



**TIMBER NOTICE OF SALE**

**SALE NAME:** *PICK UP STICKS*

**AGREEMENT NO:** 30-98580

**AUCTION:** March 26, 2020 starting at 10:00 a.m., **COUNTY:** Clark, Skamania  
Pacific Cascade Region Office, Castle Rock, WA

**SALE LOCATION:** Sale located approximately 31 miles east of Woodland

**PRODUCTS SOLD  
AND SALE AREA:**

All timber, except leave trees marked with blue paint and yellow "Leave Tree Area" tags with pink flagging, and snags, bound by the following; Unit 1, white "Timber Sale Boundary" tags, pink flagging and S-1000 road. Unit 2 is marked with white "Timber Sale Boundary Tags", pink flagging, reprod and S-1000 road. Unit 3 is bound by white "Timber Sale Boundary" tags, pink flagging, reprod and the S-2050 and S-2400 roads. Unit 4 ROW is bound with orange "Right of Way Tags" and orange flagging. Units 5, 6, 7, 8 and 10 ROW units are bound with orange "Right-Of-Way" tags and orange flashers. Unit 9, a waste area is bound by S-1000, white "Timber Sale Boundary" tags and pink flagging on part(s) of Sections 3 all in Township 5 North, Range 4 East, Sections 29, 30, 31 and 32 all in Township 6 North, Range 5 East, Sections 34 all in Township 6 North, Range 4 East, W.M., containing 224 acres, more or less.

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

**ESTIMATED SALE VOLUMES AND QUALITY:**

Species	Avg DBH	Ring Count	Total MBF	Total \$/MBF	MBF by Grade								
					1P	2P	3P	SM	1S	2S	3S	4S	UT
Douglas fir	20	6	6,941	\$310.00				978		4,055	1,448	296	166
Hemlock	17	7	2,534	\$139.00				23		1,303	834	233	139
Maple	14		193	\$95.00					15		102		76
Red alder	14		172	\$95.00						25	57	50	40
Noble fir	26		13	\$139.00						10		1	2
Red cedar	25		8	\$654.00							8		
Sale Total			9,861										

**MINIMUM BID:** \$310/MBF (est. value \$2,545,000.00) **BID METHOD:** Sealed Bids

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

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

**BIDDABLE SPECIES:** Douglas fir

**BID DEPOSIT:** \$254,500.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.



## TIMBER NOTICE OF SALE

**HARVEST METHOD:** Cable, cable assist and ground based equipment. This sale is estimated to be 75% ground-based yarding and 25% cable-based yarding. A detailed felling and yarding plan shall be required prior to any harvest activities. Ground-based yarding is restricted to sustained slopes of 40% or less. For additional harvest requirements, refer to Clauses H-140 and H-141 in the contract. Ground Based Yarding will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

**ROADS:** 49.06 stations of required construction. 50.42 stations of required reconstruction. 89.97 stations of optional construction. 155.29 stations of required prehaul maintenance. 51.90 stations of abandonment, if built. S-1000 road repair must be completed by 08/31/2021. Construction on the S-1000 Road will not be permitted from September 1st to June 1. For additional details see attached road plan. The hauling of forest products will not be permitted from October 1 to April 30 unless authorized in writing by the Contract Administrator on roads S-2050, S-2070, S-2072 and S-2072B from October 1 to April 30 from Units 3, 7 and 8 unless authorized in writing by the Contract Administrator.

### ACREAGE DETERMINATION

**CRUISE METHOD:** The sale acres were determined by GPS. The sale area was cruised using a variable plot cruise method.

**FEES:** \$167,637.00 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 an estimated 978 MBF of high quality SM DF, 340 MBF of high quality 2 saw DF, 101 MBF of high quality DF 3 saw logs, see cruise for additional information.

The Purchaser is required to obtain a Forest Service Bridge Overload permit for each vehicle that exceeds the weight limits for crossing the FSR-54 Canyon Creek Bridge.

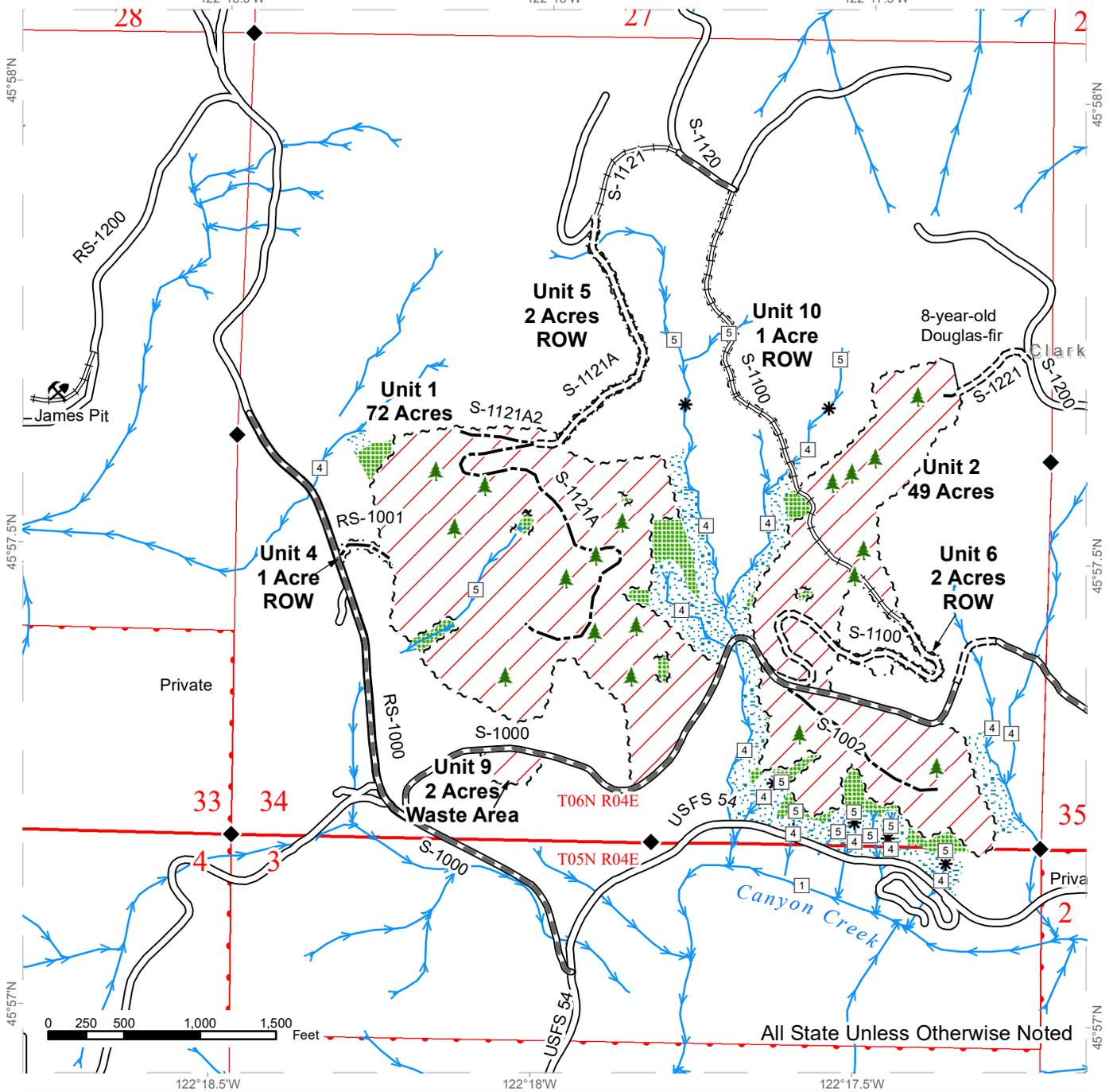
Forest product removal haul route via S-2000, USFS 54 to Healy Road. Weight restriction of 56 ton max on bridge over South Fork Siouxon River on S-1000 at station 238.64 to 240.29. Alternate route has been established for equipment mobilization, see Clause G-310 and H-141 for additional information.

Intermediate supports may be required to prevent soil rutting in Unit 3 off the S-2072B Road. See clauses H-140 and H-141 for further harvesting requirements.

# TIMBER SALE MAP

**SALE NAME:** PICK UP STICKS  
**AGREEMENT #:** 30-098580  
**TOWNSHIP(S):** T6R4E, T5R4E, T6R5E  
**TRUST(S):** Common School and Indemnity (3), Escheat (9), Normal School (8), State Forest Purchase (2), State Forest Transfer (1)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Clark, Skamania  
**ELEVATION RGE:** 920-2640  
 122°18.5'W 122°18'W 122°17.5'W

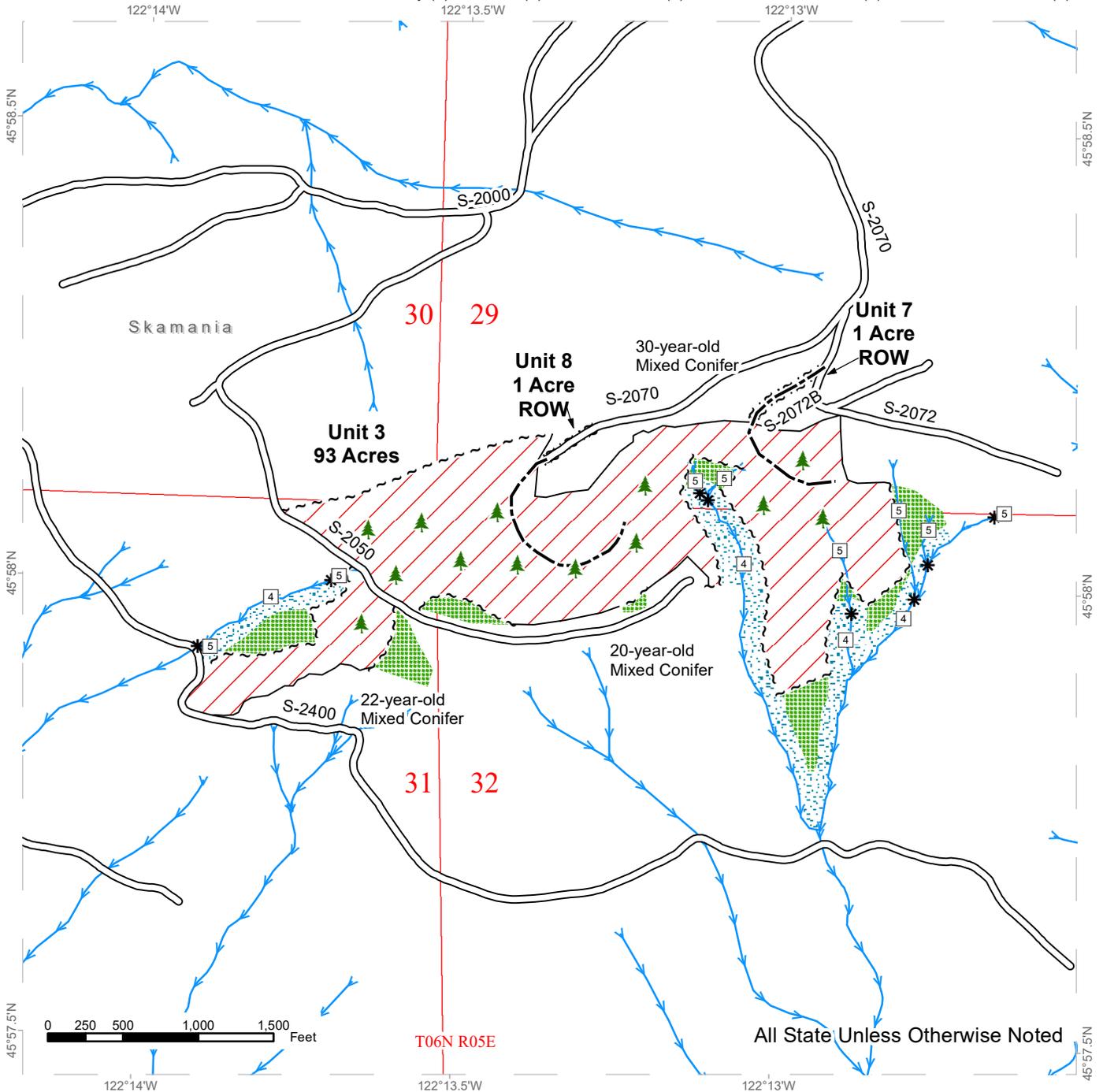


Variable Retention Harvest	Existing Roads	Sale Boundary Tags
Leave Tree Area	Required Pre-Haul Maintenance	Leave Tree Tags
Riparian Mgt Zone	Required Construction	Right of Way Tags
Leave Tree Area <1/4-acre	Required Reconstruction	Flag Line
Rock Pit	Optional Construction	Timber Type Change
Streams		Survey Monument
Stream Type		
Stream Type Break		

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All State Unless Otherwise Noted

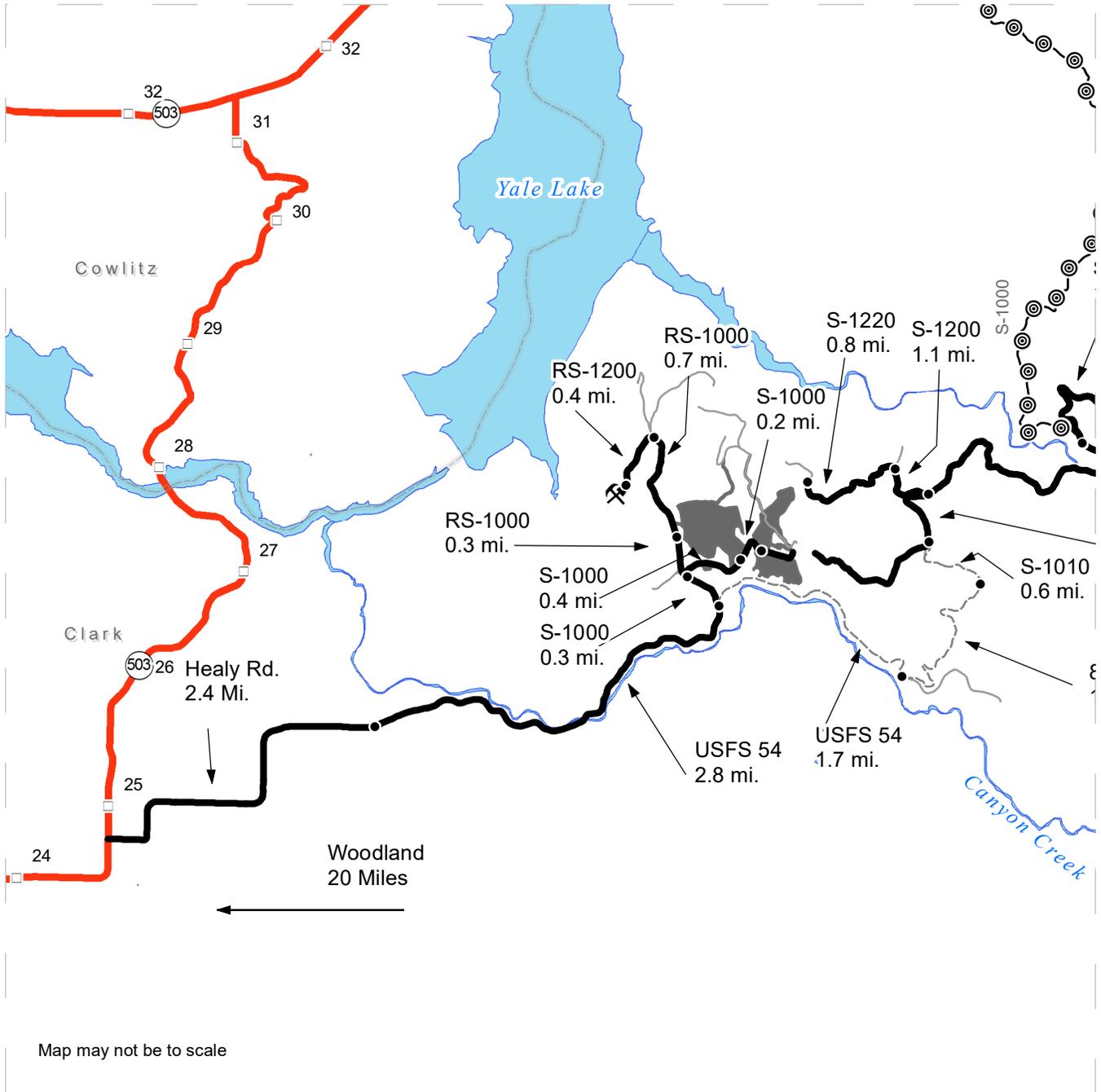
Variable Retention Harvest	Existing Roads	Sale Boundary Tags
Leave Tree Area	Optional Construction	Leave Tree Tags
Riparian Mgt Zone	Leave Tree Area <1/4-acre	Right of Way Tags
Streams	Flag Line	Timber Type Change
Stream Type		
Stream Type Break		



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	Timber Sale Unit
	Haul Route
	Other Road
	View Only Route
	Equipment Route
	Milepost Markers
	Distance Indicator
	Rock Pit

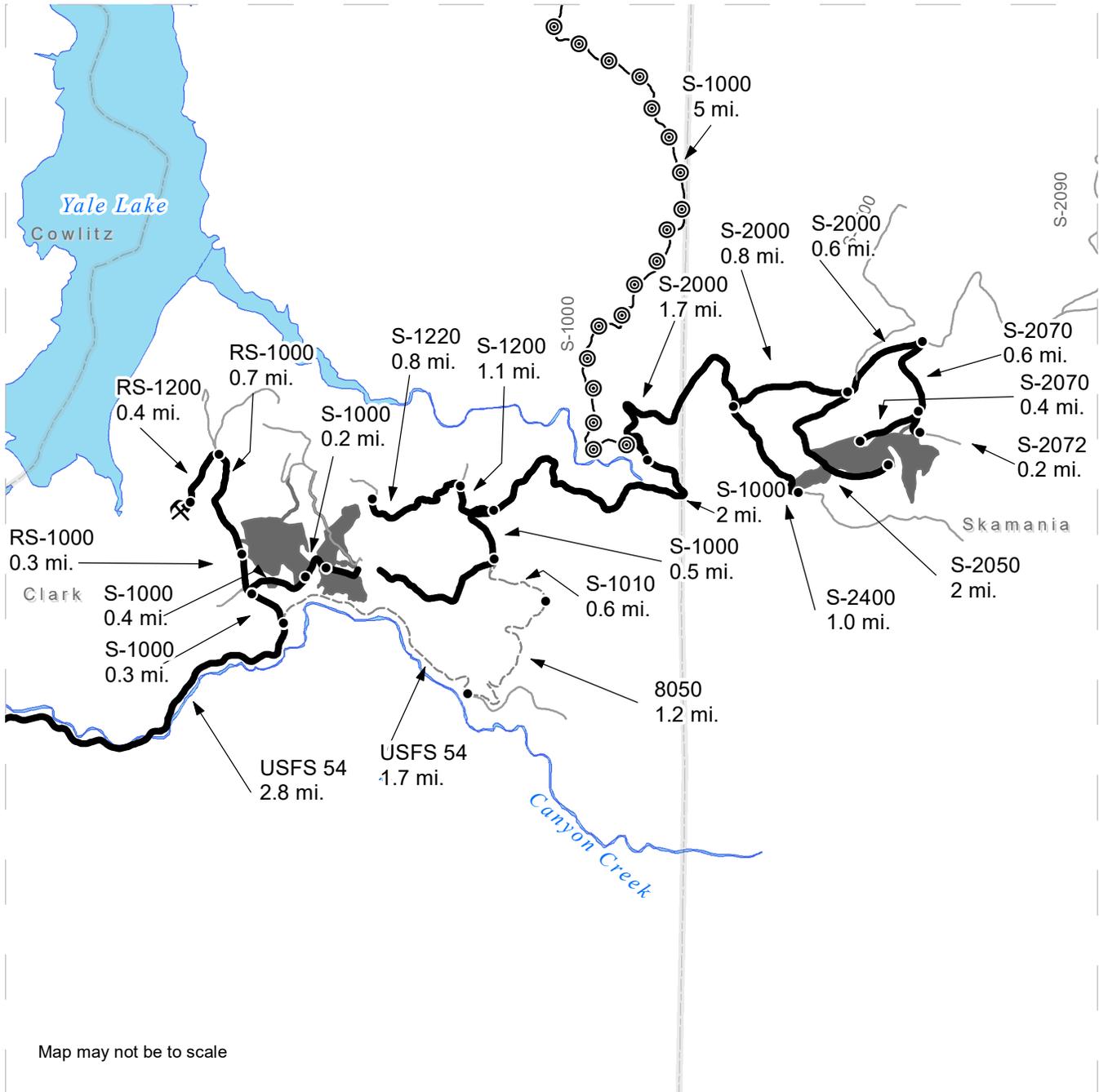
**DRIVING DIRECTIONS:**  
 \*See Attachment\*



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**DRIVING DIRECTIONS:**

\*See Attachment\*

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- Timber Sale Unit
- Haul Route
- Other Road
- View Only Route
- Equipment Route
- Milepost Markers
- Distance Indicator
- Rock Pit

**DRIVING DIRECTIONS:**  
 \*See Attachment\*



## **Pick Up Sticks Driving Directions**

Turn east onto NE Healy Rd from SR 503 between mile markers 24 and 25 and travel 2.4 miles to USFS 54. Continue on USFS 54 for 2.8 miles, then turn left (north) onto the S-1000 for 0.3 miles.

### **Units 1 and 4 (ROW)**

Continue right (east) at the fork on the S-1000 for 0.3 miles to Units 1 and 4. From here, the units are accessed by continuing straight on the RS-1000 for 0.3 miles. Unit 1 can also be accessed by turning right (east) on the S-1000 for 0.2 miles.

### **Unit 2, 6 (ROW), and 9 (Waste Area)**

To Unit 9, from the S-1000/RS-1000 junction turn right (east) on the S-1000 and continue for 0.25 miles. Continue another 0.4 miles for units 2 and 6.

### **Units 3, 7 (ROW), and 8 (ROW)\***

To access unit 3, continue on the USFS 54 for another 1.7 miles and turn left (north) onto the 8050 Rd. Continue for 1.2 miles until it becomes the S-1010. Continue 0.6 miles, stay right (north) at the fork, and the road turns into the S-1000 for another 2.5 miles. Turn right (north) onto the S-2000 for 1.7 miles until the S-2400. Turn right (south) on the S-2400 for 1 mile for unit 3. Or continue straight (east) for 0.8 miles until the S-2050. Turn right (south) for 2 miles to unit 3. Or continue straight (northeast) 0.6 miles until the S-2070, turn right (south) and continue another 0.6 miles to units 8 and 3. For unit 7, stay left (south) at the fork to go on the S-2072 for 0.2 miles. It is 0.4 miles on the S-2070 or 0.2 miles on the S-2072 to unit 3.

### **Units 5 (ROW) and 10 (ROW)**

Unit 5 is a ROW entering the north end of unit 1 and can be accessed by hiking through this unit. Unit 10 is a ROW entering the western side of unit 2 and can be accessed by hiking through this unit.

### **James Pit (Rock Source)**

The James Pit can be accessed by taking the left fork (north) at the S-1000/RS-1000 junction onto the RS-1000. Continue for 1 mile, then turn left (south) on the RS-1200 for 0.4 miles.

### **\*Equipment Route for Units 3, 7 (ROW), and 8 (ROW)**

Due to weight restrictions on the South Fork Siouxon Bridge, equipment exceeding 56 tons for work on Units 3, 7, and 8 can be hauled from SR 503 between mile markers 39 and 40 to the 10 Rd. (south) for 0.7 miles. Turn right (southwest) on the S-6000 and continue on for 4.6 miles until it becomes the S-1000. Continue for 5 miles, then turn left (north) on the S-2000. From here, continue on the haul route for these units.

### **Preview Route**

Prior to repair of the S-1000 crossing, the sale can be previewed via USFS 54. From the USFS 54/S-1000 junction, continue 1.7 miles on the USFS 54, then turn left (north) on the 8050 for 1.2 miles. Follow the S-1010 to the northwest for 0.6 miles until it reaches the S-1000. From here, follow the haul route.

**STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES**

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

**Export Restricted MBF Scale AGREEMENT NO. 30-098580**

**SALE NAME: PICK UP STICKS**

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

Section G: General Terms

G-001 Definitions

The following definitions apply throughout this contract;

Bill of Sale and Contract for Forest Products: Contract between the Purchaser and the State, which sets forth the procedures and obligations of the Purchaser in exchange for the right to remove forest products from the sale area. The Bill of Sale and Contract for Forest Products may include a Road Plan for any road construction or reconstruction, where applicable.

Contract Administrator: Region Manager's designee responsible for assuring that the contractual obligations of the Purchaser are met.

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

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

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

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

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

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

Purchaser was the successful bidder on March 26, 2020 and the sale was confirmed on \_\_\_\_\_. The State, as owner, agrees to sell to Purchaser, and Purchaser agrees to purchase, cut, and remove the following forest products: All timber, except leave trees marked with blue paint and yellow "Leave Tree Area" tags with pink flagging, and snags, bound by the following; Unit 1, white "Timber Sale Boundary" tags, pink flagging and S-1000 road. Unit 2 is marked with white "Timber Sale Boundary Tags", pink flagging, reprod and S-1000 road. Unit 3 is bound by white "Timber Sale Boundary" tags, pink flagging, reprod and the S-2050 and S-2400 roads. Unit 4 ROW is bound with orange "Right of Way Tags" and orange flagging. Units 5, 6, 7, 8 and 10 ROW units are bound with orange "Right-Of-Way" tags and orange flashers. Unit 9, a waste area is bound by S-1000, white "Timber Sale Boundary" tags and pink flagging, located on approximately 224 acres on part(s) of Section 3 in Township 5 North, Range 4 East, Sections 29, 30, 31, and 32 all in Township 6 North, Range 5 East, Section 34 in Township 6 North, Range 4 East W.M. in Clark, and Skamania County(s) as shown on the attached timber sale map and as designated on the sale area.

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-030 Contract Term

Purchaser shall remove the forest products conveyed and complete all work required by this contract prior to October 31, 2022.

G-040 Contract Term Adjustment - No Payment

Purchaser may request an adjustment in the contract term. A claim must be submitted in writing and received by the State within 30 days after the start of interruption or delay. The claim must also indicate the actual or anticipated length of interruption or delay. The State may grant an adjustment without charge only if the cause for contract term adjustment is beyond Purchaser's control. The cause must be one of the following and the adjustment may be granted only if operations or planned operations under this contract are actually interrupted or delayed:

- a. Road and bridge failures which deny access.
- b. Access road closures imposed by road owner.
- c. Excessive suspensions as provided in clause G-220.
- d. Regulatory actions not arising from Purchaser's failure to comply with this contract which will prevent timber harvest for a period less than 6 months.

G-050 Contract Term Extension - Payment

Extensions of this contract term may be granted only if, in the judgment of the State, Purchaser is acting in good faith and 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 contract value based on the contract payment rate and advertised volume.

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

The payments shall not include the initial deposit which shall be held 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 timber value of the contract.

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

- e. Payment of \$30.45 per acre per annum for the acres on which an operating release has not been issued for all harvest units.
- f. In no event will the extension charge be less than \$200.00.
- g. Extension payments are non-refundable.

G-053 Surveys - Sensitive, Threatened, Endangered Species

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

G-060 Exclusion of Warranties

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

- a. The MERCHANTABILITY of the forest products. The use of the term "merchantable" in any document is not intended to vary the foregoing.
- b. The CONDITION of the forest products. The forest products will be conveyed "AS IS."
- c. The ACREAGE contained within any sale area. Any acreage descriptions appearing in the timber notice of sale, timber sale contract, or other documents are estimates only, provided solely for administrative and identification purposes.
- d. The VOLUME, QUALITY, OR GRADE of the forest products. The State neither warrants nor limits the amount of timber to be harvested. The descriptions of the forest products to be conveyed are estimates only, made solely for administrative and identification purposes.

- e. The CORRECTNESS OF ANY SOIL OR SURFACE CONDITIONS, PRE-SALE CONSTRUCTION APPRAISALS, INVESTIGATIONS, AND ALL OTHER PRE-BID DOCUMENTS PREPARED BY OR FOR THE STATE. These documents have been prepared for the State's appraisal purposes only.
- f. THAT THE SALE AREA IS FREE FROM THREATENED OR ENDANGERED SPECIES or their habitat. The State is not responsible for any interference with forestry operations that result from the presence of any threatened or endangered species, or the presence of their habitat, within the sale area.
- g. THAT THE FORESTRY OPERATIONS to be performed under this contract WILL BE FREE FROM REGULATORY ACTIONS by governmental agencies. The State is not responsible for actions to enforce regulatory laws, such as the Washington Forest Practices Act (chapter 76.09 RCW), taken by the Department of Natural Resources or any other agency that may affect the operability of this timber sale.
- h. Items contained in any other documents prepared for or by the State.

G-062 Habitat Conservation Plan

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

By signing this contract, Purchaser agrees to comply with the terms and conditions of the ITP, and the HCP, which shall become terms of this contract. The State agrees to authorize the lawful activities of the Purchaser carried out pursuant to this contract, PROVIDED the Purchaser remains in compliance with the terms and conditions of both the HCP and ITP. The requirements set forth in this contract are intended to comply with the terms and conditions of the HCP and ITP. Accordingly, non-compliance with the terms and conditions of the HCP and ITP will render the authorization provided in this paragraph void, be deemed a breach of the contract and may subject Purchaser to liability for violation of the Endangered Species Act.

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

## G-063 Incidental Take Permit Notification Requirements

- a. Purchaser shall immediately notify the Contract Administrator of new locations of permit species covered by the Incidental Take Permits (ITP) that are discovered within the area covered by the State's Habitat Conservation Plan (HCP), including, but not limited to: locations of occupied murrelet habitat; spotted owl nest sites; wolves; grizzly bears; nests, communal roosts, or feeding concentrations of bald eagles; peregrine falcon nests; Columbian white-tailed deer; Aleutian Canada geese; Oregon silverspot butterflies; and additional stream reaches found to contain bull trout. Purchaser is required to notify the Contract Administrator upon discovery of any fish species found in streams or bodies of water classified as non-fish bearing. In all circumstances, notification must occur within a 24 hour time period.
- b. Upon locating any live, dead, injured, or sick specimens of any permit species covered by the ITP, Purchaser shall immediately notify the Contract Administrator. Purchaser shall notify the Contract Administrator if there is any doubt as to the identification of a discovered permit species. Purchaser may be required to take certain actions to help the Contract Administrator safeguard the well-being of any live, injured or sick specimens of any permit species discovered, until the proper disposition of such specimens can be determined by the Contract Administrator. Any such requirements will be explained to Purchaser by the Contract Administrator during the Pre-Work Conference. In all circumstances, notification must occur within a 24 hour time period.
- c. Purchaser shall refer to a specific ITP number, ITP TE812521-1 or ITP 1168 (copies which are located in the region office) in all correspondence and reports concerning permit activities.
- d. Provisions and requirements of the ITP shall be clearly presented and explained to Purchaser by Contract Administrator during the Pre-Work Conference as per contract clause G-330. All applicable provisions of the ITP and this schedule must be presented and clearly explained by Purchaser to all authorized officers, employees, contractors, or agents of Purchaser conducting authorized activities in the timber sale area. Any questions Purchaser may have about the ITP should be directed to the Contract Administrator.

