

TIMBER NOTICE OF SALE

SALE NAME: UP TOP

AGREEMENT NO: 30-092039

AUCTION: February 23, 2016 starting at 10:00 a.m., **COUNTY:** Thurston, Grays Harbor
South Puget Sound Region Office, Enumclaw, WA

SALE LOCATION: Sale located approximately 10 miles northwest of Littlerock

**PRODUCTS SOLD
AND SALE AREA:**

All timber, except leave trees marked with blue paint or bounded out by yellow Leave Tree Area tags, and down timber existing more than 5 years from the day of sale, bounded by the following: white "timber sale boundary" tags, the C-4100 and C-4110 roads in Unit #1; white "timber sale boundary" tags and the C-4100 road in Unit #2; white "timber sale boundary" tags in Unit #3; white "timber sale boundary" tags and the C-4000 road in Unit #4; white "timber sale boundary" tags, the C-4000, C-4200 and C-4010 roads in Unit #5; white "timber sale boundary" tags, timber type change and the C-Line road in Unit #6; white "timber sale boundary" tags, timber type change and the C-4032 road in Unit #7; all timber painted with a red "X" along the C-4000 in ROW Units #8 and #9; all timber bounded by orange right of way tags in ROW Unit #10 on part(s) of Sections 1, 9, 10, 11, 14, 15, 16 and 22 all in Township 17 North, Range 4 West, W.M., containing 299 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BV-SFIS-US09000572)

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	18.4	7	5,156				33		2,935	1,430	743	16
Hemlock	16.5	6	1,043						499	305	222	16
Noble fir	15.7	6	966						399	331	236	
Silver fir	17.6	6	698						433	168	97	
Red cedar	16.7		33								22	11
Red alder	13.1		30							3	4	23
Spruce		33	1								1	
Sale Total			7,927									

MINIMUM BID: \$1,323,000.00 **BID METHOD:** Sealed Bids

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

EXPIRATION DATE: October 31, 2018 **ALLOCATION:** Export Restricted

BID DEPOSIT: \$132,300.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: Harvesting activities are estimated to be 15% ground-based and 85% cable. Forest products sold under this contract shall be harvested and removed using cable and tracked ground based equipment, with tracked ground based equipment limited to sustained slopes 40% and less. Self-leveling shovels are restricted to sustained slopes of 55% or less. Use of tracked skidders shall be allowed for pole yarding and in Unit #6 only, unless authority to use other equipment is granted in writing by the State. Yarding may be restricted during wet weather if rutting becomes excessive, per clause H-017.

TIMBER NOTICE OF SALE

Cutting and yarding will not be permitted from November 1st to April 30th, unless authority to do so is granted in writing by the Contract Administrator. If permission is granted to operate from November 1st to April 30th, the purchaser shall be required to operate under a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Preventive measures required in the Winter Operating Plan must be put in place prior to commencing any winter operations.

ROADS:

12.60 stations of required construction. 16.70 stations of required reconstruction. 3.80 stations of optional construction. 49.10 stations of optional reconstruction. 861.80 stations of required pre-haul maintenance. 34.90 stations of optional pre-haul maintenance. 12.60 stations of abandonment. 3.80 stations of required decommissioning if constructed. Purchaser maintenance on the C-4000-18, C-4010, C-4017, C-4030, C-4032, C-4100, C-4110, C-4130, C-4200 and C-4500 roads. Designated maintenance on all other roads used.

Rock for the proposal may be obtained at no cost to the Purchaser from the State owned Low Bank Quarry, located in Section 15, Township 17 North, Range 04 West, W.M. or from any commercial source at the Purchaser's expense, as approved in writing by the Contract Administrator. Rock Pit development plan is included in the Road Plan.

Road construction, rock haul and timber haul will not be permitted from November 1st to April 30th, unless authority to do so is granted in writing by the Contract Administrator. If permission is granted to operate from November 1st to April 30th, the purchaser shall be required to operate under a Winter Operating Plan to include further protection of water, soil, roads and other forest assets at the Purchaser's expense. Preventive measures required in the Winter Operating Plan must be put in place prior to commencing any winter operations.

ACREAGE DETERMINATION

CRUISE METHOD: Unit acreage was determined by traversing the boundaries by GPS. Right of way acreage was determined by multiplying length times width. GPS data files are available upon request by emailing audrey.mainwaring@dnr.wa.gov. See cruise narrative for cruise method.

FEES: \$140,704.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: This sale contains high quality Douglas-fir. See cruise for details.

Use of trees as tailholds and operation of equipment and yarding is restricted between Unit 2 and Unit 3, and in a leave tree clump in Unit 5 per H-141.

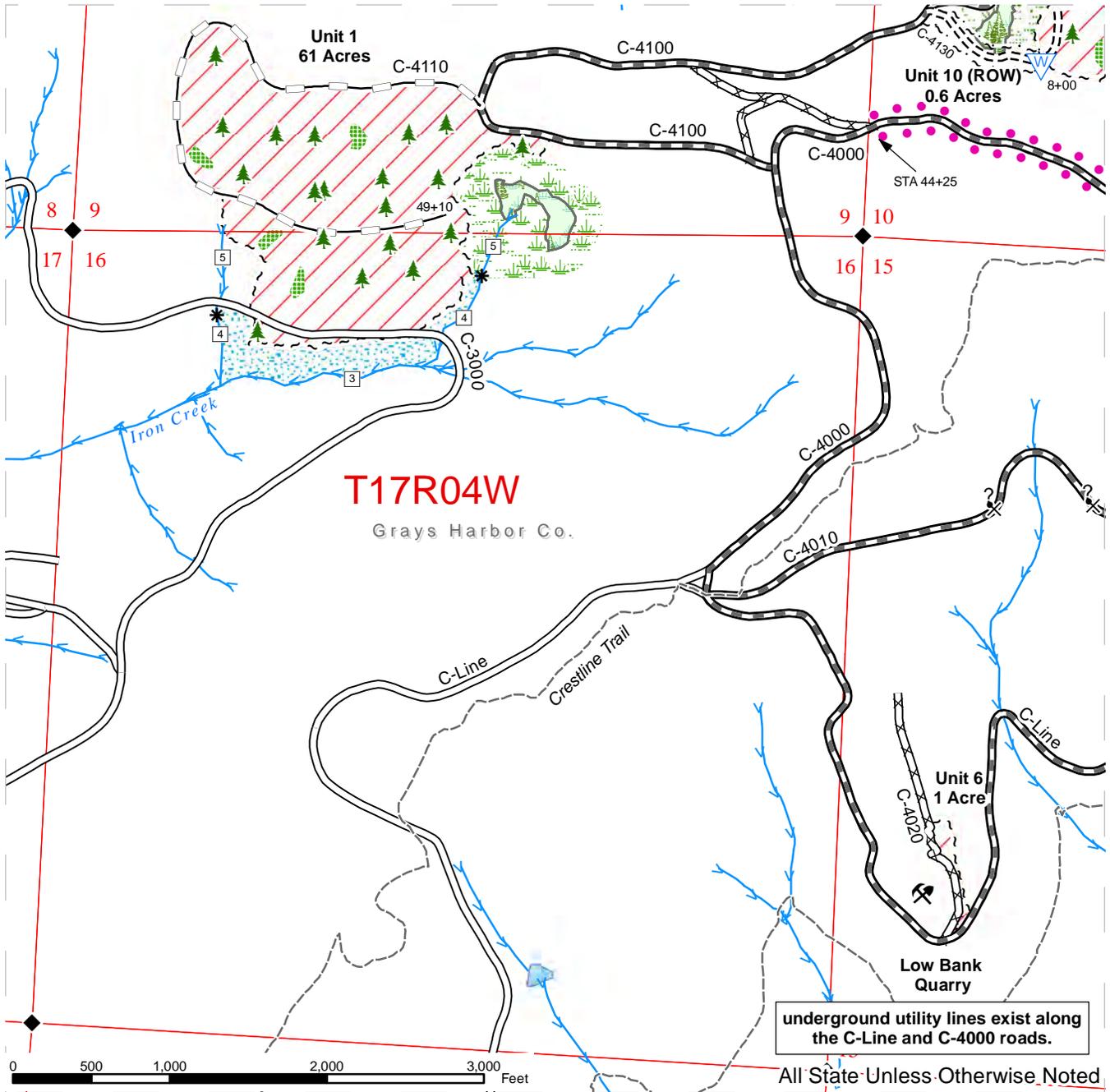
Road work associated with this project includes manufacture of 2,500 cubic yard stockpile of 6" jawrun, 2,000 cubic yard stockpile of 2 inch minus, 500 cubic yard stockpile of 2 inch clean, and required exploratory drilling for rock pit development along the C-4010 Road, see Road Plan for details.

See map for gate locations. Gate keys may be obtained by contacting the South Puget Sound Region office at (360)825-1631 or by contacting the Tumwater work center at (360) 902-1449.

TIMBER SALE MAP

SALE NAME: UP TOP
 AGREEMENT#: 30-092039
 TOWNSHIP(S): T17R04W
 TRUST(S): State Forest Purchase(2), Common School and Indemnity(3), Scientific School(10), Forest Board Repayment(42)

REGION: South Puget Sound Region
 COUNTY(S): GRAYS HARBOR, THURSTON
 ELEVATION RGE: 895-2380



underground utility lines exist along the C-Line and C-4000 roads.

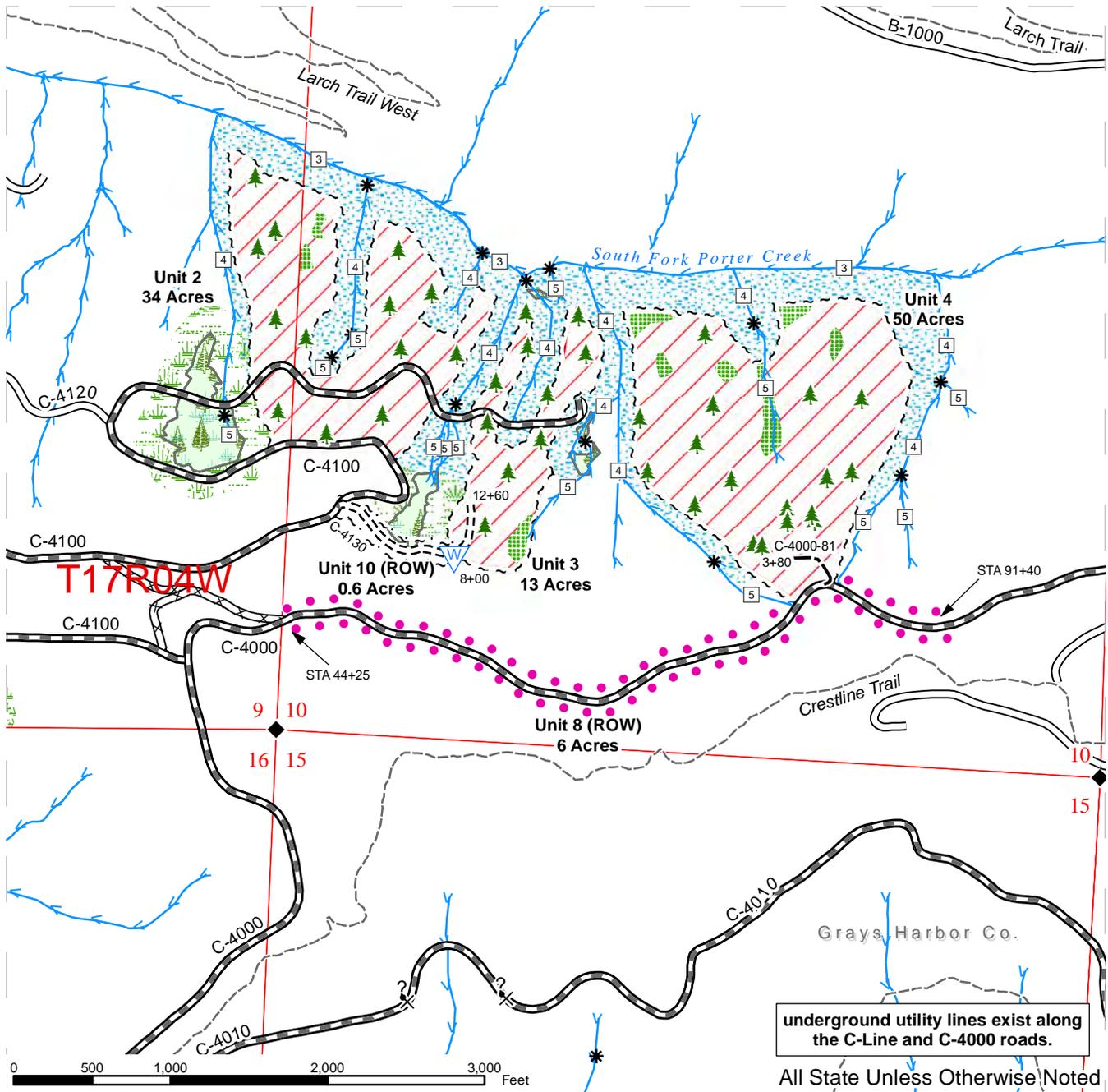
All State Unless Otherwise Noted

Timber Sale Area	Existing Roads	Stream Type
Leave Tree Area - marked with yellow "Leave Tree Area" tags	Abandoned Roads	Stream Type Break
Forested Wetlands	Required Reconstruction	Leave Trees yellow "Leave Tree Area" tags or painted blue bands
Wetland Mgt. Zone	Required Construction	Waste Area
Riparian Mgt. Zone	Optional Construction	Existing Rock Pit
White "Timber Sale Boundry Tags"	Optional Reconstruction	Rock Exploration
Timber Type Change	Optional Prehaul Maintenance	Monumented Corners
Daylighting - take trees marked with painted red "x"	Required Pre-Haul Maintenance	Public Land Survey Sections
Right of Way - Marked with orange "Right of Way" Tags	Trail	
	Streams	

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Prepared By: rmas490

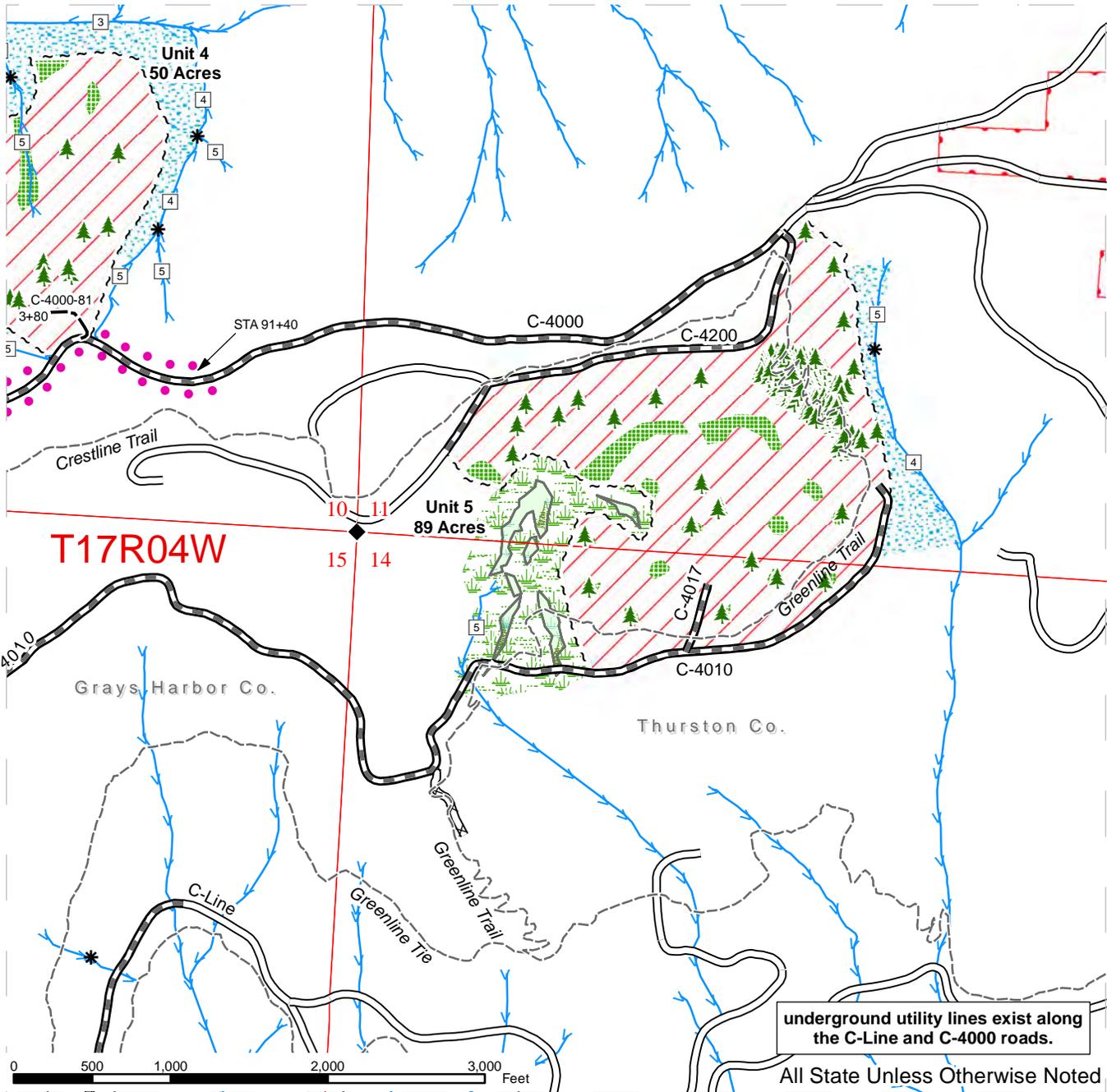
Creation Date: 7/13/2015

Modified By: cdun490
 Modification Date: 12/8/2015

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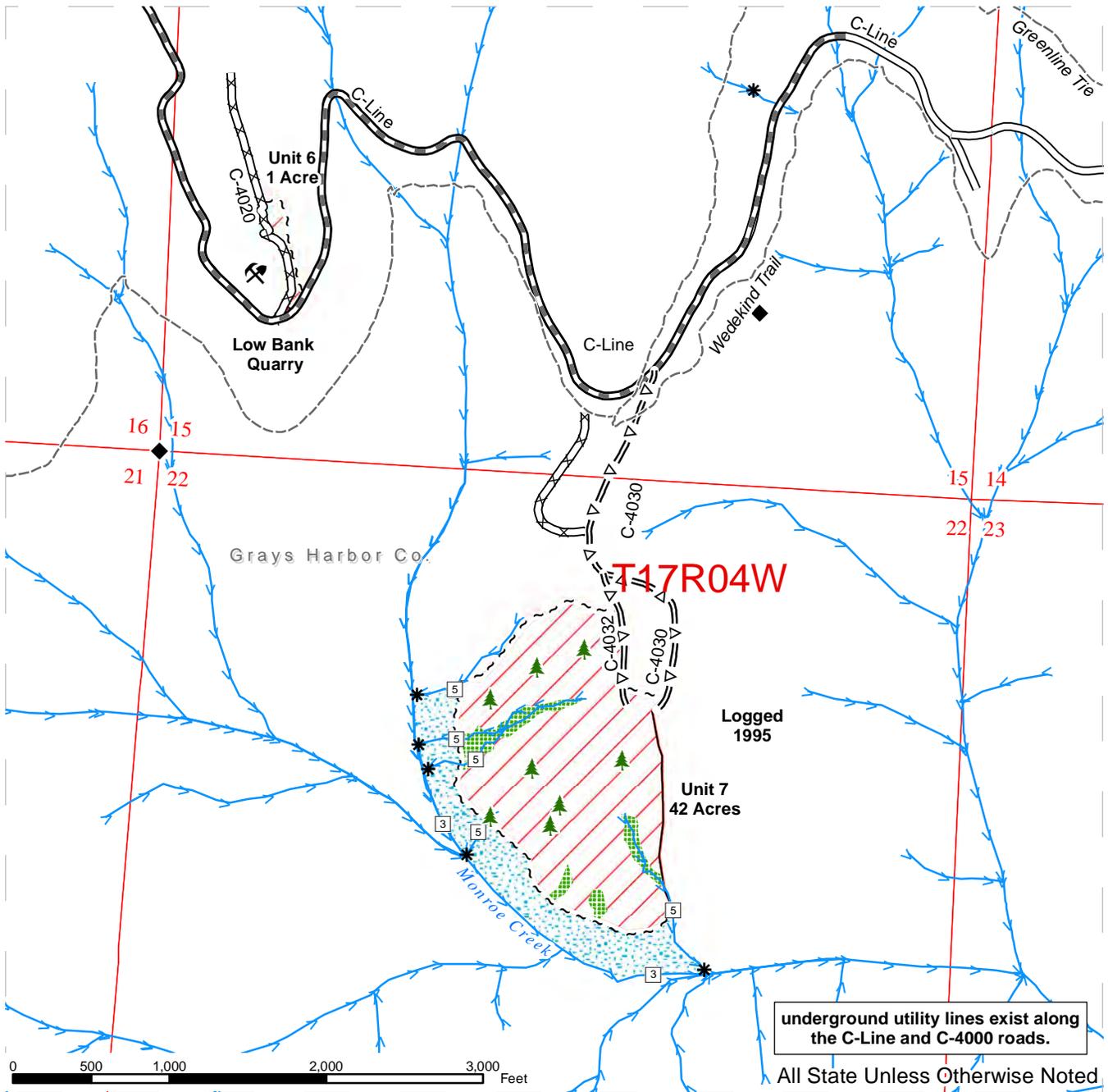


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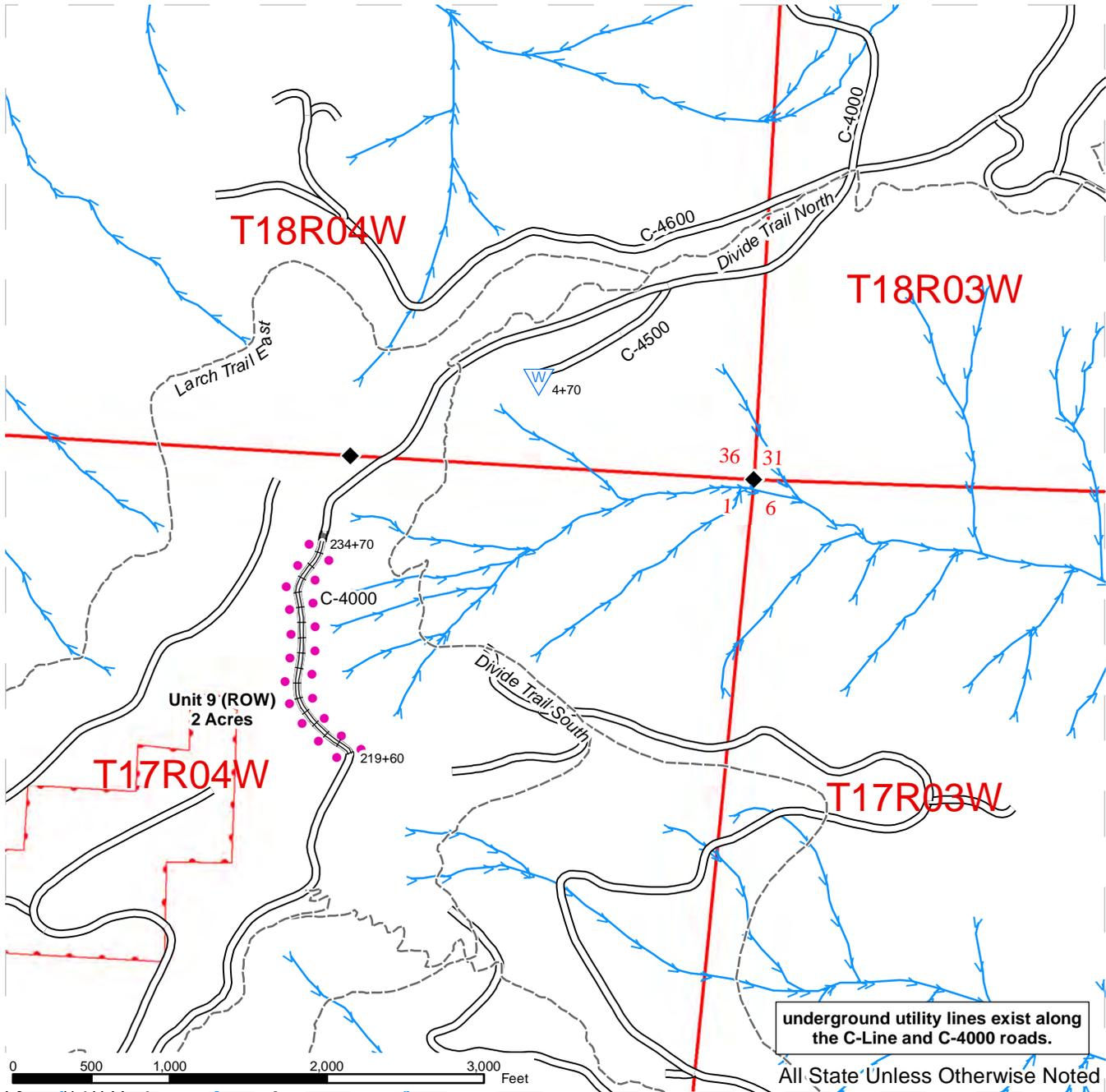


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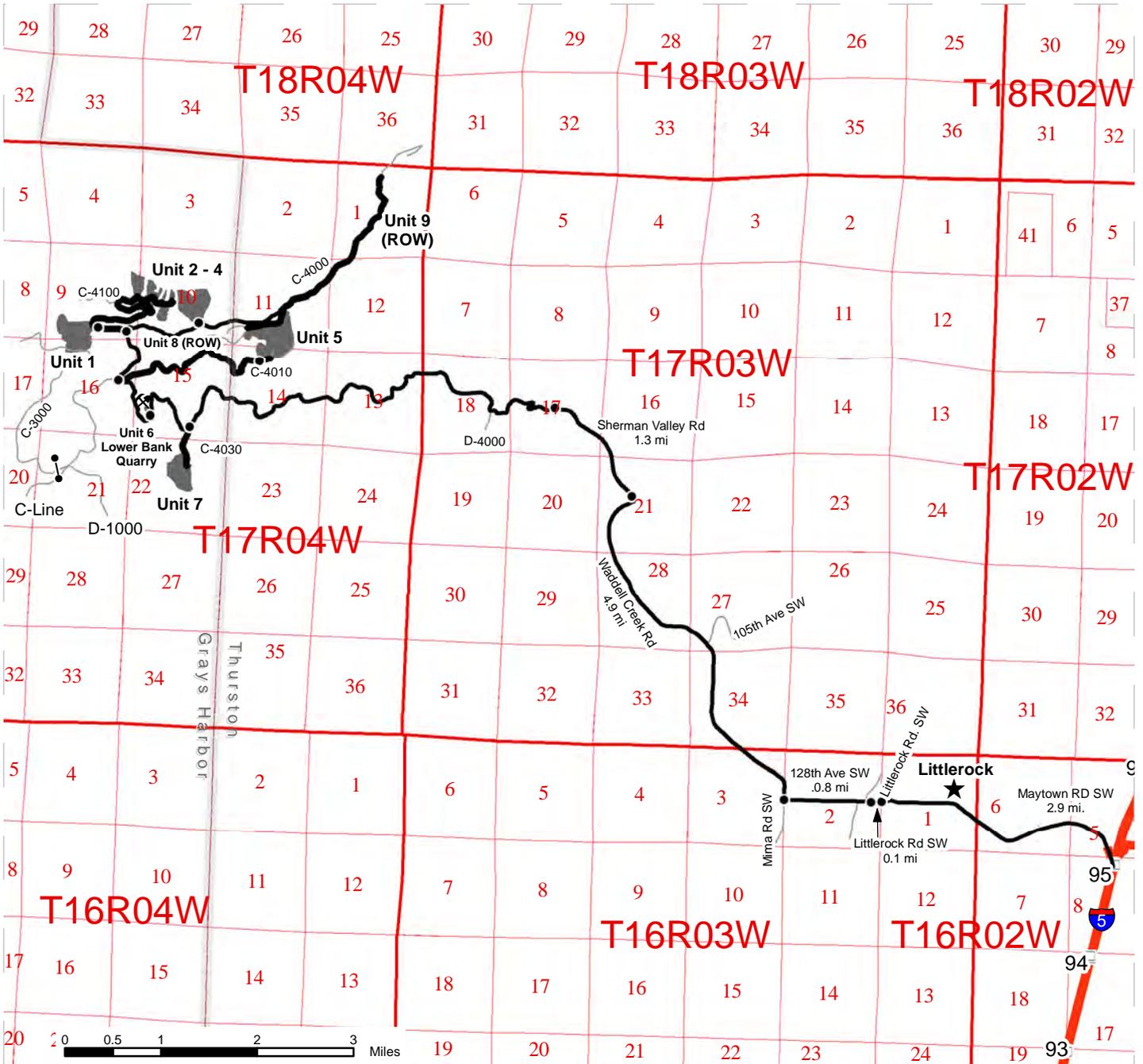


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DRIVING MAP

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- Timber Sale Unit
- Highways
- Haul Route
- Other Route
- Distance Indicator
- Existing Rock Pit
- Gate (Master 957)

Driving Directions:

From I-5, (exit 95) turn west on Maytown Rd. SW and follow for 2.8 miles and through the town of Littlerock for 0.1 mile Continue straight (west) onto 128th Ave and follow for 0.7 mile. Turn right (north) onto Waddell Creek Rd. and follow for 4.1 miles. Turn left (west) onto Sherman Valley Rd. Take the left onto the C-Line follow for 5.1 miles. Turn left (south) onto the C-4030 (road is blocked) walk in 1400 ft. and continue walking on the C-4032 for 400 ft. to Unit 7. Continue on the C-Line from the C-Line and C-4030 junction for 0.9 mile, Unit 6 on the right next to Low Bank Pit. Continue on the C-Line for 1.2 miles and turn right (north) on the C-4000 for 0.6 mile. Turn left (west) onto the C-4100 for 0.4 mile to Unit 1. From the C-4100/ C-4000 junction continue east for 0.8 miles to Unit 4. Continue 2.6 miles to Unit 9. Continue on the C-4100 till the end and you will find Units 2 and 3. From the C-4000 and C-4010 turn right (east) on the C-4010 for 1.9 to Unit 5.



**STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES**

**BILL OF SALE AND CONTRACT FOR
FOREST PRODUCTS**

Export Restricted Lump Sum AGREEMENT NO. 30-092039

SALE NAME: UP TOP

**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 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 February 23, 2016 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 leave trees marked with blue paint or bounded out by yellow Leave Tree Area tags, and down timber existing more than 5 years from the day of sale, bounded by the following: white "timber sale boundary" tags, the C-4100 and C-4110 roads in Unit #1; white "timber sale boundary" tags and the C-4100 road in Unit #2; white "timber sale boundary" tags in Unit #3; white "timber sale boundary" tags and the C-4000 road in Unit #4; white "timber sale boundary" tags, the C-4000, C-4200 and C-4010 roads in Unit #5; white "timber sale boundary" tags, timber type change and the C-Line road in Unit #6; white "timber sale boundary" tags, timber type change and the C-4032 road in Unit #7; all timber painted with a red "X" along the C-4000 in ROW Units #8 and #9; all timber bounded by orange right of way tags in ROW Unit #10, located on approximately 299 acres on part(s) of Sections 1, 9, 10, 11, 14, 15, 16, and 22 all in Township 17 North, Range 4 West W.M. in Thurston, and Grays Harbor 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 not 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	Recreation Trail Clean Out and Repair

G-031 Contract Term

Purchaser shall complete all work required by this contract prior to October 31, 2018.

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 \$873.00 per acre per annum for the acres on which an operating release has not been issued within the harvest area.
- 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. 812521 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, PRT-812521 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-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: BV-SFIS-US09000572.

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.

Road is defined as the road bed, including but not limited to its component parts, such as 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. 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.

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 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 Enumclaw, 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 post office address:

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; C-Line, C-3000, C-4000, C-4000-81, C-4010, C-4017, C-4030, C-4032, C-4100, C-4110, C-4130, C-4200, C-4500 and C-5000 roads. 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 C-Line, C-3000 or C-4000 roads, except as allowed per Road Plan clause 1-7, unless authority is granted in writing by the Contract Administrator.

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:

To be determined one month before day of sale.

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 \$212,047.00. The total contract price consists of a \$0.00 contract bid price plus \$212,047.00 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-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 area, 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-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 6 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-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for all Units. The plan shall address the harvest, protection of leave trees, recreational trail protections, slash and yarding of timber for each Unit, which are part(s) of this contract. The harvest plan shall be approved by the Contract Administrator prior to beginning the harvest operation. Purchaser shall not deviate from the harvest plan without prior written approval by the Contract Administrator.

H-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-060 Skid Trail Locations

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

H-080 Snags Not to be Felled

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

H-110 Stump Height

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

H-120 Harvesting Equipment

Forest products sold under this contract shall be harvested and removed using cable and ground based equipment. Ground based equipment shall be limited to tracked ground based equipment on sustained slopes 40% and less. Self-leveling shovels are restricted

to sustained slopes of 55% or less. Use of tracked skidders shall be allowed for pole yarding and in Unit #6 only, unless authority to use other equipment is granted in writing by the State.

H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities.

H-126 Tailholds on State Land

If Purchaser tailholds on State land, methods to minimize damage to live trees outside the sale area shall be employed and must be approved in writing by the Contract Administrator.

H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. Timber haul will not be permitted from November 1 to April 30, unless authority to do so is granted in writing by the Contract Administrator. If permission is granted to operate from November 1 to May 31, the Purchaser shall comply with a "Winter Operating Plan" to include further protection of water, soil, roads, and other forest assets at the Purchaser's expense. All preventative measures shall be in place prior to commencing any winter operations.
- b. Any existing downed trees or logs yarded to the landing will be returned to their original locations.
- c. Equipment limitation zones are required within 30 feet of Type 5 streams.
- d. Any and all operations associated with this sale may be temporarily suspended when, in the opinion of the Contract Administrator, there is the potential for delivery to typed water.
- e. The Purchaser shall notify all employees and contractors working on this sale that any danger tree marked or unmarked may be felled. Any marked danger tree will be replaced with a suitable tree of similar size and species as approved by the Contract Administrator.
- f. Ground based yarding equipment shall only operate during dry soil conditions.
- g. Within shovel logging areas, the shovel operator shall break up concentrations of logging debris greater than 10.5 feet by 10.5 feet to allow exposure of natural forest soils to ensure proper reforestation.
- h. Designated haul roads have been designed to allow transport of poles 52 feet in length or less. If the Purchaser chooses to remove poles greater than 52 feet in length a haul plan must be submitted in writing to the Contract Administrator, which details the desired haul route, additional reconstruction needs, and mitigation for damage, which is a result of hauling oversized material. If approved

in writing by the Contract Administrator, all work shall be at the Purchaser's expense.

- i. The C-4020 Road shall be used as a designated skid trail for yarding in Unit #6. This road is not to be used for timber haul.

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

H-141 Additional Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

- a. No equipment may operate within, nor logs yarded through or over, the leave tree clump marked with yellow Leave Tree Area Boundary tags on the northwest edge of Unit 5 as shown on the Logging Plan Map. In addition, no use of trees as tailholds, nor operation of equipment, yarding of logs in, over or through will be permitted within the Riparian Management Zone between Unit 2 and Unit 3.
- b. Purchaser shall leave 2 down logs per acre. A log is defined as having a minimum diameter of 12 inches on the small end of the log and a minimum length of 20 feet or at least 100 board feet.

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.

H-250 Additional Falling Requirements

Within all Units, all live stems over 2" in diameter, except for leave trees, shall be felled. Trees shall be severed at a stump height not to exceed 12 inches and cut completely free of the stump. Cut trees shall not be left "hung up" or leaning against leave trees. Areas of young or immature timber may be excluded from this requirement 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 7/16/2015 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 C-4000-81, C-4010, C-4017, C-4030, C-4032, C-4100, C4110, C-4130, C-4200 and C-4500 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 all other roads used 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 State current Equipment Rate Schedule on file at the region and Olympia offices. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

C-080 Landing Locations Approved Prior to Construction

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

C-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-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

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

S-060 Pump Truck or Pump Trailer

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

S-100 Stream Cleanout

Slash or debris which enters any stream 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 yarding equipment may operate within the Riparian or Wetland Management Zones, or leave tree clumps in Units 1-5 and 7, 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 Typed water.

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

Purchaser is responsible for understanding and complying with all applicable local, state, and federal hazardous material/waste laws and regulations for operations conducted under this contract. Such regulations pertain to, but may not be limited to, hazardous material storage, handling and transport, personnel protection, release notification and emergency response, cleanup

and waste disposal. Purchaser shall be responsible for restoring the site in the event of a spill.

b. Hazardous Materials Spill Prevention

All operations shall be conducted in a manner that 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 4 to 6 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. 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 (ECY). It is the responsibility of the Purchaser to have all emergency contact information readily available and a means of remote communication for purposes of quick notification. In the event of a spill, the Purchaser is responsible for notifying the following:

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

DNR Contract Administrator

ECY - Northwest Region:

1-425-649-7000

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

ECY - Southwest Region:

1-360-407-6300

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

ECY - Central Region:

1-509-575-2490

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

ECY - Eastern Region:

1-509-329-3400

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

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.

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 harvest area.

DRAFT

DRAFT

DRAFT

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

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Purchaser

Art Tasker
South Puget Sound Region Manager

Date: _____
Address: _____

Date: _____

CORPORATE ACKNOWLEDGEMENT

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
Recreation Trail Clean Out and Repair

This schedule applies to the **Crestline, Wedekind, and Greenline** trails.

Purchaser is responsible for locating and marking the recreation trail on the ground within the sale boundary prior to harvest as approved by the Contract Administrator (CA).

- If needed, upon completion of harvest activities Purchaser shall locate the original recreation trail with pink fluorescent flagging. The CA will then approve the trail location in writing and repair/clean out can begin.

Trail closures shall be posted by the Purchaser prior to operations at each end of the harvest unit and at the nearest junction with another trail or road. Posting signs will include the date posted, closure periods, and anticipated re-openings. Closure signs will be maintained by the Purchaser during the sale and will be removed after the approval of the final trail cleaning following harvest.

Recreation trail repair/clean out shall occur within 2 weeks of completion of harvest activity within 200 feet of the trail and shall consist of the following:

- Remove all logging debris from the recreation trail and the area on each side of the trail within 5 feet of the travel path.
- Trail will be repaired where holes or ruts resulted due to logging damage. The trail will be returned to its original width on mineral soils and free of organic debris.
- Existing drainage control measures shall be returned to pre-harvest condition.

All work described above shall be done as determined by the CA. The logging release for the unit will not be issued until repair and clean out is completed and approved in writing by the CA.



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

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

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

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

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

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

EXCISE TAX EXEMPT ACTIVITIES

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

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

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

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

(Revised 6/13)

PRE-CRUISE NARRATIVE

Sale Name: Up Top	Region: South Puget Sound
Agreement #: 30-092039	District: Black Hills
Contact Forester: Cameron Eskeberg	Phone/ Location: (360) 480-9702
Alternate Contact: Derwood Duncan III	Phone/ Location: (360) 280-3113

Type of Sale (lump sum, mbf scale, tonnage scale or contract harvest): Lump Sum
 Required or Optional removal of utility as pulp: No
 Evaluated for RFRS Implementation?: Yes, RMZ's where on projected path to future desired conditions, had risk protected geological features, or not cost efficient.
 Percentage cable (specify downhill vs uphill): 85% uphill
 Percentage ground based: 15%
 Species Onsite: RC, DF, WH, RA, BC, BLM, NF, SF, SS, Other:(Please List)

UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit #	Harvest R/W or RMZ WMZ	Legal Description Sec/Twp/Rng	Grant	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 9,16/ T 17 N/ R 4W	03	64.3	0	2.0	1.4	0	60.9	Garmin 64s
2		Sec 9,10/ T 17N/ R 4 W	03	37.6	0	2.2	1	0	34.4	Garmin 64s
3		Sec 10/ T 17N/ R 4W	03	14.2	0	0.9	0.2	0	13.1	Garmin 64s
4		Sec 11,14/ T 17N/ R 4W	03	53.5	0	3.8	0	0	49.7	Garmin 64s
5		Sec 11,14/ T 17N/ R 4W	02,10	95.8	0	6.2	0.2	0	89.4	Garmin 64s
6		Sec 15/ T 17N/ R 4W	02	1.1	0	0	0	0	1.1	Garmin 64s
7		Sec 22/ T 17N/ R 4W	42,02	45.6	0	3.9	0	0	41.7	Garmin 64s
8 (ROW)		Sec 10/ T17N/ R 4W	03	6	0	0	0	0	6	Garmin 64s
9 (ROW)		Sec 01/ T 17N/ R 3W	10	2	0	0	0	0	2	Garmin 64s
10		Sec 10/ T 17N/ R 4W	03	0.6	0	0	0	0	0.6	Garmin 64s
TOTAL ACRES				320.7	0	19	2.8	0	298.9	

HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Mark leave, take, etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and C-4110 road. Clumped leave trees are marked with yellow "Leave Tree Area" tags, blue ringed individually marked trees , and pink flagging.		512 Trees
2	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and C-4100 road. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.		304 Trees
3	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.		112 Trees
4	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and C-4000 road. Clumped leave trees are marked with yellow "Leave Tree Area" tags and pink flagging.		432 Trees

5	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and C-4200 and C-4010 road. Clumped leave trees are marked with yellow "Leave Tree Area" tags, blue ringed individually marked trees , and pink flagging.		1130 Trees
6	Pit expansion clearing: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, and C-Line, Reprod.	Expansion of Low Bank rock pit.	0 Trees
7	Variable Retention Harvest: Boundaries are marked with white "Timber Sale Boundary" tags and pink flagging, Reprod, and C-4032 road. Clumped leave trees are marked with yellow "Leave Tree Area" tags, blue ringed individually marked trees , and pink flagging.		368 Trees
8 (ROW)	All take trees are marked with a red "X." along the C-4000.		0 Trees
9 (ROW)	All take trees are marked with a red "X." along the C-4000.		0 Trees
10 (ROW)	All take trees are bound within the orange "Right-of-Way Boundary Tags"		0 Trees

OTHER PRE-CRUISE INFORMATION:

Unit #	Estimated Volume	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	See cruise	C- Line to C-4000 to C-4100	
2	See cruise	C-Line to C-4000 to C-4100	
3	See cruise	C-Line to C-4000 to C-4100	
4	See cruise	C-Line to C-4000	
5	See cruise	C-Line to C-4000 to C-4200	
6	See cruise	C-Line	
7	See cruise	C-Line to C-4030 to C-4032	
8 (ROW)	See cruise	C-Line to C-4000	
9 (ROW)	See cruise	C-Line to C-4000	
10 (ROW)	See cruise	C-Line to C-4000 to C-4100 to C-4130	

REMARKS:

From I-5, (exit 95) turn west on Maytown Rd. SW and follow for 2.8 miles and through the town of Littlerock for 0.1 mile Continue straight (west) onto 128th Ave and follow for 0.7 mile. Turn right (north) onto Waddell Creek Rd. and follow for 4.1 miles. Turn left (west) onto Sherman Valley Rd. Take the left onto the C-Line follow for 5.1 miles. Turn left (south) onto the C-4030 (road is blocked) walk in 1400 ft. and continue walking on the C-4032 for 400 ft. to Unit 7. Continue on the C-Line from the C-Line and C-4030 junction for 0.9 mile, Unit 6 on the right next to Low Bank Pit. Continue on the C-Line for 1.2 miles and turn right (north) on the C-4000 for 0.6 mile. Turn left (west) onto the C-4100 for 0.4 mile to Unit 1. Continue on the C-4100 till the end and you will find Units 2 and 3. From the C-4000 and C-4010 turn right (east) on the C-4010 for 1.9 to Unit 5.

