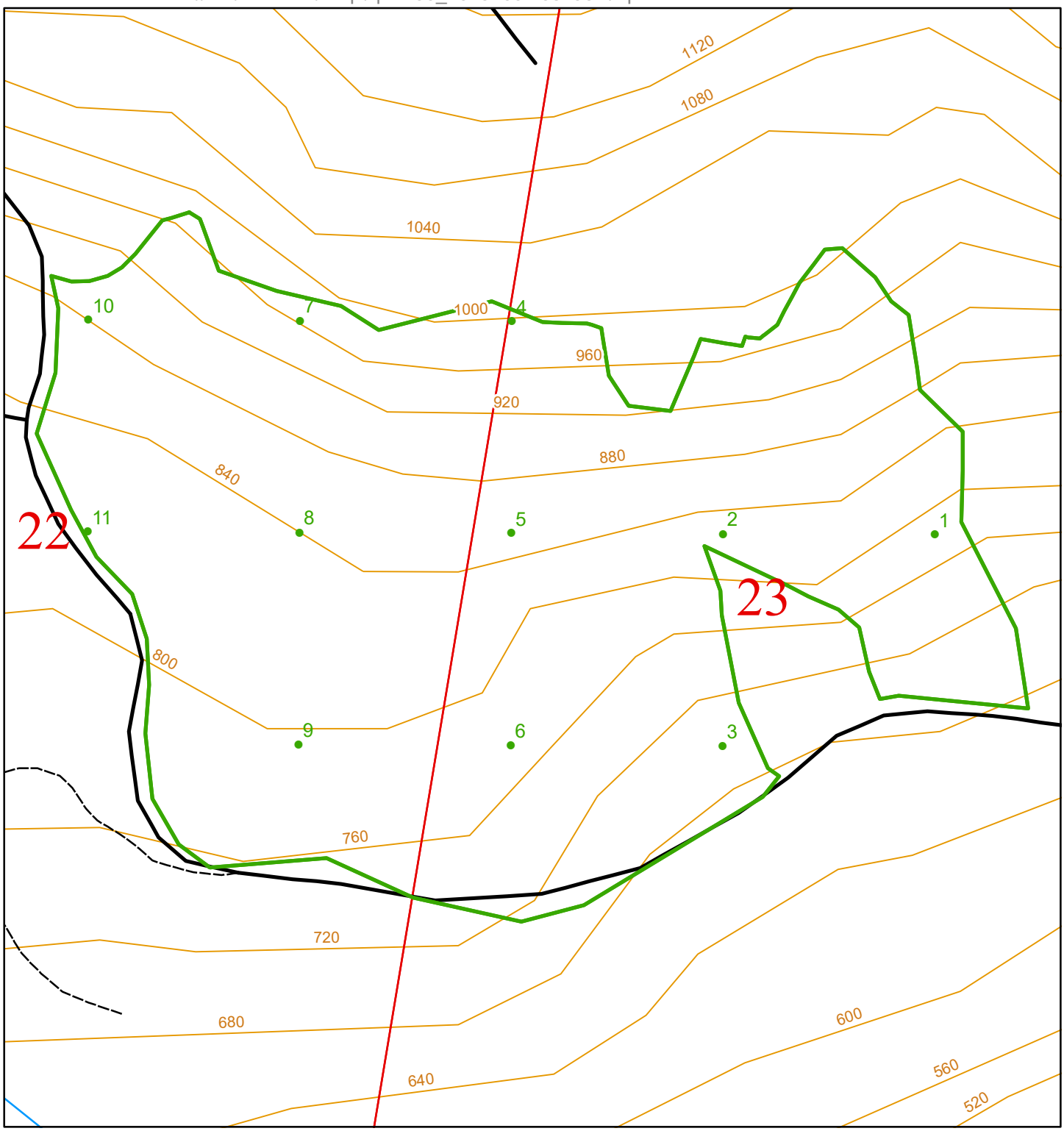
Scale 1:2,300

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Oct 01, 2019 08:42 AM



Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T30R08W
POLY ID:	1	Total Sample Points:	11
Acres:	20	Spacing Between Points:	300
		Point Rotation Degrees:	0

N

0 70 140 280 420 560 Feet

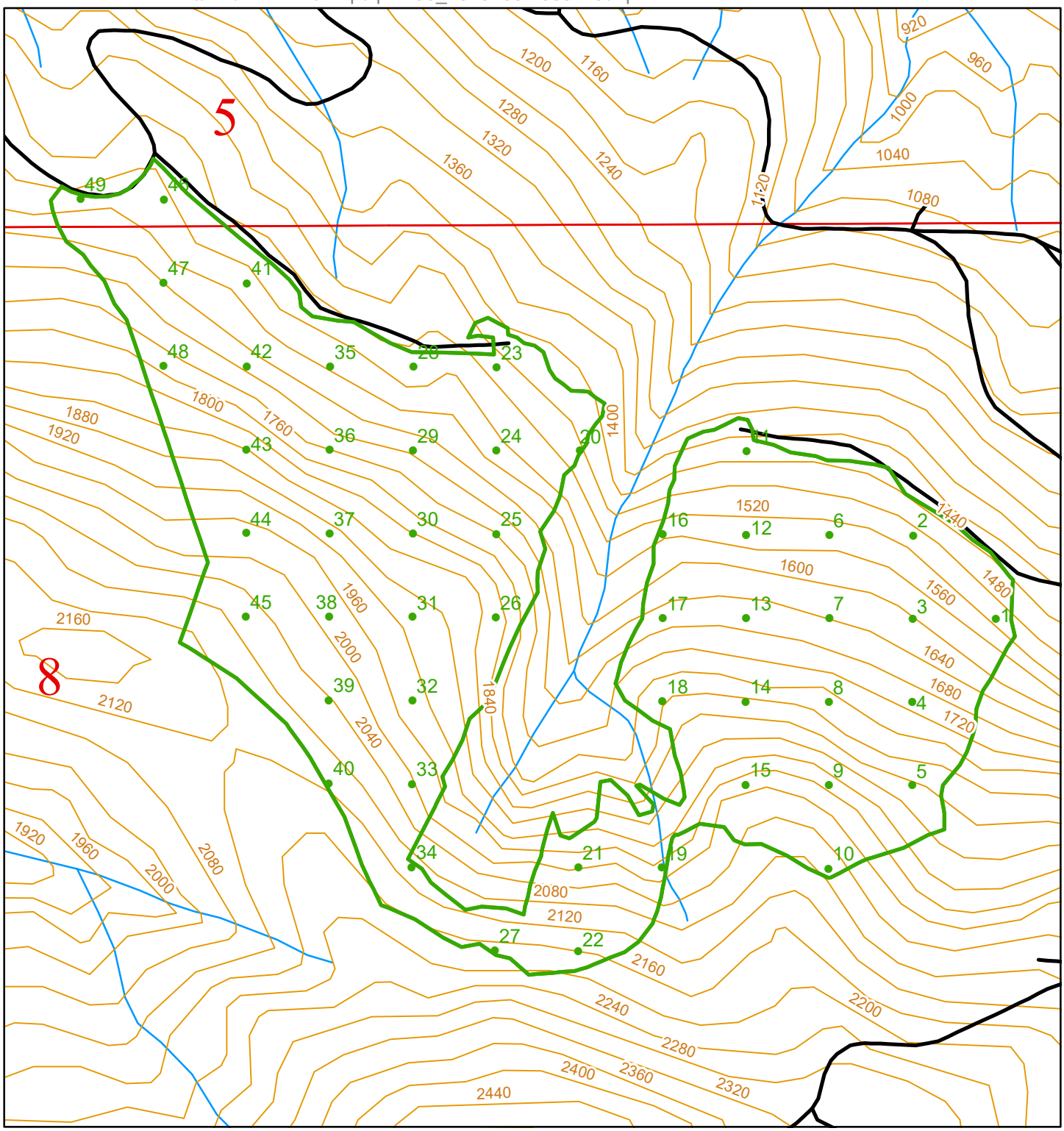
Scale 1:2,400

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Oct 01, 2019 08:50 AM



Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T30R08W
POLY ID:	1	Total Sample Points:	49
Acres:	98	Spacing Between Points:	Width: 300 Height: 300
		Point Rotation Degrees:	0

N

0 175 350 700 1,050 1,400 Feet

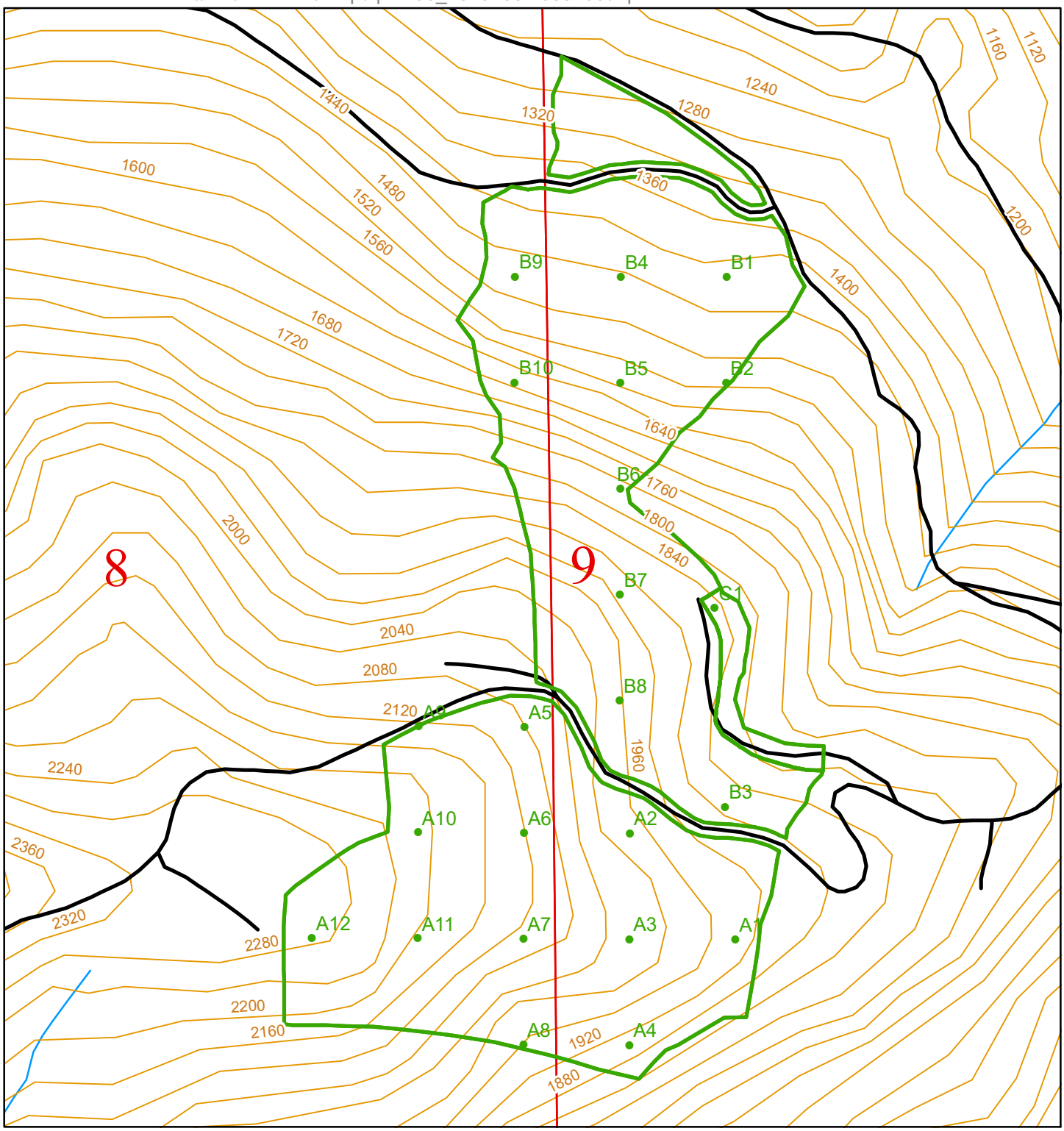
Scale 1:6,100

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Oct 01, 2019 08:51 AM



Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T30R08W
POLY ID:	1	Total Sample Points:	12
Acres:	25	Spacing Between Points:	Width: 300 Height: 300
		Point Rotation Degrees:	0

N

0 140 280 560 840 1,120 Feet

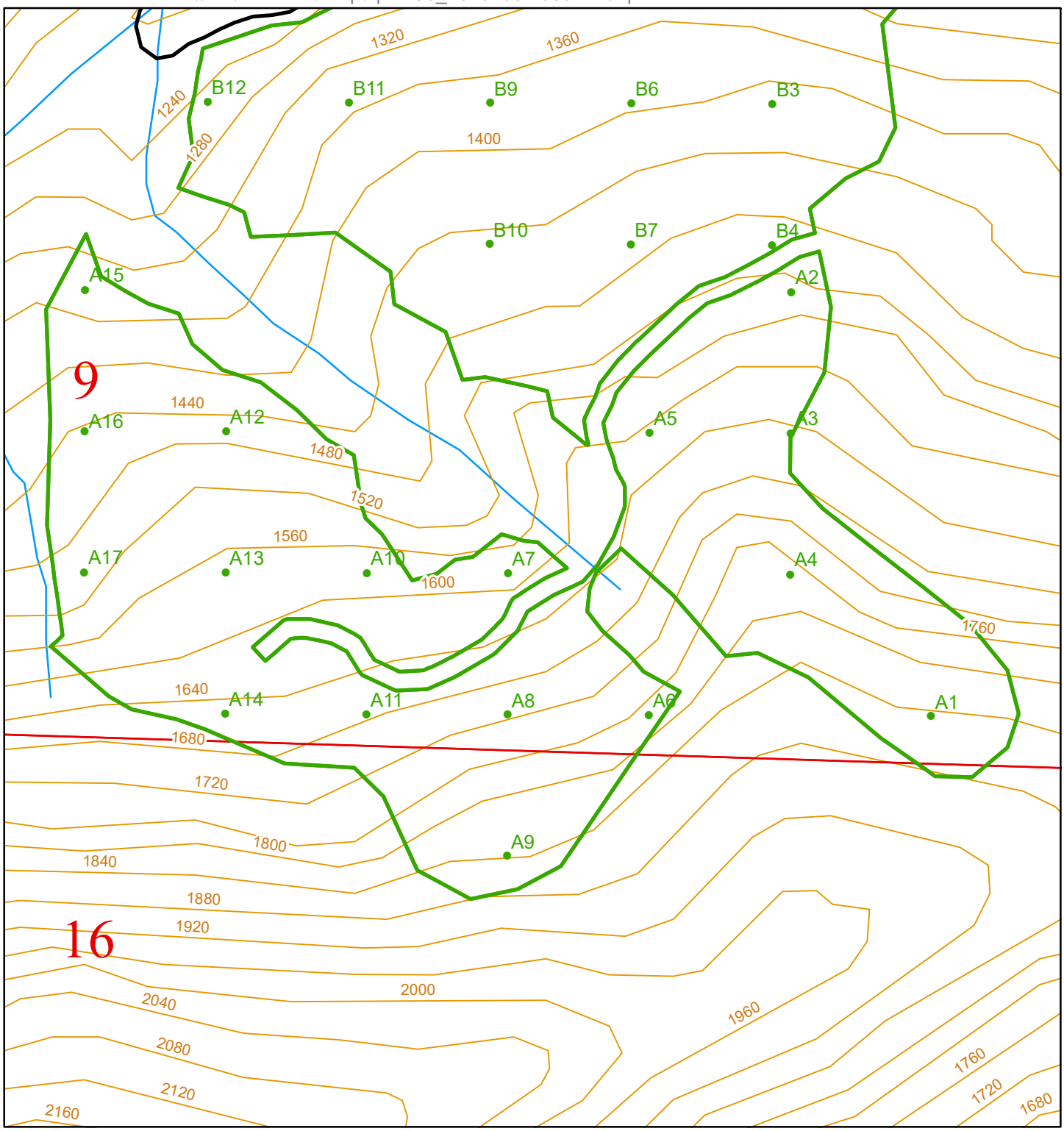
Scale 1:4,800

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Oct 01, 2019 08:53 AM



Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T30R08W
POLY ID:	1	Total Sample Points:	17
Acres:	30	Spacing Between Points:	Width: 300 Height: 300
		Point Rotation Degrees:	0

N

0 105 210 420 630 840 Feet

Scale 1:3,600

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

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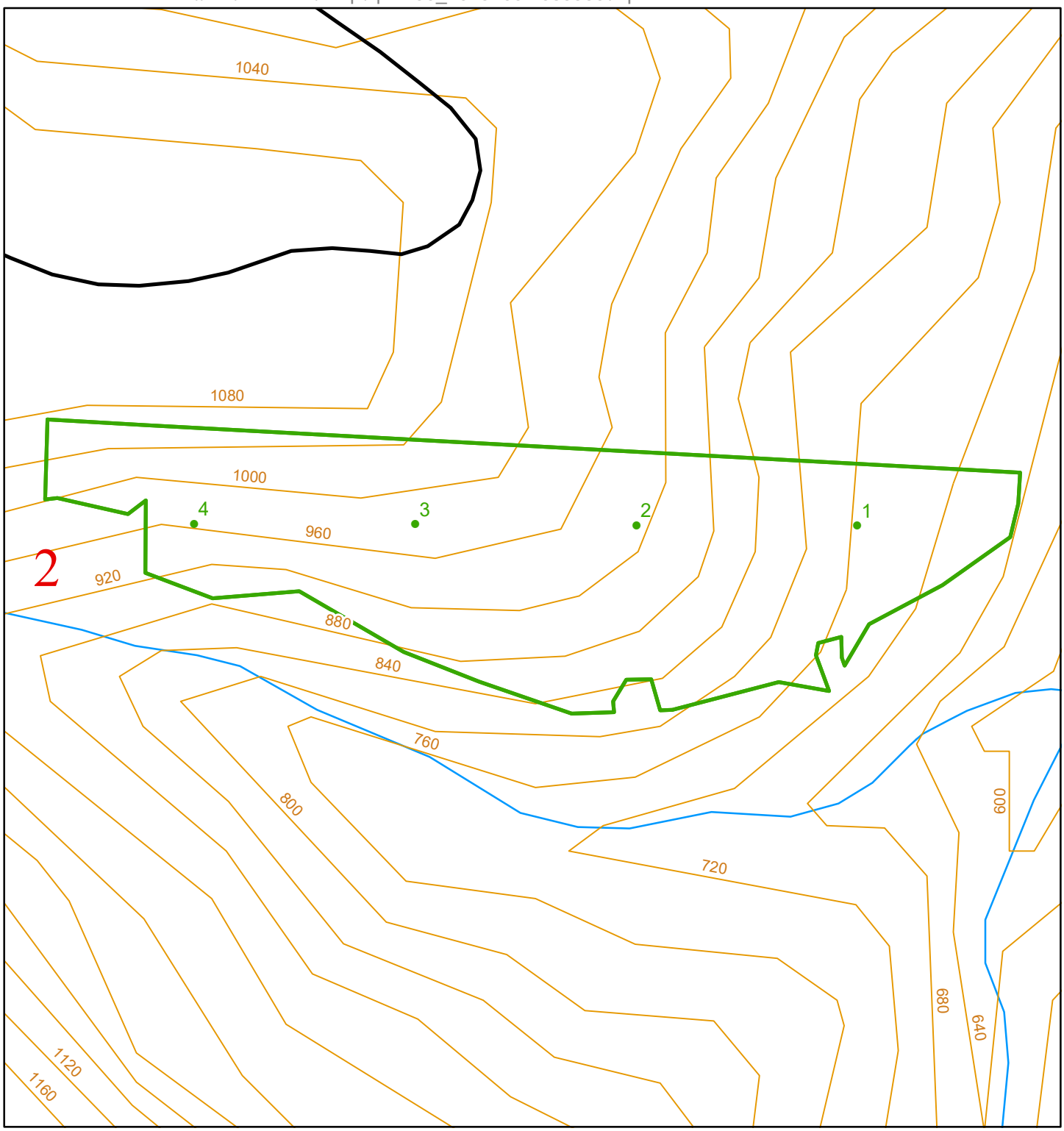


Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T30R09W
POLY ID:	1	Total Sample Points:	4
Acres:	8	Spacing Between Points:	300
		Point Rotation Degrees:	0

N

0 65 130 260 390 520 Feet

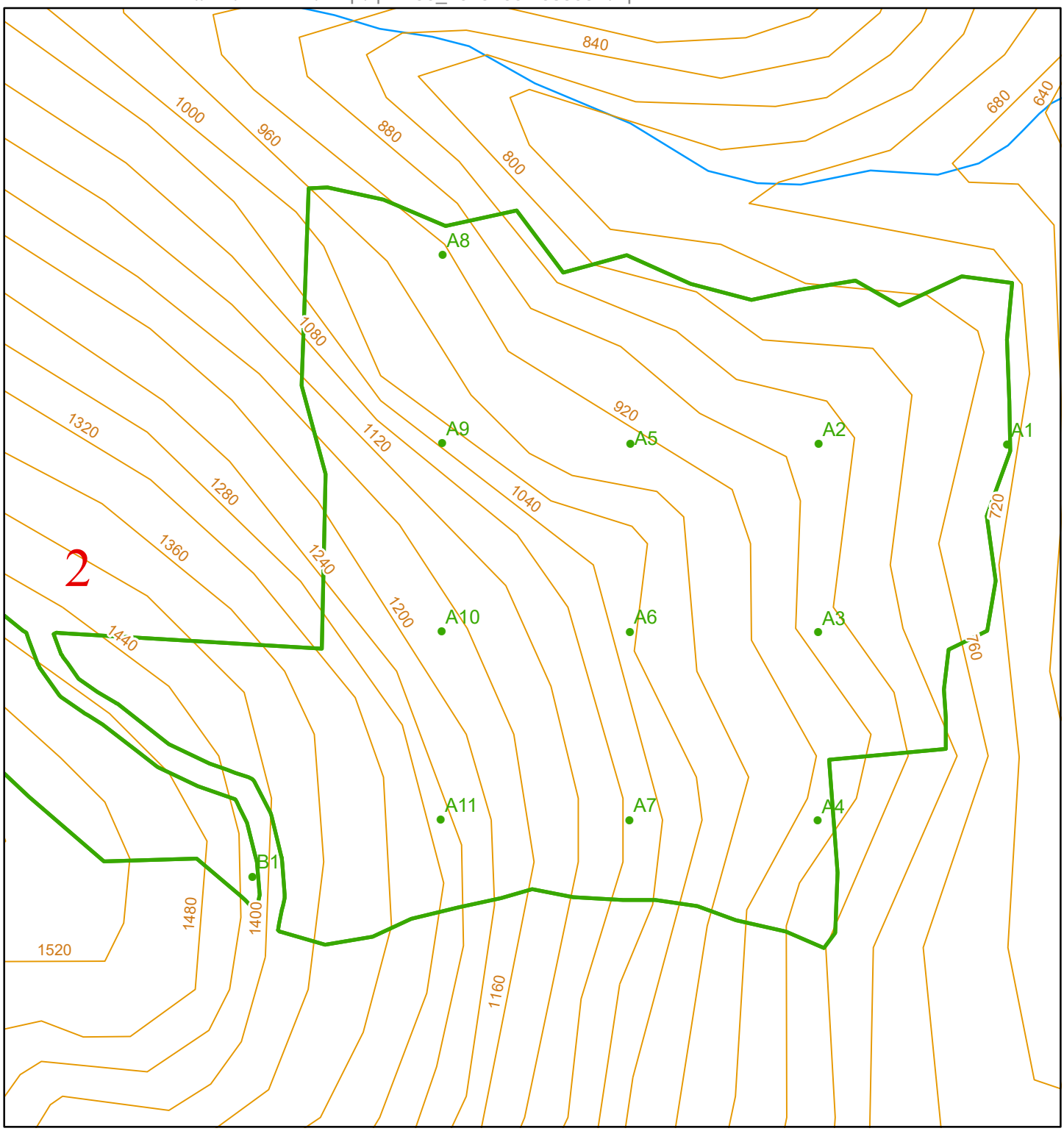
Scale 1:2,300

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Oct 01, 2019 08:56 AM



Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T30R09W
POLY ID:	1	Total Sample Points:	11
Acres:	26	Spacing Between Points:	Width: 300 Height: 300
		Point Rotation Degrees:	0

N

0 75 150 300 450 600 Feet

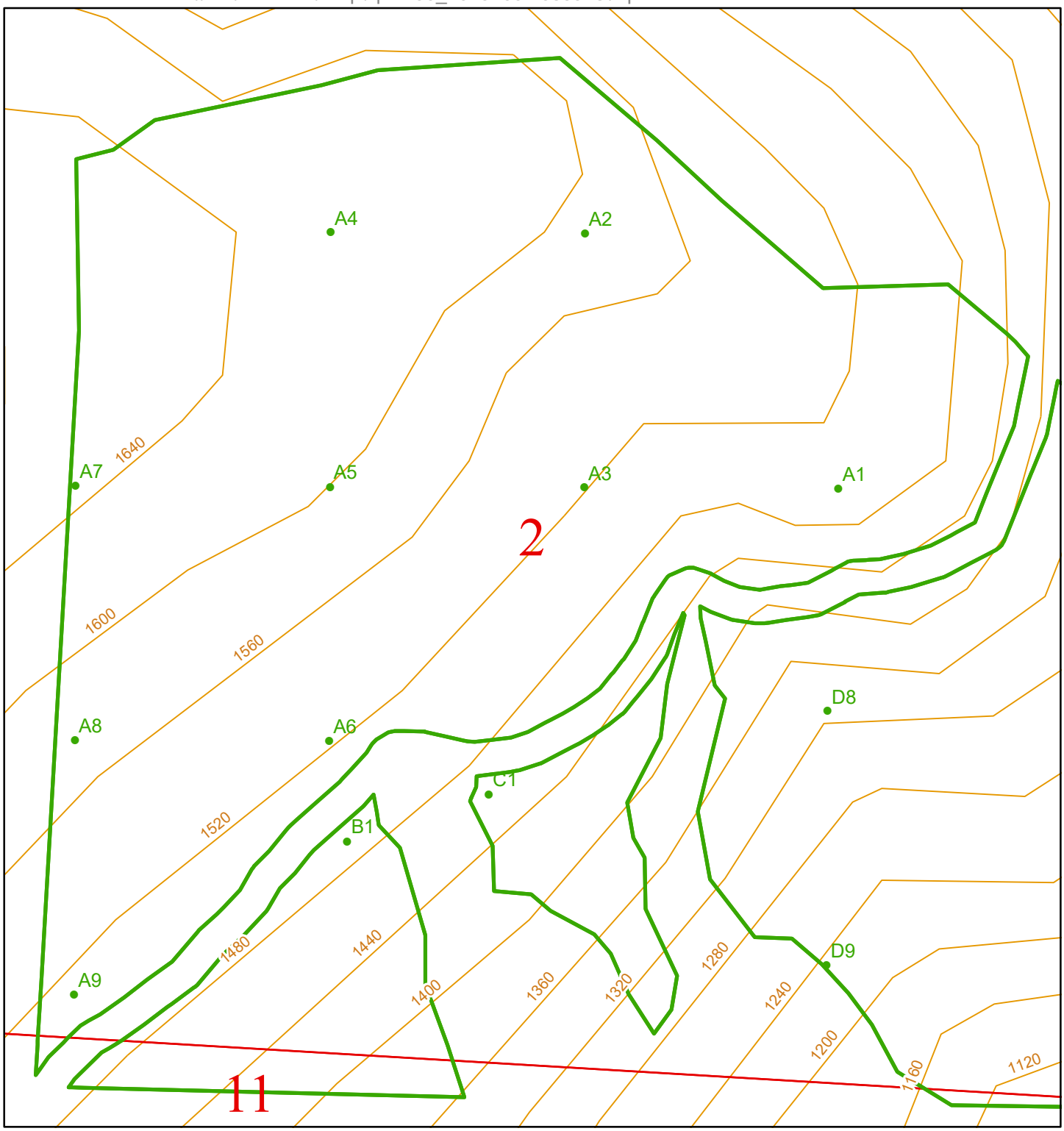
Scale 1:2,700

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Oct 01, 2019 08:57 AM



Cruiser Sample Point Locations

LAYER NAME:	whiskey boundary	Township:	T30R09W
POLY ID:	1	Total Sample Points:	9
Acres:	17	Spacing Between Points:	Width: 300 Height: 300
		Point Rotation Degrees:	0

N

0 55 110 220 330 440 Feet

Scale 1:2,000

Legend

- Sample Points
- Unit
- Public Land Survey Sections
- Contours 40-foot

Washington State Department of Natural Resources
Hilary Franz, Commissioner of Public Lands

Oct 01, 2019 09:00 AM

FPA/N No:	2616350
Effective Date:	2/29/2020
Expiration Date:	3/1/2023
Shut Down Zone:	653S
EARR Tax Credit:	[x] Eligible [ ] Non-eligible
Reference:	DNR
	Whiskey Creek Limit

Forest Practices Application/Notification
Notice of Decision

Decision

[ ] Notification	Operations shall not begin before the effective date.
[x] Approved	This Forest Practices Application is subject to the conditions listed below.
[ ] Disapproved	This Forest Practices Application is disapproved for the reasons listed below.
[ ] Closed	Applicant has withdrawn FPA/N.

FPA/N Classification

[ ] Class II [x] Class III [ ] Class IVG [ ] Class IVS

Number of Years Granted on Multi-Year Request

[ ] 4 years [ ] 5 years

Conditions on Approval / Reasons for Disapproval

Issued By: Erik Dukes **Region:** Olympic

Title: Forest Practice Forester **Date:** 2/29/2020

Copies to: **[ ] Landowner, Timber Owner and Operator.**

Issued in person: **[x] Landowner [x] Timber Owner [x] Operator By:** Kate Kerschner

Appeal Information

You have thirty (30) days to appeal this Decision and any related State Environmental Policy Act determinations to the Pollution Control Hearings Board in writing at the following addresses:
Physical address: 1111 Israel Rd. SW, Ste 301, Tumwater, WA 98501
Mailing address: P.O. BOX 40903, OLYMPIA, WA 98504-0903
Information regarding the Pollution Control Hearings Board can be found at: http://www.eluho.wa.gov/
At the same time you file an appeal with the Pollution Control Hearings Board, also send a copy of the appeal to the Department of Natural Resources' region office and the Office of the Attorney General at the following addresses:

Office of the Attorney General
Natural Resources Division
1125 Washington Street SE
PO Box 40100
Olympia, WA 98504-0100

And

Department Of Natural Resources
Olympic Region
411 Tillicum Lane
Forks, WA 98331

Other Applicable Laws

Operating as described in this application/notification does not ensure compliance with the Endangered Species Act, or other federal, state, or local laws.