## G-064 Permits

Purchaser is responsible for obtaining any permits not already obtained by the State that relate to Purchaser's operation. Forest Practice Application / Hydraulic Project Approval permits obtained by the State shall be transferred to Purchaser. Purchaser is responsible for all permits, amendments and renewals.

## G-065 Regulatory Disclaimer

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

## G-066 Governmental Regulatory Actions

## a. Risk

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

## b. Sale Area

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

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

## c. Adjustment of Price

The State shall adjust the total contract price by subtracting from the total contract price an amount determined in the following manner: The State shall cause the timber sale area subject to governmental regulation or order to be measured. The State shall calculate the percentage of the total sale area subject to the governmental regulation or order. The State shall reduce the total contract price by that calculated percentage. However, variations in species, value, costs, or other items pertaining to the affected sale area will be analyzed and included in the adjustment if deemed appropriate by the State. The State will further reduce the total contract price by the reasonable cost of unamortized roads Purchaser constructed but was unable to fully use for removing timber. A reduction in total contract price terminates all of the Purchaser's rights to purchase and remove the timber and all other interest in the affected sale area.

## G-070 Limitation on Damage

In the event of a breach of any provision of this contract by the State, the exclusive remedy available to Purchaser will be limited to a return of the initial deposit, unapplied payments, and credit for unamortized improvements made by Purchaser.

The State shall not be liable for any damages, whether direct, incidental or consequential.

G-080 Scope of State Advice

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

G-090 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, added forest products become a part of this contract and shall be paid for at the same rate and manner as other forest products under this contract.

G-100 Forest Products Not Designated

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

G-110 Title and Risk of Loss

Title to the forest products conveyed passes at confirmation of the sale. Purchaser bears the risk of loss of or damage to and has an insurable interest in the forest products in this contract from the time of confirmation of the sale of forest products. In the event of loss of or damage to the forest products after passage of title, whether the cause is foreseeable or unforeseeable, the forest products shall be paid for by Purchaser. Breach of this contract shall have no effect on this provision. Title to the forest products not removed from the sale area within the period specified in this contract shall revert to the State as provided in RCW 79.15.100.

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 Purchaser's expense regardless of cost, to remedy deficiencies at any time.

## G-140 Indemnity

To the fullest extent permitted by law, Purchaser shall indemnify, defend and hold harmless State, agencies of State and all officials, agents and employees of State, from and against all claims arising out of or resulting from the performance of the contract. "Claim" as used in this contract means any financial loss, claim, suit, action, damage, or expense, including but not limited to attorneys' fees, attributable for bodily injury, sickness, disease or death, or injury to or destruction of tangible property including loss of use resulting therefrom. Purchasers' obligations to indemnify, defend, and hold harmless includes any claim by Purchasers' agents, employees, representatives, or any subcontractor or its employees. Purchaser expressly agrees to indemnify, defend, and hold harmless State for any claim arising out of or incident to Purchasers' or any subcontractors' performance or failure to perform the contract. Purchasers' obligation to indemnify, defend, and hold harmless State shall not be eliminated or reduced by any actual or alleged concurrent negligence of State or its agents, agencies, employees and officials. Purchaser waives its immunity under Title 51 RCW to the extent it is required to indemnify, defend and hold harmless State and its agencies, officials, agents or employees.

## G-150 Insurance

Purchaser shall, at its cost and expense, buy and maintain insurance of the types and amounts listed below. Failure to buy and maintain the required insurance may result in a breach and/or termination of the contract at State's option. State may suspend Purchaser operations until required insurance has been secured.

All insurance and surety bonds should be issued by companies admitted to do business within the State of Washington and have a rating of A-, Class VII or better in the most recently published edition of Best's Reports. If an insurer is not admitted, all insurance policies and procedures for issuing the insurance policies must comply with Chapter 48.15 RCW and 284-15 WAC.

The State of Washington, Department of Natural Resources region office of sale origin shall be provided written notice before cancellation or non-renewal of any insurance referred to therein, in accord with the following specifications:

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

Before starting work, Purchaser shall furnish State of Washington, Department of Natural Resources with a certificate(s) of insurance, executed by a duly authorized

representative of each insurer, showing compliance with the insurance requirements specified in the contract. Insurance coverage shall be obtained by the Purchaser prior to operations commencing and continually maintained in full force until all contract obligations have been satisfied or an operating release has been signed by the State.

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

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

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

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

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

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

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

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

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

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

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

#### G-160 Agents

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

Purchaser is required to have a person on site during all operations who is authorized to receive instructions and notices from the State. Purchaser shall inform the State in writing who is authorized to receive instructions and notices from the State, and any limits to this person's authority.

## G-170 Assignment and Delegation

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

## G-180 Modifications

Waivers, modifications, or amendments of the terms of this contract must be in writing signed by Purchaser and the State.

## G-190 Contract Complete

This contract is the final expression of the Parties' agreement. There are no understandings, agreements, or representations, expressed or implied, which are not specified in this contract.

## G-200 Notice

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

G-210 Violation of Contract

G-220 State Suspends Operations

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

## G-210 Violation of Contract

- a. If Purchaser violates any provision of this contract, the Contract Administrator, by written notice, may suspend those operations in violation. If the violation is capable of being remedied, Purchaser has 30 days after receipt of a suspension notice to remedy the violation. If the violation cannot be remedied (such as a violation of WAC 240-15-015) or Purchaser fails to remedy the violation within 30 days after receipt of a suspension notice, the State may terminate the rights of Purchaser under this contract and collect damages.
- b. If the contract expires pursuant to clause G-030 or G-031 without Purchaser having performed all its duties under this contract, Purchaser's right to operate is terminated and Purchaser shall not have the right to remedy the breach. This provision shall not relieve Purchaser of any payment obligations.
- c. The State has the right to remedy the breach in the absence of any indicated attempt by Purchaser or if Purchaser is unable, as determined by the State, to

remedy the breach. Any expense incurred by the State shall be charged to Purchaser and shall be paid within 30 days of receipt of billing.

- d. If Purchaser's violation is a result of a failure to make a payment when due, in addition to a. and b. above, interest shall accrue on the unpaid balance at 12 percent per annum, beginning the date payment was due.

#### G-220 State Suspends Operation

The Contract Administrator may suspend any operation of Purchaser under this contract when the State is suffering, or there is a reasonable expectation the State will suffer environmental, monetary, or other damage if the operation is allowed to continue.

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

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

If it reasonably appears that the damage that the State is suffering, or can reasonably be expected to suffer if the operation is allowed to continue, will prevent harvest for a period that will exceed 6 months, and Purchaser has complied with this contract, the provisions of clause G-066 shall govern just as if the harvest was prevented by an applicable foreign or domestic governmental regulation or order.

#### G-230 Unauthorized Activity

Any cutting, removal, or damage of forest products by Purchaser, its employees, agents, or invitees, including independent contractors, in a manner inconsistent with the terms of this contract or State law, is unauthorized. Such activity may subject Purchaser to liability for triple the value of said forest products under RCW 79.02.320 or RCW 79.02.300 and may result in prosecution under RCW 79.02.330 or other applicable statutes.

#### G-240 Dispute Resolution

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

- a. In the event of a dispute, Purchaser must make a written request to the Region Manager for resolution prior to seeking other relief.
- b. The Region Manager will issue a written decision on Purchaser's request within ten business days.

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

G-250 Compliance with All Laws

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

G-260 Venue

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

G-270 Equipment Left on State Land

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

G-280 Operating Release

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

G-310 Road Use Authorization

Purchaser is authorized to use the following State roads and roads for which the State has acquired easements and road use permits; For forest product removal the following roads are permitted for use: RS-1000 (0+00 to 29+44), RS-1001 (0+00 to 4+36), RS-1200 (0+00 to 27+00), S-1000 (0+00 to 125+78), S-1002, S-1100 (0+00 to 60+01), S-1120 (0+00 to 4+45), S-1121 (0+00 to 8+46), S-1121A (0+00 to 49+98), S-1200, S-

1221 (0+00 to 7+37), S-2000 (0+00 to 165+00) S-2050, S-2070 (0+00 to 67+49), S-2072 (0+00 to 13+00) S-2072B (0+00 to 14+76), S-2400 (0+00 to 52+00). The following roads are permitted for equipment mobilization: 10 Rd (0+00 to 42+00), S-1000 (260+00 to 524+50), and S-6000 are authorized for use for equipment mobilization due to weight restrictions on the South Fork Siouxon bridge located at 238+64 to 240+29. 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-380 Road Easement and Road Use Permit Requirements

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

Easement between the State and USFS dated 01/31/1967 Expires: Indefinitely.

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:

## DATA MISSING

## Section P: Payments and Securities

## P-010 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 the 'Payment for Forest Products' clause, the initial deposit will be immediately forfeited to the State, and will be offset against Purchaser's remaining balance due. Any excess initial deposit funds not needed to ensure full payment of the contract price, or not needed to complete any remaining obligations of the Purchaser existing after contract expiration, will be refunded to the Purchaser.

## P-021 Payment for Forest Products

Purchaser agrees to pay the following rates per MBF Scribner net log scale for forest products conveyed and cut or removed from the sale area plus \$167,637.00 on day of sale and \$9.00 per MBF upon removal in fees. Fees collected shall be retained by the state unless the contract is adjusted via the G-066 clause.

## DATA MISSING

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

Utility logs, special cull and peelable cull logs of all species, included on loads of logs that are required to be removed and scaled per clause H-150 will be paid for on an adjusted gross scale basis at the rate of \$20.00 per MBF plus fees.

## P-040 Weighing and Scaling Costs

Purchaser agrees to pay for all scaling and weighing costs for logs and other products sold under this contract. Purchaser also agrees to pay for all costs associated with the transmission and reporting of scale or weight data.

## P-045 Guarantee of Payment

Purchaser will pay for forest products prior to cutting or will guarantee payment by posting an approved payment security. The amount of cash or payment security shall be determined by the State and shall equal or exceed the value of the cutting proposed by Purchaser.

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

Forest products included in this agreement which are destroyed, damaged, stolen, lost, or mismatched shall be paid for by Purchaser on demand of the State. The rates contained in clause P-021 shall apply.

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 L: Log Definitions and Accountability

L-010 Forest Products Conveyed

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

L-020 Short Logs - Peeler Blocks

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

## L-060 Load Tickets

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

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

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

## L-071 Log and Load Reporting Service

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

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

## L-080 Scaling Rules

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

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

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

Forest Product measurement and weighing facilities required by this contract must be approved by the State. Forest products sold under the contract which require log scaling shall be scaled, measured, or counted by a State approved third party log scaling organization. Forest products sold under the contract which require weighing shall be weighed at a location that meets Washington State Department of Agriculture approval.

Prior to forest products being hauled, the Contract Administrator must authorize in writing the use of State approved measurement and/or weighing facilities that are at or

en-route to final destinations. Forest products from this sale shall be measured or weighed at facilities, which are currently approved for use by the State and are currently authorized for this sale. The State reserves the right to verify load volume and weights with State employees or contractors at the State's own expense. The State reserves the right to revoke the authorization of previously approved measurement locations.

L-120 Long Log Taper Distribution

Forest products over 40 feet long plus trim shall be segment scaled and the lower segment diameters shall be determined using actual taper. In order to utilize taper rules for determining segment diameters for poles and pilings greater than 40 feet in length plus trim, Purchaser must request use of a Pole and Piling Scaling Specification Agreement on file in the region office. Approval for usage of a special Pole and Piling Scaling Specification Agreement may be granted at the sole discretion of the State.

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

L-130 Conversion Factors

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

Section H: Harvesting Operations

H-001 Operations Outside the Sale Boundaries

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

H-010 Cutting and Yarding Schedule

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

H-013 Reserve Tree Damage Definition

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

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

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

- b. A reserve tree top is broken or the live crown ratio is reduced below 30 percent.
- c. A reserve tree has more than 1/3 of the circumference of its root system injured such that the cambium layer is exposed.

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

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

#### H-016 Skid Trail Requirements

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

Purchaser shall comply with the following during the yarding operation:

- a. A skid trail will not exceed 14 feet in width, including rub trees.
- b. Skid trails shall not cover more than 5 percent of the total acreage on one unit.
- c. Location of the skid trails must be marked by Purchaser and approved by the Contract Administrator.
- d. Except for rub trees, skid trails shall be felled and yarded prior to the felling of adjacent timber.
- e. Rub trees shall be left standing until all timber tributary to the skid trail has been removed.
- f. Excessive soil damage is not permitted. Excessive soil damage is described in clause H-017.
- g. Purchaser will not have more than two skid trails open to active skidding at any one time. All other skid trails used for skidding timber will be closed.
- h. Once a skid trail is closed, Purchaser will not reopen a skid trail unless approved in writing by the Contract Administrator.
- i. Skid trails will be water barred at the time of completion of yarding, if required by the Contract Administrator.

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

H-017 Preventing Excessive Soil Disturbance

Operations may be suspended when soil rutting exceeds 8 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-025 Timing Requirements for Timber Removal

All harvested timber must be removed within 60 days of being felled.

H-030 Timber Falling

Trees shall be felled and logs shall be bucked to obtain the greatest practicable utilization of forest products and other valuable materials conveyed.

H-035 Fall Trees Into Sale Area

Trees shall be felled into the sale area unless otherwise approved by the Contract Administrator.

H-040 Purchaser Harvest Plan

Purchaser shall, as part of the plan of operations, prepare an acceptable harvest plan for all harvest units. The plan shall address the felling and yarding operations, 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-052 Branding and Painting

Forest products shall be branded with a brand furnished by the State prior to removal from the landing. All purchased timber shall be branded in a manner that meets the requirements of WAC 240-15-030(2)(a)(i). All timber purchased under a contract designated as export restricted shall also be painted in a manner that meets the requirements of WAC 240-15-030(2)(a)(ii).

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

H-080 Snags Not to be Felled

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

## H-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 systems including cable assist and ground based systems including shovel, forwarder and tracked skidder. Authority to use other equipment or to operate outside the equipment specifications detailed above must be approved in writing by the State.

## H-125 Log Suspension Requirements

Lead-end suspension is required for all yarding activities. Full Suspension is required when yarding over type 5 streams.

## 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-127 Tailholds on Private Land

If Purchaser chooses to tailhold on private property, Purchaser shall obtain permit(s) and assumes responsibility for all costs and damages associated with the permit(s). Purchaser must provide the State with a copy of the executed permit(s) or a letter from the landowner indicating that a satisfactory tailhold permit(s) has been consummated between Purchaser and the landowner.

## H-130 Hauling Schedule

The hauling of forest products will not be permitted on roads S-2050, S-2070, S-2072 and S-2072B from October 1 to April 30 from Units 3, 7 and 8 unless authorized in writing by the Contract Administrator.

## H-140 Special Harvest Requirements

Purchaser shall accomplish the following during the harvest operations:

Shovel must be large enough to pick up one end of the largest log 35 feet from the machine.

Ground based yarding equipment will not be permitted on sustained slopes over 40%.

Ground based yarding equipment shall only operate during dry soil conditions.

Cable assist operations will not be permitted on slopes over 80%.

Intermediate support may be required to prevent soil rutting in Unit 3 off the S-2072B road.

All trees shall be felled with a saw having a bar length adequate to enable the operator to control felling of the tree. Leaving a posts or unequal holding wood indicates a bar of inadequate length.

In concurrence with S-035, Logging Debris Clean Up; Logging slash will be piled in 10 feet by 10 feet piles or in a manner approved by the Contract administrator in an effort to create plantable spots.

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:

Weight restriction on South Fork Siouxon bridge located on the S-1000 road, bridge is located at station 238.64 to 240.29 no equipment will be hauled over bridge. See G-310, Road Use Authorization for equipment mobilization route.

Purchaser must obtain Overloaded Permit from US Forest Service to drive overloaded vehicles over Canyon Creek. Overloaded vehicles are considered to be anything over 80,000 pounds.

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

H-150 Required Removal of Forest Products

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

Species	Net bd ft	Log length (ft)	Log dib
Conifer	10	12	5
Hardwood	20	16	5

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

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

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

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

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

**H-160 Mismatch**

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

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

**H-180 Removal of Specialized Forest Products or Firewood**

Prior to the removal of conveyed specialized forest products or firewood from the sale area, Purchaser and the State shall agree in writing to the method of accounting for/and removal of such products.

**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 Felling Requirements**

Within all units, all non-merchantable hardwood stems 2 inches DBH or 10 feet tall, shall be felled concurrently with felling operations. 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 1/6/2020 are hereby made a part of this contract.

**C-050 Purchaser Road Maintenance and Repair**

Purchaser shall perform work at their own expense on RS-1000 (0+00 to 29+44), RS-1001 (0+00 to 4+36), RS-1200 (0+00 to 27+00), S-1002, S-1100 (0+00 to 60+01), S-1120 (0+00 to 4+45), S-1121 (0+00 to 8+46), S-1121A (0+00 to 49+98), S-1121A2, S-1200, S-1221 (0+00 to 7+37), S-2050, S-2070 (0+00 to 67+49), S-2072 (0+00 to 13+00) S-2072B (0+00 to 14+76), S-2400 (0+00 to 52+00). 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 roads not listed in Clause C-050. Purchaser shall furnish a statement in a form satisfactory to the State showing the costs incurred while performing this work. Costs shall be based on the rates set forth in the equipment rate schedule on file at the Region office or Engineering Division in Olympia. The State shall reimburse Purchaser for said costs within 30 days of receipt and approval of the statement.

**C-140 Water Bars**

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

**Section S: Site Preparation and Protection****S-001 Emergency Response Plan**

An Emergency Response Plan (ERP) shall be provided to the Contract Administrator containing but not limited to, valid contact numbers and procedures for medical emergencies, fire, hazardous spills, forest practice violations and any unauthorized or unlawful activity on or in the vicinity of the sale area. The Contract Administrator and the State shall be promptly notified whenever an incident occurs requiring an emergency response.

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

**S-010 Fire Hazardous Conditions**

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

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

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

**S-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-040 Noxious Weed Control**

Purchaser shall notify the Contract Administrator in advance of moving equipment onto State lands. Purchaser shall thoroughly clean all off road equipment prior to entry onto State land to remove contaminated soils and noxious weed seed. If equipment is moved from one DNR project area to another, the Contract Administrator reserves the right to require the cleaning of equipment. Equipment shall be cleaned at a location approved by the Contract Administrator.

**S-050 Cessation of Operations for Low Humidity**

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

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

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

**S-070 Water Supply**

Purchaser shall provide, during the "closed season", a water supply with a minimum capacity of 300 gallons for rapid filling of pump trucks or trailers at a location designated by the Contract Administrator.

**S-100 Stream Cleanout**

Slash or debris which enters all tryped streams 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-120 Stream Protection

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

S-130 Hazardous Materials

a. Hazardous Materials and Waste - Regulatory Compliance

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

b. Hazardous Materials Spill Prevention

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

c. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Purchaser shall take immediate action to contain and control all hazardous material spills. Purchaser shall ensure that enough quick response spill kits capable of absorbing 10 gallons of oil, coolant, solvent or contaminated water are available on site to quickly address potential spills from any piece of equipment at all times throughout active operations. If large quantities of bulk fuel/other hazardous materials are stored on site, Purchaser must be able to effectively control a container leak and contain & recover a hazmat spill equal to the largest single on site storage container volume. (HAZWOPER reg. 29CFR 1910.120 (j) (1) (vii)).

d. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology (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-010 Liquidated Damages

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

D-020 Failure to Remove Forest Products

Purchaser's failure to remove all or part of the forest products sold in this agreement prior to the expiration of the contract term results in substantial injury to the State. The value of the forest products sold at the time of breach is not readily ascertainable. Purchaser's failure to perform disrupts the State's management plans, the actual cost of which is difficult to assess. A resale involves additional time and expense and is not an

adequate remedy. Therefore, Purchaser agrees to pay the State as liquidated damages a sum calculated using the following formula:

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

Where:

LD = Liquidated Damage value.

V = The unremoved value at the date of breach of contract. The value is determined by subtracting the removal volume to date from the State's cruise volume multiplied by the contract bid rates.

ID = Initial Deposit paid at date of contract that has not been applied to timber payments.

P = Advance payments received but not yet applied to specific contract requirements.

C = Charges assessed for contract requirements completed prior to breach of contract but not paid for.

A = Administrative Fee = \$2,500.00.

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

Where:

r = daily equivalent of an annual interest at current interest rate as established by WAC 332-100-030.

LD = Liquidated damage value.

N = Number of days from date of breach to date payment is received.

#### D-030 Inadequate Log Accountability

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

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

D-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 all harvest units.

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

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

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

\_\_\_\_\_  
Eric Wisch  
Pacific Cascade Region Manager

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

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

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

STATE OF \_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_

\_\_\_\_\_ to me known to be the \_\_\_\_\_ of the corporation that executed the within and foregoing instrument and acknowledged said instrument to be the free and voluntary act and deed of the corporation, for the uses and purposes therein mentioned, and on oath stated that (he/she was) (they were) authorized to execute said instrument.

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

\_\_\_\_\_  
Notary Public in and for the State of

\_\_\_\_\_

My appointment expires \_\_\_\_\_

## PRE-CRUISE NARRATIVE

Sale Name: <b>Pick Up Sticks</b>	Region: <b>Pacific Cascade</b>
Agreement #: <b>30-098580</b>	District: Yacolt
Contact Forester: Michael Rutledge Phone / Location: 360-791-6640	County(s): Clark, Skamania
Alternate Contact: Scott Hancock Phone / Location: 360-608-9294	Other information: <a href="#">Click here to enter text.</a>

Type of Sale: MBF Scale	
Harvest System: Ground based	75%
Harvest System: Uphill Cable	25%
Enter % of sale acres	

### UNIT ACREAGES AND METHOD OF DETERMINATION:

Unit # Harvest R/W or RMZ WMZ	Legal Description (Enter only one legal for each unit) Sec/Twp/Rng	Grant or Trust	Gross Proposal Acres	Deductions from Gross Acres (No harvest acres)				Net Harvest Acres	Acreage Determination  (List method and error of closure if applicable)
				RMZ/ WMZ Acres	Leave Tree Acres	Existing Road Acres	Other Acres (describe)		
1	Sec 34/ T06N/ R04E	08, 09	85	8	5	0	0	72	GPS (Trimble)
2	Sec 03/ T05N/ R04E Sec 34/ T06N/ R04E	03, 08	72	17	4	2	0	49	GPS (Trimble)
3	Sec 29, 30, 31, 32/T06N/ R05E	01, 02, 03	125	20	10	2	0	93	GPS (Trimble)
4 ROW	Sec 34/ T06N/ R04E	08	1	0	0	0	0	1	GPS (Trimble)
5 ROW	Sec 34/ T06N/ R04E	08	2	0	0	0	0	2	GPS (Trimble)
6 ROW	Sec 34/ T06N/ R04E	08	2	0	0	0	0	2	GPS (Trimble)
7 ROW	Sec 29/ T06N/ R05E	02	1	0	0	0	0	1	GPS (Trimble)
8 ROW	Sec 29/ T06N/ R05E	02	1	0	0	0.5	0	0.5	GPS (Trimble)
9 Waste Area	Sec 34/ T06N/ R04E	09	1.5	0	0	0	0	1.5	GPS (Trimble)
10 ROW	Sec 34/ T06N/ R04E	08	2	0	0	1	0	1	GPS (Trimble)
<b>TOTAL ACRES</b>			292.5	45	19	5.5	0	223	

### HARVEST PLAN AND SPECIAL CONDITIONS:

Unit #	Harvest Prescription: (Leave, take, paint color, tags, flagging etc.)	Special Management areas:	Other conditions (# leave trees, etc.)
1	Unit 1 is bounded by white "Timber Sale Boundary" tags, pink flagging, and the S-1000.	VRH	Leave Tree Total=621. 55 Painted blue.
2	Unit 2 is bounded by white "Timber Sale Boundary" tags, pink flagging, and reprod.	VRH	Leave Tree Total=430. 64 Painted blue.
3	Unit 3 is bounded by white "Timber Sale Boundary" tags, pink flagging, reprod, the S-2050, and the S-2400.	VRH	Leave Tree Total=835. 95 Painted blue.
4	Unit 4 ROW is bounded by orange "Right-of-Way Boundary" tags with orange flagging.	Right-of-Way	
5	Unit 5 ROW is bounded by orange "Right-of-Way Boundary" tags with orange flashers.	Right-of-Way	
6	Unit 6 ROW is bounded by orange "Right-of-Way Boundary" tags with orange flashers.	Right-of-Way	
7	Unit 7 ROW is bounded by orange "Right-of-Way Boundary" tags with orange flashers.	Right-of-Way	
8	Unit 8 ROW is bounded by orange "Right-of-Way Boundary" tags with orange flashers.	Right-of-Way	
9	Unit 9 Waste Area is bounded by white "Timber Sale Boundary" tags, pink flagging, and the S-1000.	Waste Area	
10	Unit 10 ROW is bounded by orange "Right-of-Way Boundary" tags with orange flashers.	Right-of-Way	

#### **OTHER PRE-CRUISE INFORMATION:**

Unit #	Primary,secondary Species / Estimated Volume (MBF)	Access information (Gates, locks, etc.)	Photos, traverse maps required
1	DF, WH, RA, WRC 2,520	Unit 1 is accessed via the USFS 54 Rd. to the S-1000 Rd. The unit is located off the S-1000 Rd. No gates.	1" = 400'
2	DF, WH, RA, WRC 2,500	Unit 2 is accessed via the USFS 54 Rd. to the S-1000 Rd. The unit is located off the S-1000 Rd. No gates.	1" = 400'
3	DF, WH, PSF/NF, WRC 3,325	Unit 3 is accessed via the S-1000 Rd to the S-2000 Rd. The unit is located off the S-2050, S-2070, and S-2400 Rds. No gates.	1" = 400'
4	DF, WH, RA 25	Unit 4 is Right-of-Way harvest to facilitate construction of the RS-1001 Rd. No Gates.	1" = 400'
5	DF, WH 50	Unit 5 is Right-of-Way harvest to facilitate construction of the S-1121A Rd. No Gates.	1" = 400'

6	DF, WH 25	Unit 6 is Right-of-Way harvest to facilitate construction of the S-1100 Rd. No Gates.	1" = 400'
7	DF, WH, RA 5	Unit 7 Right-of-Way harvest to facilitate construction of the S-2072B Rd. No gates.	1" = 400'
8	DF, WH, RA 5	Unit 8 Right-of-Way harvest to daylight and extend construction of the S-2070 Rd. No gates.	1" = 400'
9	DF, WH, RA 30	Unit 9 is Waste Area harvest. No gates.	1" = 400'
10	DF, WH, RA, BLM 30	Unit 10 is Right-of-Way harvest to facilitate construction of the S-1100. No Gates.	1" = 400'
TOTAL MBF	8,515		

**REMARKS:**

24 acres of Unit 1, 10 acres of Unit 2 and 23 acres of Unit 3 are considered uphill cable for appraisal.		
Prepared By: Kelly Childers Date: 8/9/19	Title: Forester 1	CC:

# Cruise Narrative

<b>Sale Name:</b> Pick Up Sticks	<b>Region:</b> Pacific Cascade
<b>App. #:</b> 30-098580	<b>District:</b> Yacolt
<b>Lead Cruiser:</b> KBailey	<b>Completion date:</b> 09/04/2019
<b>Other Cruisers:</b>	

**Unit acreage specifications:**

Unit #	Cruised acres	Cruised acres agree with sale acres? Yes/No	If acres do not agree explain why.
1	72	Yes	
2	49	Yes	
3	93	Yes	
4	1	Yes	
5	2	Yes	
6	2	Yes	
7	1	Yes	
8	0.5	Yes	
9	1	Yes	
10	1	Yes	
Total	223.5	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	16'	208' x 208'	1:1	72
2	VP	46.94	16'	208' x 208'	1:1	49
3	VP	40	16'	208' x 208'	1:1	93
4	VP	33.61	4.5'	100' spacing	1:1	4
5	VP	46.94	16'	415' spacing	1:1	4
6	VP	40	4.5'	305' spacing	Cruise all	5
7	VP	20	4.5'	285' spacing	Cruise all	2
8	ITS	NA	4.5'	NA	NA	NA
9	VP	33.69	4.5'	147' x 147'	1:1	4
10	ITS	Na	4.5'	NA	NA	NA

**Sale/Cruise Description:**

<b>Minor species cruise intensity:</b>	Cruised on appropriate plots.						
<b>Minimum cruise spec:</b>	40% Of Form- Factor at 16 feet D.O.B or 5 inch Top, and merchantable top.						
<b>Avg. ring count by sp:</b>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black;"><b>DF =</b></td> <td style="border: 1px solid black; width: 100px;">06</td> <td style="border: 1px solid black;"><b>WH =</b></td> <td style="border: 1px solid black; width: 100px;">07</td> <td style="border: 1px solid black;"><b>SS =</b></td> <td style="border: 1px solid black; width: 100px;">NA</td> </tr> </table>	<b>DF =</b>	06	<b>WH =</b>	07	<b>SS =</b>	NA
<b>DF =</b>	06	<b>WH =</b>	07	<b>SS =</b>	NA		
<b>Leave/take tree description:</b>	Leave tree clumps are bounded with yellow "Leave Tree Area" tags and pink flagging, individual leave trees are marked with a single band of blue paint.						

<b>Sort Description:</b>	<p><b>HA</b>– Logs meeting the following criteria: Surface characteristics for a high quality A sort will have sound tight knots not to exceed 1 ½” in diameter, numbering not more than an average of one per foot of log length. May include logs with not more than two larger knots. Knots and knot indicators ½” in diameter and smaller shall not be a determining factor. Logs will have a growth ring count of 6 or more rings per inch in the outer third top end of the log. (min dia 8”). DF only.</p> <p><b>HB</b> – Logs meeting the following criteria: Surface characteristics for a B sort will have sound tight knots not to exceed 1 ½” in diameter. May include logs with not more than two larger knots up to 2 ½” in diameter. Logs will have a growth ring count of 6 or more rings per inch in the outer third to end of the log. (min dia 8”). DF only.</p> <p><b>R</b> – Logs meeting the following criteria: Gross diameter of 12 inches or greater, excessive knots greater than 2 ½ inches with recovery less than 65% of the net scale.</p>
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**Field observations:**

Pick up sticks is a 3 unit timber sale with 7 associated ROWs, daylighting and waste areas. These three units are dominated by DF and WH, with minor amounts of RA, BM and minuscule amounts of NF in the upper portions of the sale.

Unit 1 was the most uniform in stand structure. This unit is an even aged DF/WH stand with pockets and scattered hardwood. The DF averaged 19” @ DBH with 88’ of bole. The WH averaged 15” @ DBH with 51’ of bole. Hardwoods for this unit were of average quality.

Units 2 and 3 are more of a multi age stands. They both contained an older/larger component of timber as well as timber in the 60-70 year age class. There were pockets of high quality as well as areas that contained quite a bit of defect.

Metrics for these units are as follows; unit 2: DF 23” @ DBH with 112’ bole height, WH 17” @ DBH with 85’ of bole. Unit 3: DF 21” @ DBH with 82’ of bole, WH 17 “@ DBH with 63’ of bole.