Prepared By: Cameron Eskeberg Date: 07/15/2015	Title: Forester 1	CC: Derwood Duncan
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Revised 2/23/2007 (PSLD)

Cruise Narrative

Sale Name: Up Top	Region: South Puget Sound
App. #: 30-092039	District: Black Hills
Lead Cruiser: Aaron Coleman	Completion Date: 8-18-2015
Other Cruisers: John Piety	

Unit acreage specifications:

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	60.9	Yes	
2	34.4	Yes	
3	13.1	Yes	
4	49.7	Yes	
5	89.4	Yes	
6	1.1	Yes	
7	41.7	Yes	
8 (ROW)	6	Yes	
9 (ROW)	2	Yes	
10 (ROW)	0.6	Yes	
Total	298.9	Yes	

Unit cruise specifications:

Unit #	Sample type (VP, FP, ITS, 100%)	Expansion factor (BAF, full/half)	Sighting height (4.5 ft, 16 ft.)	Grid size (Plot spacing or % of area)	Plot ratio (Cru./Tally)	Total number of plots
1	VP	40	4.5 ft	250' x 250'	1:1	43
3	VP	40	4.5 ft	208' x 208'	1:1	32
3	VP	40	4.5 ft	208' x 208'	1:1	13
4	VP	46.94 – Majors 33.61 - Minors	4.5 ft	208' x 208'	1:1	48
5	VP	40	4.5 ft	250' x 250'	1:2	62
6	ITS	1:5.20 – DF 1:4.75 – WH	n/a	n/a	n/a	n/a
7	VP	40	4.5 ft	208' x 208'	1:1	39
8 (ROW)	ITS	1:5.00 – DF 1:2.83 – NF 1:4.25 – RC 1:3.00 – RA 1:2.20 – WH	n/a	n/a	n/a	n/a
9 (ROW)	ITS	1:2.00 – DF 1:5.00 – NF	n/a	n/a	n/a	n/a
10 (ROW)	VP	40	4.5 ft	132' x 132'	Cruise All	7

Sale/Cruise Description:

Minor species cruise intensity:	Cruised on appropriate plots.					
Minimum cruise spec:	40% Of Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.					
Avg. ring count by sp:	DF =	7	WH =	6	NF/SF =	6
Leave/take tree description:	Unit contains leave tree areas bounded with yellow "Leave Tree Area" tags and pink flagging as well as clumped and scattered trees marked with blue paint, except in unit 7 where there is old blue paint from a previous thinning. These trees should be considered "take" trees.					
Sort Description:	<p>HA - Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 1/2" 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 1/2" 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. (High Quality sort. Grades SM, 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27")</p> <p>HB - Logs meeting the following criteria: Surface characteristics for an Intermediate B sort will have sound tight knots not to exceed 1 1/2" in diameter. May include logs with not more than two larger knots up to 2 1/2" in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (Intermediate sort. Grades 2S, 3S. Lengths 16ft-40ft, 2ft multiples min TDIB 8". Max butt 27").</p> <p>D - Domestic quality logs that do not meet high quality or intermediate definitions. (Domestic sort. Grades 2S, 3S, 4S and utility. Lengths 16ft-40ft, min TDIB 2in.)</p> <p>O - Logs exceeding 27" on the large end. (Oversize sort. Grade 2S. Lengths 16ft-40ft, 2ft multiples butt diameter min dia. 27 in. +)</p> <p>R - Logs meeting the following criteria: Surface characteristics for a rough log sort will not meet the requirements for a domestic 2S, but still be in limitations for a domestic 3S. Meaning logs will contain excessive knots in excess of 2 1/2" and not exceeding 3" with a recovery of less than 65% of the net scale and greater than 33% of the gross scale. (Rough oversize sort. Grade 3S. Lengths 16ft-40ft, 2ft multiples TDIB 12"+)</p>					

Field observations:

<p>This sale consists of 7 VRH units and 3 Right-of-Way (ROW) units located off of the C-Line, C-4000, C-4100, C-4030, and C-4130 within Capitol State Forest.</p> <p>The species breakdown for this sale is as follows:</p> <p>Douglas-fir (DF): 65% Western Hemlock (WH): 13% Noble Fir (NF): 12% Silver Fir (SF): 9% Red Alder (RA): <1% Western redcedar (RC): <1% Sitka Spruce (SS): <1%</p> <p>The DF throughout this sale averages 18.4" diameter and 79' bole height, the WH averages 16.5" diameter and 71' bole height, the Noble Fir averages 15.7" diameter and 63' bole height, and the Silver Fir averages 17.6" diameter and 72' bole height. This sale contains a fair amount of high quality DF and WH logs, while domestic sorts make up the rest of the volume. Defect present throughout the sale consists of frost check in the true fir specifically, forked tops, broken tops, swollen butts, spike knots and root rot pockets were also present. All units were previously thinned and contain openings such as yarding corridors.</p> <p>Sound, dead trees were cruised when appropriate, and are represented by a 'D' in the status column of the cruise.</p>
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Recommended harvest systems for the sale is 85% uphill cable yarding and 15% ground-based yarding.

All roads to all units were in good, drivable condition at the time of the cruise with multiple access points and parking spots.

Grants: 02, 03, 10, 42

Prepared by: Aaron Coleman

Title: Timber Cruiser

TC		PSPCSTGR		Species, Sort Grade - Board Foot Volumes (Project)																	
T17N R04W S09 Ty00U1 THRU T17N R04W S09 Ty0U10				Project: UPTOP											Page 1						
				Acres 298.90											Date 8/18/2015		Time 1:26:04PM				
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
NF	CU	CU			100.0	7											7	4		0.00	17.0
NF	HB	2S	1	2.8	40	39	12			100						100	40	15	350	2.06	.1
NF	D	2S	35	9.1	1,262	1,148	343			81	19	0		0	100		40	14	255	1.70	4.5
NF	D	3S	34	5.4	1,170	1,107	331		100				2	13	85		38	9	111	0.81	10.0
NF	D	4S	25	3.7	821	791	236	96	4			10	36	22	32		29	5	35	0.39	22.7
NF	OS	2S	5	5.1	155	147	44				100	1			99		40	18	507	3.01	.3
NF Totals				12	6.5	3,456	3,233	966	23	35	30	11	3	10	10	78	25	6	59	0.68	54.6
DF	CU	CU		100.0	4												3	6		0.00	46.8
DF	HA	2S	1	1.3	177	175	52			100					100		40	14	286	1.56	.6
DF	HA	3S			96	96	29		100						100		40	10	160	0.88	.6
DF	HB	2S	14	2.8	2,467	2,399	717			68	32				100		40	14	286	1.64	8.4
DF	HB	3S	9	1.3	1,605	1,584	473		100						100		40	10	148	0.91	10.7
DF	D	SM	1	2.4	112	109	33				100				100		40	16	391	2.05	.3
DF	D	2S	32	5.0	5,784	5,495	1,642			71	29	1	0	2	98		40	14	280	1.72	19.6
DF	D	3S	18	3.1	3,203	3,104	928		100			0	2	11	87		38	9	120	0.87	25.8
DF	D	4S	14	1.8	2,531	2,486	743	91	9			9	18	13	61		32	6	43	0.42	58.5
DF	D	UT			22	22	7	52	48			29	34		38		22	6	33	0.53	.7
DF	OS	2S	10	5.5	1,812	1,713	512				100			1	99		40	22	775	3.82	2.2
DF	OS	UT	1		19	19	6				100	100					18	20	310	3.38	.1
DF Totals				65	3.5	17,833	17,201	5,141	13	29	33	24	2	3	5	91	27	8	99	0.92	174.2
DF	D	CU	CU		100.0	2											14	8		0.00	.1
DF	D	D	2S	51	17.7	31	26	8		44	56			3	97		39	14	245	1.96	.1
DF	D	D	4S	5	45.5	5	3	1		100				100			30	10	60	0.97	.0
DF	D	D	UT	18		9	9	3	3	97				45	3	52	24	11	100	1.12	.1
DF	D	OS	2S	26	35.5	19	13	4			100				100		40	21	490	4.00	.0
DF Totals				0	24.7	66	50	15	1	22	23	54	8	6	1	85	26	11	127	1.52	.4
WH	CU	CU		100.0	0												4	6		0.00	11.4
WH	HB	2S	4	4.0	158	152	45			100					100		40	13	265	1.63	.6
WH	HB	3S	2		66	66	20		100						100		40	11	180	1.12	.4
WH	D	2S	40	5.7	1,490	1,405	420			84	16			1	99		40	14	261	1.69	5.4
WH	D	3S	28	3.7	987	950	284		100				3	7	91		39	9	123	0.83	7.7
WH	D	4S	21	1.2	751	742	222	91	9			6	17	10	66		32	6	43	0.42	17.3
WH	D	UT	1		53	53	16		100						100		40	8	104	0.69	.5
WH	OS	2S	4	5.9	115	108	32				100				100		40	18	486	3.05	.2
WH Totals				13	4.0	3,620	3,476	1,039	19	33	38	10	1	5	4	90	27	8	80	0.79	43.5
WH	D	CU	CU														7			0.00	.0
WH	D	D	2S	56	8.3	9	8	2		100					100		40	15	330	2.18	.0
WH	D	D	3S	26	16.7	4	4	1		100					100		40	11	150	1.31	.0
WH	D	D	4S	12		2	2	0	100						100		38	7	70	0.75	.0
WH	D	D	UT	6		1	1	0	100				100				22	6	30	0.43	.0
WH Totals				0	9.4	15	14	4	17	26	57			5	95		23	9	97	1.27	.1
RA	CU	CU		100.0	0												8	6		0.00	1.1
RA	D	C2	10	5.6	11	10	3		100						100		40	11	170	1.31	.1
RA	D	C3	14		14	14	4		100						100		40	10	150	0.97	.1
RA	D	C4	49	4.5	52	50	15		100				22	78			37	9	91	0.77	.5

TC PSPCSTGR **Species, Sort Grade - Board Foot Volumes (Project)**

T17N R04W S09 Ty00U1 THRU T17N R04W S09 Ty0U10	Project: UPTOP Acres 298.90	Page 2 Date 8/18/2015 Time 1:26:04PM
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S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def% Gross Net			Total Net MBF	Percent of Net Board Foot Volume								Average Log				Logs Per /Acre	
								Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
RA	D	C5	27	15.1	31	26	8	100					51	42	7		20	7	28	0.36	.9
RA Totals			0	7.3	108	100	30	26	74				13	22	2	63	20	7	37	0.54	2.7
RC	CU	CU															6	5		0.00	.9
RC	D	3S	41	6.8	50	46	14		50	50			46		54		34	11	141	1.57	.3
RC	D	4S	34		37	37	11	100					10	45	3	42	30	6	40	0.52	.9
RC	OS	3S	25	14.0	31	27	8				100						40	19	559	4.28	.0
RC Totals			0	6.6	119	111	33	34	21	21	24		3	34	1	61	21	7	51	0.88	2.2
SF	CU	CU															2	6		0.00	9.5
SF	HB	2S	35	5.6	877	828	247			76	24				7	93	39	14	252	1.62	3.3
SF	HB	3S	15	1.1	357	353	106		100							100	40	10	141	0.94	2.5
SF	D	2S	27	8.1	678	623	186			59	41			4	14	82	37	14	256	1.73	2.4
SF	D	3S	9	2.5	212	207	62		100						11	11	37	9	97	0.78	2.1
SF	D	4S	14	4.8	339	323	97	95	5				6	24	15	54	30	6	39	0.42	8.2
SF Totals			9	5.3	2,464	2,334	698	13	25	43	20		1	5	9	84	24	8	83	0.94	28.0
SS	CU	CU															4	20		0.00	.0
SS	D	UT	13		0	0	0		100					100			28	10	100	1.36	.0
SS	OS	2S	87	13.2	1	1	0				100					100	40	21	660	4.54	.0
SS Totals			0	11.6	2	1	0		13		87			13		87	24	17	253	3.05	.0
Totals				4.2	27,682	26,519	7,927	15	30	34	20		2	4	5	88	26	8	87	0.86	305.8

TC PSTATS		PROJECT STATISTICS							PAGE	1	
		PROJECT			UPTOP				DATE	8/18/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04	09	UPTOP	00U1	THR	298.90	247	1,441	S	W	
17N	04W	09	UPTOP	00U10							
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL			247	1441	5.8						
CRUISE			132	641	4.9	34,460	1.9				
DBH COUNT REFOREST COUNT			111	522	4.7						
BLANKS			4								
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		363	63.1	18.4	79	27.1	116.3	17,833	17,201	4,345	4,341
DOUG FIR-D		4	.1	24.7	82	0.1	.4	66	50	16	16
WHEMLOCK		99	17.3	16.5	71	6.3	25.7	3,620	3,476	941	940
WHEMLOCK-D		2	.0	21.6	73	0.0	.1	15	14	4	4
NOBLE F		113	22.8	15.7	63	7.7	30.5	3,456	3,233	914	912
PS FIR		29	9.7	17.6	72	3.9	16.4	2,464	2,334	621	621
WR CEDAR		17	1.0	16.7	51	0.4	1.5	119	111	41	41
R ALDER		13	1.2	13.1	48	0.3	1.1	108	100	29	29
S SPRUCE		1	.0	33.0	75	0.0	.0	2	1	0	0
TOTAL		<i>641</i>	<i>115.3</i>	<i>17.5</i>	<i>73</i>	<i>45.9</i>	<i>192.0</i>	<i>27,682</i>	<i>26,519</i>	<i>6,913</i>	<i>6,905</i>
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL	68.1	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		98.2	5.2	405	427	449					
DOUG FIR-D		62.0	35.4	237	368	498					
WHEMLOCK		59.8	6.0	248	264	280					
WHEMLOCK-D		53.6	50.2	144	290	436					
NOBLE F		88.8	8.3	224	244	264					
PS FIR		47.6	9.0	291	319	348					
WR CEDAR		135.7	33.9	103	156	210					
R ALDER		53.7	15.5	78	92	107					
S SPRUCE											
TOTAL		<i>100.1</i>	<i>4.0</i>	<i>336</i>	<i>350</i>	<i>364</i>	<i>400</i>	<i>204</i>	<i>100</i>		
CL	68.1	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		79.0	4.2	97	101	106					
DOUG FIR-D		64.8	37.0	74	118	161					
WHEMLOCK		55.3	5.6	68	72	76					
WHEMLOCK-D		42.8	40.1	53	89	124					
NOBLE F		78.7	7.4	61	66	71					
PS FIR		42.9	8.1	78	85	91					
WR CEDAR		128.6	32.1	38	56	74					
R ALDER		50.5	14.6	24	28	32					
S SPRUCE											
TOTAL		<i>80.3</i>	<i>3.2</i>	<i>85</i>	<i>87</i>	<i>90</i>	<i>257</i>	<i>131</i>	<i>64</i>		
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		91.6	5.8	59	63	67					
DOUG FIR-D		900.2	57.2	0	0	0					
WHEMLOCK		209.0	13.3	15	17	20					
WHEMLOCK-D		1169.5	74.4	0	0	0					

TC PSTATS			PROJECT STATISTICS							PAGE	2	
			PROJECT			UPTOP				DATE	8/18/2015	
TWP	RGE	SC	TRACT	TYPE		ACRES			PLOTS	TREES	CuFt	BdFt
17N	04	09	UPTOP	00U1	THR	298.90			247	1,441	S	W
17N	04W	09	UPTOP	00U10								
CL	68.1	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.			
SD:	1.00	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10			
NOBLE F		291.7	18.5	19	23	27						
PS FIR		339.9	21.6	8	10	12						
WR CEDAR		690.1	43.9	1	1	1						
R ALDER		710.5	45.2	1	1	2						
S SPRUCE		1571.6	99.9	0	0	0						
TOTAL		69.6	4.4	110	115	120	194	99	48			
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		80.5	5.1	110	116	122						
DOUG FIR-D		880.8	56.0	0	0	1						
WHEMLOCK		191.5	12.2	23	26	29						
WHEMLOCK-D		1169.5	74.4	0	0	0						
NOBLE F		257.1	16.3	26	31	36						
PS FIR		333.4	21.2	13	16	20						
WR CEDAR		630.9	40.1	1	2	2						
R ALDER		709.2	45.1	1	1	2						
S SPRUCE		1571.6	99.9	0	0	0						
TOTAL		54.4	3.5	185	192	199	118	60	30			
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		86.3	5.5	16,257	17,201	18,145						
DOUG FIR-D		889.7	56.6	22	50	78						
WHEMLOCK		196.4	12.5	3,042	3,476	3,910						
WHEMLOCK-D		1169.5	74.4	4	14	24						
NOBLE F		245.3	15.6	2,728	3,233	3,737						
PS FIR		335.6	21.3	1,836	2,334	2,831						
WR CEDAR		697.5	44.3	62	111	160						
R ALDER		828.3	52.7	48	100	153						
S SPRUCE		1571.6	99.9	0	1	3						
TOTAL		55.7	3.5	25,579	26,519	27,459	124	63	31			
CL	68.1	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.			
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10			
DOUG FIR		82.5	5.2	4,114	4,341	4,569						
DOUG FIR-D		891.4	56.7	7	16	25						
WHEMLOCK		194.6	12.4	824	940	1,056						
WHEMLOCK-D		1169.5	74.4	1	4	7						
NOBLE F		248.9	15.8	768	912	1,056						
PS FIR		335.5	21.3	489	621	754						
WR CEDAR		683.5	43.5	23	41	58						
R ALDER		794.1	50.5	14	29	44						
S SPRUCE		1571.6	99.9	0	0	1						
TOTAL		54.2	3.4	6,667	6,905	7,143	117	60	29			
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				140	148	156						
DOUG FIR-D		889.7	56.6	50	114	179						
WHEMLOCK		105.4	6.7	119	136	152						
WHEMLOCK-D		1045.1	66.4	29	113	198						
NOBLE F		147.4	9.4	89	106	122						
PS FIR		175.9	11.2	112	142	173						
WR CEDAR		318.5	20.2	40	72	104						
R ALDER		458.2	29.1	43	92	140						
S SPRUCE		1571.6	99.9	0	128	256						
TOTAL		110.5	7.0	133	138	143	488	249	122			

T17N R04W S09 T00U1										T17N R04W S09 T00U1				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
17N	04W	09	UPTOP	00U1	60.90	43	108	S	W					

Spp	S	So	Gr	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
NF	CU	CU			100.0	30											7	4		0.00	60.2
NF	HB	2S		1	2.8	197	192	12		100							40	15	350	2.06	.5
NF	DM	2S		34	10.8	3,926	3,500	213		90	10						40	13	241	1.69	14.5
NF	DM	3S		35	5.5	3,747	3,540	216	100				16	84			38	9	113	0.82	31.4
NF	DM	4S		25	4.9	2,743	2,610	159	94	6			9	41	18	31	29	5	34	0.40	76.8
NF	OS	2S		5	4.4	438	419	26			100						40	18	539	3.15	.8
NF	Totals			49	7.4	11,082	10,261	625	24	36	33	7	2	11	10	77	24	6	56	0.67	184.2
DF	CU	CU															2	6		0.00	48.9
DF	HB	2S		13	3.3	1,473	1,424	87		83	17						40	13	245	1.51	5.8
DF	HB	3S		15		1,623	1,623	99		100							40	10	155	0.93	10.5
DF	DM	2S		33	5.5	3,624	3,424	209		69	31			5	95		39	13	256	1.70	13.4
DF	DM	3S		14	4.5	1,581	1,510	92		100			4	9	87		38	9	122	0.90	12.3
DF	DM	4S		24	4.5	2,640	2,522	154	93	7			5	13	9	73	33	6	45	0.44	55.8
DF	DM	UT		1	.0	57	57	3	29	71			29				27	7	54	0.75	1.1
DF	Totals			50	4.0	10,997	10,560	643	22	32	34	12	1	4	5	90	25	7	71	0.80	147.8
WH	DM	2S		88	8.3	93	85	5		100							40	13	220	1.66	.4
WH	DM	4S		12		12	12	1	100					100			26	6	30	0.56	.4
WH	Totals			0	7.4	104	97	6	12	88				12	88		33	10	125	1.23	.8
Type Totals					5.7	22,183	20,918	1,274	23	34	33	10	2	7	8	84	24	7	63	0.73	332.8

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
		Project: UPTOP										Date 8/18/2015										
												Time 1:26:05PM										
T17N R04W S09 T00U2										T17N R04W S09 T00U2												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
17N	04W	09	UPTOP	00U2	34.40	32	76	S	W													
S Spp	So T	Gr rt	ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf		
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft				
WH	CU	CU														3	6		0.00		42.8	
WH	DM	2S		32	5.3	4,542	4,302	148		93	7				100	40	13	251	1.58		17.1	
WH	DM	3S		42	2.3	5,832	5,700	196	100				3	4	93	39	9	122	0.76		46.6	
WH	DM	4S		24	.8	3,175	3,148	108	99	1		6	19	2	73	33	5	41	0.36		76.7	
WH	DM	UT		2		252	252	9	100						100	40	9	120	0.76		2.1	
WH	Totals			50	2.9	13,801	13,402	461	23	45	30	2	1	6	2	91	28	7	72	0.66		185.4
DF	CU	CU														3	7		0.00		21.4	
DF	HA	2S		3		328	328	11		100					100	40	14	290	1.63		1.1	
DF	HB	2S		10	1.0	1,074	1,063	37		64	36				100	40	15	372	1.94		2.9	
DF	DM	2S		45	4.8	5,115	4,870	168		81	19	2			98	39	14	256	1.68		19.0	
DF	DM	3S		23	5.1	2,627	2,493	86	100					4	96	39	9	111	0.82		22.4	
DF	DM	4S		12	4.9	1,262	1,200	41	94	6		16	18	21	45	30	6	36	0.41		33.4	
DF	OS	2S		7	1.7	753	740	25			100				100	40	20	689	3.61		1.1	
DF	Totals			40	4.2	11,159	10,694	368	11	24	46	19	3	2	3	92	29	9	106	0.98		101.3
DF	D	CU	CU													10	7		0.00		.4	
DF	D	DM	2S		85	15.0	147	125	4		100				100	40	16	340	2.40		.4	
DF	D	DM	4S		15	45.5	40	22	1	100			100			30	10	60	0.97		.4	
DF	D	Totals		1	21.6	187	147	5		15	85		15		85	27	11	133	1.57		1.1	
NF	CU	CU														6	4		0.00		10.9	
NF	DM	2S		37	.0	797	797	27		100					100	40	14	322	1.77		2.5	
NF	DM	3S		33		699	699	24	100						100	39	8	88	0.62		7.9	
NF	DM	4S		30		623	623	21	100			27	15	47	11	24	6	36	0.35		17.5	
NF	Totals			8		2,120	2,120	73	29	33	38		8	4	14	74	23	6	55	0.57		38.9
RA	CU	CU														11	5		0.00		4.3	
RA	DM	C4		48		95	95	3	100				100			30	9	70	0.68		1.4	
RA	DM	C5		52	22.9	129	100	3	100			41	59			20	6	23	0.29		4.3	
RA	Totals			1	13.2	224	195	7	51	49		21	79			17	6	20	0.30		10.0	
Type	Totals				3.4	27,491	26,557	914	19	35	37	9	3	5	3	89	27	8	79	0.75		336.6

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1								
												Date		8/18/2015							
												Time		1:26:05PM							
T17N R04W S09 T00U7										T17N R04W S09 T00U7											
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt												
17N	04W	09	UPTOP	00U7	41.70	39	96	S	W												
Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log			Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd		CF/ Lf
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft			
DF		CU	CU		100.0	28										6	6		0.00		43.4
DF		HA	2S	2	1.7	998	981	41		100					100	40	14	285	1.54		3.4
DF		HA	3S	2		689	689	29		100					100	40	10	160	0.88		4.3
DF		HB	2S	18	3.6	6,538	6,306	263		36	64				100	40	16	377	2.02		16.7
DF		HB	3S	6	.7	2,173	2,158	90		100					100	40	10	140	0.87		15.4
DF		DM	SM	3	2.4	802	783	33							100	40	16	391	2.05		2.0
DF		DM	2S	23	2.5	8,531	8,319	347		45	55		2		98	39	15	324	1.78		25.7
DF		DM	3S	10	.8	3,284	3,256	136		100			9	22	69	36	10	121	0.85		26.8
DF		DM	4S	6		2,061	2,061	86	84	16			20	35	4	41	27	6	37	0.37	55.6
DF		OS	2S	29	5.7	10,969	10,344	431							2	98	40	22	828	3.98	12.5
DF		OS	UT	1		139	139	6					100			18	20	310	3.38		.4
DF	Totals			95	3.2	36,213	35,037	1,461	5	18	20	57	2	3	3	92	29	10	170	1.28	206.3
DF	D	CU	CU													11			0.00		.2
DF	D	DM	UT	26		33	33	1		100					100	40	11	180	1.53		.2
DF	D	OS	2S	74	35.5	140	90	4							100	40	21	490	4.00		.2
DF	D	Totals		0	28.7	173	123	5		27	73				100	27	14	223	2.76		.6
WH		CU	CU													8	4		0.00		5.7
WH		DM	2S	42	4.2	661	633	26		100					100	40	14	258	1.65		2.5
WH		DM	3S	16		249	249	10		100			14		86	35	10	124	1.00		2.0
WH		DM	4S	20		302	302	13	100				14		86	37	5	45	0.45		6.7
WH		OS	2S	22	5.0	340	323	13							100	40	19	570	3.12		.6
WH	Totals			4	2.9	1,552	1,507	63	20	17	42	21		5	95	28	7	86	0.86		17.5
RC		CU	CU													11	8		0.00		.4
RC		DM	3S	30	5.8	94	89	4		20	80				100	39	12	180	1.91		.5
RC		DM	4S	3		8	8	0	100						100	34	5	40	0.86		.2
RC		OS	3S	67	14.0	225	194	8							100	40	19	559	4.28		.3
RC	Totals			1	11.3	328	291	12	3	6	24	67		3	97	32	12	207	2.31		1.4
Type Totals					3.4	38,265	36,958	1,541	5	18	21	55	2	3	3	93	29	10	164	1.26	225.7

T17N R04W S09 T00U9										T17N R04W S09 T00U9				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
17N	04W	09	UPTOP	00U9	2.00	1	19	S	W					

S Twp	So Rge	Gr Sec	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
								Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
NF	CU	CU		100.0	125											9	4		0.00	137.5
NF	DM	3S	47	14.9	5,875	5,000	10		100				50	50		35	9	80	0.69	62.5
NF	DM	4S	53	2.2	5,625	5,500	11	100			14	30	11	45		28	5	34	0.31	162.5
NF	Totals		89	9.7	11,625	10,500	21	52	48		7	15	30	48		22	5	29	0.37	362.5
DF	CU	CU														7	5		0.00	12.0
DF	DM	3S	68		880	880	2		100		18			82		35	10	110	0.80	8.0
DF	DM	4S	27		340	340	1	100			12	65		24		27	5	28	0.30	12.0
DF	DM	UT	5		60	60	0	100			100					16	7	30	0.41	2.0
DF	Totals		11		1,280	1,280	3	31	69		20	17		63		21	6	38	0.46	34.0
Type Totals				8.7	12,905	11,780	24	50	50		9	16	27	49		22	5	30	0.37	396.5

T	TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page	1							
												Date		8/18/2015						
												Time		1:26:05PM						
T17N R04W S09 T0U10										T17N R04W S09 T0U10										
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt											
17N	04W	09	UPTOP	0U10	.60	7	29	S	W											
S Spp	So T	Gr rt ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
				Def%	Gross	Net		Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf	
								5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft		
NF	CU	CU														0	9		0.00	23.4
NF	DM	2S	42	4.7	5,411	5,157	3			36	64	4		8	88	38	15	331	2.05	15.6
NF	DM	3S	17	.9	2,083	2,065	1		100				3	13	84	38	9	125	0.97	16.6
NF	DM	4S	11		1,394	1,394	1	42	58			5	24	35	36	30	7	59	0.59	23.8
NF	OS	2S	30	5.6	3,740	3,529	2				100	13			87	36	21	620	3.61	5.7
NF	Totals		57	3.8	12,629	12,145	7	5	24	15	56	6	3	9	81	25	10	143	1.40	85.1
DF	CU	CU														2	6		0.00	38.2
DF	DM	2S	38	7.0	3,114	2,897	2			54	46		15		85	37	14	246	1.74	11.8
DF	DM	3S	23	6.6	1,797	1,678	1		100					41	59	36	9	94	0.73	17.8
DF	DM	4S	37	4.3	2,905	2,781	2	45	55			7	39	13	40	29	6	46	0.46	60.6
DF	DM	UT	2		107	107	0	100				100				16	5	20	0.24	5.3
DF	Totals		35	5.8	7,923	7,463	4	18	43	21	18	4	20	14	61	22	7	56	0.68	133.7
DF	D	CU	CU													2	13		0.00	3.2
DF	D	DM	2S	71	23.1	420	323	0		100			100			22	13	100	1.25	3.2
DF	D	DM	UT	29		129	129	0	100					100		34	5	40	0.53	3.2
DF	D	Totals	2	17.6	550	453	0	29	71				71	29		19	10	47	0.78	9.7
RC	CU	CU														5	16		0.00	3.2
RC	DM	3S	62		393	393	0		100				100			30	12	150	1.60	2.6
RC	DM	4S	38		240	240	0	100					100			28	7	41	0.68	5.9
RC	Totals		3		633	633	0	38	62				100			22	10	54	0.92	11.7
SS	CU	CU														4	20		0.00	1.0
SS	DM	UT	13		96	96	0	100					100			28	10	100	1.36	1.0
SS	OS	2S	87	13.2	731	635	0			100				100		40	21	660	4.54	1.0
SS	Totals		3	11.6	827	731	0	13	87				13	87		24	17	253	3.05	2.9
Type Totals				5.0	22,562	21,425	13	11	29	19	41	5	14	11	70	23	9	88	1.00	243.1

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				UPTOP				DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U1	60.90	43	206	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES				
TOTAL		43	206	4.8						
CRUISE		21	108	5.1	8,184		1.3			
DBH COUNT										
REFOREST										
COUNT		21	94	4.5						
BLANKS		1								
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
NOBLE F	60	78.0	15.6	61	26.2	103.3	11,082	10,261	3,003	2,994
DOUG FIR	47	56.0	16.9	68	21.3	87.4	10,997	10,560	2,908	2,908
WHEMLOCK	1	.4	21.0	68	0.2	.9	104	97	31	31
TOTAL	108	134.4	16.2	64	47.7	191.6	22,183	20,918	5,943	5,934
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		71.2	9.2	182	201	219				
DOUG FIR		58.3	8.5	230	251	273				
WHEMLOCK										
TOTAL		65.1	6.3	209	223	237	169	86	42	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		65.9	8.5	53	58	63				
DOUG FIR		53.1	7.7	63	69	74				
WHEMLOCK										
TOTAL		59.7	5.7	59	63	67	142	73	36	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		139.8	21.3	61	78	95				
DOUG FIR		107.5	16.4	47	56	65				
WHEMLOCK		655.7	99.9	0	0	1				
TOTAL		71.9	11.0	120	134	149	206	105	52	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		115.7	17.6	85	103	121				
DOUG FIR		100.0	15.2	74	87	101				
WHEMLOCK		655.7	99.9	0	1	2				
TOTAL		49.4	7.5	177	192	206	97	50	24	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		112.7	17.2	8,500	10,261	12,023				
DOUG FIR		104.3	15.9	8,882	10,560	12,239				
WHEMLOCK		655.7	99.9	0	97	193				
TOTAL		46.4	7.1	19,440	20,918	22,396	86	44	21	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		112.2	17.1	2,482	2,994	3,506				
DOUG FIR		102.6	15.6	2,454	2,908	3,363				
WHEMLOCK		655.7	99.9	0	31	63				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	UPTOP			DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U1	60.90	43	206	S	W	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
TOTAL		46.1	7.0	5,517	5,934	6,350	85	43	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	
NOBLE F		69.3	10.6	82	99	116				
DOUG FIR		42.0	6.4	102	121	140				
WHEMLOCK		655.7	99.9	0	104	208				
TOTAL		187.6	28.6	101	109	117	1,405	717	351	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	UPTOP		DATE	8/18/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U2	34.40	32	151	S	W	
				TREES	ESTIMATED		PERCENT			
				PER PLOT	TOTAL		SAMPLE			
					TREES		TREES			
TOTAL		32	151	4.7						
CRUISE		19	76	4.0	4,494		1.7			
DBH COUNT										
REFOREST										
COUNT		13	60	4.6						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
WHEMLOCK	39	74.3	15.0	73	23.6	91.3	13,801	13,402	3,437	3,437
DOUG FIR	29	37.7	19.4	80	17.6	77.5	11,159	10,694	2,839	2,839
DOUG FIR-D	1	.4	25.0	82	0.2	1.3	187	147	46	46
NOBLE F	5	14.0	14.6	69	4.3	16.3	2,120	2,120	514	514
R ALDER	2	4.3	10.3	42	0.8	2.5	224	195	53	53
TOTAL	76	130.6	16.3	74	46.8	188.8	27,491	26,557	6,889	6,889
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		51.3	8.2	215	234	254				
DOUG FIR		65.3	12.3	326	372	418				
DOUG FIR-D										
NOBLE F		73.4	36.5	140	220	300				
R ALDER		94.3	88.3	7	60	113				
TOTAL		67.7	7.8	262	284	306	183	94	46	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		51.3	8.2	56	62	67				
DOUG FIR		53.6	10.1	86	96	105				
DOUG FIR-D										
NOBLE F		75.2	37.4	34	54	75				
R ALDER		88.6	83.0	3	16	29				
TOTAL		60.5	6.9	69	74	79	146	75	37	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		86.8	15.3	63	74	86				
DOUG FIR		87.2	15.4	32	38	43				
DOUG FIR-D		565.7	99.9	0	0	1				
NOBLE F		229.0	40.5	8	14	20				
R ALDER		421.5	74.4	1	4	8				
TOTAL		50.2	8.9	119	131	142	101	51	25	
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		79.7	14.1	78	91	104				
DOUG FIR		70.5	12.5	68	78	87				
DOUG FIR-D		565.7	99.9	0	1	2				
NOBLE F		215.3	38.0	10	16	22				
R ALDER		393.5	69.5	1	3	4				
TOTAL		35.4	6.3	177	189	201	50	26	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	
WHEMLOCK		84.6	14.9	11,399	13,402	15,404				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	UPTOP			DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U2	34.40	32	151	S	W	
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		64.1	11.3	9,483	10,694	11,906				
DOUG FIR-D		565.7	99.9	0	147	293				
NOBLE F		213.8	37.8	1,319	2,120	2,920				
R ALDER		424.6	75.0	49	195	341				
TOTAL		39.8	7.0	24,692	26,557	28,423	63	32	16	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
WHEMLOCK		83.0	14.7	2,933	3,437	3,941				
DOUG FIR		66.4	11.7	2,507	2,839	3,172				
DOUG FIR-D		565.7	99.9	0	46	92				
NOBLE F		213.3	37.7	320	514	707				
R ALDER		416.0	73.5	14	53	92				
TOTAL		36.5	6.4	6,446	6,889	7,333	53	27	13	
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				125	147	169				
DOUG FIR				122	138	154				
DOUG FIR-D		565.7	99.9	0	117	235				
NOBLE F		52.2	9.2	81	130	180				
R ALDER		424.6	75.0	19	78	136				
TOTAL		192.4	34.0	131	141	151	1,478	754	369	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	UPTOP		DATE	8/18/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U3	13.10	13	46	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		13	46	3.5						
CRUISE		12	46	3.8	1,266	3.6				
DBH COUNT										
REFOREST										
COUNT										
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	35	76.6	16.1	78	26.9	107.7	15,440	15,010	3,838	3,838
DOUG FIR-D	1	1.3	21.0	84	0.7	3.1	435	333	115	101
WHEMLOCK	6	9.5	18.9	86	4.2	18.5	2,964	2,877	742	742
R ALDER	3	7.6	14.9	60	2.4	9.2	1,176	1,093	300	300
NOBLE F	1	1.7	18.0	77	0.7	3.1	400	244	103	104
TOTAL	46	96.7	16.4	78	35.0	141.5	20,415	19,556	5,099	5,085
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		58.3	9.9	228	253	278				
DOUG FIR-D										
WHEMLOCK		35.8	15.9	272	323	375				
R ALDER		20.8	14.4	126	147	168				
NOBLE F										
TOTAL		55.5	8.2	232	253	274	123	63	31	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		56.6	9.6	59	65	71				
DOUG FIR-D										
WHEMLOCK		28.9	12.8	72	82	93				
R ALDER		14.7	10.2	36	40	44				
NOBLE F										
TOTAL		52.0	7.7	61	66	71	108	55	27	
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		73.1	21.1	60	77	93				
DOUG FIR-D		360.6	103.9		1	3				
WHEMLOCK		188.6	54.4	4	10	15				
R ALDER		360.6	103.9		8	15				
NOBLE F		360.6	103.9		2	4				
TOTAL		55.0	15.8	81	97	112	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		57.5	16.6	90	108	126				
DOUG FIR-D		360.6	103.9		3	6				
WHEMLOCK		190.0	54.8	8	18	29				
R ALDER		360.6	103.9		9	19				
NOBLE F		360.6	103.9		3	6				
TOTAL		39.3	11.3	125	142	158	67	34	17	
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		56.5	16.3	12,566	15,010	17,454				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	UPTOP			DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U3	13.10	13	46	S	W	
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-D		360.6	103.9		333	678				
WHEMLOCK		201.5	58.1	1,205	2,877	4,548				
R ALDER		360.6	103.9		1,093	2,229				
NOBLE F		360.6	103.9		244	497				
TOTAL		40.3	11.6	17,286	19,556	21,825	70	36	18	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		56.2	16.2	3,217	3,838	4,460				
DOUG FIR-D		360.6	103.9		101	207				
WHEMLOCK		195.4	56.3	324	742	1,160				
R ALDER		360.6	103.9		300	612				
NOBLE F		360.6	103.9		104	211				
TOTAL		38.2	11.0	4,525	5,085	5,646	63	32	16	
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		56.5	16.3	117	139	162				
DOUG FIR-D		360.6	103.9		108	220				
WHEMLOCK		201.5	58.1	65	156	246				
R ALDER		360.6	103.9		118	241				
NOBLE F		360.6	103.9		79	162				
TOTAL		40.3	11.6	122	138	154	70	36	18	

TC TSTATS		STATISTICS								PAGE	1
		PROJECT				UPTOP				DATE	8/18/2015
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
17N	04W	09	UPTOP	00U4	49.70	48	194	S	W		
				TREES	ESTIMATED		PERCENT				
				PER PLOT	TOTAL		SAMPLE				
					TREES		TREES				
TOTAL		48	194	4.0							
CRUISE		28	110	3.9	5,091		2.2				
DBH COUNT											
REFOREST											
COUNT		20	74	3.7							
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
DOUG FIR	62	51.9	19.2	75	23.9	104.6	13,973	13,231	3,639	3,635	
WHEMLOCK	26	22.9	17.7	64	9.3	39.1	5,085	4,791	1,358	1,350	
NOBLE F	16	24.2	17.0	67	9.3	38.1	4,872	4,631	1,243	1,243	
WR CEDAR	4	2.5	17.5	48	1.0	4.2	303	287	106	106	
R ALDER	2	.9	16.6	47	0.3	1.4	116	113	37	37	
TOTAL	110	102.4	18.3	69	43.8	187.5	24,348	23,053	6,383	6,372	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		53.4	6.8	311	334	357					
WHEMLOCK		52.1	10.4	280	312	345					
NOBLE F		58.7	15.1	234	276	318					
WR CEDAR		55.9	32.0	92	135	178					
R ALDER		43.5	40.7	77	130	183					
TOTAL		55.8	5.3	293	309	326	125	64	31		
CL:	68.1 %	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR		45.7	5.8	86	91	96					
WHEMLOCK		47.8	9.6	79	88	96					
NOBLE F		56.2	14.5	64	75	85					
WR CEDAR		55.9	31.9	34	50	66					
R ALDER		35.4	33.1	28	42	56					
TOTAL		49.0	4.7	81	85	89	96	49	24		
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		76.3	11.0	46	52	58					
WHEMLOCK		188.9	27.2	17	23	29					
NOBLE F		195.6	28.2	17	24	31					
WR CEDAR		324.3	46.8	1	3	4					
R ALDER		498.8	71.9	0	1	2					
TOTAL		45.2	6.5	96	102	109	81	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		
DOUG FIR		68.8	9.9	94	105	115					
WHEMLOCK		149.2	21.5	31	39	48					
NOBLE F		189.4	27.3	28	38	49					
WR CEDAR		314.2	45.3	2	4	6					
R ALDER		484.7	69.9	0	1	2					
TOTAL		33.0	4.8	179	187	196	43	22	11		
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		75.3	10.9	11,795	13,231	14,667					

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	UPTOP			DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U4	49.70	48	194	S	W	
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		152.7	22.0	3,736	4,791	5,846				
NOBLE F		186.0	26.8	3,388	4,631	5,873				
WR CEDAR		318.5	45.9	155	287	419				
R ALDER		486.1	70.1	34	113	191				
TOTAL		38.2	5.5	21,783	23,053	24,323	58	30	15	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		72.1	10.4	3,257	3,635	4,013				
WHEMLOCK		151.0	21.8	1,056	1,350	1,644				
NOBLE F		187.3	27.0	907	1,243	1,579				
WR CEDAR		317.7	45.8	58	106	155				
R ALDER		484.7	69.9	11	37	63				
TOTAL		35.3	5.1	6,048	6,372	6,695	50	25	12	
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				113	126	140				
WHEMLOCK		110.8	16.0	96	122	149				
NOBLE F		92.2	13.3	89	121	154				
WR CEDAR		216.7	31.3	37	68	100				
R ALDER		486.1	70.1	24	80	137				
TOTAL		161.9	23.3	116	123	130	1,046	534	262	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				UPTOP				DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U5	89.40	62	313	S	W	
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES				
TOTAL		62	313	5.0						
CRUISE		22	100	4.5	10,785	.9				
DBH COUNT REFOREST COUNT		40	213	5.3						
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	61	78.9	17.5	80	31.6	132.3	18,937	18,395	4,793	4,794
PS FIR	29	32.4	17.6	72	13.1	54.8	8,237	7,802	2,077	2,077
WHEMLOCK	10	9.3	17.1	75	3.6	14.8	2,052	1,982	550	550
TOTAL	100	120.6	17.5	77	48.2	201.9	29,227	28,179	7,420	7,421
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		46.5	6.0	270	288	305				
PS FIR		47.6	9.0	291	319	348				
WHEMLOCK		46.2	15.4	218	258	298				
TOTAL		46.9	4.7	280	294	308	88	45	22	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		41.1	5.3	70	74	78				
PS FIR		42.9	8.1	78	85	91				
WHEMLOCK		42.0	14.0	61	71	80				
TOTAL		42.0	4.2	74	77	80	70	36	18	
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		67.7	8.6	72	79	86				
PS FIR		147.4	18.7	26	32	38				
WHEMLOCK		227.6	28.9	7	9	12				
TOTAL		48.7	6.2	113	121	128	95	48	24	
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		65.2	8.3	121	132	143				
PS FIR		143.6	18.2	45	55	65				
WHEMLOCK		214.1	27.2	11	15	19				
TOTAL		43.5	5.5	191	202	213	76	39	19	
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		65.1	8.3	16,877	18,395	19,914				
PS FIR		144.9	18.4	6,367	7,802	9,237				
WHEMLOCK		219.5	27.8	1,430	1,982	2,534				
TOTAL		43.3	5.5	26,632	28,179	29,727	75	38	19	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		65.5	8.3	4,396	4,794	5,192				
PS FIR		144.9	18.4	1,695	2,077	2,459				
WHEMLOCK		216.4	27.5	399	550	701				
TOTAL		43.7	5.5	7,010	7,421	7,833	76	39	19	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	UPTOP			DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U5	89.40	62	313	S	W	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
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				128	139	151				
PS FIR		15.8	2.0	116	142	168				
WHEMLOCK		144.1	18.3	96	134	171				
TOTAL		328.5	41.7	132	140	147	4,309	2,198	1,077	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	UPTOP		DATE	8/18/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U6	1.10	1	90	S	W	
			TREES	ESTIMATED	PERCENT					
			PER PLOT	TOTAL	SAMPLE					
			TREES	TREES	TREES					
TOTAL		1	90	90.0						
CRUISE		1	18	18.0	451	4.0				
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	10	245.8	22.1	81	139.2	654.5	94,394	90,461	23,964	23,964
WHEMLOCK	6	151.1	22.6	74	88.3	419.6	53,402	48,867	15,229	15,229
WHEMLOCK-D	2	13.0	21.6	73	7.1	33.1	4,145	3,757	1,151	1,151
TOTAL	18	409.9	22.3	78	234.7	1107.2	151,941	143,085	40,344	40,345
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		54.0	18.0	302	368	434				
WHEMLOCK		52.8	23.5	247	323	399				
WHEMLOCK-D		53.6	50.2	144	290	436				
TOTAL		51.7	12.5	301	344	388	113	58	28	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		48.0	16.0	82	97	113				
WHEMLOCK		36.8	16.4	84	101	117				
WHEMLOCK-D		42.8	40.1	53	89	124				
TOTAL		41.7	10.1	88	98	107	74	38	18	