Transfer of Forest Practices Application/Notification (WAC 222-20-010)

Use the "Notice of Transfer of Approved Forest Practices Application/Notification" form. This form is available at region offices and on the Forest Practices website: http://www.dnr.wa.gov/businesspermits/forestpractices. Notify DNR of new Operators within 48 hours.

Continuing Forest Land Obligations (RCW 76.09.060, RCW 76.09.070, RCW 76.09.390, and WAC 222-20-055)

Obligations include reforestation, road maintenance and abandonment plans, conversions of forest land to non-forestry use and/or harvest strategies on perennial non-fish habitat (Type Np) waters in Eastern Washington.

Before the sale or transfer of land or perpetual timber rights subject to continuing forest land obligations, the seller must notify the buyer of such an obligation on a form titled "Notice of Continuing Forest Land Obligation". The seller and buyer must both sign the "Notice of Continuing Forest Land Obligation" form and send it to the DNR Region Office for retention. This form is available at DNR region offices.

If the seller fails to notify the buyer about the continuing forest land obligation, the seller must pay the buyer's costs related to continuing forest land obligations, including all legal costs and reasonable attorneys' fees incurred by the buyer in enforcing the continuing forest land obligation against the seller.

Failure by the seller to send the required notice to the DNR at the time of sale will be prima facie evidence in an action by the buyer against the seller for costs related to the continuing forest land obligation prior to sale.

DNR affidavit of mailing:

On this day_____, I placed in the United States mail at Forks, WA,
(date) (post office location)
postage paid, a true and accurate copy of this document. Notice of Decision FPA # 2616350

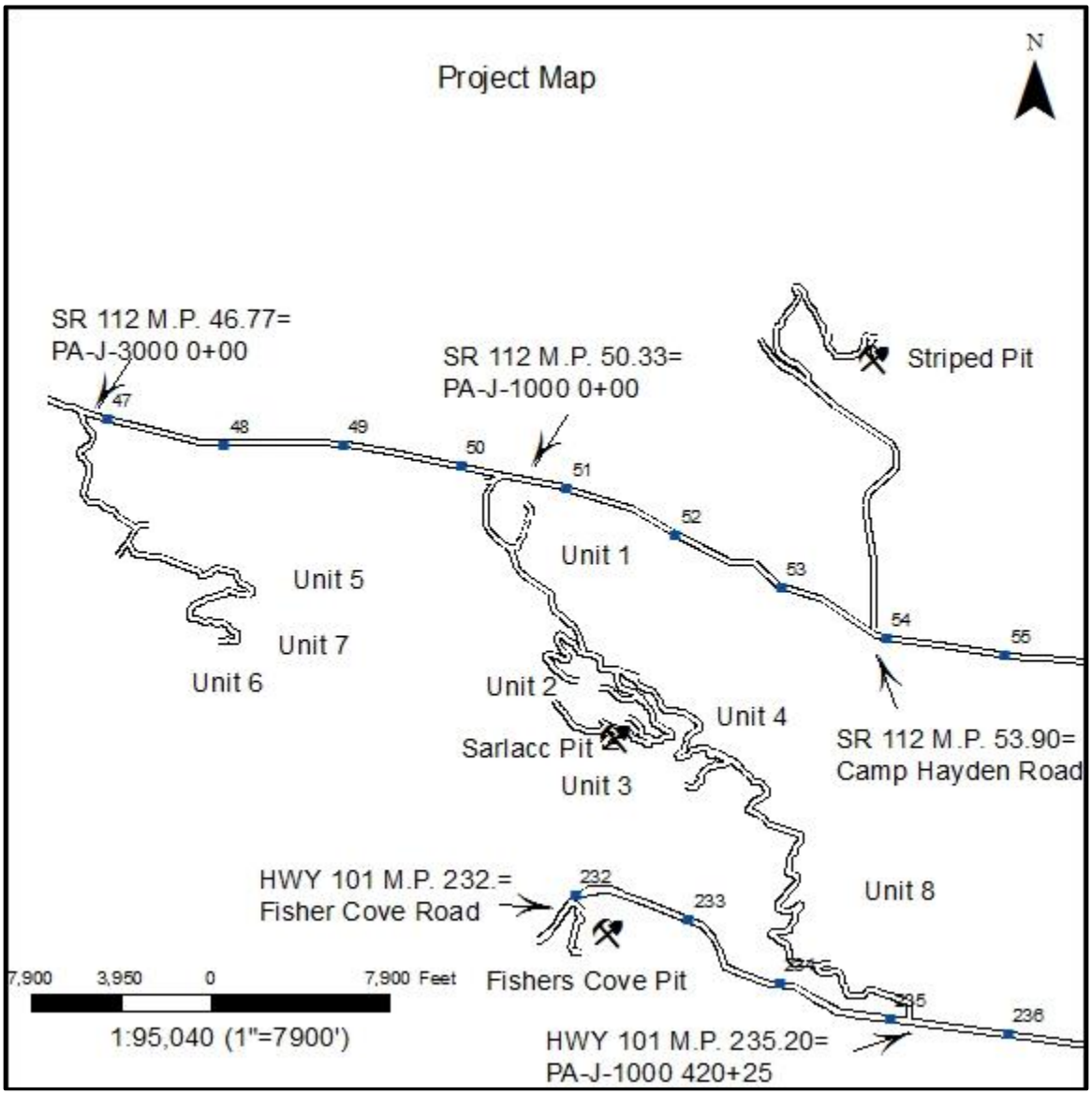
_____ _____
(Printed name) (Signature)

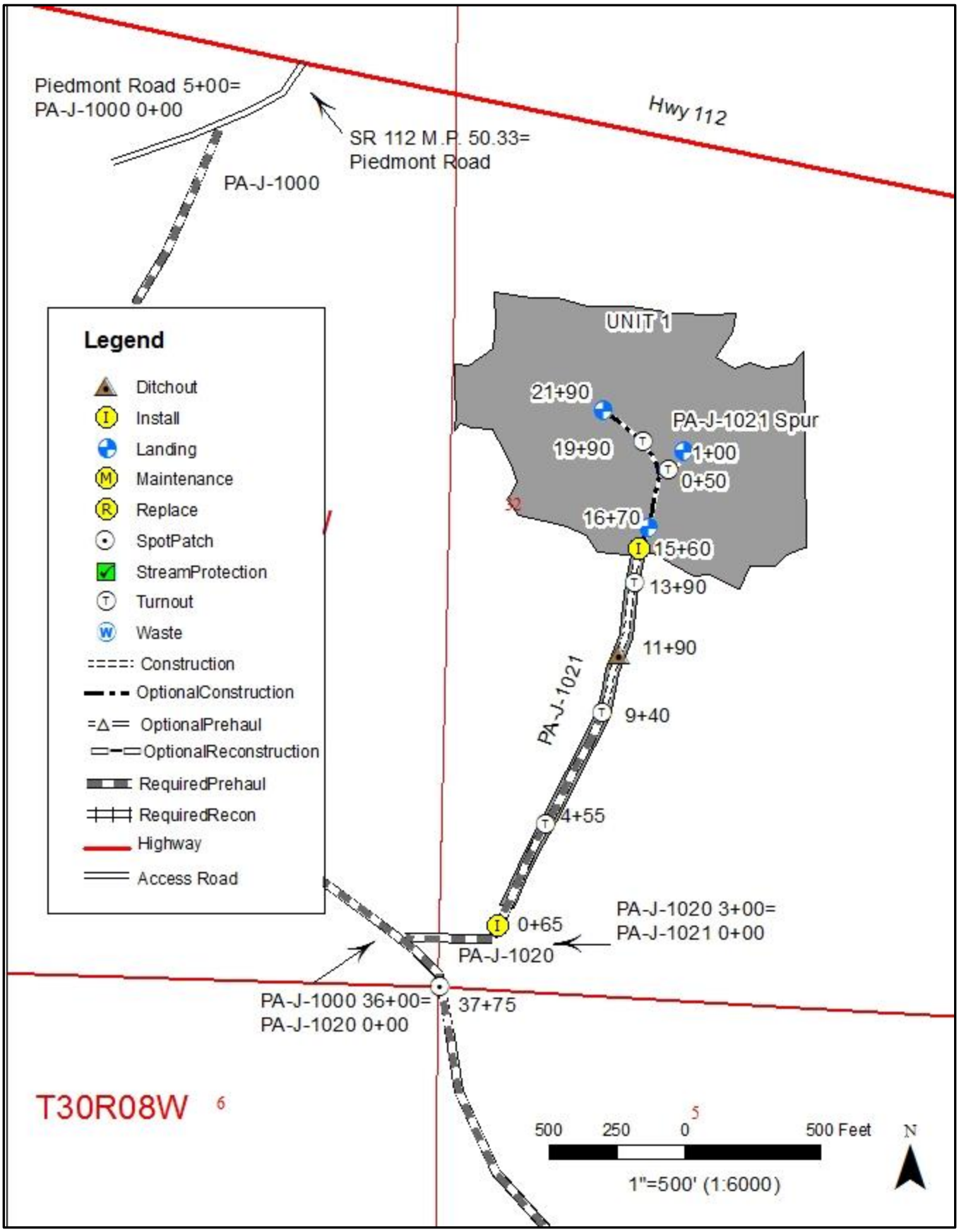
STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

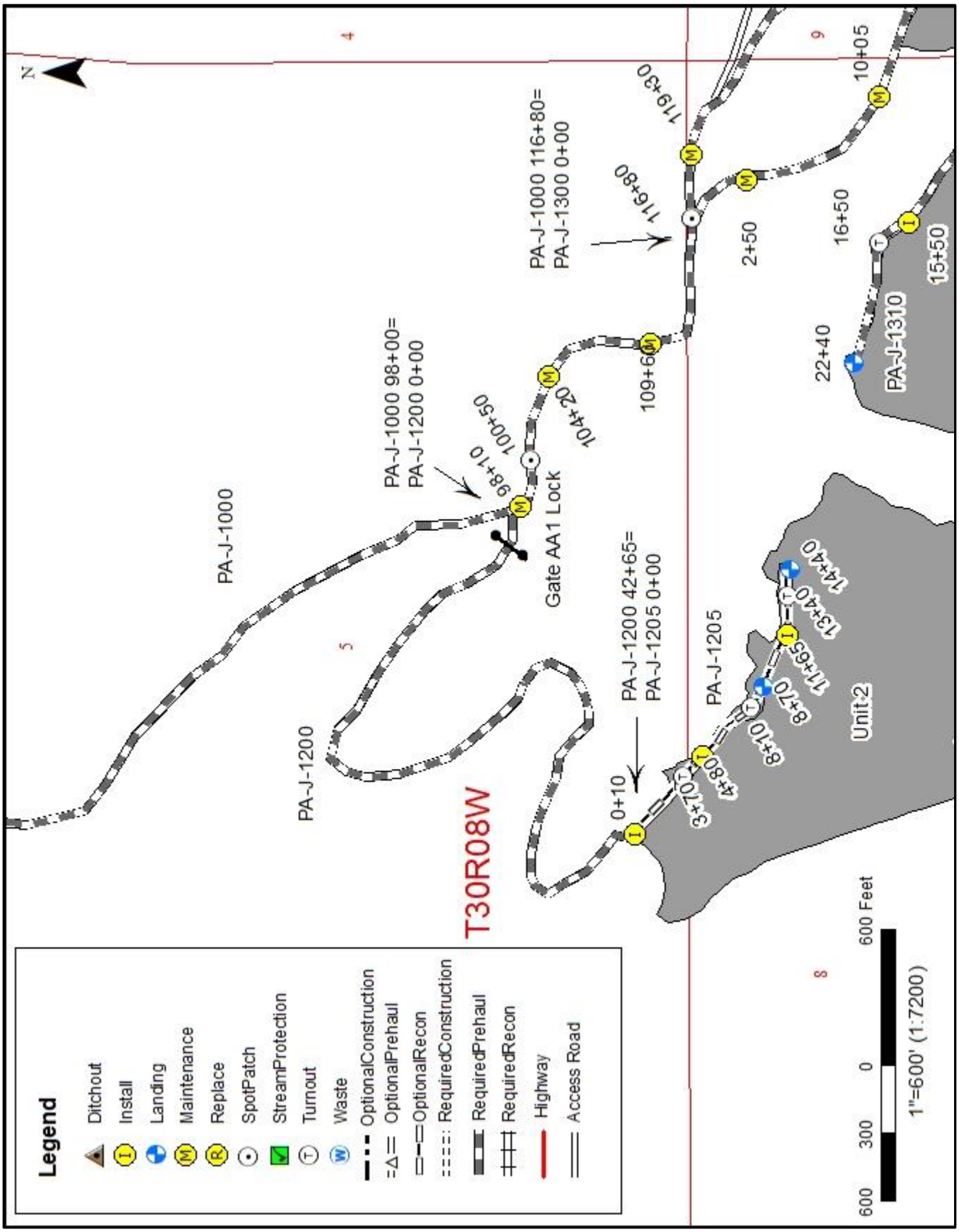
WHISKEY CREEK LIMIT TIMBER SALE ROAD PLAN
CLALLAM COUNTY
STRAITS DISTRICT
OLYMPIC REGION

AGREEMENT NO.: 30-099241 DISTRICT ENGINEER: GREG ELLIS

DATE: 6-11-20 DRAWN & COMPILED BY: SCOTT ROSE, JONATHAN MASON




Piedmont Road 5+00=
PA-J-1000 0+00
SR 112 M.P. 50.33=
Piedmont Road
Hwy 112
PA-J-1000
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
Construction
OptionalConstruction
OptionalPrehaul
OptionalReconstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
UNIT 1
21+90
PA-J-1021 Spur
19+90
1+00
0+50
16+70
15+60
13+90
11+90
PA-J-1021
9+40
4+55
0+65
PA-J-1020 3+00=
PA-J-1021 0+00
PA-J-1020
PA-J-1000 36+00=
PA-J-1020 0+00
37+75
T30R08W
6
5
500
250
0
500 Feet
N
1"=500' (1:6000)


N
4
9
5
8
T30R08W
PA-J-1000
PA-J-1200
PA-J-1205
PA-J-1310
Unit 2
Gate AA1 Lock
PA-J-1000 98+00=
PA-J-1200 0+00
PA-J-1000 116+80=
PA-J-1300 0+00
PA-J-1200 42+65=
PA-J-1205 0+00
0+10
3+70
4+80
8+10
8+70
11+65
13+40
14+40
98+10
100+50
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109+60
116+80
119+30
2+50
10+05
15+50
16+50
22+40
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
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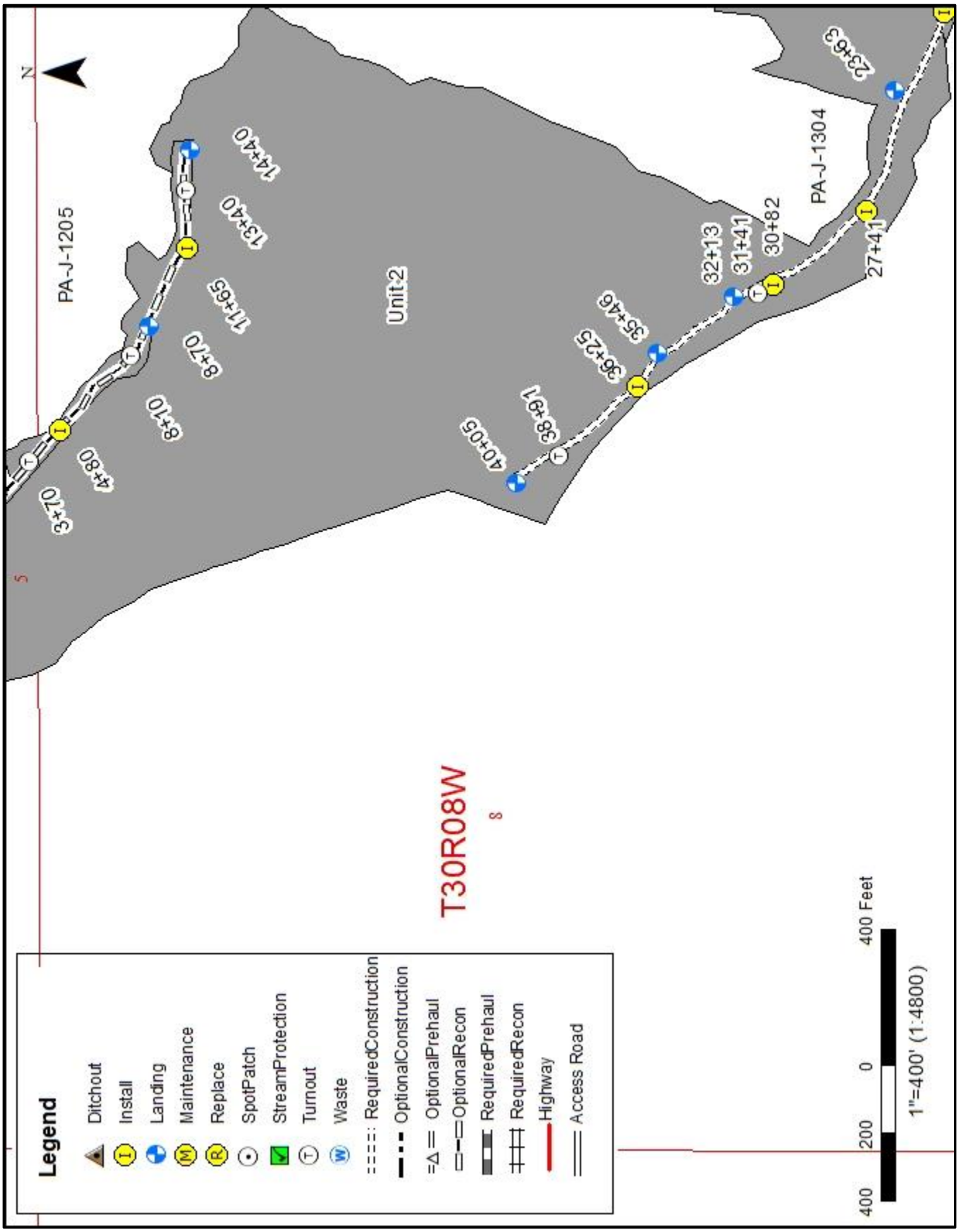
OptionalPrehaul
OptionalRecon
RequiredConstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
600 300 0 600 Feet
1"=600' (1:7200)


N
PA-J-1205
PA-J-1304
Unit 2
T30R08W
3+70
4+80
8+10
8+70
11+65
13+40
14+40
40+05
38+91
36+25
35+46
32+13
31+41
30+82
27+41
23+63
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
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OptionalConstruction
OptionalPrehaul
OptionalRecon
RequiredPrehaul
RequiredRecon
Highway
Access Road
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200
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400 Feet
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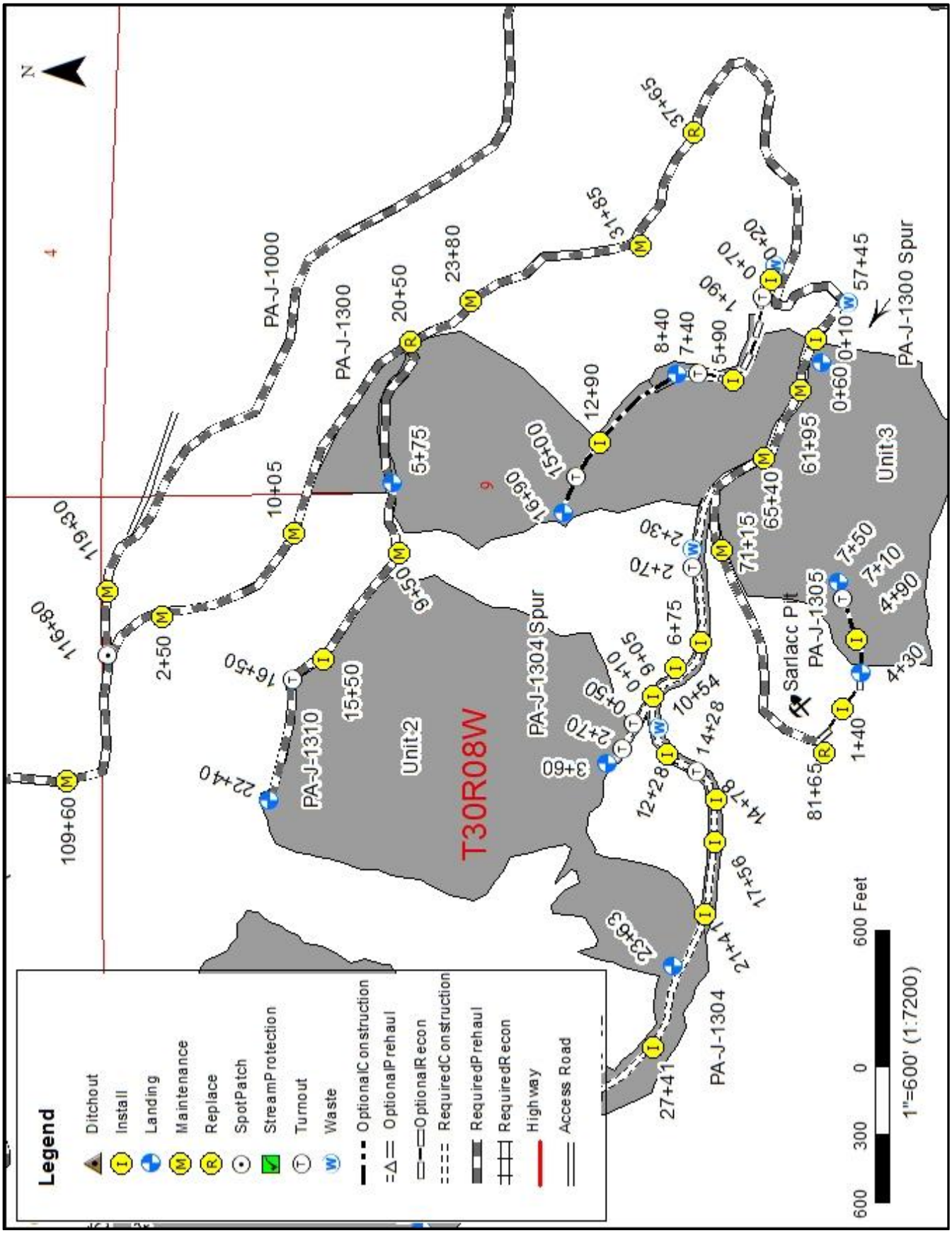
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T30R08W
Unit 2
Unit 3
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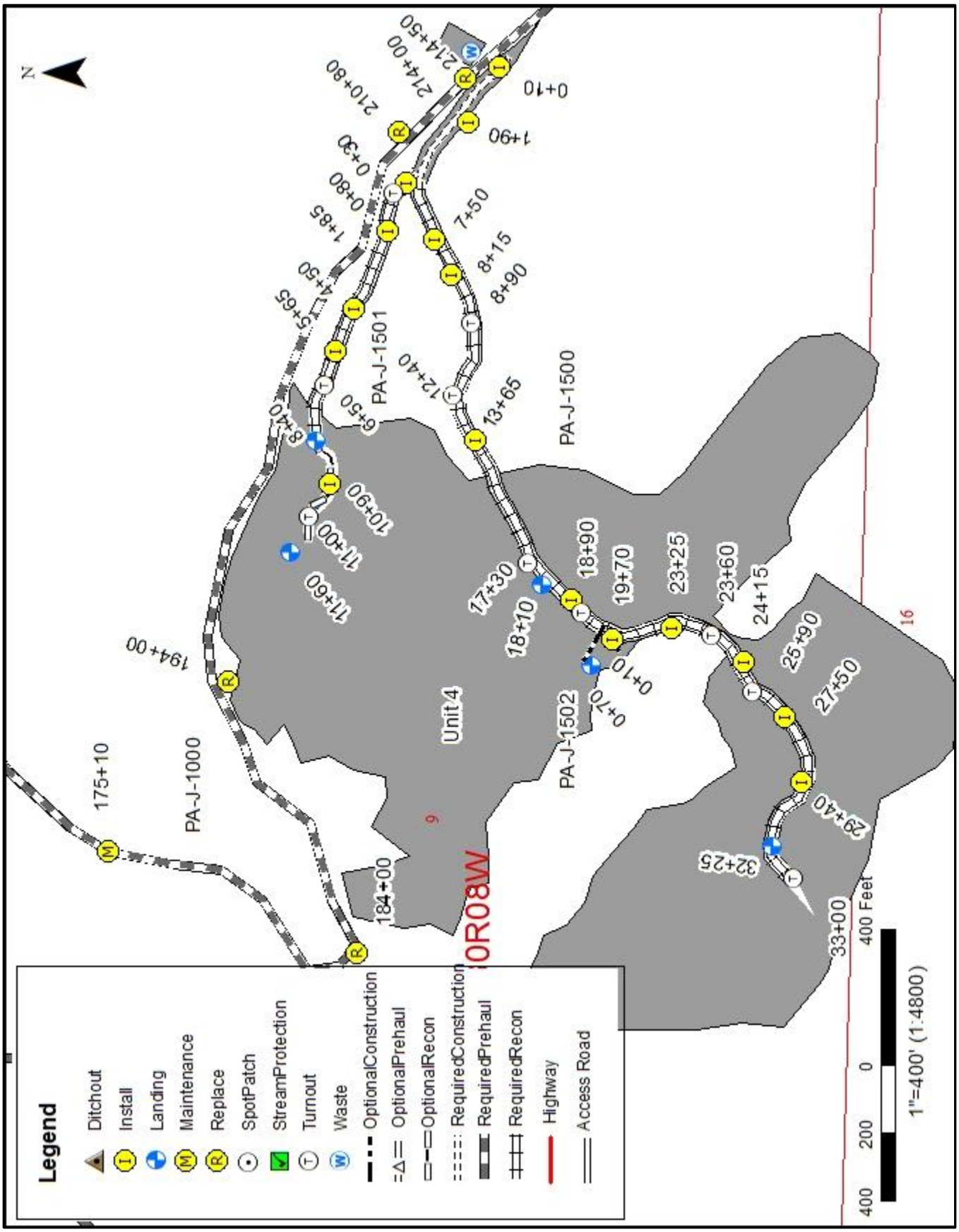
PA-J-1300
PA-J-1300 Spur
PA-J-1304
PA-J-1304 Spur
PA-J-1305
PA-J-1310
Sarlacc Pit
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
OptionalConstruction
OptionalPrehaul
OptionalRecon
RequiredConstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
600 300 0 600 Feet
1"=600' (1:7200)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Maintenance
Replace
SpotPatch
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Waste
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OptionalPrehaul
OptionalRecon
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RequiredPrehaul
RequiredRecon
Highway
Access Road
N
PA-J-1000
PA-J-1501
PA-J-1500
PA-J-1502
Unit 4
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194+00
184+00
0+10
1+90
214+00
214+50
210+80
0+30
0+80
1+85
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7+50
8+15
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0+70
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23+25
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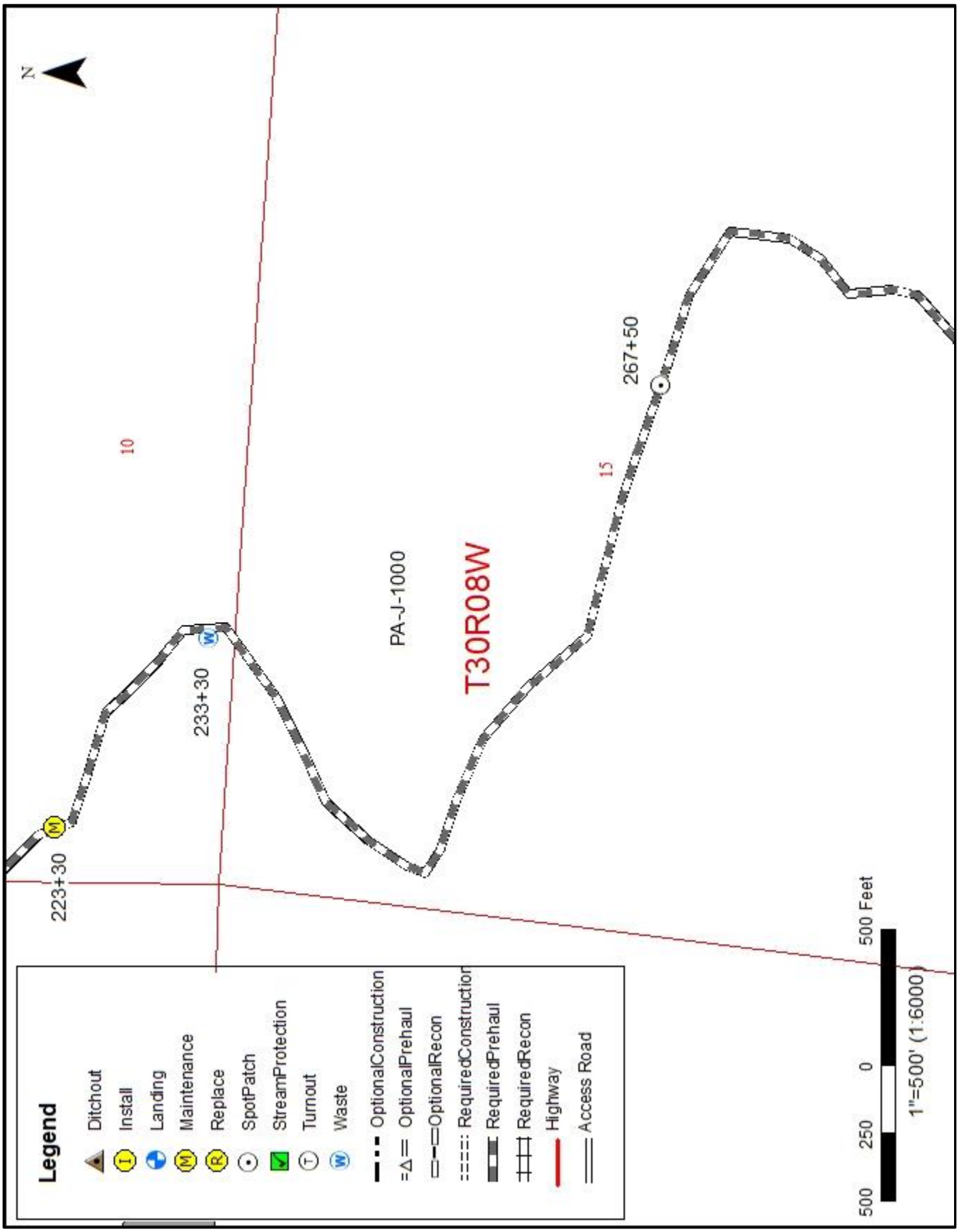
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15
223+30
233+30
267+50
PA-J-1000
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Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
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OptionalRecon
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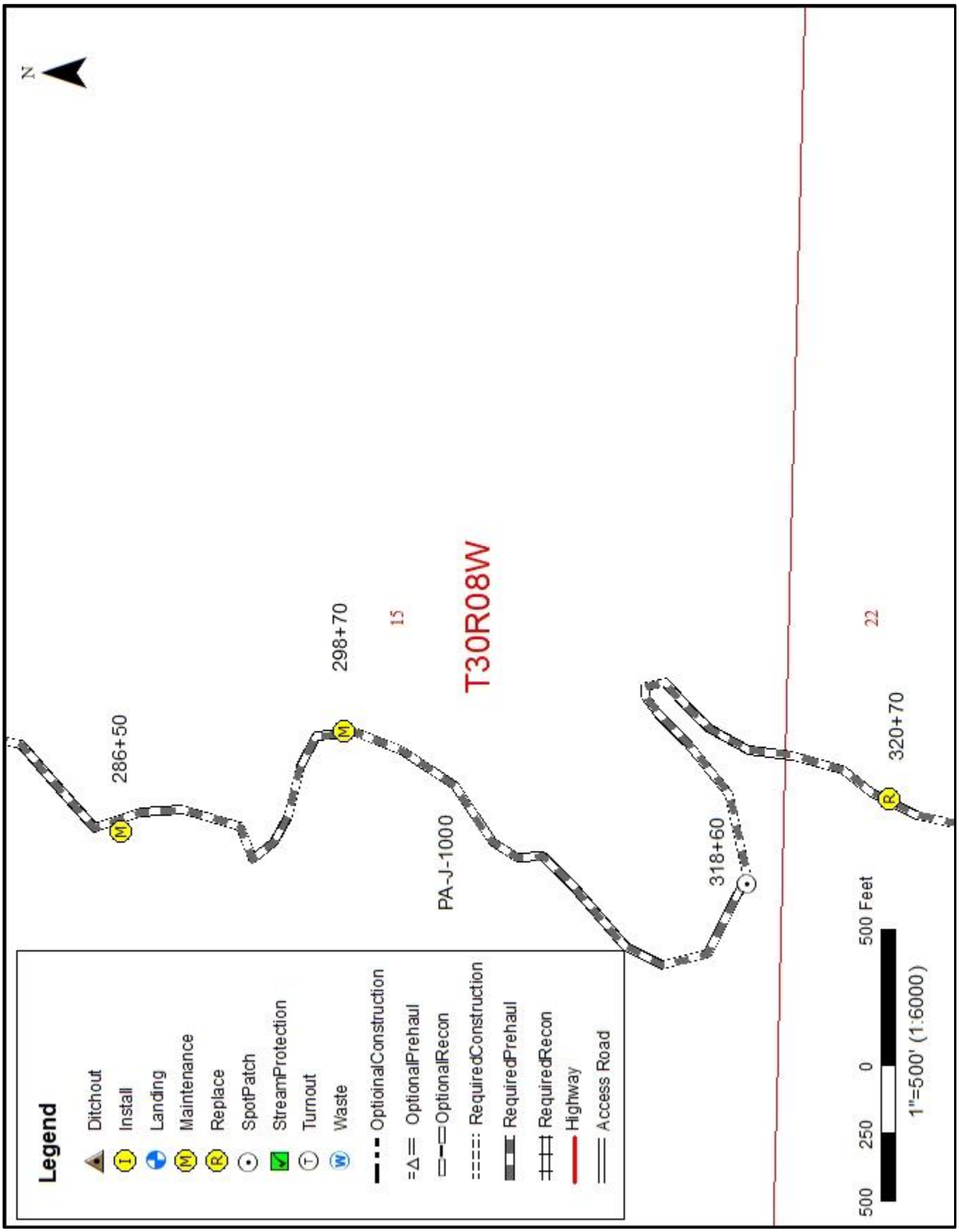
RequiredPrehaul
RequiredRecon
Highway
Access Road
500 250 0 500 Feet
1"=500' (1:6000)