There was a notable amount of defect in this sale that was concentrated to units 2 and 3. Defects noticed consisted of conk, frost crack, crooks, forks, and general rot particularly in the first log.

ROW’s were a combination of new construction and reconstruction.

This sale shall require both cable and ground based logging techniques. Approx. 75% ground and 25% cable. Access is good from the bottom for units 1 and 2 off the S-1000. For unit 3 access is good off both the S-2050 and S-2070 roads. No gate keys are needed.

**Grants: 01,02,03,08,09**

**Prepared by: K. Bailey**

**Title: Check Cruiser**

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

T06N R04E S34 Ty00U1 THRU T06N R04E S34 Ty0U10	<b>Project: PICKUP</b> <b>Acres 223.50</b>	<b>Page 1</b> <b>Date 9/4/2019</b> <b>Time 4:25:23PM</b>
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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
									Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99					
WH	CU	CU			100.0	649											5	12		0.00	23.0
WH	HA	SM			1.4	106	105	23						100			37	18	486	2.59	.2
WH	D	2S		52	4.6	6,111	5,832	1,303				47	53	2	0		37	15	310	1.92	18.8
WH	D	3S		33	1.7	3,798	3,732	834	22	78				1	2	7	37	8	100	0.76	37.4
WH	D	4S		9	.2	1,050	1,047	234	95	5				14	35	11	29	5	31	0.35	33.4
WH	D	UT		6		623	623	139	35	6	16	42		39	33	4	27	7	57	0.54	11.0
<b>WH</b>	<b>Totals</b>			<b>26</b>	<b>8.1</b>	<b>12,337</b>	<b>11,339</b>	<b>2,534</b>	<b>18</b>	<b>26</b>	<b>25</b>	<b>31</b>		<b>5</b>	<b>6</b>	<b>4</b>	<b>28</b>	<b>9</b>	<b>92</b>	<b>0.84</b>	<b>123.8</b>
DF	CU	CU			100.0	792											4	15		0.00	34.0
DF	HA	3P			2.0	101	99	22					100				40	25	1127	4.33	.1
DF	HA	SM		14	1.6	4,447	4,374	978					100				40	19	609	2.81	7.2
DF	HA	2S		5	1.8	1,549	1,521	340				100					40	13	244	1.41	6.2
DF	HA	3S		1	1.9	460	452	101			100						40	10	138	0.80	3.3
DF	HB	2S		21	2.6	6,593	6,420	1,435				42	58			1	39	15	349	1.91	18.4
DF	HB	3S		5	1.1	1,693	1,673	374			100						39	9	128	0.76	13.1
DF	D	2S		33	5.1	10,745	10,200	2,280				35	65	1	2	0	38	16	403	2.25	25.3
DF	D	3S		13	1.1	4,039	3,994	893	29	71				2	7	9	36	8	91	0.68	43.9
DF	D	4S		4	.4	1,329	1,323	296	92	8				27	31	17	26	6	30	0.32	43.5
DF	D	UT		3	.8	747	741	166	10	11	5	74		53	12	4	19	10	102	1.03	7.2
DF	RO	3S		1	2.7	267	260	58				33	67			10	36	14	294	1.97	.9
<b>DF</b>	<b>Totals</b>			<b>70</b>	<b>5.2</b>	<b>32,761</b>	<b>31,057</b>	<b>6,941</b>	<b>8</b>	<b>17</b>	<b>25</b>	<b>50</b>		<b>3</b>	<b>3</b>	<b>2</b>	<b>29</b>	<b>11</b>	<b>153</b>	<b>1.16</b>	<b>203.1</b>
BM	CU	CU			100.0	107											13	8		0.00	5.1
BM	D	UT		39		342	342	76	65	19	16			22	42	20	28	6	41	0.44	8.4
BM	D	1S		8	5.6	70	66	15				100					36	16	340	2.54	.2
BM	D	3S		52	3.8	473	455	102			100			17	33		31	10	117	1.02	3.9
BM	D	4S				1	1	0			100					100	30	9	70	0.76	.0
BM	D	4S		1		1	1	0	100						50	50	33	6	40	0.38	.0
<b>BM</b>	<b>Totals</b>			<b>2</b>	<b>13.0</b>	<b>993</b>	<b>864</b>	<b>193</b>	<b>26</b>	<b>60</b>	<b>6</b>	<b>8</b>		<b>18</b>	<b>34</b>	<b>8</b>	<b>24</b>	<b>8</b>	<b>49</b>	<b>0.57</b>	<b>17.7</b>
RA	CU	CU			100.0	16											8	6		0.00	1.9
RA	D	UT		23		181	181	40	100					11	64	1	26	5	31	0.32	5.8
RA	D	2S		14	3.1	113	110	25				100				34	37	13	197	1.52	.6
RA	D	3S		33		254	254	57			100					68	32	11	130	1.00	2.0
RA	D	4S		20		154	154	34			100					78	32	9	71	0.69	2.2
RA	D	4S		10		70	70	16	100							100	30	6	45	0.43	1.5
<b>RA</b>	<b>Totals</b>			<b>2</b>	<b>2.5</b>	<b>789</b>	<b>769</b>	<b>172</b>	<b>33</b>	<b>53</b>	<b>14</b>			<b>3</b>	<b>67</b>	<b>0</b>	<b>26</b>	<b>7</b>	<b>55</b>	<b>0.58</b>	<b>13.9</b>
NF	CU	CU			100.0	26											30	16		0.00	.1
NF	D	2S		76		44	44	10				29	71				36	16	380	2.14	.1
NF	D	4S		6		3	3	1	27	73				100			13	7	22	0.52	.1
NF	D	UT		18		10	10	2		100							40	9	120	0.92	.1
<b>NF</b>	<b>Totals</b>			<b>0</b>	<b>31.0</b>	<b>84</b>	<b>58</b>	<b>13</b>	<b>1</b>	<b>22</b>	<b>22</b>	<b>54</b>		<b>6</b>		<b>94</b>	<b>28</b>	<b>12</b>	<b>133</b>	<b>1.08</b>	<b>.4</b>
RC	CU	CU															3	24		0.00	.1
RC	D	3S		100		35	35	8	16		84					100	40	11	215	1.47	.2
<b>RC</b>	<b>Totals</b>			<b>0</b>		<b>35</b>	<b>35</b>	<b>8</b>	<b>16</b>		<b>84</b>					<b>100</b>	<b>28</b>	<b>15</b>	<b>143</b>	<b>1.41</b>	<b>.2</b>

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

T06N R04E S34 Ty00U1  
 THRU  
 T06N R04E S34 Ty0U10

**Project: PICKUP**  
**Acres 223.50**

**Page 2**  
**Date 9/4/2019**  
**Time 4:25:23PM**

S Spp	So T	Gr rt	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					
<b>Totals</b>					6.1	46,999	44,122	9,861	11	21	25	43	4	5	3	88	28	10	123	1.01	359.2

PROJECT STATISTICS										
PROJECT PICKUP										PAGE 1
										DATE 9/4/2019
TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
06N	04E	34	STICKS	00U1	THR	223.50	235	1,140	S	W
06N	04E	34	STICKS	00U10						
			PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES			
TOTAL			235	1140	4.9					
CRUISE			124	575	4.6	32,544	1.8			
DBH COUNT REFOREST										
COUNT			110	556	5.1					
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	348	71.3	20.7	90	36.7	167.0	32,761	31,057	7,004	6,861
WHEMLOCK	182	57.9	16.7	68	21.5	87.6	12,337	11,339	3,031	2,912
BL MAPLE	20	9.6	14.1	52	2.8	10.3	993	864	271	244
R ALDER	22	6.6	14.0	62	1.9	7.0	789	769	213	210
NOBLE F	2	.1	26.4	86	0.1	.5	84	58	20	13
WR CEDAR	1	.1	25.0	85	0.1	.3	35	35	10	10
<b>TOTAL</b>	<b>575</b>	<b>145.6</b>	<b>18.5</b>	<b>77</b>	<b>63.4</b>	<b>272.8</b>	<b>46,999</b>	<b>44,122</b>	<b>10,550</b>	<b>10,249</b>
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		92.4	5.0	638	672	705				
WHEMLOCK		74.7	5.6	311	330	348				
BL MAPLE		72.7	16.7	97	117	136				
R ALDER		58.8	12.8	105	120	136				
NOBLE F		101.9	95.4	21	465	909				
WR CEDAR										
<b>TOTAL</b>		<b>103.2</b>	<b>4.3</b>	<b>500</b>	<b>522</b>	<b>545</b>	<b>425</b>	<b>217</b>	<b>106</b>	
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		81.4	4.4	137	143	149				
WHEMLOCK		66.3	5.0	78	82	86				
BL MAPLE		73.0	16.7	27	33	39				
R ALDER		59.7	13.0	29	34	38				
NOBLE F		86.5	81.0	20	103	186				
WR CEDAR										
<b>TOTAL</b>		<b>88.7</b>	<b>3.7</b>	<b>111</b>	<b>116</b>	<b>120</b>	<b>314</b>	<b>160</b>	<b>79</b>	
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		84.7	5.5	67	71	75				
WHEMLOCK		129.5	8.4	53	58	63				
BL MAPLE		291.6	19.0	8	10	11				
R ALDER		477.3	31.1	5	7	9				
NOBLE F		1102.2	71.8	0	0	0				
WR CEDAR		1533.0	99.9	0	0	0				
<b>TOTAL</b>		<b>58.0</b>	<b>3.8</b>	<b>140</b>	<b>146</b>	<b>151</b>	<b>134</b>	<b>69</b>	<b>34</b>	
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		75.6	4.9	159	167	175				
WHEMLOCK		119.9	7.8	81	88	94				
BL MAPLE		278.4	18.1	8	10	12				
R ALDER		471.8	30.8	5	7	9				

TC PSTATS		<b>PROJECT STATISTICS</b>							PAGE	<b>2</b>		
		<b>PROJECT</b>			<b>PICKUP</b>				DATE	9/4/2019		
TWP	RGE	SC	TRACT	TYPE		ACRES			PLOTS	TREES	CuFt	BdFt
06N	04E	34	STICKS	00U1	THR	223.50			235	1,140	S	W
06N	04E	34	STICKS	00U10								
CL	68.1		COEFF	<b>BASAL AREA/ACRE</b>			# OF PLOTS REQ.		INF. POP.			
SD:	1.00		VAR.	S.E.%	LOW	AVG	HIGH	5	7	10		
NOBLE F			1095.3	71.4	0	1	1					
WR CEDAR			1533.0	99.9	0	0	1					
<b>TOTAL</b>			47.9	3.1	264	273	281	91	47	23		
CL	68.1		COEFF	<b>NET BF/ACRE</b>			# OF PLOTS REQ.		INF. POP.			
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR			86.2	5.6	29,312	31,057	32,801					
WHEMLOCK			121.6	7.9	10,441	11,339	12,237					
BL MAPLE			283.3	18.5	705	864	1,024					
R ALDER			471.3	30.7	533	769	1,005					
NOBLE F			1269.2	82.7	10	58	105					
WR CEDAR			1533.0	99.9	0	35	71					
<b>TOTAL</b>			58.6	3.8	42,437	44,122	45,807	137	70	34		
CL	68.1		COEFF	<b>NET CUFT FT/ACRE</b>			# OF PLOTS REQ.		INF. POP.			
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR			82.1	5.4	6,493	6,861	7,228					
WHEMLOCK			119.6	7.8	2,685	2,912	3,139					
BL MAPLE			281.4	18.3	199	244	288					
R ALDER			475.0	31.0	145	210	275					
NOBLE F			1197.6	78.1	3	13	23					
WR CEDAR			1533.0	99.9	0	10	19					
<b>TOTAL</b>			53.6	3.5	9,892	10,249	10,607	115	58	29		
CL	68.1		COEFF	<b>V_BAR/ACRE</b>			# OF PLOTS REQ.		INF. POP.			
SD:	1.0		VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR					176	186	196					
WHEMLOCK			55.4	3.6	119	129	140					
BL MAPLE			210.3	13.7	68	84	99					
R ALDER			382.4	24.9	76	109	143					
NOBLE F			1323.3	86.2	18	105	192					
WR CEDAR			1533.0	99.9	0	126	252					
<b>TOTAL</b>			54.8	3.6	156	162	168	120	61	30		

T TSPCSTGR	Species, Sort Grade - Board Foot Volumes (Type)										Page 1											
	Project: PICKUP										Date 9/4/2019											
											Time 4:25:24PM											
T06N R04E S34 T00U1										T06N R04E S34 T00U1												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
06N	04E	34	STICKS	00U1	72.00	72	140	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	298										4	10		0.00		22.6	
DF		HA	SM	6		1,492	1,492						100		100	39	19	570	2.68		2.6	
DF		HA	2S	4		843	843					100			100	39	13	254	1.49		3.3	
DF		HB	2S	30	1.5	6,468	6,368					57	43		3	97	38	14	295	1.74	21.6	
DF		HB	3S	7	.7	1,680	1,669					100				100	40	9	123	0.71	13.6	
DF		DM	2S	28	4.0	6,316	6,063					46	54			3	97	38	15	334	1.98	18.2
DF		DM	3S	17		3,704	3,704		33	67				1	5	7	87	37	8	86	0.60	43.1
DF		DM	4S	6		1,257	1,257		89	11				21	39	16	23	26	6	31	0.32	40.9
DF		DM	UT	1		298	298		24	36				100				14	7	34	0.48	8.8
DF		RO	3S	1		36	36									100		34	13	210	1.90	.2
<b>DF</b>	<b>Totals</b>			64	3.0	22,391	21,729		1,564	11	20	34	35	3	4	3	90	29	10	124	0.97	174.8
WH		CU	CU		100.0	134												3	12		0.00	17.2
WH		DM	2S	41	3.8	3,525	3,392					59	41	8			92	34	14	259	1.72	13.1
WH		DM	3S	41	1.8	3,517	3,453		16	84					2	3	95	37	9	107	0.77	32.4
WH		DM	4S	16		1,305	1,305		99	1				12	26	17	45	30	5	32	0.32	40.7
WH		DM	UT	2		101	101		13	87				100				19	8	36	0.48	2.8
<b>WH</b>	<b>Totals</b>			24	3.8	8,581	8,251		594	23	36	24	17	6	5	4	85	28	9	78	0.71	106.2
RA		CU	CU		100.0	48												8	6		0.00	5.7
RA		DM	UT	23		558	558		40	100				11	65		24	26	5	31	0.32	17.8
RA		DM	2S	14	3.1	352	341		25			100				34	66	37	13	197	1.52	1.7
RA		DM	3S	34		788	788		57	100						68	32	32	11	130	1.00	6.1
RA		DM	4S	20		479	479		34	100						78	22	32	9	71	0.69	6.8
RA		DM	4S	9		210	210		15	100						100		30	7	45	0.43	4.6
<b>RA</b>	<b>Totals</b>			7	2.4	2,436	2,377		171	32	53	14		3	67		30	26	7	56	0.58	42.7
BM		CU	CU		100.0	104												13	7		0.00	5.4
BM		DM	UT	52		829	829		60	69	11	21		17	37	26	20	30	6	42	0.41	19.9
BM		DM	1S	13	5.6	216	204		15			100					100	36	16	340	2.54	.6
BM		DM	3S	35	9.4	600	544		39	100						27	73	36	10	127	1.09	4.3
<b>BM</b>	<b>Totals</b>			5	9.9	1,750	1,577		114	36	40	11	13	9	29	14	49	28	7	52	0.56	30.2
<b>Type Totals</b>					3.5	35,157	33,933		2,443	17	27	29	27	4	10	4	83	28	9	96	0.82	353.9

**T06N R04E S34 T00U2** **T06N R04E S34 T00U2**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 06N 04E 34 STICKS 00U2 49.00 49 122 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF		CU	CU		100.0	1,721												5	19		0.00	57.1
DF		HA	3P		2.0	459	450	22										40	25	1127	4.33	.4
DF		HA	SM	27	2.0	16,628	16,296	798										40	19	614	2.82	26.5
DF		HA	2S	9	2.3	5,480	5,353	262			100							40	13	241	1.39	22.2
DF		HA	3S	3	2.0	1,951	1,912	94			100							40	10	137	0.80	14.0
DF		HB	2S	19	3.5	11,831	11,419	560			35	65						40	16	405	1.95	28.2
DF		HB	3S	4	2.0	2,990	2,930	144			100							40	10	133	0.76	22.0
DF		DM	2S	23	7.2	14,595	13,540	663				27	73			2		40	17	490	2.45	27.6
DF		DM	3S	9	3.2	5,950	5,761	282	27	73				0	7	5	88	37	8	94	0.68	61.3
DF		DM	4S	2	2.0	1,348	1,321	65	98	2				25	41	20	15	25	5	28	0.29	47.3
DF		DM	UT	2	2.0	1,398	1,370	67	2	15	6	77		51	2			20	12	155	1.52	8.8
DF		RO	3S	2	2.0	700	686	34				28	72			15		37	15	335	2.13	2.0
<b>DF</b>	<b>Totals</b>			86	6.2	65,051	61,038	2,991	5	15	22	58		2	2	1	95	30	13	192	1.31	317.5
WH		CU	CU															1	12		0.00	2.3
WH		HA	SM	4	2.0	347	340	17				100						36	18	470	2.59	.7
WH		DM	2S	54	4.7	4,727	4,506	221			55	45						38	15	305	1.79	14.8
WH		DM	3S	35	3.4	3,024	2,923	143	20	80					2		98	37	8	100	0.71	29.3
WH		DM	4S	7	2.0	578	567	28	87	13				34	41	12	12	23	6	24	0.32	23.2
<b>WH</b>	<b>Totals</b>			12	3.9	8,676	8,335	408	13	29	29	29		2	3	1	93	31	9	118	0.91	70.4
BM		CU	CU		100.0	332												12	9		0.00	15.4
BM		DM	UT	20		336	336	16	52	48				43	57			22	7	37	0.56	9.0
BM		DM	3S	80		1,268	1,268	62			100			28	37	35		28	10	111	0.97	11.4
<b>BM</b>	<b>Totals</b>			2	17.2	1,936	1,604	79	11	89				31	41	28		20	9	45	0.60	35.8
<b>Type Totals</b>					6.2	75,663	70,977	3,478	6	18	22	54		2	3	1	93	30	12	168	1.20	423.6

T TSPCSTGR		Species, Sort Grade - Board Foot Volumes (Type)										Page 1										
Project: PICKUP												Date 9/4/2019										
												Time 4:25:24PM										
T06N R04E S34 T00U3										T06N R04E S34 T00U3												
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt													
06N	04E	34	STICKS	00U3	93.00	93	226	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	706											5	14		0.00	30.2	
DF		HA	SM	1		447	447						100			100	40	18	559	2.91	.8	
DF		HB	2S	19	2.7	4,537	4,416				35	65				100	38	15	353	2.09	12.5	
DF		HB	3S	5	.5	1,192	1,186			100						100	38	9	128	0.83	9.3	
DF		DM	2S	52	4.2	12,955	12,404				35	65	1	1	0	98	38	16	397	2.30	31.3	
DF		DM	3S	13	.1	3,288	3,286		26	74			3	8	16	72	34	8	93	0.77	35.3	
DF		DM	4S	5		1,202	1,202		89	11			36	18	16	30	26	6	32	0.35	37.9	
DF		DM	UT	4		759	759		10	1	7	82	39	25	10	25	25	11	154	1.18	4.9	
DF		RO	3S	1	4.1	245	235				33	67			5	95	36	14	259	1.78	.9	
<b>DF</b>	<b>Totals</b>			60	5.5	25,331	23,935		2,226	8	16	25	51	4	3	4	89	28	11	147	1.23	163.0
WH		CU	CU		100.0	1,456											5	12		0.00	39.9	
WH		DM	2S	55	4.9	9,072	8,624		802			39	61	1	0	98	38	15	335	2.05	25.8	
WH		DM	3S	29	1.2	4,605	4,549		423	26	74			2	2	12	84	37	8	96	0.77	47.4
WH		DM	4S	7		1,128	1,128		105	95	5			10	40	3	46	30	5	33	0.39	34.0
WH		DM	UT	9		1,381	1,381		128	35	2	18	46	35	34	5	27	28	7	61	0.56	22.5
<b>WH</b>	<b>Totals</b>			39	11.1	17,641	15,682		1,458	17	22	23	38	5	7	4	84	27	9	92	0.89	169.5
NF		CU	CU		100.0	62											30	16		0.00	.2	
NF		DM	2S	76		106	106		10			29	71			100	36	16	380	2.14	.3	
NF		DM	4S	6		8	8		1	27	73			100			13	7	22	0.52	.3	
NF		DM	UT	18		25	25		2		100					100	40	9	120	0.92	.2	
<b>NF</b>	<b>Totals</b>			0	31.0	201	139		13	1	22	22	54	6		94	28	12	133	1.08	1.0	
RC		CU	CU														3	24		0.00	.2	
RC		DM	3S	100		85	85		8	16		84				100	40	11	215	1.47	.4	
<b>RC</b>	<b>Totals</b>			0		85	85		8	16		84				100	28	15	143	1.41	.6	
<b>Type Totals</b>					7.9	43,257	39,841		3,705	12	18	24	46	5	5	4	87	28	10	119	1.06	334.2



T06N R04E S34 T00U5										T06N R04E S34 T00U5				
Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt					
06N	04E	34	STICKS	00U5	2.00	4	12	S	W					

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF		CU	CU		100.0	2,465												3	16		0.00	75.3
DF		HA	SM	30		15,024	15,024	30										40	20	693	3.07	21.7
DF		HA	2S	18		8,466	8,466	17			100							40	13	264	1.38	32.1
DF		HA	3S	7		3,653	3,653	7		100								40	10	150	0.89	24.4
DF		HB	2S	7		3,153	3,153	6				100						40	18	530	2.33	5.9
DF		DM	2S	14	4.3	7,543	7,219	14			63	37						40	15	325	1.69	22.2
DF		DM	3S	17	.8	8,252	8,188	16	18	82				5	7	89		38	8	97	0.67	84.6
DF		DM	4S	2		963	963	2	100					100				24	6	30	0.35	32.1
DF		DM	UT	5		2,141	2,141	4				100						16	22	330	2.89	6.5
<b>DF</b>	<b>Totals</b>			69	5.5	51,659	48,805	98	5	21	27	47	4	3	1	92		28	12	160	1.18	304.8
WH		CU	CU															3	20		0.00	25.9
WH		HA	SM	15		3,375	3,375	7				100						40	18	530	2.59	6.4
WH		DM	2S	57	1.3	12,806	12,638	25			77	23						40	14	297	1.62	42.5
WH		DM	3S	21		4,864	4,864	10		100					9	91		39	10	151	0.88	32.3
WH		DM	4S	5		954	954	2	100				26	31	43			25	7	37	0.43	25.9
WH		DM	UT	2		407	407	1	100					100				30	6	40	0.49	10.2
<b>WH</b>	<b>Totals</b>			31	.8	22,406	22,238	44	6	22	44	28	1	3	4	92		30	13	155	1.17	143.3
<b>Type Totals</b>					4.1	74,066	71,043	142	5	21	32	41	3	3	2	92		28	13	159	1.18	448.1

T06N R04E S34 T00U6	T06N R04E S34 T00U6
Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt	BdFt
06N 04E 34 STICKS 00U6 2.00 5 16 S	W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
DF		CU	CU		100.0	87											3	5		0.00	27.5
DF		DM	2S	22		1,835	1,835	4			100						36	14	289	1.83	6.4
DF		DM	3S	16		1,344	1,344	3	39	61				30	70		37	8	89	0.63	15.0
DF		DM	4S	62		4,999	4,999	10	100				26	48	11	15	26	5	26	0.24	190.1
<b>DF</b>	<b>Totals</b>			80	1.1	8,265	8,178	16	67	10	22		16	29	12	43	24	5	34	0.34	239.0
WH		DM	4S	65		1,299	1,299	3	69	31			31	69			24	6	30	0.31	43.3
WH		DM	UT	35		688	688	1	100					100			27	5	30	0.24	22.9
<b>WH</b>	<b>Totals</b>			20		1,986	1,986	4	79	21			21	79			25	5	30	0.28	66.2
<b>Type Totals</b>					.8	10,251	10,164	20	70	12	18		17	39	9	35	24	5	33	0.33	305.2



T06N R04E S34 T00U8	T06N R04E S34 T00U8
Twp <b>06N</b> Rge <b>04E</b> Sec <b>34</b> Tract <b>STICKS</b> Type <b>00U8</b> Acres <b>.50</b> Plots <b>1</b> Sample Trees <b>11</b> CuFt <b>S</b>	BdFt <b>W</b>

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/	
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf	
DF		CU	CU														6		0.00	10.0	
DF		DM	3S	32		600	600	0	100							100	40	6	60	0.37	10.0
DF		DM	4S	57		1,020	1,020	1	100			29	31	39			34	5	36	0.23	28.0
DF		DM	UT	11		200	200	0	100	100							20	5	20	0.17	10.0
<b>DF</b>	<b>Totals</b>			74		1,820	1,820	1	100		11	16	18	55			27	5	31	0.26	58.0
WH		DM	4S	100		600	600	0	100								29	5	30	0.26	20.0
<b>WH</b>	<b>Totals</b>			24		600	600	0	100								29	5	30	0.26	20.0
RA		DM	UT	100		40	40	0	100								22	5	20	0.24	2.0
<b>RA</b>	<b>Totals</b>			2		40	40	0	100								22	5	20	0.24	2.0
<b>Type Totals</b>						2,460	2,460	1	100		8	22	13	57			27	5	31	0.26	80.0

**T06N R04E S34 T00U9** **T06N R04E S34 T00U9**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 06N 04E 34 STICKS 00U9 2.00 4 12 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
					Def%	Gross	Net		Log Scale Dia.				Log Length				Ln Ft	Dia In	Bd Ft	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99						
DF		CU	CU		100.0	205												5	5		0.00	49.2
DF		DM	2S	11	5.0	1,733	1,646	3			100							40	12	190	1.48	8.7
DF		DM	3S	58	2.9	8,419	8,176	16	39	61								38	8	93	0.73	87.5
DF		DM	4S	31		4,401	4,401	9	100					9	17	9	65	32	5	34	0.29	129.7
<b>DF</b>	<b>Totals</b>			75	3.6	14,758	14,224	28	53	35	12			3	5	3	89	29	6	52	0.52	275.0
WH		CU	CU															2	17		0.00	13.8
WH		DM	2S	26		1,271	1,271	3			100							36	13	220	1.45	5.8
WH		DM	3S	63		3,054	3,054	6	63	37						9	91	37	7	78	0.69	39.2
WH		DM	4S	5		240	240	0	100					100				28	5	30	0.34	8.0
WH		DM	UT	6		255	255	1	100					100				13	5	10	0.20	25.5
<b>WH</b>	<b>Totals</b>			25		4,820	4,820	10	50	23	26			5	5	6	84	24	8	52	0.65	92.2
<b>Type Totals</b>					2.7	19,577	19,043	38	53	32	15			3	5	4	88	28	7	52	0.54	367.3

**T06N R04E S34 T0U10** **T06N R04E S34 T0U10**  
 Twp Rge Sec Tract Type Acres Plots Sample Trees CuFt BdFt  
 06N 04E 34 STICKS 0U10 1.00 1 22 S W

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre			Total Net MBF	Percent Net Board Foot Volume								Average Log				Logs Per /Acre	
									Log Scale Dia.				Log Length				Ln	Dia	Bd	CF/ Lf		
									5-7	8-11	12-15	16+	12-20	21-30	31-35	36-99	Ft	In	Ft	Lf		
WH		DM	2S	65	8,555	8,555	9	100				100				37	13	233	1.56	36.7		
WH		DM	3S	27	3,422	3,422	3	29	71					61	39	34	8	80	0.67	42.8		
WH		DM	4S	7	978	978	1	100				50	50				25	5	27	0.38	36.7	
WH		DM	UT	1	61	61	0	100				100				10	5	10	0.20	6.1		
<b>WH</b>	<b>Totals</b>			62	13,016	13,016	13	15	19	66					4	16	80	31	9	106	0.91	122.2
DF		CU	CU													5	0.00				4.0	
DF		DM	2S	75	4,720	4,720	5	64 36				100				36	15	295	1.84	16.0		
DF		DM	3S	15	960	960	1	100				100				36	10	120	0.82	8.0		
DF		DM	4S	10	600	600	1	100				27	20	27	27	27	6	30	0.33	20.0		
<b>DF</b>	<b>Totals</b>			30	6,280	6,280	6	10	15	48	27	3	2	3	93	29	9	131	1.05	48.0		
BM		CU	CU		100.0	120										18	5	0.00				6.0
BM		DM	UT	17	180	180	0	100				50	50				28	5	30	0.33	6.0	
BM		DM	3S	38	390	390	0	100				100				30	11	130	1.21	3.0		
BM		DM	4S	21	210	210	0	100				100				30	9	70	0.76	3.0		
BM		DM	4S	24	240	240	0	100				50	50				33	6	40	0.38	6.0	
<b>BM</b>	<b>Totals</b>			5	10.5	1,140	1,020	1	41	59					79	21	27	6	43	0.47	24.0	
RA		CU	CU		100.0	180										13	5	0.00				12.0
RA		DM	UT	36	240	240	0	100				100				33	5	40	0.34	6.0		
RA		DM	4S	64	420	420	0	100				100				30	6	35	0.44	12.0		
<b>RA</b>	<b>Totals</b>			3	21.4	840	660	1	100				64	36				24	5	22	0.32	30.0
<b>Type Totals</b>					1.4	21,276	20,976	21	18	19	55	8	3	6	13	77	29	8	94	0.83	224.2	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PICKUP		DATE	9/4/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	04E	34	STICKS	00U1	72.00	72	298	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
					TREES	TREES				
TOTAL		72	298	4.1						
CRUISE		36	140	3.9	11,023		1.3			
DBH COUNT										
REFOREST										
COUNT		36	158	4.4						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	70	64.7	18.9	88	28.9	125.5	22,391	21,729	5,046	4,994
WHEMLOCK	44	48.0	15.4	71	15.9	62.3	8,581	8,251	2,133	2,110
R ALDER	18	20.3	14.0	63	5.8	21.7	2,436	2,377	659	649
BL MAPLE	8	20.1	13.1	51	5.2	18.8	1,750	1,577	490	463
<b>TOTAL</b>	<i>140</i>	<i>153.1</i>	<i>16.5</i>	<i>74</i>	<i>56.2</i>	<i>228.4</i>	<i>35,157</i>	<i>33,933</i>	<i>8,328</i>	<i>8,216</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	80.3	9.6		486	538	589				
WHEMLOCK	79.1	11.9		234	266	297				
R ALDER	45.0	10.9		125	140	155				
BL MAPLE	83.3	31.4		94	138	181				
<b>TOTAL</b>	<i>97.1</i>	<i>8.2</i>		<i>347</i>	<i>378</i>	<i>409</i>	<i>376</i>	<i>192</i>	<i>94</i>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	71.5	8.5		110	120	130				
WHEMLOCK	67.6	10.2		60	66	73				
R ALDER	47.9	11.6		34	39	43				
BL MAPLE	80.9	30.5		28	40	52				
<b>TOTAL</b>	<i>84.1</i>	<i>7.1</i>		<i>82</i>	<i>88</i>	<i>94</i>	<i>282</i>	<i>144</i>	<i>71</i>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	112.6	13.3		56	65	73				
WHEMLOCK	165.3	19.5		39	48	57				
R ALDER	255.5	30.1		14	20	26				
BL MAPLE	194.8	22.9		16	20	25				
<b>TOTAL</b>	<i>55.7</i>	<i>6.6</i>		<i>143</i>	<i>153</i>	<i>163</i>	<i>124</i>	<i>63</i>	<i>31</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	100.5	11.8		111	125	140				
WHEMLOCK	143.7	16.9		52	62	73				
R ALDER	250.5	29.5		15	22	28				
BL MAPLE	180.7	21.3		15	19	23				
<b>TOTAL</b>	<i>42.2</i>	<i>5.0</i>		<i>217</i>	<i>228</i>	<i>240</i>	<i>71</i>	<i>36</i>	<i>18</i>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.	INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	101.1	11.9		19,141	21,729	24,316				
WHEMLOCK	148.4	17.5		6,809	8,251	9,693				
R ALDER	249.5	29.4		1,678	2,377	3,075				
BL MAPLE	182.1	21.4		1,239	1,577	1,915				
<b>TOTAL</b>	<i>50.2</i>	<i>5.9</i>		<i>31,929</i>	<i>33,933</i>	<i>35,937</i>	<i>100</i>	<i>51</i>	<i>25</i>	