TC TSTATS				STATISTICS				PAGE	1	
PROJECT				UPTOP				DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U7	41.70	39	178	S	W	
				TREES	ESTIMATED		PERCENT			
				PER PLOT	TOTAL		SAMPLE			
					TREES		TREES			
TOTAL		39	178	4.6						
CRUISE		20	96	4.8	3,143		3.1			
DBH COUNT										
REFOREST										
COUNT		17	81	4.8						
BLANKS		2								
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	87	67.2	21.4	95	36.2	167.2	36,213	35,037	7,617	7,594
DOUG FIR-D	1	.2	32.0	85	0.2	1.0	173	123	41	41
WHEMLOCK	5	7.3	16.8	71	2.8	11.3	1,552	1,507	416	416
WR CEDAR	3	.7	28.4	67	0.6	3.1	328	291	102	102
TOTAL	96	75.4	21.1	93	39.8	182.6	38,265	36,958	8,176	8,153
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		70.3	7.5	806	872	937				
DOUG FIR-D										
WHEMLOCK		95.1	47.3	187	354	521				
WR CEDAR		62.4	43.2	292	513	735				
TOTAL		72.5	7.4	770	832	893	210	107	53	
CL:	68.1 %	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		61.9	6.6	170	182	195				
DOUG FIR-D										
WHEMLOCK		77.8	38.7	56	91	126				
WR CEDAR		59.9	41.4	104	178	252				
TOTAL		62.7	6.4	167	178	189	157	80	39	
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		76.9	12.3	59	67	75				
DOUG FIR-D		624.5	99.9	0	0	0				
WHEMLOCK		216.3	34.6	5	7	10				
WR CEDAR		624.5	99.9	0	1	1				
TOTAL		71.5	11.4	67	75	84	204	104	51	
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		54.0	8.6	153	167	182				
DOUG FIR-D		624.5	99.9	0	1	2				
WHEMLOCK		198.4	31.7	8	11	15				
WR CEDAR		624.5	99.9	0	3	6				
TOTAL		49.5	7.9	168	183	197	98	50	24	
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		55.8	8.9	31,908	35,037	38,165				
DOUG FIR-D		624.5	99.9	0	123	246				
WHEMLOCK		201.9	32.3	1,020	1,507	1,994				
WR CEDAR		624.5	99.9	0	291	582				
TOTAL		52.4	8.4	33,858	36,958	40,057	110	56	27	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	UPTOP			DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U7	41.70	39	178	S	W	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
CL:	68.1 %	COEFF	NET CUFT FT/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		54.9	8.8	6,927	7,594	8,261				
DOUG FIR-D		624.5	99.9	0	41	81				
WHEMLOCK		199.3	31.9	283	416	548				
WR CEDAR		624.5	99.9	0	102	205				
TOTAL		<i>50.6</i>	<i>8.1</i>	<i>7,492</i>	<i>8,153</i>	<i>8,814</i>	<i>102</i>	<i>52</i>	<i>26</i>	
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				191	210	228				
DOUG FIR-D		624.5	99.9	0	120	240				
WHEMLOCK		119.6	19.1	90	134	177				
WR CEDAR		624.5	99.9	0	95	189				
TOTAL		<i>187.3</i>	<i>30.0</i>	<i>185</i>	<i>202</i>	<i>219</i>	<i>1,400</i>	<i>714</i>	<i>350</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	UPTOP		DATE	8/18/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U8	6.00	1	160	S	W	
			TREES	ESTIMATED	PERCENT					
			PER PLOT	TOTAL	SAMPLE					
			TREES	TREES	TREES					
TOTAL		1	160	160.0						
CRUISE		1	39	39.0	667		5.8			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
DOUG FIR	14	66.7	16.1	70	23.5	94.6	10,952	10,667	3,066	3,059
WR CEDAR	8	24.1	12.1	49	5.5	19.3	1,054	1,054	416	416
NOBLE F	5	5.2	17.7	68	2.1	8.8	1,173	1,131	292	292
R ALDER	6	9.0	13.2	45	2.3	8.5	585	570	196	191
WHEMLOCK	6	6.2	11.4	56	1.3	4.4	416	405	122	120
TOTAL	39	111.2	15.0	63	35.1	135.6	14,179	13,827	4,092	4,077
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		40.9	11.3	142	160	178				
WR CEDAR		38.5	14.5	37	44	50				
NOBLE F		116.5	57.9	92	218	344				
R ALDER		34.1	15.2	54	63	73				
WHEMLOCK		95.7	42.6	37	65	93				
TOTAL		99.6	15.9	96	114	132	396	202	99	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		45.8	12.7	40	46	52				
WR CEDAR		51.3	19.3	14	17	21				
NOBLE F		127.0	63.1	21	56	92				
R ALDER		47.4	21.1	17	21	26				
WHEMLOCK		83.2	37.0	12	19	26				
TOTAL		93.9	15.0	28	33	38	352	180	88	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	UPTOP		DATE	8/18/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	00U9	2.00	1	74	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		1	74	74.0						
CRUISE		1	19	19.0	328		5.8			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
NOBLE F	12	150.0	12.1	58	34.5	119.9	11,625	10,500	3,006	2,928
DOUG FIR	7	14.0	13.2	54	3.7	13.3	1,280	1,280	332	329
TOTAL	<i>19</i>	<i>164.0</i>	<i>12.2</i>	<i>58</i>	<i>38.1</i>	<i>133.2</i>	<i>12,905</i>	<i>11,780</i>	<i>3,338</i>	<i>3,257</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		50.6	15.2	59	70	81				
DOUG FIR		64.8	26.4	67	91	116				
TOTAL		<i>58.1</i>	<i>13.7</i>	<i>67</i>	<i>78</i>	<i>89</i>	<i>143</i>	<i>73</i>	<i>36</i>	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		59.5	17.9	16	20	23				
DOUG FIR		66.3	27.0	17	24	30				
TOTAL		<i>61.6</i>	<i>14.5</i>	<i>18</i>	<i>21</i>	<i>24</i>	<i>160</i>	<i>82</i>	<i>40</i>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	UPTOP		DATE	8/18/2015		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	0U10	0.60	7	29	S	W	
				TREES	ESTIMATED		PERCENT			
				PER PLOT	TOTAL		SAMPLE			
					TREES		TREES			
TOTAL			7	29	4.1					
CRUISE			7	29	4.1	51	57.3			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
NOBLE F	14	28.8	22.6	80	16.8	80.0	12,629	12,145	3,002	3,002
DOUG FIR	11	45.6	15.9	71	15.8	62.9	7,923	7,463	2,046	2,046
DOUG FIR-D	1	3.2	18.0	60	1.3	5.7	550	453	147	147
WR CEDAR	2	5.9	18.9	46	2.6	11.4	633	633	237	237
S SPRUCE	1	1.0	33.0	75	1.0	5.7	827	731	212	212
TOTAL	29	84.4	19.0	72	38.0	165.7	22,562	21,425	5,643	5,643
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	SAMPLE TREES - BF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		56.1	15.5	479	567	655				
DOUG FIR		76.5	24.2	173	228	283				
DOUG FIR-D										
WR CEDAR		79.9	74.8	29	115	201				
S SPRUCE										
TOTAL		77.8	14.7	341	399	458	250	128	63	
CL:	68.1 %	COEFF	SAMPLE TREES - CF				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		48.7	13.5	118	137	155				
DOUG FIR		70.0	22.1	48	61	75				
DOUG FIR-D										
WR CEDAR		63.8	59.8	17	42	68				
S SPRUCE										
TOTAL		68.8	13.0	88	101	115	196	100	49	
CL:	68.1 %	COEFF	TREES/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		82.8	33.7	19	29	38				
DOUG FIR		111.8	45.5	25	46	66				
DOUG FIR-D		264.6	107.7		3	7				
WR CEDAR		264.6	107.7		6	12				
S SPRUCE		264.6	107.7		1	2				
TOTAL		58.2	23.7	64	84	104	157	80	39	
CL:	68.1 %	COEFF	BASAL AREA/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		111.8	45.5	44	80	116				
DOUG FIR		96.2	39.2	38	63	87				
DOUG FIR-D		264.6	107.7		6	12				
WR CEDAR		264.6	107.7		11	24				
S SPRUCE		264.6	107.7		6	12				
TOTAL		45.0	18.3	135	166	196	94	48	23	
CL:	68.1 %	COEFF	NET BF/ACRE				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		117.2	47.7	6,353	12,145	17,938				

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	UPTOP			DATE	8/18/2015	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
17N	04W	09	UPTOP	0U10	0.60	7	29	S	W	
CL:	68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR		92.3	37.6	4,660	7,463	10,265				
DOUG FIR-D		264.6	107.7		453	940				
WR CEDAR		264.6	107.7		633	1,315				
S SPRUCE		264.6	107.7		731	1,518				
TOTAL		56.6	23.0	16,494	21,425	26,356	148	76	37	
CL:	68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		116.1	47.2	1,584	3,002	4,419				
DOUG FIR		94.3	38.4	1,261	2,046	2,832				
DOUG FIR-D		264.6	107.7		147	305				
WR CEDAR		264.6	107.7		237	491				
S SPRUCE		264.6	107.7		212	439				
TOTAL		53.5	21.8	4,416	5,643	6,871	133	68	33	
CL:	68.1 %	COEFF		V-BAR/ACRE			# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
NOBLE F		117.2	47.7	79	152	224				
DOUG FIR		92.3	37.6	74	119	163				
DOUG FIR-D		264.6	107.7		79	165				
WR CEDAR		264.6	107.7		55	115				
S SPRUCE		264.6	107.7		128	266				
TOTAL		56.6	23.0	100	129	159	148	76	37	

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

T17N R04W S09 Ty00U	60.9
T17N R04W S09 Ty00U	34.4
T17N R04W S09 Ty0U1	.6

Project UPTOP
Acres 298.90

Page No 1
Date: 8/18/2015
Time 1:26:06PM

Species	s T	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
		Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
DOUG FIR		18,863	38,878	37,014	68.79	33.38	0.96	12,987	12,976	5,330	5,141
WHEMLOCK		5,185	9,728	9,003	54.18	28.88	0.81	2,813	2,809	1,082	1,039
NOBLE F		6,808	11,288	7,829	40.03	24.14	0.76	2,733	2,725	1,033	966
PS FIR		2,899	5,548	5,319	64.06	33.47	0.96	1,857	1,857	736	698
WR CEDAR		302	394	286	40.32	30.90	0.99	122	122	35	33
R ALDER		348	494	241	25.10	17.69	0.65	88	87	32	30
DOUG FIR	D	39	78	139	120.30	60.15	1.84	49	47	20	15
WHEMLOCK	D	14	28	41	88.88	44.44	1.27	13	13	5	4
S SPRUCE		1	1	3	219.91	109.96	3.23	1	1	0	0
Totals		34,460	66,438	59,875	59.89	31.06	0.90	20,662	20,638	8,274	7,927

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/ LF	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log		Gross	Net	Gross	Net
C	34,111	65,943	59,633	60.25	31.16	0.90	20,574	20,551	8,242	7,896
H	348	494	241	25.10	17.69	0.65	88	87	32	30
Totals	34,460	66,438	59,875	59.89	31.06	0.90	20,662	20,638	8,274	7,927



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

FPA/N No: _____

Effective Date: _____

Expiration Date: _____

Shut Down Zone: _____

EARR Tax Credit: Eligible Non-eligible

Reference: _____

**Forest Practices Application/Notification
 Notice of Decision**

Decision

- Notification** Operations shall not begin before the effective date.
- 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 approved FPA/N

FPA/N Classification

Class II Class III Class IVG Class IVS

Number of Years Granted on Multi-Year Request

4 yrs 5 yrs

Conditions on Approval / Reasons for Disapproval

Issued By: _____

Region: _____

Title: _____

Date: _____

Copies to: Landowner, Timber Owner and Operator.

Issued in person: Landowner Timber Owner Operator **By:** _____

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.eho.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
Region

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.

Hydraulic Project Approval (HPA) (Chapter 77.55RCW and WAC 222-50-020(2))

The Department of Fish and Wildlife (WDFW), as the jurisdictional agency issuing HPAs, has final authority for approving water crossing structures in Type S and F waters. WDFW continues to have authority on Type N waters and may exercise that authority on some Type N waters.

Notice: The HPA water crossing requirements supersede what is indicated on the FPA. Landowners are required by law to follow the provisions as directed on the HPA.

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 _____, WA,
(date mm/dd/yyyy) (post office location)

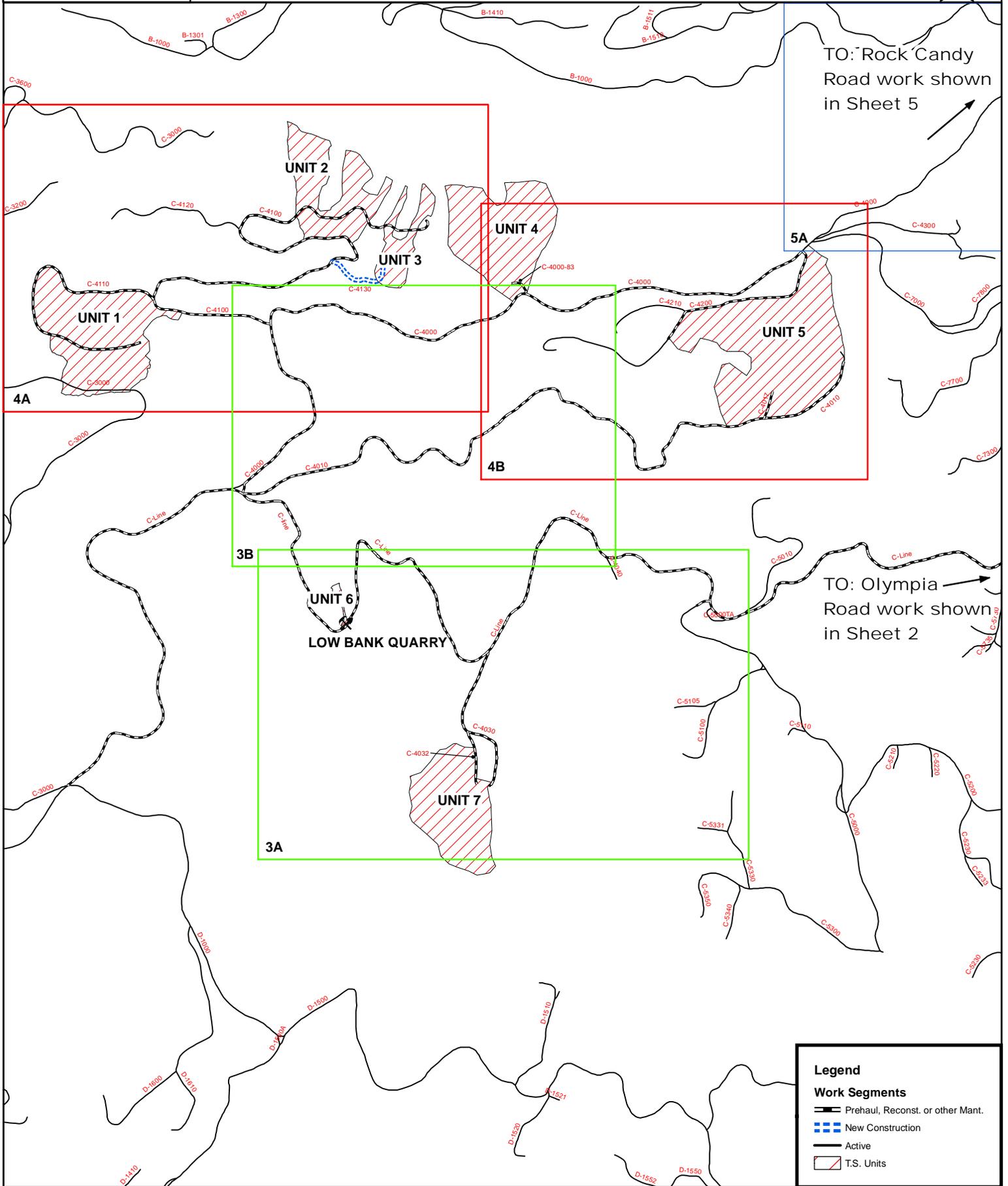
postage paid, a true and accurate copy of this document. Notice of Decision FPA # _____

(Printed name)

(Signature)

ROAD PLAN VICINITY MAP UP TOP TIMBER SALE PAGE 1 OF 5

**ORIGINAL SCALE:
1:24000 (1" = 2000 FT)**



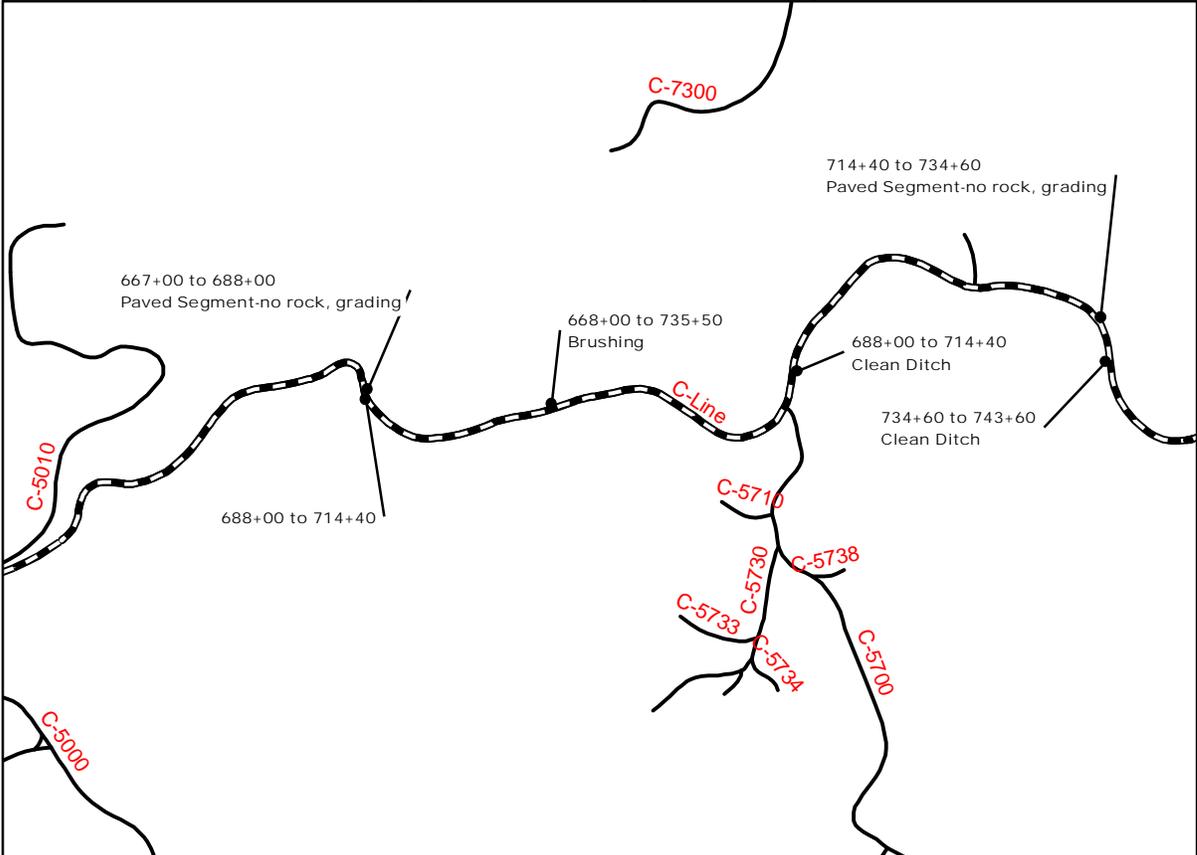
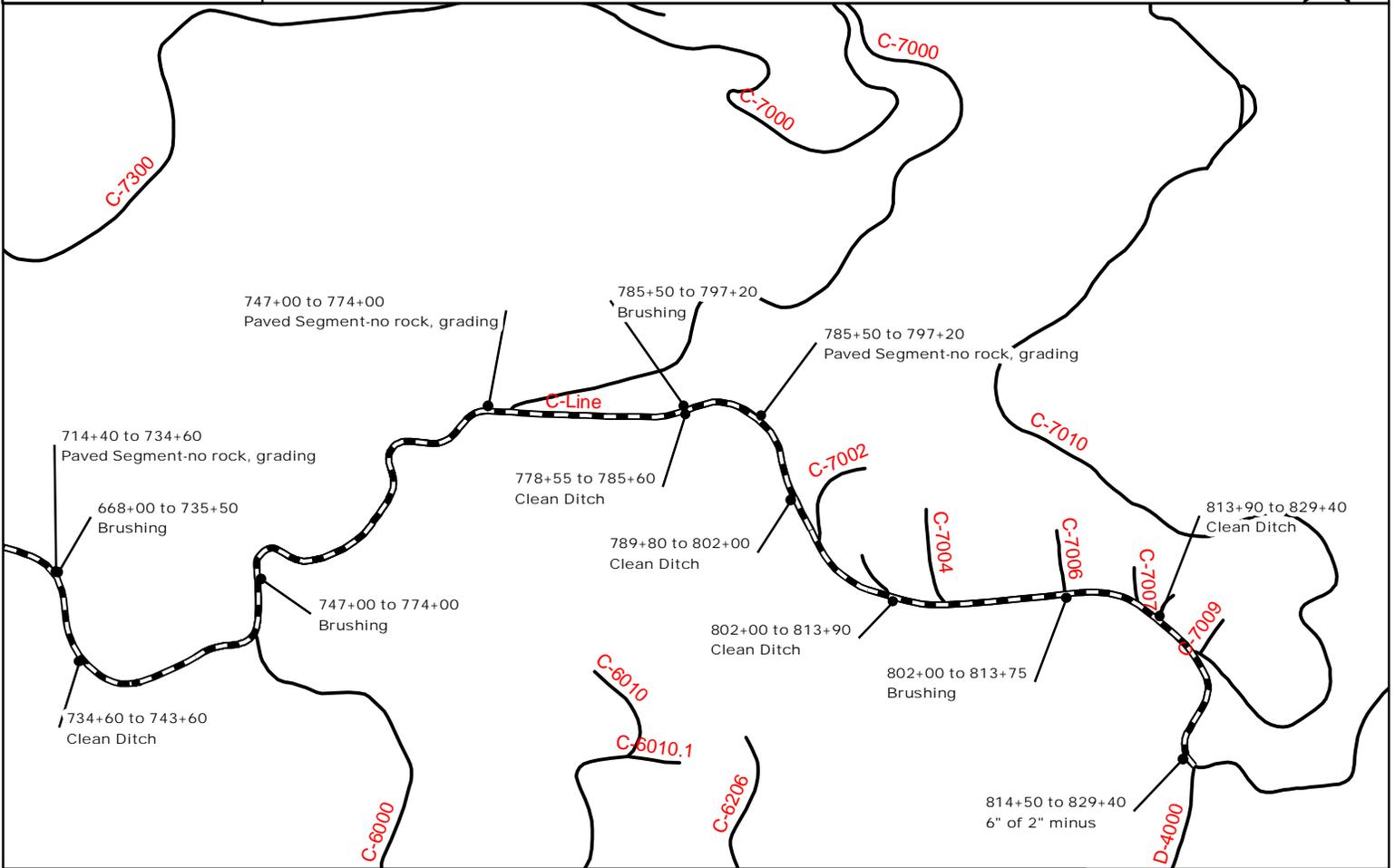
Legend

Work Segments

- Prehaul, Reconst. or other Mant.
- New Construction
- Active
- T.S. Units

ROAD PLAN VICINITY MAP UP TOP TIMBER SALE PAGE 2 OF 5

**ORIGINAL SCALE:
1:12000 (1" = 1000 FT)**



Legend

Work Points

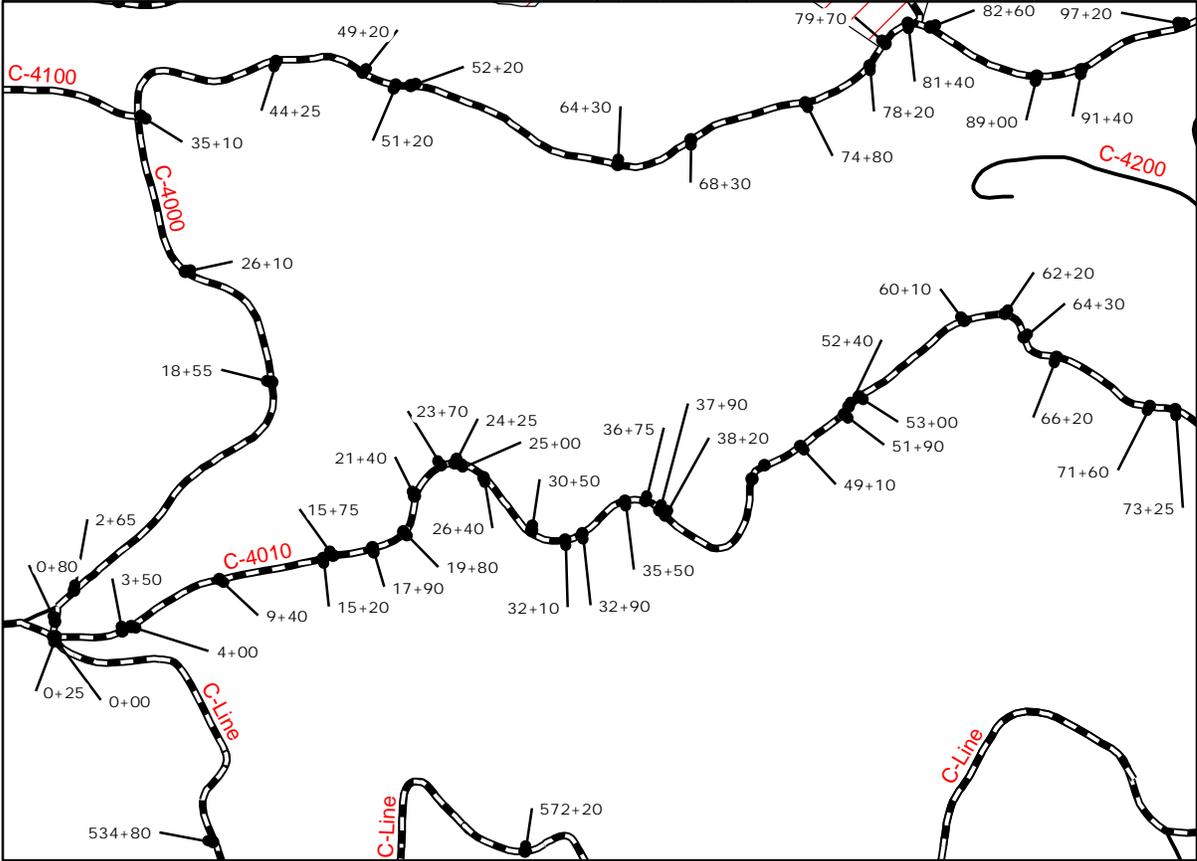
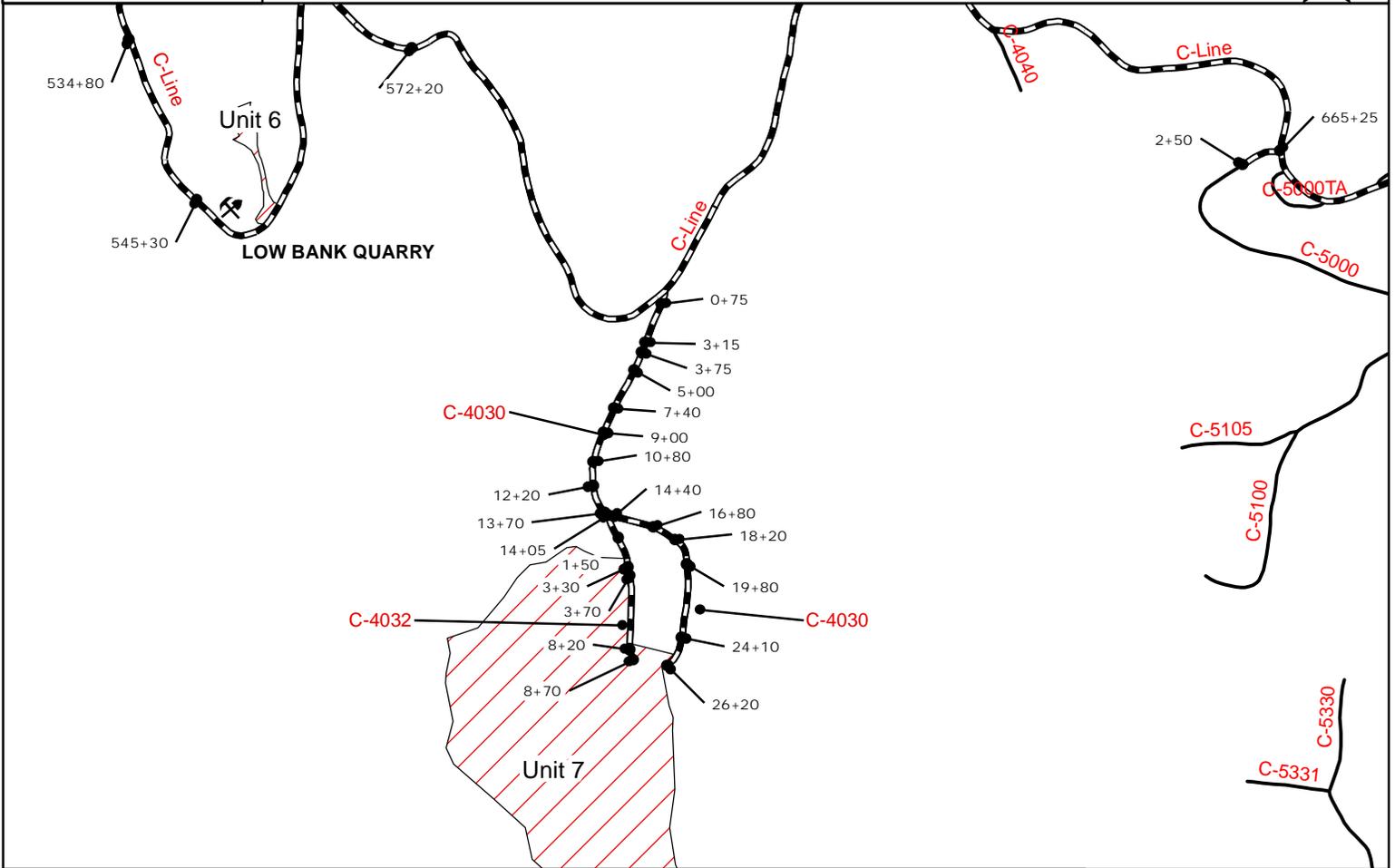
- Road Station

Work Segments

- ▬ Prehaul, Reconst. or other Mant.
- ▬ New Construction
- ▬ Active
- ▬ T.S. Units

ROAD PLAN VICINITY MAP UP TOP TIMBER SALE PAGE 3 OF 5

**ORIGINAL SCALE:
1:12000 (1" = 1000 FT)**

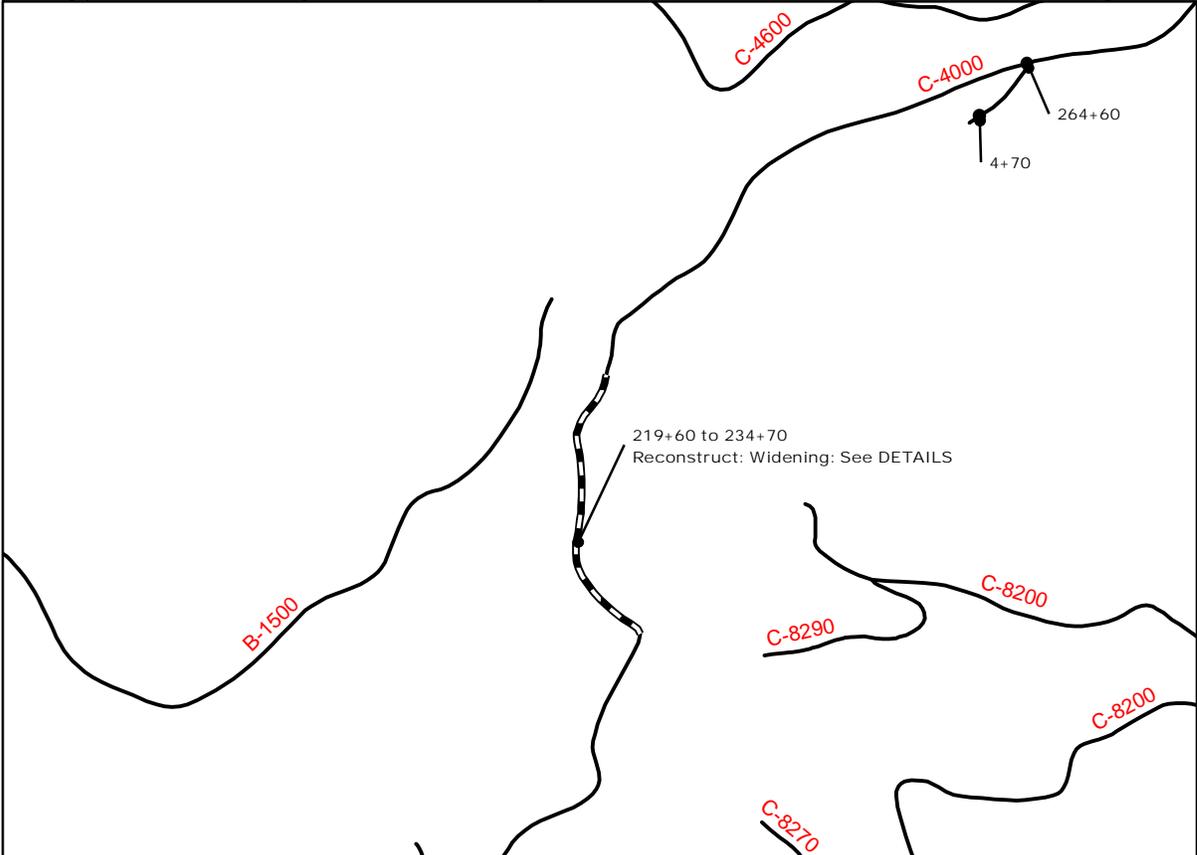
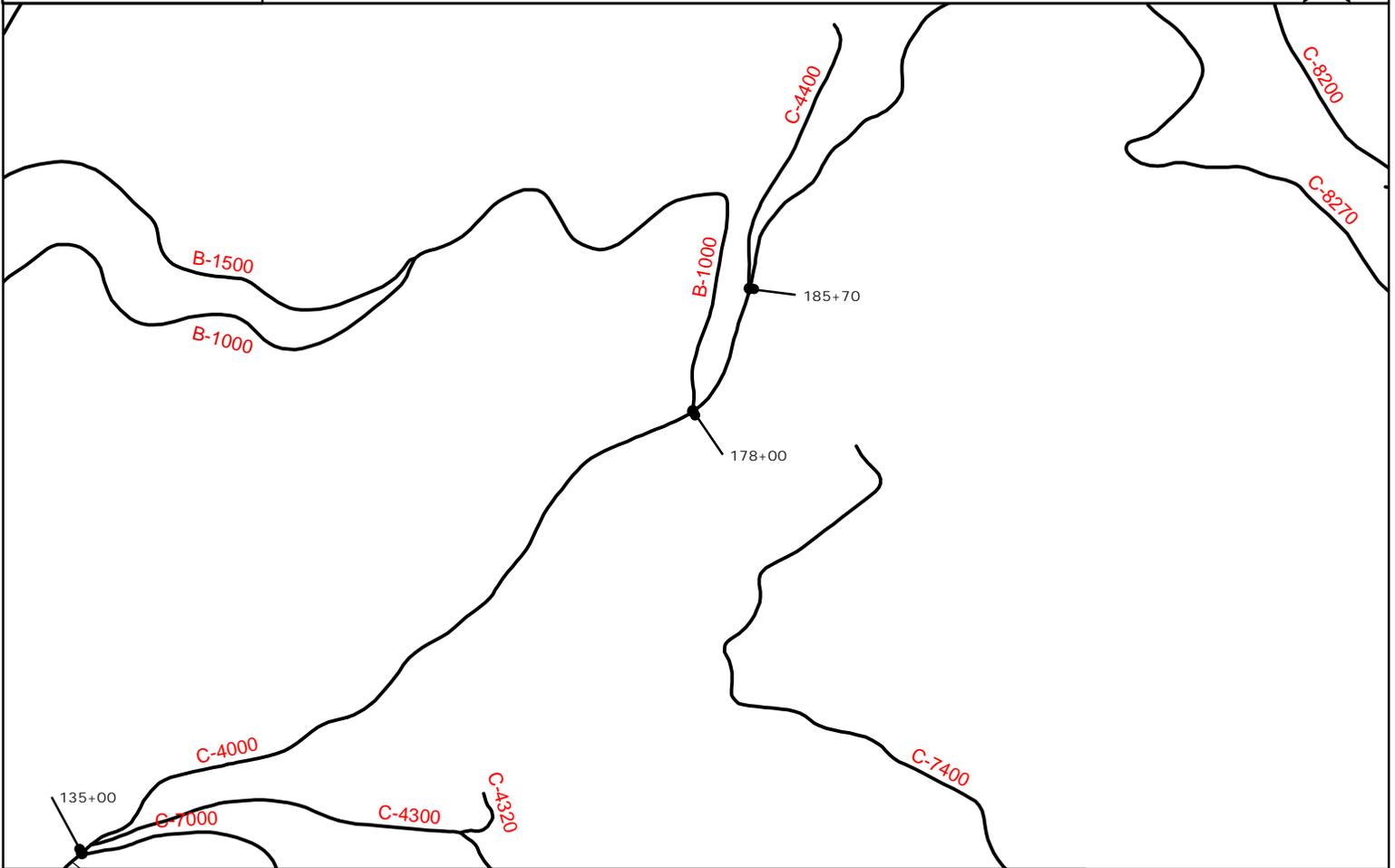


Legend

- Work Points**
- Road Station
- Work Segments**
- ▬ Prehaul, Reconst. or other Mant.
- ▬ New Construction
- ▬ Active
- ▨ T.S. Units

ROAD PLAN VICINITY MAP
UP TOP TIMBER SALE
PAGE 5 OF 5

ORIGINAL SCALE:
1:12000 (1" = 1000 FT)



Legend

Work Points

- Road Station

Work Segments

- ▬ Prehaul, Reconst. or other Mant.
- ▬ New Construction
- ▬ Active
- ▭ T.S. Units

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

UPTOP TIMBER SALE ROAD PLAN
THURSTON & GRAYS HARBOR COUNTYS
LITTLEROCK UNIT
BLACK HILLS DISTRICT

AGREEMENT NO.: 30-092039

STAFF ENGINEER: W. HOSKINS

DATE: 16 JULY 2015

DRAWN & COMPILED BY: W. HOSKINS

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

Clauses in this road plan apply to all road related work, including landings and rock source development, unless otherwise noted.

0-2 REQUIRED ROADS

The specified work on the following roads is required.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
C-Line	434+80 to 829+40	Prehaul Maintenance
C-4000	0+00 to 185+70	Prehaul Maintenance
C-Line	477+00 to 478+60	Reconstruction
C-4010	0+00 to 126+20	Prehaul Maintenance
C-4100	0+00 to 116+90	Prehaul Maintenance
C-4017	0+00 to 4+90	Prehaul Maintenance
C-4200	0+00 to 31+00	Prehaul Maintenance
C-4000	219+60 to 234+70	Reconstruction
C-5000	0+00 to 2+50	Prehaul Maintenance
C-4100-81	0+00 to 3+80	Decommission, if built
C-4130	0+00 to 12+60	Construction

0-3 OPTIONAL ROADS

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
C-4030	0+00 to 26+20	Prehaul Maintenance
C-4032	0+00 to 8+70	Prehaul Maintenance
C-4000-81	0+00 to 3+80	Construction
C-4110	0+00 to 49+10	Reconstruction

0-4 CONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
C-4130	0+00 to 12+60	Clear, Grub, Dispose of Organic Debris per Clause 3-25, Endhaul excess material as required, build as shown in DESIGN, Apply rock per ROCK LIST, Compact per COMPACTION LIST
C-4130	2+80 to 6+00	Place geotextile between subgrade-ballast interface per Clause 10-2. Apply rock per ROCK LIST, Compact per COMPACTION LIST
C-4000-81	0+00 to 3+80	Clear, Grub, Dispose of Organic Debris per Clause 3-25, Endhaul excess material as required, build as shown in DESIGN. See Clause 1-43 for information about utilities in area Apply rock per ROCK LIST, Compact per COMPACTION LIST

0-5 RECONSTRUCTION

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
C-4000	219+60 to 234+70	Cut Right of Way Timber as marked, Clear, Grub, Widen road by removing and Endhauling material in cutslope as shown in DETAILS, Apply rock per ROCK LIST, Compact per COMPACTION LIST
C-4110	0+00 to 49+10	Fill Waterbars, Brush, Ditch, Clean Culverts, Install culverts per CULVERT LIST, Desod, Shape, Apply rock per ROCK LIST, Compact per COMPACTION LIST
C-Line	477+00 to 478+60	Remove existing pipes and fill, install "beaver deceiver" pipe and reconstruct according to BEAVER DECEIVER DETAIL

0-6 PRE-HAUL MAINTENANCE

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
C-4000	0+00 to 185+70	Brush, Ditch, Clean Culverts, Install Culverts per CULVERT LIST, Grade, Shape, Apply rock per ROCK LIST, Compact per COMPACTION LIST. See Clause 1-43 for information about utilities in area
C-4010	94+60 to 96+20	Install ditch check dams per CHECK DAM DETAIL
C-4100	68+30 to 69+20	Install ditch check dams per CHECK DAM DETAIL
C-5000	0+00 to 2+50	Install ditch check dams per CHECK DAM DETAIL
C-Line	529+50 to 530+30, 607+80 to 610+20	Install ditch check dams per CHECK DAM DETAIL
C-Line	515+00 to 829+40	Brush, Ditch, Clean Culverts, Install Culverts per CULVERT LIST, Grade, Shape, Apply rock per ROCK LIST, Compact per COMPACTION LIST. See Clause 1-43 for information about utilities in area.