N
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
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OptionalPrehaul
OptionalRecon
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RequiredPrehaul
RequiredRecon
Highway
Access Road
286+50
298+70
15
T30R08W
PA-J-1000
318+60
320+70
22
500 Feet
500
250
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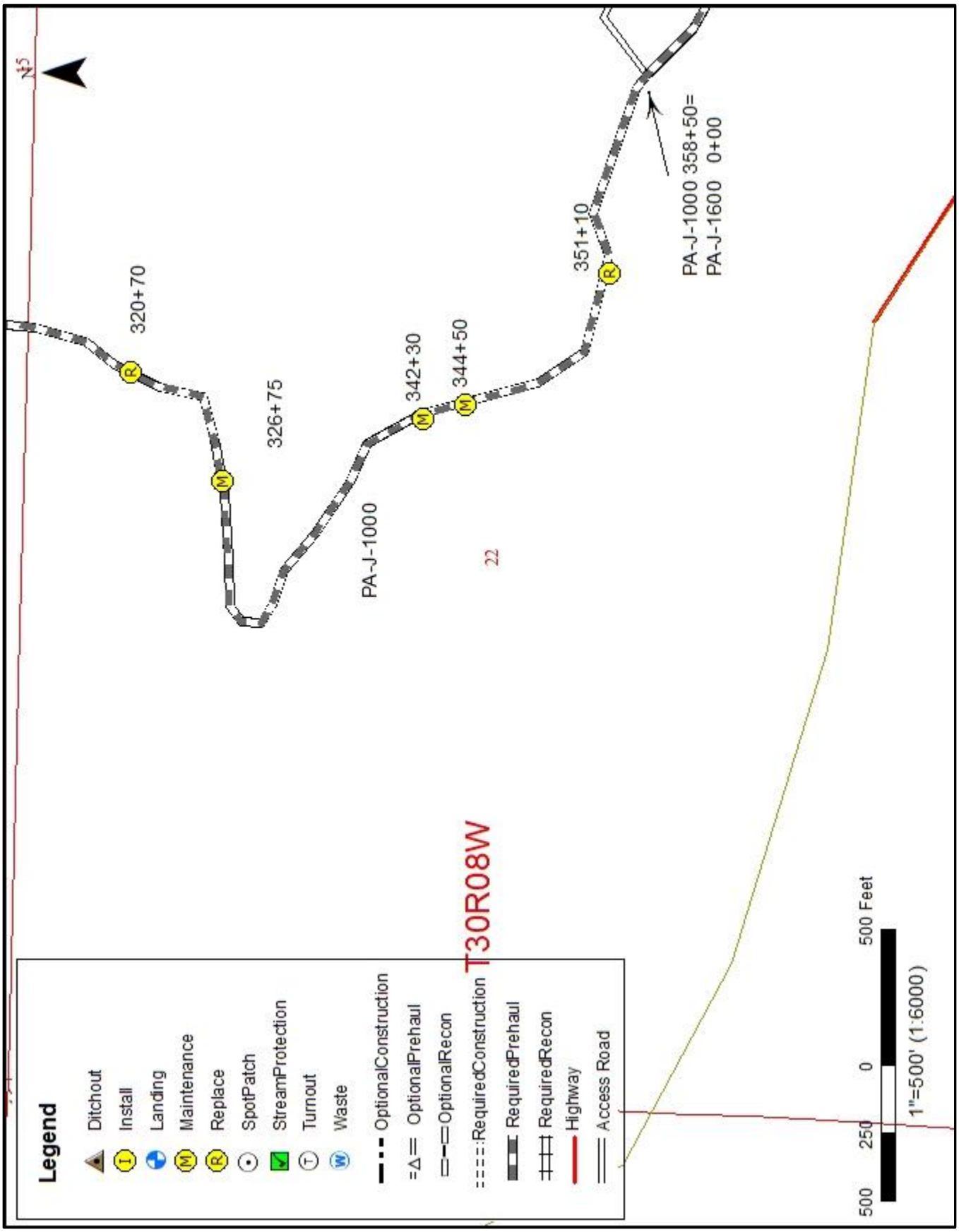
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Legend
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Landing
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Replace
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StreamProtection
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RequiredPrehaul
RequiredRecon
Highway
Access Road
T30R08W
22
320+70
326+75
PA-J-1000
342+30
344+50
351+10
PA-J-1000 358+50=
PA-J-1600 0+00
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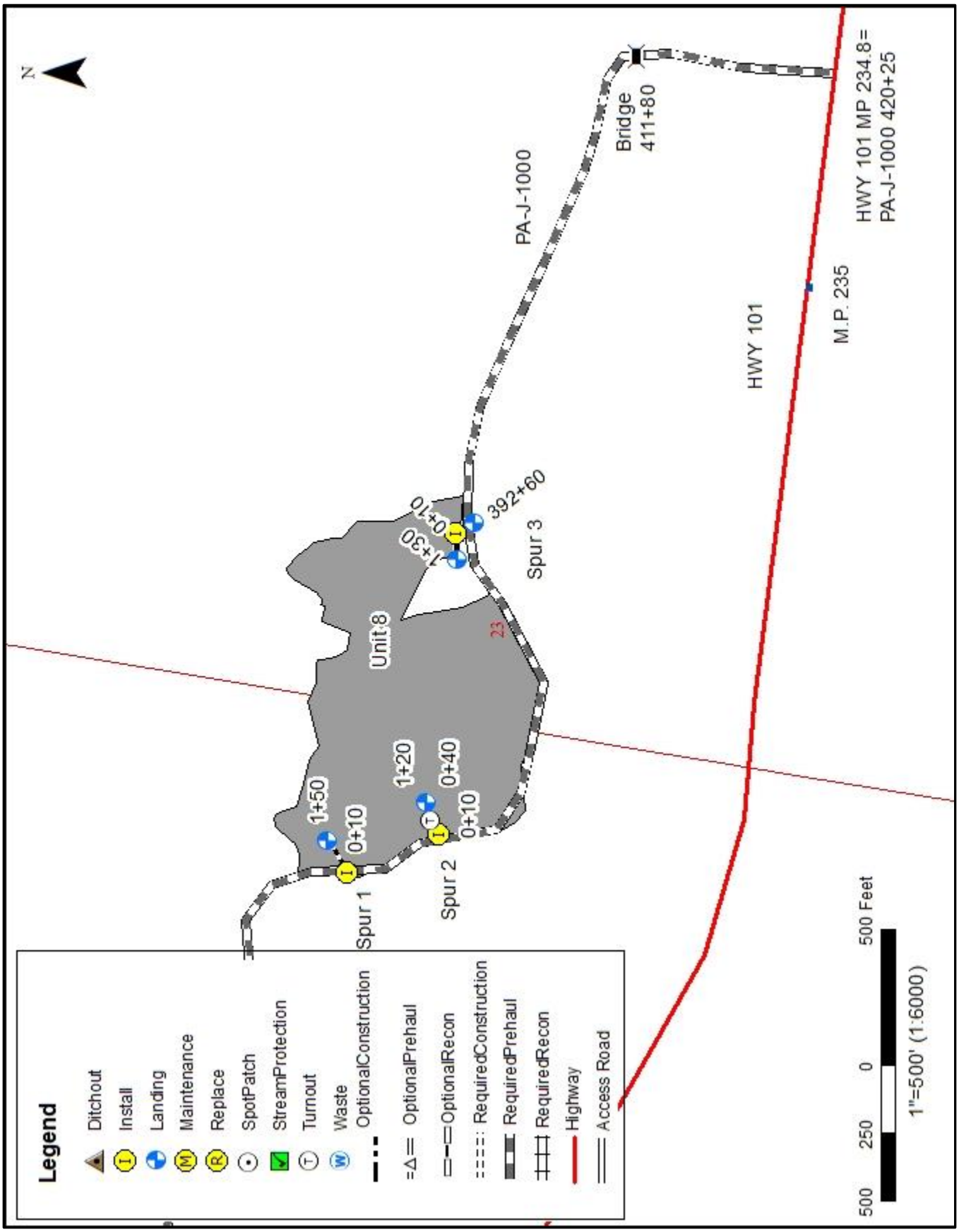
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Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
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Waste
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OptionalPrehaul
OptionalRecon
RequiredConstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
Spur 1
Spur 2
Spur 3
Unit 8
23
0+10
1+50
1+20
0+40
0+10
1+30
0+10
392+60
PA-J-1000
Bridge
411+80
HWY 101
M.P. 235
HWY 101 MP 234.8=
PA-J-1000 420+25
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250
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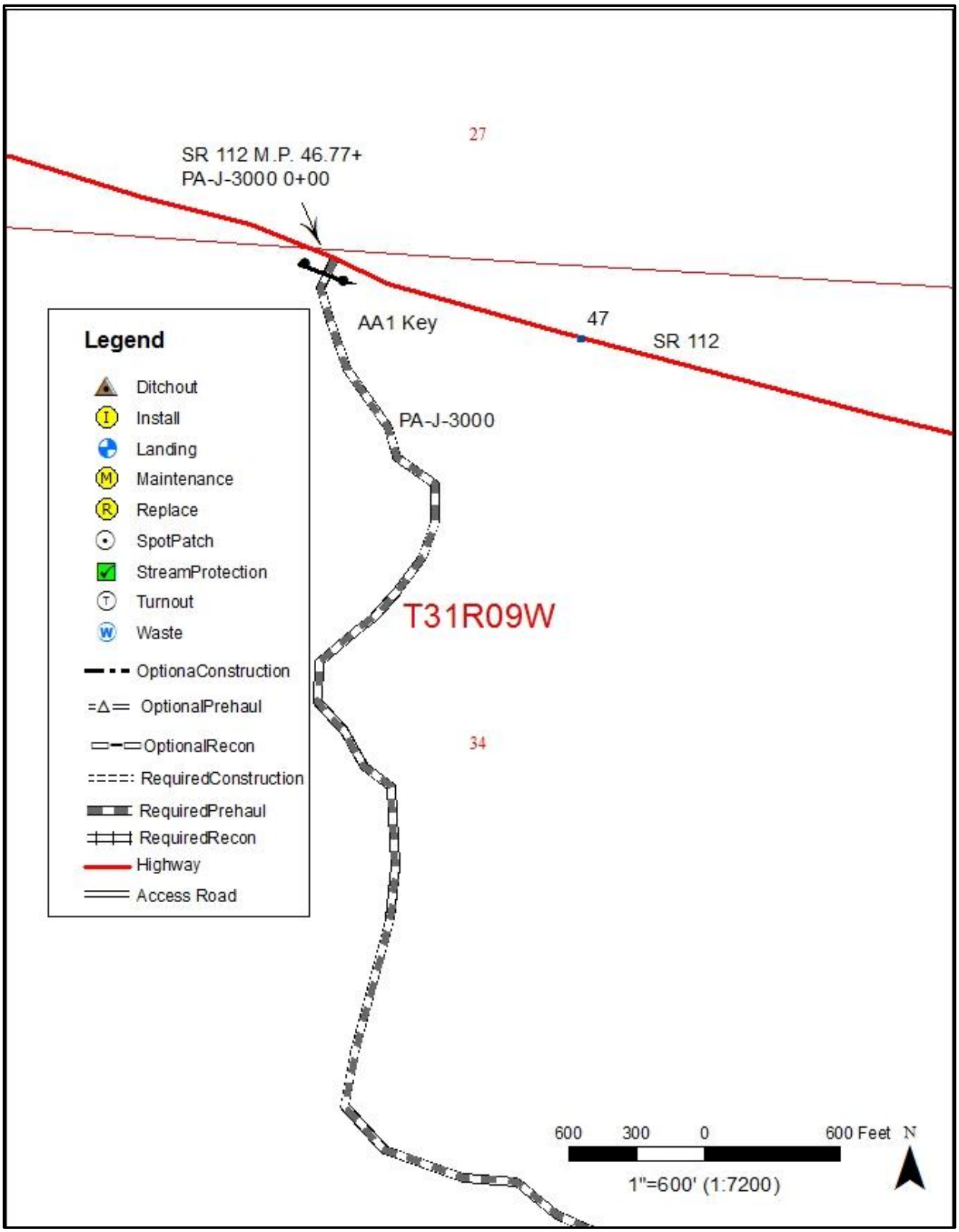
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SR 112 M.P. 46.77+
PA-J-3000 0+00
AA1 Key
47
SR 112
PA-J-3000
T31R09W
34
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
OptionaConstruction
OptionalPrehaul
OptionalRecon
RequiredConstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
600 300 0 600 Feet
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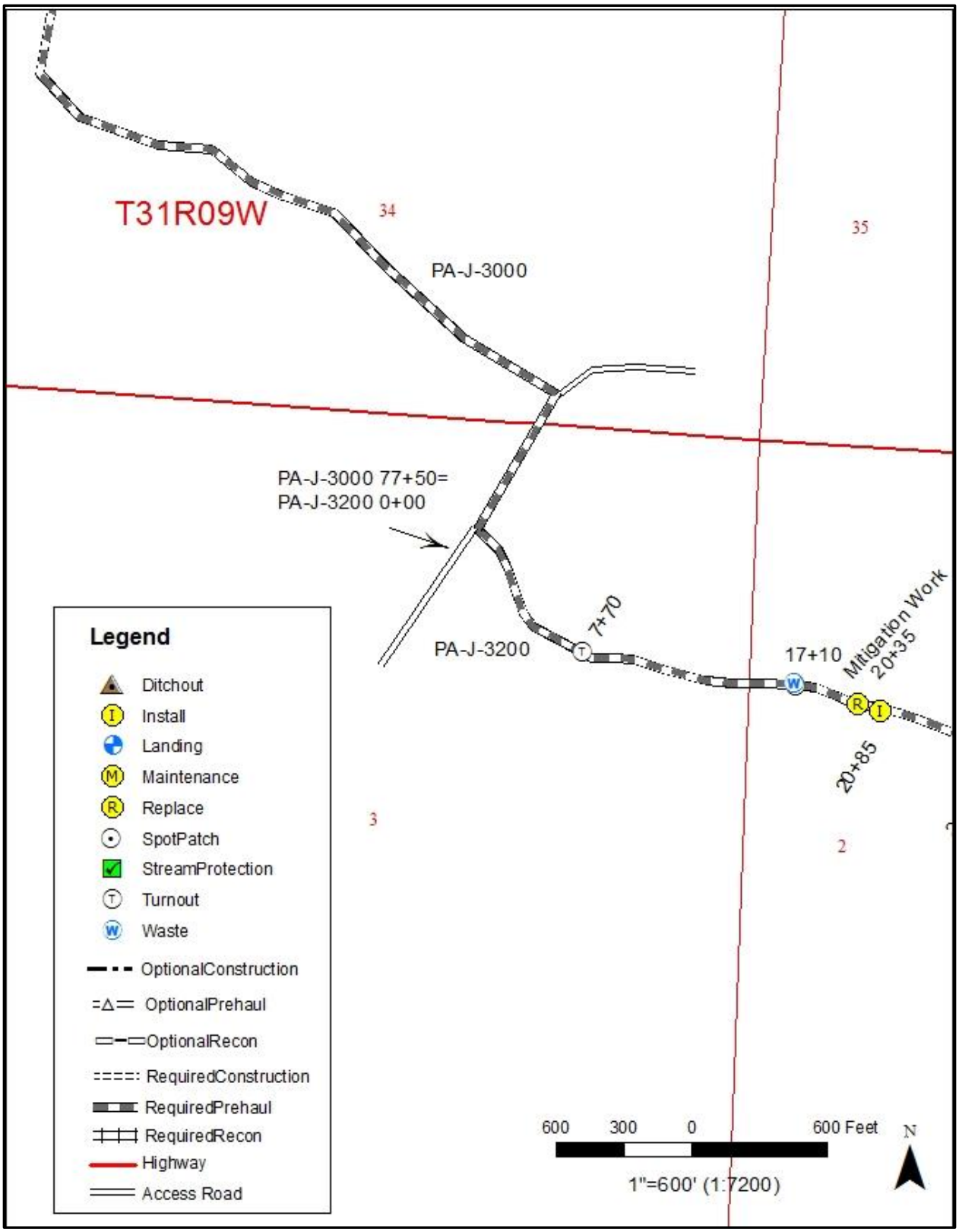
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PA-J-3000
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PA-J-3200 0+00
PA-J-3200
7+70
17+10
Mitigation Work
20+35
20+85
3
2
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
OptionalConstruction
OptionalPrehaul
OptionalRecon
RequiredConstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
600 300 0 600 Feet
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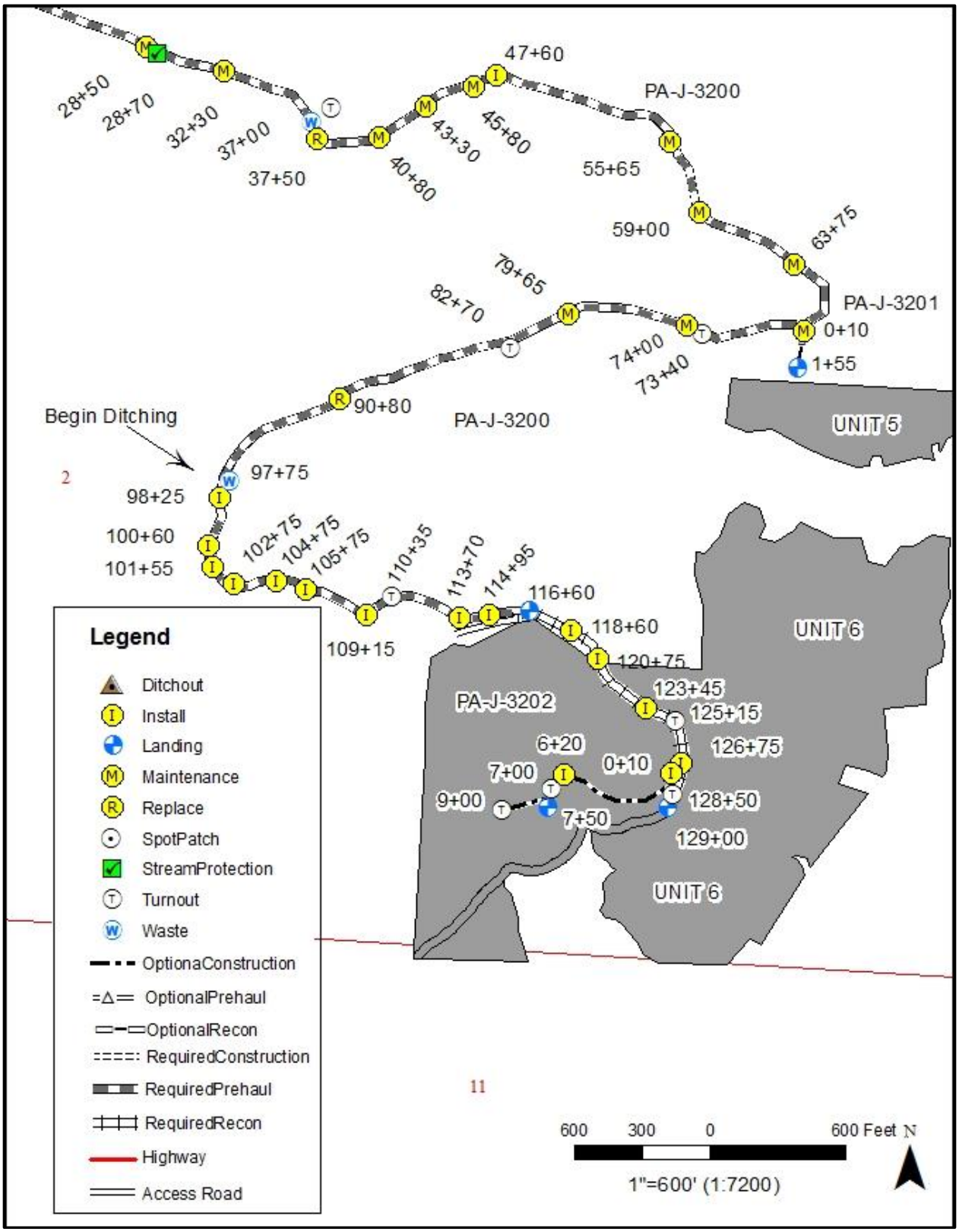
28+50
28+70
32+30
37+00
37+50
40+80
43+30
45+80
47+60
PA-J-3200
55+65
59+00
63+75
PA-J-3201
0+10
1+55
74+00
73+40
79+65
82+70
90+80
PA-J-3200
UNIT 5
Begin Ditching
97+75
98+25
100+60
101+55
102+75
104+75
105+75
109+15
110+35
113+70
114+95
116+60
118+60
120+75
123+45
125+15
126+75
128+50
129+00
UNIT 6
PA-J-3202
6+20
7+00
9+00
7+50
0+10
UNIT 6
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
OptionaConstruction
OptionalPrehaul
OptionalRecon
RequiredConstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
600 300 0 600 Feet
N
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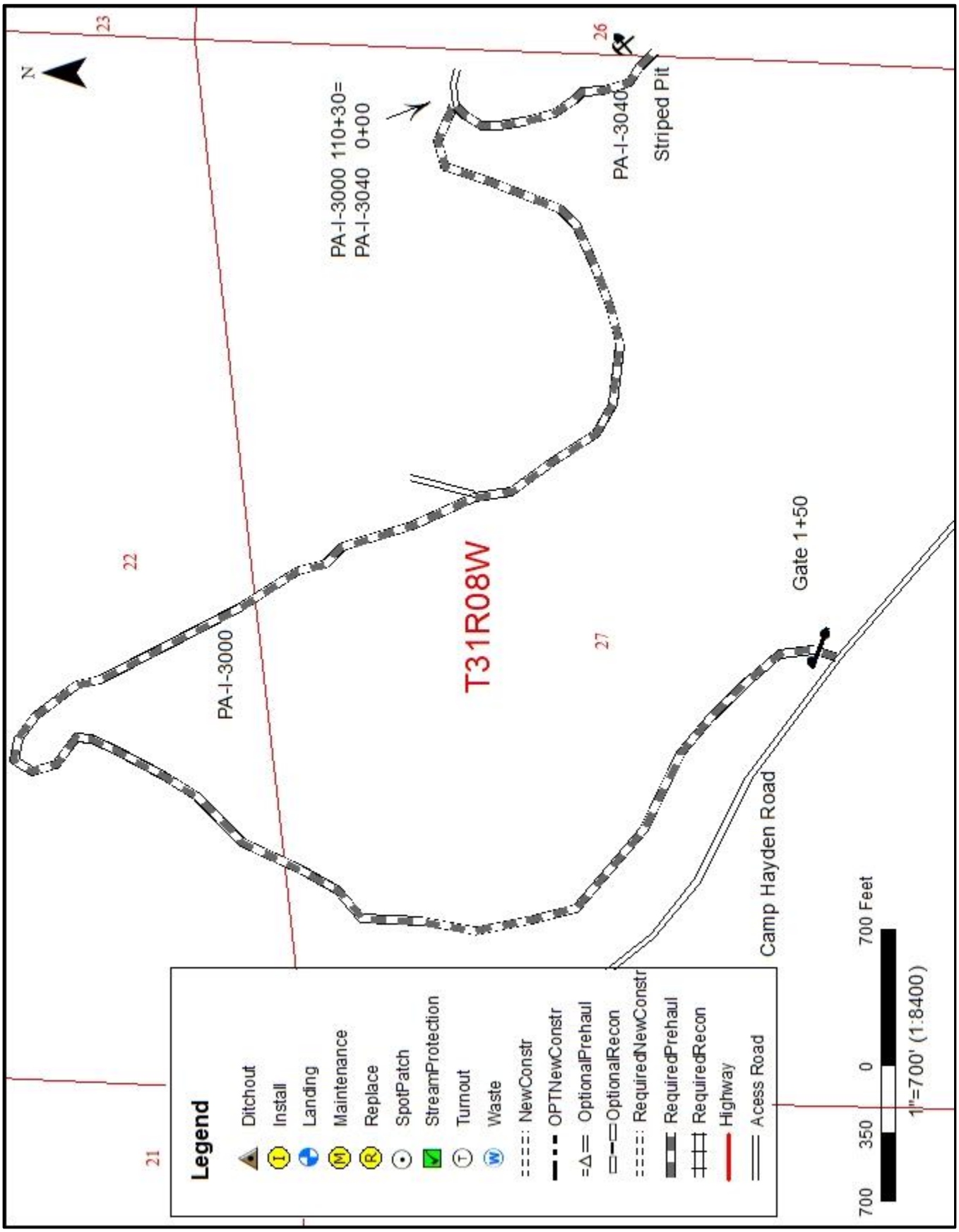
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23
26
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PA-I-3040 0+00
PA-I-3040
Striped Pit
22
T31R08W
27
Gate 1+50
PA-I-3000
Camp Hayden Road
21
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
NewConstr
OPTNewConstr
OptionalPrehaul
OptionalRecon
RequiredNewConstr
RequiredPrehaul
RequiredRecon
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Acess Road
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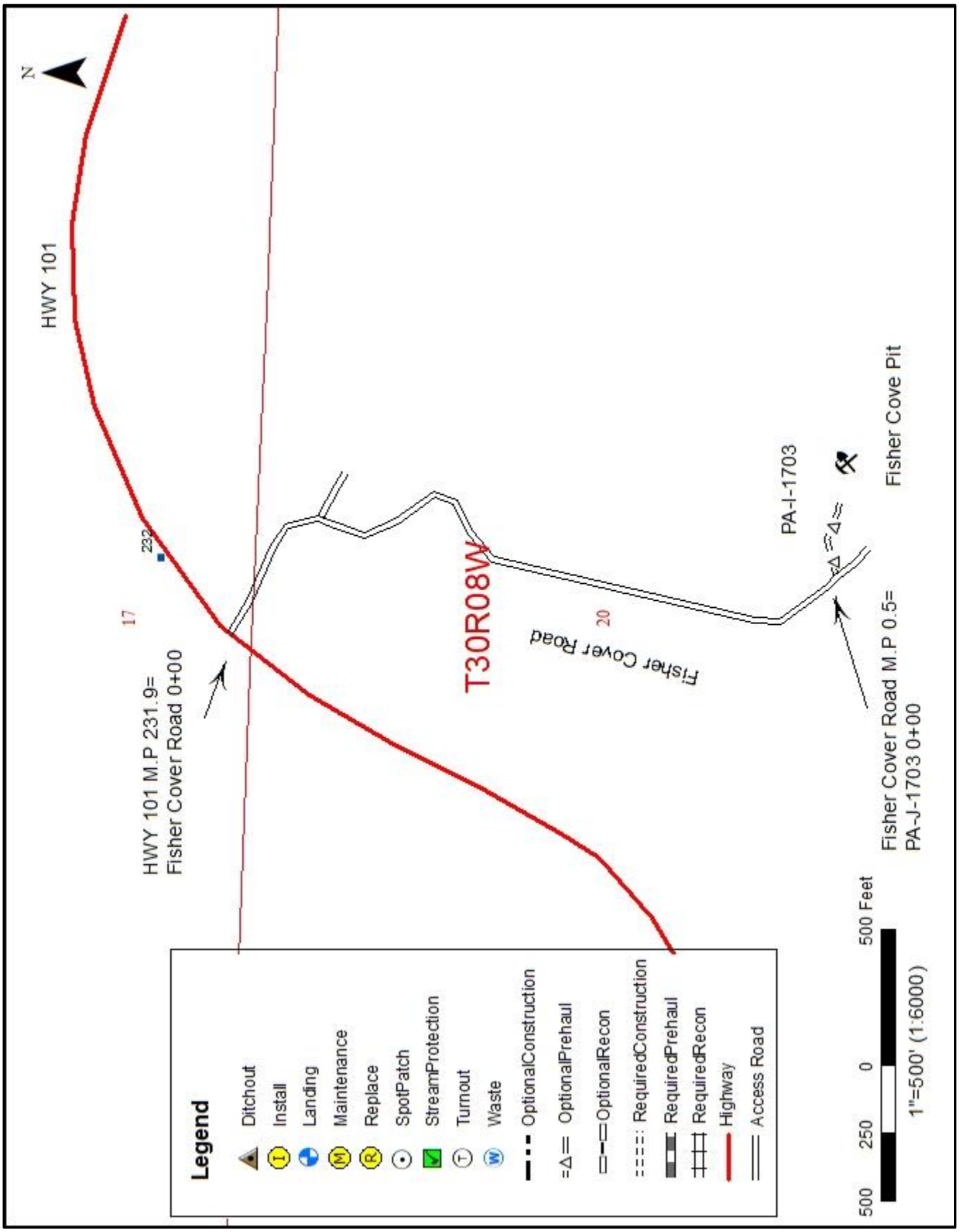

N
HWY 101
232
17
HWY 101 M.P 231.9=
Fisher Cover Road 0+00
T30R08W
20
Fisher Cover Road
PA-I-1703
Fisher Cove Pit
Fisher Cover Road M.P 0.5=
PA-J-1703 0+00
Legend
Ditchout
Install
Landing
Maintenance
Replace
SpotPatch
StreamProtection
Turnout
Waste
OptionalConstruction
OptionalPrehaul
OptionalRecon
RequiredConstruction
RequiredPrehaul
RequiredRecon
Highway
Access Road
500
250
0
500 Feet
1"=500' (1:6000)

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.