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	PICKUP			DATE	9/4/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	04E	34	STICKS	00U1	72.00	72	298	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		100.9	11.9	4,401	4,994	5,588				
WHEMLOCK		145.3	17.1	1,749	2,110	2,471				
R ALDER		251.9	29.7	457	649	842				
BL MAPLE		181.4	21.4	364	463	561				
<b>TOTAL</b>		<b>46.4</b>	<b>5.5</b>	<b>7,767</b>	<b>8,216</b>	<b>8,665</b>	<b>86</b>	<b>44</b>	<b>22</b>	
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				153	173	194				
WHEMLOCK		101.1	11.9	109	132	155				
R ALDER		208.1	24.5	77	109	141				
BL MAPLE		40.0	4.7	66	84	102				
<b>TOTAL</b>		<b>222.0</b>	<b>26.1</b>	<b>140</b>	<b>149</b>	<b>157</b>	<b>1,967</b>	<b>1,004</b>	<b>492</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PICKUP	DATE		9/4/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	04E	34	STICKS	00U2	49.00	49	258	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		49	258	5.3						
CRUISE		25	121	4.8	6,481		1.9			
DBH COUNT										
REFOREST										
COUNT		24	136	5.7						
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	95	90.4	23.4	112	55.9	270.3	65,051	61,038	12,890	12,580
WHEMLOCK	19	28.2	17.7	85	11.5	48.2	8,676	8,335	2,027	2,027
BL MAPLE	7	13.7	16.1	56	4.8	19.3	1,936	1,604	509	425
<b>TOTAL</b>	<i>121</i>	<i>132.3</i>	<i>21.6</i>	<i>100</i>	<i>72.6</i>	<i>337.9</i>	<i>75,663</i>	<i>70,977</i>	<i>15,425</i>	<i>15,032</i>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	76.3	7.8		968	1,050	1,132				
WHEMLOCK	58.3	13.7		359	416	473				
BL MAPLE	42.0	17.1		105	127	149				
<b>TOTAL</b>	<i>86.4</i>	<i>7.9</i>		<i>826</i>	<i>897</i>	<i>967</i>	<i>298</i>	<i>152</i>	<i>75</i>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	68.9	7.1		192	206	221				
WHEMLOCK	52.8	12.4		86	98	110				
BL MAPLE	43.0	17.5		28	34	40				
<b>TOTAL</b>	<i>77.0</i>	<i>7.0</i>		<i>167</i>	<i>179</i>	<i>192</i>	<i>237</i>	<i>121</i>	<i>59</i>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	54.8	7.8		83	90	97				
WHEMLOCK	116.9	16.7		23	28	33				
BL MAPLE	200.0	28.6		10	14	18				
<b>TOTAL</b>	<i>40.3</i>	<i>5.8</i>		<i>125</i>	<i>132</i>	<i>140</i>	<i>65</i>	<i>33</i>	<i>16</i>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	41.6	5.9		254	270	286				
WHEMLOCK	106.1	15.1		41	48	56				
BL MAPLE	201.2	28.7		14	19	25				
<b>TOTAL</b>	<i>31.5</i>	<i>4.5</i>		<i>323</i>	<i>338</i>	<i>353</i>	<i>40</i>	<i>20</i>	<i>10</i>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	41.3	5.9		57,440	61,038	64,637				
WHEMLOCK	108.7	15.5		7,042	8,335	9,628				
BL MAPLE	208.4	29.7		1,127	1,604	2,081				
<b>TOTAL</b>	<i>32.9</i>	<i>4.7</i>		<i>67,646</i>	<i>70,977</i>	<i>74,308</i>	<i>43</i>	<i>22</i>	<i>11</i>	
CL:	68.1 %	COEFF	<b>NET CUFT FT/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	41.5	5.9		11,835	12,580	13,325				
WHEMLOCK	107.4	15.3		1,716	2,027	2,338				
BL MAPLE	208.5	29.8		299	425	552				
<b>TOTAL</b>	<i>32.1</i>	<i>4.6</i>		<i>14,344</i>	<i>15,032</i>	<i>15,721</i>	<i>41</i>	<i>21</i>	<i>10</i>	

TC TSTATS				STATISTICS				PAGE	2		
				PROJECT	PICKUP			DATE	9/4/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	04E	34	STICKS	00U2	49.00	49	258	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				212	226	239					
WHEMLOCK				49.4	7.1	146	173	200			
BL MAPLE				126.0	18.0	58	83	108			
<b>TOTAL</b>				204.3	29.2	200	210	220	1,667	850	417

TC TSTATS				STATISTICS				PAGE	1		
				PROJECT	PICKUP			DATE	9/4/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	04E	34	STICKS	00U3	93.00	93	469	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		93	469	5.0							
CRUISE		48	226	4.7	13,319	1.7					
DBH COUNT											
REFOREST											
COUNT		44	235	5.3							
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		130	60.1	21.3	82	32.3	149.0	25,331	23,935	5,731	
WHEMLOCK		93	82.6	17.1	63	31.8	131.4	17,641	15,682	4,374	
NOBLE F		2	.3	26.4	86	0.3	1.3	201	139	49	
WR CEDAR		1	.2	25.0	85	0.1	.7	85	85	23	
<b>TOTAL</b>		226	143.2	19.0	71	64.8	282.4	43,257	39,841	10,178	
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		72.0	6.3	609	650	691					
WHEMLOCK		72.5	7.5	332	359	386					
NOBLE F		101.9	95.4	21	465	909					
WR CEDAR											
<b>TOTAL</b>		79.3	5.3	499	527	555	251	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		
DOUG FIR		64.5	5.7	139	147	155					
WHEMLOCK		65.0	6.7	84	90	96					
NOBLE F		86.5	81.0	20	103	186					
WR CEDAR											
<b>TOTAL</b>		69.8	4.7	117	123	129	195	99	49		
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		79.7	8.3	55	60	65					
WHEMLOCK		92.9	9.6	75	83	91					
NOBLE F		691.3	71.6	0	0	1					
WR CEDAR		964.4	99.9	0	0	0					
<b>TOTAL</b>		61.8	6.4	134	143	152	152	78	38		
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	6.0	140	149	158					
WHEMLOCK		88.3	9.1	119	131	143					
NOBLE F		686.8	71.2	0	1	2					
WR CEDAR		964.4	99.9	0	1	1					
<b>TOTAL</b>		40.9	4.2	270	282	294	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		59.8	6.2	22,451	23,935	25,419					
WHEMLOCK		96.1	10.0	14,120	15,682	17,243					
NOBLE F		797.2	82.6	24	139	253					
WR CEDAR		964.4	99.9	0	85	169					
<b>TOTAL</b>		41.2	4.3	38,142	39,841	41,540	68	35	17		

TC TSTATS				STATISTICS				PAGE	2	
				PROJECT	PICKUP			DATE	9/4/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES		PLOTS	TREES	CuFt	BdFt
06N	04E	34	STICKS	00U3	93.00		93	469	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		58.9	6.1	5,258	5,599	5,941				
WHEMLOCK		92.8	9.6	3,712	4,107	4,502				
NOBLE F		751.8	77.9	7	31	56				
WR CEDAR		964.4	99.9	0	23	46				
<b>TOTAL</b>		<b>40.7</b>	<b>4.2</b>	<b>9,349</b>	<b>9,760</b>	<b>10,172</b>	<b>66</b>	<b>34</b>	<b>17</b>	
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				151	161	171				
WHEMLOCK				107	119	131				
NOBLE F		831.5	86.2	18	105	192				
WR CEDAR		964.4	99.9	0	126	252				
<b>TOTAL</b>		<b>199.0</b>	<b>20.6</b>	<b>135</b>	<b>141</b>	<b>147</b>	<b>1,581</b>	<b>807</b>	<b>395</b>	

TC TSTATS				STATISTICS						PAGE	1
				PROJECT	PICKUP					DATE	9/4/2019
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	04E	34	STICKS	00U4	1.00	4	12	S	W		
				TREES	ESTIMATED			PERCENT			
				PER PLOT	TOTAL			SAMPLE			
				PLOTS	TREES	PER PLOT	TREES	TREES			
TOTAL		4	12	3.0							
CRUISE		2	7	3.5	225		3.1				
DBH COUNT											
REFOREST											
COUNT		2	5	2.5							
BLANKS											
100 %											
<b>STAND SUMMARY</b>											
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET	
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC	
DOUG FIR	7	224.8	9.1	45	33.5	100.8	7,402	7,402	1,753	1,753	
<b>TOTAL</b>	<b>7</b>	<b>224.8</b>	<b>9.1</b>	<b>45</b>	<b>33.5</b>	<b>100.8</b>	<b>7,402</b>	<b>7,402</b>	<b>1,753</b>	<b>1,753</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	33.7	13.7		32	37	42					
<b>TOTAL</b>	<b>33.7</b>	<b>13.7</b>		<b>32</b>	<b>37</b>	<b>42</b>	<b>53</b>	<b>27</b>	<b>13</b>		
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	62.5	25.4		8	10	13					
<b>TOTAL</b>	<b>62.5</b>	<b>25.4</b>		<b>8</b>	<b>10</b>	<b>13</b>	<b>181</b>	<b>92</b>	<b>45</b>		
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	63.6	36.3		143	225	306					
<b>TOTAL</b>	<b>63.6</b>	<b>36.3</b>		<b>143</b>	<b>225</b>	<b>306</b>	<b>211</b>	<b>108</b>	<b>53</b>		
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	60.9	34.8		66	101	136					
<b>TOTAL</b>	<b>60.9</b>	<b>34.8</b>		<b>66</b>	<b>101</b>	<b>136</b>	<b>193</b>	<b>99</b>	<b>48</b>		
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	63.4	36.2		4,721	7,402	10,083					
<b>TOTAL</b>	<b>63.4</b>	<b>36.2</b>		<b>4,721</b>	<b>7,402</b>	<b>10,083</b>	<b>210</b>	<b>107</b>	<b>52</b>		
CL:	68.1 %	COEFF	<b>NET CUFT FT/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR	61.5	35.1		1,137	1,753	2,370					
<b>TOTAL</b>	<b>61.5</b>	<b>35.1</b>		<b>1,137</b>	<b>1,753</b>	<b>2,370</b>	<b>198</b>	<b>101</b>	<b>49</b>		
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
DOUG FIR				47	73	100					
<b>TOTAL</b>	<b>194.1</b>	<b>110.9</b>		<b>47</b>	<b>73</b>	<b>100</b>	<b>1,967</b>	<b>1,004</b>	<b>492</b>		

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PICKUP			DATE	9/4/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	04E	34	STICKS	00U5	2.00	4	22	S	W	
				TREES	ESTIMATED					
				PER PLOT	TOTAL			PERCENT		
					TREES			SAMPLE		
								TREES		
TOTAL		4	22	5.5						
CRUISE		2	12	6.0	254		4.7			
DBH COUNT										
REFOREST										
COUNT		2	10	5.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	7	84.6	22.6	106	49.5	234.9	51,659	48,805	10,469	10,057
WHEMLOCK	5	42.5	21.7	102	23.5	109.6	22,406	22,238	4,944	4,944
<b>TOTAL</b>	<b>12</b>	<b>127.1</b>	<b>22.3</b>	<b>104</b>	<b>73.0</b>	<b>344.5</b>	<b>74,066</b>	<b>71,043</b>	<b>15,413</b>	<b>15,001</b>
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	61.0	24.8		582	774	967				
WHEMLOCK	42.1	20.9		440	556	672				
<b>TOTAL</b>	<b>57.5</b>	<b>17.3</b>		<b>565</b>	<b>683</b>	<b>802</b>	<b>144</b>	<b>73</b>	<b>36</b>	
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	53.5	21.8		121	155	188				
WHEMLOCK	33.5	16.6		102	122	142				
<b>TOTAL</b>	<b>48.2</b>	<b>14.5</b>		<b>120</b>	<b>141</b>	<b>161</b>	<b>101</b>	<b>52</b>	<b>25</b>	
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	44.9	25.6		63	85	106				
WHEMLOCK	51.6	29.5		30	42	55				
<b>TOTAL</b>	<b>31.2</b>	<b>17.8</b>		<b>104</b>	<b>127</b>	<b>150</b>	<b>51</b>	<b>26</b>	<b>13</b>	
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	45.6	26.0		174	235	296				
WHEMLOCK	54.2	31.0		76	110	143				
<b>TOTAL</b>	<b>31.5</b>	<b>18.0</b>		<b>282</b>	<b>344</b>	<b>406</b>	<b>52</b>	<b>26</b>	<b>13</b>	
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	44.7	25.6		36,327	48,805	61,283				
WHEMLOCK	67.0	38.3		13,731	22,238	30,745				
<b>TOTAL</b>	<b>33.0</b>	<b>18.8</b>		<b>57,657</b>	<b>71,043</b>	<b>84,429</b>	<b>57</b>	<b>29</b>	<b>14</b>	
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	45.0	25.7		7,469	10,057	12,646				
WHEMLOCK	61.9	35.3		3,197	4,944	6,691				
<b>TOTAL</b>	<b>31.9</b>	<b>18.2</b>		<b>12,265</b>	<b>15,001</b>	<b>17,737</b>	<b>53</b>	<b>27</b>	<b>13</b>	
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				155	208	261				
WHEMLOCK	49.1	28.0		125	203	281				
<b>TOTAL</b>	<b>188.1</b>	<b>107.5</b>		<b>167</b>	<b>206</b>	<b>245</b>	<b>1,848</b>	<b>943</b>	<b>462</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PICKUP	DATE		9/4/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	04E	34	STICKS	00U6	2.00	5	16	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		5	16	3.2						
CRUISE		5	16	3.2	539		3.0			
DBH COUNT										
REFOREST										
COUNT										
BLANKS										
100 %										
<b>STAND SUMMARY</b>										
	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	13	213.4	9.5	45	33.8	104.0	8,265	8,178	1,958	1,946
WHEMLOCK	3	56.0	8.9	44	8.1	24.0	1,986	1,986	473	473
<b>TOTAL</b>	<b>16</b>	<b>269.4</b>	<b>9.3</b>	<b>45</b>	<b>41.9</b>	<b>128.0</b>	<b>10,251</b>	<b>10,164</b>	<b>2,431</b>	<b>2,420</b>
CONFIDENCE LIMITS OF THE SAMPLE										
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR										
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	168.8	48.6		47	92	137				
WHEMLOCK	43.3	30.0		28	40	52				
<b>TOTAL</b>	<b>171.0</b>	<b>44.1</b>		<b>46</b>	<b>83</b>	<b>119</b>	<b>1,245</b>	<b>635</b>	<b>311</b>	
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	158.1	45.6		12	23	33				
WHEMLOCK	56.8	39.3		6	10	14				
<b>TOTAL</b>	<b>160.3</b>	<b>41.4</b>		<b>12</b>	<b>20</b>	<b>29</b>	<b>1,095</b>	<b>559</b>	<b>274</b>	
CL:	68.1 %	COEFF	<b>TREES/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	63.0	31.3		147	213	280				
WHEMLOCK	177.2	88.1		7	56	105				
<b>TOTAL</b>	<b>84.2</b>	<b>41.8</b>		<b>157</b>	<b>269</b>	<b>382</b>	<b>350</b>	<b>178</b>	<b>87</b>	
CL:	68.1 %	COEFF	<b>BASAL AREA/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	75.0	37.3		65	104	143				
WHEMLOCK	149.1	74.1		6	24	42				
<b>TOTAL</b>	<b>86.7</b>	<b>43.1</b>		<b>73</b>	<b>128</b>	<b>183</b>	<b>371</b>	<b>189</b>	<b>93</b>	
CL:	68.1 %	COEFF	<b>NET BF/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	99.4	49.4		4,138	8,178	12,218				
WHEMLOCK	152.9	76.0		477	1,986	3,495				
<b>TOTAL</b>	<b>107.5</b>	<b>53.4</b>		<b>4,735</b>	<b>10,164</b>	<b>15,593</b>	<b>571</b>	<b>291</b>	<b>143</b>	
CL:	68.1 %	COEFF	<b>NET CUFT FT/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	92.8	46.1		1,049	1,946	2,844				
WHEMLOCK	146.4	72.7		129	473	818				
<b>TOTAL</b>	<b>99.9</b>	<b>49.7</b>		<b>1,218</b>	<b>2,420</b>	<b>3,622</b>	<b>493</b>	<b>252</b>	<b>123</b>	
CL:	68.1 %	COEFF	<b>V-BAR/ACRE</b>				# OF PLOTS REQ.		INF. POP.	
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10	
DOUG FIR	99.4	49.4		40	79	117				
WHEMLOCK	152.9	76.0		20	83	146				
<b>TOTAL</b>	<b>107.5</b>	<b>53.4</b>		<b>37</b>	<b>79</b>	<b>122</b>	<b>571</b>	<b>291</b>	<b>143</b>	

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PICKUP			DATE	9/4/2019	
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	04E	34	STICKS	00U7	1.00	2	8	S	W	
				TREES	ESTIMATED			PERCENT		
				PER PLOT	TOTAL			SAMPLE		
				PLOTS	TREES	TREES	TREES			
TOTAL	2		8	4.0						
CRUISE	2		8	4.0		163	4.9			
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	5	85.0	10.4	51	15.5	50.0	2,838	2,838	898	898
WHEMLOCK	3	78.4	8.4	42	10.4	30.0	1,977	1,977	470	470
<b>TOTAL</b>	<b>8</b>	<b>163.4</b>	<b>9.5</b>	<b>47</b>	<b>26.0</b>	<b>80.0</b>	<b>4,815</b>	<b>4,815</b>	<b>1,368</b>	<b>1,368</b>
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	35.4	17.6		33	40	47				
WHEMLOCK	21.7	15.0		23	27	31				
<b>TOTAL</b>	<b>37.4</b>	<b>14.1</b>		<b>30</b>	<b>35</b>	<b>40</b>	<b>64</b>	<b>32</b>	<b>16</b>	
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	49.9	24.8		11	14	18				
WHEMLOCK	41.1	28.4		5	7	9				
<b>TOTAL</b>	<b>59.5</b>	<b>22.4</b>		<b>9</b>	<b>11</b>	<b>14</b>	<b>161</b>	<b>82</b>	<b>40</b>	
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	141.4	132.4			85	197				
WHEMLOCK	75.3	70.5		23	78	134				
<b>TOTAL</b>	<b>37.4</b>	<b>35.1</b>		<b>106</b>	<b>163</b>	<b>221</b>	<b>98</b>	<b>50</b>	<b>25</b>	
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	141.4	132.4			50	116				
WHEMLOCK	47.1	44.1		17	30	43				
<b>TOTAL</b>	<b>70.7</b>	<b>66.2</b>		<b>27</b>	<b>80</b>	<b>133</b>	<b>351</b>	<b>179</b>	<b>88</b>	
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	141.4	132.4			2,838	6,595				
WHEMLOCK	62.7	58.8		816	1,977	3,139				
<b>TOTAL</b>	<b>57.6</b>	<b>53.9</b>		<b>2,219</b>	<b>4,815</b>	<b>7,411</b>	<b>232</b>	<b>119</b>	<b>58</b>	
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	141.4	132.4			898	2,087				
WHEMLOCK	42.6	39.9		283	470	658				
<b>TOTAL</b>	<b>78.2</b>	<b>73.2</b>		<b>367</b>	<b>1,368</b>	<b>2,370</b>	<b>429</b>	<b>219</b>	<b>107</b>	
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	141.4	132.4			57	132				
WHEMLOCK	62.7	58.8		27	66	105				
<b>TOTAL</b>	<b>57.6</b>	<b>53.9</b>		<b>28</b>	<b>60</b>	<b>93</b>	<b>232</b>	<b>119</b>	<b>58</b>	

TC TSTATS		STATISTICS								PAGE	1
		PROJECT	PICKUP				DATE	9/4/2019			
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	04E	34	STICKS	00U8	0.50	1	11	S	W		
		PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES					
TOTAL		1	11	11.0							
CRUISE		1	11	11.0	35	31.4					
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
STAND SUMMARY											
	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC	
DOUG FIR	8	48.0	8.9	63	6.9	20.7	1,820	1,820	398	398	
WHEMLOCK	2	20.0	8.1	58	2.5	7.1	600	600	148	148	
R ALDER	1	2.0	8.0	56	0.2	.7	40	40	11	11	
<b>TOTAL</b>	<i>11</i>	<i>70.0</i>	<i>8.6</i>	<i>62</i>	<i>9.7</i>	<i>28.5</i>	<i>2,460</i>	<i>2,460</i>	<i>557</i>	<i>557</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				62	62	62					
WHEMLOCK	47.1	44.1		17	30	43					
R ALDER											
<b>TOTAL</b>				<i>49</i>	<i>49</i>	<i>49</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				13	13	13					
WHEMLOCK	56.8	53.2		3	7	11					
R ALDER											
<b>TOTAL</b>				<i>11</i>	<i>11</i>	<i>11</i>					

TC TSTATS				STATISTICS				PAGE	1	
				PROJECT	PICKUP	DATE		9/4/2019		
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt	
06N	04E	34	STICKS	00U9	2.00	4	24	S	W	
				TREES	ESTIMATED	PERCENT				
				PER PLOT	TOTAL	SAMPLE				
				PLOTS	TREES	TREES	TREES			
TOTAL		4	24	6.0						
CRUISE		2	12	6.0	396		3.0			
DBH COUNT										
REFOREST										
COUNT		2	12	6.0						
BLANKS										
100 %										
STAND SUMMARY										
	SAMPLE	TREES	AVG	BOLE	REL	BASAL	GROSS	NET	GROSS	NET
	TREES	/ACRE	DBH	LEN	DEN	AREA	BF/AC	BF/AC	CF/AC	CF/AC
DOUG FIR	8	158.9	13.2	60	41.6	151.2	14,758	14,224	4,187	4,138
WHEMLOCK	4	39.2	15.3	61	12.9	50.4	4,820	4,820	1,442	1,442
<b>TOTAL</b>	<b>12</b>	<b>198.1</b>	<b>13.7</b>	<b>60</b>	<b>54.6</b>	<b>201.7</b>	<b>19,577</b>	<b>19,043</b>	<b>5,629</b>	<b>5,580</b>
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		62.3	23.5	93	121	150				
WHEMLOCK		63.2	36.1	94	148	201				
<b>TOTAL</b>		<b>60.4</b>	<b>18.2</b>	<b>106</b>	<b>130</b>	<b>154</b>	<b>159</b>	<b>81</b>	<b>40</b>	
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		65.7	24.8	27	36	45				
WHEMLOCK		50.5	28.8	30	42	55				
<b>TOTAL</b>		<b>58.1</b>	<b>17.5</b>	<b>31</b>	<b>38</b>	<b>45</b>	<b>147</b>	<b>75</b>	<b>37</b>	
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		56.8	32.5	107	159	210				
WHEMLOCK		127.7	72.9	11	39	68				
<b>TOTAL</b>		<b>20.9</b>	<b>11.9</b>	<b>174</b>	<b>198</b>	<b>222</b>	<b>23</b>	<b>12</b>	<b>6</b>	
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		42.6	24.3	114	151	188				
WHEMLOCK		127.7	72.9	14	50	87				
<b>TOTAL</b>		<b>.0</b>	<b>.0</b>	<b>202</b>	<b>202</b>	<b>202</b>	<b>0</b>	<b>0</b>	<b>0</b>	
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		37.1	21.2	11,207	14,224	17,241				
WHEMLOCK		127.7	72.9	1,304	4,820	8,335				
<b>TOTAL</b>		<b>5.3</b>	<b>3.1</b>	<b>18,462</b>	<b>19,043</b>	<b>19,625</b>	<b>1</b>	<b>1</b>	<b>0</b>	
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		35.5	20.3	3,298	4,138	4,977				
WHEMLOCK		127.7	72.9	390	1,442	2,494				
<b>TOTAL</b>		<b>7.6</b>	<b>4.4</b>	<b>5,336</b>	<b>5,580</b>	<b>5,823</b>	<b>3</b>	<b>2</b>	<b>1</b>	
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				74	94	114				
WHEMLOCK		101.8	58.2	26	96	165				
<b>TOTAL</b>		<b>199.9</b>	<b>114.2</b>	<b>92</b>	<b>94</b>	<b>97</b>	<b>2,088</b>	<b>1,065</b>	<b>522</b>	

TC TSTATS		STATISTICS								PAGE	1
		PROJECT				PICKUP				DATE	9/4/2019
TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt		
06N	04E	34	STICKS	0U10	1.00	1	22	S	W		
				TREES	ESTIMATED			PERCENT			
		PLOTS	TREES	PER PLOT	TOTAL			SAMPLE			
					TREES			TREES			
TOTAL		1	22	22.0							
CRUISE		1	22	22.0	108			20.4			
DBH COUNT											
REFOREST											
COUNT											
BLANKS											
100 %											
<b>STAND SUMMARY</b>											
	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	9	55.0	18.1	73	23.1	98.4	13,016	13,016	3,473	3,473	
DOUG FIR	5	20.0	18.4	83	8.6	37.0	6,280	6,280	1,470	1,470	
BL MAPLE	5	15.0	12.4	52	3.6	12.6	1,140	1,020	333	306	
R ALDER	3	18.0	10.0	59	3.1	9.9	840	660	252	228	
<b>TOTAL</b>	<b>22</b>	<b>108.0</b>	<b>16.4</b>	<b>69</b>	<b>39.0</b>	<b>157.9</b>	<b>21,276</b>	<b>20,976</b>	<b>5,528</b>	<b>5,476</b>	
CONFIDENCE LIMITS OF THE SAMPLE											
68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR											
CL:	68.1 %	COEFF	<b>SAMPLE TREES - BF</b>				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK				426	426	426					
DOUG FIR	84.5	42.0		182	314	446					
BL MAPLE	78.8	39.1		41	68	95					
R ALDER	15.7	10.9		33	37	41					
<b>TOTAL</b>	<b>76.3</b>	<b>18.5</b>		<b>188</b>	<b>231</b>	<b>273</b>	<b>246</b>	<b>126</b>	<b>62</b>		
CL:	68.1 %	COEFF	<b>SAMPLE TREES - CF</b>				# OF TREES REQ.		INF. POP.		
SD:	1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	7	10		
WHEMLOCK				114	114	114					
DOUG FIR	82.4	40.9		43	73	104					
BL MAPLE	83.1	41.3		12	20	29					
R ALDER	14.6	10.1		11	13	14					
<b>TOTAL</b>	<b>63.8</b>	<b>15.5</b>		<b>51</b>	<b>60</b>	<b>69</b>	<b>172</b>	<b>88</b>	<b>43</b>		

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

T06N R04E S34 Ty00U1	72.0
T06N R04E S34 Ty00U2	49.0
T06N R04E S34 Ty0U1	1.0

**Project PICKUP**  
**Acres 223.50**

**Page No 1**  
**Date: 9/4/2019**  
**Time 4:25:27PM**

Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
DOUG FIR	15,940	37,783	44,616	96.19	40.58	1.18	15,655	15,333	7,322	6,941
WHEMLOCK	12,940	22,536	21,678	50.30	28.88	0.86	6,775	6,509	2,757	2,534
BL MAPLE	2,136	2,803	1,603	25.50	19.43	0.67	605	545	222	193
R ALDER	1,478	2,681	1,312	31.79	17.52	0.60	477	470	176	172
NOBLE F	32	78	131	90.65	37.73	1.40	46	29	19	13
WR CEDAR	18	37	51	117.26	58.63	1.47	22	22	8	8
<b>Totals</b>	<b>32,544</b>	<b>65,918</b>	<b>69,391</b>	<b>70.39</b>	<b>34.75</b>	<b>1.03</b>	<b>23,578</b>	<b>22,907</b>	<b>10,504</b>	<b>9,861</b>

Wood Type Species	Total	Total	Total	Net Cubic Ft/		CF/	Total CCF		Total MBF	
	Trees	Logs	Tons	Tree	Log	LF	Gross	Net	Gross	Net
C	28,930	60,434	66,476	75.67	36.23	1.07	22,497	21,893	10,106	9,496
H	3,613	5,484	2,915	28.07	18.50	0.64	1,082	1,014	398	365
<b>Totals</b>	<b>32,544</b>	<b>65,918</b>	<b>69,391</b>	<b>70.39</b>	<b>34.75</b>	<b>1.03</b>	<b>23,578</b>	<b>22,907</b>	<b>10,504</b>	<b>9,861</b>



# Forest Practices Application/Notification Notice of Decision

FPA/N No: 2937052  
 Effective Date: 11/26/2019  
 Expiration Date: 11/26/2022  
 Shut Down Zone: 660  
 EARR Tax Credit:  Eligible     Non-eligible  
 Reference: Sledgehammer VRH RMZ  
 30-097429

### 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 FPA/N.

### FPA/N Classification

Class II     Class III     Class IVG     Class IVS

### Number of Years Granted on Multi-Year Request

4 years     5 years

### Conditions on Approval / Reasons for Disapproval

1. Use erosion control measures in areas of soil disturbances with potential to deliver sediment to any waters. Erosion control measures may include but are not limited to: grass seeding, mulch, fiber mat, hay bales, brush and non-merchantable timber retention etc.
2. Notify the Department of Natural Resources two business days before commencement of actual operations in Type S or F water(s). Call 360-577-2025 or email (pcforestpractices@dnr.wa.gov and the Forest Practices Forester) and provide the application number and legal description for your activity.
3. Timing Limitations on Type S and F water(s): All work below the ordinary high water mark shall only occur between July 16 to September 30.

Issued By: Jon Byerly

Region: Pacific Cascade

Title: Forest Practices Forester

Date: 11/26/2019

Copies to:     Landowner, Timber Owner and Operator.