All other Pre-haul maintenance includes, but is not limited to: Brush, Ditch, Clean Culverts, Install Culverts per CULVERT LIST, Grade, Shape, Apply rock per ROCK LIST, Compact per COMPACTION LIST.

0-8 CLOSURE

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

0-9 DECOMMISSIONING

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

0-10 ABANDONMENT

This project includes abandonment listed in Clause 9-23 ROAD ABANDONMENT

0-12 DEVELOP ROCK SOURCE

Purchaser shall develop an existing rock source. Rock source development will involve reducing oversize material, Clearing, Stripping, Drilling, Blasting, Crushing and

Stockpiling. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

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.

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

1-5 DESIGN DATA

Plan, Profile, Mass-Haul Diagram and cross section design data is available upon request at the Department of Natural Resources South Puget Sound Region Office in Enumclaw, 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.

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 the following roads for more than the specified number of days.

<u>Road</u>	<u>Number of Allowable Closed Days</u>
C-4000	21 total: with written permission from Contract Administrator, with detour routes posted.
C-Line	Daily full closure of the C-Line is not allowed.
All Other Roads in Roadplan	3 days, with written permission from Contract Administrator, with detour routes posted if detour is possible

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

1-10 WSDOT STANDARD SPECIFICATION REFERENCE

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

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:

- Prehaul Maintenance: red or orange painted stationing on nearby trees, or red or orange painted 4 ft. lathe with stationing
- Reconstruction:
 - C-4000: Orange painted stake with stationing cutslope side of existing road, orange painted slope stake marking top of cut above stationing stake
 - C-4110: Same as Prehaul
- Construction: Orange painted 4 ft. lathe on designed centerline with stationing, orange ribbon on designed centerline

1-16 CONSTRUCTION STAKES SET BY STATE

Purchaser shall perform work on the following road(s) in accordance with the construction stakes (stakes) and/or reference points (RP's) 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.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
C-4000-81	0+00 to 3+80	Point of Beginning: Aluminum Tag RP's
C-4000	219+60 to 234+70	Top of cut slope stakes

1-18 REFERENCE POINT DAMAGE

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

SUBSECTION TIMING

1-20 COMPLETE BY DATE

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

1-21 HAUL APPROVAL

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

1-22 WORK NOTIFICATIONS

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

1-23 ROAD WORK PHASE APPROVAL

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

- Drainage installation

- Subgrade compaction
- Rock compaction

SUBSECTION RESTRICTIONS

1-25 ACTIVITY TIMING RESTRICTION

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

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
All	All	Operation of Road Construction Equipment	November 1 to April 30

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25

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

1-29 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 roads.
- Wheel track rutting exceeds 4 inches on crushed rock roads.
- Surface or base stability problems persist.

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

1-32 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 have surface(s) evaluated 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.

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.

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.

<u>Road</u>	<u>Stations</u>	<u>Utility</u>	<u>Utility Contact</u>
C-Line	515+00 to 829+40	Buried Power	PSE: 360-786-5958 or 811
C-4000	0+00 to 185+70 (C-4400 jct.)	Buried Power	PSE: 360-786-5958 or 811
C-4000-81	0+00 to 0+75	Buried Power	PSE: 360-786-5958 or 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 the following road(s) in a condition that will allow the passage of light administrative vehicles.

<u>Road</u>	<u>Stations</u>
C-Line	All
C-4000	All

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following road(s), Purchaser shall use a grader to shape the existing surface before rock application, if rock application required. Purchaser shall accomplish all grading using a motor grader. Clause 4-62 shall apply if road aggregate moisture is non-conducive to grading.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
C-Line	434+80 to 829+40	Grade & shape, apply rock per ROCK LIST, compact per COMPACTION LIST. Do not grade paved areas; see MAPS for locations of paved areas.
C-4000	0+00 to 185+70	Grade & shape, apply rock per ROCK LIST, compact per COMPACTION LIST.
C-4030	0+00 to 26+20	Grade & shape, apply rock per ROCK LIST, compact per COMPACTION LIST.
C-4032	0+00 to 8+70	Grade & shape, apply rock per ROCK LIST, compact per COMPACTION LIST.
C-4100	0+00 to 116+90	Grade & shape, apply rock per ROCK LIST, compact per COMPACTION LIST.
C-4200	0+00 to 31+00	Grade & shape, apply rock per ROCK LIST, compact per COMPACTION LIST.

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following road(s), Purchaser shall clean ditches, headwalls, and catchbasins. Work must be done in accordance with the TYPICAL SECTION DETAIL, CULVERT AND DRAINAGE SPECIFICATION DETIAL. Pulling ditch material across the road or mixing in with the road surface is not allowed.

<u>Road</u>	<u>Stations</u>
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C-Line	439+00, 447+10 to 460+00, 518+80 to 523+40, 529+30 to 532+50, 542+30 to 545+30, 549+60 to 573+20, 575+50 to 591+20, 605+60 to 610+20, 630+00 to 637+10, 638+70 to 647+60, 652+90 to 663+00, 688+00 to 714+40, 734+60 to 743+60, 778+55 to 785+60, 789+80 to 829+40
C-4000	74+80 to 130+00
C-4010	49+10 to 71+60, 91+70 to 126+20
C-4017	0+00 to 4+90
C-4030	0+00 to 26+20
C-4032	0+00 to 8+70
C-4100	18+05 to 25+05, 41+90 to 47+20, 52+60 to 66+60, 80+00 to 85+50, 89+00 to 93+00, 99+50 to 101+50, 105+00 to 106+90
C-5000	0+00 to 2+50

3-1 BRUSHING

On the following road(s), Purchaser shall cut vegetative material up to 6 inches in diameter, including limbs, as shown on the BRUSHING DETAIL. Brushing must be achieved by manual or mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

<u>Road</u>	<u>Stations</u>
C-Line	561+25 to 569+25, 573+20 to 587+50, 603+50 to 605+50, 614+25 to 630+00, 637+00 to 638+75, 668+00 to 735+50, 747+00 to 774+00, 785+50 to 797+20, 802+00 to 813+75
C-4000	0+00 to 185+70
C-4030	0+00 to 26+20
C-4032	0+00 to 8+70
C-4010	108+60 to 126+20
C-4100	25+05 to 116+90

SUBSECTION CLEARING

3-5 CLEARING

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

3-7 RIGHT-OF-WAY DECKING

On the following road(s), 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.

<u>Road</u>	<u>Stations</u>
C-4000	44+25 to 91+40 (ROW unit)
C-4000	219+60 to 234+70

3-8 PROHIBITED DECKING AREAS

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

- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 40% without approval by the Contract Administrator
- Against standing trees unless approved by the Contract Administrator.

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. Grubbing must be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Purchaser shall place grubbed stumps directed by the Contract Administrator and in compliance with all other clauses in this road plan.

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 and/or brushing area limits as shown on the TYPICAL SECTION SHEET and/or BRUSHING DETAIL.

3-21 DISPOSAL COMPLETION

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

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located within the cleared right-of-way or in natural openings as designated by the Contract Administrator.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 10 feet of any culvert.
- Within 100 feet of a live stream, or wetland, unless used to comply with the specifications detailed in the Riparian Strategy.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 40%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

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

3-25 SCATTERING ORGANIC DEBRIS

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

SUBSECTION PILE

3-32 END HAULING ORGANIC DEBRIS

On slopes greater than 40%, Purchaser shall end haul or push organic debris to the designated waste areas located by the Contract Administrator.

SECTION 4 – EXCAVATION

4-2 PIONEERING

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 prior to embankment.

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 18 percent favorable and 14 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 5% 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% of the curve radius.
- Maximum favorable grades for switchbacks is 12%.
- 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:

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

4-6 EMBANKMENT SLOPE RATIO

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

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

4-7 SHAPING CUT AND FILL SLOPE

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

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

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

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

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

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.

<u>Road</u>	<u>Stations</u>
C-4000	219+60 to 234+70

4-12 FULL BENCH CONSTRUCTION

On the following road(s), Purchaser shall use full bench construction for the entire subgrade width If designated, Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Full Bench Location</u>	<u>Comments</u>
C-4130	3+50 to 5+80	Waste in fill, 7+40 to 10+60
C-4000-81	0+85 to 1+15	Waste in landing, 3+80

In addition to the above listed locations, Purchaser shall use full bench construction for any segment of road where side slopes exceed 45%.

SUBSECTION INTERSECTIONS, TURNOUTS AND TURNAROUNDS

4-21 TURNOUTS

Purchaser shall construct turnouts as designated on the Road Plan Maps and in-field markings (Stationing). Locations may be adjusted to fit the final subgrade alignment and sight distances. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

SUBSECTION DITCH CONSTRUCTION

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

Purchaser shall construct ditches into the subgrade as specified on the TYPICAL SECTION SHEET.

4-27 DITCH WORK – MATERIAL USE PROHIBITED

On the following road(s), Purchaser shall not pull ditch material across the road or mix in with the road surface. Excavated material must be disposed of as specified in Clause 4-36 DISPOSAL OF WASTE MATERIAL.

<u>Road</u>	<u>Stations</u>	<u>Waste Disposal</u>
C-Line	All	No ditch waste is to deposited onto the traveled way
C-4000	All	No ditch waste is to be deposited onto the traveled way

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-29 DITCHOUTS

On the following road(s), Purchaser shall construct ditchouts as identified and as needed. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio. L or R denotes ditchout left or ditchout right.

<u>Road</u>	<u>Stations</u>	<u>L or R</u>
C-4100	1+70	L & R
C-4130	7+60	R
C-4130	End: 12+60	L
C-4030	18+70	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. Additional waste areas may also be identified or approved by the Contract Administrator. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.

<u>Road</u>	<u>Waste Area Location</u>	<u>Comments</u>	<u>Volume</u>
C-4000	C-4500 STA 4+70	Fill existing road prism of C-4500 no higher than 10 ft no closer to shoulder than 2.0 ft.	1800 C.Y.
C-Line	C-3000 STA 8+00	Waste in eastern floor of pit: for beaver deceiver fill removal	1200 C.Y.
C-4130	C-4130 STA 8+00	Waste unsuitable material from C-4130 here	+/- 500 C.Y.

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas :

- Within 10 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.

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

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

SUBSECTION COMPACTION

4-60 FILL COMPACTION

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

4-61 SUBGRADE COMPACTION

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

4-62 DRY WEATHER COMPACTION

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

SUBSECTION SUBGRADE REINFORCEMENT

4-70 SUBGRADE REINFORCEMENT

On the following road(s), Purchaser shall provide and install geotextile fabric as specified in the Engineer's design. Geotextile fabric must overlap by a minimum of 2 feet at all joints. The geotextile fabric must be covered with a minimum of 12 inches of compacted rock as specified in the ROCK LIST. Geotextile fabric must meet the specifications in Clause 10-2 GEOTEXTILE FOR SEPARATION.

<u>Road</u>	<u>Stations</u>
C-4130	3+50 to 6+00

SECTION 5 – DRAINAGE

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 may be new or used material and must meet the specifications in Clauses 10-15 through 10-23. Purchaser shall obtain approval from the Contract Administrator for the quality of used culverts before installation.

5-6 USED CULVERT MATERIAL

Purchaser may install used culverts on the following roads. All other roads must have new culverts installed.

<u>Road</u>	<u>Stations</u>
C-4000-81	0+00 to 3+80

5-9 CULVERT MARKER INSTALLATION

On the following road(s), Purchaser shall install culvert markers in accordance with the CULVERT MARKER INSTALLATION DETAIL.

<u>Road</u>	<u>Stations</u>
C-4030	0+00 to 26+20 (If Built)
C-4032	0+00 to 8+70 (If Built)
C-4130	0+00 to 12+60 (If Built)
C-4110	0+00 to 49+10 (If Built)
C-4100-81	0+00 to 3+80 (If Built)
C-Line	434+80 to 829+40
C-4000	0+00 to 185+70
C-4010	0+00 to 126+20
C-4100	0+00 to 116+90
C-4017	0+00 to 4+90
C-4200	0+00 to 31+00
C-4000	219+60 to 234+70
C-5000	0+00 to 2+50

5-11 UNUSED MATERIALS STATE PROPERTY

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

SUBSECTION CULVERT INSTALLATION

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer’s recommendations.

5-17 CROSS DRAIN SKEW AND SLOPE

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

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point.

SUBSECTION ENERGY DISSIPATERS

5-20 ENERGY DISSIPATERS

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

5-21 DOWNSPOUTS AND FLUMES

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

SUBSECTION CATCH BASINS, HEADWALLS, AND ARMORING

5-25 CATCH BASINS

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

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed.

SUBSECTION SURFACE DRAINAGE

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by November 1. Purchaser shall construct waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

SECTION 6 – ROCK AND SURFACING

SUBSECTION ROCK SOURCE

6-2 ROCK SOURCE ON 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.

<u>Source</u>	<u>Location</u>
Low Bank Quarry	NW ¼ SW ¼ Sec. 15 T17N R04W

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 calendar days before starting any operations in the rock source.

<u>Source</u>	<u>Rock Type</u>
Low Bank Quarry	2 Inch Minus, 2 Inch Clean, 6 Inch Jaw Run

6-12 ROCK SOURCE SPECIFICATIONS

Rock sources must be in accordance with the following specifications, unless otherwise specified in the ROCK SOURCE DEVELOPMENT 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 12 hours of exploration of rock and other related work as directed by the Contract Administrator at the following site(s). Purchaser shall accomplish all excavation using an excavator with a minimum of 100 horsepower.

<u>Site</u>	<u>Location</u>
C-4010	19+80
C-4010	30+50

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 too large to be converted by the Purchaser to a size that will meet specifications used for the roads in this sale.
- Oversized rock that exceeds the maximum allowable amount must be reduced stones less than 24 inches at their widest point.
- Purchaser shall notify the Contract Administrator a minimum of 3 working days before blasting operations.
- 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.

SUBSECTION ROCK MANUFACTURE

6-20 ROCK GRADATION TYPES

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

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 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.
- Purchaser is required to produce sieve analysis for crushing operations every 800 cubic yards for 2 Inch Minus and 2 Inch Clean.
- Purchaser may use a commercial testing lab to produce sieve analyses.

SUBSECTION ROCK GRADATIONS

6-30 2-INCH MINUS CRUSHED ROCK

% Passing 2" square sieve	100%
% Passing 1" square sieve	50 - 85%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	16% maximum
% Passing U.S. #200 sieve	10% 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.

6-31 2-INCH CLEAN ROCK

% Passing 2" square sieve	100%
% Passing U.S. #4 sieve	20% maximum
% Passing U.S. #200 sieve	5% maximum

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.1 percent organic debris and trash. All percentages are by weight.

6-39 6-INCH JAW RUN ROCK

% Passing 6" in one dimension	100%
% Passing 3" square sieve	45 - 65%

Rock may not contain more than 5 percent organic debris and 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 compacted 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 STOCKPILE

6-65 ROCK STOCKPILE LOCATION

Purchaser shall stockpile in accordance with the ROCK LIST.

<u>Rock Source</u>	<u>Rock Type</u>	<u>Quantity (c.y.)</u>	<u>Stockpile Location</u>
Low Bank Quarry	2 Inch Minus	2000	Pit Floor, as directed by Contract Administrator
Low Bank Quarry	2 Inch Clean	500	Pit Floor, as directed by Contract Administrator
Low Bank Quarry	6 Inch Jaw Run	2500	Pit Floor, as directed by Contract Administrator

6-67 ROCK STOCKPILE SPECIFICATIONS

Rock stockpiles listed in Clause 6-65 ROCK STOCKPILE LOCATION must meet the following specifications:

Before placing aggregates upon the stockpile site, the site must be cleared of vegetation, trees, stumps, brush, rocks, or other debris and the ground leveled to a smooth, firm, uniform surface.

When completed, the stockpile must be neat and regular in shape. The stockpile height

is limited to a maximum of 30 feet. Stockpiles in excess of 200 cubic yards must be built up in layers of not more than 4 feet deep. Stockpile layers must be constructed by trucks, clamshells, or other methods approved in writing by the Contract Administrator. Each layer must be completed over the entire area of the pile before depositing aggregates in the next layer. The aggregates may not be dumped so that they run down and over the lower layers in the stockpile. The method of dropping from a bucket or spout in one location to form a cone shaped pile is not allowed.

No equipment other than pneumatic tired equipment may be used on stockpiles. Stockpiles of different types or sizes of aggregate must be spaced far enough apart, or separated by suitable walls or partitions, to prevent the mixing of the aggregates.

SUBSECTION ROCK APPLICATION

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for drainage installation and subgrade 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.

6-73 ROCK FOR WIDENED PORTIONS

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

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, if hauling takes place from May 1 to October 31 Purchaser may place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

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

<u>Road</u>	<u>Stations</u>
C-4000-81	0+00 to 3+80
C-4030	0+00 to 26+20
C-4032	0+00 to 8+70

C-4110	0+00 to 49+10
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SUBSECTION DUST ABATEMENT

6-80 WATERING FOR DUST ABATEMENT

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

SUBSECTION ASPHALT

6-93 ASPHALT REPAIR

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

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

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

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

6-96 TEMPORARY TRAFFIC CONTROL FOR BITUMINOUS SURFACE TREATMENT

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

SUBSECTION STREAM CROSSING STRUCTURES GENERAL

7-5 STRUCTURE DEBRIS

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

designated for stockpiling or disposal. Purchaser shall retrieve all material carried downstream from the jobsite.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements.

7-7 BANK PROTECTION FOR STREAM CROSSING STRUCTURES

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

7-8 "BEAVER DECEIVER" STRUCTURE

On the following road, Purchaser shall install a drainage structure in accordance with the attached BEAVER DECEIVER DETAIL

<u>Road</u>	<u>Stations</u>
C-Line	477+75

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

On the following road(s), Purchaser shall install silt fence in accordance with Clause 10-6 GEOTEXTILE FOR TEMPORARY SILT FENCE during periods of active log haul. Fence shall be removed at prior to expiration of Sale.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
C-4100	106+90 to 107+41	Install silt fence on inside shoulder of road to divert ditchwater over top of inlet of culvert at Sta. 107+41
C-4100	69+20 to 69+70	Install silt fence on inside shoulder of road to divert ditchwater over top of inlet of culvert at Sta. 69+20

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a layer of straw to all exposed soils within 100 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-5 CHECK DAM

On the following road(s), Purchaser shall construct rock check dams according to the DITCH CHECK DAM DETAIL. Check dams must be built with 6 inch jaw run rock to a depth of 12 inches and a length of between 2 and 3 feet (See DETAIL).

<u>Road</u>	<u>Stations</u>
C-Line	530+30 to 592+50
C-4010	94+80 to 98+20
C-Line	607+80 to 610+20
C-5000	0+00 to 2+50
C-4100	68+30 to 69+20

SECTION 9 – POST-HAUL ROAD WORK

SUBSECTION STRUCTURES

9-1 EARTHEN BARRICADES

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

<u>Road</u>	<u>Stations</u>
C-4030	3+15
C-4110	0+50
C-4017	4+90
C-4010	126+20

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.

SUBSECTION CLOSURE

9-15 ROAD CLOSURE

Purchaser shall close the following roads at the termination of use.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
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C-4030	0+00 to 26+20	Restore waterbars, restore closure berm to pre-sale condition
C-4032	0+00 to 8+70	Restore waterbars, restore closure berm to pre-sale condition
C-4110	0+00 to 49+10	Restore waterbars, restore closure berm to pre-sale condition
C-4017	0+00 to 4+90	See Clause 9-16

9-16 CLOSURE

At a minimum, closure consists of:

- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 30 feet between waterbars or between natural drainage paths and with a maximum spacing of 300 feet, or as marked in the field.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL immediately upslope of each culvert.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must drain onto stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.

9-20 ROAD DECOMMISSIONING

Purchaser shall decommission the following roads at the termination of use.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
C-4000-81	0+00 to 3+80	Decommissioning

9-22 LIGHT DECOMMISSIONING

- Rip the surface to a minimum depth of 10 inches.
- Construct non-drivable waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Scatter woody debris onto abandoned road surfaces.

9-23 ROAD ABANDONMENT

Purchaser shall abandon the following roads at the termination of use.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
C-4130	0+00 to 12+60	Decommissioning

9-24 ABANDONMENT

- Remove all ditch relief culverts. The resulting slopes must be 1:1 or flatter. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Remove all culverts in natural drainages. The resulting slopes must be 1:1 or flatter. Strive to match the existing native stream bank gradient. The natural streambed width must be re-established. Place and compact the removed fill material in a location that will not erode into any Type 1 through 5 waters or wetlands.
- Transport all removed culverts off site.
- Construct non-drivable waterbars at natural drainage points and at a spacing that will produce a vertical drop of no more than 20 feet between waterbars and with a maximum horizontal spacing of 400 feet.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Pull back unstable fill that has potential of failing and entering any Type 1 through 5 waters or wetlands. Place and compact removed material in a stable location.
- Remove berms except as designed.
- Block the road by constructing an aggressive barrier of dense interlocked large woody debris (logs, stumps, root wads, etc.) so that four wheel highway vehicles cannot pass the point of abandonment. If necessary construct a vehicular turn-around near the point of abandonment.
- Apply grass seed to all exposed soils resulting from the abandonment work and in accordance with Section 8 EROSION CONTROL.

SECTION 10 MATERIALS

SUBSECTION GEOTEXTILES

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.

	<u>ASTM Test</u>	<u>Requirements</u>
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.

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

SUBSECTION CULVERTS

10-15 CORRUGATED STEEL CULVERT

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

10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts must meet AASHTO M-294 specifications, or ASTM F-2648 specifications for recycled polyethylene. Culverts must be Type C – corrugated single walled pipe where Single Walled (SW) culvert is called for; otherwise, 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

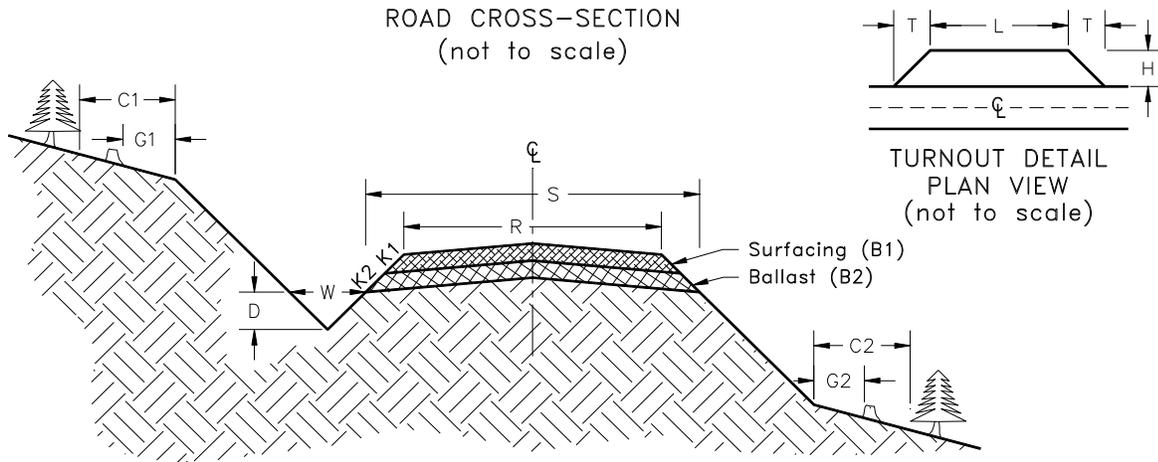
Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe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

10-24 GAGE AND CORRUGATION

Unless otherwise stated in the CULVERT LIST, metal culverts must conform to the following specifications for gage and corrugation as a function of diameter.

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

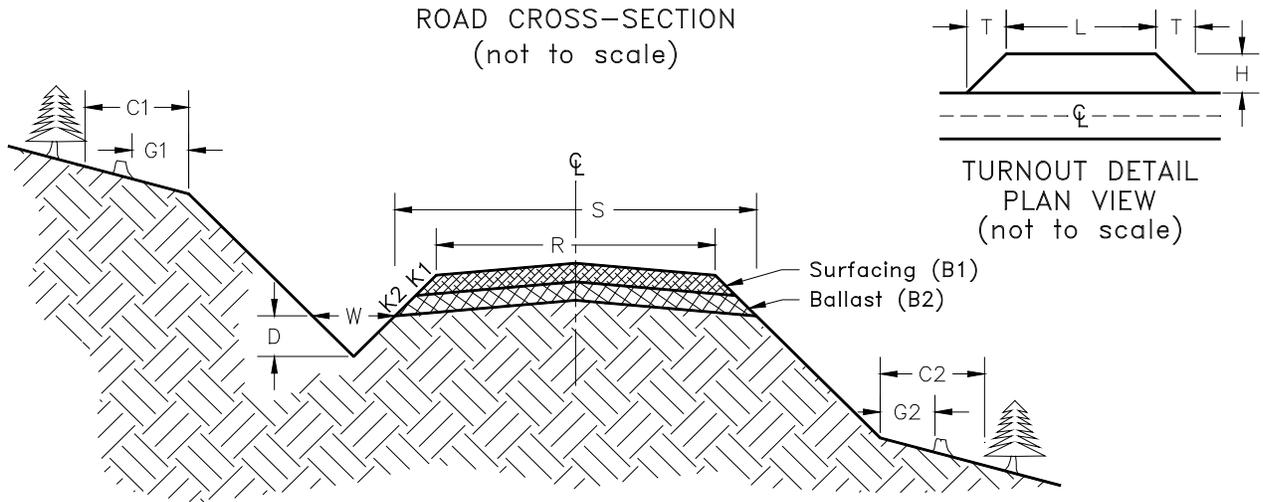
TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width	Road Width	Ditch		Crown in. @ CL	Grubbing Limits		Clearing Limits	
						Width	Depth		G1	G2	C1	C2
				S(ft)	R(ft)	W	D					
C-Line	434+80	829+40	A	EXISTING	VARIES	3	1	4	-	-	-	-
C-4000	0+00	185+70	A	EXISTING	VARIES	3	1	4	-	-	**	**
C-4000	219+60	234+70	B	18	15	3	1	4	5	5	**	**
C-4010	0+00	126+20	B	EXISTING	12	3	1	4	-	-	-	-
C-4100	0+00	116+90	B	EXISTING	12	3	1	4	-	-	-	-
C-4017	0+00	4+90	C	EXISTING	12	3	1	4	-	-	-	-
C-4200	0+00	31+00	B	EXISTING	12	3	1	4	-	-	-	-
C-5000	0+00	2+50	B	EXISTING	12	3	1	4	-	-	-	-
C-4100-83	0+00	3+80	C	15	12	3	1	4	5	5	10	10
C-4030	0+00	26+20	C	EXISTING	12	3	1	4	5	5	10	10
C-4032	0+00	8+70	C	EXISTING	12	3	1	4	5	5	10	10
C-4130	0+00	12+60	C	15	12	3	1	4	5	5	ROW Tags	ROW Tags
C-4110	0+00	49+10	C	EXISTING	12	3	1	4	5	5	10	10

** Clearing limits are specified as either Red X's, which are located on stretches of the C-4000 to be daylighted, or 10 feet, whichever is great.

ROCK LIST
(Page 1 of 2)



BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length L	Width H	Taper T
			K2	B2							
					6 INCH JAW RUN						
C-4130	0+00	12+60	1:1	12 INCHES	50	12.6	630	LOW BANK QUARRY			
C-4000-81	0+00	3+80	1:1	12 INCHES	50	3.8	190*				
ALL	LANDINGS		1:1	12 INCHES			400				
ALL	TURNOUTS		1:1	8 INCHES			300		30	20	20
ALL	DITCH CHECKS		-	-	-	-	100				
ALL	CULVERT INLET/OUTLET ARMOR		-	-	-	-	30				
ALL	SPOT PATCH		-	-	-	-	250				
STOCKPILE	AS DIRECTED BY C.A. IN LOW BANK QUARRY		-	-			2500				

* Optional Rock

BALLAST SUBTOTAL 190(OPT) Cubic Yards
BALLAST SUBTOTAL 4210(REQD) Cubic Yards

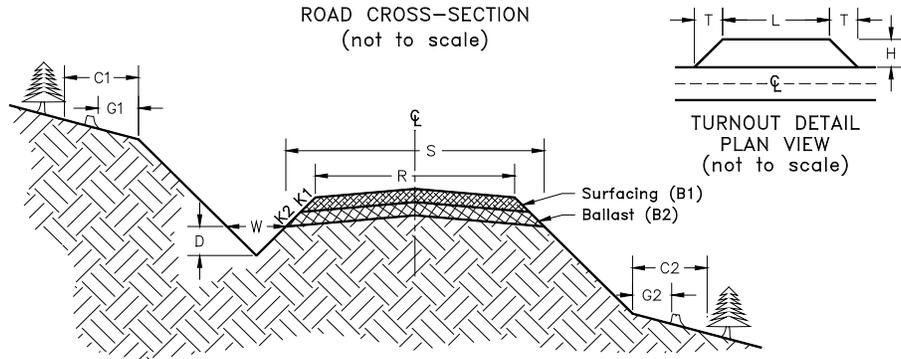
BALLAST TOTAL 4400 Cubic Yards

Rock quantities shown are measured in compacted yards. If Purchaser desires to obtain loose (or truck) yards, Purchaser must apply an appropriate swell factor to the quantities listed above.

If Purchaser elects to haul on optional rock roads in dry weather, the depth listed above is recommended but not required.

ROCK LIST

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SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Total	Rock Source
			K1	B1				
					2 INCH MINUS			LOW BANK QUARRY
C-LINE	439+00	614+25	1 ½ :1	4 INCHES	20	175.25	3510	
C-LINE	630+00	667+00	1 ½ :1	4 INCHES	20	37	740	
C-LINE	688+00	714+40	1 ½ :1	4 INCHES	20	26.4	530	
C-LINE	734+60	747+00	1 ½ :1	4 INCHES	20	12.4	250	
C-LINE	774+00	785+50	1 ½ :1	4 INCHES	20	11.5	230	
C-LINE	797+20	829+40	1 ½ :1	4 INCHES	20	32.2	650	
C-LINE	829+40	814+50	1 ½ :1	6 INCHES	30	14.9	450	
C-4010	0+00	91+70	1 ½ :1	4 INCHES	20	91.7	1830	
C-4010	91+70	94+60	1 ½ :1	6 INCHES	30	2.9	60	
C-4010	101+00	126+20	1 ½ :1	6 INCHES	30	25.5	770	
C-4017	0+00	4+90	1 ½ :1	6 INCHES	30	4.9	150*	
C-4000	0+00	185+00	1 ½ :1	6 INCHES	30	185	5550	
C-4000	185+00	219+60	1 ½ :1	4 INCHES	20	34.6	690	
C-4000	219+60	234+70	1 ½ :1	6 INCHES	30	15.1	450	
C-4200	0+00	31+00	1 ½ :1	4 INCHES	20	31.0	620	
C-4100	0+00	68+00	1 ½ :1	4 INCHES	20	68.0	1360	
C-4100	70+00	85+00	1 ½ :1	4 INCHES	20	15.0	300	
C-4100	89+00	118+90	1 ½ :1	4 INCHES	20	29.9	600	
C-4030	0+00	26+20	1 ½ :1	6 INCHES	30	26.2	790*	
C-4032	0+00	8+70	1 ½ :1	6 INCHES	30	8.7	260*	
C-4110	0+00	32+50	1 ½ :1	4 INCHES	20	32.5	650*	
C-4110	33+70	49+10	1 ½ :1	4 INCHES	20	15.4	310*	
C-4130	0+00	12+60	1 ½ :1	6 INCHES	30	12.6	380	
TURNOUTS	-	-	-	-	-	-	350	
CULVERT BEDDING	-	-	-	-	-	-	600	
STOCKPILE	AS DIRECTED BY C.A. IN LOW BANK QUARRY		-	-	-	-	2000	
					2 INCH CLEAN			LOW BANK QUARRY
C-LINE	434+80	439+00	1 ½ :1	6 INCHES	30	4.2	130	
C-4100	68+00	70+00	1 ½ :1	6 INCHES	30	2.0	60	
C-4100	85+00	89+00	1 ½ :1	6 INCHES	30	4.0	120	
C-4010	94+60	101+00	1 ½ :1	6 INCHES	30	6.4	190	
C-4110	32+50	33+70	1 ½ :1	6 INCHES	30	1.2	40*	

STOCKPILE	From	To	Rock	Compacted Rock	C.Y./	# of	C.Y.	Rock
	AS DIRECTED BY C.A. IN LOW BANK QUARRY		-	-	-	-	500	

*Optional Rock

SURFACE TOTAL

2" MINUS: 21920 (REQD) Cubic Yards
 2" MINUS: 2160 (OPT) Cubic Yards
 2" CLEAN: 1000 (REQD) Cubic Yards
 2" CLEAN: 40 (OPT) Cubic Yards

Rock quantities shown are measured in compacted yards. If Purchaser desires to obtain loose (or truck) yards, Purchaser must apply an appropriate swell factor to the quantities listed above.

RIP-RAP & SELECT FILL

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Total	Rock Source
			K1	B1				
C-LINE	477+00	478+60	-	-	500	1.6	800	6" JAW LOW BANK QUARRY (USE TO REBUILD FILL)

*Optional Rock

TOTAL 800 Cubic Yards

Rock quantities shown are measured in compacted yards. If Purchaser desires to obtain loose (or truck) yards, Purchaser must apply an appropriate swell factor to the quantities listed above.

If Purchaser elects to haul on optional rock roads in dry weather, the depth listed above is recommended but not required.

CULVERT LIST

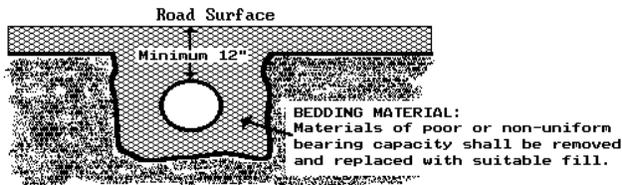
Road Number	Location	Culvert		Length (ft)			Armor (C.Y.)			Backfill Material	Placement Method	Const. Staked	Remarks
		Dia.	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type				
C-4000	51+20	18	CPP	30			0.2	0.4	6" JAW	2" AG	MACHINE	Y	NO SKEW DEEPEX EXISTING LAY
C-4000	44+25	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4000	49+20	18	CPP	20	20		0.2		6" JAW	2" AG	MACHINE	Y	
C-4000	68+30	18	CPP	20	20		0.2		6" JAW	2" AG	MACHINE	Y	
C-4000	82+60	18	CPP	20	20		0.2		6" JAW	2" AG	MACHINE	Y	
C-4000	91+40	18	CPP	20	20		0.2		6" JAW	2" AG	MACHINE	Y	
C-4000	97+20	18	CPP	20	20		0.2		6" JAW	2" AG	MACHINE	Y	
C-4000	109+10	18	CPP	20	20		0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	15+75	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	23+70	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	25+00	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	26+40	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	32+90	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	NO SKEW
C-4010	35+50	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	36+75	24	CPP	40			0.2		6" JAW	2" AG	MACHINE	Y	T5 CROSSING
C-4010	38+20	18	CPP	40			0.2		6" JAW	2" AG	MACHINE	Y	PRESERVE JUNCTION
C-4010	45+80	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	51+90	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	91+70	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	117+10	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	0+25	18	CMP	85			0.2		6" JAW	2" AG	MACHINE	Y	14 GAGE; DISABLE EXISTING 18 CMP
C-4010	15+20	24	CPP	40			0.2		6" JAW	2" AG	MACHINE	Y	T5 CROSSING
C-4010	52+40	24	CPP	50			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	112+60	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4010	121+50	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4030	0+75	18	CPP	30			0.2	0.4	6" JAW	2" AG	MACHINE	Y	
C-4030	9+00	18	CPP	30			0.2	0.4	6" JAW	2" AG	MACHINE	Y	
C-4030	18+20	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	NO SKEW
C-4032	3+70	18	CPP	30			0.2	0.4	6" JAW	2" AG	MACHINE	Y	
C-4100	25+05	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4100	52+20	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4100	61+25	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4100	69+20	24	CPP	30			0.2	0.2	6" JAW	2" AG	MACHINE	Y	T5 WATER
C-4100	85+50	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	BLOCK DITCH LEADING TO WETLAND
C-4100	89+00	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	XTRA DEEP CATCH BASIN
C-4100	106+90	18	CPP	20	30		0.2		6" JAW	2" AG	MACHINE	Y	
C-4100	109+60	18	CPP	40			0.2		6" JAW	2" AG	MACHINE	Y	
C-4100	77+30	18	CPP	40			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	0+50	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	6+75	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	12+80	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	29+75	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	33+20	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	33+70	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	36+20	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	38+40	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	44+20	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4110	11+00	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4130	1+76	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	

Road Number	Location	Culvert		Length (ft)			Armor (C.Y.)			Backfill Material	Placement Method	Const. Staked	Remarks
		Dia.	Type	Culvert	Downspt	Flume	Inlet	Outlet	Type				
C-4130	3+52	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4130	6+00	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4130	7+40	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4130	10+60	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-4200	16+20	18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	
C-5000	2+50	18	CPP	20	20		0.2		6" JAW	2" AG	MACHINE	Y	
C-Line	477+75	18	CPP	20	20,20		-	-	2" AG		MACHINE	Y	SEE BEAVER DECEIVER DETAIL
C-Line	545+30	18	CPP	40			0.2	0.4	6" JAW	2" AG	MACHINE	Y	NO SKEW OUTLET INTO C-5000 DITCH
C-Line	665+25	18	CPP	80			0.2		6" JAW	2" AG	MACHINE	Y	REPAIR HEADWALL
C-Line	572+20	18	CPP	30	20		0.2		6" JAW	2" AG	MACHINE	Y	
ANY ROAD IN SECTION 0-2		18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	AT C.A. DISCRETION. IF NOT INSTALLED TRANSPORT TO LOCATION DESIGNATED BY C.A.
ANY ROAD IN SECTION 0-2		18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	AT C.A. DISCRETION. IF NOT INSTALLED TRANSPORT TO LOCATION DESIGNATED BY C.A.
ANY ROAD IN SECTION 0-2		18	CPP	30			0.2		6" JAW	2" AG	MACHINE	Y	AT C.A. DISCRETION. IF NOT INSTALLED TRANSPORT TO LOCATION DESIGNATED BY C.A.

Key:

- AG - Aggregate Rock
- JAW - Clean Jaw Run Rock
- NT - Native (bank run)
- CPP - High Density Polyethylene
- CMP - Galvanized Steel
- TEMP - Temporary Installation
- Flume - Half round pipe
- Downsput - Full round pipe

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

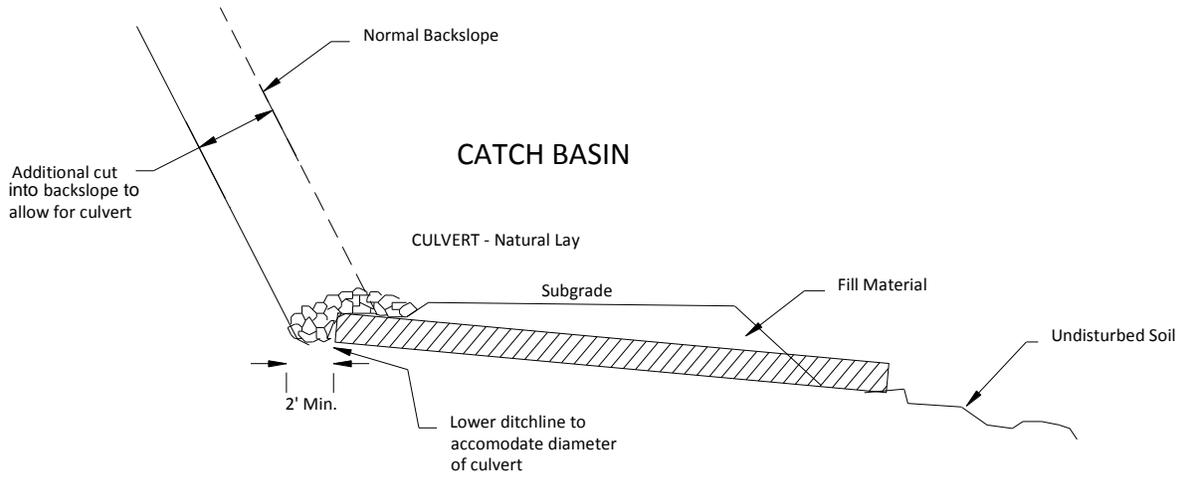


COMPACTION LIST

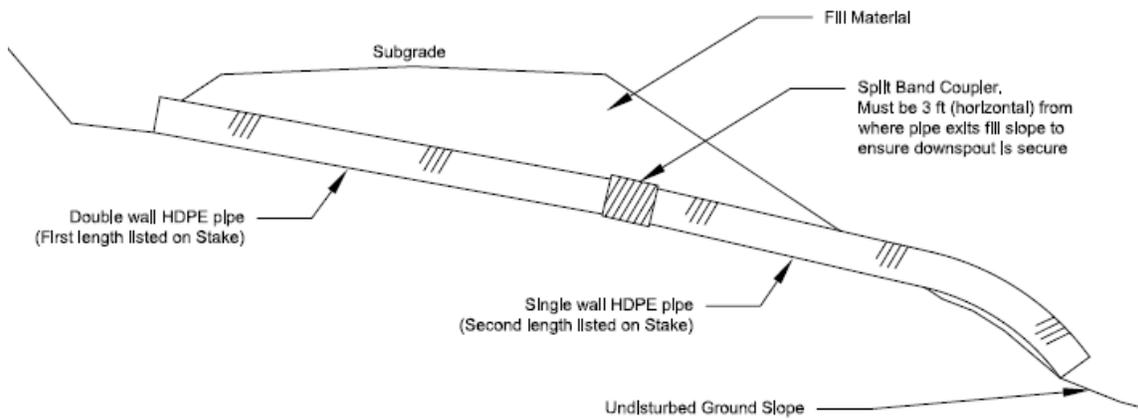
Road	From Station	To Station	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes	Maximum Operating Speed (mph)
C-LINE	434+80	829+40	PREHAUL POST ROCK APPLICATION- SKIP PAVED AREAS	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4000	0+00	185+70	PREHAUL, POST ROCK APPLICATION	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4010	0+00	126+20	PREHAUL, POST ROCK APPLICATION	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4100	0+00	116+90	PREHAUL, POST ROCK APPLICATION	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4200	0+00	31+00	PREHAUL, POST ROCK APPLICATION	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4030	0+00	26+20	PREHAUL, POST ROCK APPLICATION	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4032	0+00	8+70	PREHAUL, POST ROCK APPLICATION	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4110	0+00	49+10	PREHAUL, POST ROCK APPLICATION	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4130	0+00	12+60	SUBGRADE	-	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4000- 81	0+00	3+80	SUBGRADE	-	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4130	0+00	12+60	POST BALLAST APP.	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5
C-4000- 81	0+00	3+80	POST BALLAST APP.	6 IN.	SMOOTH DRUM VIBRATORY	20,000	2	3.5

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 1 of 4)



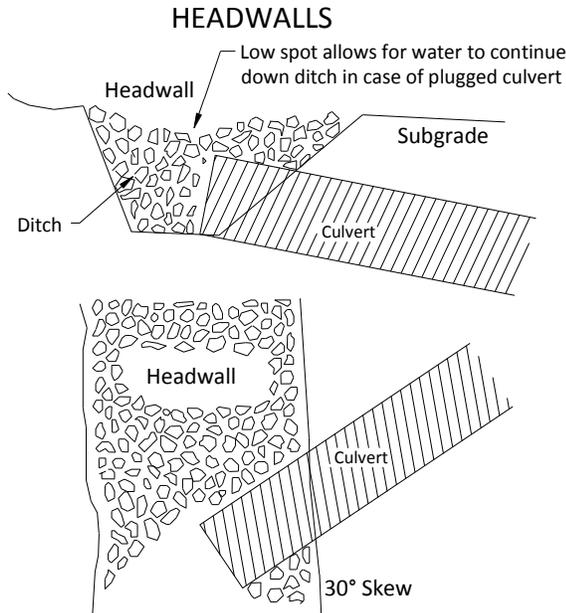
CULVERT - With HDPE (Plastic) Downspout



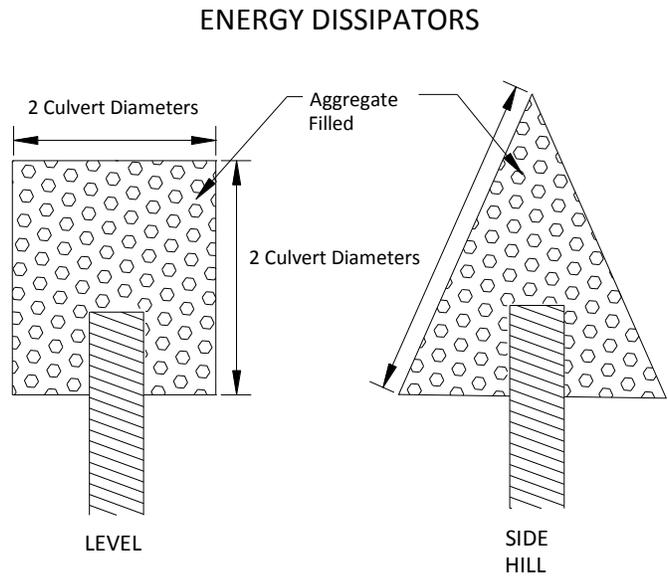
CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 2 of 4)

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



Headwalls to be constructed of material that will resist erosion.