Road	Stations	Type
PA-J-3000	0+00 to 77+50	Prehaul Maintenance
PA-J-3200	0+00 to 116+60	Prehaul Maintenance
PA-J-3200	116+60 to 129+00	Reconstruction
PA-J-1000	0+00 to 420+25	Prehaul Maintenance
PA-J-1020	0+00 to 3+00	Prehaul Maintenance
PA-J-1021	0+00 to 9+40	Prehaul Maintenance
PA-J-1021	9+40 to 15+60	Construction
PA-J-1200	0+00 to 42+65	Prehaul Maintenance
PA-J-1300	0+00 to 81+65	Prehaul Maintenance
PA-J-1304	0+00 to 40+05	Construction
PA-J-1304 Spur	0+00 to 3+60	Construction
PA-J-1310	0+00 to 22+40	Prehaul Maintenance
PA-J-1500	0+00 to 5+00	Construction
PA-J-1500	5+00 to 33+00	Reconstruction
PA-J-1501	0+00 to 8+40	Reconstruction
PA-I-3000	0+00 to 110+30	Prehaul Maintenance
PA-I-3040	0+00 to 11+80	Prehaul Maintenance

0-3 OPTIONAL ROADS

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

Road	Stations	Type
PA-J-3201	0+00 to 1+55	Reconstruction
PA-J-3202	0+00 to 9+00	Construction
PA-J-1021 Spur	0+00 to 1+00	Construction
PA-J-1205	0+00 to 14+40	Reconstruction
PA-J-1303	0+00 to 8+40	Reconstruction
PA-J-1303	8+40 to 16+90	Construction
PA-J-1300 Spur	0+00 to 0+60	Construction
PA-J-1305	0+00 to 3+50	Reconstruction
PA-J-1305	3+50 to 7+50	Construction
PA-J-1501	8+40 to 11+60	Reconstruction

PA-J-1502	0+00 to 0+70	Construction
Spur 1	0+00 to 1+50	Construction
Spur 2	0+00 to 1+20	Construction
Spur 3	0+00 to 1+30	Construction
PA-J-1703	0+00 to 2+50	Prehaul Maintenance

0-4 CONSTRUCTION

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

Road	Stations	Requirements
PA-J-3202	0+00 to 9+00	See Below
PA-J-1021	9+40 to 15+60	See Below
PA-J-1021 Spur	0+00 to 1+00	See Below
PA-J-1303	8+40 to 16+90	See Below
PA-J-1300 Spur	0+00 to 0+60	See Below
PA-J-1305	3+50 to 7+50	See Below
PA-J-1304	0+00 to 40+05	See Below
PA-J-1500	0+00 to 5+00	See Below
PA-J-1502	0+00 to 0+70	See Below
PA-J-1304 Spur	0+00 to 3+60	See Below
Spur 1	0+00 to 1+50	See Below
Spur 2	0+00 to 1+20	See Below
Spur 3	0+00 to 1+30	See Below
Total Stations	82.65 Stations	

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 hay.

0-5 RECONSTRUCTION

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

Road	Stations	Requirements
PA-J-3200	116+60 to 129+00	See Below
PA-J-3201	0+00 to 1+55	See Below
PA-J-1205	0+00 to 14+40	See Below
PA-J-1303	0+00 to 8+40	See Below
PA-J-1305	0+00 to 3+50	See Below
PA-J-1500	5+00 to 33+00	See Below
PA-J-1501	0+00 to 11+60	See Below
Total Stations	79.85 Stations	

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

0-6 PRE-HAUL MAINTENANCE

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

Road	Stations	Requirements
PA-J-3000	0+00 to 77+50	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1.
PA-J-3200	0+00 to 116+60	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1. Clean/install culverts in accordance with Clause 2-6 and culvert list. Construct ditches in accordance with 2-7.
PA-J-1000	0+00 to 420+25	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1. Clean/install culverts in accordance with Clause 2-6 and culvert list. Ditch in accordance to Contract Administrator
PA-J-1020	0+00 to 3+00	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1.
PA-J-1021	0+00 to 9+40	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance

		with Rock list, brush road in accordance to Clause 3-1. Remove all vegetative material with minimum loss of rock in accordance with Clause 2-9.
PA-J-1200	0+00 to 42+65	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1. Ditch in accordance to Contract Administrator
PA-J-1300	0+00 to 81+65	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1. Clean/install culverts in accordance with Clause 2-6 and culvert list. Construct ditches in accordance with 2-7.
PA-J-1310	0+00 to 22+40	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1. Clean/install culverts in accordance with Clause 2-6 and culvert list. Construct ditches in accordance with 2-7.
PA-I-3000	0+00 to 110+30	Grade, shape and compact existing running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1.
PA-I-3040	0+00 to 11+80	Grade, shape and compact exiting running surface in accordance to Clause 2-5, apply rock in accordance with Rock list, brush road in accordance to Clause 3-1.
PA-J-1703	0+00 to 2+50	Grade, shape and compact existing running surface in accordance to Clause 2-5
Total Stations	898.05 Stations	

Pre-haul 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 replacements, 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 9-5

0-8 CLOSURE

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

0-12 DEVELOP ROCK SOURCE

Purchaser may develop existing rock sources called Striped Pit, Sarlacc Pit and Fisher Cove Pit. Rock source development will involve stripping approximately .6 acres to useable rock as determined by the Contract Administrator and possible drilling and shooting to obtain ballast material. Purchaser may strip and drill & shoot Sarlacc Pit, Fisher Cover Pit or Striped Pit in combination or soley to obtain the volume of a size rock called for in the Rock List. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

0-13 STREAM MITIGATION

Purchaser shall install stream mitigation work as described by the Informal Conference Notes 110699. Requirements are listed in the notes attached to this Road Plan.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

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

1-2 UNFORESEEN CONDITIONS

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to unforeseen conditions, or Purchaser's choice of construction season or techniques will be at the Purchaser's expense. Unforeseen

conditions include, but are not limited to, solid subsurface rock, subsurface springs, saturated ground, and unstable soils.

1-3 ROAD DIMENSIONS

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

1-4 ROAD TOLERANCES

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

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

1-5 DESIGN DATA

Road Construction design data for the PA-J-1500 AND PA-J-1304 is available upon request at the Department of Natural Resources Straits District Office in Port Angeles, WA.

1-6 ORDER OF PRECEDENCE

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

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

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

1-7 TEMPORARY ROAD CLOSURE

Purchaser shall notify the Contract Administrator a minimum of 5 calendar days before the closure of any road. Construction may not close any road for more than 5 consecutive calendar days. Construction may not close the following roads for more than the specified number of days.

Road	Number of Allowable Closed Days	Comment
PA-J-1000	3 days for Culvert Replacement at 184+00, 1 day for all other Culverts	Road Closed signs should be placed along PA-J-1000 and at terminating ends; and excavated area blocked off each night for public safety.
PA-J-1300	4 hours per pipe	Contact Lessee of comm site before work

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

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

1-9 DAMAGED METALLIC COATING

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

1-11 FPHP REQUIREMENTS

The following work is subject to requirements under a Forest Practice Hydraulics Project Approval issued by the State of Washington.

Road	Stations	Work Type
PA-J-3200	20+35	Down Stream Mitigation,See Informal Conference Notes 110699, Pipe install

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.

1-13 LOG LOADING

At no time shall the loading of logs occur on the PA-J-1000 road unless authorized by Contract Administrator. In addition, no debris from harvesting operations shall be allowed on this road.

SUBSECTION ROAD MARKING

1-15 ROAD MARKING

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

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

1-16 CONSTRUCTION STAKES SET BY STATE

Purchaser shall perform work on the following road(s) in accordance with the construction stakes or reference points set in the field for grade and alignment. Reconstruction of existing road grades must conform to the original location except where construction staked or designed.

Road	Stations	Type
PA-J-1500	0+00 to 5+00	Construction
PA-J-1500	20+55 to 23+03	Reconstruction
PA-J-1304	0+00 to 40+05	Construction

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.

1-20 COMPLETE BY DATE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

On the following road(s), Purchaser shall notify the Contract Administrator a minimum of 14 calendar days before work begins.

Road	Stations
PA-J-1000	ALL
PA-J-1300	ALL

1-23 ROAD WORK PHASE APPROVAL

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

- Subgrade construction
- Drainage installation
- Subgrade compaction
- Rock application
- Rock compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

On the following road(s), are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator.

Road	Stations	Activity	Closure Period
All	All	All	8:00 PM- 6:00 AM (year around)

All	All	All	Weekends and State Recognized Holidays
All	All	All roadwork activities including Timber Haul and rock pit development.	November 1st – April 30th

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION or Contract Clause H-130 HAULING SCHEDULE, Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan, and shall put preventative measures in place before operating during the closure period. Purchaser is required to maintain all haul roads at their own expense including those listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

1-27 TIMING RESTRICTION FOR MARBLED MURRELET

On the following road(s), any road work, right-of-way timber falling and yarding, rock pit operation, or heavy equipment operation will occur during the limited operating period of two hours after official sunrise to two hours before official sunset from April 1 through Septemeber 23.

This restriction does not apply to hauling timber, rock, or equipment.

Road	Stations
PA-J-1000	233+30 to 337+30

1-29 SEDIMENT RESTRICTION

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

1-30 CLOSURE TO PREVENT DAMAGE

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

- Wheel track rutting exceeds 6 inches on jaw run, pit run roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Wheel track rutting exceeds 4 inches on native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

1-32 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, approved in writing by Contract Administrator, must be used.

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

1-33 SNOW PLOWING RESTRICTION

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

SUBSECTION OTHER INFRASTRUCTURE

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

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

If additional damage to the surface, signs, guardrails, etc. occurs then the damage will be repaired, at the Purchaser's expense, as directed by the Contract Administrator when authorized by the county or WSDOT.
The following county roads and state highways are affected by this sale:

Road Name
HWY 101
HWY 112
Piedmont Road
Camp Hayden Road
Fisher Cove Road

1-42 UTILITY ACCESS ROAD

The following road(s) intersect(s) existing utility access roads. Purchaser shall conduct road work on the intersecting roads so that the utility access roads are accessible at all times.

Road	Stations
PA-J-1000	0+00 to 116+80
PA-J-1300	ALL
PA-J-3000	ALL

1-43 ROAD WORK AROUND UTILITIES

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

Road	Stations	Utility	Utility Contact
PA-J-1000	0+00 to 116+80	Buried Lines	**811**
PA-J-1300	ALL	Buried Lines	**811**

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

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

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

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

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

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

2-4 PASSAGE OF LIGHT VEHICLES

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

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface.

Road	Stations	Requirements
PA-J-3000	0+00 to 77+50	Grade, shape, compact and remove shoulder berms
PA-J-3200	0+00 to 116+60	Grade, shape, compact and remove shoulder berms
PA-J-1000	0+00 to 420+25	Grade, shape, compact and remove shoulder berms
PA-J-1020	0+00 to 3+00	Grade, shape, compact and remove shoulder berms
PA-J-1021	0+00 to 9+40	Grade, shape, compact and remove shoulder berms
PA-J-1200	0+00 to 42+65	Grade, shape, compact and remove shoulder berms
PA-J-1300	0+00 to 81+65	Grade, shape, compact and remove shoulder berms
PA-J-1310	0+00 to 22+40	Grade, shape, compact and remove shoulder berms
PA-I-3000	0+00 to 110+30	Grade, shape, compact and remove shoulder berms
PA-I-3040	0+00 to 11+80	Grade, shape, compact and remove shoulder berms

2-6 CLEANING CULVERTS

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before start of timber haul.

Road	Stations
PA-J-3200	28+50, 32+30, 40+80, 43+30, 45+80, 55+65, 59+00, 63+75, 74+00, 79+65
PA-J-3201	0+10
PA-J-1000	98+10, 104+20, 109+60, 119+30, 175+10, 223+30, 286+50, 298+70, 326+75, 342+30, 344+50

PA-J-1300	2+50, 10+05, 23+80, 31+85, 61+95, 65+40, 71+15,
PA-J-1310	9+50

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

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

Road	Stations	Left and/or Right	Comments
PA-J-3200	55+65 to 59+00	Right	
PA-J-3200	98+25 to 116+60	Right	
PA-J-1300	23+80 to 31+85	Right	Locate for Power
PA-J-1300	37+65 to 48+90	Right	Locate for Power
PA-J-1300	48+90 to 51+90	Left and Right	Locate for Power
PA-J-1300	51+90 to 55+25	Left	Locate for Power
PA-J-1300	57+65 to 79+00	Left	Locate for Power

2-9 REMOVING VEGETATIVE MATERIAL

On the following road(s), Purchaser shall remove all vegetative material, dirt, mud and other debris on the existing road surface with a minimum loss of rock. Material material must disposed of as specified in Clauses 4-35 through 4-38.

Road	Stations
PA-J-1021	0+00 to 9+40

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

SUBSECTION BRUSHING

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 5 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

Road	Stations
PA-J-3000	0+00 to 77+50
PA-J-3200	0+00 to 116+60
PA-J-1000	0+00 to 420+25
PA-J-1020	0+00 to 3+00
PA-J-1021	0+00 to 9+40
PA-J-1200	0+00 to 42+65
PA-J-1300	0+00 to 81+65
PA-J-1310	0+00 to 22+40
PA-I-3000	0+00 to 110+30
PA-I-3040	0+00 to 11+80

3-2 BRUSHING RESTRICTION

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

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.

3-6 CLEARING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING

At the following stream crossing location(s), Purchaser shall place large woody debris in the stream in accordance with the Informal Conference Notes.

Road	Stations
PA-J-3200	20+35

3-7 RIGHT-OF-WAY DECKING

Purchaser shall deck all right-of-way timber. Decks must be parallel to the road centerline and placed within the cleared right-of-way. Decks must be free of dirt, limbs,

and other right-of-way debris, and removable by standard log loading equipment from the roadbed.

3-8 PROHIBITED DECKING AREAS

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

- Within 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.

SUBSECTION GRUBBING

3-10 GRUBBING

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Purchaser shall remove stumps using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator. Grubbing must be completed before starting excavation and embankment.

3-11 GRUBBING WITHIN RIPARIAN AREA AT TYPE 1-3 STREAM CROSSING

Purchaser shall retain all grubbed stumps (root wads) within the Inner Zone (25 feet either side of the stream) for placement in accordance with the Informal Confernce Notes.

Road	Stations
PA-J-3200	20+35

3-12 STUMP PLACEMENT

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

3-13 STUMPS FOR PUNCHEON MATERIAL

Stumps from within the grubbing limits may be overturned and driven flush with the ground surface for use as subgrade puncheon material as directed with written permission by the Contract Administrator.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

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

SUBSECTION ORGANIC DEBRIS

3-20 ORGANIC DEBRIS DEFINITION

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

3-21 DISPOSAL COMPLETION

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

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located as listed below.

Road	Stations
PA-J-3200	17+10
PA-J-3200	37+00
PA-J-3200	97+75
PA-J-1000	165+75
PA-J-1000	214+50
PA-J-1000	233+30
PA-J-1300	57+45
PA-J-1303	0+20
PA-J-1304	2+30
PA-J-1304	10+54

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream, or wetland,unless used to comply with the specifications detailed in the Riparian Strategy, Clause 3-6 Clearing Within Riparian Area at Type 1-3 Stream Crossing, and Clause 3-11 Grubbing Within Riparian Area at Type 1-3 Stream Crossing
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.

- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris 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**.**

SUBSECTION PILE

3-30 EXCLUSION OF DOZER BLADES

Purchaser shall not use dozer blades for the piling of organic debris.

3-31 PILING

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

3-32 END HAULING ORGANIC DEBRIS

On the following road(s), and on slopes greater than 45%, Purchaser shall end haul or push organic debris to the designated waste areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS, or to a waste area located by the Contract Administrator.

Road	Stations
PA-J-3200	20+35
PA-J-3200	98+25 to 126+75
PA-J-1303	8+40 to 16+90
PA-J-1304	2+70 to 27+41
PA-J-1500	0+00 to 5+00

SECTION 4 – EXCAVATION

4-1 EXCAVATOR CONSTRUCTION

Purchaser shall use a track mounted hydraulic excavator for construction, reconstruction and maintenance work unless stated otherwise within this Road Plan or authorized in writing by the Contract Administrator.

4-2 PIONEERING

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

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

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 15 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-4 SWITCHBACK STANDARDS

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

- Maximum adverse grades for switchbacks is 10%.
- Maximum favorable grades for switchbacks is 12%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

4-5 CUT SLOPE RATIO

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

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

4-10 WIDEN THE EXISTING SUBGRADE

On the following road(s), Purchaser shall widen the subgrade and fill slopes to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Purchaser shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches. Pulling excavation material across the road or mixing in with the existing road surface is not allowed.

Road	Stations
PA-J-1021	4+55 to 9+40 for intermittent widening

4-12 FULL BENCH CONSTRUCTION

On the following road(s), and where side slopes exceed 45% Purchaser shall use full bench construction for the entire subgrade width. Purchaser shall end haul waste material to the location specified in Clause 4-37 Waste Area Location.

Road	Full Bench Location
PA-J-1304	2+70 to 10+54 and 16+00 to 23+00
PA-J-1500	0+00 to 5+00 and 20+55 to 23+03
PA-J-1501	8+40 to 10+90

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

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

4-22 TURNAROUNDS

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

4-23 SUBGRADE FLARE FOR INTERSECTIONS

Intersections shall be constructed/reconstructed to include additional intersection flare.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

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

4-27 DITCH WORK – MATERIAL USE PROHIBITED

Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be end hauled to the location specified in Clauses 4-36 through 4-38.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified in the table below and as needed to fit as built conditions. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio. L or R denotes ditchout left or ditchout right.

Road	Stations	L or R
PA-J-1021	11+90	L and 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. On side slopes greater than 45%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in the listed designated areas. The amount of material allowed in a waste area is at the discretion of the Contract Administrator. Note: All amount values are estimated bank yards.

Waste Area Location Road	Waste Area Location Station	Waste Generated From Road	Waste Generated at Stations	Estimated Volume
PA-J-3200	17+10	ICN 110699	Streambank	50
PA-J-3200	37+00	PA-J-3200	37+50, 55+65 to 59+00	50
PA-J-3200	97+75	PA-J-3200	97+75 to 116+60, 118+60 to 123+45	2000
PA-J-1000	165+75	PA-J-1000 Pipe Removal	184+00	300
PA-J-1000	214+50	PA-J-1500	0+00 to 5+00	2000
PA-J-1000	214+50	PA-J-1501	8+40 to 10+90	200
PA-J-1000	233+30	PA-J-1000 Pipe Removal	184+00	300
PA-J-1303	0+20	PA-J-1303	8+40 to 12+90	400
PA-J-1300	57+45	PA-J-1304	2+00 to 9+80	1750
PA-J-1304	2+30	PA-J-1304	2+00 to 9+80	1750
PA-J-1304	10+54	PA-J-1304	16+00 to 23+00	4000

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 45%.
- 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

4-45 SELECT BORROW

Select borrow consists of granular material, either naturally occurring or processed, and contains no more than 5% clay, organic debris, or trash by volume.

4-46 COMMON BORROW

Common borrow consists of soil, and/or aggregate that is non-plastic and contains no more than 5% clay, organic debris, or trash by volume. The material is considered non-plastic if the fines 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 consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 12 inches in any dimension.

4-48 BORROW MATERIAL

Borrow material may not contain more than 5% clay, organic debris, or trash by volume.

SUBSECTION SHAPING

4-55 ROAD SHAPING

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

4-56 DRY WEATHER SHAPING

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 for 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 before placement of rock.

4-62 DRY WEATHER COMPACTION

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 BACKILL 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.

SUBSECTION SUBGRADE REINFORCEMENT

4-70 SUBGRADE REINFORCEMENT

On the following road(s), Purchaser shall provide and install geotextile fabric directed by the Contract Administrator or as specified in the Engineer's design. Subgrade reinforcement must be installed to a width that is 2 feet more than the subgrade width, including turnouts. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered as specified in Rock List. Geotextile fabric must meet the specifications in Clause 10-3 GEOTEXTILE FOR STABILIZATION. Unused material will remain the property of the state.

Road	Stations
PA-J-1021	15+60 to 21+90
PA-J-1021 Spur	0+00 to 1+00
PA-J-1041	8+40 to 11+60

SECTION 5 – DRAINAGE

5-3 PUNCHEON PLACEMENT

On the following road(s), puncheon may be utilized in the subgrade on the following road. Puncheon shall consist of logs of at least 4 inches in diameter and shall be at least 17 feet long.

Road	Stations
PA-J-1021	15+60 to 21+90
PA-J-1021 Spur	0+00 to 1+00

5-4 PUNCHEON RESTRICTED

At no time shall puncheon be used in the subgrade, unless approved by the Contract Administrator or already listed in this road plan.

SUBSECTION CULVERTS

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and

flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and meet the specifications in Clauses 10-15 through 10-23.

5-6 CULVERT TYPE

Purchaser may install culverts made of steel, aluminum**,** plastic in accordance with Clauses 10-15 through 10-23 unless otherwise stated in this road plan.

5-9 BEVELED ENDS

The following culverts must have their ends beveled as specified below.

Road	Stations	Bevel Type	Comment
PA-J-1000	184+00	1 ½ : 1 halfway up	Inlet only beveled

5-12 UNUSED MATERIALS STATE PROPERTY

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

5-13 CONTINGENCY CULVERTS

The following culverts will be supplied by the Purchaser and are available for installation as directed by the Contract Administrator. In the event that culverts are not used, culverts shall be stockpiled at Port Angeles Work Center.

Size
18” x 30’ culvert 18” culvert band
18” x 30’ culvert 18” culvert band
18” x 30’ culvert 18” culvert band

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the TYPICAL CROSS DRAIN CULVERT INSTALLATION DETAIL SHEET, TYPICAL TYPE NS NP CULVERT INSTALLATION DETAIL SHEET, the National Corrugated Metal Pipe Association’s "Installation Manual for Corrugated Steel Drainage Structures"and the Corrugated Polyethylene Pipe Association’s “Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings”. Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer’s recommendations. Culverts over 15 inches diameter shall be

banded using lengths of no less than 10 feet, and no more than one length less than 16 feet**.** Shorter section of banded culvert shall be installed at the inlet end.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the District Engineer or his/her designee for the installation of culverts 30 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 18 inches of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover specified in the Engineer's design, TYPICAL TYPE NS NP DETAIL SHEET, or recommended by the culvert manufacturer for the type and size of the pipe, whichever is greater.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters at all culverts on the CULVERT AND ROCK LIST that specify the placement of rock. Energy dissipater installation is subject to approval by the Contract Administrator.

Rock used for energy dissipaters must weigh at least 10 pounds. Energy dissipaters must extend a minimum of 1 foot to each side of the culvert at the outlet and a minimum of 2 feet beyond the outlet. Placement must be with a zero-drop-height method only.

5-21 DOWNSPOUTS AND FLUMES

Downspouts and flumes longer than 10 feet must be staked on both sides at maximum intervals of 10 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts with No. 10 galvanized smooth wire or 1/2-inch bolts in accordance with the TYPICAL CULVERT INSTALLAION DETAILS SHEET.

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

Purchaser shall construct catch basins to resist erosion. Minimum dimensions of catch basins are 1-2 feet wide, 1-2 feet deep and 2-4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls 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 must consist of oversize or quarry spall material. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. No placement by end dumping or dropping of rock is allowed.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

Purchaser shall place rip rap immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the TYPICAL TYPE NS NP CULVERT INSTALLION DETAIL or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON STATE LAND

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

Source	Location	Rock Type
Striped Pit	T31 R08W Sec 27	4” jaw, 2” minus crushed, LLRR, Shot Rock

Sarlacc Pit	T30 RO8W Sec 8	4” jaw, 2” minus crushed, LLRR, Shot Rock
Fishers Cove Pit	T30 RO8W Sec 20	4” jaw, 2” minus crushed, LLRR

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from any commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use. Rock source(s) must be a WSDOT certified source. Prior to approval, purchaser shall submit a passing sieve test performed by procedure described in WSDOT FOP for WAQTC T 27/11.

SUBSECTION ROCK SOURCE DEVELOPMENT

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

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

Source	Rock Type
Striped Pit	4” jaw, 2” minus crushed, Light Loose Rip Rap, Shot Rock
Sarlacc Pit	4” jaw, 2” minus crushed, Light Loose Rip Rap, Shot Rock
Fishers Cove Pit	4” jaw, 2” minus crushed, Light Loose Rip Rap

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT AND RECLAMATION PLAN:

- Pit walls may not be undermined or over steepened. The maximum slope of the walls must be consistent with recognized engineering standards for the type of material being excavated in accordance with the following table:

Material	Maximum Slope Ratio (Horiz. :Vert.)	Maximum Slope Percent
Sand	2:1	50
Gravel	1.5:1	67
Common Earth	1:1	100
Fractured Rock	0.5:1	200
Solid Rock	0:1	vertical

- Pit walls must be maintained in a condition to minimize the possibility of the walls sliding or failing.
- The width of pit benches must be a minimum of 1.5 times the maximum length of the largest machine used.
- The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
- All operations must be carried out in compliance with all regulations of the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
- All vehicle access to the top of the pit faces must be blocked.

6-13 ROCK EXPLORATION

Purchaser shall provide an excavator with operator for up to 10 hours of exploration of rock and other related work as directed by the Contract Administrator.

6-14 DRILL AND SHOOT

Rock drilling and shooting must meet the following specifications:

- Oversize material remaining in the rock source at the conclusion of the timber sale may not exceed 5% of the total volume mined in that source.
- Oversize material is defined as rock fragments larger than five feet in any dimension.
- Oversized rock that exceeds the maximum allowable amount must be shot or broken up.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- Purchaser shall submit an informational drilling and shooting plan to the Contract Administrator 5 working days before any drilling (Form #M-126PAC).
- All operations must be carried out in compliance with the Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration and the Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.

- Purchaser shall block access roads and trails before blasting operations.
- **Contractor shall notify Pencom before blasting.**

6-16 DRILL AND SHOOT TECHNICAL SPECIFICATIONS

DRILLING

The Purchaser shall drill in accordance to an approved Shot Plan. Drill depth shall not extend more than 5 feet below existing pit floor. The District Engineer or their designee and Purchaser shall jointly measure and determine drill depths, hole spacing and pattern and must be approved prior to loading explosives. During drilling operation, drill operator shall keep a bore log which includes the depth and location of each hole drilled. The District Engineer or their designee may ask to see the bore log during and after the drilling process has completed.

BLASTING

The Purchaser shall furnish and load appropriate explosives, detonators, and ignition sources in accordance to all State and Federal laws and in accordance to an approved Shot Plan.

DRILLING AND SHOOTING PLAN "SHOT PLAN"

The Purchaser shall submit a written drilling and shooting plan, including drawings, to the District Engineer or their designee, which must meet the approval of the District Engineer or their designee prior to the start of the drilling operation. The plan and drawing(s) shall include the following proposals: drill hole diameter, drill hole spacing, drill hole pattern, drill hole depth, any stemming depths, type and depth of explosive including amount per drill hole, detonator and ignition type, and proposed delay pattern. Any adjustment or modifications to the proposals during operations must be noted and resubmitted prior to loading of explosives.

WEATHER LIMITATIONS

When, in the opinion of the District Engineer or their designee, the weather is such that satisfactory results cannot be obtained in any phase of operation, Purchaser shall suspend operations until the weather is favorable. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

SUBSECTION ROCK MANUFACTURE

6-20 ROCK CRUSHING OPERATIONS

Rock crushing operations must conform to the following specifications:

- Operations and placement of oversize material must be conducted in or near the rock source site, as approved in writing by the Contract Administrator.
- The crushing operation must be concluded within 30 working days from the time it begins.

- All testing and operations must be performed in accordance with the attached ROCK CRUSHING COMPLIANCE PROCEDURE.
- Purchaser shall produce sieve analysis for crushing operations after the first 500 yards then every 2000 yards for each rock gradation type.
- Purchaser may use a commercial testing lab to produce sieve analyses.
- Sieve analysis for acceptance of aggregate shall be performed by procedure described in WSDOT FOP for WAQTC T 27/11.

6-22 FRACTURE REQUIREMENT FOR ROCK

A minimum of 50% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

6-23 ROCK GRADATION TYPES

Purchaser shall provide rock in accordance with the types and amounts listed in the Manufacturing list below. Rock must meet the following specifications for gradation and uniform quality during manufacture and placement into a stockpile. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

Rock Type	Amount
2” minus crushed	14893
4” jaw rock	18530
Light Loose Rip Rap	220
Shot Rock	400

6-24 ROCK CRUSHING COMPLIANCE PROCEDURE

Phase I. Equipment Adjustment

Step 1:

At start up of crushing operations, the Purchaser will notify the Contract Administrator when the rock meets the gradation specifications in the contract. None of the rock crushed during this calibration period will be counted toward the amount required to be crushed, and this rock must be kept separate from accepted rock crushed later.