Issued in person:     Landowner  Timber Owner  Operator By Jacqui Spahr

**Appeal Information**

You have thirty (30) days to appeal this Decision and any related State Environmental Policy Act determinations to the Pollution Control Hearings Board in writing at the following addresses:

**Physical address: 1111 Israel Rd. SW, Ste 301, Tumwater, WA 98501**

**Mailing address: P.O. BOX 40903, OLYMPIA, WA 98504-0903**

Information regarding the Pollution Control Hearings Board can be found at: <http://www.eluho.wa.gov/>

At the same time you file an appeal with the Pollution Control Hearings Board, also send a copy of the appeal to the Department of Natural Resources' region office and the Office of the Attorney General at the following addresses:

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

And

Department Of Natural Resources  
Pacific Cascade Region  
PO Box 280  
Castle Rock WA 98611

**Other Applicable Laws**

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

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

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

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

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

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

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

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

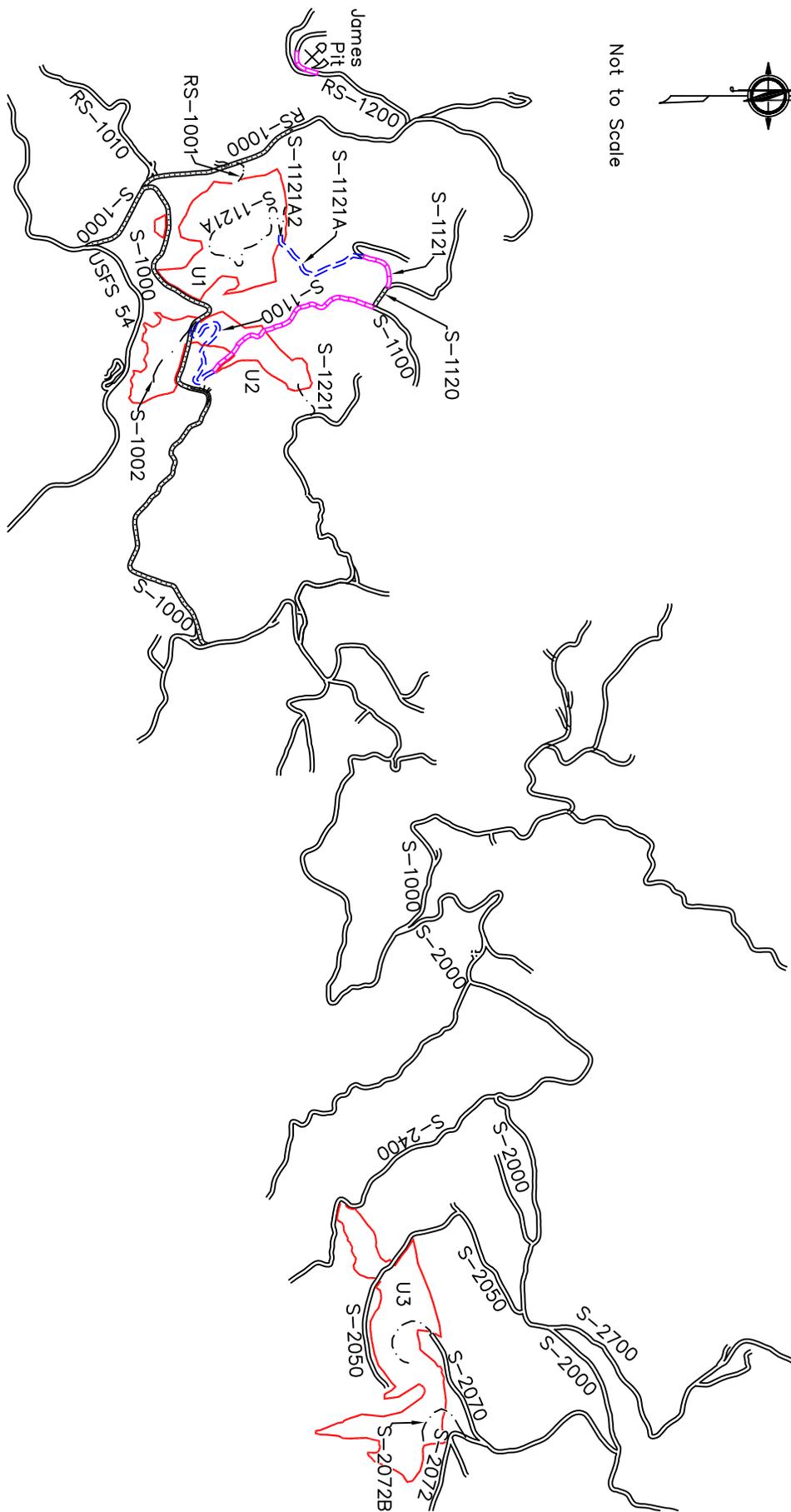
**DNR affidavit of mailing:**

On this day _____,	I placed in the United States mail at _____	Castle Rock _____,	WA,
(date)	(post office location)		
postage paid, a true and accurate copy of this document. Notice of Decision FPA # _____			
_____	_____		
(Printed name)	(Signature)		

# PICK UP STICKS

## OVERVIEW ROAD PLAN MAP

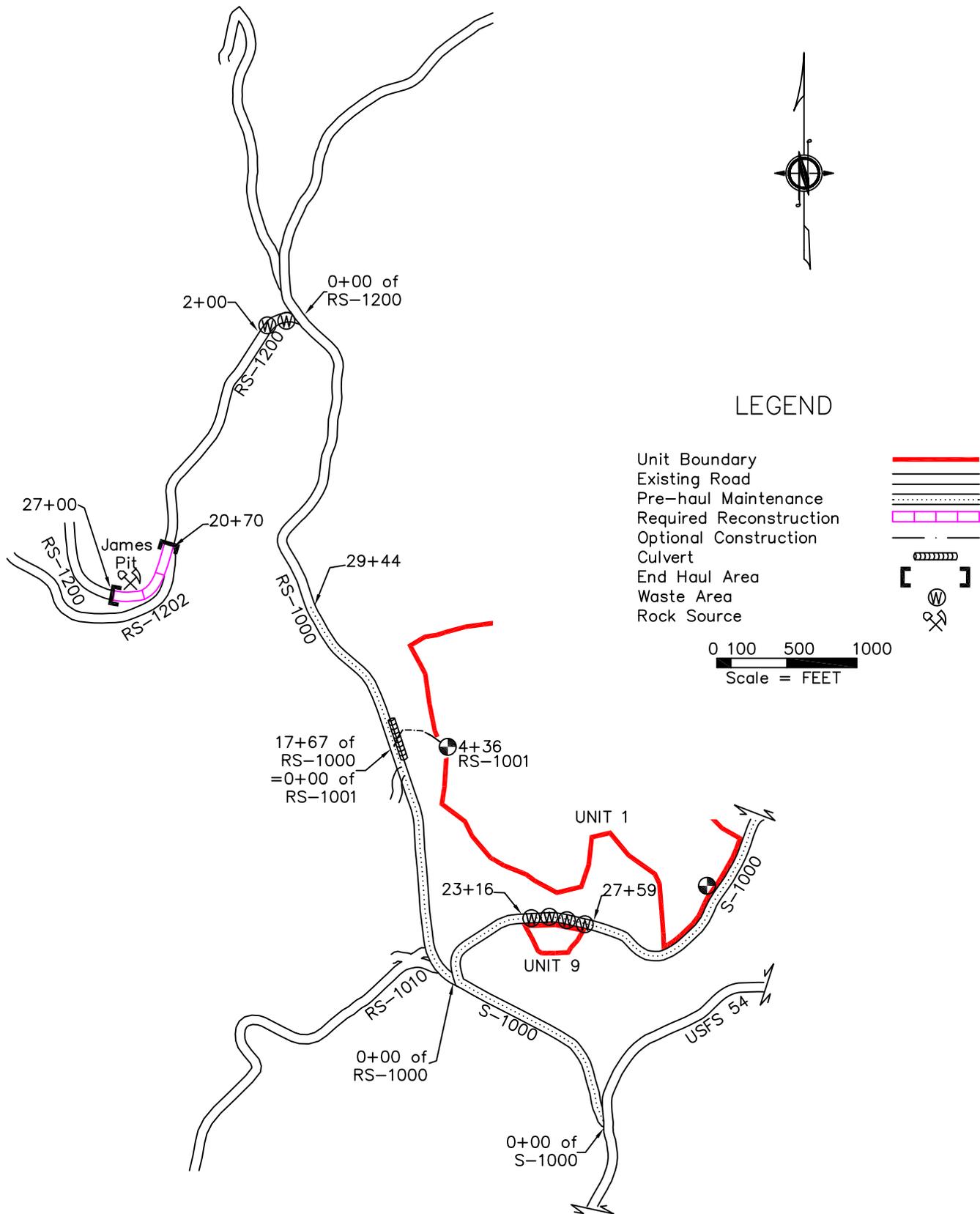
Map page 1 of 6



# PICK UP STICKS

## ROAD PLAN MAP

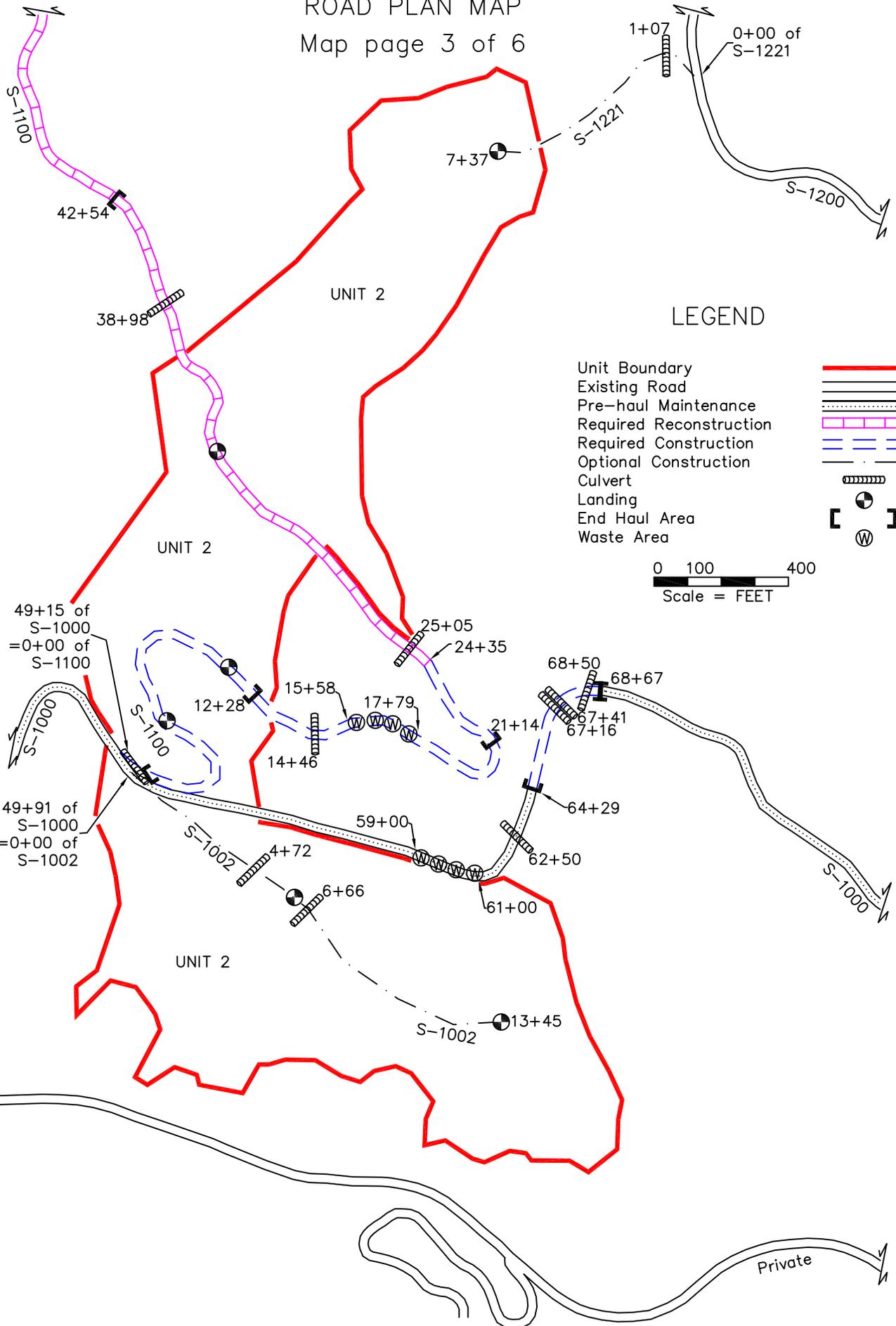
Map page 2 of 6



# PICK UP STICKS

## ROAD PLAN MAP

Map page 3 of 6



### LEGEND

- Unit Boundary
- Existing Road
- Pre-haul Maintenance
- Required Reconstruction
- Required Construction
- Optional Construction
- Culvert
- Landing
- End Haul Area
- Waste Area

0 100 400  
Scale = FEET

# PICK UP STICKS

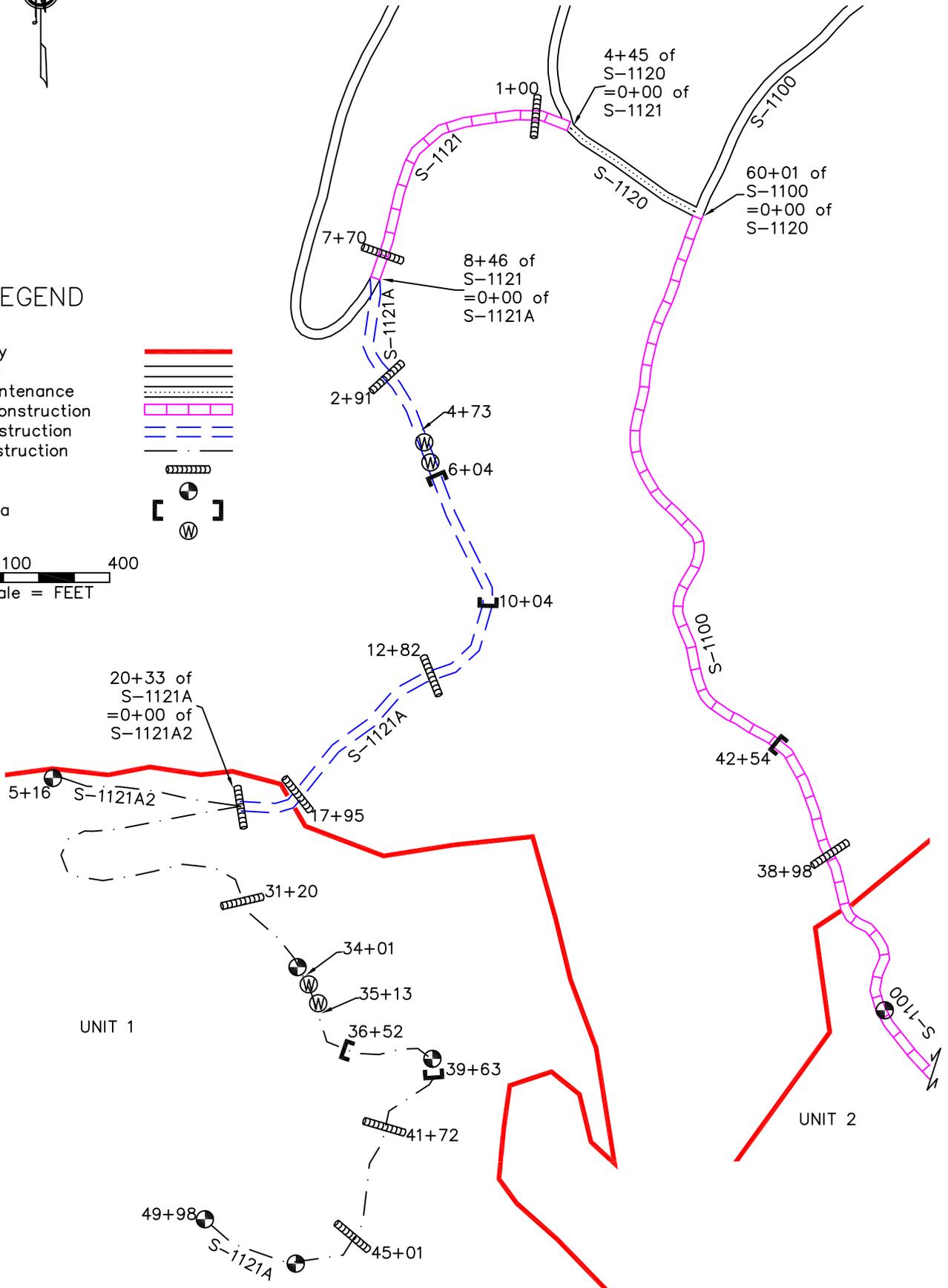
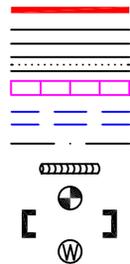
## ROAD PLAN MAP

Map page 4 of 6



### LEGEND

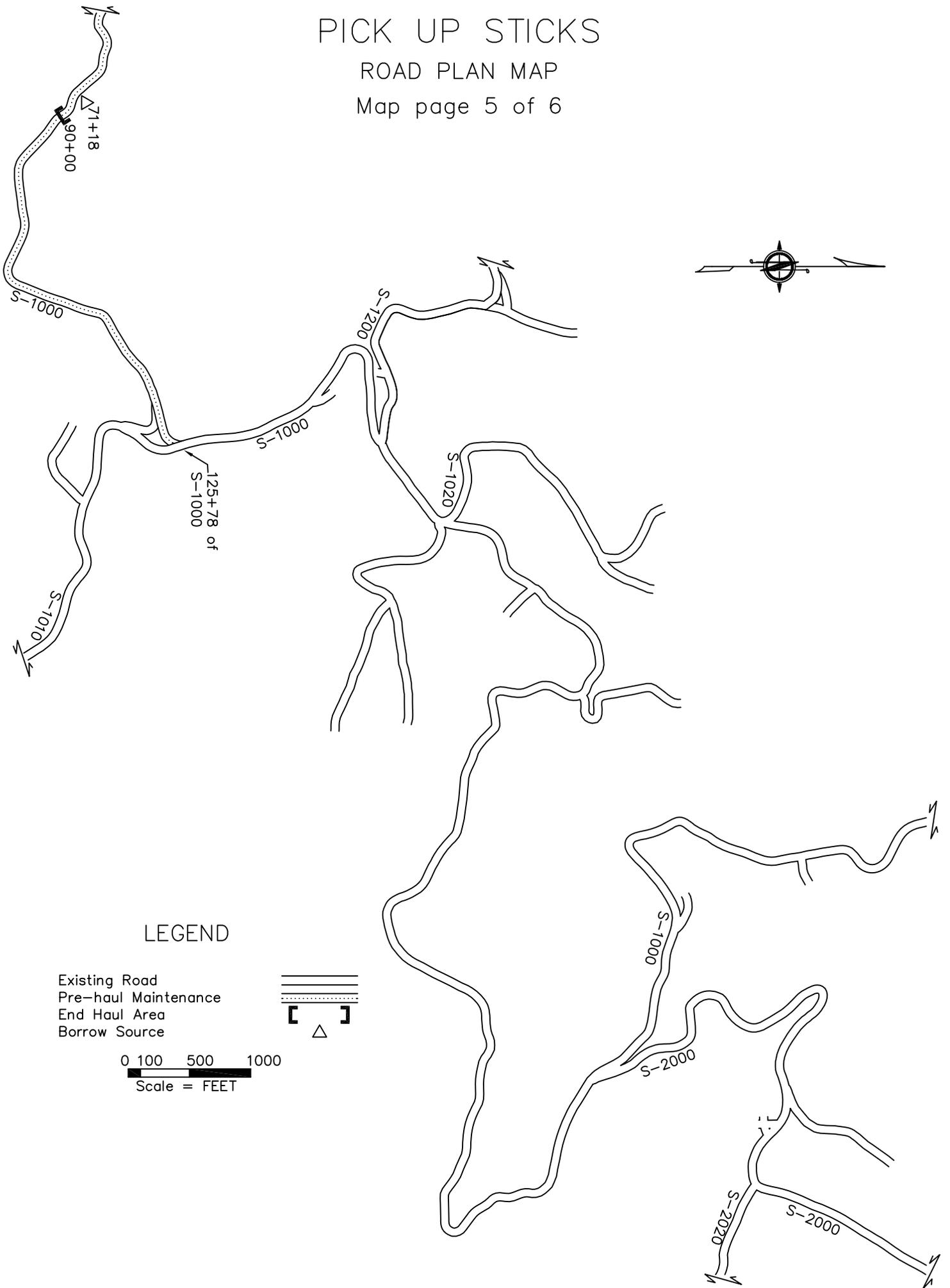
- Unit Boundary
- Existing Road
- Pre-haul Maintenance
- Required Reconstruction
- Required Construction
- Optional Construction
- Culvert
- Landing
- End Haul Area
- Waste Area



# PICK UP STICKS

ROAD PLAN MAP

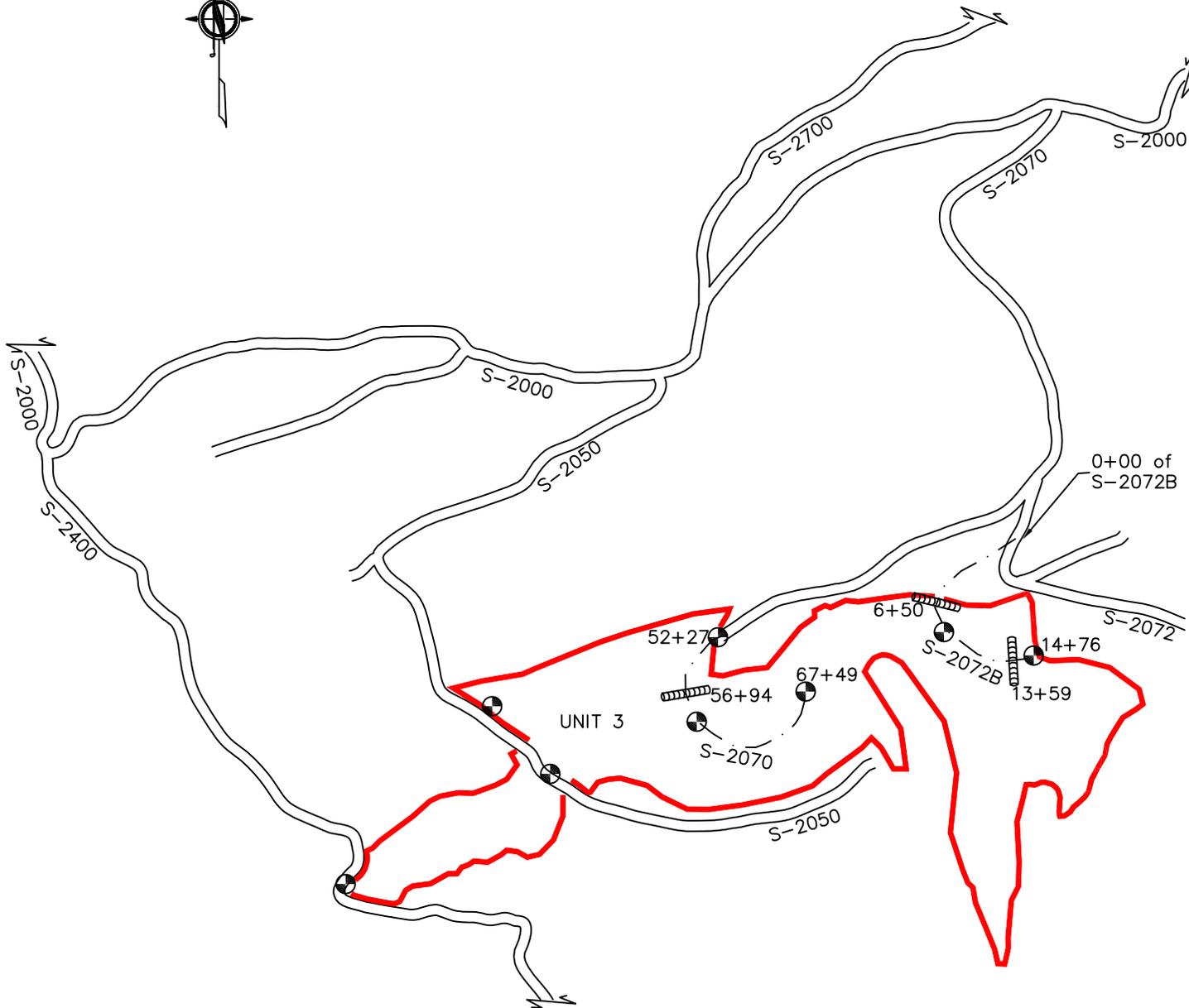
Map page 5 of 6



# PICK UP STICKS

## ROAD PLAN MAP

Map page 6 of 6



### LEGEND

- Unit Boundary 
- Existing Road 
- Optional Construction 
- Culvert 
- Landing 

0 100 500 1000  
Scale = FEET

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

PICK UP STICKS TIMBER SALE ROAD PLAN  
CLARK/SKAMANIA COUNTY  
YACOLT DISTRICT  
PACIFIC CASCADE REGION

AGREEMENT NO.: 30-098580

STAFF ENGINEER: SCOTT HANNA

DATE: JANUARY 6, 2020

DRAWN & COMPILED BY: ALICIA COMPTON

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>
RS-1000	0+00 to 29+44	Maintenance
RS-1200	20+70 to 27+00	Reconstruction
S-1000	0+00 to 64+29	Maintenance
S-1000	64+29 to 68+67	Construction
S-1000	68+67 to 125+78	Maintenance
S-1100	0+00 to 24+35	Construction
S-1100	24+35 to 60+01	Reconstruction
S-1120	0+00 to 4+45	Maintenance
S-1121	0+00 to 8+46	Reconstruction
S-1121A	0+00 to 20+33	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>
RS-1001	0+00 to 4+36	Construction
S-1002	0+00 to 13+45	Construction
S-1121A	20+33 to 49+98	Construction
S-1121A2	0+00 to 5+16	Construction
S-1221	0+00 to 7+37	Construction
S-2070	52+27 to 67+49	Construction
S-2072B	0+00 to 14+76	Construction

**0-4 CONSTRUCTION**

Construction includes, but is not limited to the following: clearing and grubbing; waste and debris disposal; excavation and embankment to sub-grade; full-bench excavation and end haul material; switchback construction and end haul material; key embankment construction; manufacture, application and compaction of backfill for sub-grade construction; acquisition and installation of drainage structures; shaping and compaction of subgrade; turnout, turnaround and landing construction; manufacture, application and compaction of rock; acquisition and application of erosion control materials.

**0-5 RECONSTRUCTION**

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

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
RS-1200	20+70 to 27+00	Clearing of organic debris from road surface with ditch construction and end haul all material; grade, shape and compact subgrade; manufacture, application and compaction of rock.
S-1100	24+35 to 60+01	Clearing and grubbing; waste and debris disposal; widening subgrade in accordance with S-1100 CONSTRUCTION DETAIL; excavation and end haul material; acquisition and replacement of drainage structures; clean inlets and outlets of existing drainage structures; grade, shape and compact subgrade; manufacture, application and compaction of rock; acquisition and application of erosion control materials.
S-1121	0+00 to 8+46	Clearing and grubbing; waste and debris disposal; excavation to sub-grade; grade, shape and compact subgrade; acquisition and installation of drainage structures; manufacture, application and compaction of rock; acquisition and application of erosion control materials.

**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>
RS-1000	0+00 to 29+44	Brush in accordance with ROAD BRUSHING DETAIL.
S-1000	0+00 to 64+29	Brush in accordance with ROAD BRUSHING DETAIL; grade, shape and compact existing surface; manufacture, application and compaction of rock.
S-1000	71+18	End haul rock that deposited on the road; material will require drill and shoot to reduce size for transport. This material may be used for the rock fill at stations 64+29 to 68+67.
S-1000	68+67 to 125+78	Brush in accordance with ROAD BRUSHING DETAIL; clean ditches and end haul; clean culvert inlets and outlets;
S-1120	0+00 to 4+45	grade, shape and compact existing surface; manufacture, application and compaction of rock.

**0-7 POST-HAUL MAINTENANCE**

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

**0-10 ABANDONMENT**

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT.

**0-12 DEVELOP ROCK SOURCE**

Purchaser shall develop a new rock source. Rock source development will involve clearing, stripping, end haul and waste disposal, drilling, shooting and processing rock. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

**0-13 STRUCTURES**

Purchaser shall install key embankment rock fill. Requirements for this structure is listed in Section 7 STRUCTURES.

SECTION 1 – GENERAL

**1-1 ROAD PLAN CHANGES**

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

**1-2 UNFORESEEN CONDITIONS**

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to unforeseen conditions, or Purchaser's choice of construction season or techniques will be at the Purchaser's expense. Unforeseen conditions include, but are not limited to, solid subsurface rock, subsurface springs, saturated ground, and unstable soils.

**1-3 ROAD DIMENSIONS**

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

**1-4 ROAD TOLERANCES**

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

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

**1-6 ORDER OF PRECEDENCE**

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

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

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

**1-7 TEMPORARY ROAD CLOSURE**

Purchaser shall notify the Contract Administrator a minimum of 3 calendar days before the closure of any road.

**1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS**

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

**1-9 DAMAGED METALLIC COATING**

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

**1-15 ROAD MARKING**

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

- Construction: 4-foot stakes with orange ribbon, orange paint and aluminum tags for reference points, blue paint with aluminum tags for culvert reference points;
- Reconstruction: 4-foot stakes with orange ribbon for centerline offsets, orange paint and aluminum tags for reference points; blue ribbon and paint for culvert reference points;
- Maintenance: Orange paint on trees for reference.

**1-16 CONSTRUCTION STAKES SET BY STATE**

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

<u>Road</u>	<u>Stations</u>	<u>Type</u>
S-1000	64+29 to 68+67	control points (See S-1000 ROAD REPAIR DETAIL)
S-1002	0+00 to 13+45	centerline, slope stakes, reference points
S-1100	0+00 to 45+01	
S-1121A	0+00 to 49+98	

**1-18 REFERENCE POINT DAMAGE**

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

**1-20 COMPLETE BY DATE**

On the following road(s), Purchaser shall complete road work by the specified date and before the start of timber haul.

<u>Road</u>	<u>Stations</u>	<u>Date</u>
RS-1000	0+00 to 29+44	prior to timber haul
S-1000	0+00 to 64+29	
S-1000	64+29 to 68+67	August 31, 2021
S-1000	68+67 to 125+78	prior to timber haul
S-1120	0+00 to 4+45	

**1-21 HAUL APPROVAL**

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

**1-22 WORK NOTIFICATIONS**

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

**1-23 ROAD WORK PHASE APPROVAL**

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

- Subgrade construction with compaction
- Rock application with compaction
- Road abandonment with erosion control
- Pit development and closure

**1-25 ACTIVITY TIMING RESTRICTION**

On the following road(s), the operation of road construction equipment is not allowed on weekends or state recognized holidays, unless authorized in writing by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
S-1000	64+29 to 68+67

The specified activities are not allowed during the listed closure period(s) unless authorized in writing by the Contract Administrator. Restrictions for hauling forest products are specified in contract clause H-130 HAULING SCHEDULE.

<u>Road</u>	<u>Stations</u>	<u>Activity</u>	<u>Closure Period</u>
S-1000	64+29 to 68+67	construction	September 1 to June 1
all other roads		all other road work	October 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 or Contract Clause H-130, 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 native surface roads.
- Surface or base stability problems persist.
- Weather is such that satisfactory results cannot be obtained in an area of operations.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

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

**1-32 BRIDGE OR ASPHALT SURFACE RESTRICTION**

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

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

**1-33 SNOW PLOWING RESTRICTION**

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

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

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

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

SECTION 2 – MAINTENANCE

**2-1 GENERAL ROAD MAINTENANCE**

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

**2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE**

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

**2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER**

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

**2-4 PASSAGE OF LIGHT VEHICLES**

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

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

On the following road(s), Purchaser shall use a grader to shape the existing surface before rock application or chemical application.