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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 3 of 4)

POLYETHYLENE PIPE INSTALLATION

INSTALLATION REQUIREMENTS:

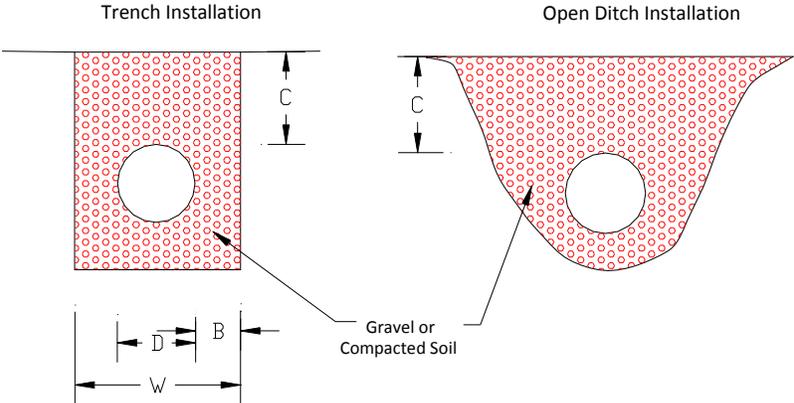
1. Crushed stone, gravel, or compacted soil backfill material shall be used as the bedding and envelope material around the culvert. The aggregate size shall not exceed 1/6 pipe diameter or 4" diameter, whichever is smaller.
2. The corrugated pipe shall be laid on grade, on a layer of bedding material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

CULVERT AND DRAINAGE SPECIFICATION DETAIL

(Page 4 of 4)

MINIMUM DIMENSIONS Trench or Open Ditch Installation

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



FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the construction materials. Remove slides up to 100 cubic yards in volume from ditches and the roadway. Repair fill-failures with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

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

Drainage

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

Preventative Maintenance

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

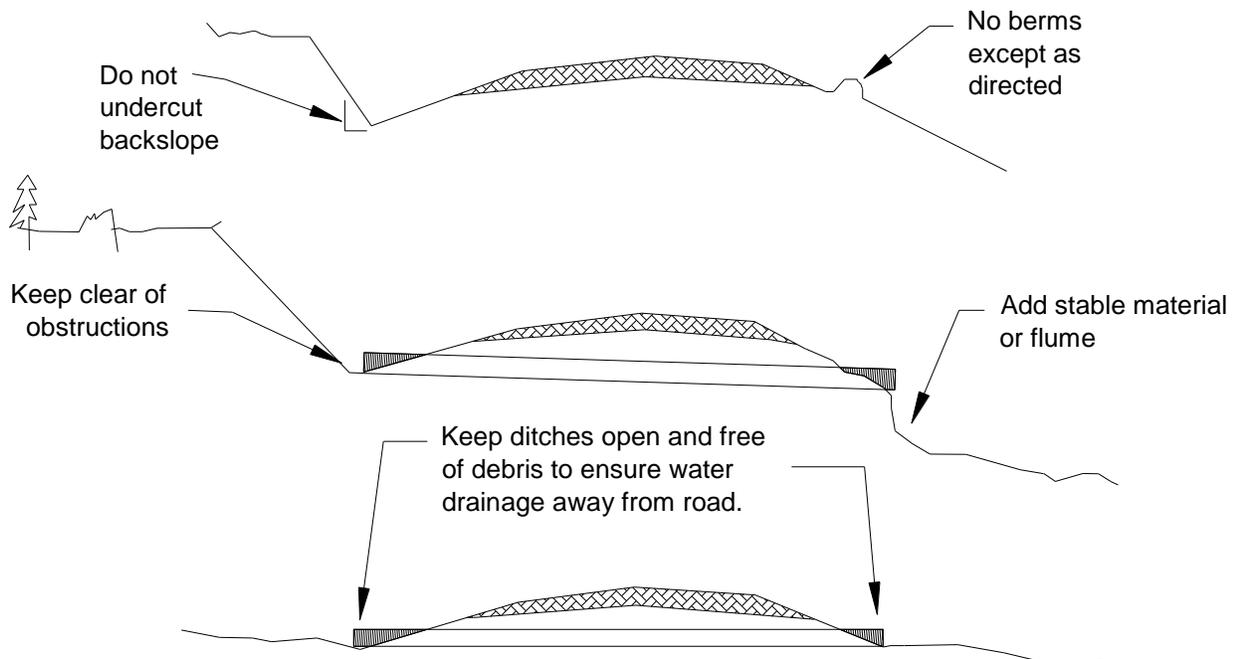
FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

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.



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
SOUTH PUGET SOUND REGION

LOW BANK QUARRY DEVELOPMENT PLAN

SECTION 15, TOWNSHIP 17 NORTH, RANGE 04 WEST, W.M.

(Page 1 of 3)

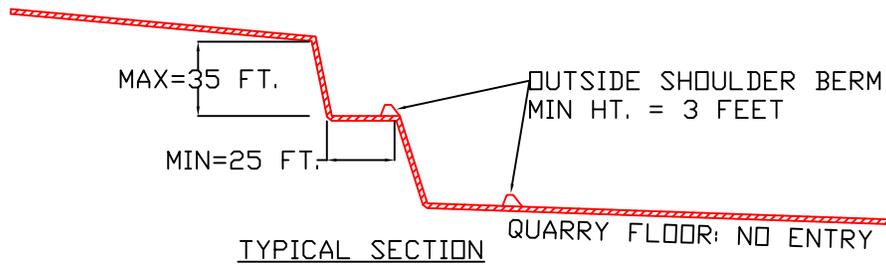
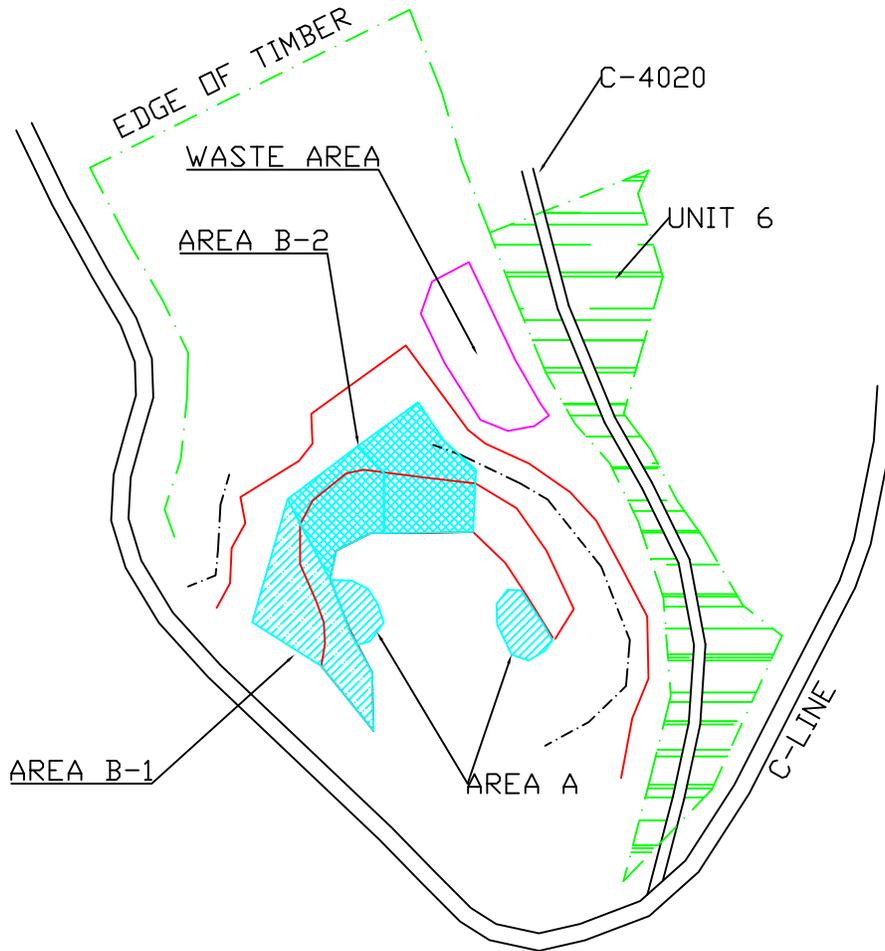
1. **Oversize material shall be utilized for crushing prior to development in any other area.** Contract Administrator, at their sole discretion, may allow for a quantity of oversize to remain in the Quarry area. Such residual oversize shall be placed as directed by the Contract Administrator.
2. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of the operation, oversize material shall be placed as directed by the contract administrator.
3. Quarry development shall proceed as directed by the attached map, at a suitable elevation to not create a working face over 30ft.
4. The pit area shall be stripped and all overburden shall be hauled or pushed to the overburden site.
5. Overburden shall be pushed or end hauled to the designated waste area and compacted. Minimal acceptable compaction is achieved by placing waste material in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts.
6. All vegetation including stumps shall be cleared a minimum of 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of $\frac{3}{4}$ of the height of the tallest tree adjacent to the pit.
7. All exposed soil and waste areas shall be grass seeded in accordance to road plan clause 5.4-3A.
8. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in a designated waste area.
9. The quarry floor shall have continuity of slope, providing drainage to the south at a minimum of 2 %.
10. The location and amount of material to be placed in a stockpile are subject to approval of the Contract Administrator. All stock piled material shall be maintained in a neat and useable condition.
11. At the conclusion of operations, oversize material shall be placed as directed by the Contract Administrator. All existing oversize material shall be utilized prior to the development of that area.
12. The working face shall not exceed 30 feet in height with a back slope no steeper than $\frac{1}{2}$:1.
13. The working bench width shall be a minimum of 30 feet, or alternatively, 18 feet wide with a 3 foot high by 3 foot wide berm placed on the outside of the bench, opposite the high wall, leaving a 15 foot wide trail between the berm and high wall.
14. Any access roads shall be lined with oversize rock to keep traffic a minimum of 10 feet from the face.
15. At the end of operations faces and walls shall be scaled and cleared of loose and overhanging material.

16. Reclamation will not be required under this contract.

LOW BANK QUARRY DEVELOPMENT PLAN

17. At the completion of rock source operations, Purchaser shall ask Contract Administrator for written approval of final rock source condition and compliance with the terms of this plan. Failure to obtain written approval of final rock source condition may result in retention of Performance Security.
18. All operations shall be carried out in compliance with all regulations of:
- a. "Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations" (30 CFR) U. S. Department of Labor, Mine Safety and Health Administration.
 - b. "Safety Standards - Metal and Nonmetallic Mines, Quarries, Pits, and Crushing Operations" (296-61 WAC), Washington Department of Labor and Industries.
 - c. "Safety Standards For Construction Work" (296-155 WAC), Washington Department of Labor and Industries.
19. The Operator shall submit an informational drilling and shooting plan to the Contract Administrator 5 working days prior to any drilling.
20. The pit area shall be worked and left in a condition that future operations may proceed in an orderly manner.
21. Upon completion of operations, the site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition. Access restriction berms shall be rebuilt at the entrance of the Quarry.

LOW BANK QUARRY DEVELOPMENT PLAN MAP



- LEGEND**
- - - GRUBBED EDGE
 - - - ACCESS TRAIL
 - TOP/TOE OF FACES
 - WASTE AREA (SEPARATE SOIL AND ORGANIC MATERIALS)

— = 100 FT. ON ORIGINAL

DEVELOPMENT NOTES:
 OVERSIZE IN AREA A AND ELSEWHERE IN THE PIT MUST BE REDUCED TO A CRUSHED AGGREGATE SPECIFIED IN THE ROADPLAN.

ROCK QUALITY IN AREA B-1 IS INFERIOR; USE AREA B-1 FOR 6 INCH JAW RUN, SPARINGLY FOR 2 INCH MINUS. DAYLIGHT AREA B-1 TO QUARRY FLOOR ELEVATION.

AREA B-2 CONTAINS BEST QUALITY ROCK. USE AREA B-2 FOR 2 INCH MINUS, 2 INCH CLEAN PRODUCTION. FINAL ELEVATION OF AREA B-2 = QUARRY FLOOR.

DEVELOPMENT OF AREAS OUTSIDE OF THOSE SHOWN REQUIRES WRITTEN PERMISSION OF CONTRACT ADMINISTRATOR.

LOW BANK QUARRY PLAN



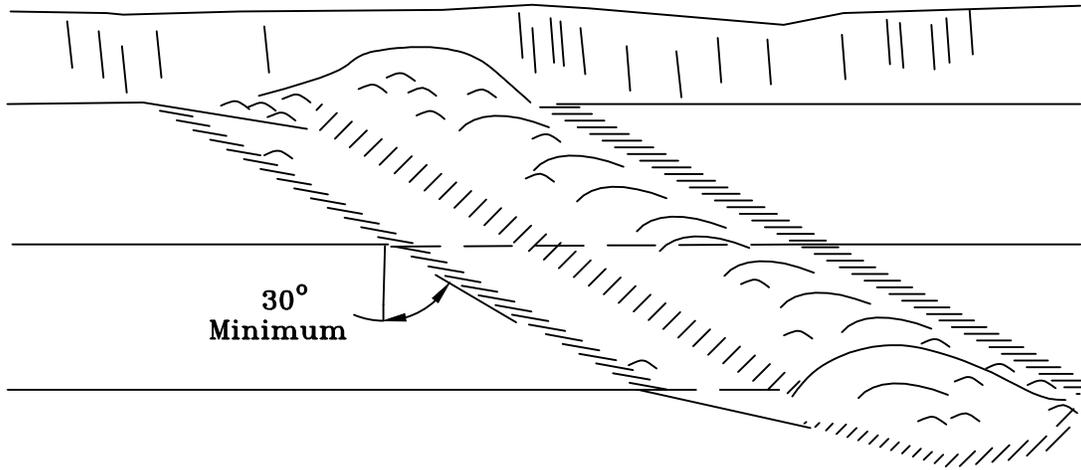
WASHINGTON STATE DEPARTMENT OF

Natural Resources

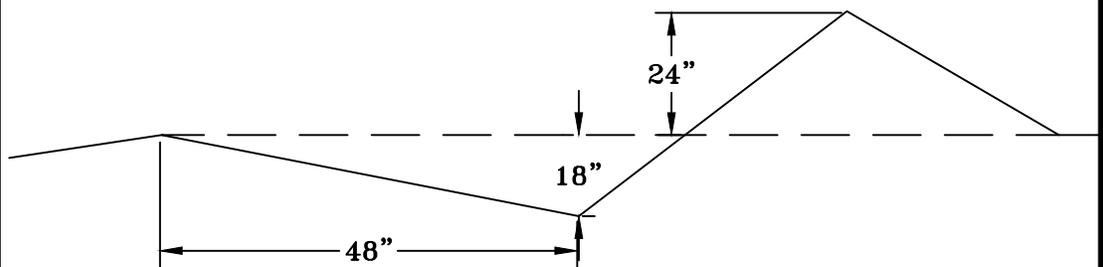
SPS Region

Non-Drivable Water Bar Detail

Cross Ditch



Cross Section at Centerline

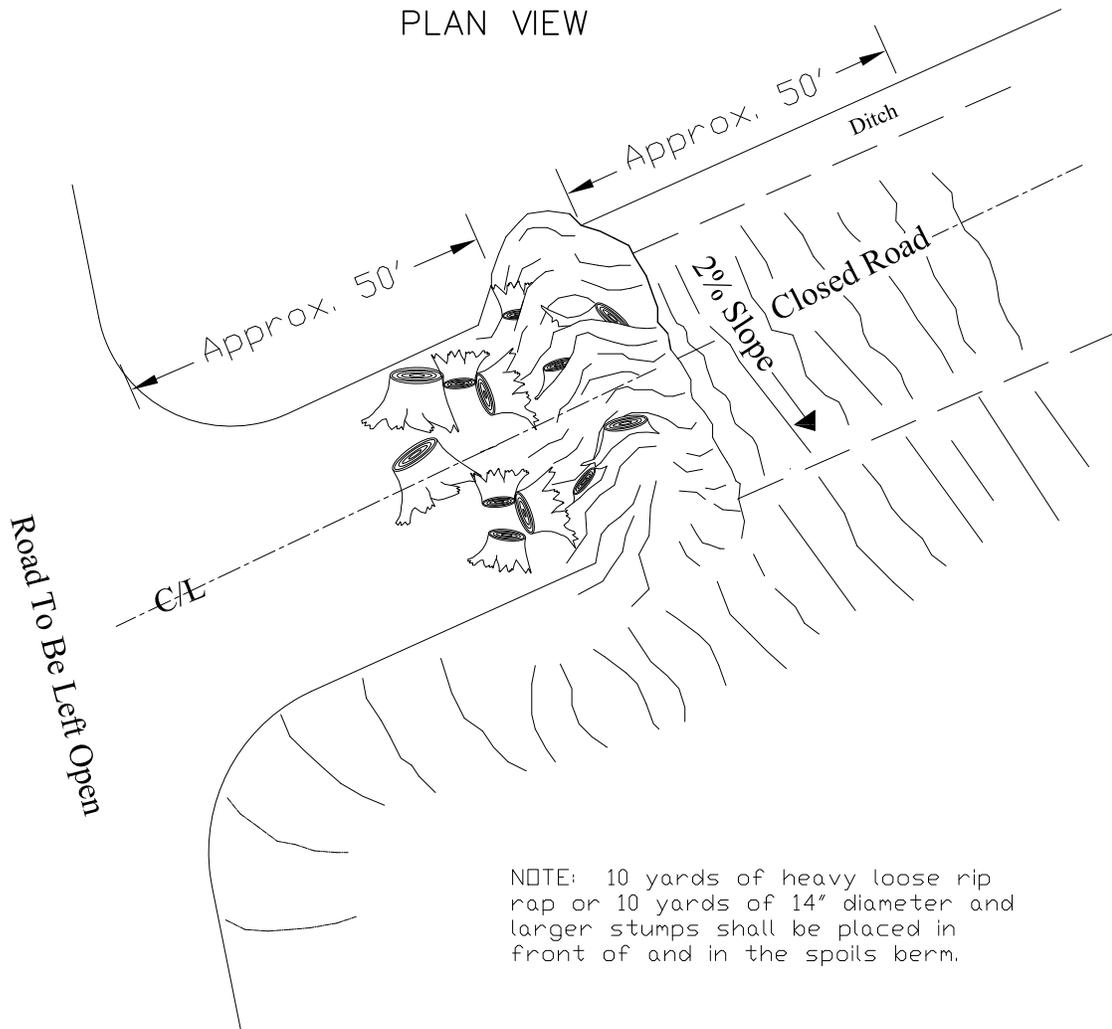


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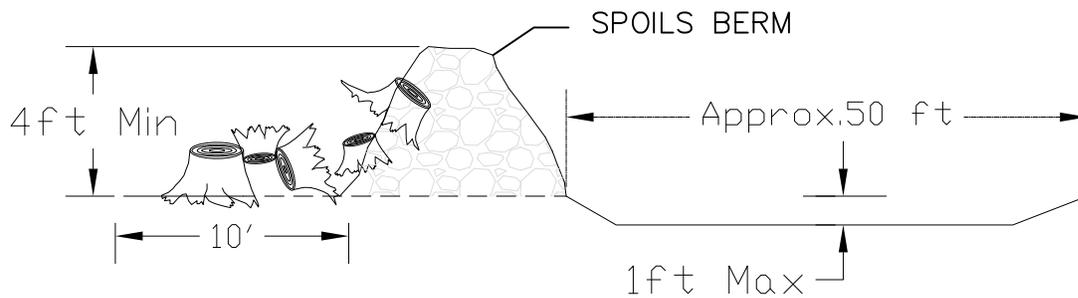
Water Bar Detail	
	WASHINGTON STATE DEPARTMENT OF Natural Resources
<small>SPS Region</small>	

SPOILS BERM DETAIL

PLAN VIEW

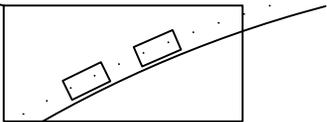
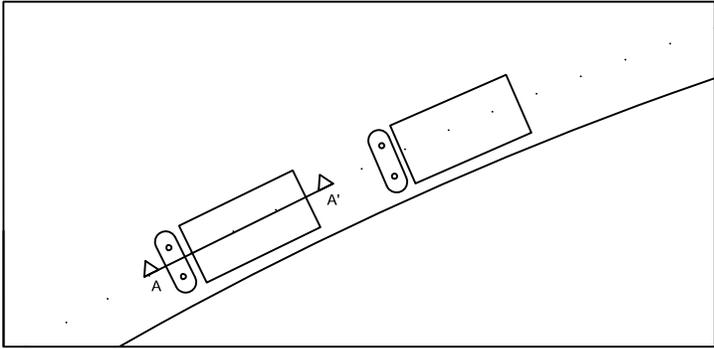
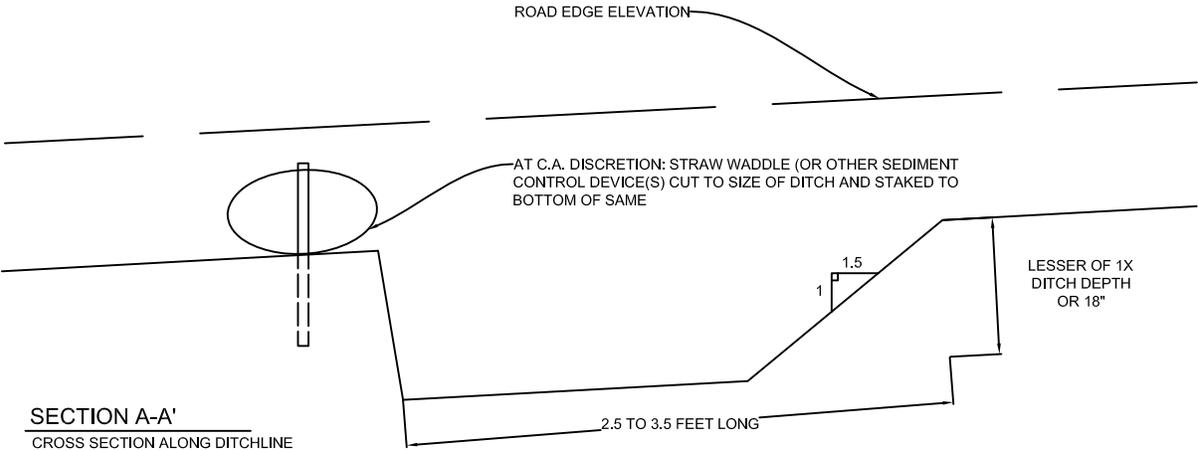


NOTE: 10 yards of heavy loose rip rap or 10 yards of 14" diameter and larger stumps shall be placed in front of and in the spoils berm.



Note: $\frac{1}{3}$ of stumps or rip rap shall be partially buried in the spoils berm and/or road surface.

SEDIMENT TRAP DETAIL



NOTES:

CONSTRUCT SEDIMENT TRAPS IN SETS GREATER THAN ONE, WHENEVER POSSIBLE.

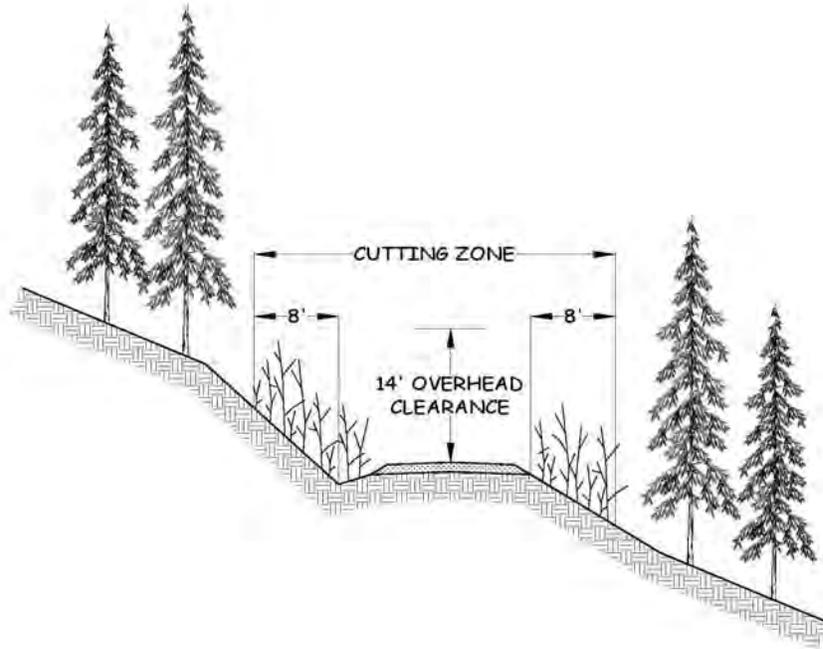
IF SEDIMENT TRAPS FILL WITH SEDIMENT DURING HAUL OPERATIONS, REMOVING SEDIMENT FROM TRAPS IS CONSIDERED ROUTINE MAINTENANCE.

ADDITIONAL SEDIMENT CONTROL DEVICES, SUCH AS HAY BALES, STRAW WADDLES OR OTHERS MAY BE REQUIRED AS SHOWN IF IN THE OPINION OF THE CONTRACT ADMINISTRATOR, SEDIMENT TRAP ALONE DOES NOT APPEAR TO BE EFFECTIVE.

Date: 09/16/2014
 Scale : NTS
 App#
 Drawn by: WPH
 Sheet 1 of 1

SEDIMENT TRAP DETAIL	
	WASHINGTON STATE DEPARTMENT OF Natural Resources <small>SPS Region</small>

ROAD BRUSHING DETAIL



SPECIFICATIONS

Brush shall be cut on the road surface and 8 ft. back from the back of road ditch and outside edge of running surface.

On the inside of switchbacks and tight curves, brush shall be cut back 16 ft. for visibility.

On truck turnouts or turnarounds, brush shall be cut 8 ft. back from outside edge.

Brush shall be cut to provide an overhead clearance of 14 ft. above the road running surface.

Brush shall be cut to within 6 in. of the ground.

Slash shall be removed from cut slopes above the road and scattered on embankment slopes.

Ditches shall be cleared of woody debris.

Culvert inlets and outlets shall be cleaned a minimum distance of two pipe diameters away.

Typical Plan

Place inlet marker on right side of inlet, in culvert corrugation if possible

Edge of fill

Edge of road

Culvert Barrel

Typical Section

Inlet marker: 1 inch I.D. Schedule 40 PVC Pipe, white

24 inches min.

Road Surface

Catch Basin

Culvert Barrel

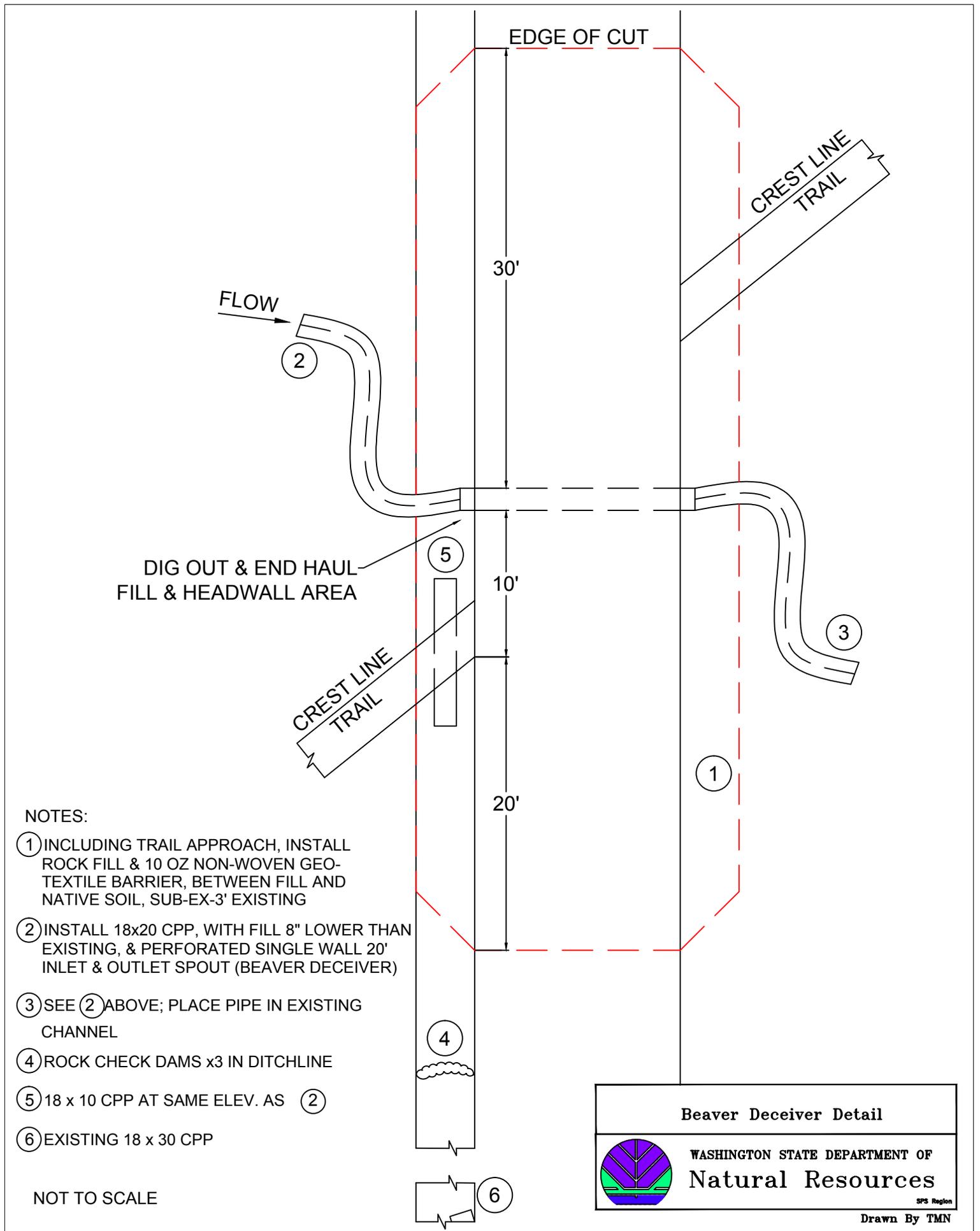
6 inches min.

CULVERT MARKER DETAIL (INLET SHOWN)



WASHINGTON STATE DEPARTMENT OF Natural Resources

Drawn by: WP Hoskins

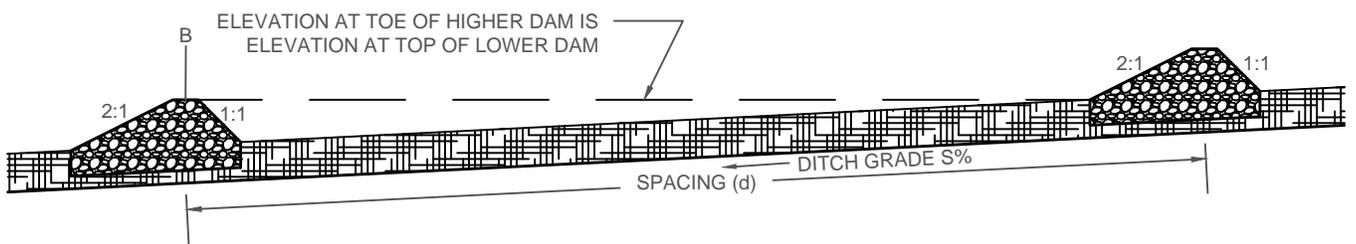
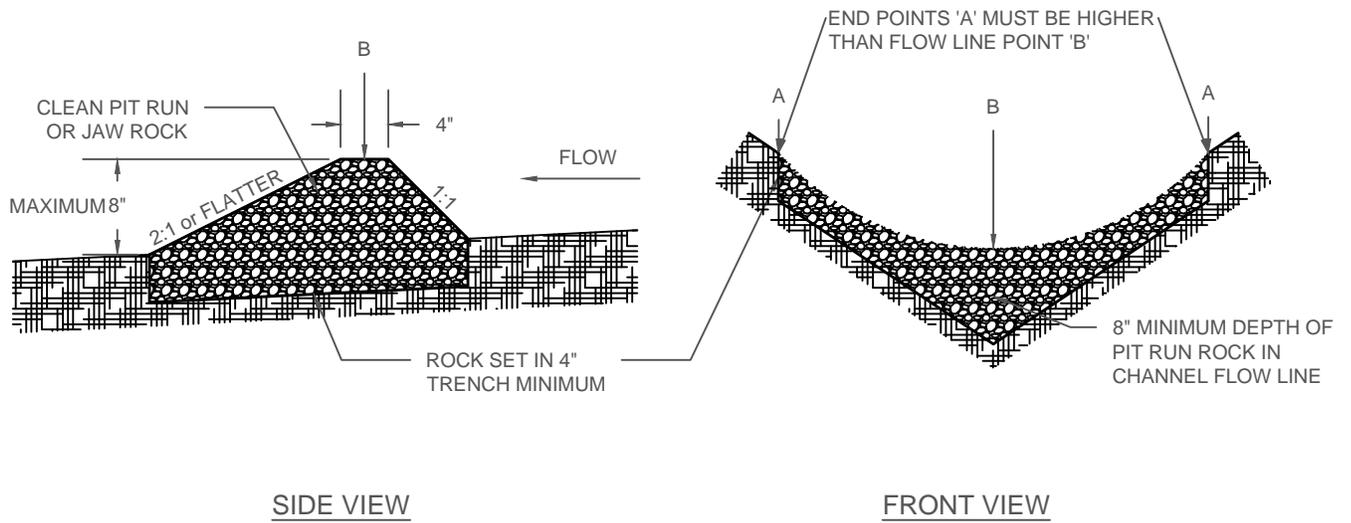


NOTES:

- ① INCLUDING TRAIL APPROACH, INSTALL ROCK FILL & 10 OZ NON-WOVEN GEOTEXTILE BARRIER, BETWEEN FILL AND NATIVE SOIL, SUB-EX-3' EXISTING
- ② INSTALL 18x20 CPP, WITH FILL 8" LOWER THAN EXISTING, & PERFORATED SINGLE WALL 20' INLET & OUTLET SPOUT (BEAVER DECEIVER)
- ③ SEE ② ABOVE; PLACE PIPE IN EXISTING CHANNEL
- ④ ROCK CHECK DAMS x3 IN DITCHLINE
- ⑤ 18 x 10 CPP AT SAME ELEV. AS ②
- ⑥ EXISTING 18 x 30 CPP

NOT TO SCALE

Beaver Deceiver Detail	
	WASHINGTON STATE DEPARTMENT OF Natural Resources
SPS Region	
Drawn By TMN	



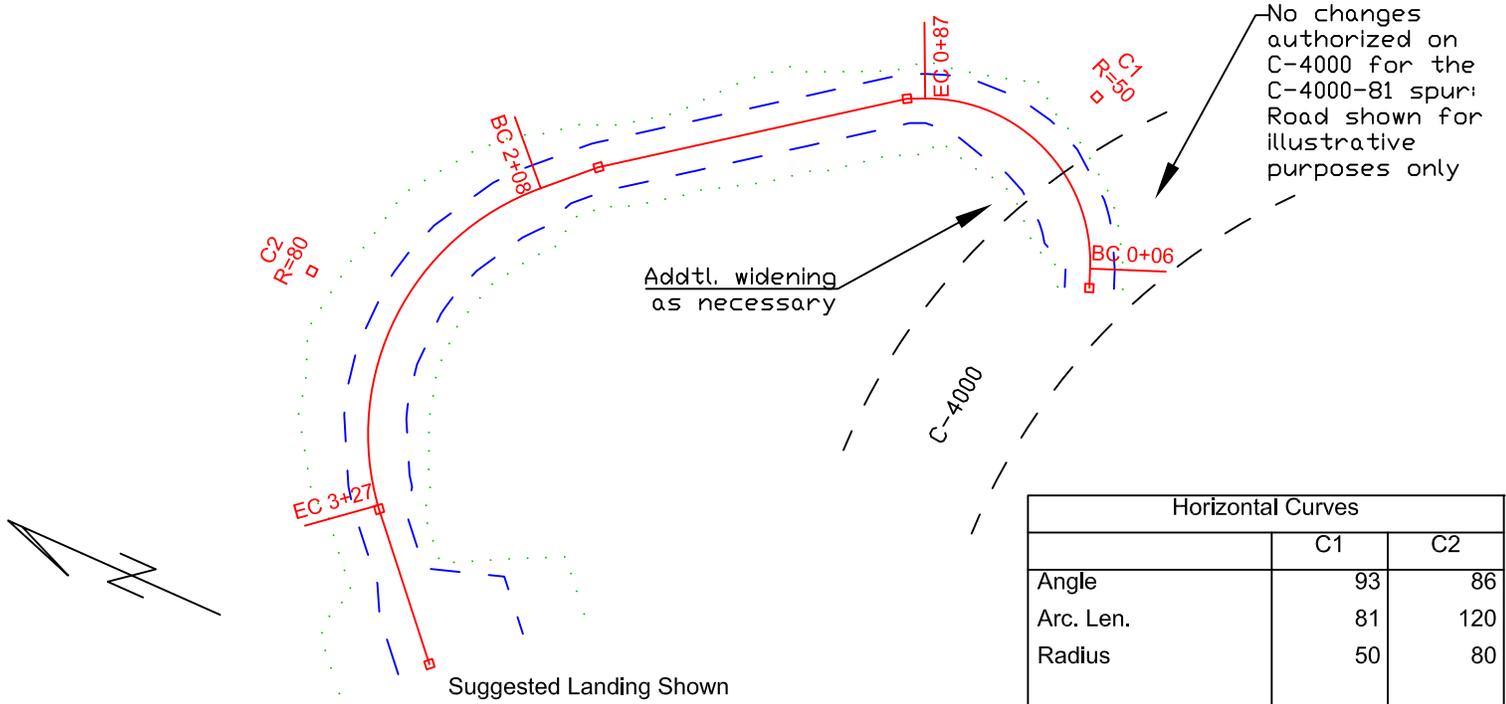
NOTES:

1. SPACING (d) AND ROCK SIZE TO BE DETERMINED BY CONTRACT ADMINISTRATOR BASED ON HYDRAULIC CONDITIONS
2. THIS FIGURE IS PROVIDED FOR GUIDANCE ONLY AND DOES NOT CONSTITUTE A DESIGN. A SITE SPECIFIC DESIGN IS REQUIRED FROM DESIGNER/ENGINEER.