Step 2:

The Purchaser will test the rock. Two samples will be taken. If the rock meets specifications, crushing may begin. If the rock does not meet specifications, return to Step 1.

Phase II. Production

Step 3:
The Purchaser will continue periodic testing to ensure that rock stays in spec. Testing will take place according to the following schedule:

- After the first 500 yards
- After every 2,000 yards thereafter.

a) Any time a sample is out of spec, but is within 5%*, the Purchaser will be notified and a second sample will be taken later in the day. If the second sample meets specifications, the rock crushed during that day will be accepted. If the second sample also fails to meet spec, none of the rock crushed since the last acceptable test will be counted toward the amount to be crushed.

b) Any time a sample is out of spec and is more than 5% off in any category, none of the rock crushed since the last acceptable test will be accepted and that rock must be kept separate from the stockpile. Return to Step 1.

c) Purchaser is strongly encouraged to take their own samples regularly and keep their operations in spec to avoid unnecessary expenses.
   - The 5% will be applied only to sieve specs for 2" to ¼"; rock that is out of spec in larger sizes must be kept separate from the acceptable rock.

SUBSECTION ROCK GRADATIONS

6-25 FINES

% Passing U.S. #40 sieve	100%
% Passing U.S. #200 sieve	0%

The portion of aggregate retained on the No. 200 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

6-30 2-INCH MINUS CRUSHED ROCK

% Passing 2" square sieve	100%
% Passing 1" square sieve	55 - 75%
% Passing U.S. #4 sieve	20 - 45%

Of the fraction passing the No. 4 sieve, 40% to 60% must pass the No. 10 sieve.

6-37 4-INCH JAW RUN ROCK

% Passing 4" square sieve	95%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	5% maximum

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

6-42 SHOT BALLAST

No more than 10 percent of the rock by visual inspection may exceed 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Shot Ballast rock may not contain more than 5 percent by weight of organic debris, dirt, and trash.

6-50 LIGHT LOOSE RIP RAP

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

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

6-52 OVERSIZE

% Passing 8” square sieve	100%
% Passing 4” square sieve	0%

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

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

Purchaser shall obtain written approval from the Contract Administrator for subgrade drainage installation included grading and compaction before rock application.

6-71 ROCK APPLICATION

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

with the COMPACTION LIST by routing equipment over the entire width and in lifts not to exceed 6 inches.

6-72 ROCK APPLICATION AFTER HAULING

On the following road(s), upon completion of all hauling operations, Purchaser shall apply 2”minus rock in accordance with the quantities shown on the ROCK LIST.

Road	Stations	Rock Type	Amount
PA-J-1000	As directed by CA	2”	200yd^3
PA-J-3200	As directed by CA	2”	100 yd^3
PA-J-1300	As directed by CA	2”	100 yd^3
PA-J-1200	As directed by CA	2”	50 yd^3

6-73 ROCK FOR WIDENED PORTIONS

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

6-76 DRY WEATHER ROCK COMPACTION

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

6-77 ROCK OVER GEOTEXTILE

On the following road(s), rock shall be applied over geotextiles in accordance with manufacturer's specifications.

Road	Stations
PA-J-1021	15+60 to 21+90
PA-J-1021 Spur	0+00 to 1+00

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.

SUBSECTION DUST ABATEMENT

6-80 WATERING FOR DUST ABATEMENT

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

SUBSECTION ASPHALT

6-93 ASPHALT REPAIR

If hauled upon, asphalt could deteriorate. Any damage or wear, including but not limited to depressions, sags, cracks, and alligatoring, must be replaced with new material. All pavement repair areas must be saw-cut before removal. The cutting line must be a

minimum of 6 inches beyond the damaged area. Damaged areas exceeding 25 square feet must have asphalt placed with an approved paving machine. The replacement asphalt must be Hot Mix Asphalt or equivalent and installed per Clause 5-04.3(5)E of the WSDOT Standard Specifications. Purchaser shall notify the Contract Administrator at least 5 working days before starting any asphalt road repairs. Purchaser shall obtain written approval from the Contract Administrator for all completed repairs.

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

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

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

STRUCTURES

SUBSECTION LARGE CULVERTS

7-55 LARGE CULVERT INSTALLATION

Purchaser shall provide and install large culverts in accordance with the DESIGN or DETAIL. Culvert designs must meet or exceed the following specifications:

Road	PA-J-3200	PA-J-1000
Station	20+35	184+00
Type	Plastic	Metal
Material and Coating Type*	Double-walled	Aluminized Steel with beveled inlet
Diameter(in)	36	48
Length (ft.)	35	60
Depth of Cover Material (ft.)	2 feet	9 feet

See Clause 10-15 CORRUGATED STEEL CULVERT AND Clause 10-16 CORRUGATED ALUMINUM CULVERT for culvert specifications.

7-57 CULVERT SHAPE CONTROL

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

SUBSECTION GATE CLOSURE

7-70 GATE CLOSURE

Purchaser shall keep gates closed and locked except during periods of haul. All gates that remain open during haul must be locked or securely fastened in the open position. All gates must be closed at termination of use.

7-75 GATE MAINTENANCE

Purchaser shall conduct gate maintenance as listed.

Road	Station	Requirements
PA-J-1200	2+00	Gate shall be painted Safety Yellow color using high gloss alkyd enamel paint. Prior to painting, surfaces shall be prepared by cleaning, sanding and removing all loose rust and paint. All surfaces shall be dry at the time of painting. Two coats of paint shall be applied, using the procedures described in the product instructions, with a minimum of eight hours drying time between coats.

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following road(s), Purchaser shall install silt fence or sediment. Sediment control shall also be accomplished methods as approved in writing by the Contract Administrator.

Road	Stations	Comments
PA-J-3200	20+35	Clean sediment traps
PA-J-3200	28+70	Clean/Construct sediment traps
PA-J-1021	8+20 to 9+20	Silt Fence along road

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 4-inch layer of straw or hay to all exposed soils at culvert installations and mitigation site PA-J-3200 Spur. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

SUBSECTION SLOPE STABILIZATION

8-11 STABILIZE SLOPES – MATERIAL REMOVAL

On the following road(s), Purchaser shall stabilize embankment slopes by removing sidecast material. End haul all material to a waste area designated in Clause 4-37 WASTE AREA LOCATION or by the Contract Administrator. All work is subject to approval by the Contract Administrator.

Road	Stations
PA-J-1500	11+50 to 12+00

SUBSECTION REVEGETATION

8-15 REVEGETATION

On the following road(s), Purchaser shall spread straw or hay on all exposed soils including, but not limited to, stream culverts, waste areas, sidecast pullback 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 covering must be approved in writing by the Contract Administrator.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the all seed, mulch, straw and/or hay, matting etc..

8-17 REVEGETATION TIMING

Purchaser shall revegetate during the first available opportunity. Soils may not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the Contract Administrator. Soil 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 4” thick or jute matting.

8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense. Purchaser shall reapply the seed and or mulch in areas that have failed to germinate or have been damaged through any cause, restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the seed and or mulch at no addition cost to the state.

SUBSECTION SEED, FERTILIZER, AND MULCH

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 60 pounds per acre of exposed soil. Grass seed must meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:
    a. Common name of seed
    b. Net weight
    c. Percent of purity
    d. Percentage of germination
    e. Percentage of weed seed and inert material
5. Seed must conform to the following mixture unless a comparable mix is approved in writing by the Contract Administrator.

Kind and Variety of Seed in Mixture	% by Weight	Minimum % germination
Perennial Rye	35-45	90
Red Fescue	30-40	90
Highland Bent	5-15	85
White Clover	10-20	90
Inert and Other Crop	0.5	

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

SUBSECTION POST-HAUL MAINTENANCE

9-5 POST-HAUL MAINTENANCE

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

Road	Stations	Additional Requirements
All	All	Clean culverts, clean ditches, grade road shape and compact as directed by the Contract Administrator.
All	All	Apply post haul rock per Clause 6-72.

SUBSECTION POST-HAUL LANDING MAINTENANCE

9-10 LANDING DRAINAGE

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

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

SUBSECTION CLOSURE

9-15 ROAD CLOSURE

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

Road	Stations	Requirements
PA-J-1500	24+15 to33+00	Pull pipes and leave at 2:1 slopes, add waterbars every 100 feet.

SECTION 10 MATERIALS

10-2 GEOTEXTILE FOR SEPARATION

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

	ASTM Test	Requirements
Type	--	Non-woven
Apparent opening size	D 4751	No. 30 max
Water permittivity	D 4491	0.02 sec^{-1}
Grab tensile strength	D 4632	160 lb
Grab tensile elongation	D 4632	>= 50%

Puncture strength	D 6241	310 lb
Tear strength	D 4533	50 lb
Ultraviolet stability	D 4355	50% retained after 500 hours of exposure

10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE

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

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

10-16 CORRUGATED ALUMINUM CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

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

10-20 FLUME AND DOWNSPOUT

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

10-21 METAL BAND

Metal coupling and end bands must meet the AASHTO specification designated for the culvert and must have matching corrugations. Culverts 24 inches and smaller must have

bands with a minimum width of 12 inches. Culverts over 24 inches must have bands with a minimum width of 24 inches.

10-22 PLASTIC BAND

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

10-23 RUBBER CULVERT GASKETS

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

10-24 GAUGE AND CORRUGATION

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

Diameter	Gauge	Corrugation
18"	16 (0.064”)	2 $^{2}/_{3}$" X $^{1}/_{2}$"
24" to 48"	14 (0.079”)	2 $^{2}/_{3}$" X $^{1}/_{2}$"
54" to 96"	12 (0.109”)	3" X 1"

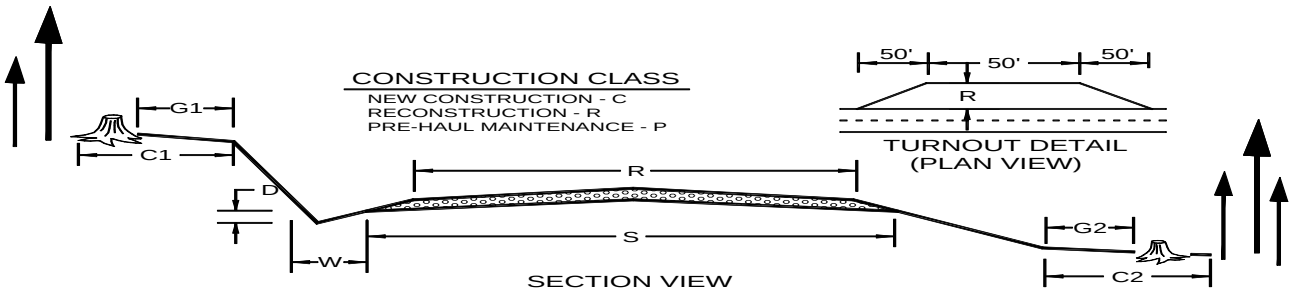
SECTION 11 SPECIAL NOTES

11-1 MITIGATION

Purchaser shall follow instructions listed in Informal Conference Notes, ICN No. 110699. This must be done concurrently with the pipe replacement upstream.

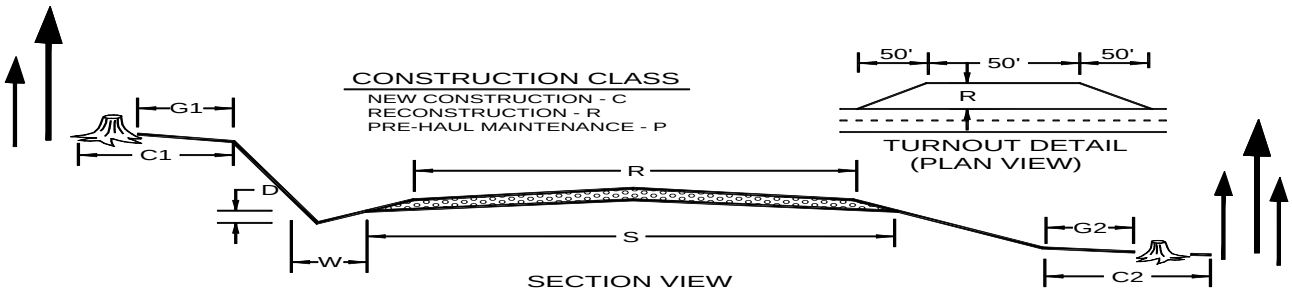
Road	Stations
PA-J-3200	20+35

TYPICAL SECTION SHEET



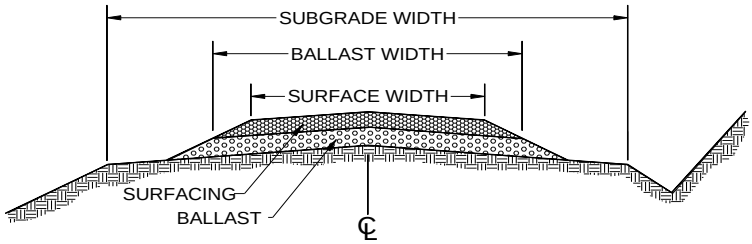
ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	TOLERANCE CLASS	SUBGRADE WIDTH (S)	ROAD WIDTH (R)	CROWN AT CL (in)	DITCH WIDTH (W)	DITCH DEPTH (D)	GRUBBING CUT BANK (G1)	GRUBBING FILL TOE (G2)	ROAD CUT CLEARING (C1)	ROAD FILL CLEARING (C2)
PA-J-3000	0+00	77+50	P	C	17	12	3	3	1				
PA-J-3200	0+00	98+25	P	C	17	12	3	3	1				
PA-J-3200	98+25	129+00	R	C	16	12	3	2	1	3	3	5	5
PA-J-3201	0+00	1+55	R	C	17	12	3	3	1	3	3	5	5
PA-J-3202	0+00	7+75	C	C	17	12	3	3	1	3	3	5	5
PA-J-1000	0+00	420+25	P	C	20	14	3	3	1				
PA-J-1020	0+00	3+00	P	C	17	12	3	3	1				
PA-J-1021	0+00	9+40	P	C	17	12	3	3	1				
PA-J-1021	9+40	15+60	C	C	17	12	3	3	1	3	3	5	5
PA-J-1021	15+60	21+90	C	C	17	12	3	3	1	3	3	5	5
PA-J-1021 Spur	0+00	1+00	C	C	17	12	3	3	1	3	3	5	5
PA-J-1200	0+00	42+65	P	C	17	12	3	3	1				
PA-J-1205	0+00	14+40	R	C	16	12	3	3	1	3	3	5	5
PA-J-1300	0+00	81+65	P	C	17	12	3	3	1				
PA-J-1303	0+00	8+40	R	C	17	12	3	3	1	3	3	5	5
PA-J-1303	8+40	16+90	C	C	17	12	3	3	1	3	3	5	5
PA-J-1300 Spur	0+00	0+60	C	C	17	12	3	3	1	3	3	5	5
PA-J-1304	0+00	40+05	C	C	17	12	3	3	1	3	3	5	5
PA-J-1304 Spur	0+00	3+60	C	C	17	12	3	3	1	3	3	5	5
PA-J-1310	0+00	22+40	C	C	17	12	3	3	1				
PA-J-1500	0+00	5+00	C	C	17	12	3	3	1	3	3	5	5
PA-J-1500	5+00	33+00	R	C	17	12	3	3	1	3	3	5	5
PA-J-1501	0+00	8+40	R	C	16	12	3	2	1	3	3	5	5
PA-J-1501	8+40	11+60	R	C	16	12	3	2	1	3	3	5	5

TYPICAL SECTION SHEET CONTINUED



ROAD NAME	START STATION	END STATION	CONSTRUCTION CLASS	TOLERANCE 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)
PA-J-1502	0+00	0+70	C	C	17	12	3	3	1	3	3	5	5
Spur 1	0+00	1+50	C	C	17	12	3	3	1	3	3	5	5
Spur 2	0+00	1+20	C	C	17	12	3	3	1	3	3	5	5
Spur 3	0+00	1+30	C	C	17	12	3	3	1	3	3	5	5
PA-I-3000	0+00	110+30	P	C	17	12	3	3	1				
PA-I-3040	0+00	11+80	P	C	17	12	3	3	1				
PA-J-1703	0+00	2+50	P	C	17	12	3	3	1				
PA-J-1305	0+00	3+50	R	C	17	12	3	3	1	3	3	5	5
PA-J-1305	3+50	7+50	C	C	17	12	3	3	1	3	3	5	5

ROCK LIST SHEET

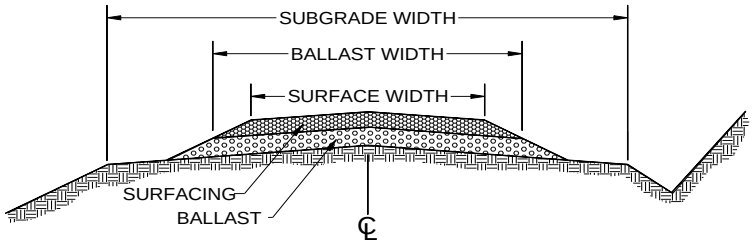


SECTION VIEW

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:A= State Pits mentioned in Road Plan or Commercial B: Fisher Cove Pit or Commercial

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd^3/sta)	Ballast SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-J-3000															
Misc Spot Patch									A				100		
PA-J-3200															
Lift	0+00	82+70							A	12	4	20	1650		
Turnout	7+70			A				20							
Turnout	17+10			A				20							
Replace Culvert	20+35								A				30		2
Install Culvert	20+85								A				20		2
Turnout	37+00			A				20							
Replace Culvert	37+50								A				20		2
Spot Patch	40+80								A				20		
Spot Patch	43+30								A				20		
Spot Patch	45+80								A				20		
Culvert Install	47+60								A				20		2
Turnout	73+40			A				40							
Turnout	82+70								A				20		
Replace Culvert	90+80								A				20		2
Lift	98+25	129+00	16	A	14	16	100	3075							
Culvert Install	98+25								A				20		2
Culvert Install	100+60								A				20		2
Totals:								3175					1980		14

ROCK LIST SHEET CONTINUED



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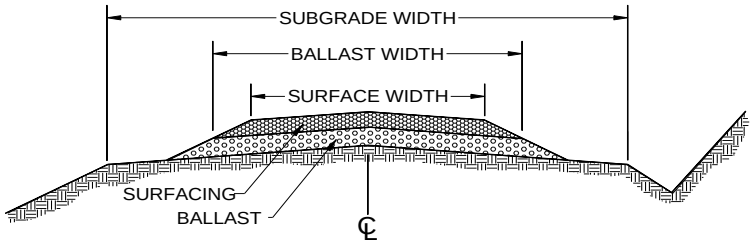
PA-J-3200															
Culvert Install	101+55								A				20		2
Culvert Install	102+75								A				20		2
Culvert Install	104+75								A				20		2
Culvert Install	105+75								A				20		2
Culvert Install	109+15								A				20		2
Turnout	110+35			A				20							
Culvert Install	113+70								A				20		2
Culvert Install	114+95								A				20		2
Landing	116+60			A				40							
Culvert Install	118+60								A				20		2
Culvert Install	120+75								A				20		2
Culvert Install	123+45								A				20		2
Turnout	125+15			A				20							
Culvert Install	126+75								A				20		2
Turnaround	128+50			A				30							
Landing	129+00			A				70							
Misc Post Haul									A				100		
Totals:								180					320		22

ROCK LIST SHEET CONTINUED



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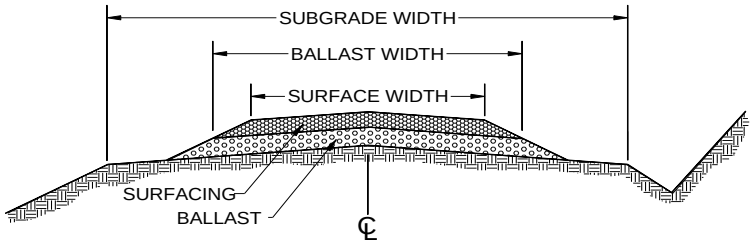
PA-J-3201															
Lift	0+00	1+55	17	A	14	12	70	110	A	12	6		60		
Landing	1+55							70							
PA-J-3202															
Lift	0+00	9+00	17	A	14	12	70	630	A	12	6	35	315		
Culvert Install	0+10								A				20		2
Culvert Install	6+20								A				20		2
Turnaround	7+00			A				30							
Landing	7+50			A				50							
Turnaround	9+00			A				50							
PA-J-1000															
Lift	98+10	358+50							B	12	4	20	5208		
Spot Patch	37+75								B				20		
Spot Patch	100+50								B				20		
Culvert Maintenance															20
Spot Patch	116+80								B				20		
Replace Culvert	160+80								A				20		2
Replace Culvert	184+00			A				400	A				100		20
Replace Culvert	194+00								A				20		2
Replace Culvert	210+80								A				20		2
Totals:								1340					5873		50

ROCK LIST SHEET CONTINUED



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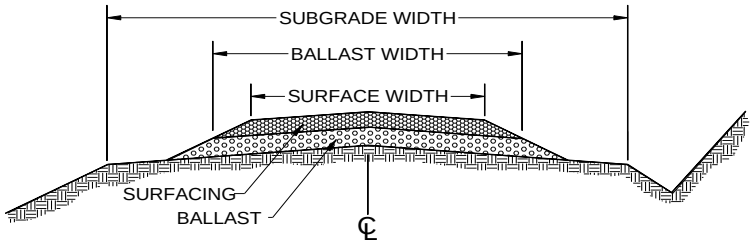
PA-J-1000															
Replace Culvert	214+00								A				20		2
Spot Patch	267+50								B				20		
Spot Patch	318+60								B				20		
Replace Culvert	320+70								A				20		2
Replace Culvert	351+10								A				20		2
Landing	392+60			A				40							
Misc Spot Patch									B				500		
Post Haul Rock									B				200		
PA-J-1020															
Lift	0+00	3+00							A		4	20	60		
PA-J-1021															
Lift	0+00	9+40	16	A	14	8	45	420	A	12	4	20	190		
Misc Subgrade Widening	0+00	9+40													50
Turnout	4+55			A				30							
Turnout	9+40							30							
Lift	9+40	21+90	17	A	14	12	70	880	A	12	6	35	440		
Culvert Install	15+60								A				20		2
Landing	16+70			A				50							
Turnaround	19+90			A				30							
Landing	21+90			A				50							
Totals:								1490					1470		58

ROCK LIST SHEET CONTINUED



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PA-J-1021 Spur															
Lift	0+00	1+00	17	A	14	16	90	90							
Turnaround	0+50			A				50							
Landing	1+00			A				70							
PA-J-1200															
Post Haul Misc									A				50		
PA-J-1205															
Lift	0+00	14+40	16	A	14	16	90	1300							
Culvert Install	0+10								A				30		2
Turnout	3+70			A				20							
Culvert Install	4+80								A				20		2
Turnaround	8+10			A				30							
Landing	8+70			A				60							
Culvert Install	11+65								A				20		2
Turnaround	13+40			A				30							
Landing	14+40			A				60							
PA-J-1300															
Lift	16+30	20+50							A	12	4	20	80		
Culvert Replace	20+50								A				20		2
Lift	41+10	79+00							A	12	4	20	760		
Totals:								1710					980		8

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd^3/sta)	Ballast SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-J-1300															
Replace Culvert	37+65								A				20		2
Misc Post Haul									A				100		
PA-J-1303															
Lift	0+00	8+40	17	A	14	12	70	590	A	12	4	20	170		
Culvert Install	0+70								A				30		2
Turnout	1+90			A				30							
Culvert Install	5+90								A				20		2
Turnaround	7+40			A				40							
Landing	8+40			A				50							
Lift	8+40	16+90	17	A	14	12	70	600	A	12	6	35	290		
Culvert Install	12+90								A				20		2
Turnaround	15+00			A				40							
Landing	16+90			A				60							
PA-J-1300 Spur															
Lift	0+00	0+60	17	A	14	12	70	40	A	12	6	35	20		
Culvert Install	0+10								A				30		2
Landing	0+60			A				70							
PA-J-1304															
Lift	0+00	40+05	17	A	14	12	70	2800	A	12	6	35	1400		
Turnout	2+70			A				20							
Culvert Install	6+75								A				20		2
Culvert Install	9+05								A				20		2
Culvert Install	12+28								A				20		2
Turnout	14+28			A				20							
Culvert Install	14+78								A				20		2
Culvert Install	17+56								A				20		2
Culvert Install	21+41								A				20		2
Landing	23+63			A				70							
Culvert Install	27+41								A				20		2
Culvert Install	30+82								A				20		2
Turnaround	31+41			A				40							
Landing	32+13			A				70							
Landing	35+46			A				70							
Culvert Install	36+25								A				20		2
Turnaround	38+91			A				40							
Landing	40+05			A				70							
Totals:								4720					2280		28

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd^3/sta)	Ballast SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-J-1304 Spur															
Lift	0+00	3+60	17	A	14	12	70	250	A	12	6	35	130		
Culvert Install	0+10								A				20		2
Turnout	0+50			A				30							
Turnaround	2+70			A				50							
Landing	3+60			A				70							
PA-J-1305															
Lift	0+00	7+50	17	A	14	16	90	675							
Culvert Install									A				20		2
Landing				A				50							
Culvert Install									A				20		2
Turnout				A				50							
Landing				A				70							
PA-J-1500															
Lift	0+00	33+00	17	A	14	12	70	2310	A	12	6	35	1160		
Culvert Install	0+10								A				30		2
Culvert Install	1+90								A				20		2
Culvert Install	7+50								A				20		2
Culvert Install	8+15								A				20		2
Turnout	8+90			A				20							
Turnout	12+40			A				20							
Culvert Install	13+65								A				20		2
Turnaround	17+30			A				40							
Landing	18+10			A				70							
Culvert Install	18+90								A				20		2
Turnaround	19+70			A				40							
Culvert Install	23+25								A				20		2
Turnout	23+60			A				30							
Culvert Install	24+15								A				20		2
Turnout	25+90			A				30							
Culvert Install	27+50								A				20		2
Landing	32+25			A				70							
Turnaround	33+00			A				40							
Totals:								3915					1540		24

Rock List Continued

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd^3/sta)	Ballast SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
PA-J-1501															
LIft	0+00	11+60	16	A	14	16	90	1040							
Culvert Install	0+10								A				20		2
Turnout	0+80			A				30							
Culvert Install	1+85								A				20		2
Culvert Install	4+50								A				20		2
Culvert Install	5+65								A				20		2
Turnout	6+50			A				30							
Landing	8+40			A				40							
Culvert Install	10+90								A				20		2
Turnaround	11+00			A				30							
Landing	11+60			A				70							
PA-J-1502															
Lift	0+00	0+70	17	A	14	12	70	50	A	12	6	35	20		
Culvert Install	0+10								A				30		
Landing	0+70			A				70							
Totals:								1360					150		10

Rock List Continued

ROAD NAME	START STATION	END STATION	SUBGRADE WIDTH (ft)	Ballast SOURCE	Ballast WIDTH (ft)	Ballast DEPTH (in)	Ballast Quantity(yd^3/sta)	Ballast SUBTOTAL(yd^3)	Crushed SOURCE	Crushed WIDTH (ft)	Crushed DEPTH (in)	Crushed Quantity(yd^3/sta)	Crushed Subtotal(yd^3)	Oversize/ Rip rap Source	Oversize/Rip Rap Quantity(yd^3)
Spur 1															
Lift	0+00	1+50	17	A	14	16	90	140							
Culvert Install	0+10								A				20		2
Landing	1+50			A				40							
Spur 2															
Lift	0+00	1+20	17	A	14	16	90	110							
Culvert Install	0+10								A				20		2
Turnaround	0+40			A				40							
Landing	1+20			A				40							
Spur 3															
Lift	0+00	1+30	17	A	14	16	90	120							
Culvert Install	0+10								A				20		2
Landing	1+30			A				40							
PA-I-3000															
Misc Spot Patch									A				100		
PA-I-3040															
Misc Spot Patch									A				100		
PA-J-1310															
Landing	5+75														
Lift	9+00	10+00							A		4	20	20		
Culvert Install	15+50								A				20		
Turnout	16+50			A				20							
Landing	22+50			A				40							
Mis Spot Patch				A				200							
Totals:								790					300		6
GRAND TOTAL:								18530					14893		220

CULVERT LIST

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP – OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-J-3200									
Culvert	20+35	36	35			5	5	CR	Replace concurrent with mitigation
Culvert	20+85	18	30			1	1	CR	Install
Culvert	28+50								Maintenance, Clean Inlet and outlet
Culvert	32+30					2			Maintenance, Clean Inlet and outlet, open inlet, add headwall
Culvert	37+50	24	40	10		1	1	CR	Replace
Culvert	40+80								Maintenance, Clean Inlet and outlet
Culvert	43+30								Maintenance, Clean Inlet and outlet
Culvert	45+80								Maintenance, Clean Inlet and outlet
Culvert	47+60	18	30			1	1	CR	Install
Culvert	55+65								Maintenance, Clean Inlet and outlet
Culvert	59+00								Maintenance, Clean Inlet and outlet
Culvert	63+75								Maintenance, Clean Inlet and outlet
Culvert	74+00								Maintenance, Clean Inlet and outlet
Culvert	79+65								Maintenance, Clean Inlet and outlet
Culvert	90+80	18	30			1	1	CR	Replace
Culvert	98+25	18	50	10		1	1	CR	Install
Culvert	100+60	18	30	10		1	1	CR	Install
Culvert	101+55	24	30	10		1	1	CR	Install
Culvert	102+75	24	30	10		1	1	CR	Install
Culvert	104+75	18	30	10		1	1	CR	Install
Culvert	105+75	18	30	10		1	1	CR	Install
Culvert	109+15	24	30	10		1	1	CR	Install
Culvert	113+70	18	30	10		1	1	CR	Install
Culvert	114+95	18	30	10		1	1	CR	Install
Culvert	118+60	18	30			1	1	CR	Install
Culvert	120+75	18	30	10		1	1	CR	Install
Culvert	123+45	18	30			1	1	CR	Install
Culvert	126+75	18	30			1	1	CR	Install

CULVERT LIST Continued

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP – OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-J-3201									
Culvert	0+10					1	1		Maintenance, Clean Inlet and Outlet
PA-J-3202									
Culvert	0+10	18	50			1	1	CR	Install
Culvert	6+20	18	40			1	1	CR	Install
PA-J-1000									
Culvert	98+10								Maintenance, Clean Inlet and Outlet
Culvert	104+20								Maintenance, Clean Inlet and Outlet
Culvert	109+60						20		Maintenance, Clean Inlet add LLRR to outlet
Culvert	119+30								Maintenance, Clean Inlet and Outlet
Culvert	160+80	18	40			1	1	CR	Replace
Culvert	175+10								Maintenance, Clean Inlet and Outlet
Culvert	184+00	48	60			10	10	400 Shot, 100 CR	Replace
Culvert	194+00	18	40	10		1	1	CR	Replace
Culvert	210+80	18	40			1	1	CR	Replace
Culvert	214+00	18	40			1	1	CR	Replace
Culvert	223+30								Maintenance, Clean Inlet and Outlet
Culvert	286+50								Maintenance, Clean Inlet and Outlet
Culvert	298+70								Maintenance, Clean Inlet and Outlet
Culvert	320+70	18	40			1	1	CR	Replace
Culvert	326+35								Maintenance, Clean Inlet and Outlet
Culvert	342+30								Maintenance, Clean Inlet and Outlet
Culvert	344+50								Maintenance, Clean/Fix Inlet and Outlet
Culvert	351+10	18	40			1	1	CR	Replace

CULVERT LIST Continued

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP – OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-J-1021									
Culvert	0+65	18	15, 15			2	2	CR	Culverts shall go in either side of ditch to allow for transition across road
Culvert	15+60	18	40			1	1	CR	Install
PA-J-1205									
Culvert	0+10	18	40			1	1	CR	Install
Culvert	4+80	24	30			1	1	CR	Install
Culvert	11+65	18	30			1	1	CR	Install
PA-J-1300									
Culvert	2+50								Maintenance, Clean inlet and outlet
Culvert	10+05								Maintenance, Clean inlet and outlet
Culvert	20+50	18	30			1	1	CR	Replace
Culvert	23+80								Maintenance, Clean inlet and outlet
Culvert	31+85								Maintenance, Clean inlet and outlet
Culvert	37+65	18	30			1	1	CR	Replace
Culvert	61+95								Maintenance, Clean inlet and outlet
Culvert	65+40								Maintenance, Clean inlet and outlet
Culvert	71+15								Maintenance, Clean inlet and outlet
Culvert	81+65	18	40			1	1	CR	Replace
PA-J-1303									
Culvert	0+70	18	30			1	1	CR	Install
Culvert	5+90	24	40	10		1	1	CR	Install
Culvert	12+90	18	30			1	1	CR	Install
PA-J-1300 Spur									
Culvert	0+10	18	40			1	1	CR	Install

CULVERT LIST Continued

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP – OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-J-1304									
Culvert	6+75	18	30			1	1	CR	Install
Culvert	9+05	18	30			1	1	CR	Install
Culvert	12+28	18	30			1	1	CR	Install
Culvert	14+78	18	30			1	1	CR	Install
Culvert	17+56	18	30			1	1	CR	Install
Culvert	21+41	18	30			1	1	CR	Install
Culvert	27+41	24	30	10		1	1	CR	Install
Culvert	30+82	18	40			1	1	CR	Install
Culvert	36+25	18	30						
PA-J-1304 Spur									
Culvert	0+10	18	50			1	1	CR	Install
PA-J-1310									
Culvert	9+50								Maintenance
Culvert	15+50	18	30			1	1	CR	Install
PA-J-1500									
Culvert	0+10	18	50			1	1	CR	Install
Culvert	1+90	18	30			1	1	CR	Install
Culvert	7+50	18	15, 15			2	2		Culverts shall go in either side of ditch to allow for transition across road
Culvert	8+15	18	30			1	1	CR	Install
Culvert	13+65	18	30			1	1	CR	Install
Culvert	23+25	18	30			1	1	CR	Install
Culvert	24+15	30	35	10		1	1	CR	Install
Culvert	27+50	18	30			1	1	CR	Install
Culvert	29+40	18	30			1	1	CR	Install
PA-J-1501									
Culvert	0+30	18	30			1	1	CR	Install
Culvert	1+85	18	30			1	1	CR	Install
Culvert	4+50	18	30			1	1	CR	Install

CULVERT LIST Continued

ROAD NAME	STATION	CULVERT DIAMETER (in)	CULVERT LENGTH (ft)	FLUME LENGTH (ft)		RIP RAP - INLET (cy)	RIP RAP – OUTLET (cy)	BACKFILL MATERIAL	NOTES
PA-J-1501									
Culvert	5+65	18	30					CR	Install
Culvert	10+90	18	30					CR	Install
PA-J-1502									
Culvert	0+10	18	50					CR	Install
Spur 1									
Culvert	0+10	18	40					CR	Install
Spur 2									
Culvert	0+10	18	40					CR	Install
Spur 3									
Culvert	0+10	18	40					CR	Install
PA-J-1305									
Culvert	1+40	18	30					CR	Install
Culvert	4+90	18	30					CR	Install
Contingency Culvert	CA	18	30						
Contingency Culvert	CA	18	30						
Contingency Culvert	CA	18	30						

FISH STREAM WORK PROVISIONS

TIMING LIMITATIONS: The fish culvert project may begin July 1 and shall be completed by September 30.