<u>Road</u>	<u>Stations</u>	<u>Requirements</u>
S-1000	0+00 to 64+29	Grade and shape in accordance with TYPICAL SECTION SHEET.
S-1000	68+67 to 125+78	
S-1120	0+00 to 4+45	

**2-6 CLEANING CULVERTS**

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

<u>Road</u>	<u>Stations</u>
S-1000	68+67 to 125+78
S-1120	0+00 to 4+45

**2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS**

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

<u>Road</u>	<u>Stations</u>
S-1000	68+67 to 125+78
S-1120	0+00 to 4+45

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

**3-1 BRUSHING**

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

<u>Road</u>	<u>Stations</u>
RS-1000	0+00 to 29+44
S-1000	0+00 to 48+84
S-1000	68+67 to 125+78
S-1120	0+00 to 4+45

**3-2 BRUSHING RESTRICTION**

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

**3-5 CLEARING**

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

**3-8 PROHIBITED DECKING AREAS**

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

- Within the grubbing limits.
- Within 25 feet of any stream.
- Within 25 feet of a cross drain culvert.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- On uphill side of road prism.
- Against standing trees unless approved by the Contract Administrator.

**3-10 GRUBBING**

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Purchaser shall remove stumps using a hydraulic mounted excavator unless authorized in writing by the Contract Administrator. Stumps over 22 inches diameter must be split. Stumps over 40 inches must be quartered. Grubbing must be completed before starting excavation and embankment.

**3-12 STUMP PLACEMENT**

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

**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.

**3-20 ORGANIC DEBRIS DEFINITION**

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

**3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS**

Waste areas for organic debris are located as listed below or within the cleared right-of-way or in natural openings or at areas approved in writing by the Contract Administrator.

<u>Road</u>	<u>Disposal Location</u>	<u>Requirements</u>
RS-1200	0+00 to 2+00	Organic debris larger than one cubic foot in volume shall be separated from waste material as defined under Clause 4-35 WASTE MATERIAL DEFINITION.
S-1000	23+16 to 27+59	
S-1000	59+00 to 61+00	
S-1100	15+58 to 17+79	
S-1121A	4+73 to 6+04	
S-1121A	34+01 to 35+13	

**3-23 PROHIBITED DISPOSAL AREAS**

Purchaser shall not place organic debris in the following areas:

- Within 25 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- On uphill side of road prism.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

**3-24 BURYING ORGANIC DEBRIS RESTRICTED**

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

**3-25 SCATTERING ORGANIC DEBRIS**

Purchaser shall scatter organic debris outside of the clearing limits or in natural openings on the downhill side of the road as directed by the Contract Administrator.

Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

**3-31 PILING**

Purchaser shall pile organic debris no closer than 40 feet from standing timber and no higher than 20 feet in areas specified in Clause 3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS. Piles must be free of rock and soil.

**3-32 END HAULING ORGANIC DEBRIS**

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

<u>Road</u>	<u>Stations</u>
RS-1200	20+70 to 27+00
S-1000	64+29 to 68+67
S-1100	0+00 to 12+28
--	21+14 to 42+54
S-1121A	6+04 to 10+04
--	36+52 to 39+63

SECTION 4 – EXCAVATION

**4-1 EXCAVATOR CONSTRUCTION**

On the following roads, Purchaser shall use a track mounted hydraulic excavator for construction work.

<u>Road</u>	<u>Stations</u>
S-1000	64+29 to 68+67
S-1100	21+14 to 42+54

**4-2 PIONEERING**

Pioneering may not extend past construction that will be completed during the current construction season. In addition, the following actions must be taken as pioneering progresses:

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

**4-3 ROAD GRADE AND ALIGNMENT STANDARDS**

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

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 15 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

The following road(s) have specific limitations for grade and alignment and are referenced in the field with construction stakes and reference points as shown in the table below.

<u>Road</u>	<u>Stations</u>	<u>Minimum Curve Radius (ft)</u>	<u>Maximum Grade (%)</u>		<u>Maximum Vertical Grade Change per 100 ft (%)</u>	
			<u>Favorable</u>	<u>Adverse</u>	<u>Sag</u>	<u>Crest</u>
S-1002	0+00 to 13+45	--	--	7	5	4
S-1100	0+00 to 19+83	80	10	--	5	4
	19+83 to 45+01	60	15		5	4
S-1121A	0+00 to 49+98	60	--	10	5	4

**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 9%.
- Maximum favorable grades for switchbacks is 10%.
- Maximum transition grades entering and leaving switchbacks is a 5% grade change.
- Transition grades required to meet switchback grade limitations must be constructed on the tangents preceding and departing from the switchbacks.

**4-5 CUT SLOPE RATIO**

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

<u>Material Type</u>	<u>Excavation Slope Ratio</u>	<u>Excavation Slope Percent</u>
Common Earth	1:1	100
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.

Purchaser shall apply embankment widening equally to both sides of the road to achieve the required width.

**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>
RS-1200	20+70 to 27+00
S-1100	24+35 to 60+01
S-1121	0+00 to 8+46

**4-11 KEYED EMBANKMENT**

On the following road(s), Purchaser shall key embankments into the native slope in accordance with the S-1000 ROAD REPAIR DETAIL.

<u>Road</u>	<u>Stations</u>
S-1000	64+29 to 68+67

**4-12 FULL BENCH CONSTRUCTION**

On the following road(s), and where side slopes exceed 45%, Purchaser shall use full bench construction for the entire subgrade width except as construction staked or designed. 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>
S-1100	21+14 to 42+54	See S-1100 CONSTRUCTION DETAIL
S-1121A	6+04 to 10+04	See S-1121A CONSTRUCTION DETAIL

**4-16 END HAULING WASTE MATERIAL**

On the following road(s), Purchaser shall end haul waste material to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Stations</u>	<u>Comments</u>
RS-1200	20+70 to 27+00	
S-1000	64+29 to 68+67	See S-1000 ROAD REPAIR DETAIL
S-1100	0+00 to 12+28	See S-1100 CONSTRUCTION DETAIL
S-1121A	36+52 to 38+41	See S-1121A CONSTRUCTION DETAIL

**4-21 TURNOUTS**

Purchaser shall construct turnouts as designated on the ROCK LIST or as directed by Contract Administrator. Locations may be adjusted to fit the final subgrade alignment and sight distances. Locations changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the TYPICAL SECTION SHEET.

**4-22 TURNAROUNDS**

Purchaser shall construct optional turnarounds as designated on the ROCK LIST. Optional turnarounds must be no larger than 30 feet long and 30 feet wide. Locations are subject to written approval by the Contract Administrator.

**4-25 DITCH CONSTRUCTION AND RECONSTRUCTION**

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

**4-27 DITCH WORK – MATERIAL USE PROHIBITED**

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 end hauled to the location specified in Clause 4-37 WASTE AREA LOCATION.

<u>Road</u>	<u>Stations</u>
S-1000	68+67 to 90+00

**4-28 DITCH DRAINAGE**

Ditches must drain to cross-drain culverts or ditchouts.

**4-29 DITCHOUTS**

Purchaser shall construct ditchouts as identified and as directed by the Contract Administrator. 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.

**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 or as listed.

<u>Road</u>	<u>Waste Area Location</u>	<u>Requirements</u>	<u>Volume</u>
RS-1200	0+00 to 2+00	Waste material shall be spread and compacted evenly with a surface that provides drainage at a minimum of 3% outslope. The surface of the waste area shall not exceed the height of the adjoining roadway(s).	1,589 cy
S-1000	23+16 to 27+59		29,962 cy
S-1000	59+00 to 61+00		3,570 cy
S-1100	15+58 to 17+79		8,000 cy
S-1121A	4+73 to 6+04		3,050 cy
S-1121A	34+01 to 35+13		2,475 cy

**4-38 PROHIBITED WASTE DISPOSAL AREAS**

Purchaser shall not deposit waste material in the following areas, except as otherwise specified in this plan:

- Within 50 feet of a cross drain culvert.
- Within 100 feet of a live stream or wetland.
- Within a riparian management zone.
- On side slopes steeper than 45%.
- On uphill side of road prism.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Within the operational area for cable landings.
- Against standing timber.

**4-47 BORROW MATERIAL**

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

**4-48 NATIVE MATERIAL**

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 4 inches in any dimension.

**4-49 BORROW SOURCE**

Purchaser shall obtain borrow material from the listed borrow source(s).

<u>Source</u>	<u>Location</u>	<u>Type</u>
JAMES PIT	RS-1200 at 25+00	shot rock
S-1100	0+00 to 24+35	native material
S-1121A	36+52 to 41+72	native material

**4-50 BORROW APPLICATION**

Purchaser shall apply borrow in accordance with quantities shown below. Borrow must be spread, shaped, and compacted full width concurrent with hauling operations.

<u>Road</u>	<u>Stations</u>	<u>Cubic Yards</u>	<u>Type</u>	<u>Comments</u>
S-1000	64+29 to 68+67	approx. 10,700	crushed/heavy loose rip rap rock	See S-1000 ROAD REPAIR DETAIL
S-1002	0+43 to 3+44	approx. 1700	native material	See S-1002 CONSTRUCTION DETAIL
S-1121A	41+72 to 42+17	approx. 170	native material	See S-1121A CONSTRUCTION DETAIL

**4-55 ROAD SHAPING**

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

**4-56 DRY WEATHER SHAPING**

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

**4-60 FILL COMPACTION**

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

**4-61 SUBGRADE COMPACTION**

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

**4-62 DRY WEATHER COMPACTION**

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

**4-63 EXISTING SURFACE COMPACTION**

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

SECTION 5 – DRAINAGE

**5-1 REMOVAL OF SHOULDER BERMS**

Purchaser shall remove berms from road shoulders.

**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.

**5-6 CULVERT TYPE**

On the following road(s), Purchaser may install culverts made of steel or plastic in accordance with Clauses 10-15 through 10-24. All other culverts shall be made of plastic.

<u>Road</u>	<u>Stations</u>
RS-1001	0+00
S-1002	4+72, 6+66
S-1221	1+07
S-2070	56+94
S-2072B	6+50, 13+59

**5-7 USED CULVERT MATERIAL**

On temporary roads, Purchaser may install used culverts. All other culverts must have new culverts installed. Purchaser shall obtain approval from the Contract Administrator for the quality of the used culverts before installation. Culverts must meet the specifications in Clauses 10-15 through 10-24.

**5-12 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.

**5-13 CONTINGENCY CULVERTS**

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

<u>Road</u>	<u>Quantity</u>	<u>Size</u>	<u>Type</u>
On any portion of road(s) used for timber or rock haul.	1	18" x 30'	plastic
	1	18" x 40'	plastic

**5-15 CULVERT INSTALLATION**

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the National Corrugated Metal Pipe Association's "Installation Manual for Corrugated Steel Drainage Structures" or the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations.

**5-16 APPROVAL FOR LARGER CULVERT INSTALLATION**

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 24 inches in diameter and over before backfilling.

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

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

**5-18 CULVERT DEPTH OF COVER**

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

**5-20 ENERGY DISSIPATERS**

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts, except for temporary culverts. 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 at a maximum interval of 15 feet with 6-foot heavy-duty steel posts, and fastened securely to the posts in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

**5-25 CATCH BASINS**

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

**5-26 HEADWALLS FOR CROSS DRAIN CULVERTS**

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all cross drain culverts, except for temporary culverts. 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. Rock must be set in place by machine. Placement must be with a zero-drop-height only. No placement by end dumping or dropping of rock is allowed. Rock type shall meet the specifications in Clause 6-41 SELECT PIT RUN ROCK.

**5-27 ARMORING FOR STREAM CROSSING CULVERTS**

At the following culvert(s), Purchaser shall place SELECT PIT RUN ROCK immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the CULVERT LIST or as directed by the Contract Administrator. Rock may not restrict the flow of water into culvert inlets or catch basins. Placement must be by zero-drop-height method only. No placement by end dumping or dropping of rock is allowed. Rock type must meet the specifications in Clause 6-41 SELECT PIT RUN ROCK.

<u>Road</u>	<u>Stations</u>
S-1100	38+98
S-1121A	2+91

**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 200 feet.

SECTION 6 – ROCK AND SURFACING

**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 3 calendar days before starting any operations in the listed locations.

<u>Source</u>	<u>Location</u>
JAMES PIT	Section 33, Township 6 North, Range 04 East, W.M.

**6-5 ROCK FROM COMMERCIAL SOURCE**

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

**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.

**6-20 ROCK CRUSHING OPERATIONS**

Rock crushing operations must conform to the following specifications:

- Purchaser shall produce sieve analysis for crushing operations every 1000 yards for 1½-INCH MINUS CRUSHED, and 2000 yards for 3-INCH MINUS CRUSHED.
- Purchaser may use a commercial testing lab to produce sieve analyses.

**6-23 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 when placed in hauling vehicles. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

**6-29 1 ½-INCH MINUS CRUSHED ROCK**

% Passing 1 ½" square sieve	100%
% Passing 1" square sieve	70 - 90%
% Passing 5/8" square sieve	50 - 80%
% Passing U.S. #4 sieve	30 - 50%
% Passing U.S. #40 sieve	3 - 18%
% Passing U.S. #200 sieve	7.5% maximum

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

**6-33 3-INCH MINUS CRUSHED ROCK**

% Passing 3" square sieve	100%
% Passing 2" square sieve	65 - 95%
% Passing 3/4" square sieve	28 - 70%
% Passing U.S. #4 sieve	10 - 35%
% Passing U.S. #200 sieve	0 - 10%

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

**6-41 SELECT PIT RUN ROCK**

No more than 50 percent of the rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Select Pit Run rock may not contain organic debris, dirt, and trash. Rock may require processing to meet this specification.

**6-51 HEAVY LOOSE RIP RAP**

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

<u>Quantity</u>	<u>Size Range</u>
30% to 90%	1 ton to 2 ton (28" - 36")
30% to 70%	500 lbs. to 1 ton (18" - 28")
20% to 50%	50 lbs. to 500 lbs. (8" - 18")
10% to 20%	3 inch to 50 lbs. (3" - 8")

**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 loose 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. Unless otherwise stated in Clause 6-75 OPTIONAL ROCK EXCEPTION.

**6-56 ROCK MEASUREMENT BY TRUCK VOLUME**

Measurement of 1½-INCH MINUS CRUSHED, SELECT PIT RUN, and HEAVY LOOSE RIP RAP rock for culvert bedding and backfill, key embankment fill, armoring and energy dissipaters is on a cubic yard truck measure basis. The Contract Administrator will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets, as shown in ROCK ACCOUNTABILITY DETAIL, for each truck and shall give them to the Contract Administrator on a weekly basis during rocking operations.

**6-70 APPROVAL BEFORE ROCK APPLICATION**

Purchaser shall obtain written approval from the Contract Administrator for 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. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

**6-73 ROCK FOR WIDENED PORTIONS**

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

**6-75 OPTIONAL ROCK EXCEPTION**

On the following roads, if hauling takes place from June 1 to September 30 Purchaser may provide and place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

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

<u>Road</u>	<u>Stations</u>
S-1002	0+00 to 13+45
S-1121A	20+33 to 49+98
S-1121A2	0+00 to 5+16
S-1221	0+00 to 7+37

**6-76 DRY WEATHER ROCK COMPACTION**

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

## SECTION 7 – STRUCTURES

### **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, Forest Practice Application (FPA) permit and S-1000 ROAD REPAIR DETAIL.

### **7-17 INSTALLATION PRODUCTION SCHEDULE**

Purchaser shall provide the Contract Administrator or their designee, with a production schedule showing projected completion dates for the following items before starting construction of the structure(s). Production schedule must include:

- excavation and end haul
- subgrade compaction
- key embankment construction and compaction
- rock fill placement
- dewatering
- rock fill placement within stream channel
- culvert bedding construction and compaction
- culvert backfill and compaction
- surface rock application and compaction

### **7-18 INSTALLATION STAGE ACCEPTANCE**

Purchaser shall ensure that all materials and procedures used during construction comply with the design. Purchaser shall obtain written approval from the Contract Administrator or their designee, after verification by the Region Engineer or designee for each stage of construction, listed in Clause 7-17 INSTALLATION PRODUCTION SCHEDULE, before starting construction on the next stage.

### **7-57 CULVERT SHAPE CONTROL**

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

SECTION 8 – EROSION CONTROL

**8-1 SEDIMENT CONTROL STRUCTURES**

Purchaser shall install sediment traps, silt fences, settling ponds or other methods as approved by the Contract Administrator.

**8-2 PROTECTION FOR EXPOSED SOIL**

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

**8-15 REVEGETATION**

Purchaser shall spread grass seed on all exposed soils resulting from road work activities. Cover all exposed soils using manual dispersal methods. Other methods of covering must be approved in writing by the Contract Administrator. Required seed not spread by the termination of this contract will become the property of the state.

<u>Road</u>	<u>Qty (lbs)*</u>	<u>Type</u>
construction	638	grass seed
reconstruction	174	
maintenance	21	
abandonment	89	

\*Quantities are estimates only. Actual quantities may vary and are the responsibility of the Purchaser.

**8-16 REVEGETATION SUPPLY**

The Purchaser shall provide the grass seed.

**8-17 REVEGETATION TIMING**

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

**8-19 ASSURANCE FOR SEEDED AREA**

Purchaser shall ensure the growth of a uniform and dense crop (at least 75% coverage) of 3-inch tall grass. Purchaser shall reapply the grass seed in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the grass seed at no additional cost to the state.

**8-25 GRASS SEED**

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 50 pounds per acre of exposed soil. Grass seed must meet the following specifications:

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

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

SECTION 9 – POST-HAUL ROAD WORK

**9-1 EARTHEN BARRICADES**

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

<u>Road</u>	<u>Stations</u>
RS-1001	0+00
S-1002	2+19
S-1221	1+07
S-2070	52+27
S-2072B	0+00

**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.

**9-5 POST-HAUL MAINTENANCE**

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

**9-10 LANDING DRAINAGE**

Purchaser shall provide for drainage of the landing surface.

**9-11 LANDING EMBANKMENT**

Purchaser shall slope landing embankments to the original construction specifications.

**9-21 ROAD ABANDONMENT**

Purchaser shall abandon the following roads before the termination of this contract. Work must be in accordance with the ROAD ABANDONMENT CROSS SECTIONS DETAIL, Clause 9-22 LIGHT ABANDONMENT and 9-24 HEAVY ABANDONMENT.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
RS-1001	0+00 to 4+36	Heavy
S-1002	2+19 to 13+45	Light
S-1221	1+07 to 7+37	Light
S-2070	52+27 to 67+49	Heavy
S-2072B	0+00 to 14+76	Heavy

#### **9-22 LIGHT ABANDONMENT**

- Remove road shoulder berms except as directed.
- 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 20 feet between waterbars or between natural drainage paths and with a maximum spacing of 200 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.
- Remove ditch cross drain culverts and leave the resulting trench open in accordance with CROSS DRAIN REMOVAL DETAIL.
- Cover, concurrently with abandonment, all exposed soils within 50 feet of any live stream, with a 3-inch deep layer of straw.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.

#### **9-24 HEAVY ABANDONMENT**

- Fill in ditches.
- Rip the surface to a minimum depth of 12 inches.
- Outslope the surface at a minimum of 30 percent.
- Remove embankments, sidecast fill, and place material into cut-banks and shape banks to conform to the natural ground.
- Remove road shoulder berms except as directed.
- Remove ditch cross drain culverts and leave the resulting trench open in accordance with CROSS DRAIN REMOVAL DETAIL.
- Scatter woody debris onto abandoned road surfaces.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.

## SECTION 10 MATERIALS

### 10-15 CORRUGATED STEEL CULVERT

Metallic coated steel culverts must meet AASHTO M-36 (ASTM A-760) specifications. Culverts 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 S – double walled with a corrugated exterior and smooth interior.

### 10-20 FLUME AND DOWNSPOUT

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

### 10-21 METAL BAND

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

### 10-22 PLASTIC BAND

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

### 10-23 RUBBER CULVERT GASKETS

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

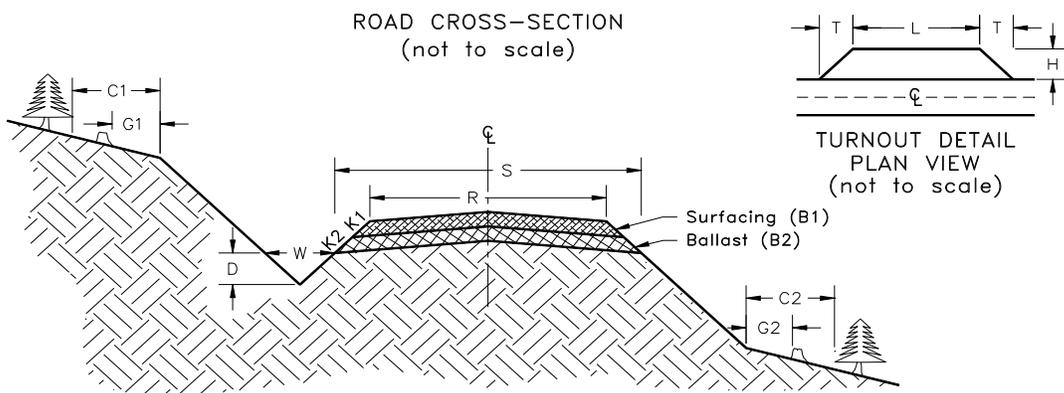
### 10-24 GAUGE AND CORRUGATION

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

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

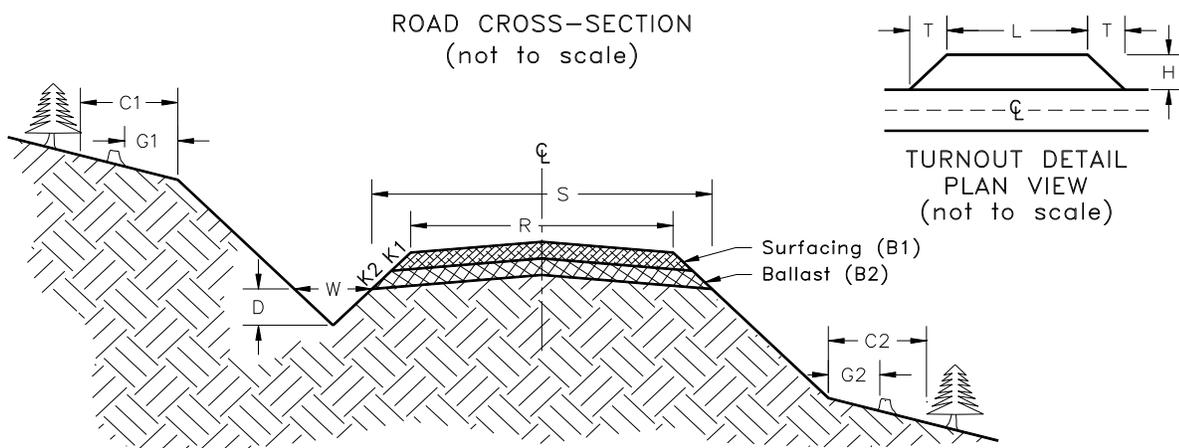
# TYPICAL SECTION

Page 1 of 1



Road Number	From Station	To Station	Tolerance Class	Subgrade Width (feet)	Road Width (feet)	Ditch		Crown @ CL (inches)	Grubbing Limits (feet)		Clearing Limits (feet)	
						Width (feet)	Depth (feet)		G1	G2	C1	C2
				S	R	W	D		G1	G2	C1	C2
RS-1000	0+00	29+44	C	--	12	--	--	--	--	--	--	--
RS-1001	0+00	4+36	C	--	12	3	1	4	3	3	5	5
RS-1200	20+70	27+00	C	14	12	3	1	4	--	--	--	--
S-1000	0+00	64+29	C	14	12	3	1	4	--	--	--	--
--	64+29	68+67	A	17	12	3	1	4	3	3	10	10
--	68+67	125+78	C	14	12	3	1	4	--	--	--	--
S-1002	0+00	13+45	B	14	12	3	1	4	3	3	5	5
S-1100	0+00	24+35	A	16	12	3	1	4	3	3	10	10
S-1100	24+35	60+01	A	15	12	3	1	4	3	3	10	10
S-1120	0+00	4+45	C	14	12	3	1	4	--	--	--	--
S-1121	0+00	8+46	C	14	12	3	1	4	--	--	--	--
S-1121A	0+00	20+33	A	15	12	3	1	4	3	3	10	10
--	20+33	49+98	B	15	12	3	1	4	3	3	10	10
S-1121A2	0+00	5+16	C	14	12	3	1	4	3	3	10	10
S-1221	0+00	7+37	C	14	12	3	1	4	3	3	5	5
S-2070	52+27	67+49	C	--	12	3	1	4	3	3	5	5
S-2072B	0+00	14+76	C	--	12	3	1	4	3	3	5	5

ROCK LIST  
Page 1 of 3



1½-INCH MINUS CRUSHED

Road Number	Road Attributes	Optional Rock	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	Cubic Yard Per Station	# of Stations	Cubic Yard Subtotal	Rock Source	Turnout		
											Length (feet)	Width (feet)	Taper (feet)
					K1	B1				JAMES PIT	L	H	I
S-1000	--		0+00	64+29	1½:1	6	30	64.29	1929				
--	Turnouts		As directed by CA		1½:1	6	19	2.00	38		50	10	25
--	--		64+29	68+67	1½:1	6	30	4.38	131				
--	CW		66+64	68+67	1½:1	6	--	--	21				
--	Bedding/Backfill		67+16		--	--	--	--	35				
--	Bedding/Backfill		67+41		--	--	--	--	720				
--	--		68+67	125+78	1½:1	6	30	57.11	1713				
--	Turnouts		As directed by CA		1½:1	6	19	4.00	76		50	10	25
S-1100	--		0+00	24+35	1½:1	5	25	24.35	609				
--	TOR		13+51	14+51	1½:1	5	16	1.00	16		50	10	25
--	CW		Switchbacks		1½:1	5	--	--	81				
--	JCT		0+00		1½:1	--	--	--	25				
--	Bedding		38+98		--	--	--	--	5				
--	Backfill		38+98		--	--	--	--	50				
S-1121A	Bedding		2+91		--	--	--	--	6				

Key:

- Bedding - Culvert Bedding
- Backfill - Culvert Backfill
- CA - Contract Administrator
- CW - Curve Widening
- JCT - Road Junction
- TOR - Turnout Right

REQUIRED 1½-INCH MINUS CRUSHED TOTAL 5455 Cubic Yards

ROCK LIST

Page 2 of 3

3-INCH MINUS CRUSHED

Road Number	Road Attributes	*Optional Rock	From Station	To Station	Rock Slope	Compacted Rock Depth (inches)	Cubic Yard Per Station/Units	# of Stations or Units	Cubic Yard Subtotal	Rock Source	Turnout/Turnaround		
											Length (feet)	Width (feet)	Taper (feet)
					K1	B1				JAMES PIT	L	H	I
RS-1200	--		20+70	27+00	1½:1	6	30	6.30	189				
S-1002	--	*	0+00	13+45	1½:1	9	46	13.45	619				
--	TOR	*	7+84	8+84	1½:1	9	29	1.00	29		50	10	25
--	TA	*	12+01	12+31	1½:1	9	34	1.00	34		30	30	
--	LNDG-50'	*	13+45		1½:1	9	47	1.00	47				
S-1100	--		24+35	60+01	1½:1	12	63	35.66	2247				
--	Turnouts		As directed by CA		1½:1	12	39	2.00	78		50	10	25
S-1120	--		0+00	4+45	1½:1	9	46	4.45	205				
S-1121	--		0+00	8+46	1½:1	9	46	8.46	389				
S-1121A	--		0+00	20+33	1½:1	12	63	20.33	1281				
--	TOL		10+28	11+28	1½:1	12	39	1.00	39		50	10	25
--	TOL		18+92	19+92	1½:1	12	39	1.00	39		50	10	25
--	CW		--	--	1½:1	12	--	--	25				
--	JCT		0+00		1½:1	12	--	--	63				
--	JCT		0+01		1½:1	12	--	--	0		30	30	
--	--	*	20+33	49+98	1½:1	12	63	29.65	1868				
--	TOR	*	29+54	30+54	1½:1	12	39	1.00	39		50	10	25
--	TOR	*	36+02	37+02	1½:1	12	39	1.00	39		50	10	25
--	CW	*	Switchbacks		1½:1	12	--	--	139				
--	LNDG-60'	*	49+98		1½:1	12	95	1.00	95				
S-1121A2	--	*	0+00	5+16	1½:1	9	46	5.16	237				
--	TA	*	As directed by CA		1½:1	9	34	1.00	34		30	30	
--	LNDG-60'	*	5+16		1½:1	9	73	1.00	73				
S-1221	--	*	0+00	7+37	1½:1	9	46	7.37	339				
--	TA	*	As directed by CA		1½:1	9	34	1.00	34		30	30	
--	LNDG-70'	*	7+37		1½:1	9	104	1.00	104				
--	CW	*	0+00	2+00	1½:1	9	--	--	48				

Key:

- CA - Contract Administrator
- CW - Curve Widening
- JCT - Junction
- TA - Turnaround
- TOR - Turnout Right
- TOL - Turnout Left
- LNDG-50' - 50-Foot Diameter Landing
- LNDG-60' - 60-Foot Diameter Landing
- LNDG-70' - 70-Foot Diameter Landing

REQUIRED 3-INCH MINUS CRUSHED TOTAL 4555 Cubic Yards  
 OPTIONAL 3-INCH MINUS CRUSHED TOTAL 3870 Cubic Yards

ROCK LIST  
Page 3 of 3  
SELECT PIT RUN

Road Number	Road Attributes	Optional F	From Station	To Station	Rock Slope	Compacted	Cubic	# of	Cubic Yard	Rock Source	Turnout/Turnaround		
						Rock Depth (inches)	Yard Per Station/U	Stations or Units	Subtotal		Length (feet)	Width (feet)	Taper (feet)
					K2	B2				JAMES PIT	L	H	I
S-1000	--		64+29	68+67	1½:1	12	70	4.38	307				
--	CW		66+64	68+67	1½:1	12	--	--	41				
S-1100	--		0+00	24+35	1½:1	12	69	24.35	1680				
--	CW		Switchbacks		1½:1	12	--	--	192				
--	TOR		13+51	14+51	1½:1	12	42	1.00	42				
--	JCT		0+00		1½:1	12	--	--	69				

**Key:**

- CW - Curve Widening
- JCT - Junction
- TOR - Turnout Right

REQUIRED SELECT PIT RUN TOTAL 2331 Cubic Yards

ARMORING, ENERGY DISSIPATORS AND ENGINEERED FILL MATERIAL

Road Number	Description	Rock Type	C.Y. Total	Rock Source
All roads	Culvert armoring and energy dissipators	SELECT PIT RUN	21.5	JAMES PIT
S-1000	Backfill between stations 64+29 to 68+67	SELECT PIT RUN	1,050	
S-1000	Backfill between stations 64+29 to 68+67	HEAVY LOOSE RIP RAP	9,800	