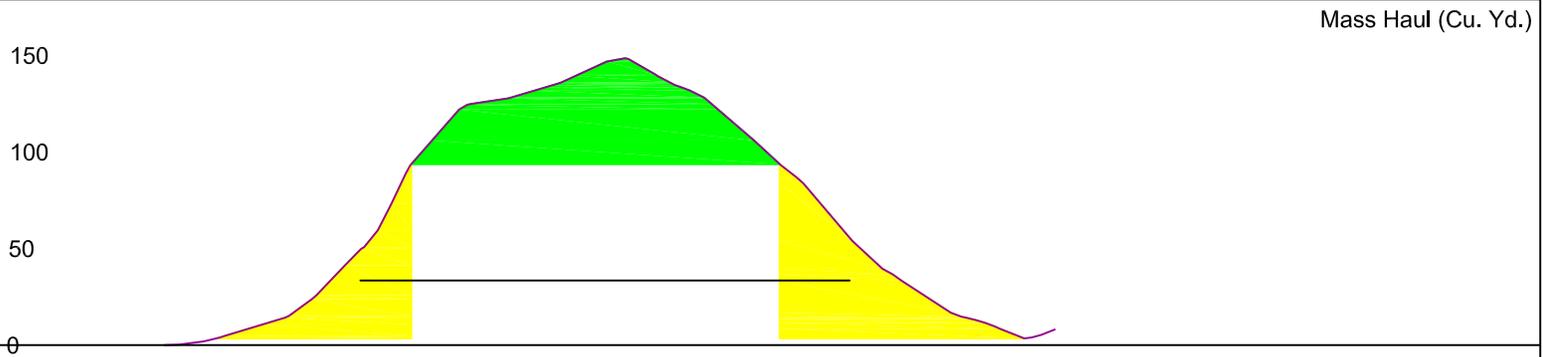
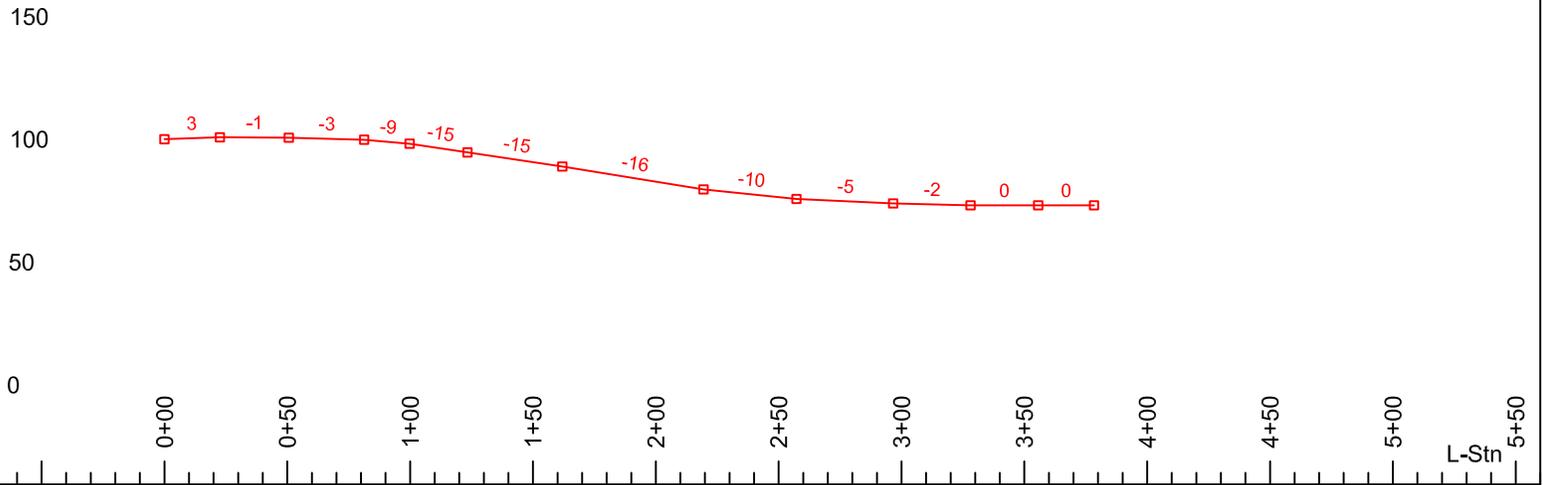
Ditch Check Dam Detail	
	WASHINGTON STATE DEPARTMENT OF Natural Resources

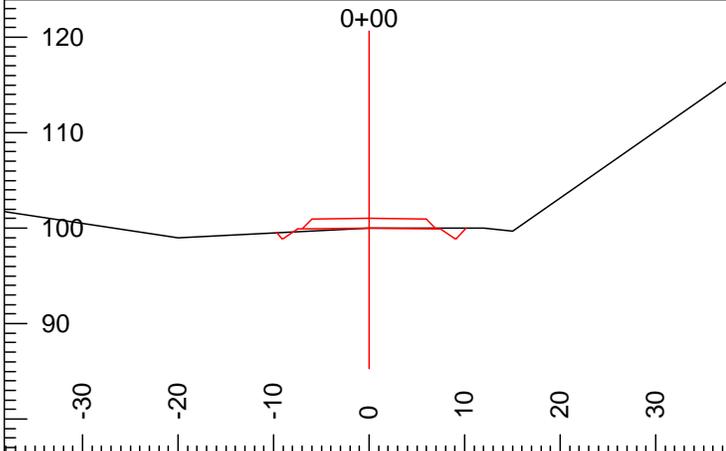
ROAD PLAN C-4000.81 DESIGN UP TOP TIMBER SALE

Page 1 of 1

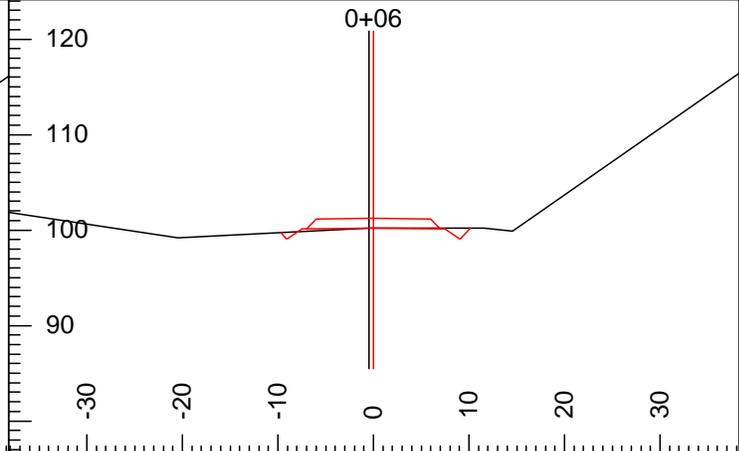


Horizontal Curves		
	C1	C2
Angle	93	86
Arc. Len.	81	120
Radius	50	80

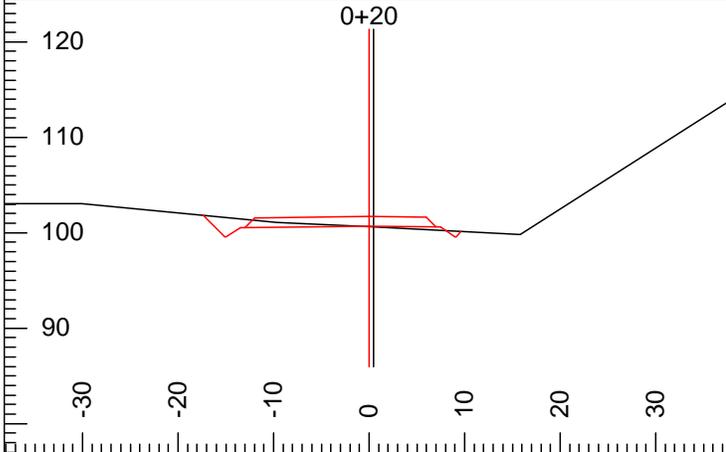




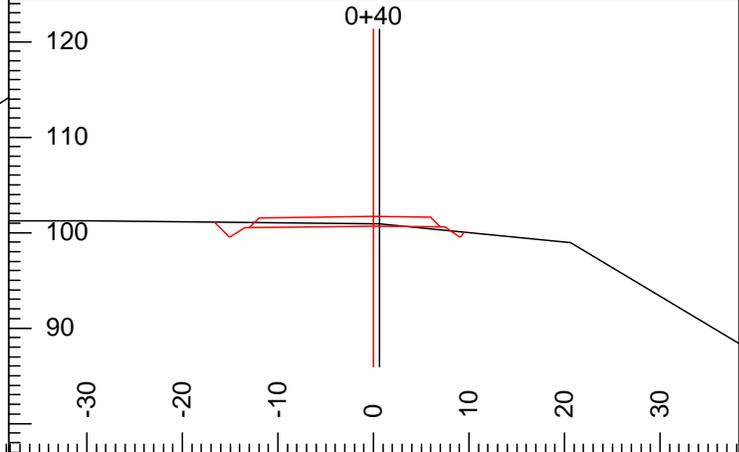
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Grd.Nxt.:	3	F Slope L:	100		
Grd.Lst:	n/a	F Slope R:	100		



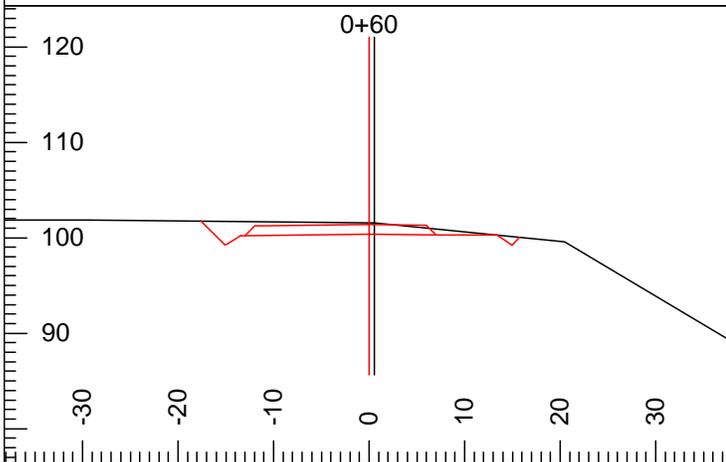
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Grd.Lst:	3	F Slope R:	100		



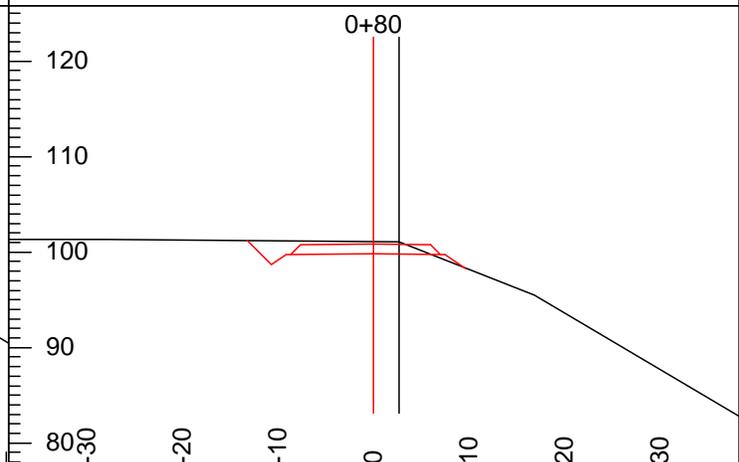
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Grd.Lst:	3	F Slope R:	100		



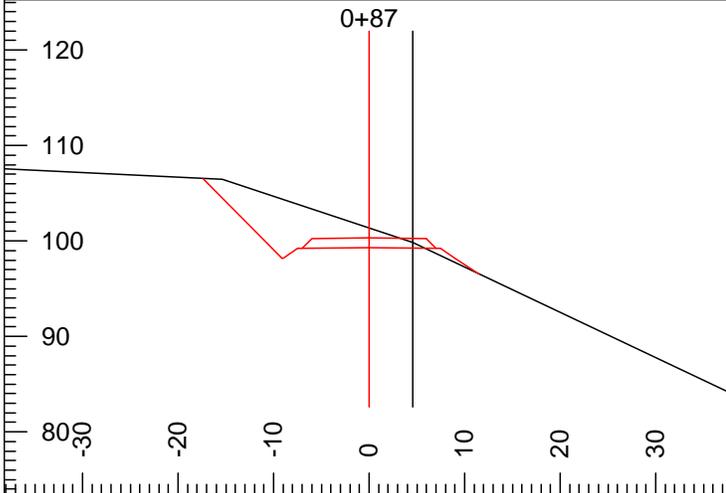
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Grd.Lst:	-1	F Slope R:	100		



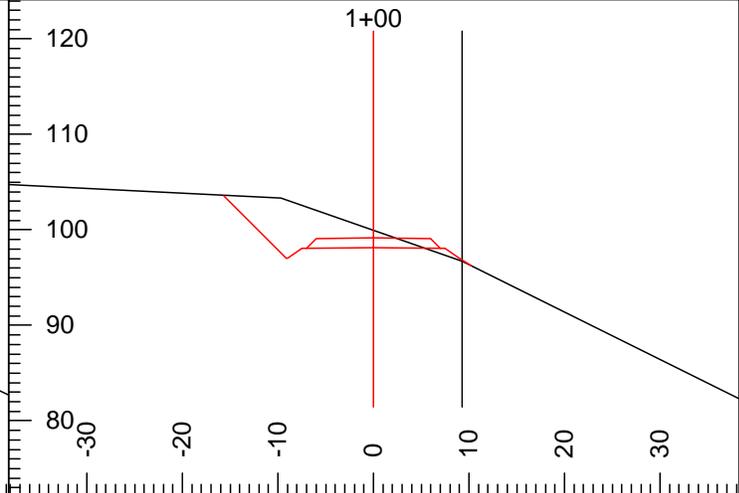
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P-Stn:	0+61	L-Ssr: (Av)	-9	H. Offset:	-1
Grd.Nxt.:	-3	F Slope L:	100		
Grd.Lst:	-3	F Slope R:	100		



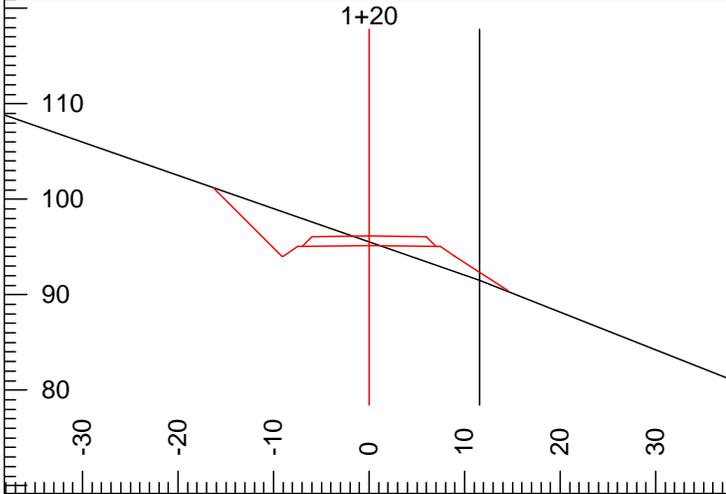
L-Stn:	0+80	Grd.Lst:	-3	F Slope L:	100	H. Offset:	-3
P-Stn:	0+82	L-Ssl: (Av)	1	F Slope R:	-67		
Grd.Nxt.:	-3	L-Ssr: (Av)	-29	Cut Dp:	1		



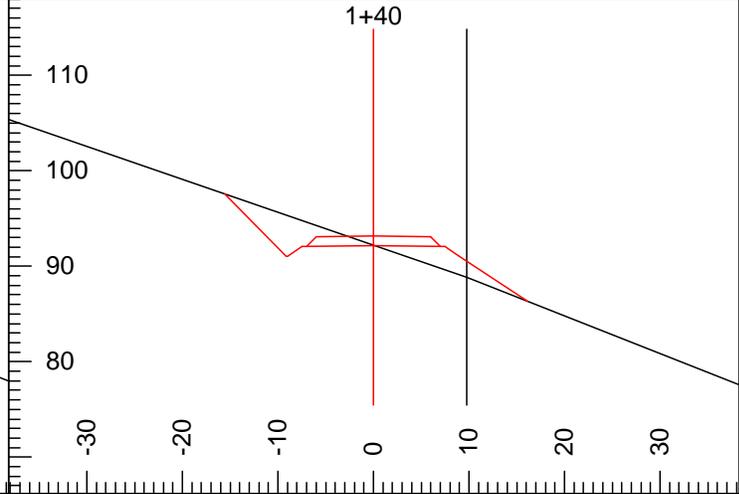
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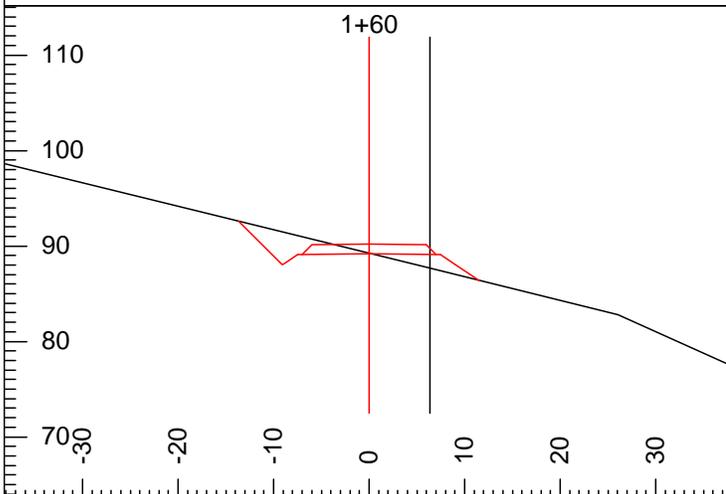
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P-Stn: 1+04 L-Ssl: (Av) 34 F Slope R: -67
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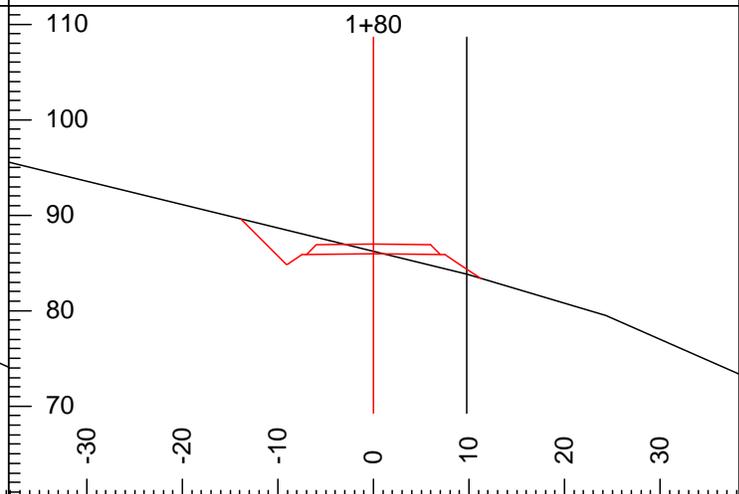
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P-Stn: 1+24 L-Ssl: (Av) 35 F Slope R: -67
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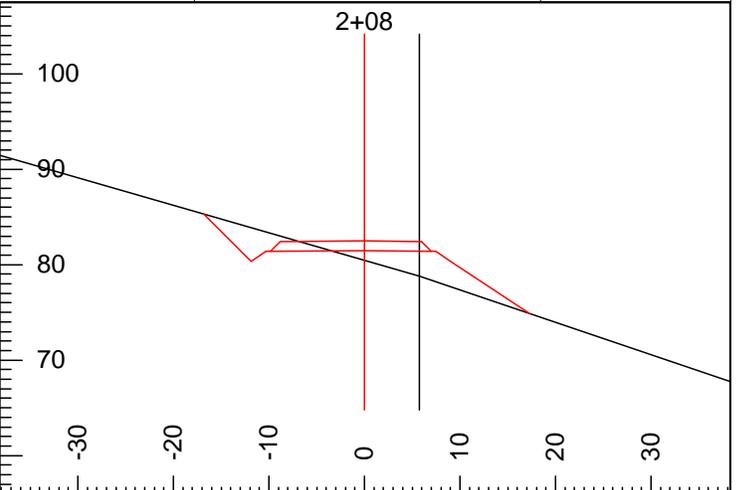
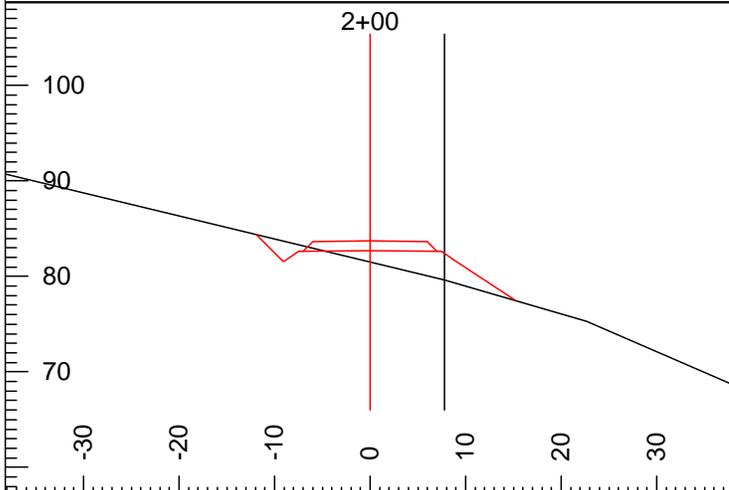
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Grd.Nxt.: -15 L-Ssr: (Av)-35 Cut Dp: 0



L-Stn: 1+60 Grd.Lst: -15 F Slope L: 100 H. Offset: -6
P-Stn: 1+67 L-Ssl: (Av) 25 F Slope R: -67
Grd.Nxt.: -15 L-Ssr: (Av)-25 Cut Dp: 0

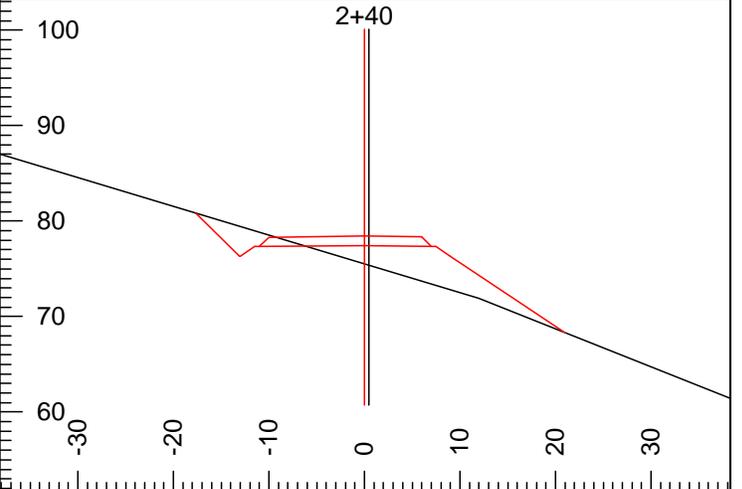
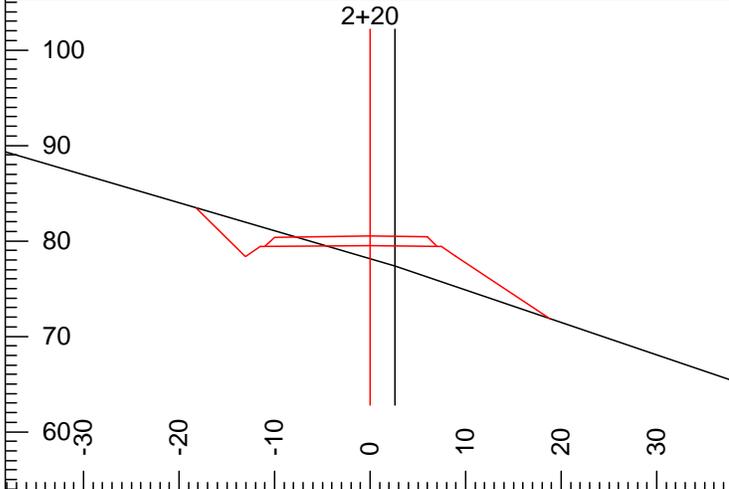


L-Stn: 1+80 Grd.Lst: -16 F Slope L: 100 H. Offset: -10
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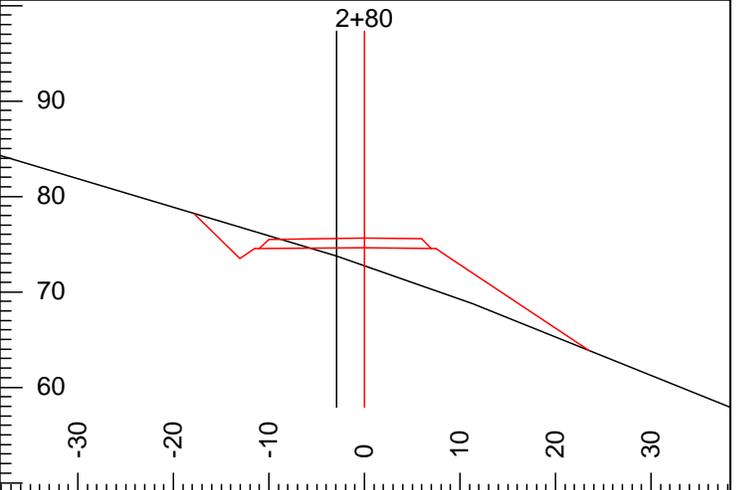
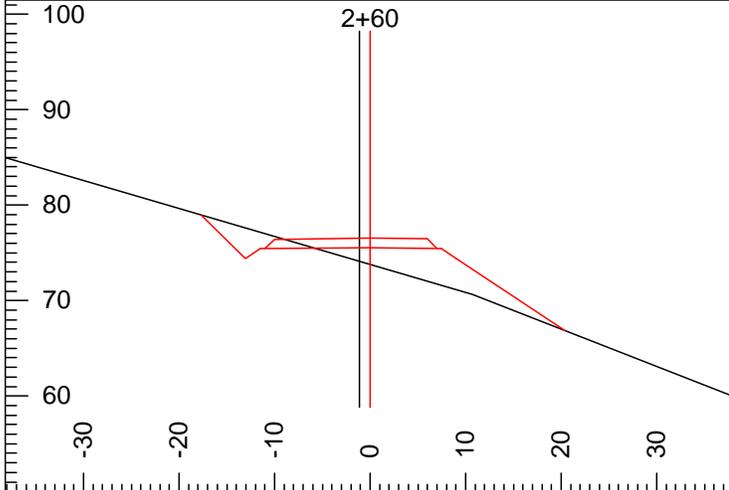
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L-Stn: 2+08 Grd.Lst: -16 F Slope L: 100 H. Offset: -6
 P-Stn: 2+18 L-Ssl: (Av) 29 F Slope R: -67
 Grd.Nxt.: -16 L-Ssr: (Av)-31 Cut Dp: -1



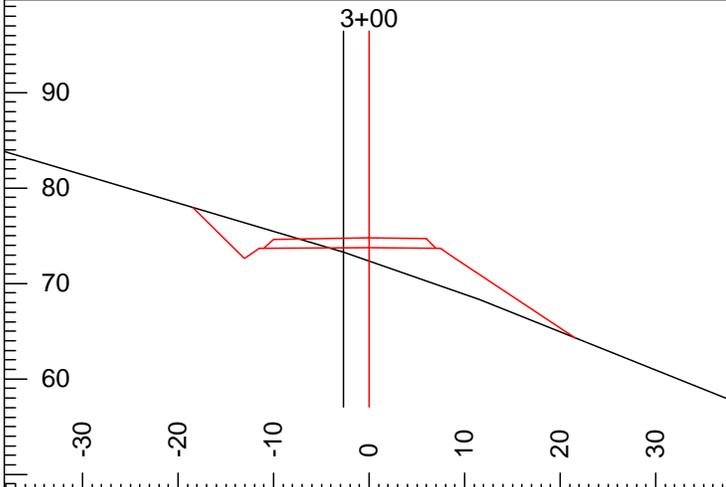
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L-Stn: 2+40 Grd.Lst: -10 F Slope L: 100 H. Offset: 0
 P-Stn: 2+50 L-Ssl: (Av) 30 F Slope R: -67
 Grd.Nxt.: -10 L-Ssr: (Av)-30 Cut Dp: -2

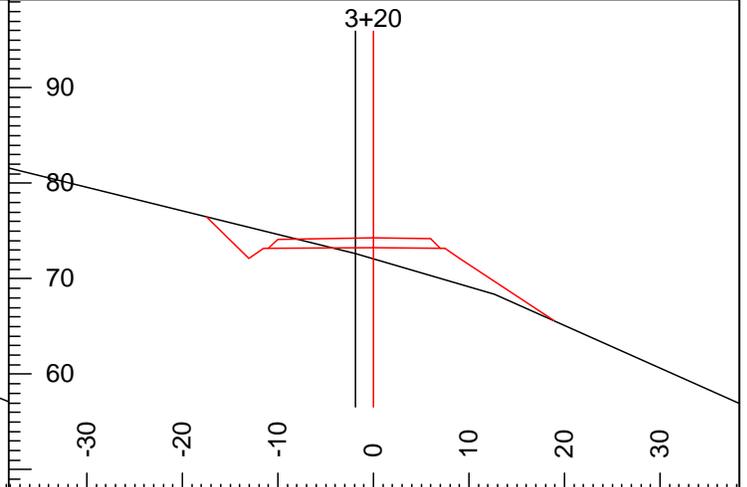


L-Stn: 2+60 Grd.Lst: -5 F Slope L: 100 H. Offset: 1
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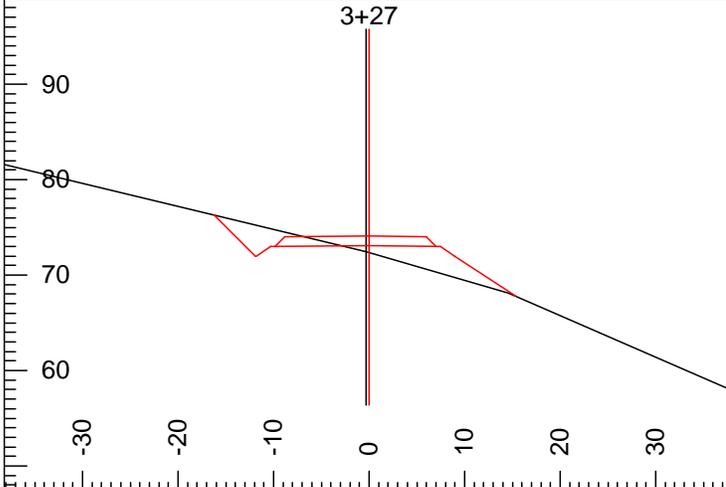
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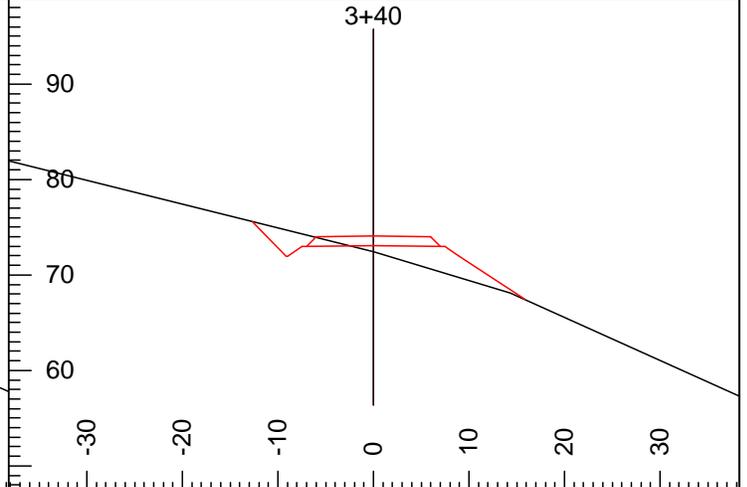
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 Grd.Nxt.: -2 L-Ssr: (Av)-35 Cut Dp: -1



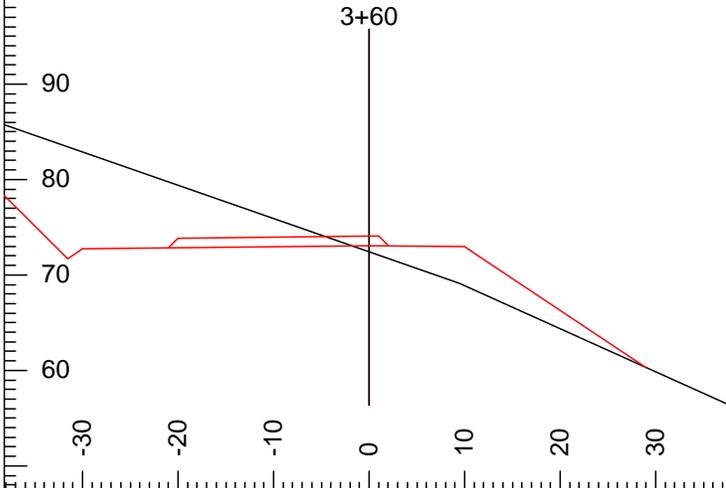
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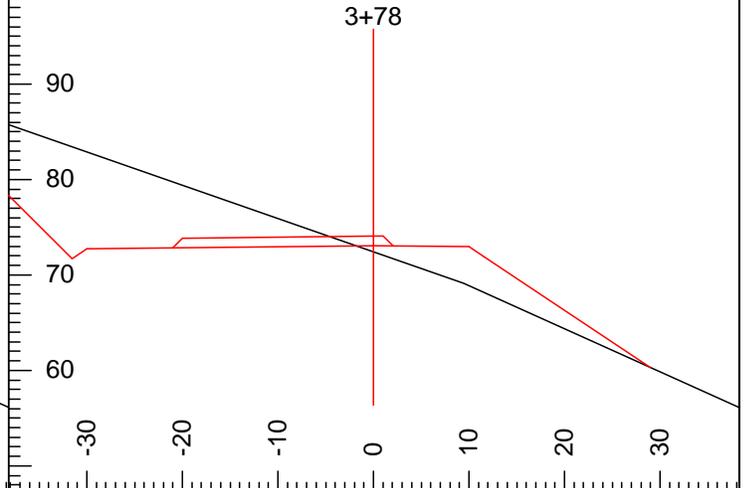
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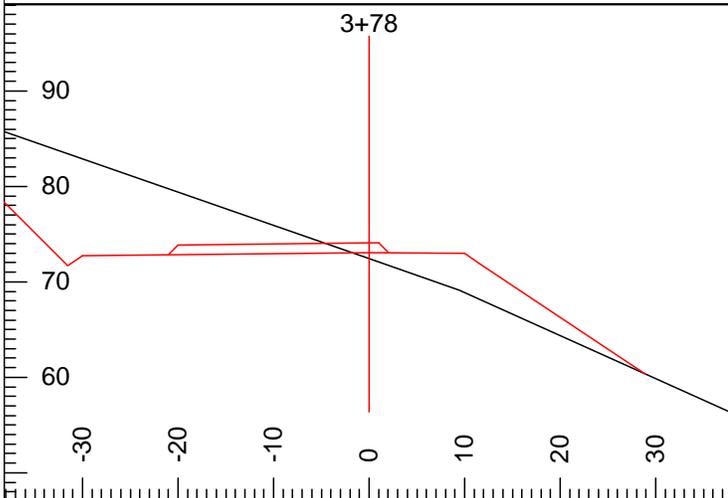
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L-Stn: 3+60 Grd.Lst: 0 F Slope L:100 H. Offset: 0
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 Grd.Nxt.: 0 L-Ssr: (Av)-36 Cut Dp: -1



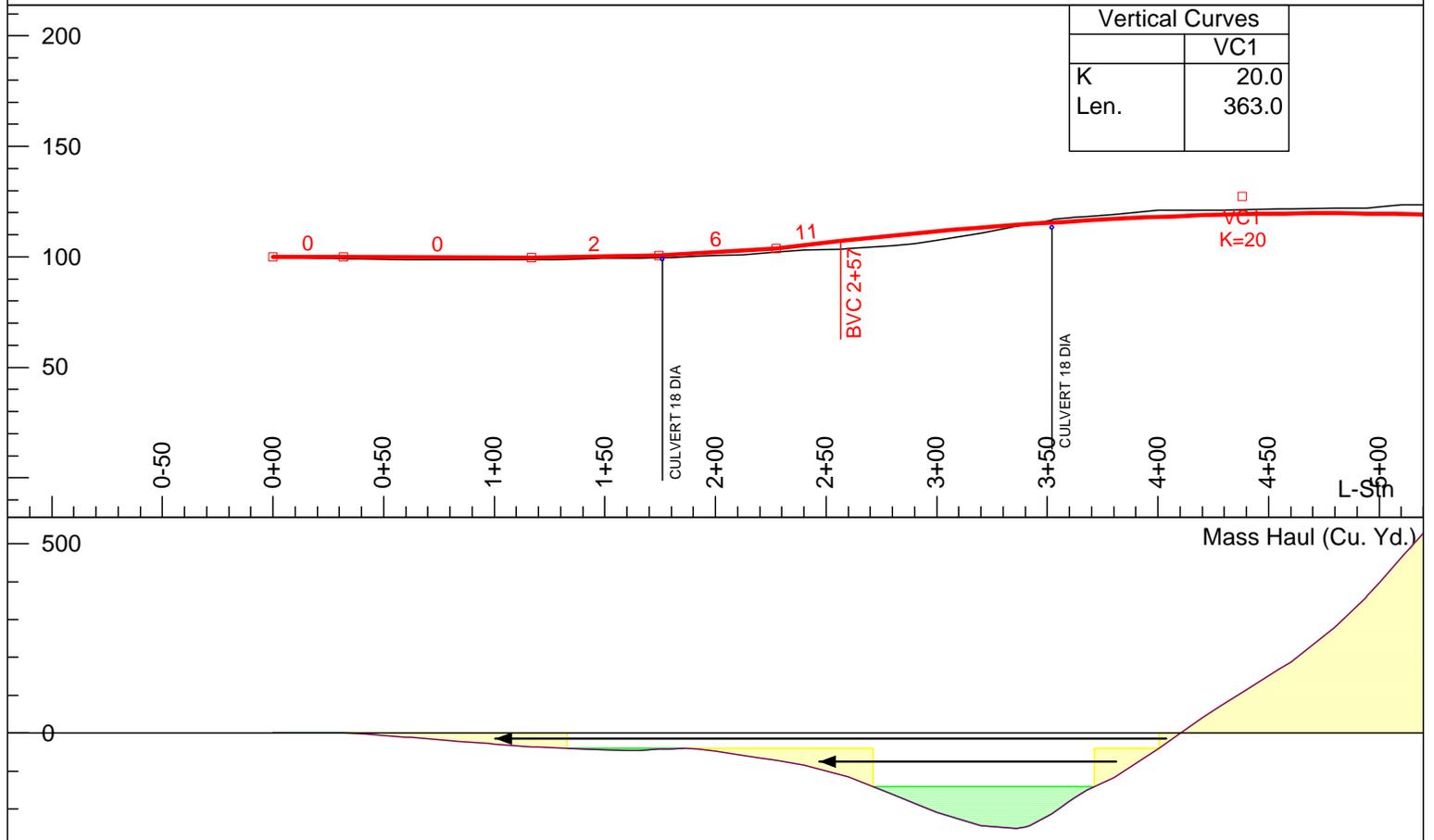
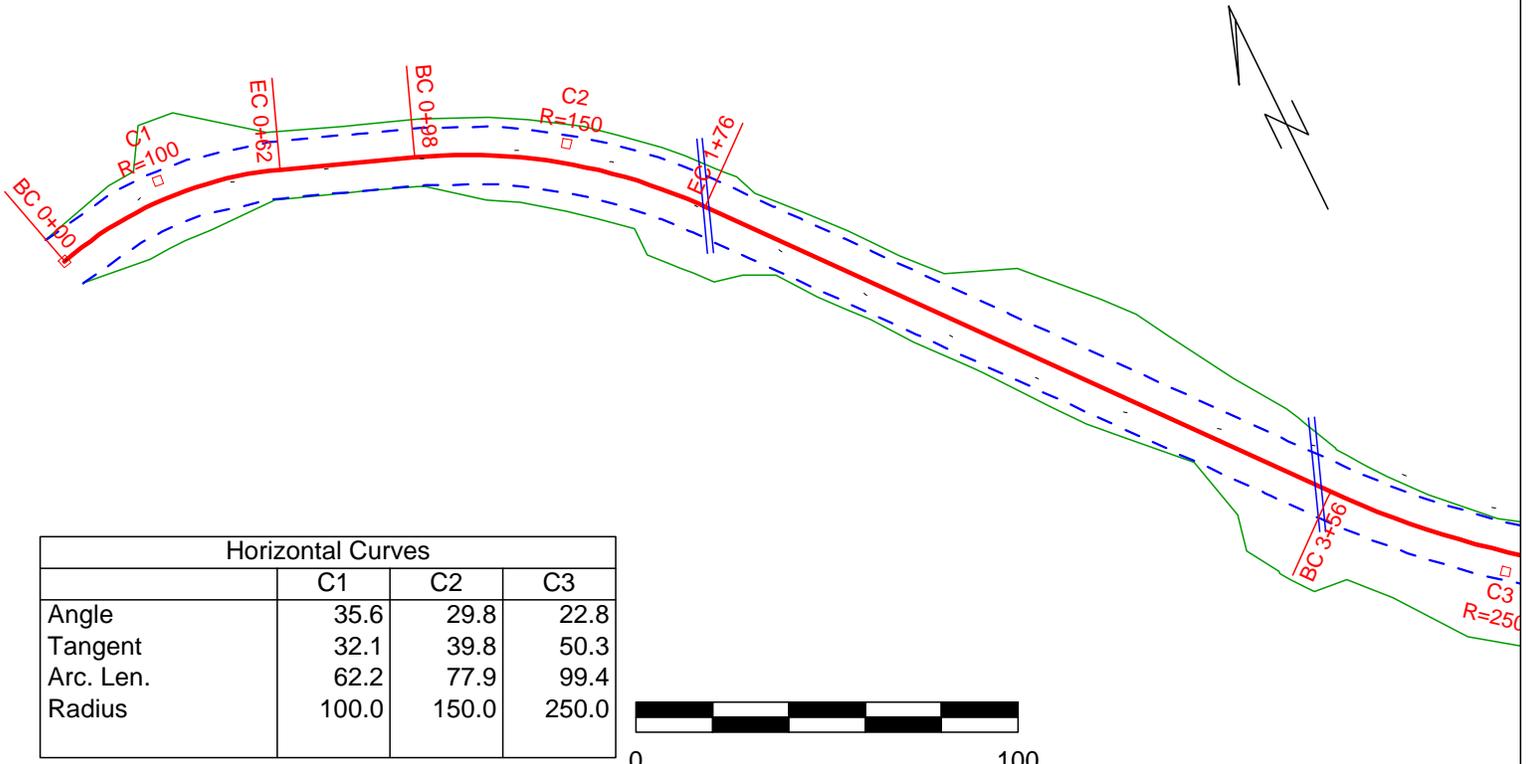
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 P-Stn: 3+87 L-Ssl: (Av) 35 F Slope R: -67
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L-Stn: 3+78 Grd.Lst: 0 F Slope L: 100 H. Offset: 0
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Grd.Nxt.: n/a L-Ssr: (Av)-36 Cut Dp: -1

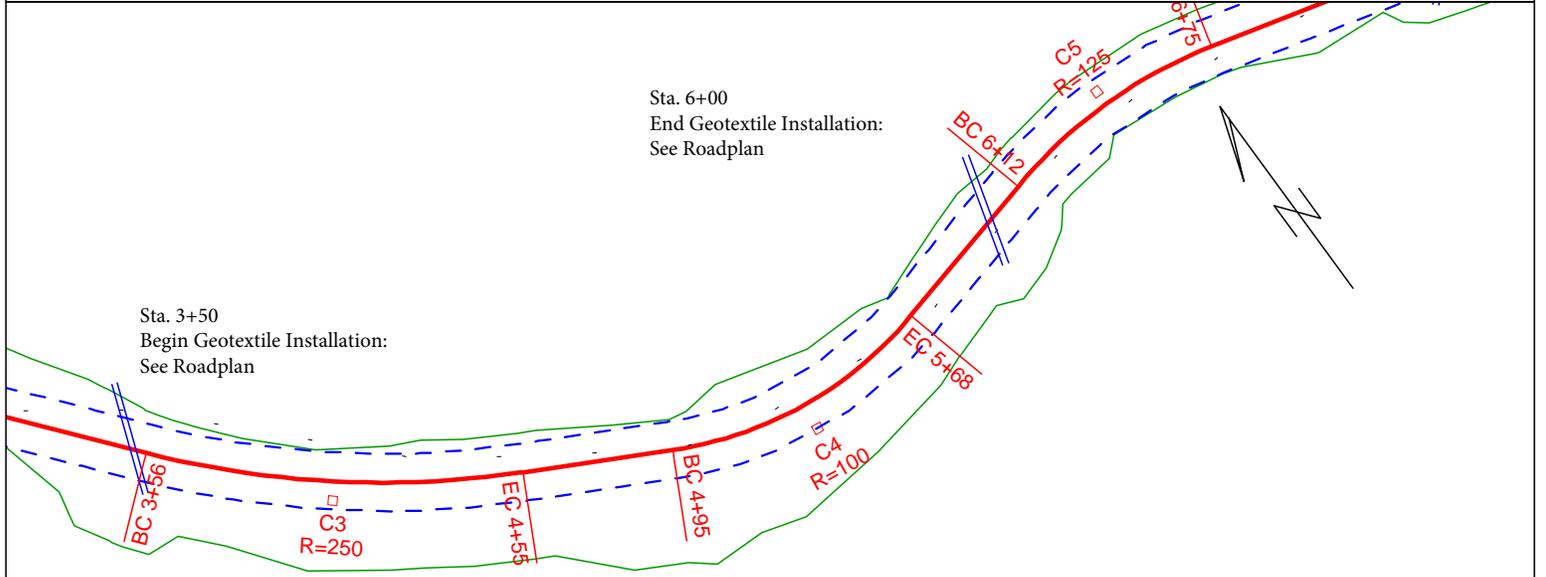
ROAD PLAN C-4130 DESIGN UP TOP TIMBER SALE