1. Work shall conform to plans and specifications in the road plan.

2. 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

3. 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.

4. The temporary bypass to divert flow around the work area shall be in place prior to initiation of other work in the wetted perimeter.

5. A sandbag revetment or similar device shall be installed at the bypass inlet to divert the entire flow through the bypass.

6. The bypass shall be of sufficient size to pass all flows and debris for the duration of the project.

7. 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

8. 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.

COMPACTION LIST

Road	Stations	Type	Max Depth Per Lift (inches)	Equipment Type	Minimum Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
Pre-haul	All	Culvert Backfill	8”	Jumping Jack		3	
Pre-haul	All	Rock Lifts	6”	Vibratory Smooth Drum	6,000	3	3
Pre-haul	All	Pre-haul Surface		Vibratory Smooth Drum	6,000	3	3
Construction	All	Subgrade (Except Puncheon)	6”	Vibratory Smooth Drum	6,000	2	3
Construction	All	Rock Placement	6”	Vibratory Smooth Drum	6,000	2	3
Post-haul Maintenance	All	Rock Placement	6”	Vibratory Smooth Drum	6,000	2	3

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, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

- Grade, shape, 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.

Forest Access Road Maintenance Specifications

Preventative Maintenance

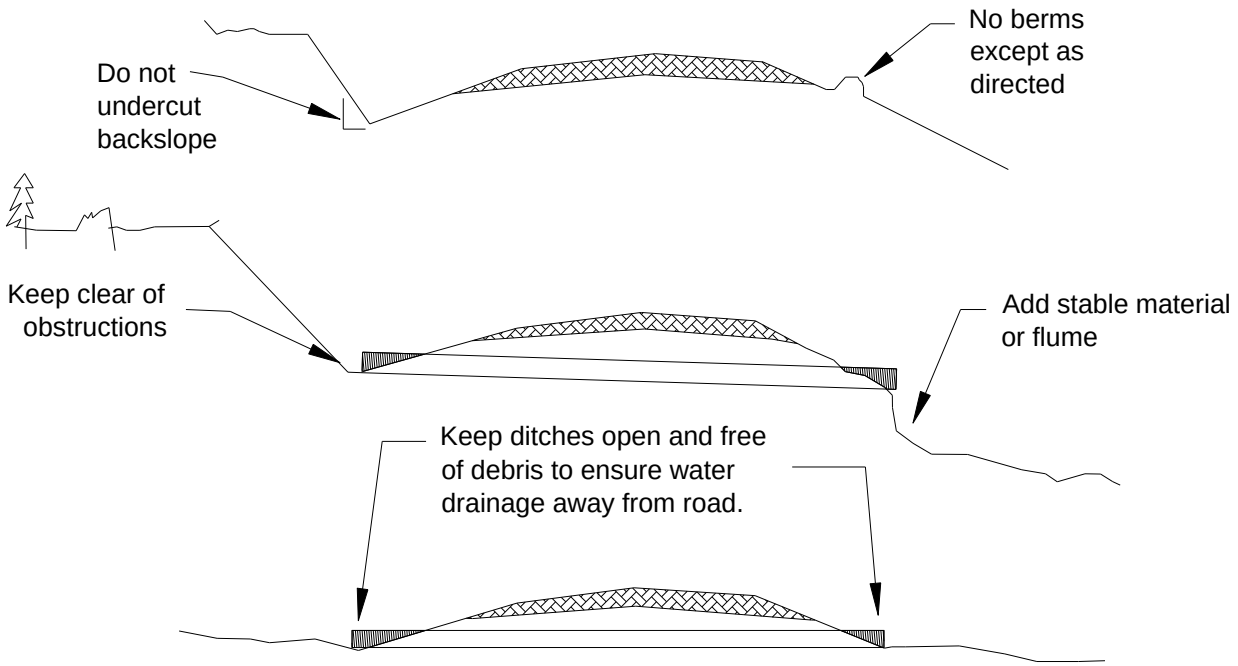
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

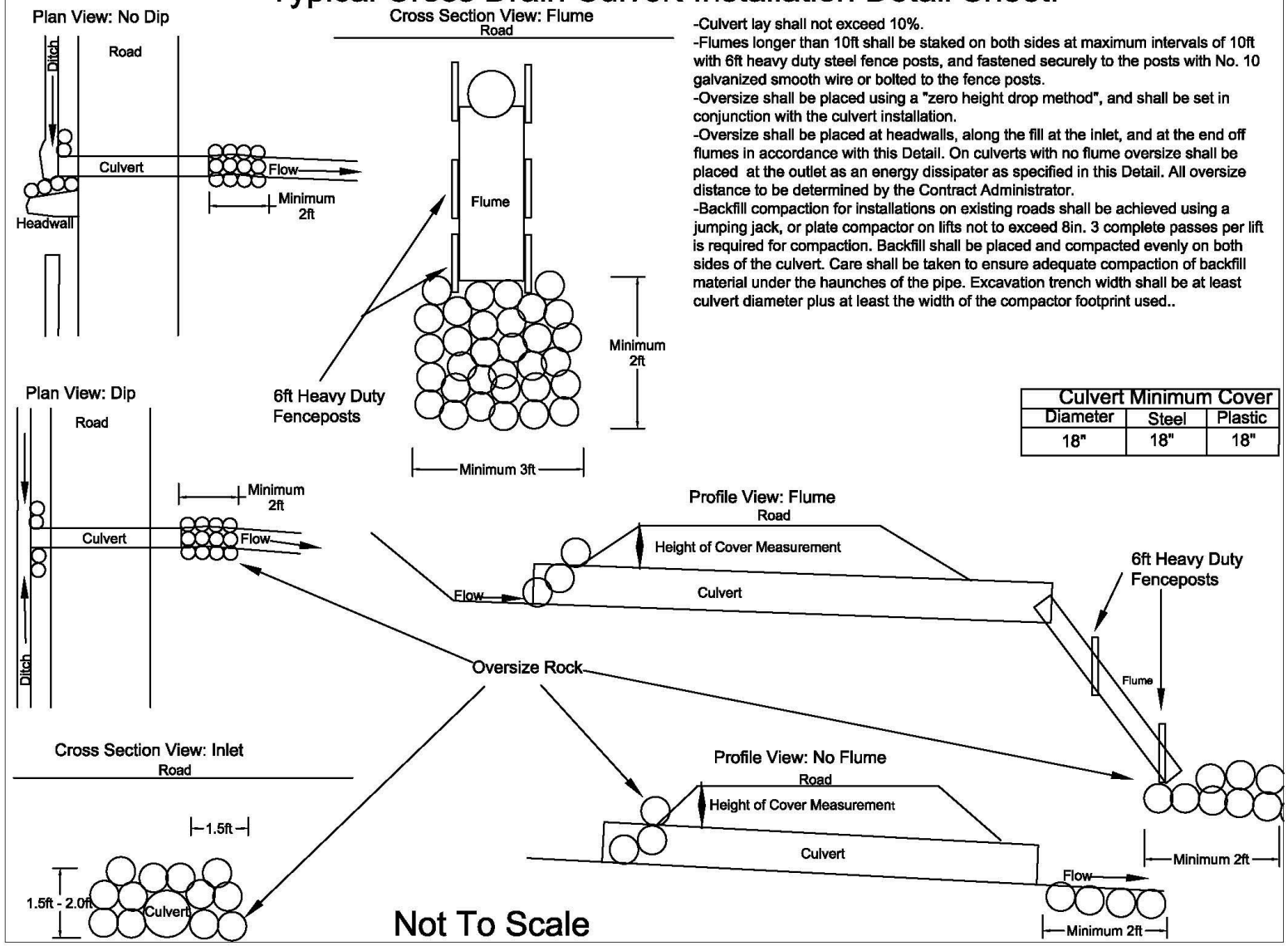
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



Typical Cross Drain Culvert Installation Detail Sheet.



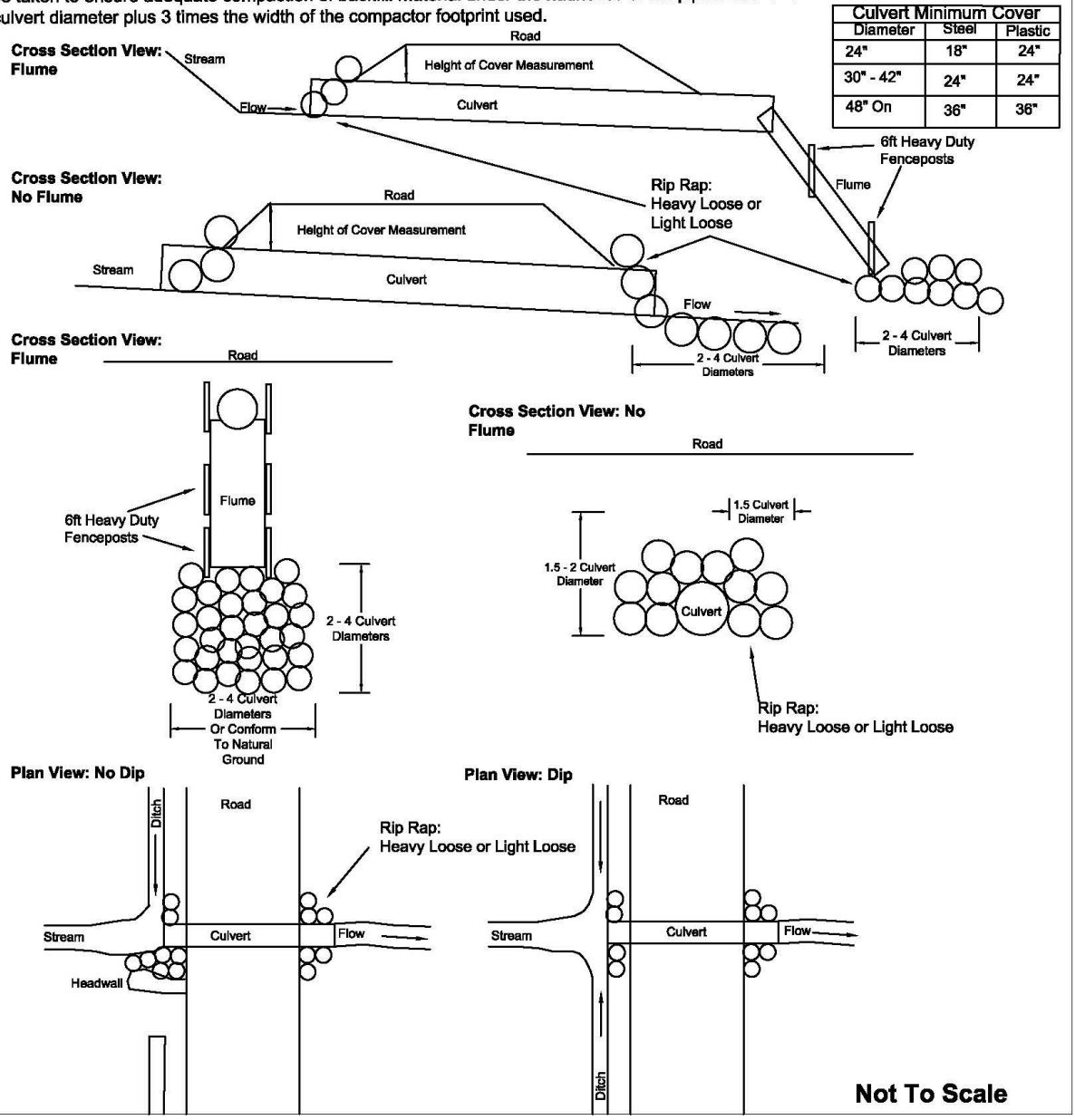
-Culvert lay shall not exceed 10%.
-Flumes longer than 10ft shall be staked on both sides at maximum intervals of 10ft with 6ft heavy duty steel fence posts, and fastened securely to the posts with No. 10 galvanized smooth wire or bolted to the fence posts.
-Oversize shall be placed using a "zero height 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..

Culvert Minimum Cover		
Diameter	Steel	Plastic
18"	18"	18"

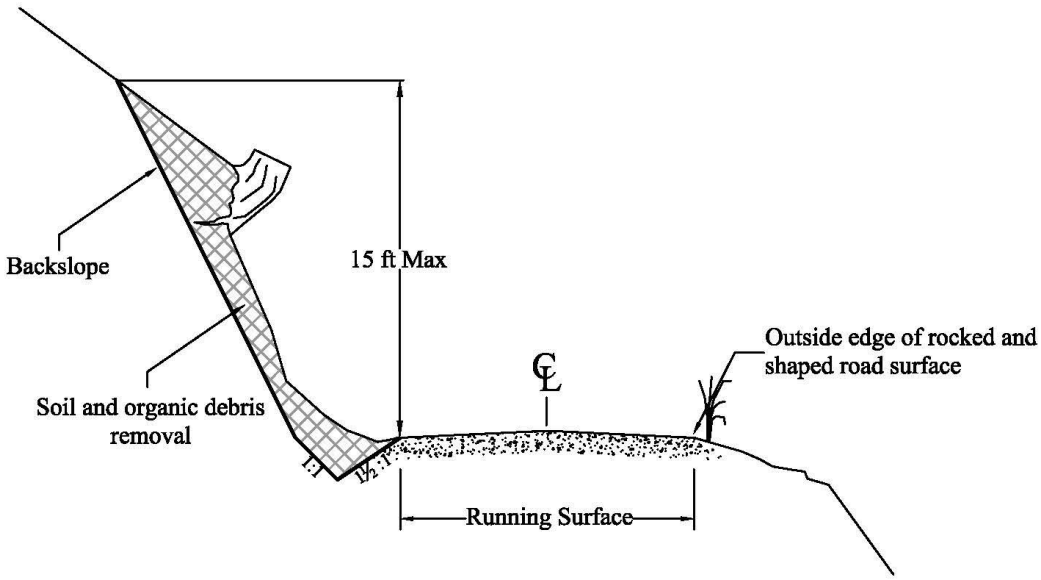
Typical Type Ns, Np Culvert Installation Detail Sheet.

-Water shall be diverted away from the work site before any "in stream" work begins, and shall continue until culvert installation is complete.
-Culvert lay shall match stream gradient up to 5%.
-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.
-Rip rap shall be placed using a "zero height drop method", and shall be set in conjunction with the culvert installation.
-Rip rap 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 rip rap shall be placed along the fill at the outlet, unless there is stream drop or it is called for in the Road Plan, at which point it will be installed as an energy dissipater at the end of the culvert as specified in this Detail. All rip rap distance to be determined by the Contract Administrator or the District Engineer.
-Backfill compaction shall be achieved using a jumping jack, walk behind vibratory roller, 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 3 times the width of the compactor footprint used.

Culvert Minimum Cover		
Diameter	Steel	Plastic
24"	18"	24"
30" - 42"	24"	24"
48" On	36"	36"



Ditch Cleaning Detail



1. The backslope shall be no steeper than ½:1, unless the material is hardpan or solid rock, in which case it may be ¼:1.

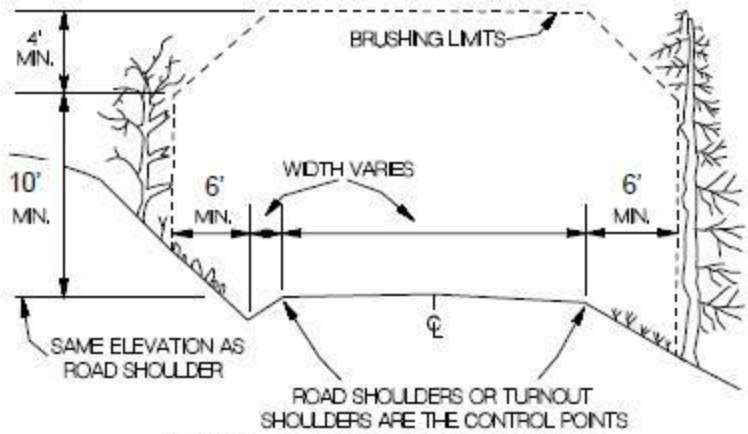
2. If there is sufficient width for the ditch without affecting the cut bank, than removing bank material is not required.

3. Bank material above the ditch shall be removed to a maximum height of 15 feet, if needed to meet the requirements of this detail.

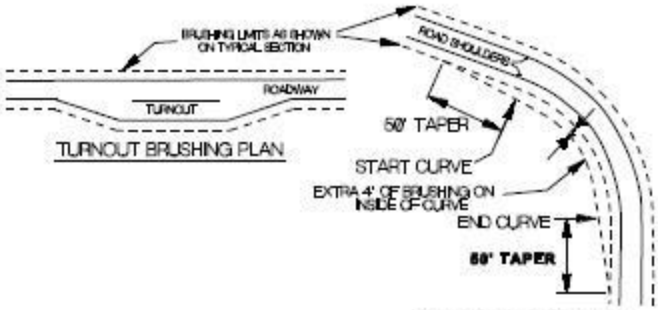
4. If there is insufficient width to clean or construct a ditch without disturbing more than 15 vertical feet of bank, the Contract Administrator may authorize changes to this plan in order to still meet the intent of having a ditch, while staying within the excavation limits already set.

5. Ditch cleaning or construction shall not shrink the running surface of the road.

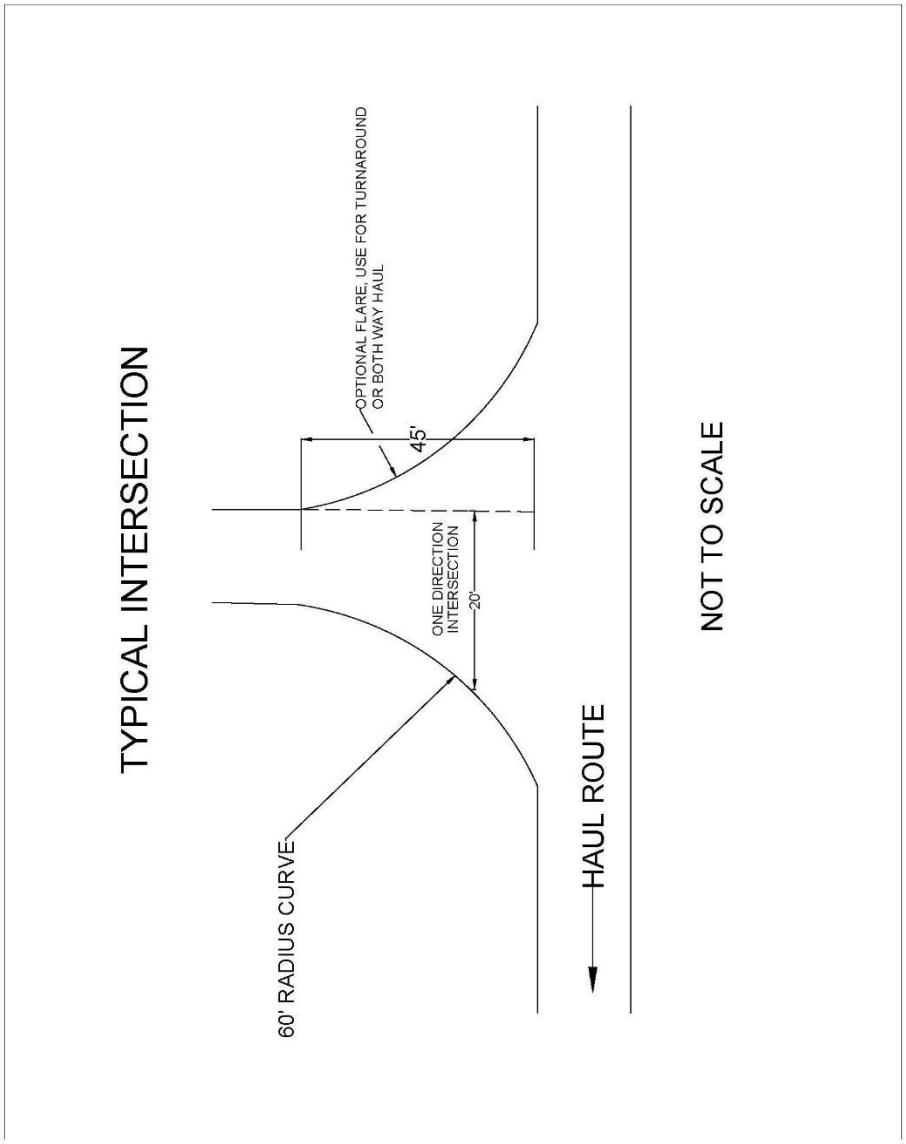
BRUSHING DETAIL



TYPICAL BRUSHING LIMITS SECTION

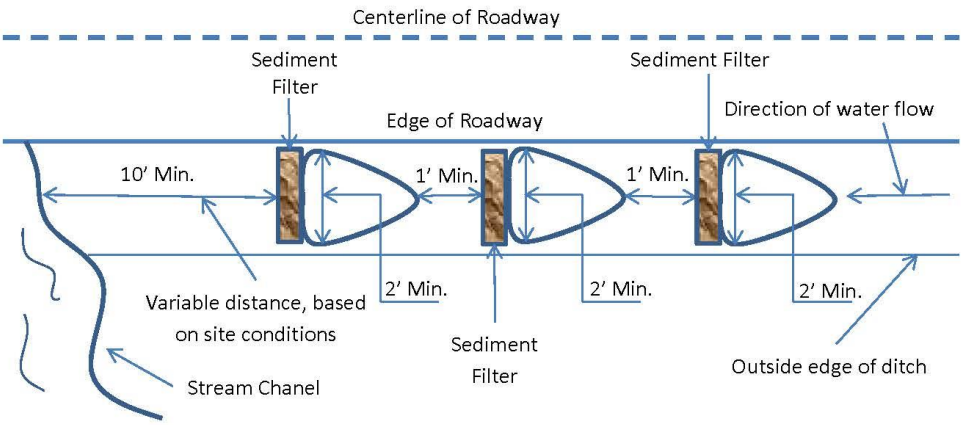


1. All vegetation within the brushing limits shall be cut to within 3 inches of the ground, unless otherwise directed by the Contract Administrator
2. All brush, trees, limbs, etc. shall be removed from the road surface, cut banks, culvert inlets/outlets, and ditch lines
3. All debris that may roll or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

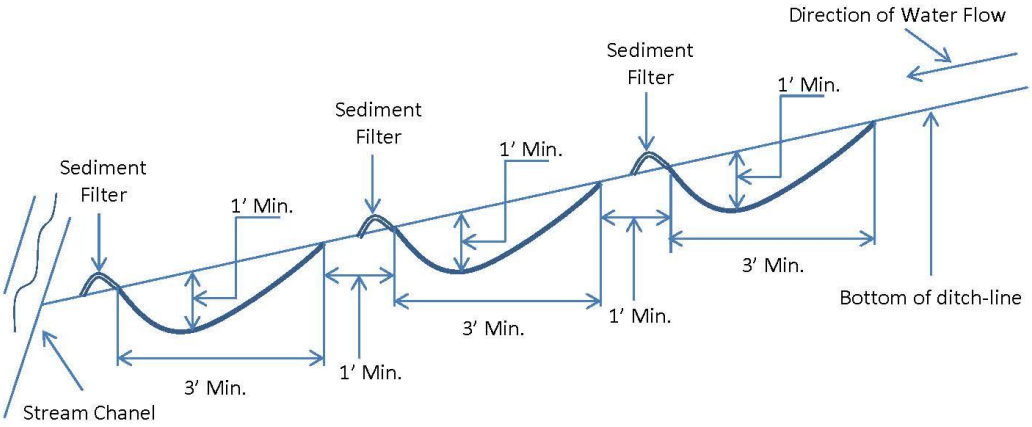

TYPICAL INTERSECTION
60' RADIUS CURVE
ONE DIRECTION INTERSECTION
20'
OPTIONAL FLARE, USE FOR TURNAROUND OR BOTH WAY HAUL
45'
HAUL ROUTE
NOT TO SCALE