REQUIRED SELECT PIT RUN TOTAL 1071.5 Cubic Yards  
REQUIRED HEAVY LOOSE RIP RAP TOTAL 9800 Cubic Yards

# CULVERT LIST

Page 1 of 1

Road Number	Location	Culvert			Armoring (Cubic Yards)			Backfill Material	Bedding Material	Culvert Marker (Y/N)	Remarks
		Dia. (inches)	Length (feet)	Type	Inlet	Outlet	Type				
RS-1001	0+00	18	50	XX	--	--	--	NT	NT	N	
S-1000	62+50	18	40	PD	0.5	0.5	SPR	NT	NT	N	
	67+16	24	50	PD	--	--	--	CR/HL	CR	N	Overflow Pipe
	67+41	96	100	GM	--	--	--	CR/HL	CR	N	Type Np x-ing
	68+50	18	30	PD	0.5	--	SPR	NT	NT	N	
	68+50	18	30	PSDS	--	--	--	--	--	N	
S-1002	4+72	18	40	XX	0.5	0.5	SPR	NT	NT	N	
	6+66	18	40	XX	0.5	0.5	SPR	NT	NT	N	
S-1100	0+00	18	30	PD	0.5	--	SPR	NT	NT	N	
	0+00	18	30	PSDS	--	--	--	--	--	N	
	14+46	18	40	PD	0.5	0.5	SPR	NT	NT	N	
	25+05	18	30	PD	0.5	--	SPR	NT	NT	N	
	25+05	18	20	PSDS	--	--	--	--	--	N	
	38+98	24	30	PD	2.0	--	SPR	CR	CR	N	Type Np x-ing
	38+98	24	30	PSDS	--	--	--	--	--	N	
S-1121	1+00	18	30	PD	0.5	0.5	SPR	NT	NT	N	
	7+70	18	30	PD	0.5	0.5	SPR	NT	NT	N	
S-1121A	2+91	24	50	PD	2.0	4.0	SPR	NT	CR	N	Type Ns x-ing
	12+82	18	40	PD	0.5	0.5	SPR	NT	NT	N	
	17+95	18	30	PD	0.5	0.5	SPR	NT	NT	N	
	20+33	18	30	PD	0.5	0.5	SPR	NT	NT	N	
	31+20	18	30	PD	0.5	0.5	SPR	NT	NT	N	
	41+72	18	40	PD	0.5	0.5	SPR	NT	NT	N	
	45+01	18	40	PD	0.5	0.5	SPR	NT	NT	N	
S-1221	1+07	18	50	XX	--	--	--	NT	NT	N	
S-2070	56+94	18	40	XX	--	--	--	NT	NT		
S-2072B	6+50	18	30	XX	--	--	--	NT	NT		
	13+59	18	30	XX	--	--	--	NT	NT		

**Key:**

- CR - Crushed Rock
- NT - Native (bank run)
- SPR - Select Pit Run
- HL - Heavy Loose Riprap
- GM - Galvanized Metal
- PD - Polyethylene Pipe Dual Wall
- XX - PD or GM
- PSDS - Polyethylene Pipe Single Wall Full Round Pipe

COMPACTION LIST

Page 1 of 1

<u>Road</u>	<u>Type</u>	<u>Max Depth Per Lift (inches)</u>	<u>Equipment Type</u>	<u>Equipment Weight (lbs)</u>	<u>Minimum Number of Passes</u>	<u>Maximum Operating Speed (mph)</u>	<u>Maximum Amount of Deflection</u>
All	Existing Road Surface	--	Vibratory Smooth Drum	20000	4	3	1
All	Subgrade Surface	--	Vibratory Smooth Drum	20000	4	3	1
All	Embankment/Fill	12	Vibratory Smooth Drum	20000	4	3	1
All	Surfacing (1½-INCH MINUS CRUSHED)	6	Vibratory Smooth Drum	20000	4	3	1
All	Ballast (3-INCH MINUS CRUSHED)	12	Vibratory Smooth Drum	20000	4	3	2
All	Ballast (SELECT PIT RUN)	12	Excavation	28000	--	--	4
All	Waste Areas	24	Excavation	28000	--	--	4
All	Culvert Bedding/Backfill	6	Vibratory Plate Compactor	260	--	--	1
S-1000 Road Repair	Culvert Bedding/Backfill at 67+41	6	Vibratory Smooth Drum	14000	4	3	1
S-1000 Road Repair	Excavated surface	--	Vibratory Smooth Drum	20000	4	3	1
S-1000 Road Repair	Key embankment surface	--	Vibratory Plate Compactor	260	--	--	1
S-1000 Road Repair	Backfill (SELECT PIT RUN)	12	Excavation	28000	--	--	4

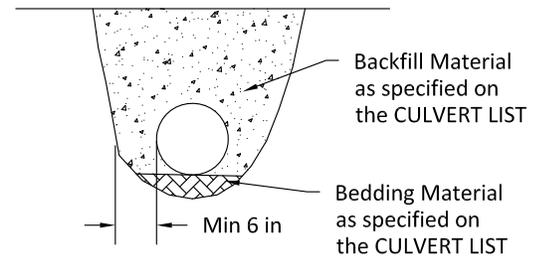
**CULVERT AND DRAINAGE SPECIFICATION DETAIL**  
PAGE 1 OF 2

**INSTALLATION REQUIREMENTS:**

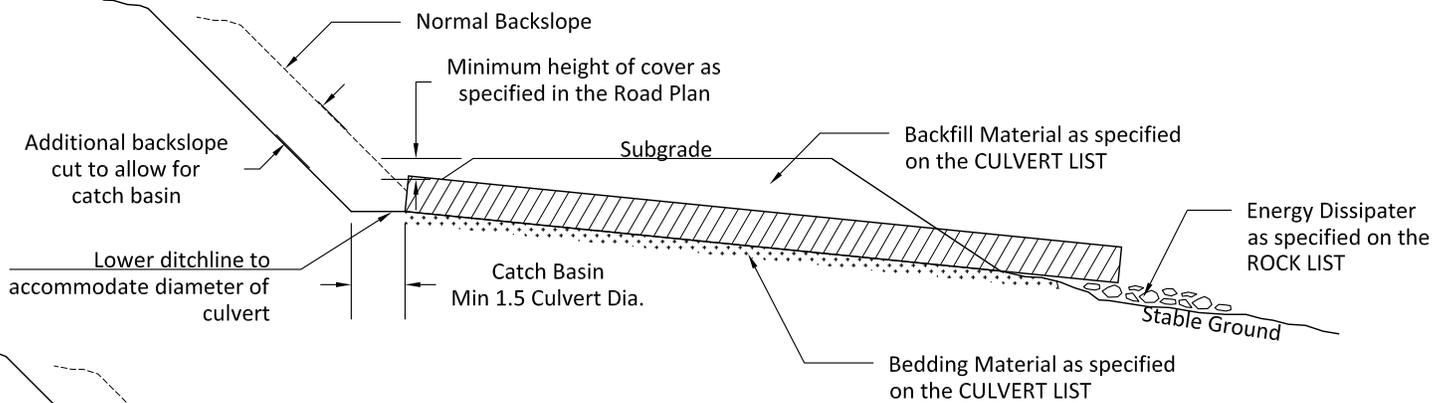
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly supported along the barrel.
2. Backfill material shall be compacted under the culvert haunches, around the sides, and above the culvert in accordance with the COMPACTION LIST.

ALL DRAWINGS ARE NOT TO SCALE

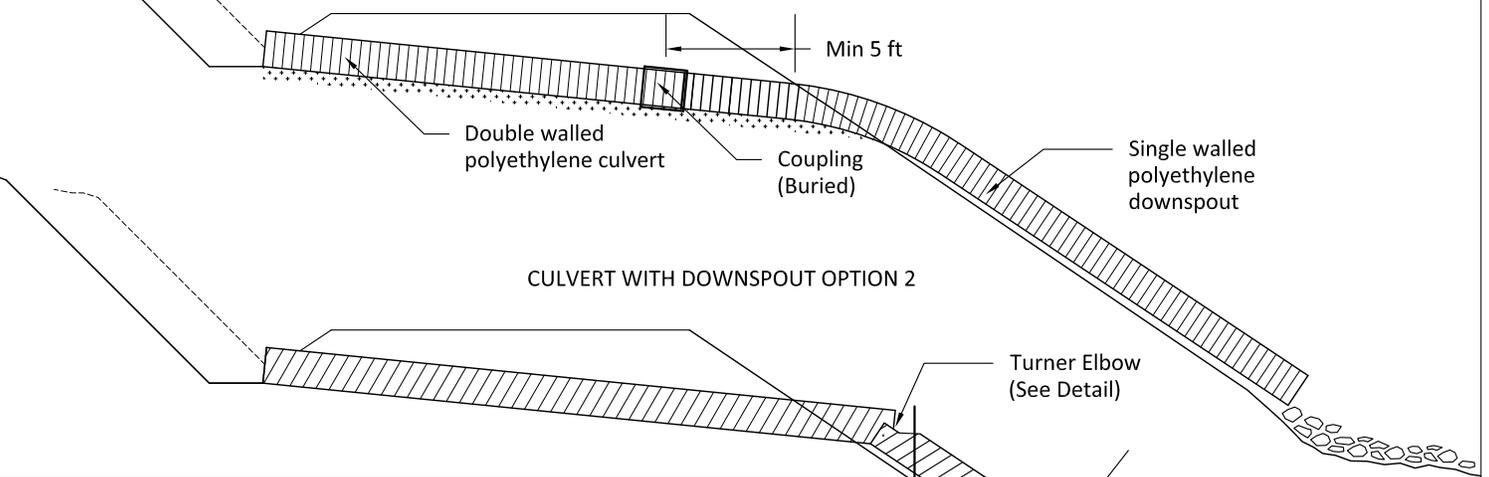
**CROSS SECTION**



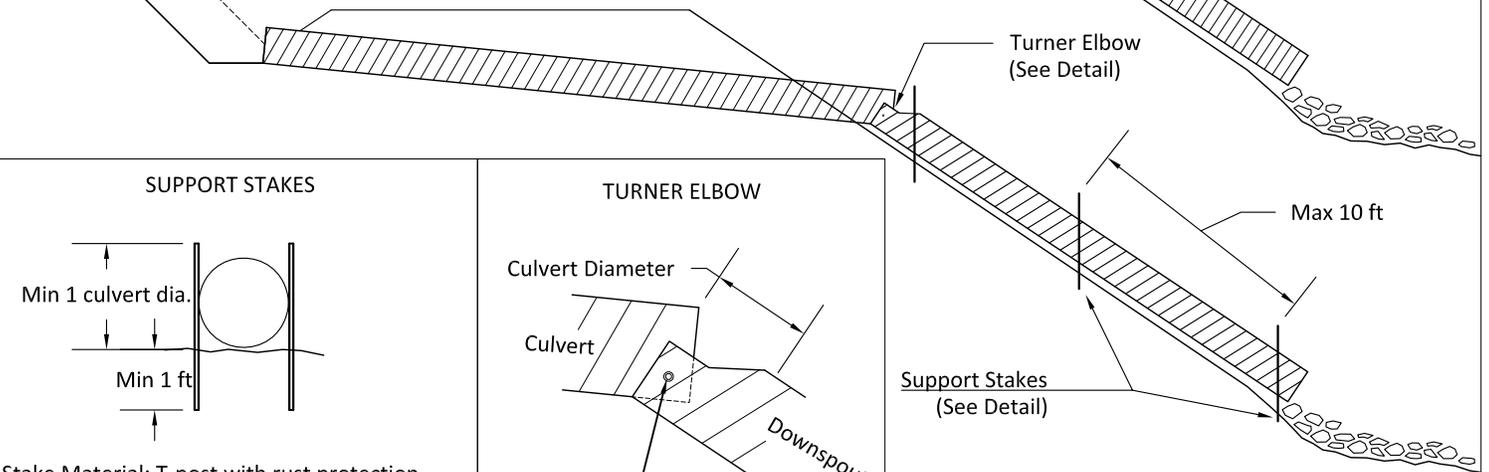
**CULVERT PROFILE (TYPICAL)**



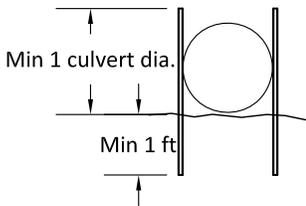
**CULVERT WITH DOWNSPOUT OPTION 1**



**CULVERT WITH DOWNSPOUT OPTION 2**

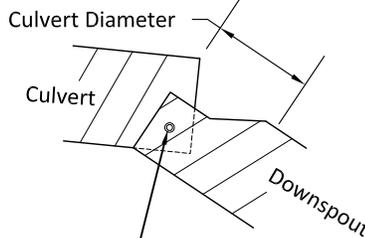


**SUPPORT STAKES**



Stake Material: T-post with rust protection coating.  
Connections: Bolt support stakes to the culvert with  $\frac{5}{8}$ " u-bolts, with washers on both the inside and outside of the culvert.  
Alternative staking methods may be approved, in writing, by the Contract Administrator.

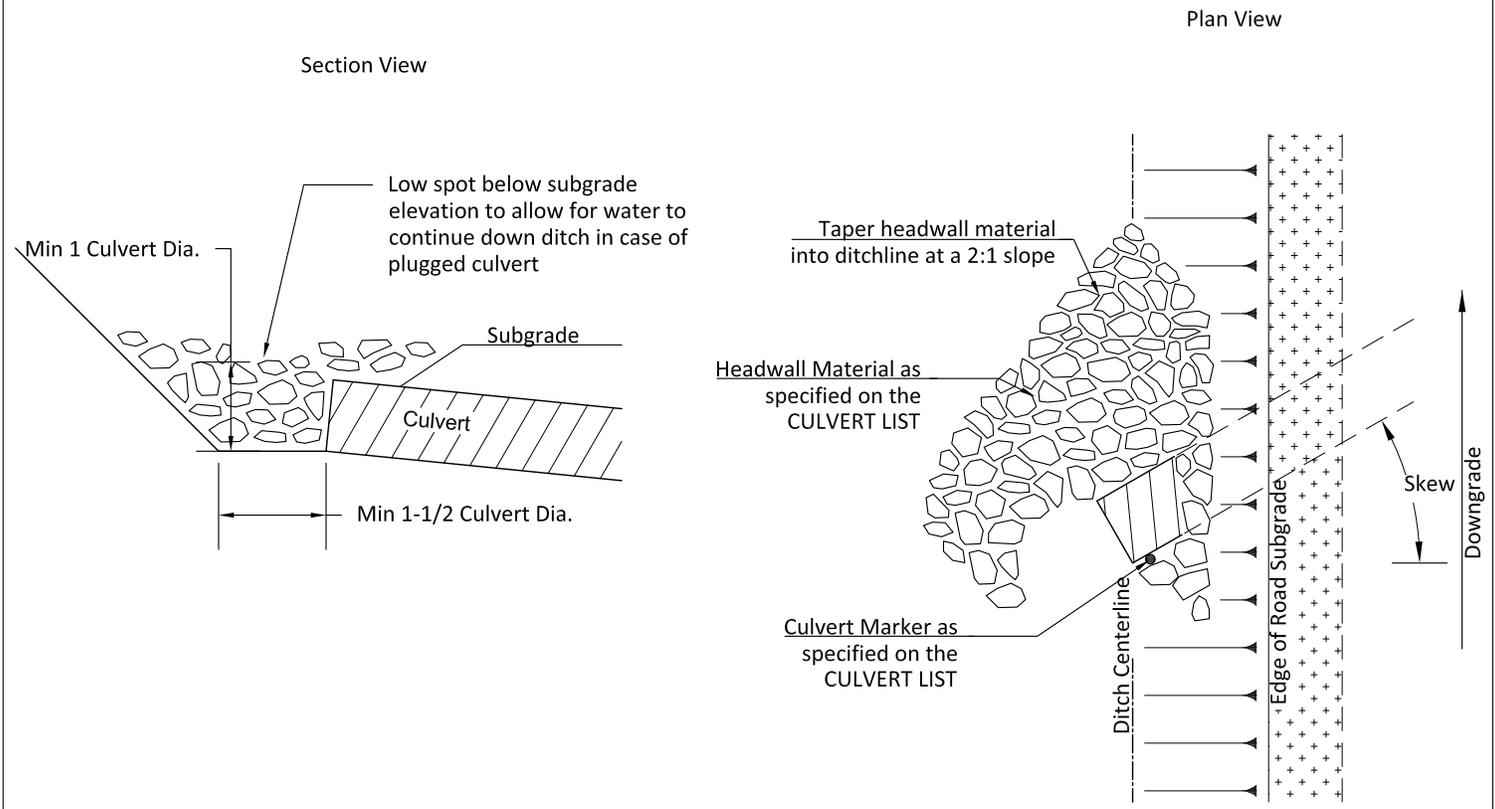
**TURNER ELBOW**



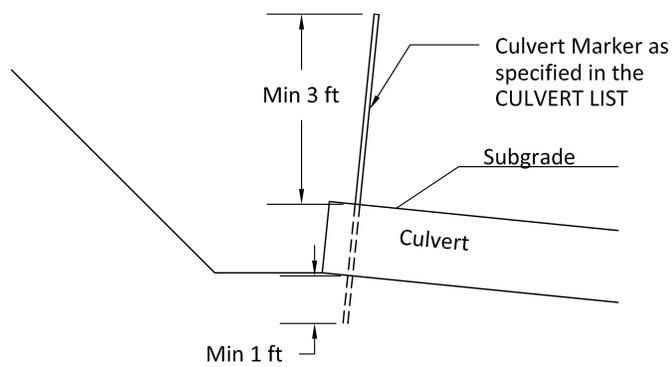
Bolted with  $\frac{5}{8}$ " galvanized bolts and washers (both sides)  
Downspout must be 6 inches larger in diameter than the culvert.

**CULVERT AND DRAINAGE SPECIFICATION DETAIL**  
**PAGE 2 OF 2**

**HEADWALLS**

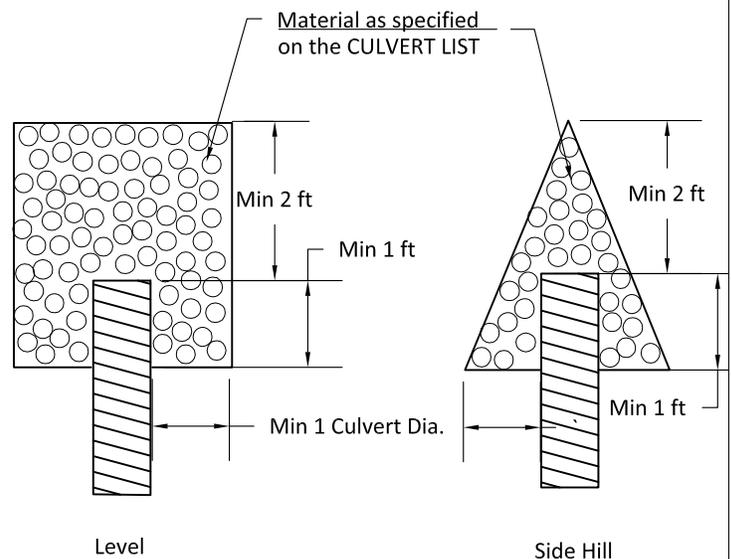


**CULVERT MARKERS**



Culvert Marker Material: 1 Inch I.D., Schedule 40 PVC Pipe, White. Marker must be capped on the top.  
 Culvert Marker Placement: Place on uphill side of culvert, between corrugations if possible.  
 Alternative culvert marker types may be approved, in writing, by the Contract Administrator.

**ENERGY DISSIPATORS**



Min Energy Dissipater Depth: 1 Culvert Dia.

**Cuts and Fills**

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

**Surface**

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

**Drainage**

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

**Preventative Maintenance**

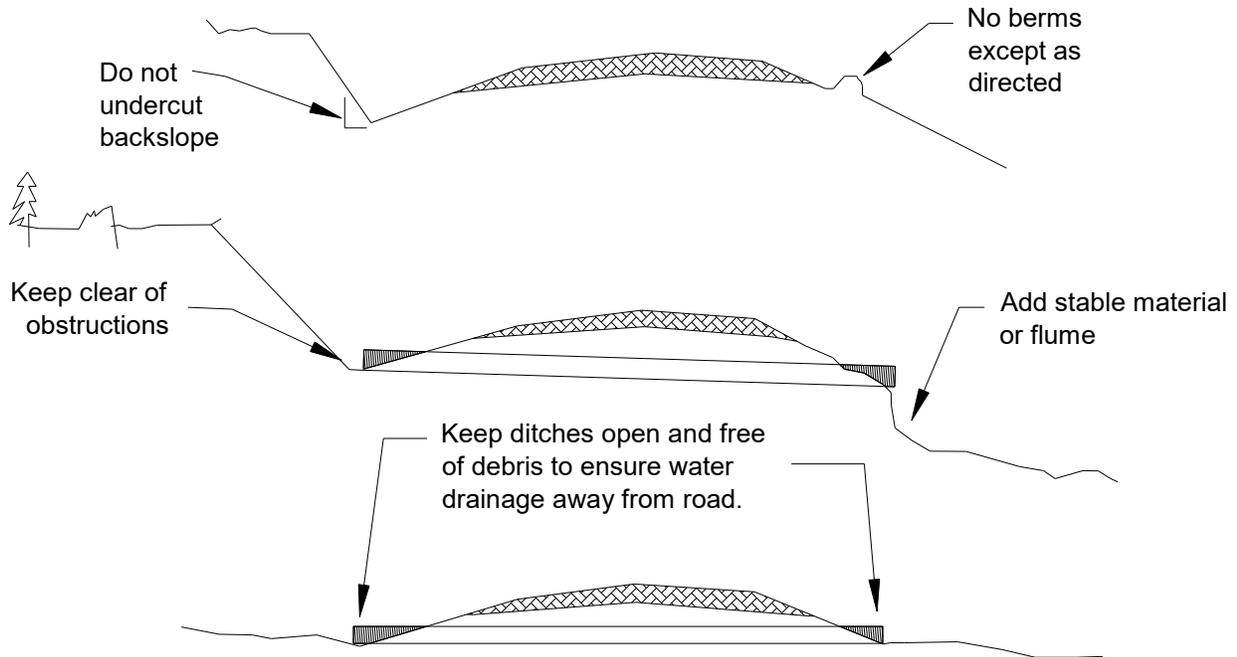
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

**Termination of Use or End of Season**

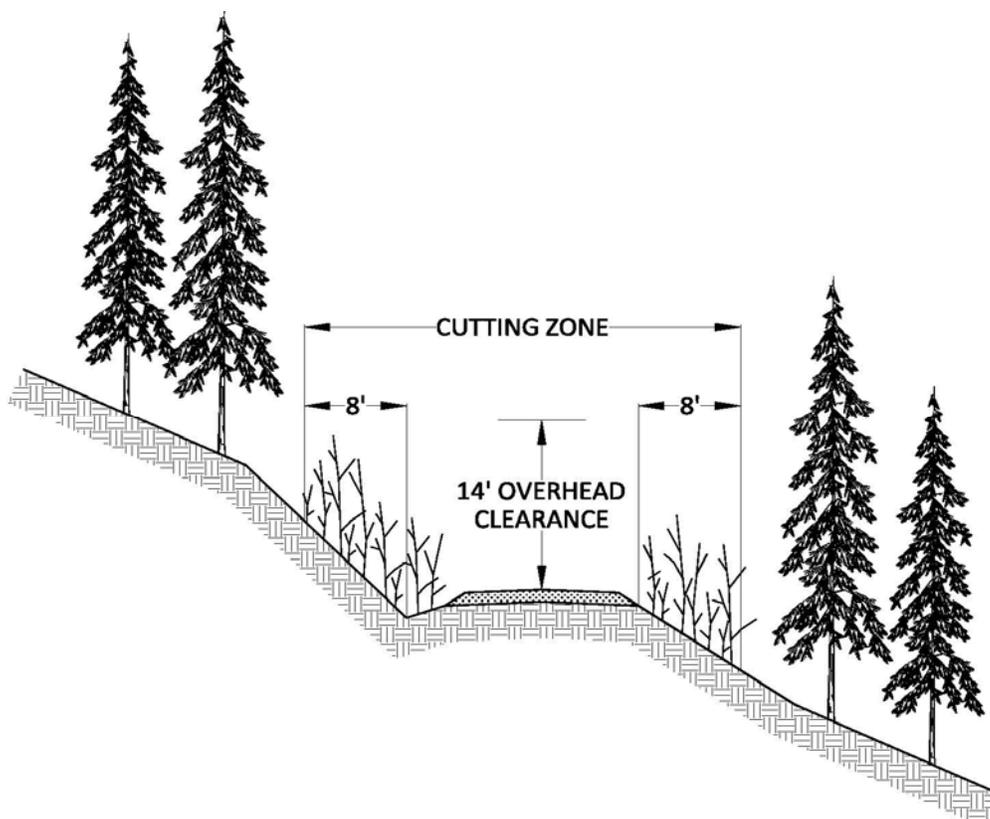
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

**Debris**

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



## 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 of running surface.

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 and road surfaces shall be cleared of woody debris.

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

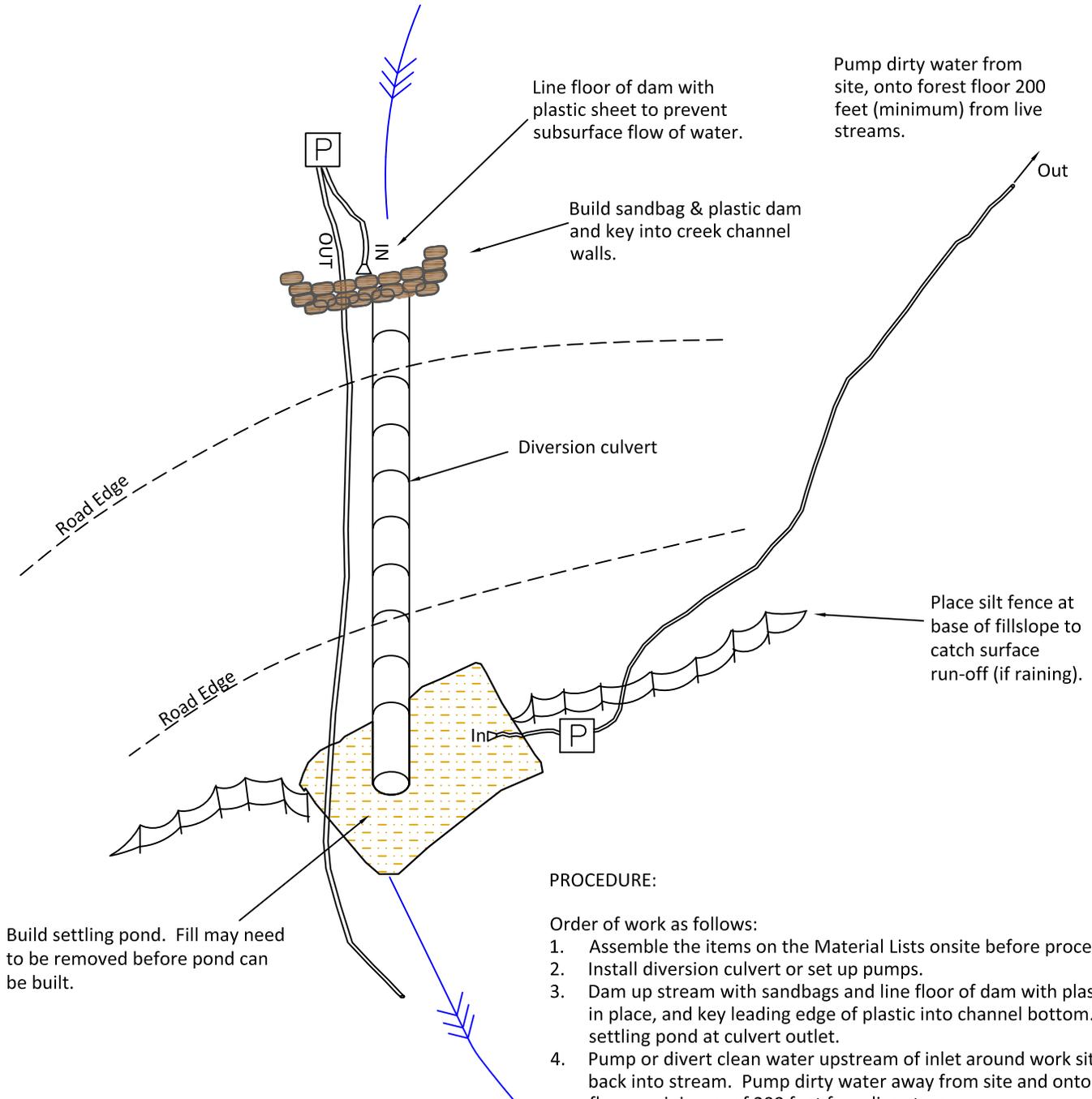
## STREAM DIVERSION PROCEDURE

For culvert installation or removal in live waters, sites shall be dewatered within the area of direct influence of the stream. Stream culvert installations or removals will occur as follows, any deviations shall be approved, in writing, by the Contract Administrator.

1. Prior to any work within the high waterline, Purchaser shall contact the Contract Administrator for an on-site pre-work to submit a plan for pumping and/or diverting all stream flow around the work area and pumping and/or diverting any groundwater flow from out of the work area, as approved, in writing, by the Contract Administrator. The SETTLING POND AND PUMP DETAIL, included herein, is an example of a pre-approved dewatering plan.
2. Once the stream has been pumped and/or diverted, stream flow shall not be allowed through the work area until all work below the ordinary high water line has been completed and approved, in writing, by the Contract Administrator.
3. Sedimentation shall be avoided during culvert installation or removal in accordance with Road Plan Clause 1-29 SEDIMENT RESTRICTION.
4. Per Road Plan Clause 8-1 SEDIMENT CONTROL STRUCTURES, Purchaser shall install silt fences or other suitable sediment control methods as approved by the Contract Administrator.
5. Backfill any settling ponds and remove any diversion culverts.
6. Maintain a clean jobsite in accordance with Road Plan Clause 7-5 STRUCTURE DEBRIS.

# SETTLING POND AND PUMP DETAIL

NOT TO SCALE



Line floor of dam with plastic sheet to prevent subsurface flow of water.

Build sandbag & plastic dam and key into creek channel walls.

Diversion culvert

Pump dirty water from site, onto forest floor 200 feet (minimum) from live streams.

Place silt fence at base of fillslope to catch surface run-off (if raining).

Build settling pond. Fill may need to be removed before pond can be built.

### PROCEDURE:

Order of work as follows:

1. Assemble the items on the Material Lists onsite before proceeding.
2. Install diversion culvert or set up pumps.
3. Dam up stream with sandbags and line floor of dam with plastic to hold in place, and key leading edge of plastic into channel bottom. Build a settling pond at culvert outlet.
4. Pump or divert clean water upstream of inlet around work site and back into stream. Pump dirty water away from site and onto forest floor a minimum of 200 feet from live streams.
5. Install/remove stream crossing structure.
6. Backfill any settling ponds.
7. Cover exposed soils in accordance with Section 8 EROSION CONTROL as stated within Road Plan.