Page 1 of 4

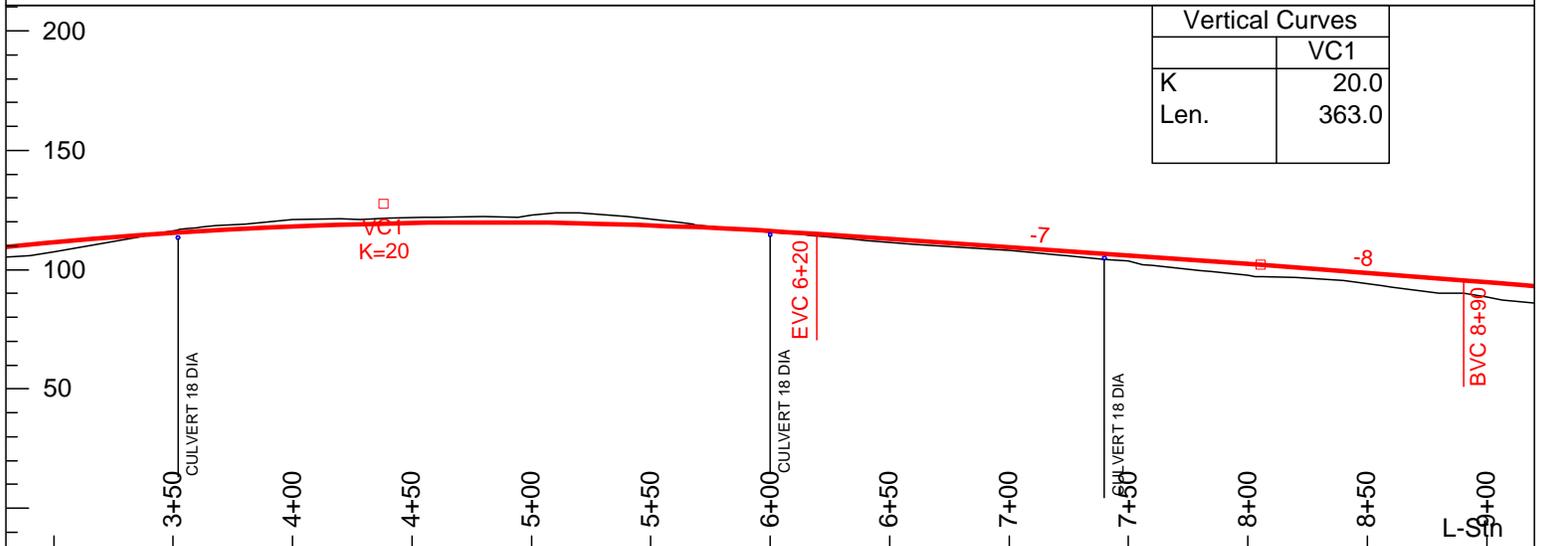


ROAD PLAN C-4130 DESIGN UP TOP TIMBER SALE

Page 2 of 4



Horizontal Curves			
	C3	C4	C5
Angle	22.8	41.9	29.0
Tangent	50.3	38.3	32.3
Arc. Len.	99.4	73.2	63.2
Radius	250.0	100.0	125.0

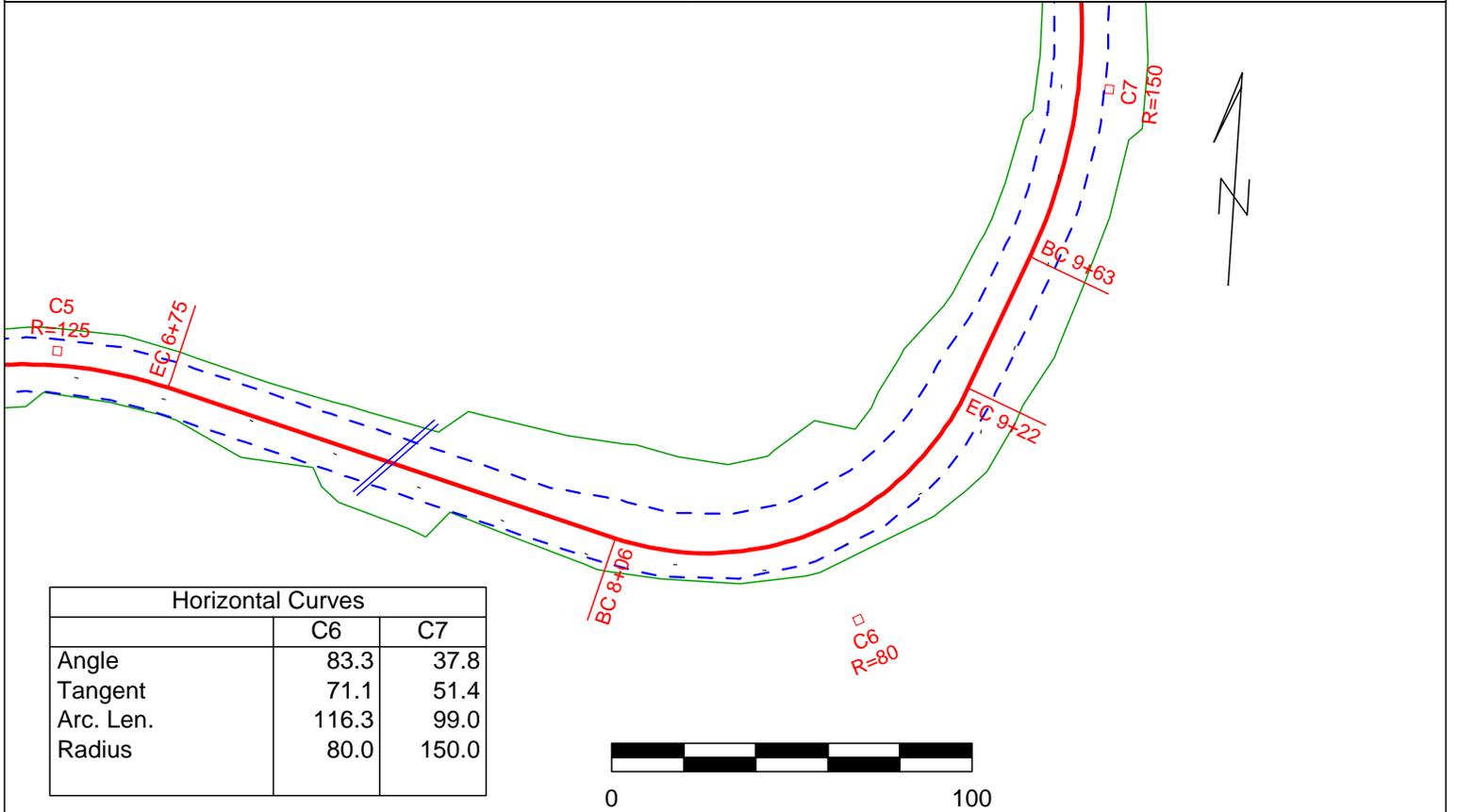


Vertical Curves	
	VC1
K	20.0
Len.	363.0

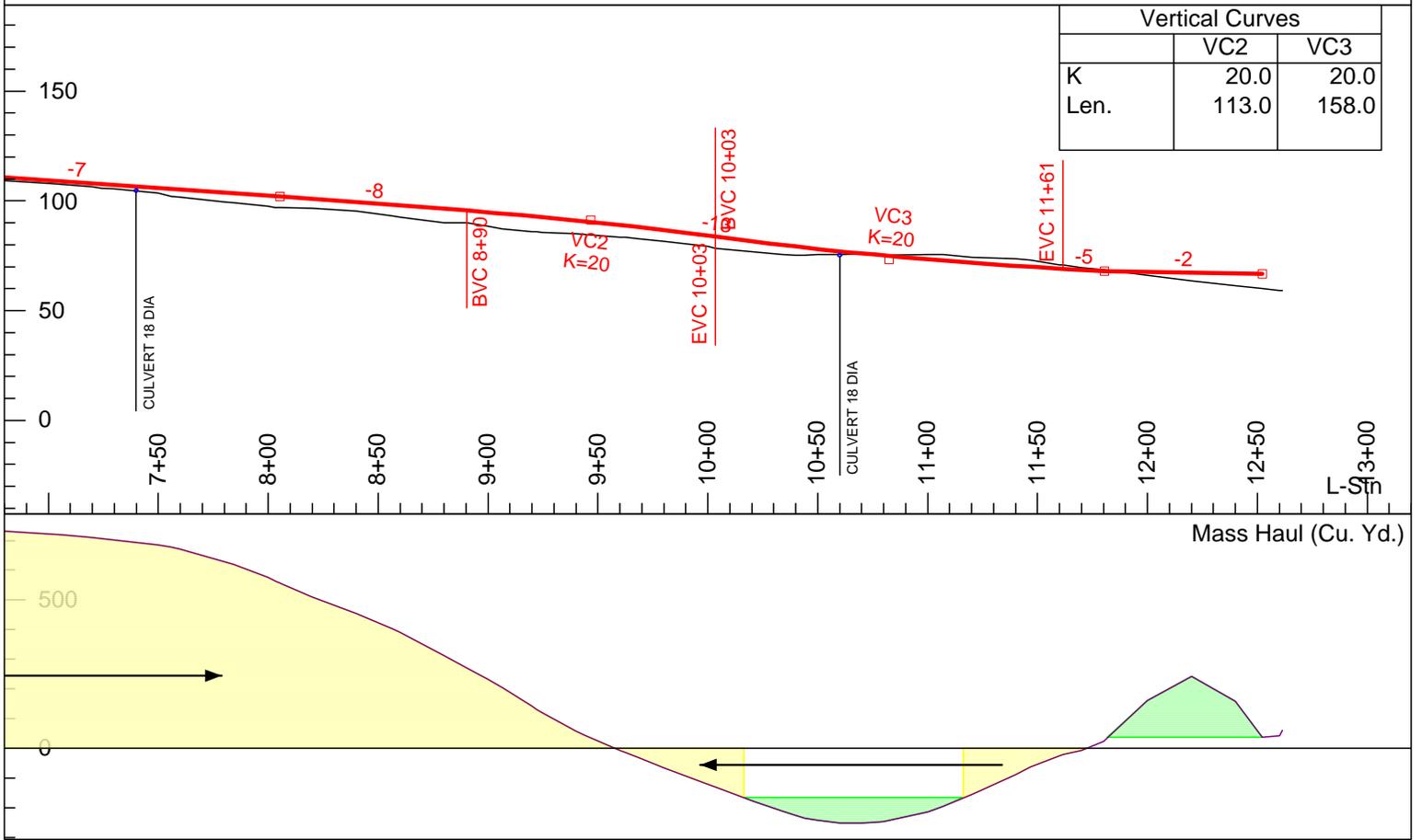


ROAD PLAN C-4130 DESIGN UP TOP TIMBER SALE

Page 3 of 4



Horizontal Curves		
	C6	C7
Angle	83.3	37.8
Tangent	71.1	51.4
Arc. Len.	116.3	99.0
Radius	80.0	150.0

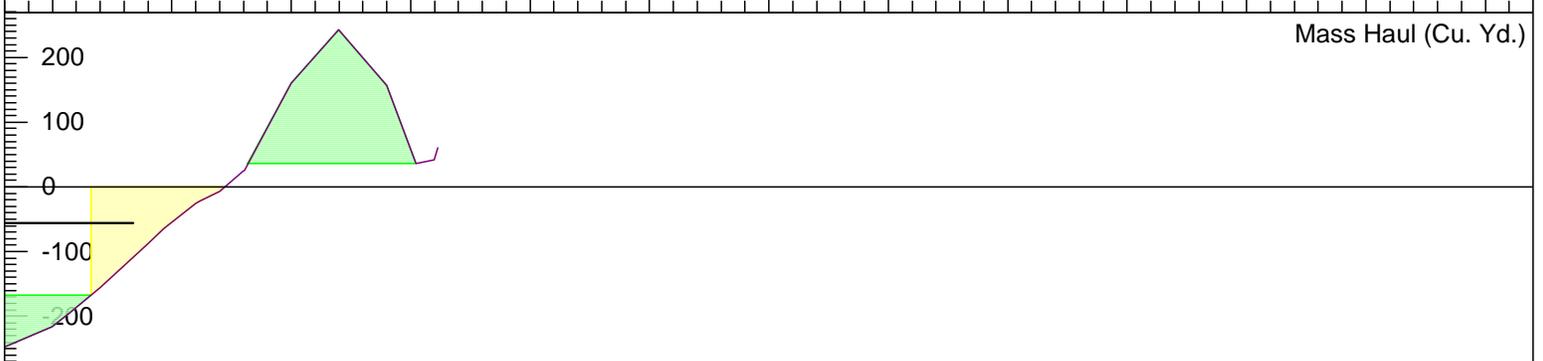
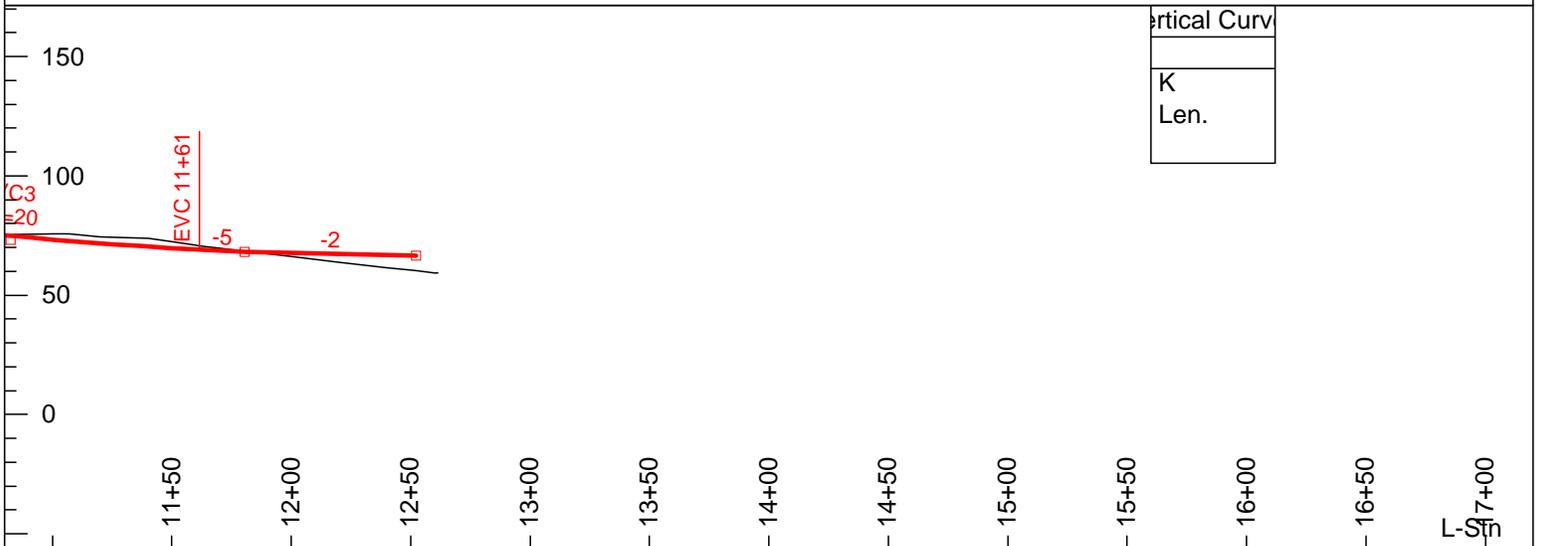
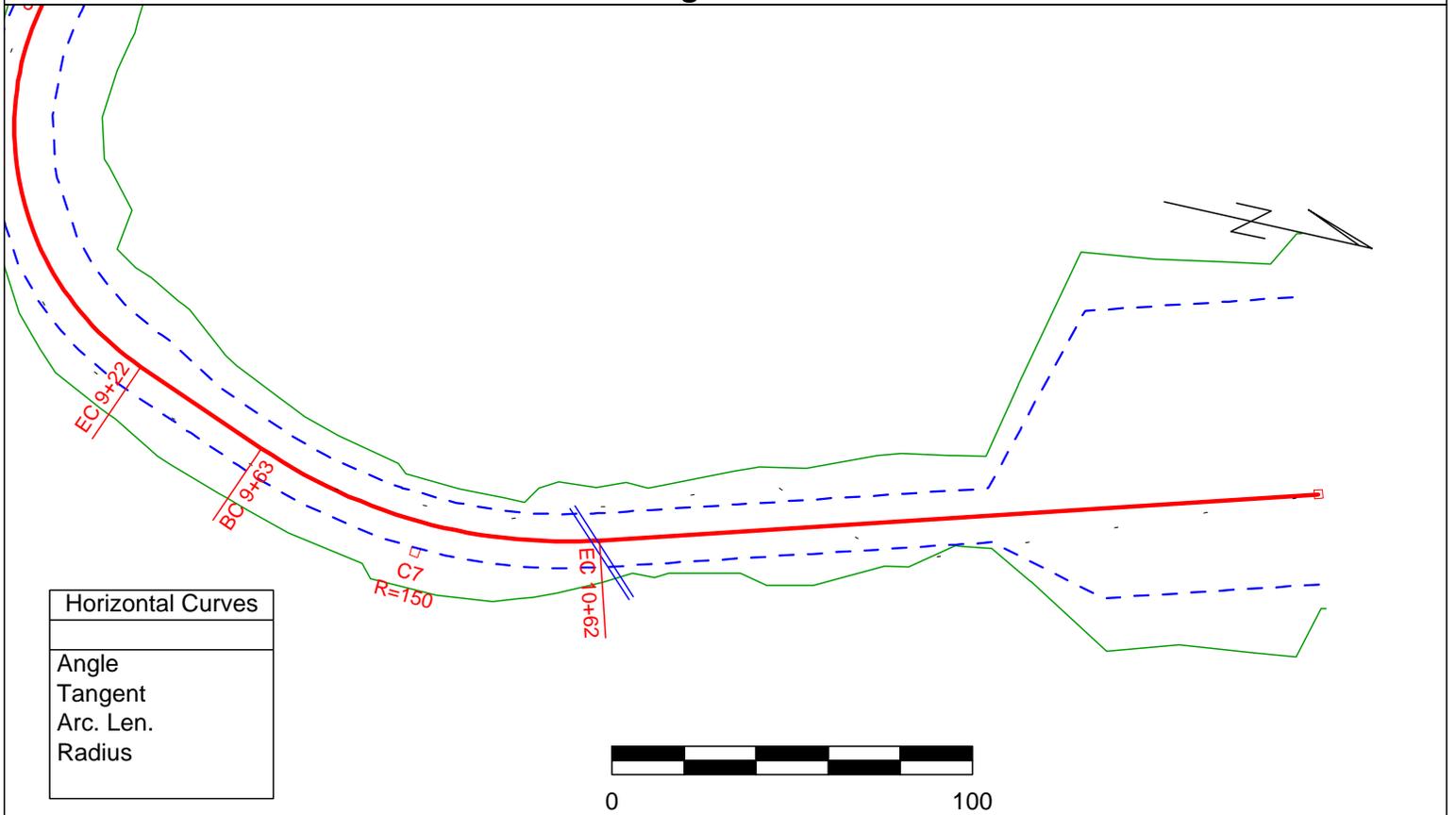


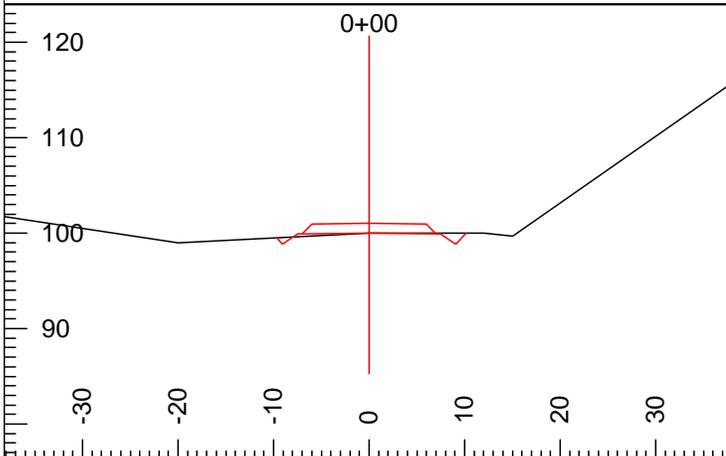
Vertical Curves		
	VC2	VC3
K	20.0	20.0
Len.	113.0	158.0

ROAD PLAN C-4130 DESIGN

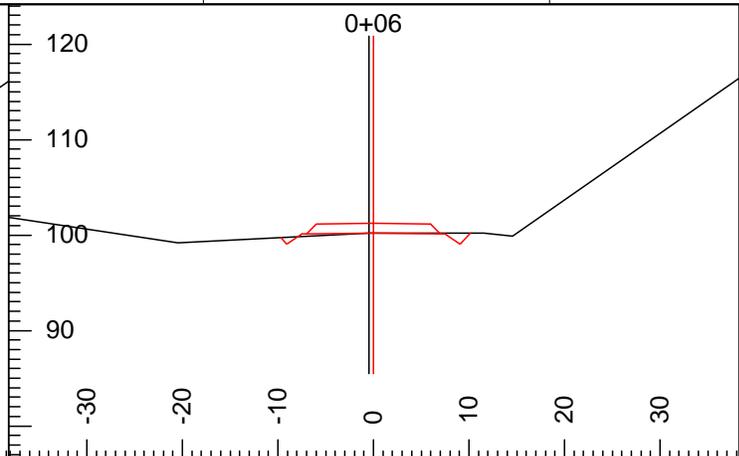
UP TOP TIMBER SALE

Page 4 of 4

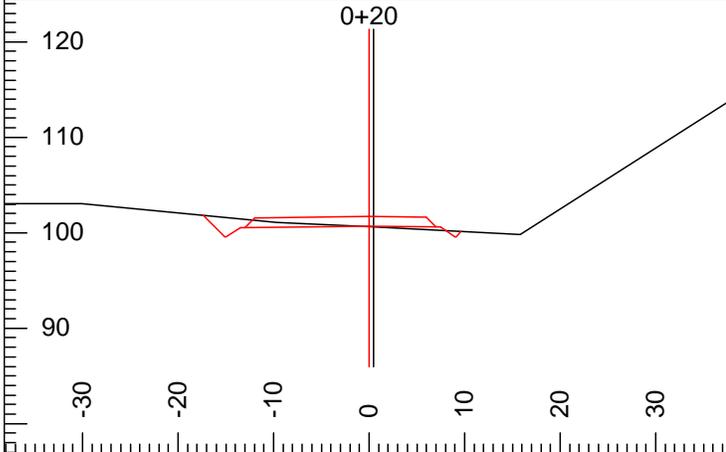




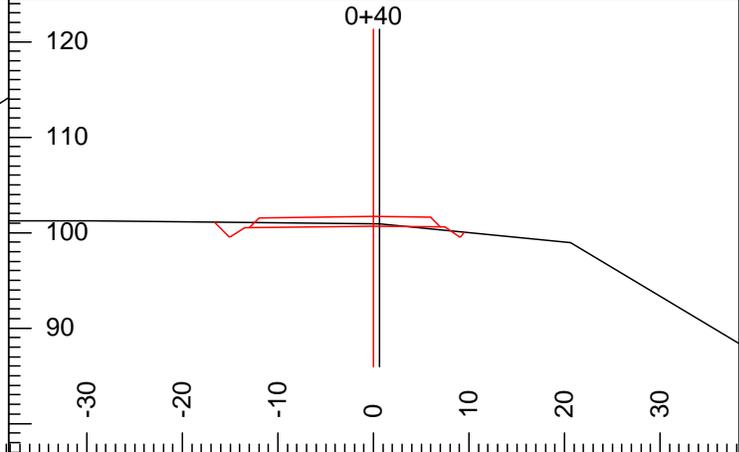
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P-Stn:	0+00	L-Ssr: (Av)	0	H. Offset:	0
Grd.Nxt.:	3	F Slope L:	100		
Grd.Lst:	n/a	F Slope R:	100		



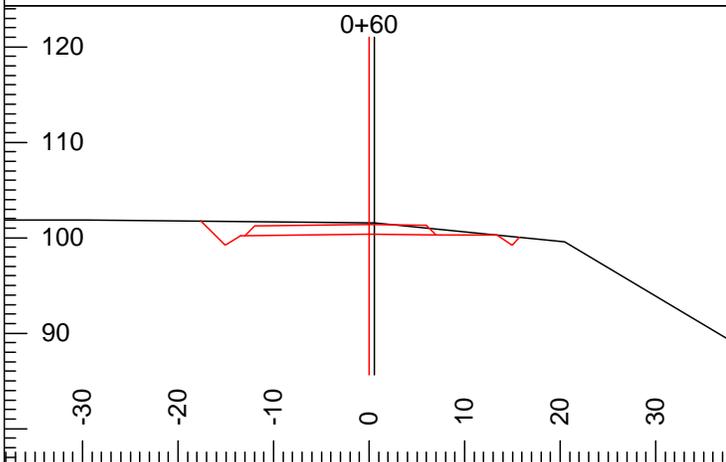
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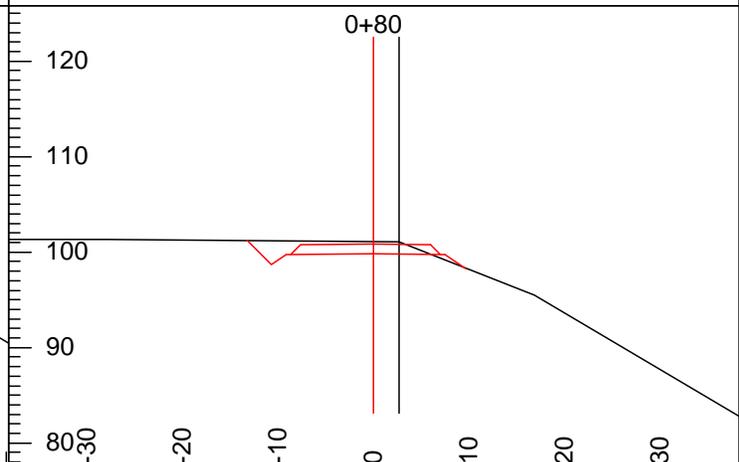
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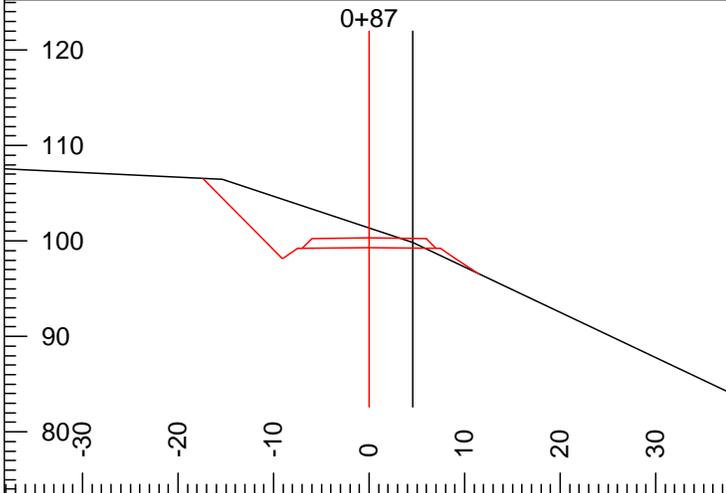
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Grd.Lst:	-1	F Slope R:	100		



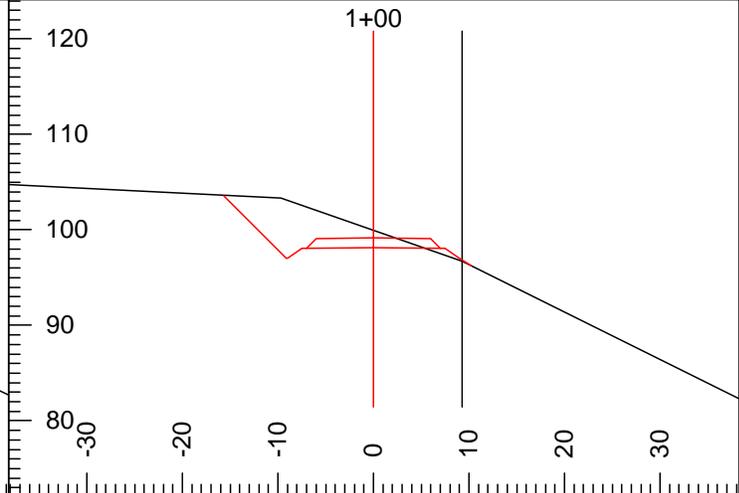
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Grd.Lst:	-3	F Slope R:	100		



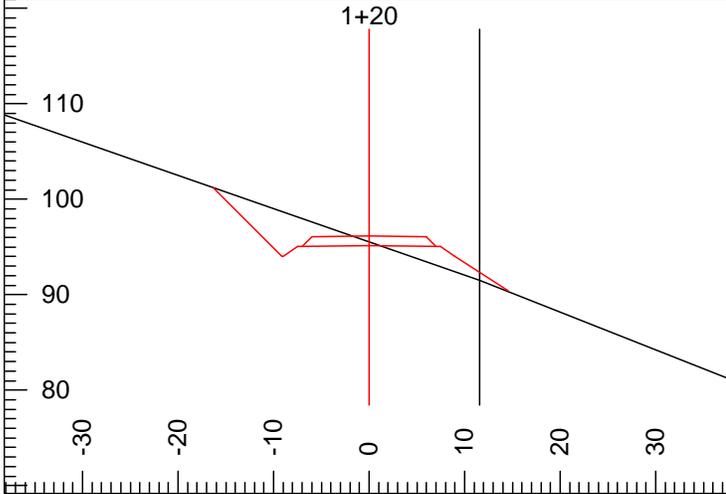
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P-Stn:	0+82	L-Ssl: (Av)	1	F Slope R:	-67		
Grd.Nxt.:	-3	L-Ssr: (Av)	-29	Cut Dp:	1		



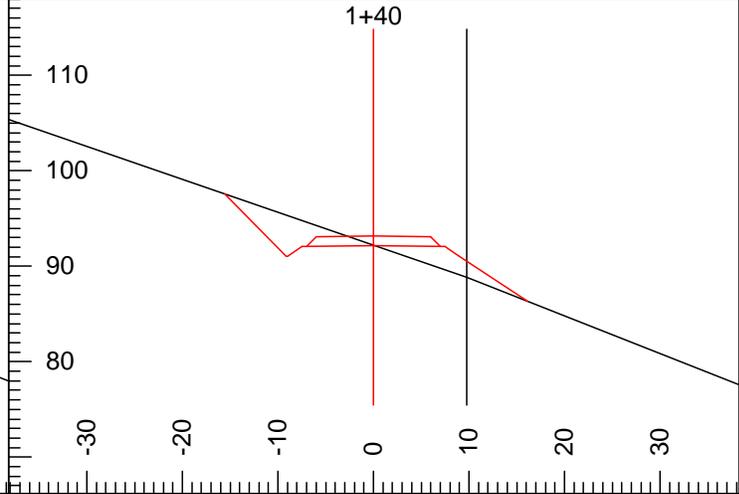
L-Stn: 0+87 Grd.Lst: -9 F Slope L: 100 H. Offset: -4
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Grd.Nxt.: -9 L-Ssr: (Av)-41 Cut Dp: 2



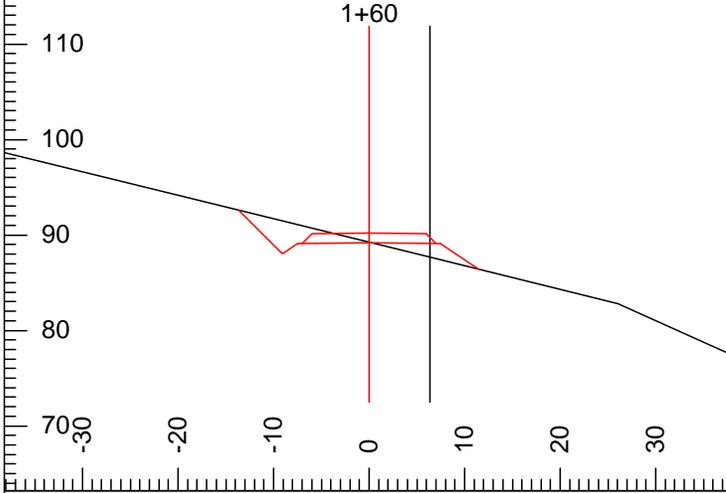
L-Stn: 1+00 Grd.Lst: -15 F Slope L: 100 H. Offset: -9
P-Stn: 1+04 L-Ssl: (Av) 34 F Slope R: -67
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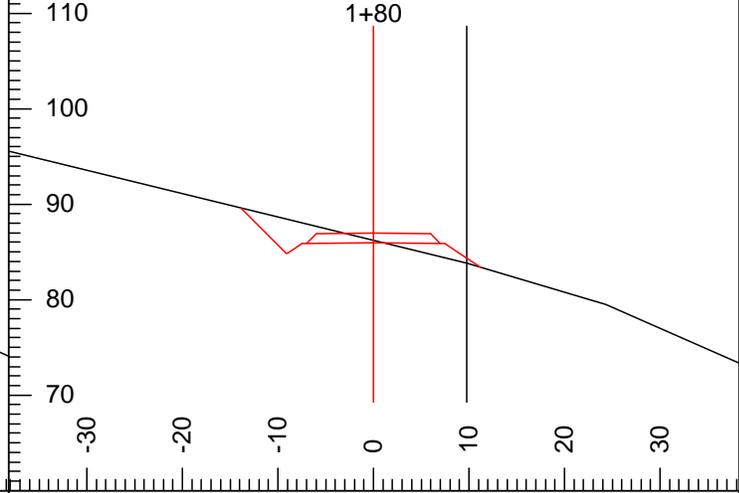
L-Stn: 1+20 Grd.Lst: -15 F Slope L: 100 H. Offset: -12
P-Stn: 1+24 L-Ssl: (Av) 35 F Slope R: -67
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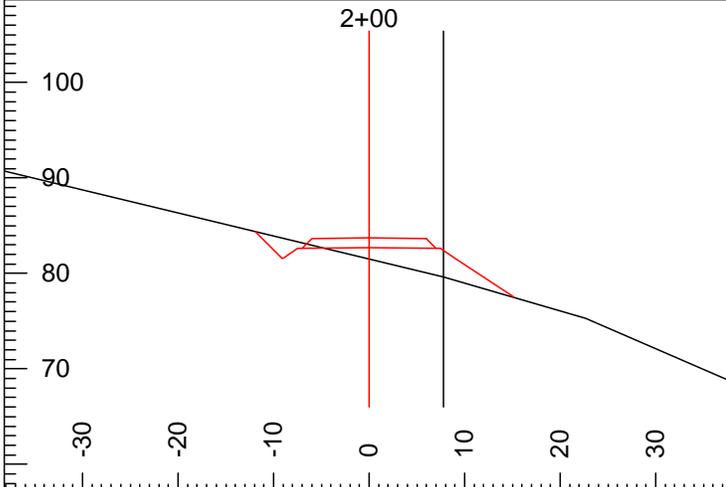
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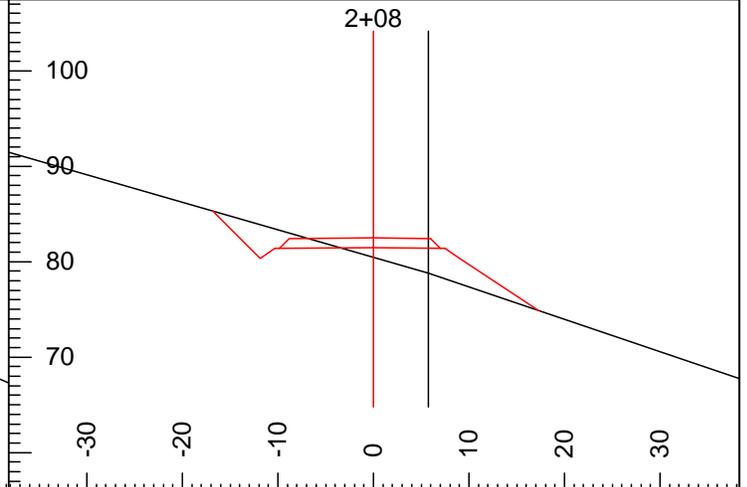
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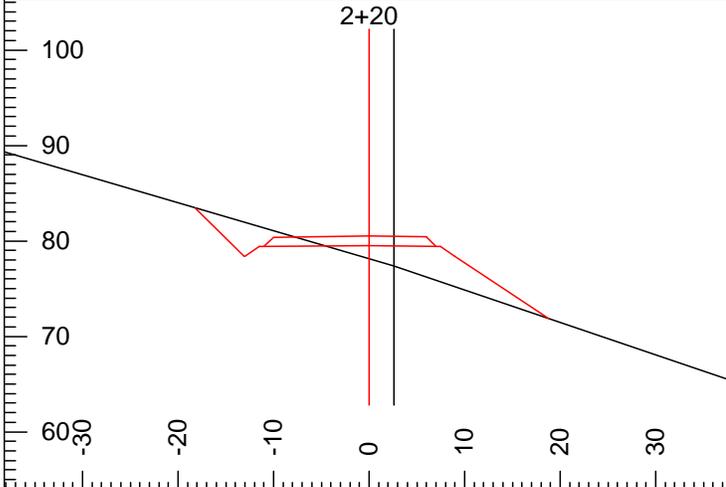
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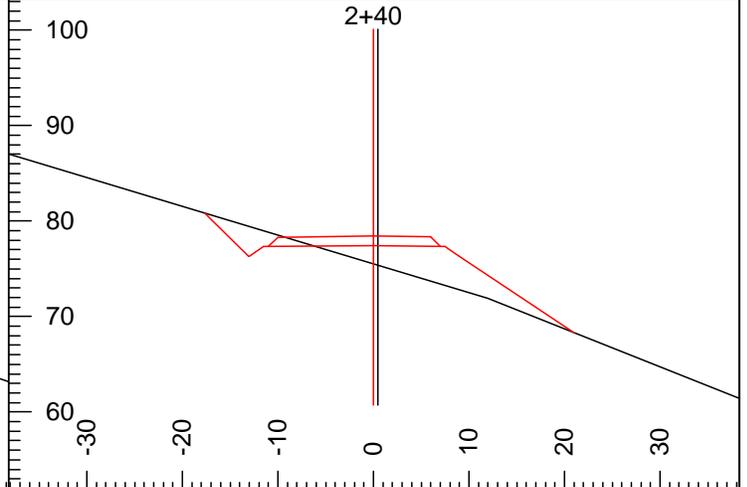
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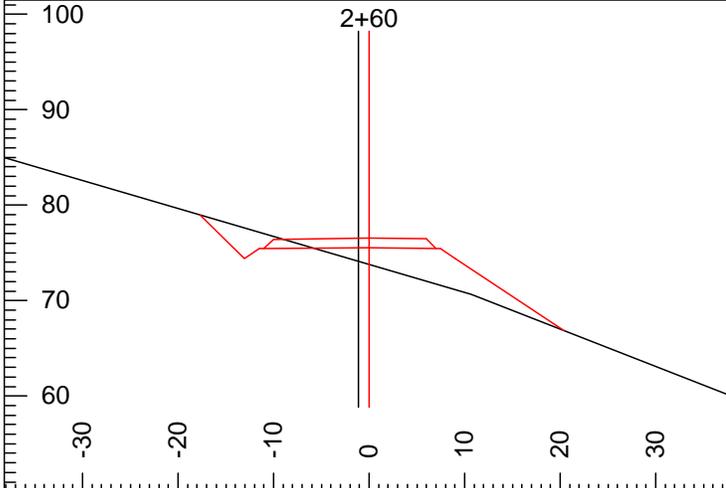
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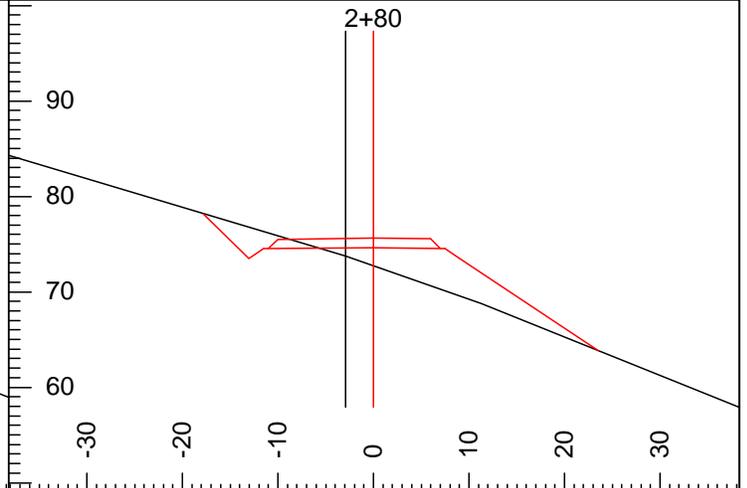
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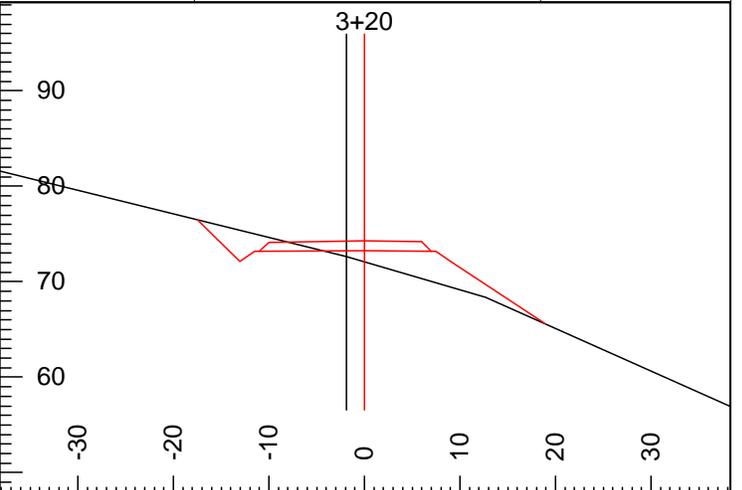
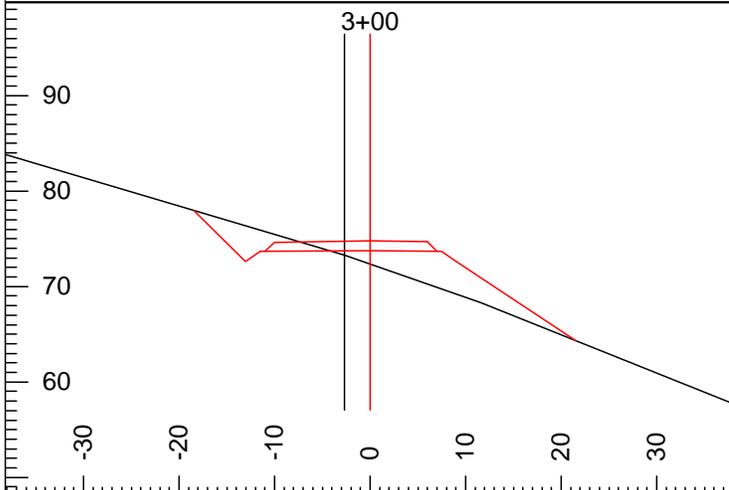
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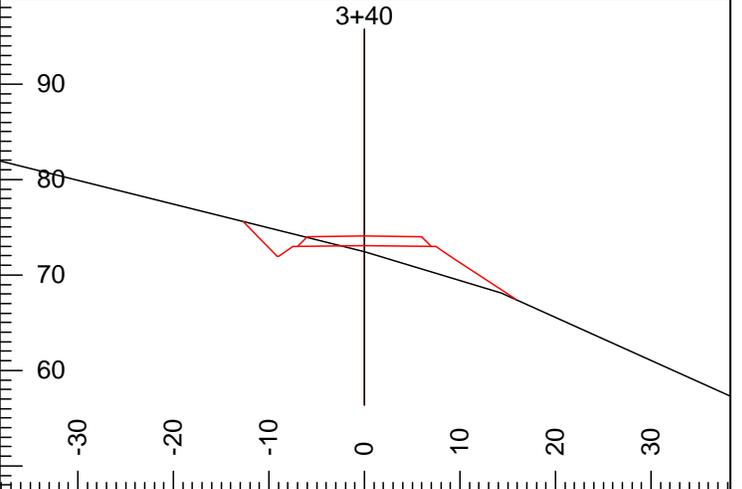
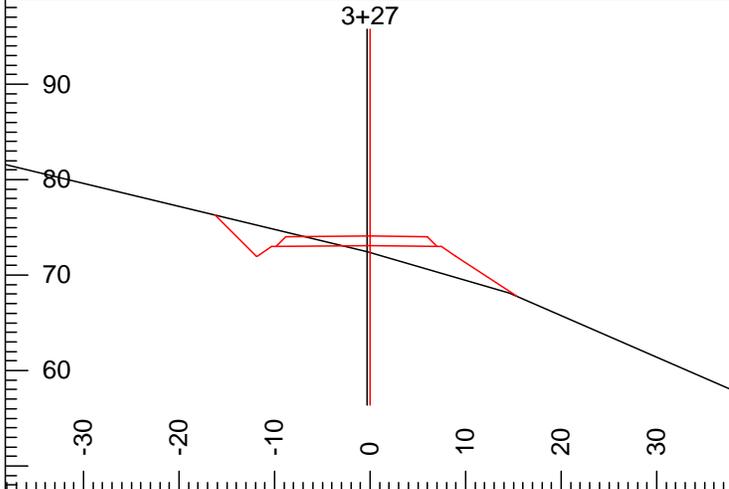