SEDIMENT TRAP DETAIL

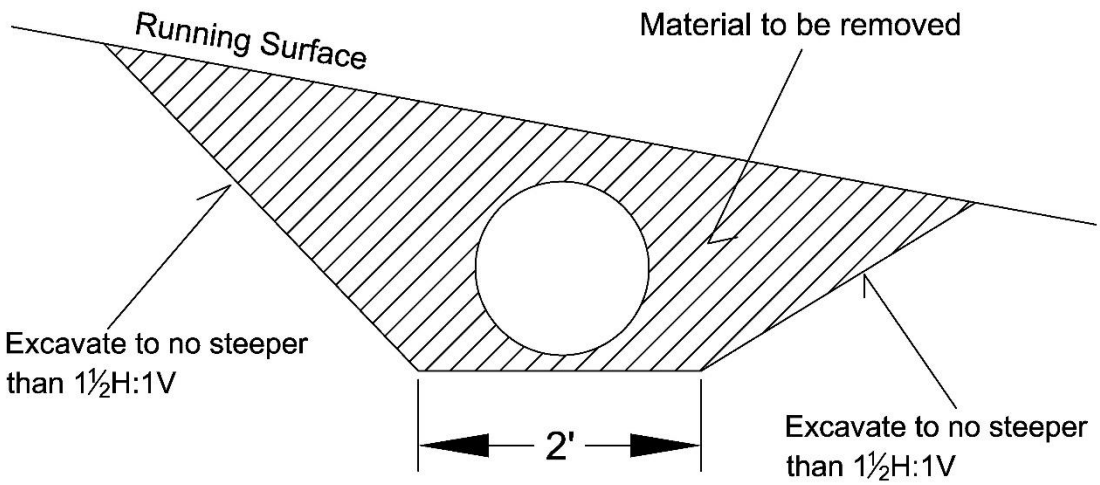
Top View



Profile View



CROSSDRAIN REMOVAL DETAIL

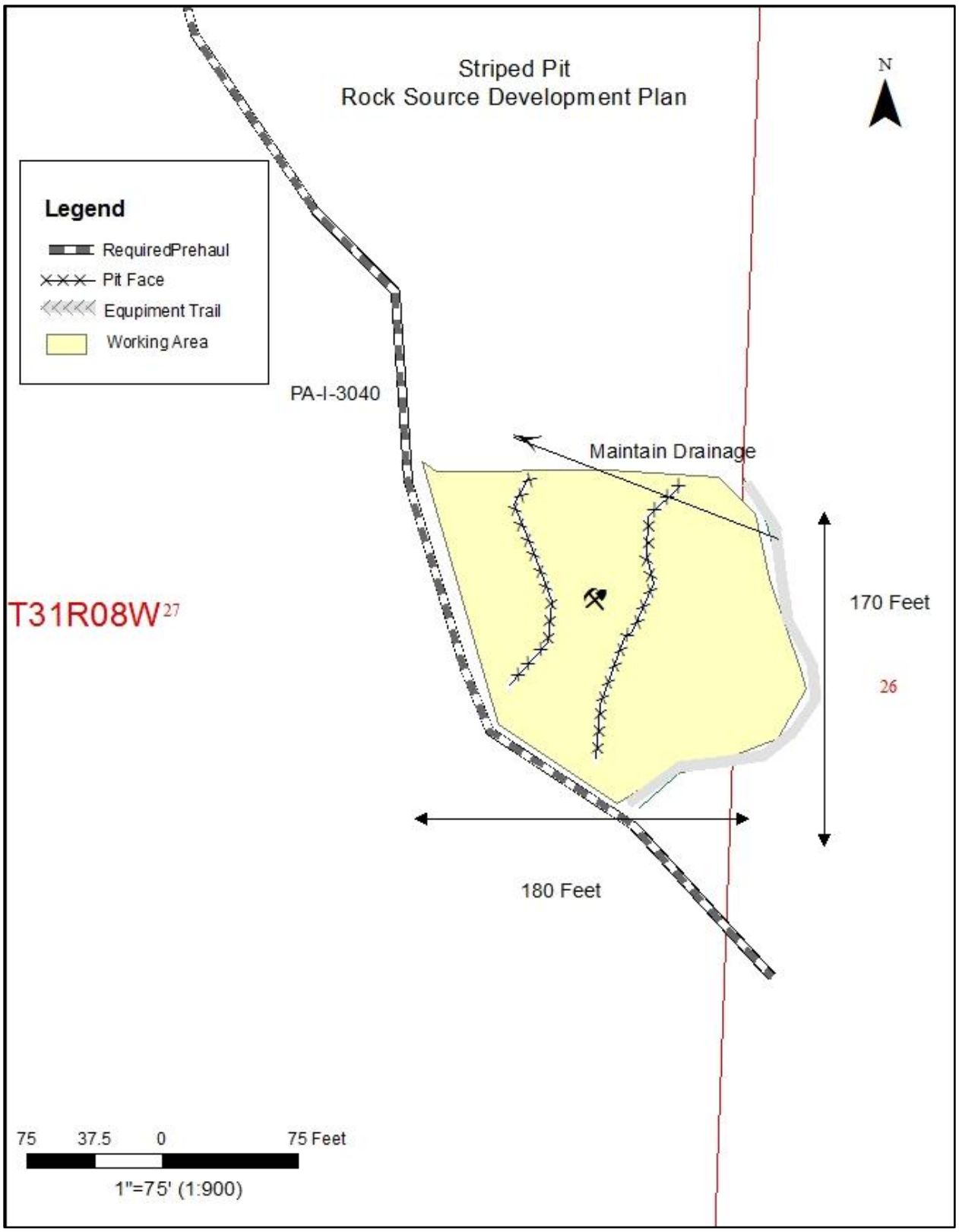


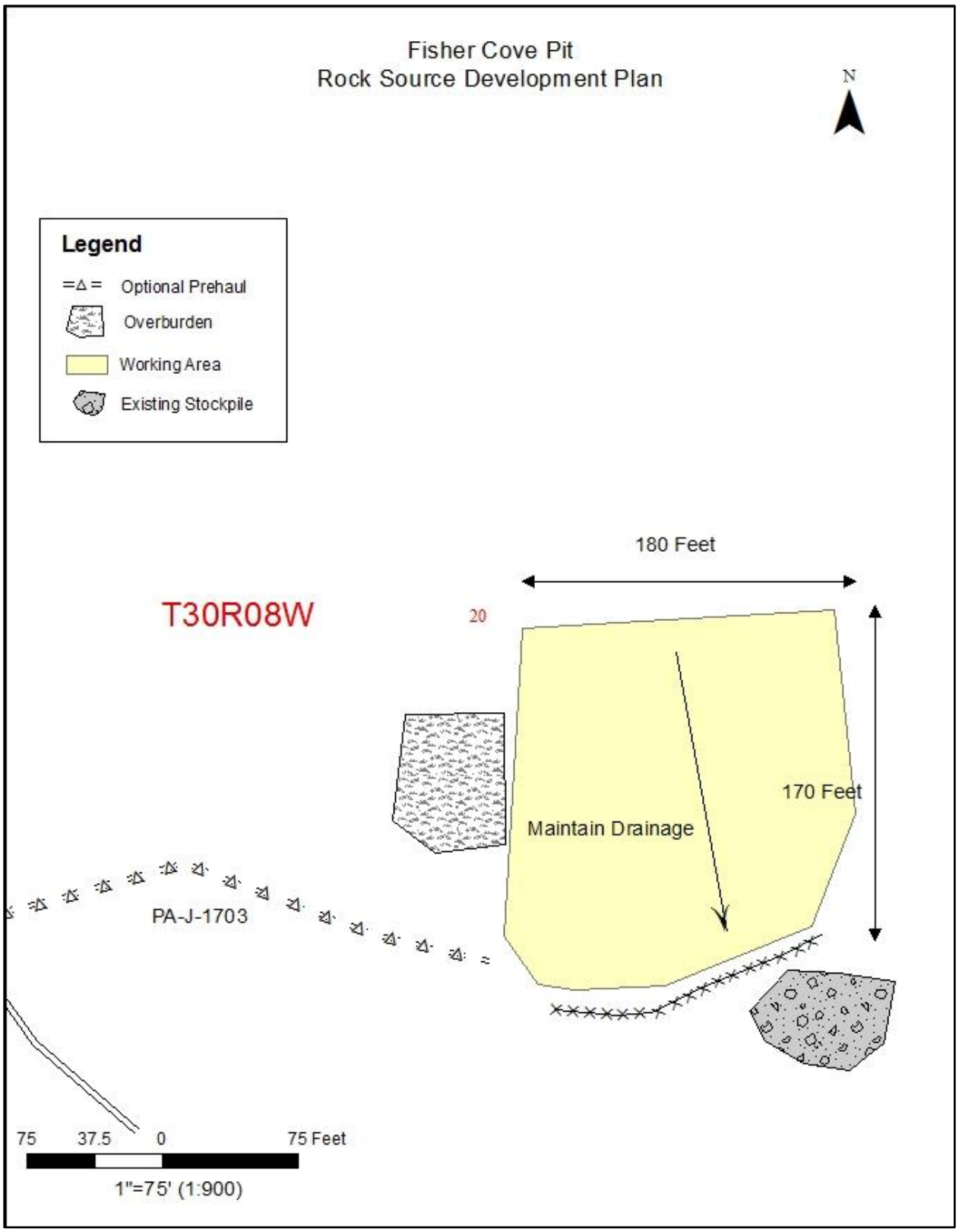
1) Excavated material may be wasted on the road surface on the downhill side of the excavation. Waste material shall be sloped at no steeper than ½ H:1V.

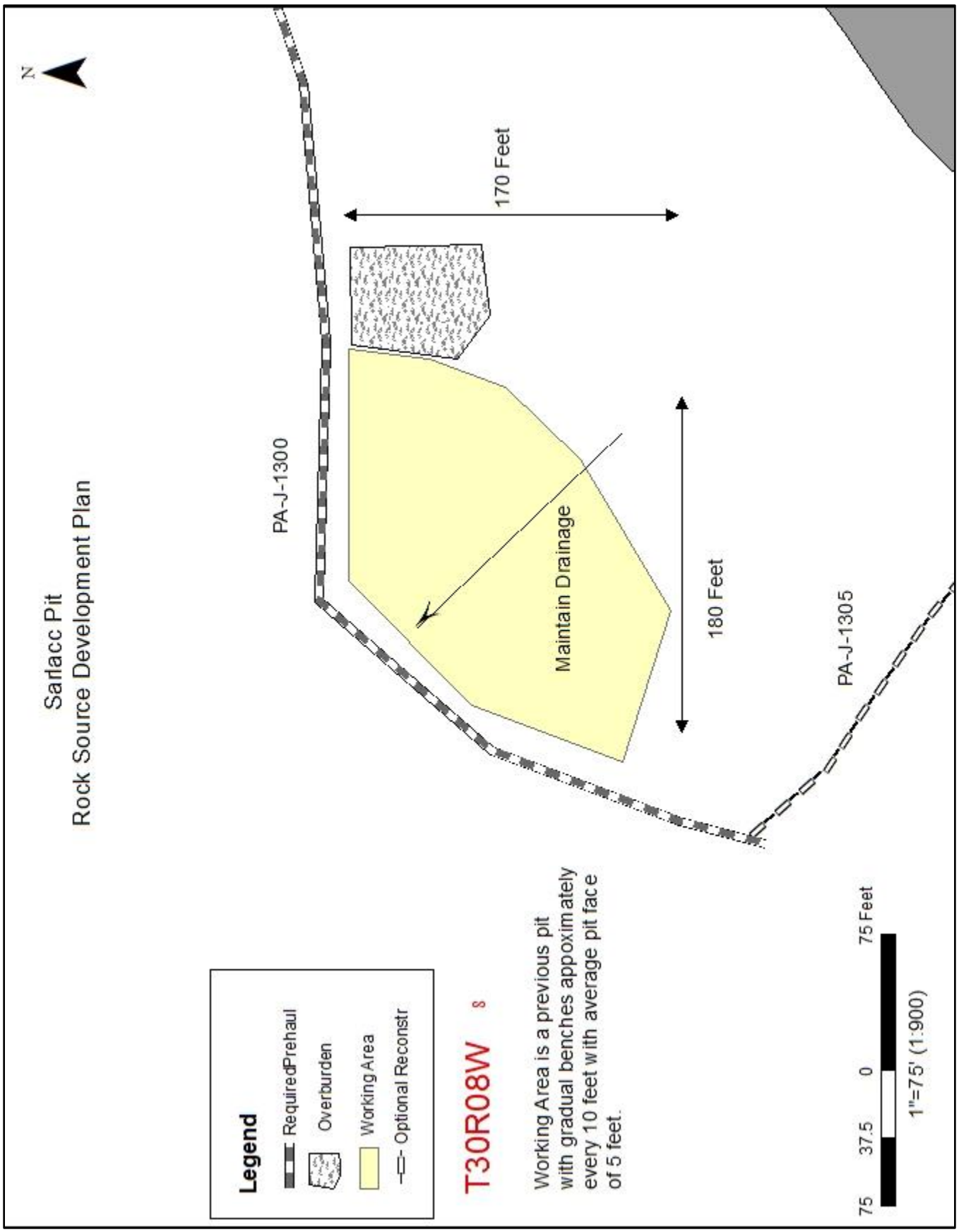
2) Resulting trench shall be keyed into the ditchline and sloped towards the outside edge of the road with a drop of at least 1 foot in 10 feet.

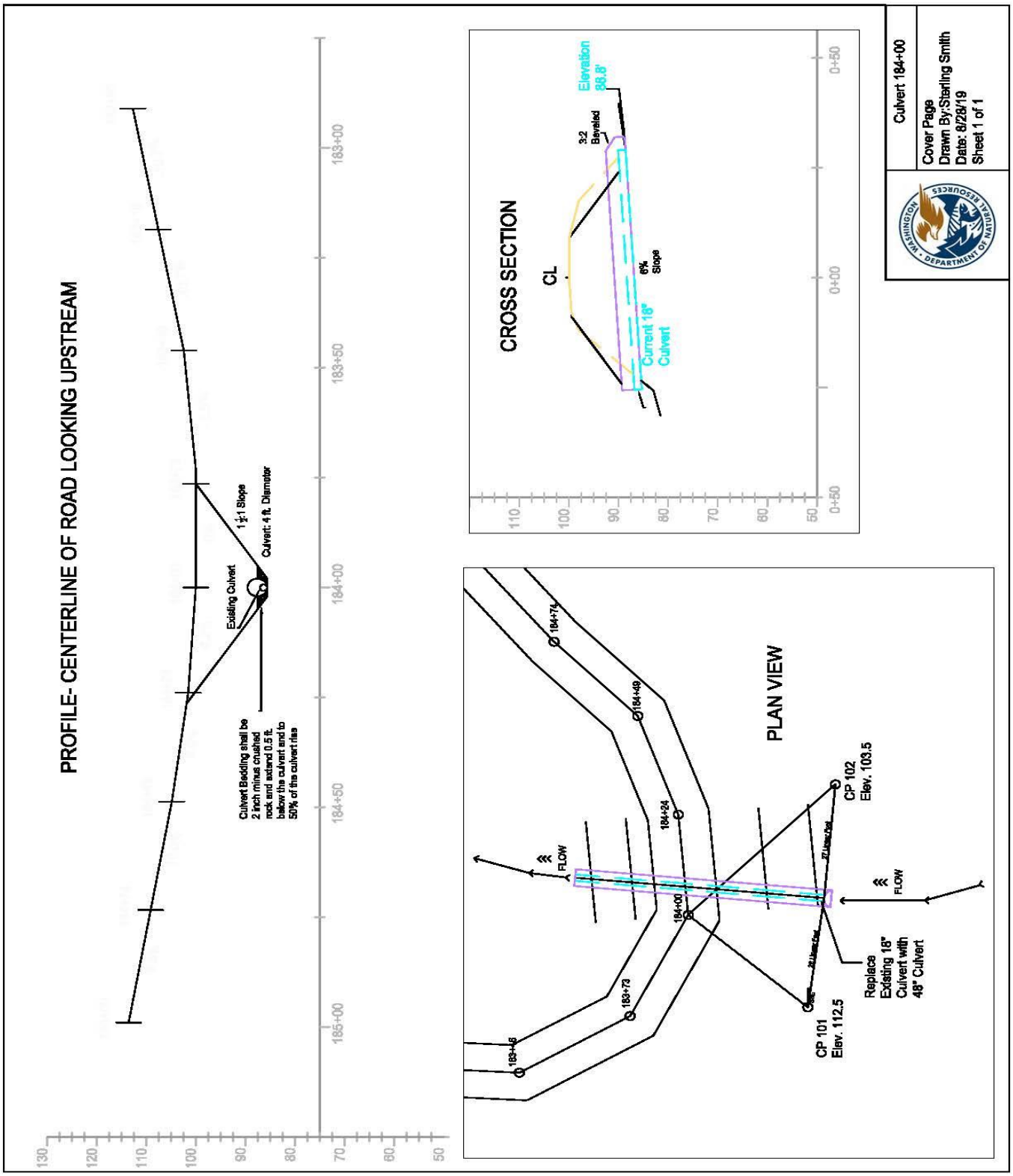
Striped Pit, Sarlacc Pit and Fisher Cove Pit
ROCK SOURCE DEVELOPMENT PLAN
PIT USE REQUIREMENTS

1. Pit expansion shall commence in the following order until the desired quantity of rock is achieved.
2. Activity restrictions per Clause 1-25.
3. Only the quanities and sorts specified in this road plan for this sale may be used or manufactured, unless otherwise approved by the Contract Adminstrator in writing.
4. Maintain drainage of the pit floor and all drainage structures within the pit boundaries. The pit floor shall have continuity of slope be left in a smooth and neat condition, providing drainage to the at a minimum of 2 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques.
5. Excavated face height shall not exceed 20 feet and shall be sloped no steeper than 1/4:1.
6. Excavated slopes shall have a 1 1/2:1 backslope or less at the completion of operations.
7. A minimum 4 foot high berm shall be constructed and constantly maintained along the upper edge of excavated pit faces. No pit faces shall be left unblocked at any time.
8. All operations shall be completed prior to the end of each operating season, including but not limited to: drainage maintenance, sloping of the excavated face, and construction of berms, unless otherwise approved in writing by the Constract Adminstrator.
9. At the end of operations, pit faces and walls shall be scaled and cleared of loose and overhanging material, benches shall have safety berms constructed or access blocked to highway vehicles. Upon completion of operations in the pit, the area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life. The contractor shall use Light Loose Rip Rap to block the drill trail.
10. All material shall remain the property of the State.
11. At the conclusion of operations, Purchaser shall ask the Contract Administrator for written approval of the final rock source condition and comptiance with the terms of this plan.
12. All work shall be conducted according to relevant specifications in this Road Plan, and the Contract Adminstrator.
13. Purchaser shall give the Contract Administrator a minimum of 7 days notice prior to commencing any operations.
14. Purchaser is require to inform Clallam County Dispatch (PenCom) of a day and approximate time of the pit blasting at 360-417-4911.


Striped Pit
Rock Source Development Plan
N
Legend
RequiredPrehaul
Pit Face
Equipment Trail
Working Area
PA-I-3040
Maintain Drainage
T31R08W
27
170 Feet
26
180 Feet
75
37.5
0
75 Feet
1"=75' (1:900)


Fisher Cove Pit
Rock Source Development Plan
N
Legend
Optional Prehaul
Overburden
Working Area
Existing Stockpile
180 Feet
T30R08W
20
170 Feet
Maintain Drainage
PA-J-1703
75
37.5
0
75 Feet
1"=75' (1:900)


Sarlacc Pit
Rock Source Development Plan
N
PA-J-1300
170 Feet
Maintain Drainage
180 Feet
PA-J-1305
Legend
RequiredPrehaul
Overburden
Working Area
Optional Reconstr
T30R08W
Working Area is a previous pit with gradual benches appoximately every 10 feet with average pit face of 5 feet.
75
37.5
0
75 Feet
1"=75' (1:900)

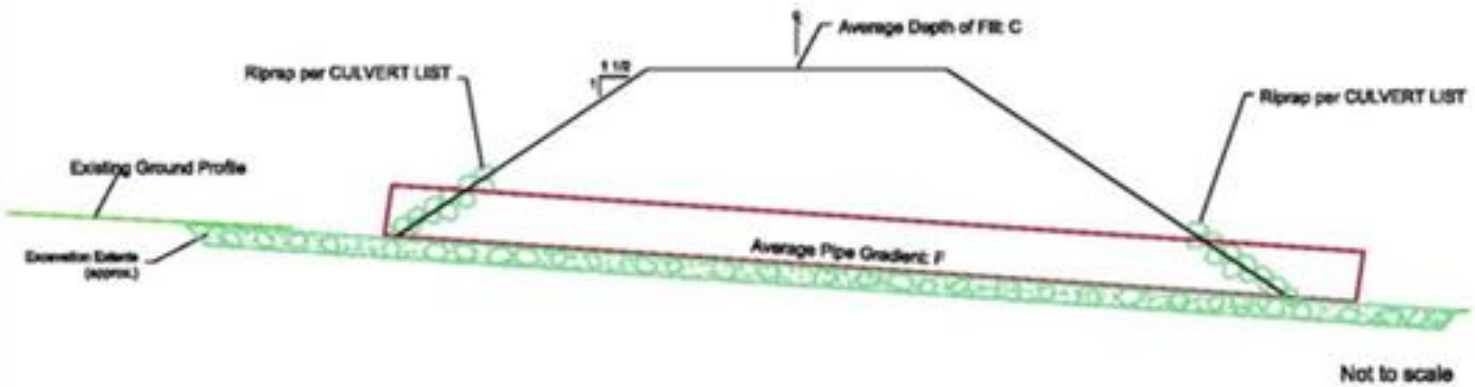

PROFILE- CENTERLINE OF ROAD LOOKING UPSTREAM
Culvert Bedding shall be 2 inch minus crushed rock and extend 0.5 ft. below the culvert and to 50% of the culvert rise
Existing Culvert
Culvert: 4 ft. Diameter
1½:1 Slope
CROSS SECTION
CL
3:2 Beveled
Elevation 88.8'
6% Slope
Current 18" Culvert
PLAN VIEW
FLOW
183+48
183+73
184+00
184+24
184+49
184+74
CP 101 Elev. 112.5
CP 102 Elev. 103.5
Replace Existing 18" Culvert with 48" Culvert
Culvert 184+00
Cover Page
Drawn By:Sterling Smith
Date: 8/28/19
Sheet 1 of 1

TYPICAL TYPE 4, TYPE 5 CULVERT
INSTALL SHEET

Road	Station	Pipe Diameter	Pipe Length	Pipe Gradient	Average Depth of Fill
PA-J-3200	20+35	36	35	Place in grade	3
PA-J-3200	37+50	24	40	Place in grade	1.5 minimum
PA-J-3200	101+55	24	30	6%	1.5 minimum
PA-J-3200	102+75	24	30	6%	1.5 minimum
PA-J-1000	184+00	48	60	6%	9
PA-J 1500	24+15	30	35	Place in grade	1.5 minimum

Note:
1) Crown at centerline not shown

PROFILE - CENTERLINE OF CULVERT

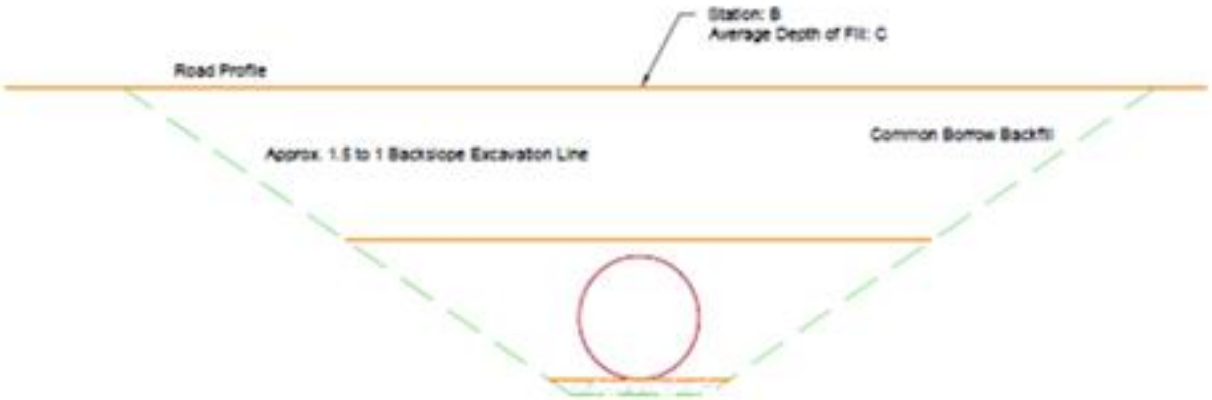


OLYMPIC REGION
SITE LOCATION
Drawn By: Madisen Warnstadt
Designed By: Madisen Warnstadt

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark, Commissioner of Public Lands

Date: October 2015

PROFILE - CENTERLINE OF ROAD LOOKING UPSTREAM



Road	Station	Pipe Diameter	Pipe Length	Pipe Gradient	Average Depth of Fill
PA-J-3200	20+35	36	35	Place in grade	3
PA-J-3200	37+50	24	40	Place in grade	1.5 minimum
PA-J-3200	101+55	24	30	6%	1.5 minimum
PA-J-3200	102+75	24	30	6%	1.5 minimum
PA-J-1000	184+00	48	60	6%	9
PA-J 1500	24+15	30	35	Place in grade	1.5 minimum

OLYMPIC REGION
TYPICAL LIVE STREAM CULVERT DETAIL
Drawn By: Thomas Barnes
Designed By:

Natural Resources

Page 2 of 2
Not to Scale

WASHINGTON STATE DEPT OF
NATURAL RESOURCES

Forest Practices
Informal Conference Note

ICN No.	Legal Subdivision	Section	TWP	RGE E/W	Application / Notification #	Class
110699	Parts of	02	30	09W	N/A	N/A

Landowner	Timber Owner	Operator
Washington State DNR (State Lands)	Same as Landowner	Same as Landowner
Mailing Address	**Mailing Address**	**Mailing Address**
411 Tillicum Lane	Same as Landowner	Same as Landowner
City, State /Province), Zip /Postal Code)	**City, State /Province), Zip /Postal Code**	**City, State /Province), Zip /Postal Code)**
Forks, WA 98331	Same as Landowner	Same as Landowner

Meeting Location	Telephone Conference ☐	Date	Time	Region
On site		11/30/18	10:00 a.m.	Olympic

Subjects Discussed:

Participants of the ID Team meeting include: Graywolf Natinger, Jessie Huggins, Theresa Powell, Chris Johnson, Erik Dukes (Travis Butterfield planned to attend, but was not able to make it in time for field visit with group.)

Purpose of the ID Team meeting was to determine if Washington State DNR can forgo fish passage requirements on a headwater tributary to Nelson Creek. A physical survey has been conducted and provided by State Lands indicating marginal fish physical characteristics exist where the stream in question crosses the PA-J-3000-7845 road. Survey data indicates that fish physical characteristics end approximately 100' above the current crossing location. The stream is known to be dry at most times of the year. DNR State Lands is potentially proposing downstream mitigation as part of the proposal.

As a group we visited portions of the stream above the crossing and below to the proposed mitigation site. As a group we discussed the stream gradients, mass wasting history and general channel characteristics. In total we visited approximately 100' above the crossing and approximately 100' below to the location of the old rail road grade crossing.

The group discussed the potential future mitigation needed, if it was agreed non-fish passage on the PA-J-3000-7845 was not required.

There was no discussion by the group to downgrade the areas of the stream meeting fish physicals.

Decisions Made:

The group determined that State Lands may install a non-fish passable crossing at this location, however culvert sizing would need to be calculated on basin size and be able to accommodate 100 year flood levels.

Mitigation shall include: In the downstream area of the old railroad grade crossing, an excavated channel width of 4-5' shall be created, slopes are to be pulled back 2:1. All exposed soils shall be covered with adequate hay and seed upon completion of the project. Four conifer root wads shall be placed in the channel at the mitigation site. All in channel work shall comply with work in type F waters.

PRINT Participants' Names	*SIGNATURES of Participants	Representing	Copies Mailed
Graywolf Nattinger	Graywolf Nattinger	DNR - State Lands	
Chris Johnson	Chris Johnson	Ecology	
Theresa Powell	[illegible]	WDFW	
Jessie Huggins	[illegible]	MAKAH	
Travis Butterfield	Travis Butterfield		

Position No.	Signature & Title of DNR Representative	Date	Work Phone
3082	, Erik Dukes	11/30/18	1-360-640-8984

*** (Participant signature means Note is correct for subjects discussed and decisions made at the meeting.)**
Did not attend -- mail copies to:
☒ Timber Owner ☒ Landowner ☒ Others: WDFW, ECY, USFW, Makah, Lower Elwha

QQ38
Rev. 11/04

Page of

SUMMARY - Road Development Costs

SALE NAME: Whiskey Creek Limit CONTRACT#: 30-099241 REGION: Olympic DISTRICT: Straits

ROAD NAME:			PA-J-3202	PA-J-1021	PA-J-1021 Spur	PA-J-1303	PA-J-1300 Spur	PA-J-1305	PA-J-1304	PA-J-1500	PA-J-1502	PA-J-1304 Spur	Spur 1	TOTAL:	TOTAL SHEET #2-3
ROAD TYPE:			Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction	Construction		
NUMBER OF STATIONS:			9	6	1	9	1	4	40	5	1	4	2	80.15	977.90
SIDESLOPE:			35%	15%	15%	40%	20%	40%	45%	45%	35%	25%	10%	325%	2.55
CLEARING AND GRUBBING:			$2,509	$785	$139	$2,369	$76	$1,115	$10,273	$1,394	$164	$410	$209	$19,442	$17,935
ROAD BRUSHING:			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$16,343
EXCAVATION AND FILL:			$3,051	$1,226	$198	$10,806	$136	$1,921	$78,601	$13,984	$237	$915	$254	$111,329	$15,724
ROAD GRADING:			0	0	0	0	0	0	0	0	0	0	0	$0	$13,217
DITCH CLEANING/CONSTRUCTION:			0	0	0	0	0	0	0	0	0	0	0	$0	$10,811
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:															
Ballast:	18530	18,530	760	1,000	210	700	110	835	3,200	350	70	400	180	7,815	10,715.00
			$16,667	$25,470	$5,555	$10,969	$1,638	$12,817	$57,280	$10,038	$1,852	$9,404	$3,879		
Surface:	14893	14,893	355	460	0	310	50	40	1,460	225	50	150	20	3,120	11,773.00
			$8,406	$12,521	$0	$5,400	$832	$634	$26,864	$6,566	$1,410	$3,789	$466		
Oversize:	220	220	4	52	0	2	2	2	0	0	0	2	2	66	520.00
			$56	$908	$0	$17	$15	$14	$0	$0	$0	$33	$29		
CULVERTS AND FLUMES:			$1,980	$1,320	$0	$2,400	$880	$1,320	$6,280	$0	$0	$1,100	$880	$16,161	$35,218
STRUCTURES:			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.00
MISC. EXPENSES:			$53	$36	$6	$50	$4	$23	$234	$29	$4	$21	$9	$469	$22,496.28
OVERHEAD:			$2,618	$3,381	$472	$2,561	$286	$1,428	$14,363	$2,561	$293	$1,254	$458	$29,674	$49,596.75
TOTAL COSTS:			$35,339	$45,648	$6,369	$34,572	$3,867	$19,272	$193,895	$34,571	$3,960	$16,926	$6,183	$400,602	$684,686.22
COST PER STATION:			$3,927	$7,363	$6,369	$4,067	$6,444	$4,818	$4,841	$6,914	$5,657	$4,702	$4,122	$4,998	1,160.08
MOBILIZATION:					$44,100										
ROAD DEACTIVATION AND ABANDONMENT COSTS:					$470										
Pit Work				$40,000											

Road Standard	Const.	Reconst.	Prehaul	Posthaul
Total Costs =	430,779	378,479	313,064	26,155
Total Sta. =	83	98	877	877
Cost per Sta. =	5,212	3,854	357	30
Compiled by:	Scott Rose			

TOTAL (All Roads) =	$1,173,059
SALE VOLUME MBF =	9,693
TOTAL COST PER MBF =	$121.02
TOTAL COST PER STATION=	$1,108.70
Date:	06/11/20

NOTE: This appraisal has no allowance for profit and risk.

Sheet 1 of 3

Plans to be furnished by: Scott Rose

SUMMARY - Road Development Costs

SALE NAME: Whiskey Creek Limit CONTRACT#: 30-099241 REGION: Olympic DISTRICT: Straits

LEGAL DESCRIPTION: 0

ROAD NAME:	Spur 2	Spur 3	PA-J-3200	PA-J-3201	PA-J-1205	PA-J-1303	PA-J-1305	PA-J-1500	PA-J-1501	PA-J-3000	PA-J-3200	PA-J-1000	TOTAL:
ROAD TYPE:	Construction	Construction	Recon/Prehaul	Recon.	Recon.	Recon.	Recon.	Recon.	Recon.	Prehaul	Prehaul	Prehaul	
NUMBER OF STATIONS:	1	1	31	2	14	8	4	28	12	78	98	420	696.70
SIDESLOPE:	10%	10%	60%	20%	30%	20%	35%	35%	35%	0%	0%	0%	255%
CLEARING AND GRUBBING:	$167	$181	$5,837	$177	$2,462	$838	$976	$5,315	$1,984	$0	$0	$0	$17,935
ROAD BRUSHING:	$0	$0	$554	$0	$0	$0	$0	$0	$0	$1,395	$1,769	$7,565	$11,282
EXCAVATION AND FILL:	$203	$220	$9,000	$0	$0	$2,400	$0	$2,400	$1,500	$0	$0	$0	$15,724
ROAD GRADING:	$0	$0	$200	$10	$94	$55	$23	$182	$75	$504	$639	$2,732	$4,512
DITCH CLEANING/CONSTRUCTION:	$0	$0	$1,199	$60	$562	$328	$137	$1,092	$452	$0	$156	$3,900	$7,886
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:													
Ballast:	190	120	3,255	180	1,500	710	360	2,320	1,240	0	100	0	9,975
	$4,095	$2,586	$71,382	$3,722	$28,800	$11,680	$5,105	$63,638	$34,013	0	$2,099	0	
Surface:	20	20	360	60	70	220	40	1,115	100	100	1,840	6,308	10,253
	$466	$466	$5,681	$872	$1,467	$4,004	$368	$32,536	$2,918	$2,274	$41,842	$129,566	
Oversize:	2	2	22	0	6	4	4	18	10	0	0	400	468
	29	29	164	0	72	37	28	363	202	0	0	4,616	
CULVERTS AND FLUMES:	$880	$880	$9,741	$0	$2,100	$2,400	$1,320	$0	$0	$0	$4,005	$9,711	$31,038
STRUCTURES:	0	0	0	0	0	0	0	0	0	0	0	0	$0
MISC. EXPENSES:	$7	$8	$2,993	$151	$1,402	$818	$341	$2,725	$1,129	$453	$575	$2,458	$13,059
OVERHEAD:	$468	$350	$8,540	$399	$2,957	$1,805	$664	$8,660	$3,382	$370	$4,087	$12,844	$44,524
TOTAL COSTS:	$6,314	$4,719	$115,290	$5,392	$39,914	$24,363	$8,960	$116,910	$45,655	$4,996	$55,170	$173,392	$601,075
COST PER STATION:	$5,262	$3,630	$3,749	$3,478	$2,772	$2,900	$2,560	$4,175	$3,936	$64	$562	$413	$863

SUMMARY - Road Development Costs

SALE NAME:	Whiskey Creek Limit	CONTRACT#:	30-099241		REGION:	Olympic		DISTRICT:	Straits	
	LEGAL DESCRIPTION:	0								
ROAD NAME:		PA-J-1020	PA-J-1021	PA-J-1200	PA-J-1300	PA-J-1310	PA-I-3000	PA-I-3040	ALL	TOTAL
ROAD TYPE:		Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Prehaul	Posthaul	
NUMBER OF STATIONS:		3	9	43	82	22	110	12	1,058	281.20
SIDESLOPE:		0%	0%	0%	0%	0%	0%	0%	0	0.00
		0	0	0	0	0	0	0	0	0.00
CLEARING AND GRUBBING:		0	0	0	0	0	0	0	0	0.00
ROAD BRUSHING:		$54	$169	$768	$1,470	$403	$1,985	$212	0	5,061.60
EXCAVATION AND FILL:		0	0	0	0	0	0	0	0	0.00
ROAD GRADING:		20	61	277	531	146	717	77	6,877	8,705.13
DITCHING:		0	0	780	2,145	0	0	0	0	2,925.00
ROCK TOTALS (Cu. Yds.)/ROCK COSTS:										
Ballast:		0	480	0	0	260	0	0	0	740.00
		$0	$12,696	$0	$0	$4,584	$0	$0	$0	
Surface:		60	190	50	980	40	100	100	0	1,520.00
		$1,633	$5,358	$1,214	$16,111	$775	$1,742	$1,742	0	
Oversize:		0	52	0	0	0	0	0	0	52.00
		$0	$998	$0	$0	$0	$0	$0	$0	
CULVERTS AND FLUMES:		0	$1,540	$0	$1,980	$660	$0	$0	$0	$4,180
STRUCTURES:		0	0	0	0	0	0	0	0	0.00
MISC. EXPENSES:		18	970	250	478	131	645	69	6,877	9,437.25
OVERHEAD:		138	1,743	263	1,817	536	407	168	1,375	5,072.65
TOTAL COSTS:		$1,862	$23,536	$3,552	$24,531	$7,235	$5,497	$2,268	$15,130	$83,611
		0	0	0	0	0	0	0	0	
COST PER STATION:		$621	$2,504	$83	$300	$323	$50	$192	$14	$297.34

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
OLYMPIC REGION

INFORMATIONAL BLASTING PLAN

Timber Sale/Project Name: _____ App./Project No.: _____

1. Blaster-in-Charge: Name: _____

   Company: _____

   Address: _____

   _____

   Telephone: _____

2. Quarry Name/Location: _____
3. Total Estimated Cubic Yards in Blast (loose): _____
4. Hole Spacing: _____
5. Burden: _____
6. Hole Diameter: _____
7. Hole Depth: _____
8. Sub Drill: _____
9. Number of Holes: _____
10. Stemming Depth: _____
11. Explosive (mfg., name, density, %, V.O.D.): _____

    _____

12. Type and Size of Primer (if applicable): _____
13. Total Weight of Primers for Shot: _____
14. Calculated Powder Factor/Cubic Yard: _____
15. Number of Delays (in M.S.): _____

    _____

16. Number of Holes Fired on Each Delay: _____

    _____

17. Total Amount of Explosives Fired on Each Delay: _____

    _____

18. Type of Blasting Machine: _____

    _____

19. Date, Start Drilling: _____
20. Date and Time, Start Loading: _____
21. Date and Time of Blast (approx.): _____

22. Detail drawing of delay system (show hole pattern and delays in milliseconds). Attach additional sheets if required:

23. Typical cross-section of hole (show primer, main charge, sub drill, and stemming):

23. Submitted by: _____ Date: _____

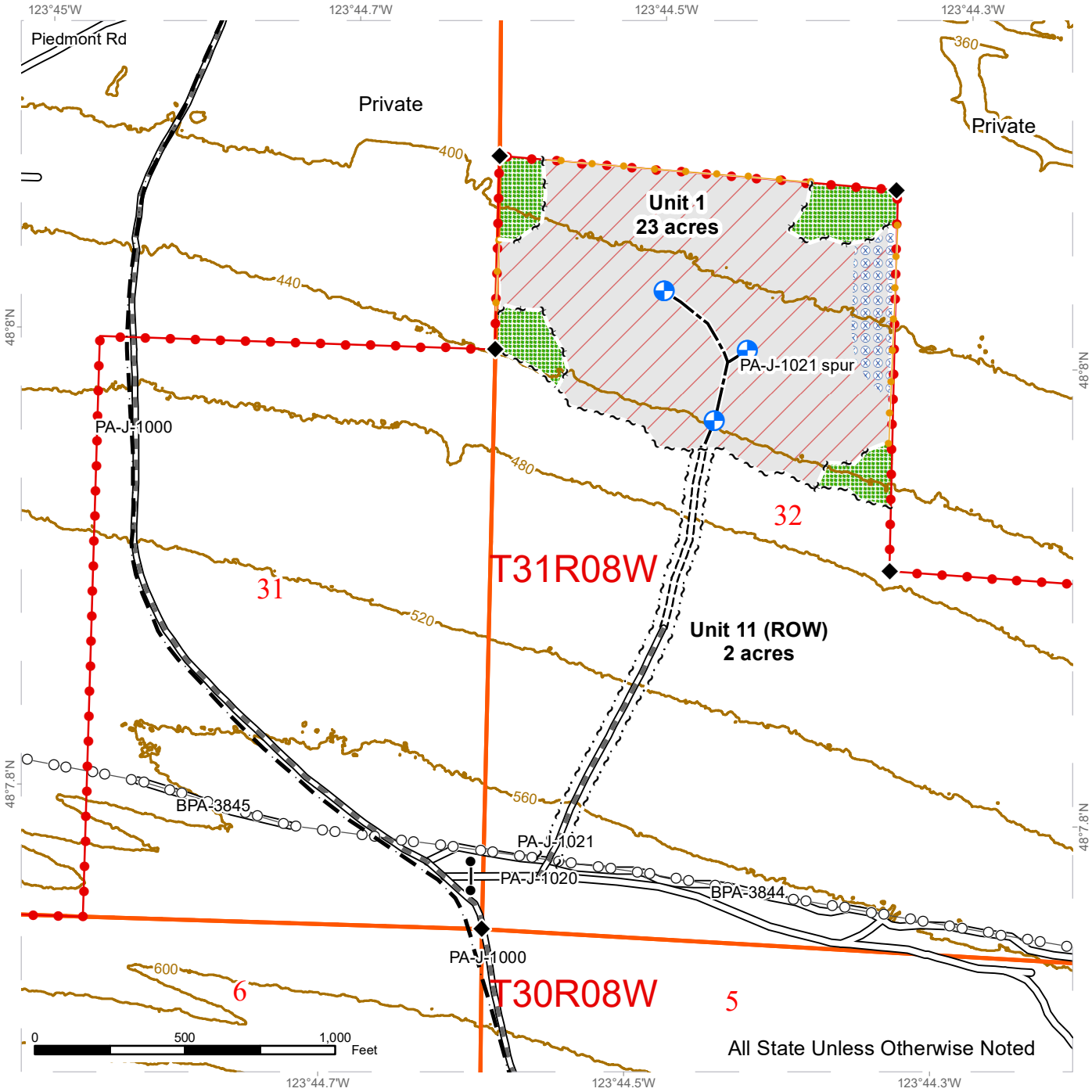
24. Received by: _____ Date: _____

Note: Attach copies of manufacturer=s data sheet(s) for explosive and caps.

LOGGING PLAN MAP

SALE NAME: WHISKEY CREEK LIMIT
AGREEMENT#: 30-099241
TOWNSHIP(S): T30R8W, T31R8W, T30R9W, T31R9W
TRUST(S): Capitol Grant (7), Common School and Indemnity (3), State Forest Transfer (1)

REGION: Olympic Region
COUNTY(S): Clallam
ELEVATION RGE: 680-2312



Variable Retention Harvest
Ground
Cable
Hazard Abatement Area
Leave Tree Area
Riparian Mgt Zone
Timing Restriction
Contours 40 ft
Olympic Discovery Trail
DNR Managed Land
Sale Boundary Tags
Take / Removal Trees
Timber Type Change
Leave Tree Tags
Right of Way Tags
Power Lines
Abandoned ROW
Existing Roads
Required Pre-Haul Maintenance
Required Construction
Required Reconstruction
Optional Construction
Optional Reconstruction
Streams
Stream Type
Stream Type Break
Survey Monument
Gate
Proposed Landing
Rock Pit
Waste Area

N

Prepared By: bsin490

Modification Date: cpag490 1/23/2020

LOGGING PLAN MAP

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AGREEMENT#: 30-099241
TOWNSHIP(S): T30R8W, T31R8W, T30R9W, T31R9W
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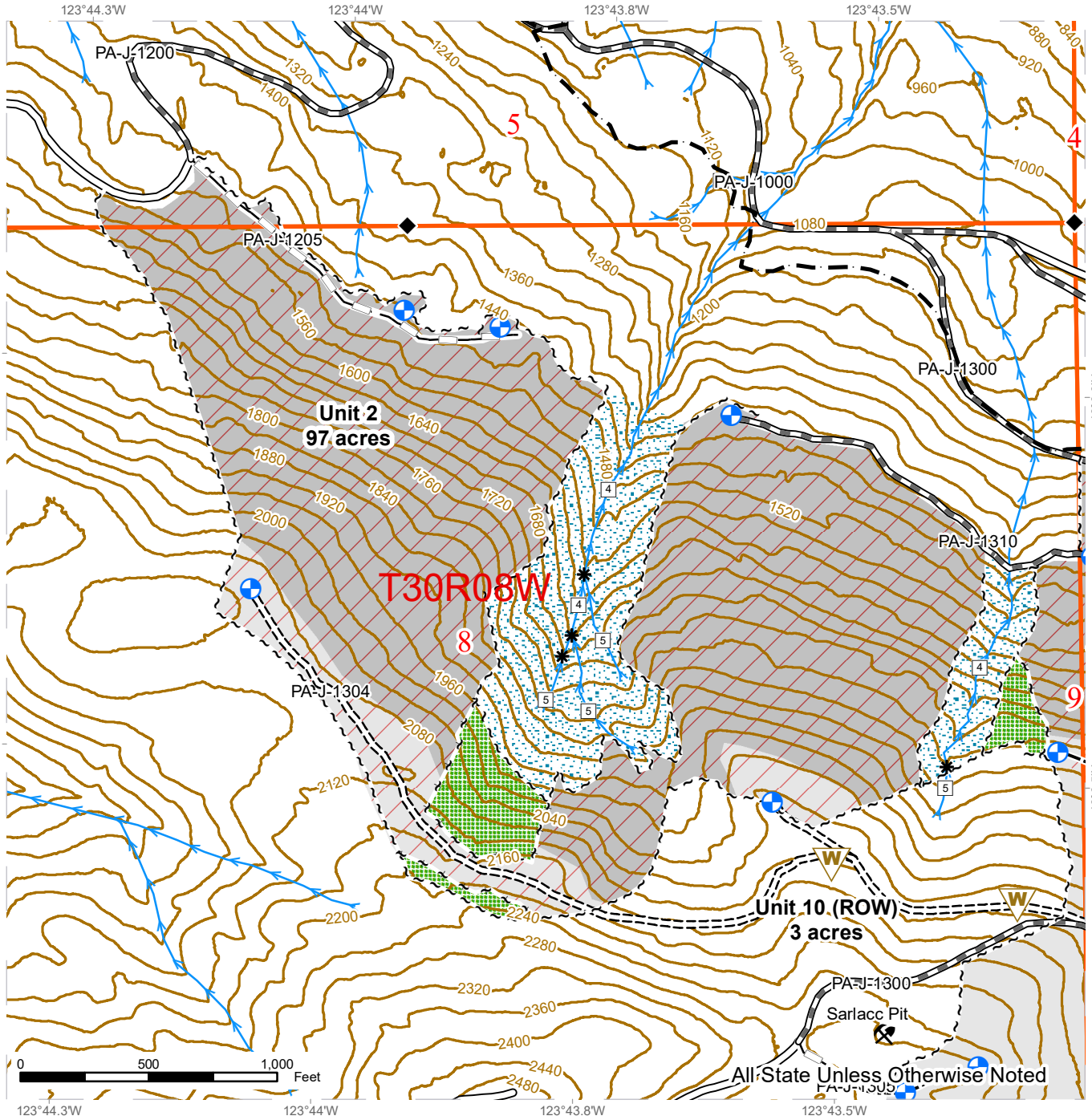

Variable Retention Harvest	DNR Managed Land	Existing Roads	Survey Monument
Ground	Sale Boundary Tags	Required Pre-Haul Maintenance	Gate
Cable	Take / Removal Trees	Required Construction	Proposed Landing
Hazard Abatement Area	Timber Type Change	Required Reconstruction	Rock Pit
Leave Tree Area	Leave Tree Tags	Optional Construction	Waste Area
Riparian Mgt Zone	Right of Way Tags	Optional Reconstruction	
Timing Restriction	Power Lines	Streams	
Contours 40 ft	Abandoned ROW	Stream Type	
Olympic Discovery Trail		Stream Type Break	

N

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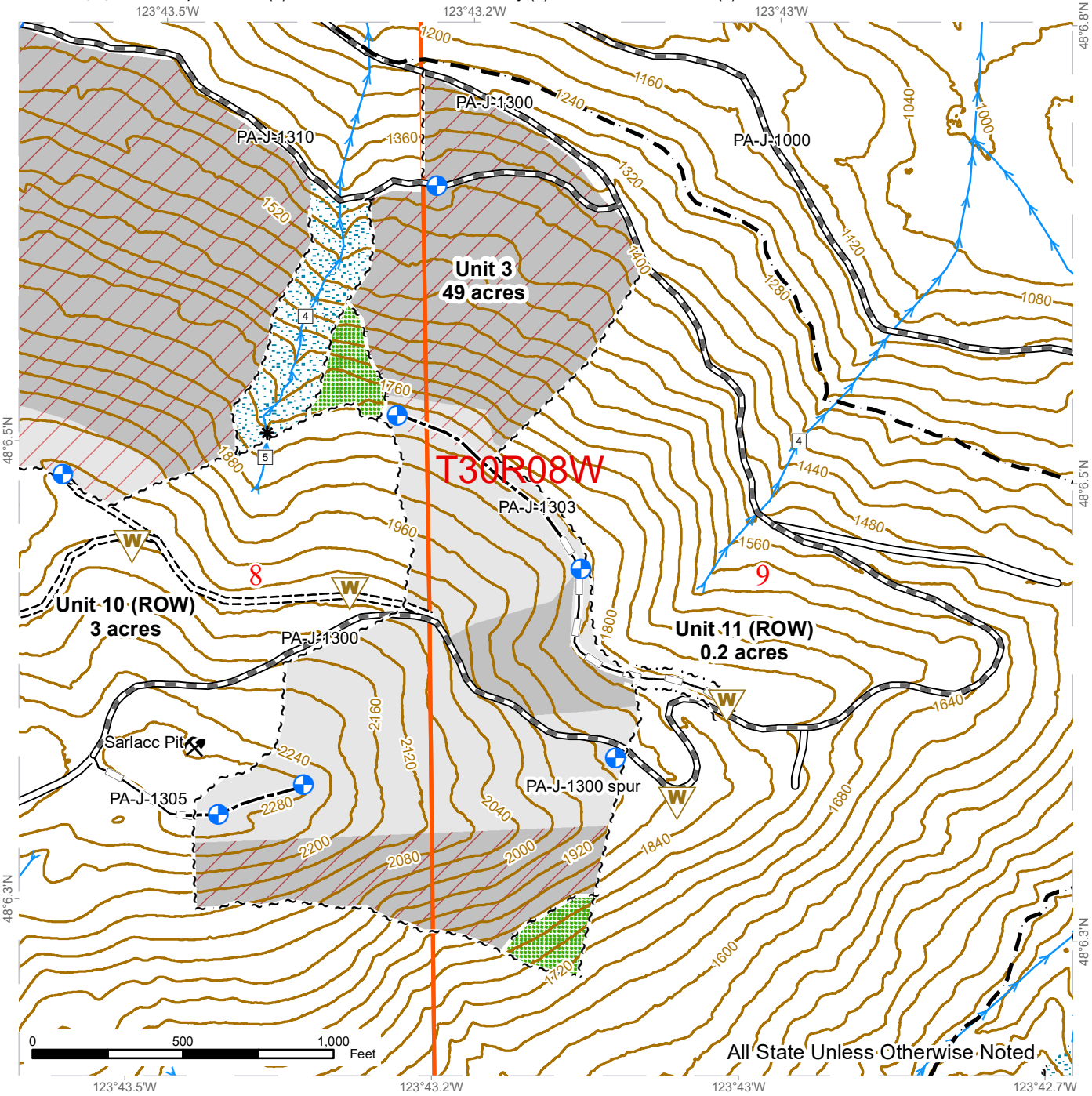

Variable Retention Harvest
Ground
Cable
Hazard Abatement Area
Leave Tree Area
Riparian Mgt Zone
Timing Restriction
Contours 40 ft
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DNR Managed Land
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Right of Way Tags
Power Lines
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Existing Roads
Required Pre-Haul Maintenance
Required Construction
Required Reconstruction
Optional Construction
Optional Reconstruction
Streams
Stream Type
Stream Type Break
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Rock Pit
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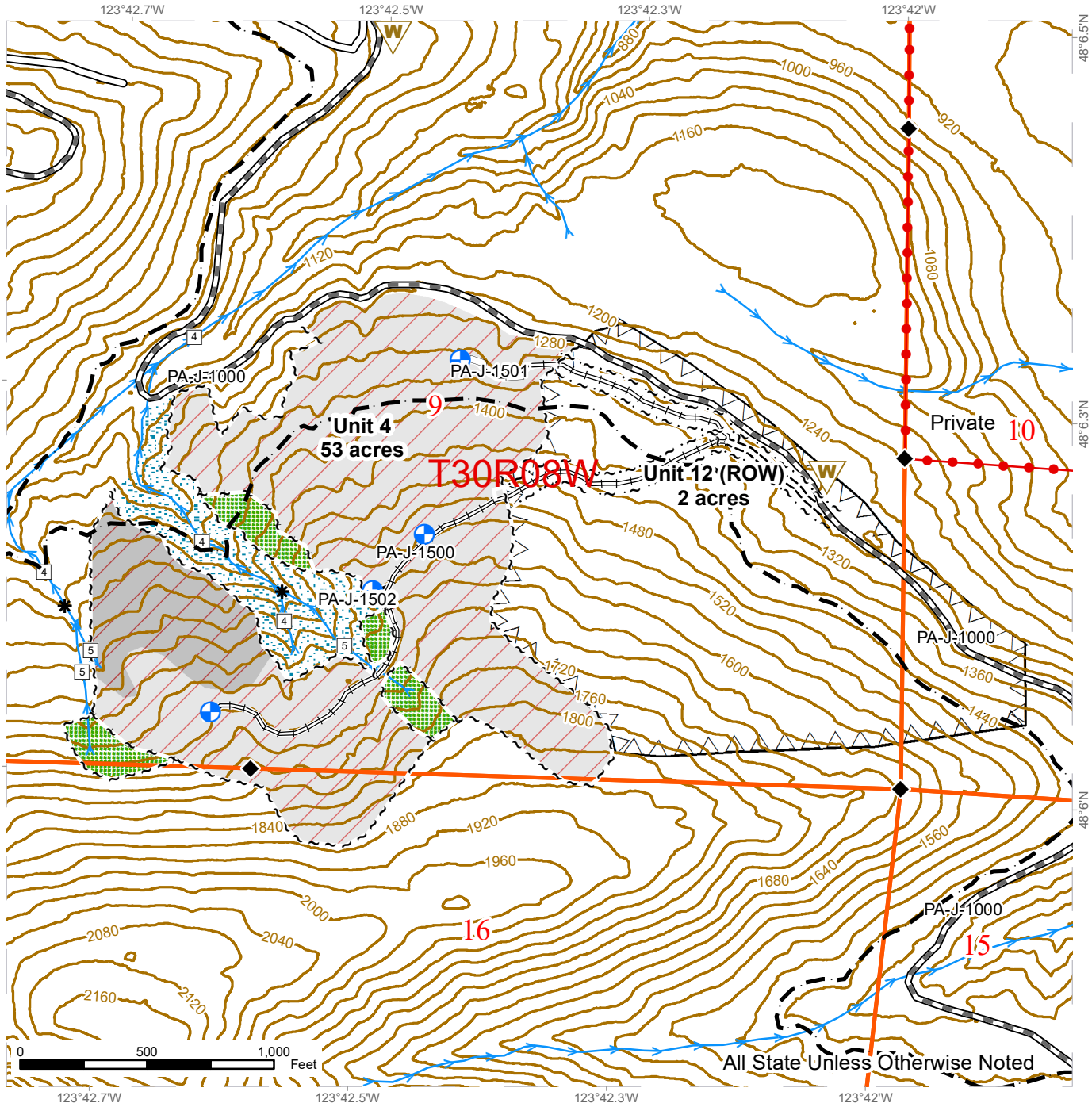

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Ground	Sale Boundary Tags	Required Pre-Haul Maintenance	Gate
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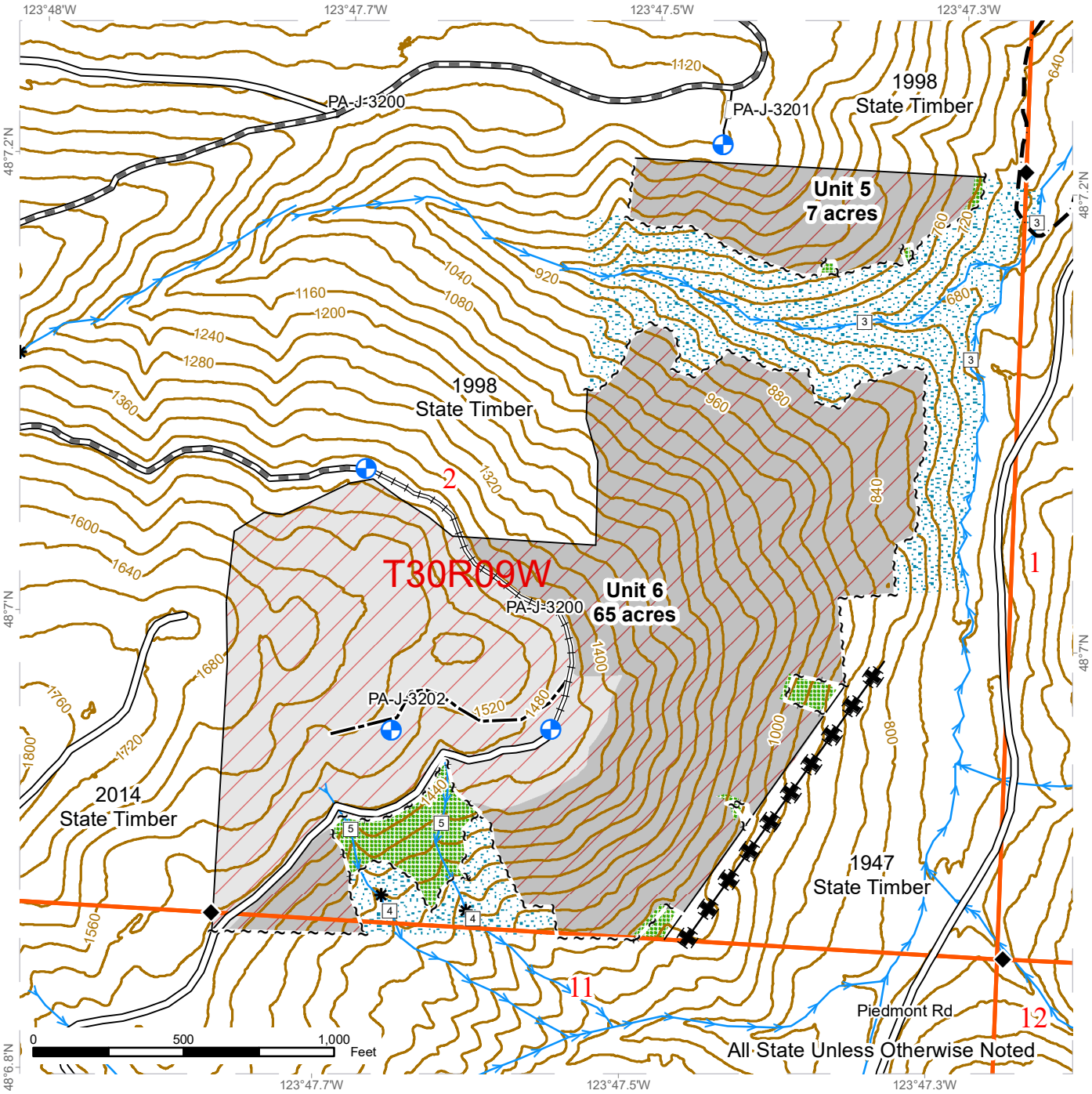

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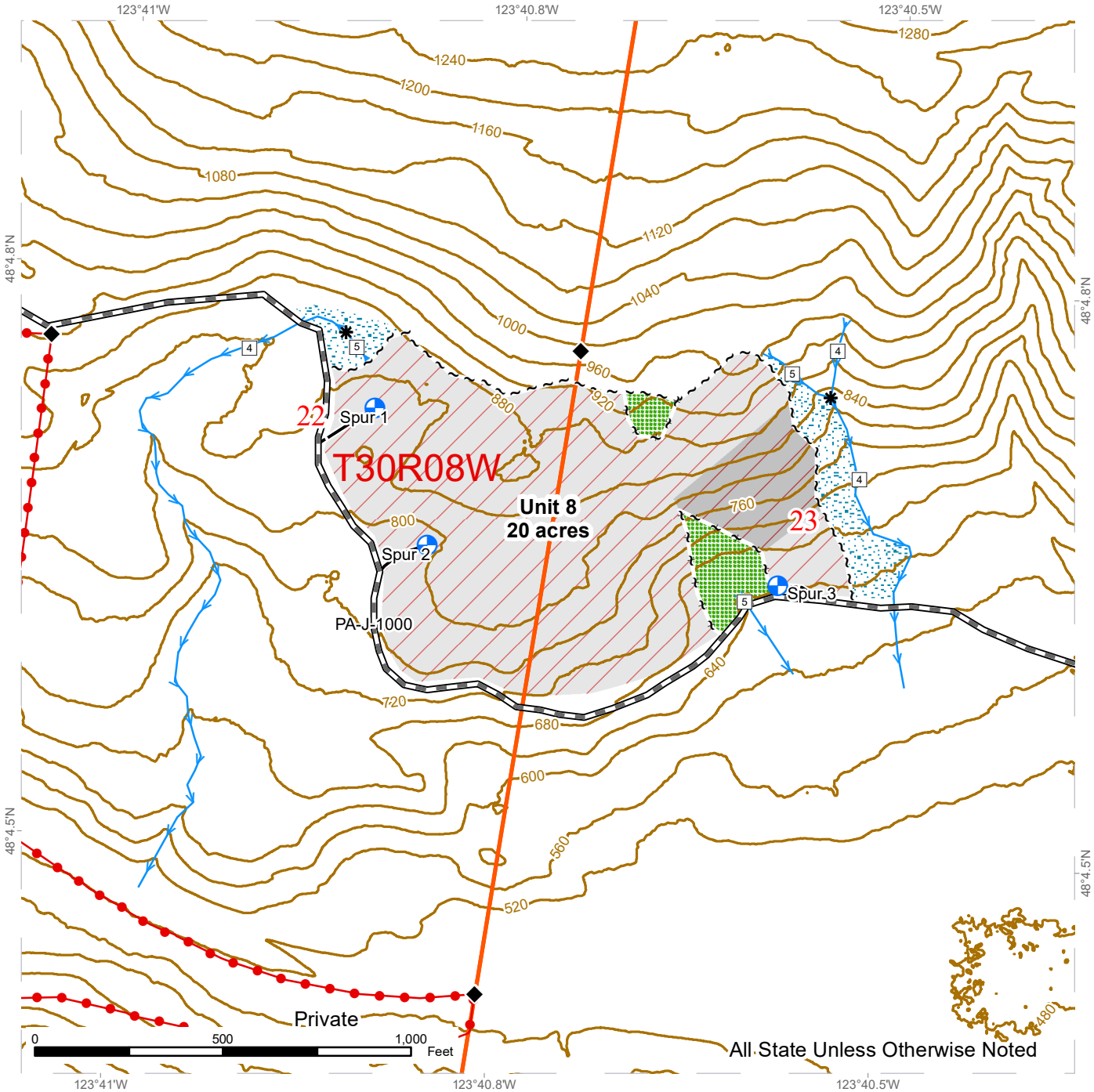

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