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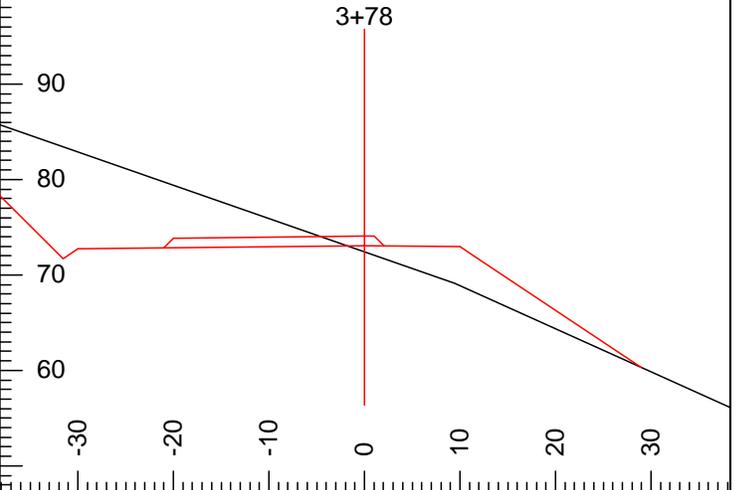
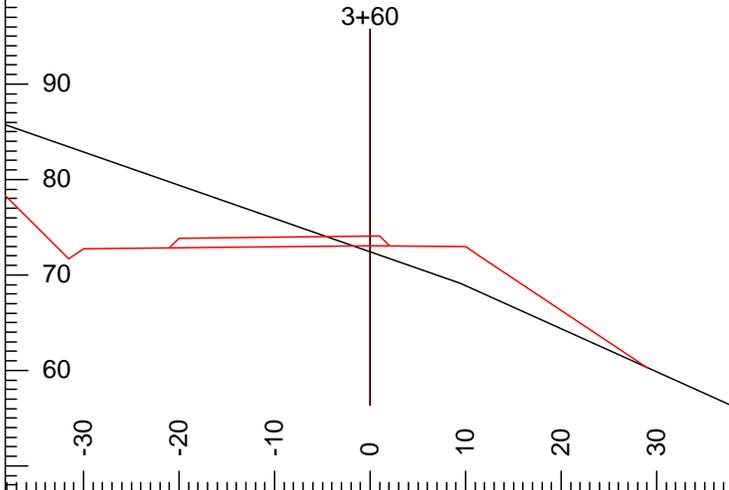
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 Grd.Nxt.: -2 L-Ssr: (Av) -35 Cut Dp: -1

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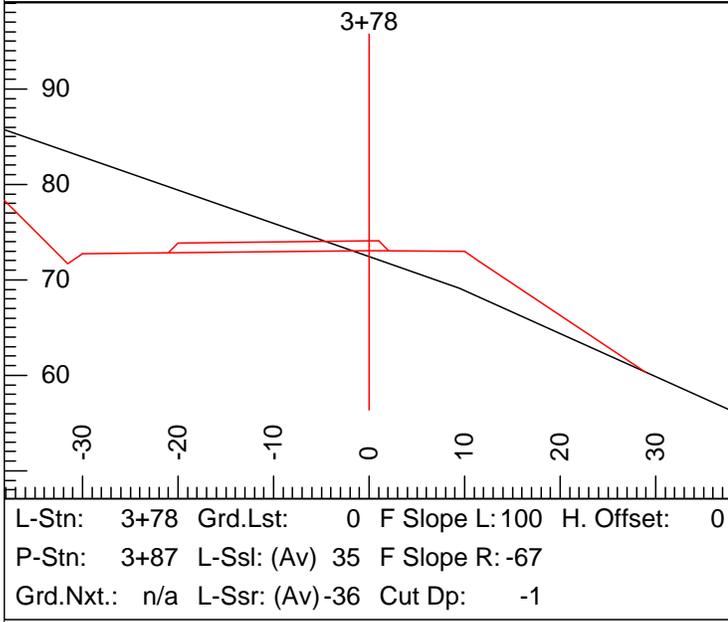
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 Grd.Nxt.: 0 L-Ssr: (Av) -30 Cut Dp: -1



L-Stn: 3+60 Grd.Lst: 0 F Slope L: 100 H. Offset: 0
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 Grd.Nxt.: 0 L-Ssr: (Av) -36 Cut Dp: -1

L-Stn: 3+78 Grd.Lst: 0 F Slope L: 100 H. Offset: 0
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**SUMMARY - ROAD DEVELOPMENT COSTS
(FOR INTERNAL DNR USE ONLY)**

UNIT: 10

SALE/PROJECT NAME: **Up Top TS**

CONTRACT NUMBER: **30-09239**

LEGAL DESCRIPTION: **Varies**

TYPE:	CONSTRUCTION	RECONSTRUCTION	PRE-HAUL MAINT
ROAD STANDARD:	C	C	Varies
NUMBER OF STATIONS:	16.40	65.80	
AVG. SIDESLOPE:	35	47	
CLEARING AND GRUBBING:	\$2,952	\$8,687	
EXCAVATION AND FILL:	\$14,997	\$49,583	
MISC. MAINTENANCE:			\$0
ROCK TOTALS (Cu. Yds.):			
Ballast: 1230	\$16,161	\$10,352	\$0
Surface: 24728	\$0	\$35,916	\$363,533
Riprap: 546	\$0	\$0	\$10,962
StockPiles:			\$30,000
CULVERTS AND FLUMES:	\$1,860	\$9,600	\$15,180
STRUCTURES:	\$0	\$0	\$0
GENERAL EXPENSES:	\$3,237	\$9,131	\$33,574
MOBILIZATION:	\$1,597	\$1,597	\$1,597
TOTAL COSTS:	\$40,804	\$124,866	\$454,846
COST PER STATION:	\$2,488	\$1,898	\$0
ROAD DEACTIVATION AND ABANDONMENT COSTS:		\$2,974	

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

TOTAL (All Roads) =	\$623,489
SALE VOLUME MBF =	7,927
TOTAL COST PER MBF =	\$78.65

Plans to be furnished by:

Compiled by: WPH

Date: 09/11/15

**ROAD COST ESTIMATE - CONSTRUCTION
(FOR INTERNAL DNR USE ONLY)**

SALE NAME: Up Top TS

CONTRACT NUMBER: 30-09239

I. CLEARING AND GRUBBING:

Flat Rate -	% Side Slope	MBF/ac	Disposal Factor	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
C-4130	30	35	1.00	4.50	\$40	1.00	12.60	\$2,268
C-4000-81	40	35	1.00	4.50	\$40	1.00	3.80	\$684
0	0	40	1.00	2.88	\$32	0.80	0.00	\$0
0	0	40	1.00	2.88	\$32	0.80	0.00	\$0
0	0	0	1.00	#N/A	\$32	0.80	0.00	\$0

Clear and Grub TOTAL = \$2,952

II. EXCAVATION:

Flat Rate -	% Side Slope	MBF/ac	Exc. Type Fact.	Production Factor	Cost/ Station	Width Factor	Total Stations	Sub Total
C-4130	30	35	1.2	4.50	\$88	1.00	12.60	\$5,988
C-4000-81	40	35	2.0	4.50	\$88	1.00	3.80	\$3,010
0	0	40	1.0	2.88	\$66	0.50	0.00	\$0
0	0	40	1.0	2.88	\$66	0.50	0.00	\$0
0	0	0	1.0	#N/A	\$66	0.50	0.00	\$0

*End Haul, Over Haul, Large Fills/Cuts

End Haul/ Over Haul Large Fills/ Cuts	Estimated Vol. (cy)	No. of Equip. Days	Cost/day	Sub Total
	800	4	\$1,500	\$6,000
				\$0

Excavation TOTAL = \$14,997

III. BALLAST AND SURFACING :

Ballast source: Lowbank
Surface source: Lowbank
Riprap source : Lowbank

Description	cu.yds/sta x stations =	cubic yards	Landings
Ballast (6"-)	75	16.40	1,230
Surfacing (2"-)	0		3
Riprap (6"-)	1	16.40	16

* Haul Formula: (R.T.Miles/MPH+Delay)/(\$/hr / Cy/load)

R.T. Miles = 3.0
Ave. Speed = 15
Delay (Hrs.)= 0.5
Cost / Hour = \$85.00
CY / Load = 11

Ballast (6"-) 1246 Cu. yds @ \$12.97 /cu. yd = \$16,161
Surfacing (2"-) 0 Cu. yds @ \$14.60 /cu. yd = \$0
Riprap (6"-) 0 Cu. yds @ \$12.97 /cu. yd = \$0

UNIT COSTS	Ballast	Surfacing	Riprap
Drill & Shoot	\$1.75	\$1.75	\$1.75
Dig and load	\$0.50	\$0.50	\$0.50
Crushing	\$3.00	\$4.50	\$3.00
Purchase			
Haul *	\$5.41	\$5.41	\$5.41
Spread	\$0.80	\$0.80	\$0.80
Compact	\$0.45	\$0.45	\$0.45
Strip			
Reclamation			
Use tax	\$1.06	\$1.19	\$1.06
TOTAL (\$/cy)	\$12.97	\$14.60	\$12.97

Rock total = \$16,161

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter	No/Length	Installed Cost/ft	Sub-total
Ditch Reliefs	5	na	18	30	\$12.00	\$1,800
			24		\$18.00	\$0
			36		\$26.00	\$0
			48		\$40.00	\$0
			72		\$96.00	\$0
Bands & Gaskets	3				\$20.00	\$60

Culvert total = \$1,860

V. STRUCTURES

Description	Type	Width	Length	Cost/ft.	Sub-total
					\$0
					\$0
					\$0

Structure total = \$0

Sub-TOTAL = \$35,970

VI. GENERAL EXPENSES:

Overhead & General Exp. Add **9%** \$3,237

VII. MOBILIZATION:

Description	\$ per Move	# of Moves	Sub-total
Dump Trucks	100	6	\$600
Grader	400	1	\$400
Compactor	400	1	\$400
Excavator	450	1	\$450
Dozer D8)	400	1	\$400
Front end loader	400	1	\$400
Rock crusher	\$1,500	1	\$1,500
Drill	\$400	1	\$400
Dozer (D5)	\$240	1	\$240

Total Mobilization = \$4,790 Mobilization sub-total = \$1,597

Road No. #REF!
Standard: #REF!
Stations: 16.40

SHEET TOTAL = \$40,804

By: WPH

Sheet 2 of 5

Date: 09/11/15

**ROAD COST ESTIMATE - RECONSTRUCTION
(FOR INTERNAL DNR USE ONLY)**

SALE NAME: Up Top TS

CONTRACT NUMBER: 30-09239

I. CLEARING AND GRUBBING:

Flat Rate -	% Side Slope	MBF/ac	Disposal Factor	Production Factor	Cost/Station	Width Factor	Total Stations	Sub Total
C-Line (Beaver)	20	10	1.00	1.50	\$40	1	1.60	\$77
C-4000 (Layback)	100	10	1.00	4.50	\$40	1	15.10	\$2,718
C-4110	35	15	1.00	3.00	\$40	1	49.10	\$5,892
0			1.00	#N/A	\$40	1	0.00	\$0
0			1.00	#N/A	\$40	1	0.00	\$0

Clear and Grub TOTAL = \$8,687

II. EXCAVATION:

Flat Rate -	% Side Slope	MBF/ac	Exc. Type Fact.	Production Factor	Cost/Station	Width Factor	Total Stations	Sub Total
C-Line (Beaver)	20	10	1.0	1.50	\$88	1.00	1.60	\$211
C-4000 (Layback)	100	10	3.5	4.50	\$88	1.00	15.10	\$20,929
C-4110	35	15	1.5	3.00	\$88	1.00	49.10	\$19,444
0			1.0	#N/A	\$66	0.50	0.00	\$0
0			1.0	#N/A	\$66	0.50	0.00	\$0

*End Haul, Over Haul, Large Fills/Cuts

End Haul/ Over Haul Large Fills/ Cuts	Estimated Vol. (cy)	No. of Equip. Days	Sub Cost/day	Sub Total
	1500	6	\$1,500	\$9,000
				\$0

Excavation TOTAL = \$49,583

III. BALLAST AND SURFACING :

Ballast source: Lowbank
Surface source: Lowbank
Riprap source : Lowbank

Description	cu.yds/sta x stations =	cubic yards
Ballast (6"-)		0
Surfacing (2"-)	35 65.80	2,303
Riprap (6"-)	500 1.00	500

* Haul Formula: (R.T.Miles/MPH+Delay)/(\$/hr / Cy/load)

R.T. Miles =	5.0
Ave. Speed =	15
Delay (Hrs.)=	0.5
Cost / Hour =	\$85.00
CY / Load =	11

Ballast (6"-)	800 Cu. yds @	\$12.94 /cu. yd =	\$10,352
Surfacing (2"-)	2303 Cu. yds @	\$15.60 /cu. yd =	\$35,916
Riprap (6"-)	Cu. yds @	\$13.98 /cu. yd =	\$0

UNIT COSTS	Ballast	Surfacing	Riprap
Drill & Shoot	\$1.75	\$1.75	\$1.75
Dig and load	\$0.50	\$0.50	\$0.50
Crushing	\$3.00	\$4.50	\$3.00
Purchase			
Haul *	\$6.44	\$6.44	\$6.44
Spread	\$0.80	\$0.80	\$0.80
Compact	\$0.45	\$0.45	\$0.45
Strip			
Reclamation			
Use tax	\$1.04	\$1.16	\$1.04
TOTAL (\$/cy)	\$12.94	\$15.60	\$13.98

Rock total = \$46,268

IV. CULVERTS AND FLUMES:

Description	Qty.	Gauge	Diameter (in.)	No/Length (ft)	Installed Cost/ft	Sub-total
Ditch Reliefs	25	na	18	32	\$12.00	\$9,600
			24		\$18.00	\$0
			36		\$26.00	\$0
			48		\$36.00	\$0
Bands & Gaskets			7			\$0

Culvert total = \$9,600

V. STRUCTURES

Description	Type	Width	Length	Cost/ft.	Sub-total
mod. steel bridge					\$0
abutments/footings					\$0
wing walls/back walls					\$0

Structure total = \$0

Sub-TOTAL = \$114,138

VI. GENERAL EXPENSES:

Overhead & General Exp. Add 8% \$9,131

VII. MOBILIZATION:

Description	\$ per Move	# of Moves	Sub-total
Dump Trucks	\$100	6	\$600
Grader	\$400	1	\$400
Compactor	\$400	1	\$400
Excavator	\$450	1	\$450
Dozer D8)	\$400	1	\$400
Front end loader	\$400	1	\$400
Rock crusher	\$1,500	1	\$1,500
Dozer (D5)	\$240	1	\$240

Total Mobilization = \$4,790 Mobilization sub-total = \$1,597

Road No. #REF!
Standard: #REF!
Stations: 65.80

SHEET TOTAL = \$124,866

By: WPH

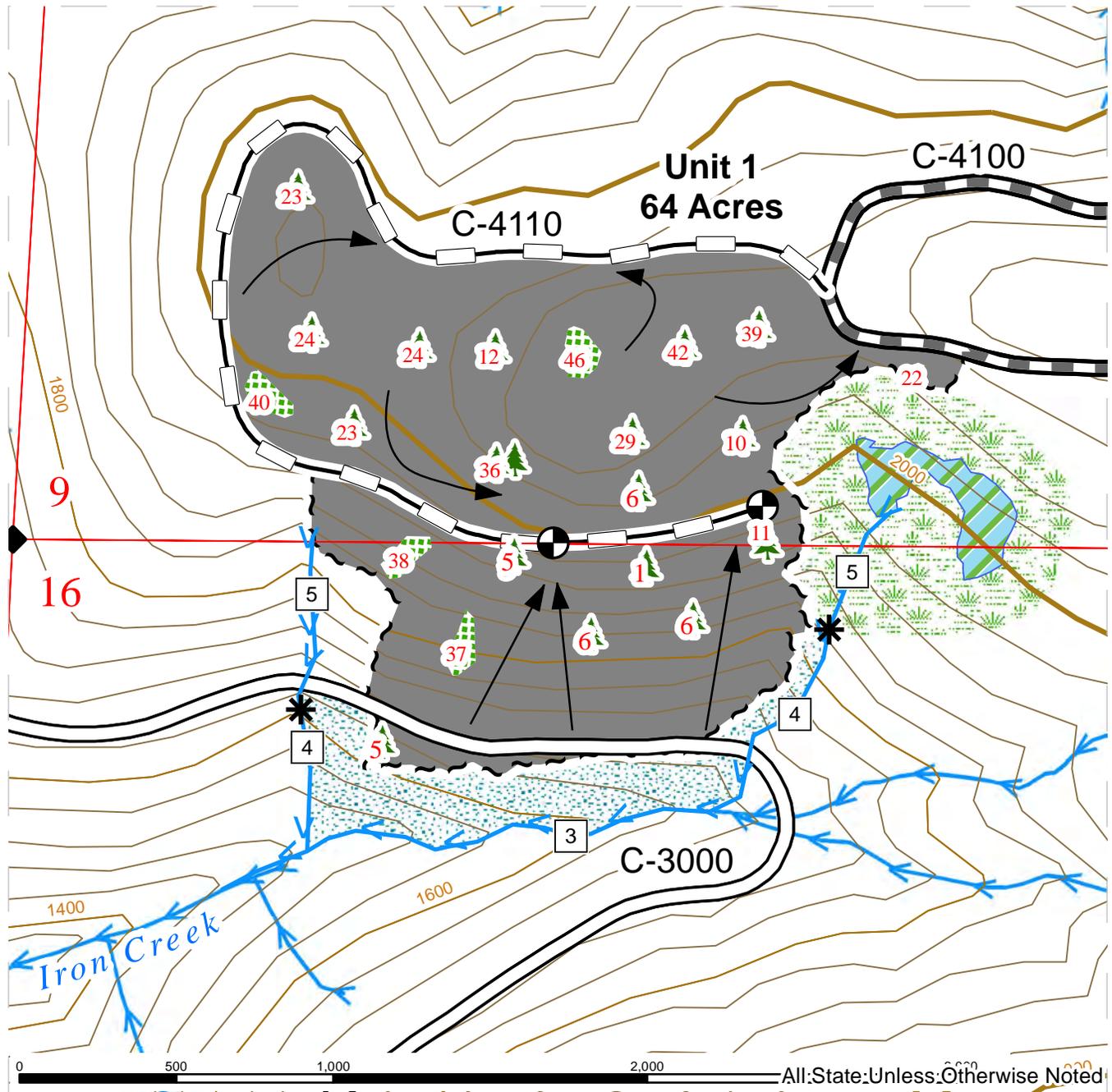
Sheet 3 of 5

Date: 09/11/15

LOGGING PLAN MAP

SALE NAME: UP TOP
 APPLICATION #: 30-092039

COUNTY(S): GRAYS HARBOR, THURSTON
 TOWNSHIP(S): T17R04W



Sale Area	Day Lighting	Streams
Wetlands	Required Pre-Haul Maintenance	Stream Type
Wetland Mgt. Zone	Existing Roads	Stream Type Break
Riparian Mgt. Zone	New Construction	Monumented corner - 20 Meters
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags	Abandoned	Leave Tree Area - marked with yellow "Leave Tree Area" tags or blue paint
Sale Boundry Tags	Trail	Proposed Landing
Timber Type Change	Ground Logging	Tics - 2000' Interval
Right of Way	Cable Logging	

Prepared By: rmas490

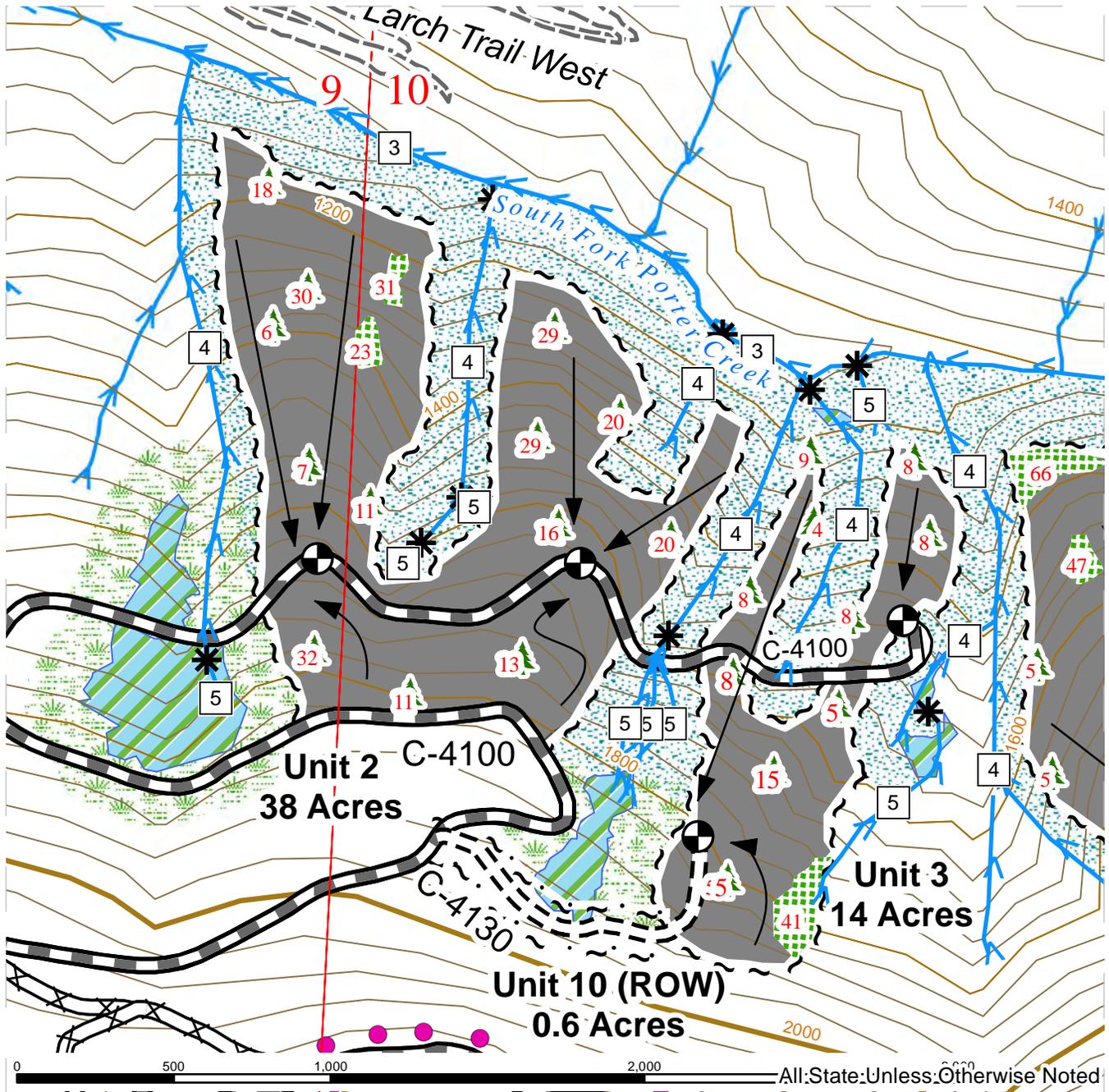
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Modified By: cdun490
 Modification Date: 12/8/2015

LOGGING PLAN MAP

SALE NAME: UP TOP
 APPLICATION #: 30-092039

COUNTY(S): GRAYS HARBOR, THURSTON
 TOWNSHIP(S): T17R04W



All:State:Unless:Otherwise Noted

Sale Area	Day Lighting	Streams
Wetlands	Required Pre-Haul Maintenance	Stream Type
Wetland Mgt. Zone	Existing Roads	Stream Type Break
Riparian Mgt. Zone	New Construction	Monumented corner - 20 Meters
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags	Abandoned	Leave Tree Area - marked with yellow "Leave Tree Area" tags or blue paint
Sale Boundry Tags	Trail	Proposed Landing
Timber Type Change	Ground Logging	Tics - 2000' Interval
Right of Way	Cable Logging	

Prepared By: rmas490

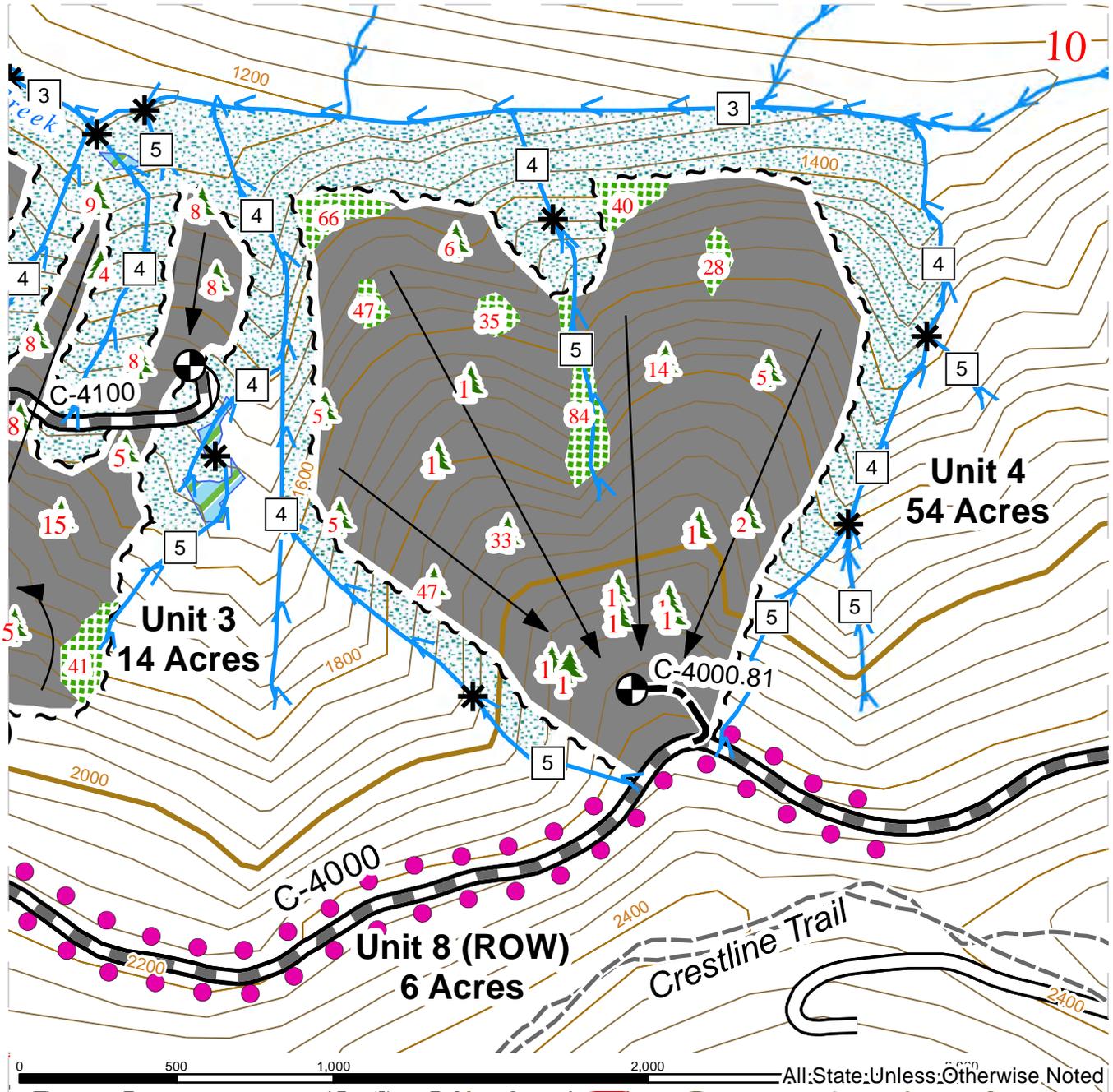
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Modified By: cdun490
 Modification Date: 12/8/2015

LOGGING PLAN MAP

SALE NAME: UP TOP
 APPLICATION #: 30-092039

COUNTY(S): GRAYS HARBOR, THURSTON
 TOWNSHIP(S): T17R04W

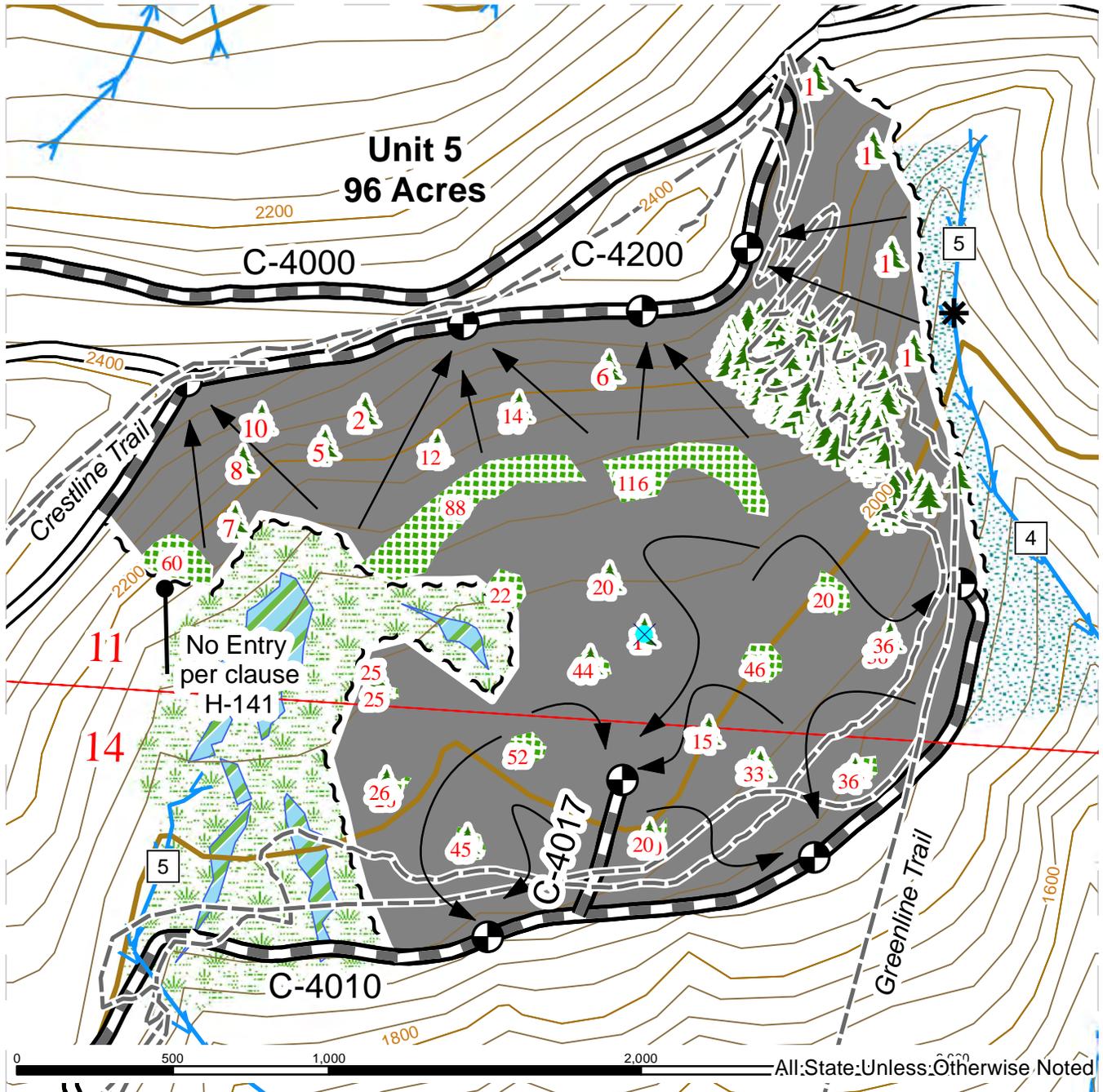


Sale Area	Day Lighting	Streams
Wetlands	Required Pre-Haul Maintenance	Stream Type
Wetland Mgt. Zone	Existing Roads	Stream Type Break
Riparian Mgt. Zone	New Construction	Monumented corner - 20 Meters
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags	Abandoned	Leave Tree Area - marked with yellow "Leave Tree Area" tags or blue paint
Sale Boundry Tags	Trail	Proposed Landing
Timber Type Change	Ground Logging	Tics - 2000' Interval
Right of Way	Cable Logging	

LOGGING PLAN MAP

SALE NAME: UP TOP
 APPLICATION #: 30-092039

COUNTY(S): GRAYS HARBOR, THURSTON
 TOWNSHIP(S): T17R04W



Sale Area	Day Lighting	Streams
Wetlands	Required Pre-Haul Maintenance	Stream Type
Wetland Mgt. Zone	Existing Roads	Stream Type Break
Riparian Mgt. Zone	New Construction	Monumented corner - 20 Meters
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags	Abandoned	Leave Tree Area - marked with yellow "Leave Tree Area" tags or blue paint
Sale Boundry Tags	Trail	Proposed Landing
Timber Type Change	Ground Logging	Tics - 2000' Interval
Right of Way	Cable Logging	

Prepared By: rmas490

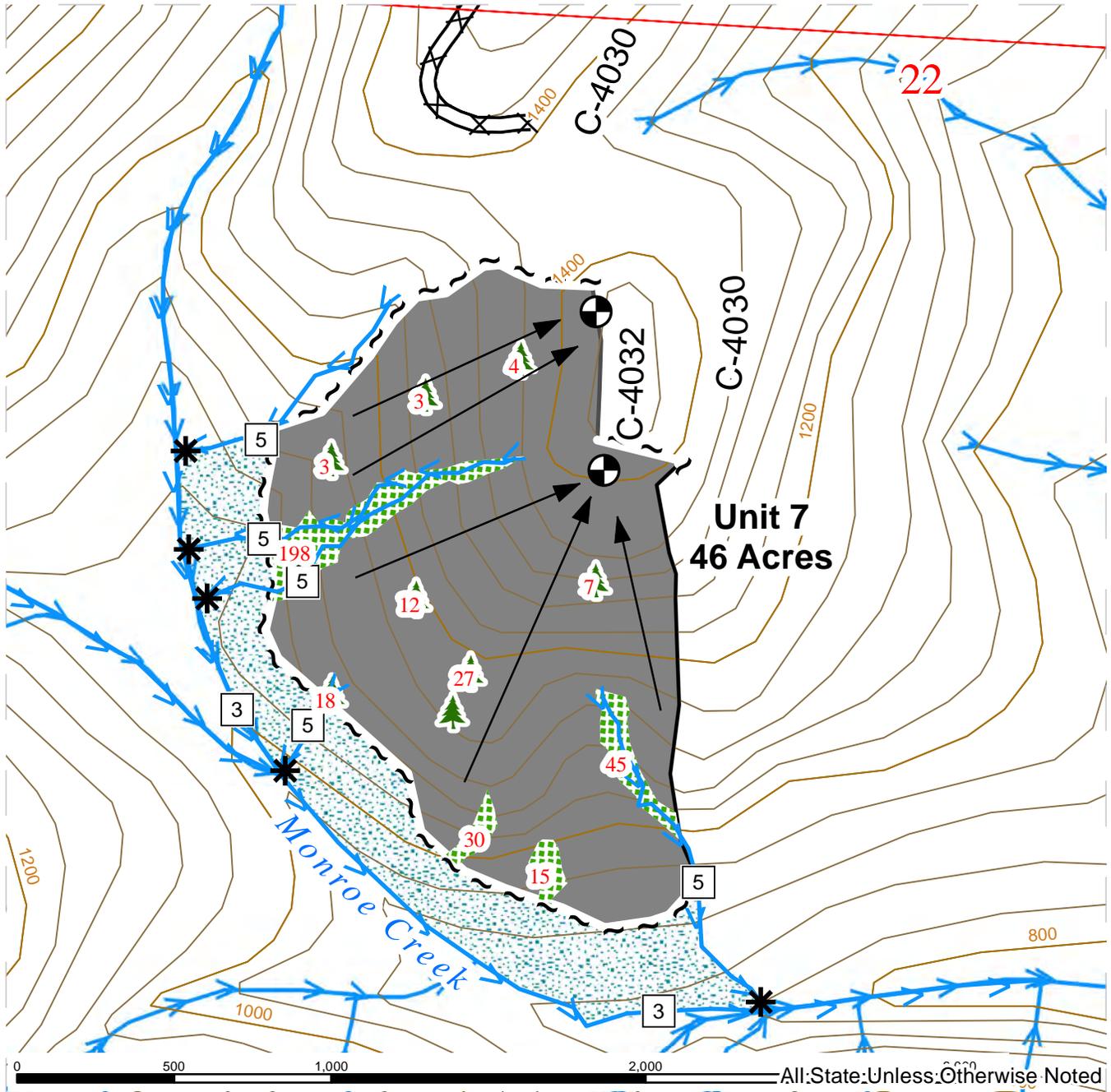
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Modified By: cdun490
 Modification Date: 12/8/2015

LOGGING PLAN MAP

SALE NAME: UP TOP
 APPLICATION #: 30-092039

COUNTY(S): GRAYS HARBOR, THURSTON
 TOWNSHIP(S): T17R04W



All:State:Unless:Otherwise Noted

Sale Area	Day Lighting	Streams
Wetlands	Required Pre-Haul Maintenance	Stream Type
Wetland Mgt. Zone	Existing Roads	Stream Type Break
Riparian Mgt. Zone	New Construction	Monumented corner - 20 Meters
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags	Abandoned	Leave Tree Area - marked with yellow "Leave Tree Area" tags or blue paint
Sale Boundry Tags	Trail	Proposed Landing
Timber Type Change	Ground Logging	Tics - 2000' Interval
Right of Way	Cable Logging	

Prepared By: rmas490

Creation Date: 7/31/2015

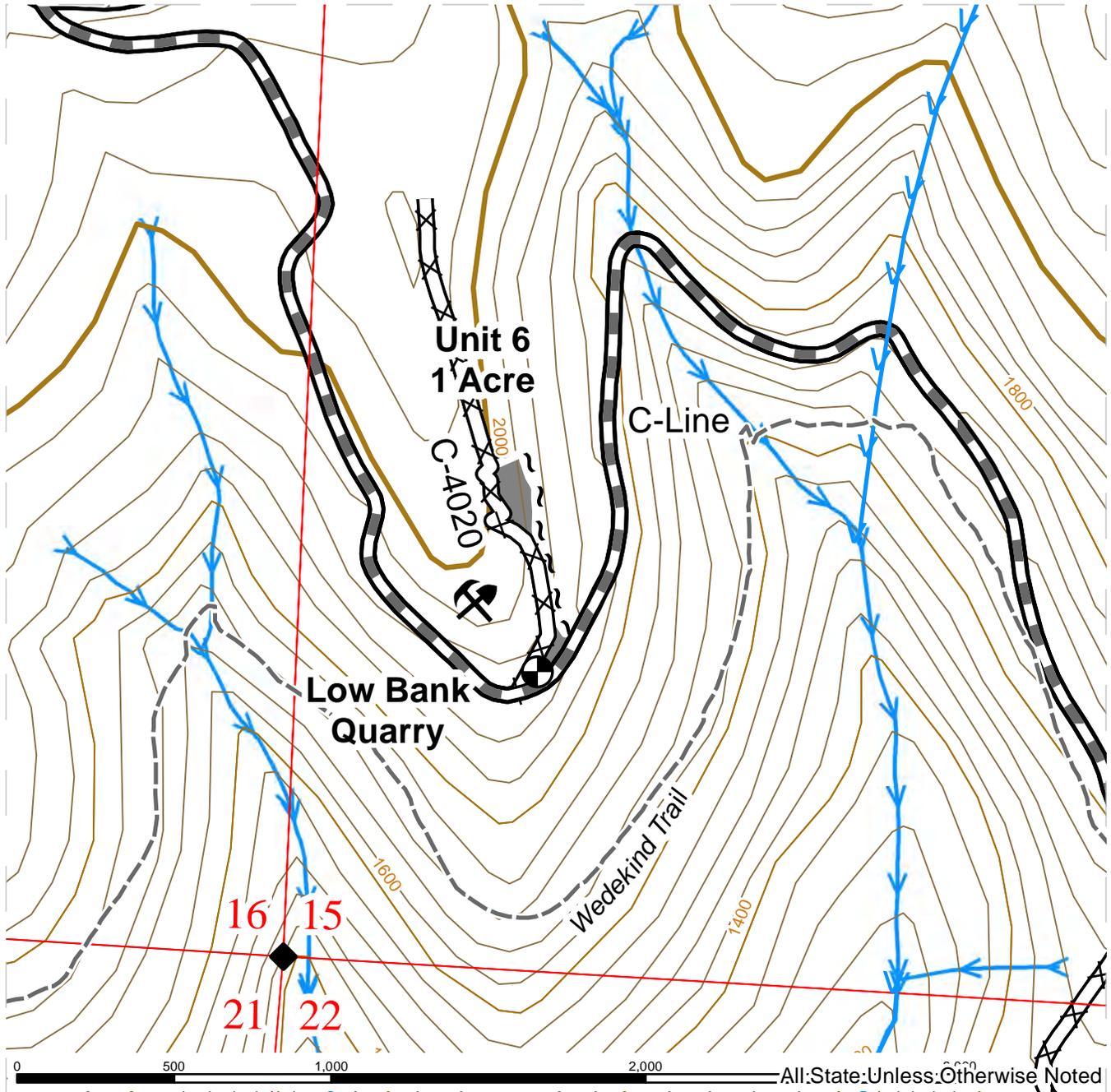
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LOGGING PLAN MAP

SALE NAME: UP TOP
 APPLICATION #: 30-092039

COUNTY(S): GRAYS HARBOR, THURSTON
 TOWNSHIP(S): T17R04W



All:State:Unless:Otherwise Noted

Sale Area	Day Lighting	Streams
Wetlands	Required Pre-Haul Maintenance	Stream Type
Wetland Mgt. Zone	Existing Roads	Stream Type Break
Riparian Mgt. Zone	New Construction	Monumented corner - 20 Meters
Leave Tree Area - Marked w/ Yellow "Leave Tree Area" Tags	Abandoned	Leave Tree Area - marked with yellow "Leave Tree Area" tags or blue paint
Sale Boundary Tags	Trail	Proposed Landing
Timber Type Change	Ground Logging	Tics - 2000' Interval
Right of Way	Cable Logging	