### Material Lists:

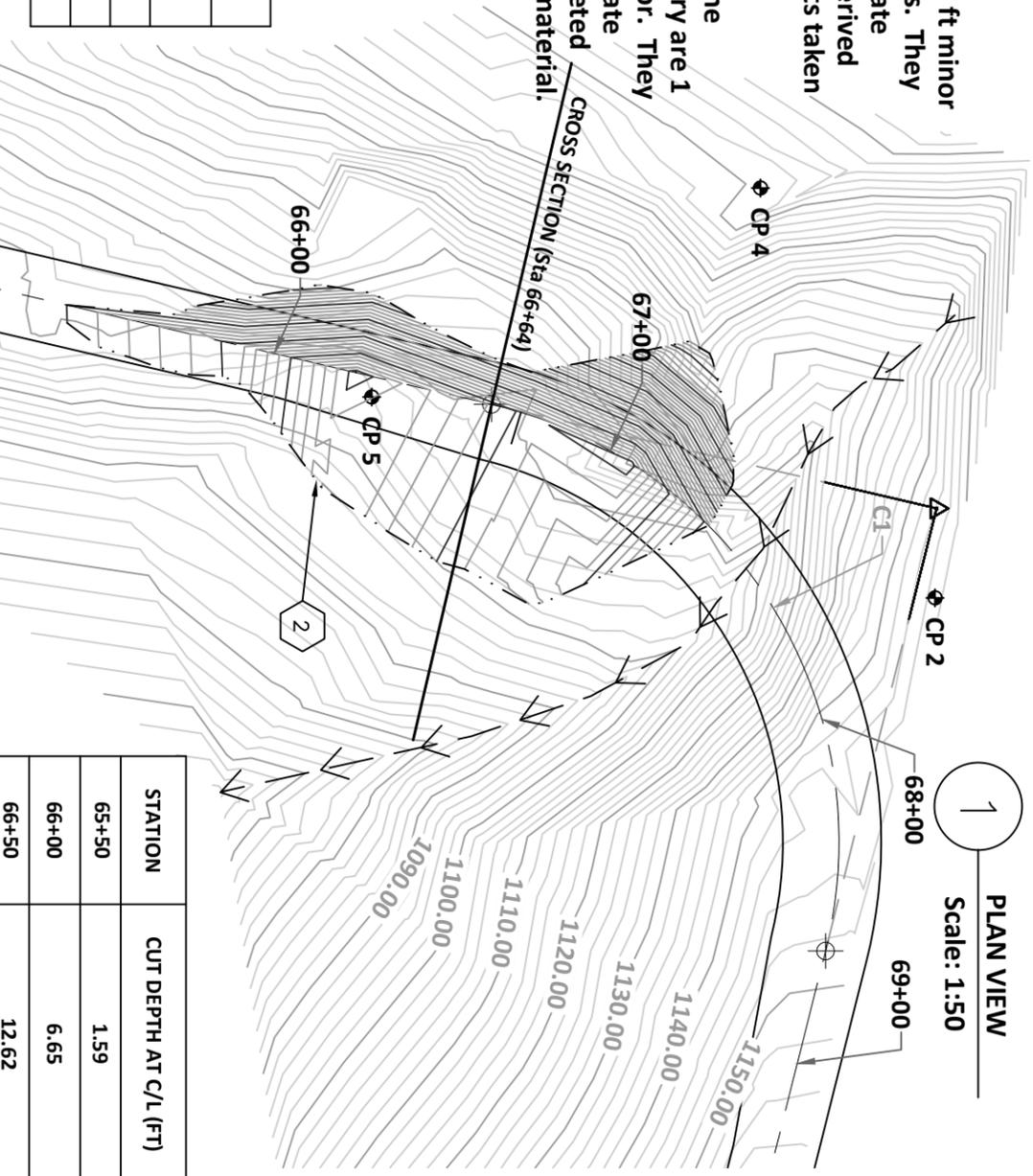
- 3 pumps, (one as a backup). The clean water pump (dam at culvert catch basin) shall have a minimum capacity of 1200 gallons per minute (gpm). The dirty water pump (settling pond) and the backup pump shall each have a minimum capacity of 600 gpm.
- Silt fence and stakes
- Plastic sheets
- Grass seed and bales of straw.

Legend

Pump P

**GENERAL NOTES:**

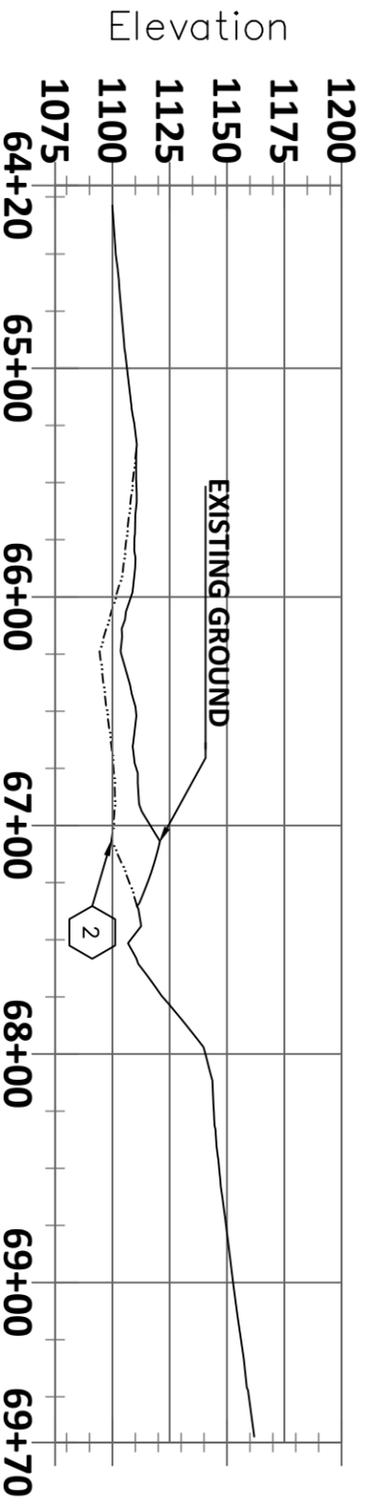
1. Contours shown are 2 ft minor and 10 ft major contours. They represent the approximate EXISTING topography derived from field measurements taken in January of 2019.
2. Contours shown for the excavation area boundary are 1 ft minor and 5 foot major. They represent the approximate topography for a completed excavation of unstable material.



**1 PLAN VIEW**  
Scale: 1:50

CONTROL POINT ELEVATIONS	
LABEL	ELEV. (FT)
CP 2	1150.00
CP 4	1163.54
CP 5	1103.61

STATION	CUT DEPTH AT C/L (FT)
65+50	1.59
66+00	6.65
66+50	12.62
67+00	16.17



**2 PROFILE VIEW**  
Scale: 1:80

**CONSTRUCTION NOTES:**

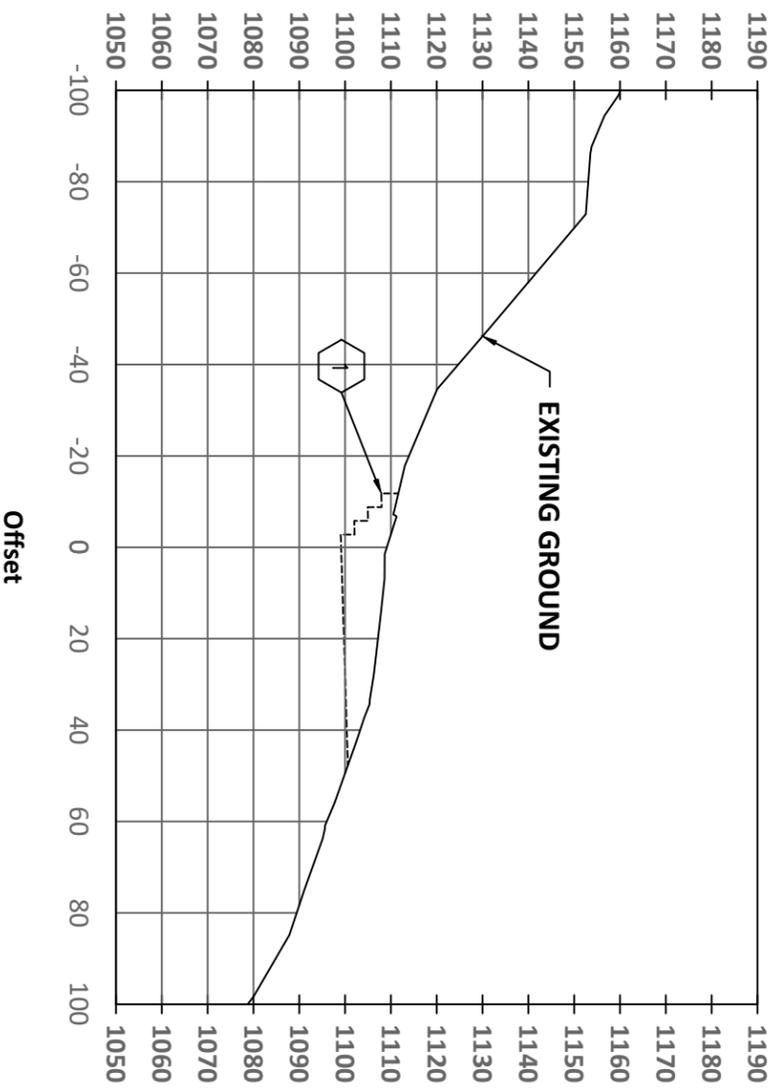
- 1 EXCAVATE KEY EMBANKMENT. (SEE KEY EMBANKMENT DETAIL PAGE 5 OF S-1000 ROAD REPAIR)
- 2 EXCAVATE AND END HAUL UNSTABLE MATERIAL. PURCHASER SHALL OBTAIN WRITTEN APPROVAL OF EXCAVATION PRIOR TO BACKFILL APPLICATION.



**LEGEND**

- Road edges
- Road Centerline
- Approx. Excavation
- Type NP Water

**3 CROSS SECTION (Sta 66+64)**  
Scale: 1:40



DESIGN BY: Scott Hanna/T. Szymoniak  
DRAWN BY: Scott Hanna/Alicia Compton  
CHECKED BY: Brett Freeman  
DATE: 12/17/2019

**S-1000 ROAD REPAIR**

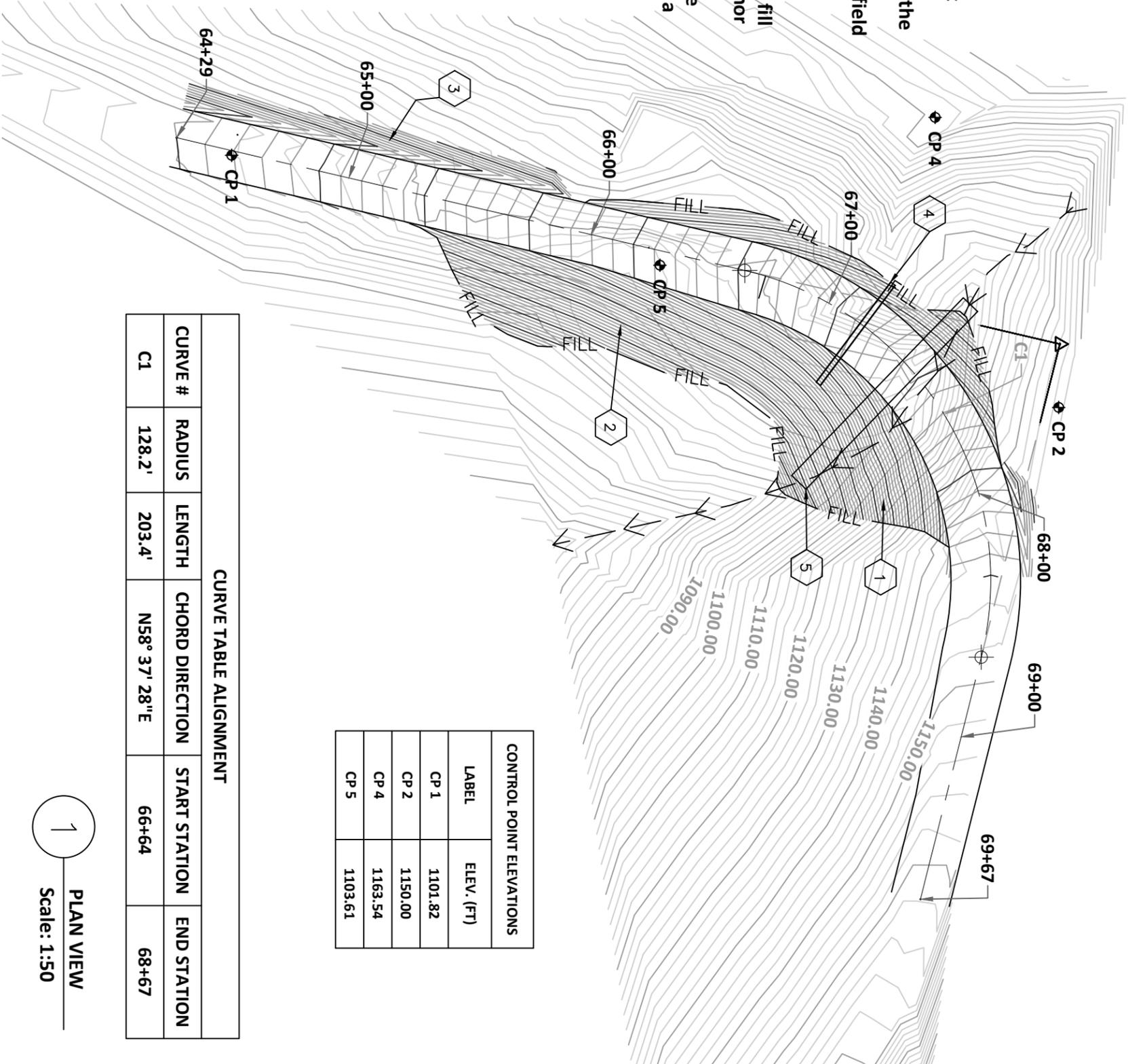
**EXCAVATION PLAN**

SHEET 1 OF 5

**GENERAL NOTES:**

1. Contours shown are 2 ft minor and 10 ft major contours. They represent the approximate EXISTING topography derived from field measurements taken in January of 2019.

2. Contours shown for the fill area boundary are 1 ft minor and 5 foot major. They represent the approximate DESIGNED topography for a key embankment rock fill.



CONTROL POINT ELEVATIONS	
LABEL	ELEV. (FT)
CP 1	1101.82
CP 2	1150.00
CP 4	1163.54
CP 5	1103.61

CURVE TABLE ALIGNMENT					
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	START STATION	END STATION
C1	128.2'	203.4'	N58° 37' 28"E	66+64	68+67

1 PLAN VIEW  
Scale: 1:50

**CONSTRUCTION NOTES:**

- 1 HEAVY LOOSE RIP RAP KEY EMBANKMENT FILL. (SEE KEY EMBANKMENT DETAIL PAGE 5 OF S-1000 ROAD REPAIR)
- 2 CONSTRUCTED FILL SLOPES SHALL BE NO STEEPER THAN 1½(H) :1(V).
- 3 DITCH EXCAVATION AND END HAUL MATERIAL IN ACCORDANCE WITH ROAD PLAN CLAUSES.
- 4 24" x 50' CORRUGATED PLASTIC CULVERT
- 5 96" x 100' CORRUGATED STEEL CULVERT

**LEGEND**

- Toe of Rock Fill
- Road edges
- Road Centerline
- Type NP Water
- Culverts

DESIGN BY: Scott Hanna/T. Szymoniak  
DRAWN BY: Scott Hanna/Alicia Compton  
CHECKED BY: Brett Freeman  
DATE: 12/17/2019

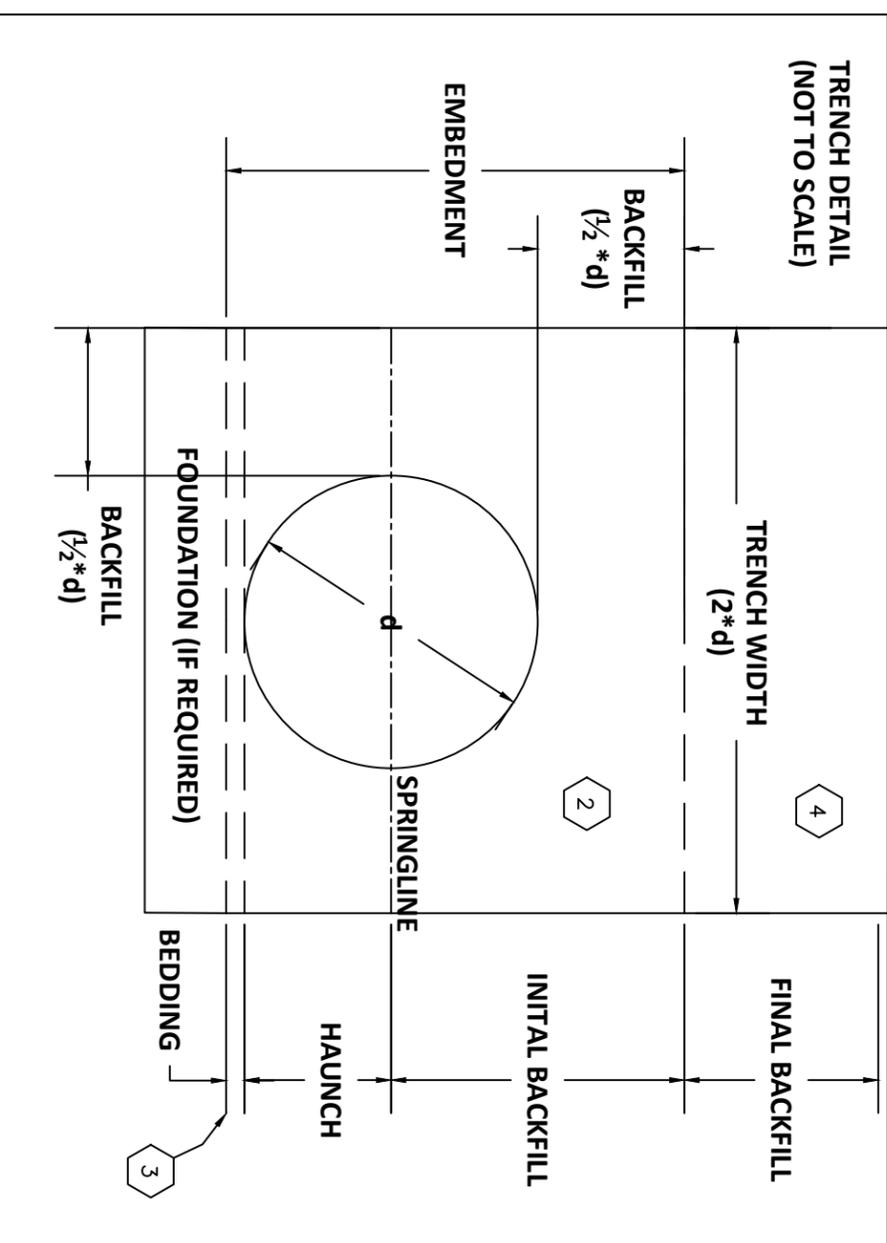
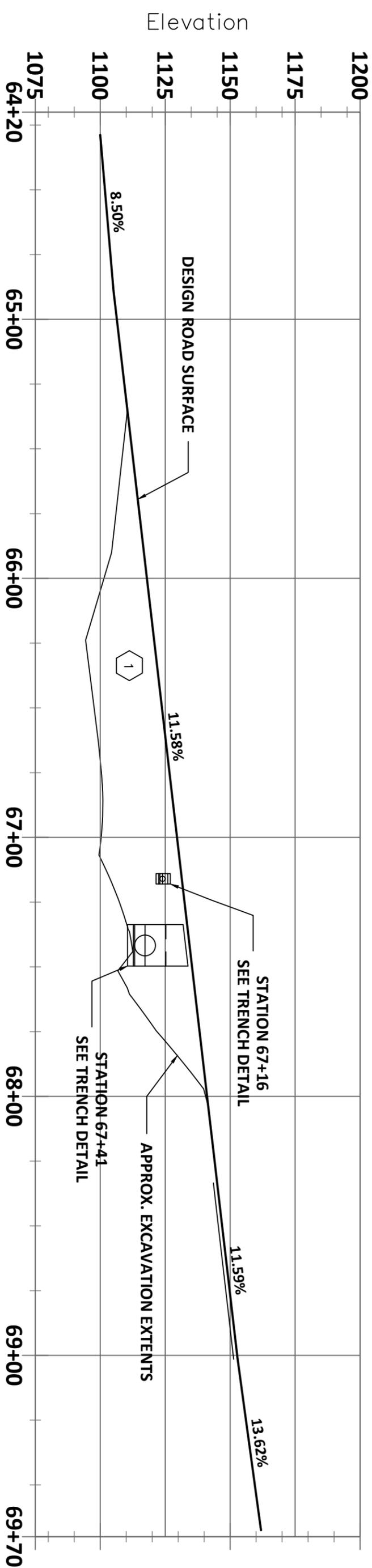
**S-1000 ROAD REPAIR**

**DESIGN PLAN**

SHEET 2 OF 5

PROFILE - CENTERLINE OF ROAD  
LOOKING UPSTREAM

1 PROFILE VIEW  
Scale: 1:40



STATION	FILL DEPTH AT C/L (FT)
65+50	3.34
66+00	16.53
66+50	26.15
67+00	29.18
67+50	27.15

CULVERT TABLE			
STATION	CULVERT SIZE	CULVERT TYPE	BEDDING DEPTH
67+16	24" X 50'	PLASTIC	6 INCHES
67+41	96" X 100'	STEEL	6 INCHES

- CONSTRUCTION NOTES:**
- 1 HEAVY LOOSE RIP RAP KEY EMBANKMENT FILL. (SEE KEY EMBANKMENT DETAIL PAGE 5 OF S-1000 ROAD REPAIR).
  - 2 1½-INCH MINUS CRUSHED FOR CULVERT BACKFILL (SEE TRENCH DETAIL)
  - 3 1½-INCH MINUS CRUSHED FOR CULVERT BEDDING (SEE CULVERT TABLE FOR DEPTH REQUIREMENTS)
  - 4 FINAL BACKFILL MATERIAL FOR STATION 67+16 WILL CONSIST OF SELECT PIT RUN, THEN 6-INCHES OF 1 ½-INCH MINUS CRUSHED FOR SURFACING.
- FINAL BACKFILL MATERIAL FOR STATION 67+41 WILL CONSIST OF HEAVY LOOSE RIP RAP, THEN 1-FOOT OF SELECT PIT RUN FOR ROAD BALLAST, AND 6-INCHES OF 1½-INCH MINUS CRUSHED FOR SURFACING.

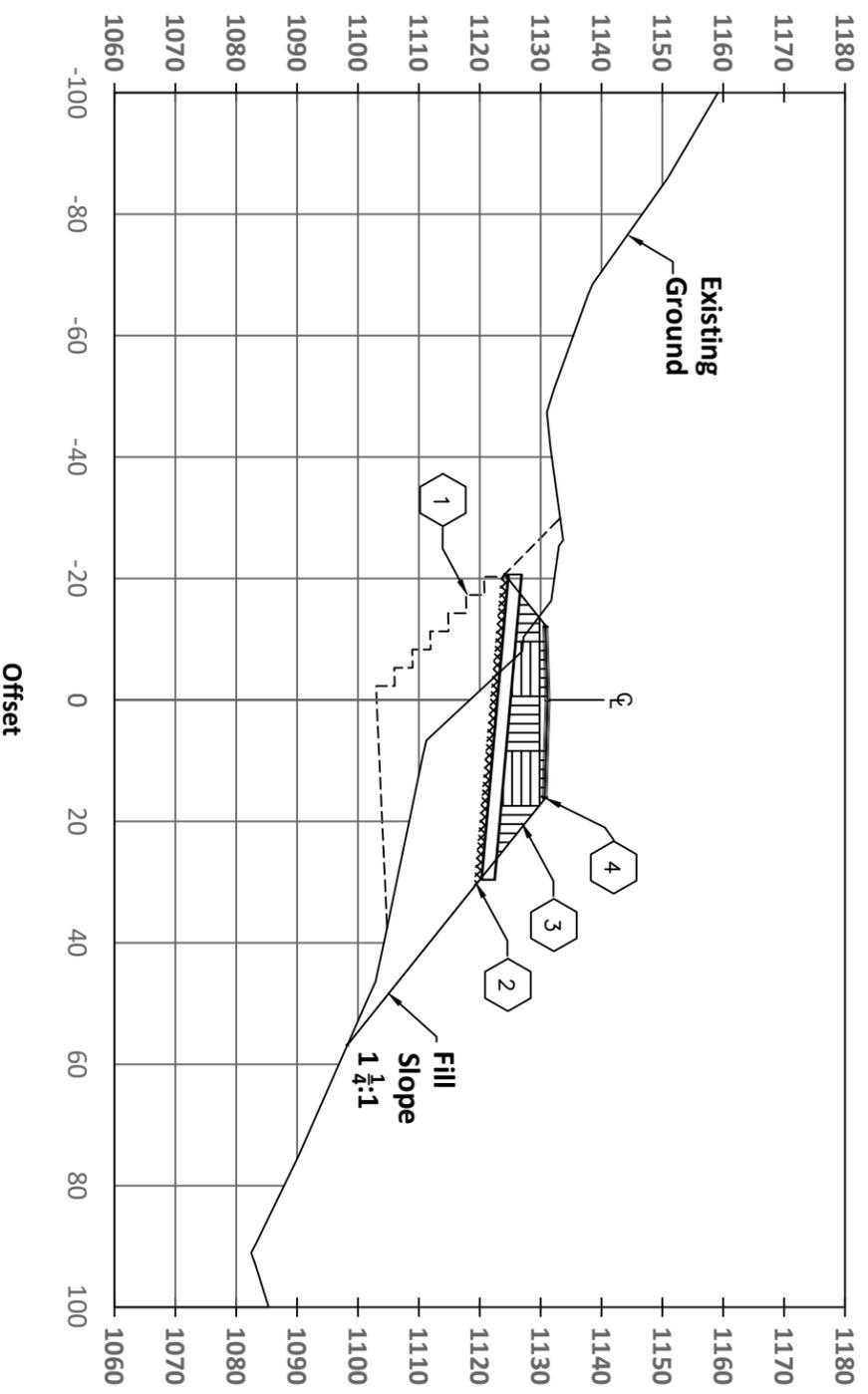
DESIGN BY: S. Hanna/T. Szymoniak  
DRAWN BY: S. Hanna/Alicia Compton  
CHECKED BY: Brett Freeman  
DATE: 12/17/2019

S-1000 ROAD REPAIR

DESIGN PROFILE

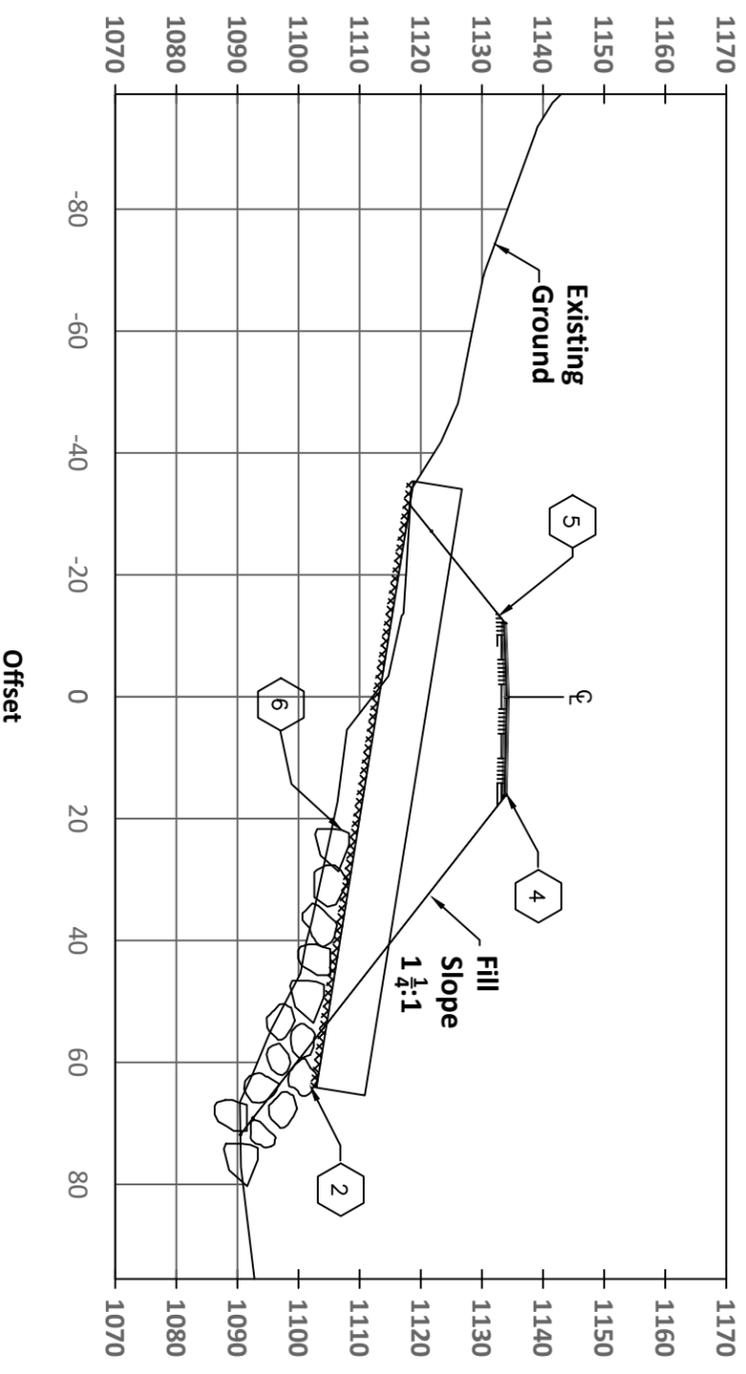
SHEET 3 OF 5

1 SECTION 67+16  
Scale: 1:30



CULVERT TABLE					
STATION	CULVERT SIZE	CULVERT TYPE	CULVERT SLOPE	INLET INVERT ELEVATION	OUTLET INVERT ELEVATION
67+16	24" X 50'	PLASTIC	-8.8%	1124.8'	1120.4'
67+41	96" X 100'	STEEL	-16.0%	1119.1'	1103.2'

2 SECTION 67+41  
Scale: 1:30



**CONSTRUCTION NOTES:**

- 1 HEAVY LOOSE RIP RAP KEY EMBANKMENT FILL. (SEE KEY EMBANKMENT DETAIL PAGE 5 OF S-1000 ROAD REPAIR).
- 2 6-INCH LIFT OF 1 1/2"-INCH MINUS CRUSHED FOR CULVERT BEDDING. (SEE TRENCH DETAIL ON PAGE 3 OF S-1000 ROAD REPAIR)
- 3 SELECT PIT RUN.
- 4 6-INCH LIFT OF 1 1/2"-INCH MINUS CRUSHED GRAVEL SURFACE.
- 5 12-INCH LIFT OF SELECT PIT RUN.
- 6 HEAVY LOOSE RIP RAP.

DESIGN BY: Scott Hanna/T. Szymoniak  
DRAWN BY: Scott Hanna/Alicia Compton  
CHECKED BY: Brett Freeman

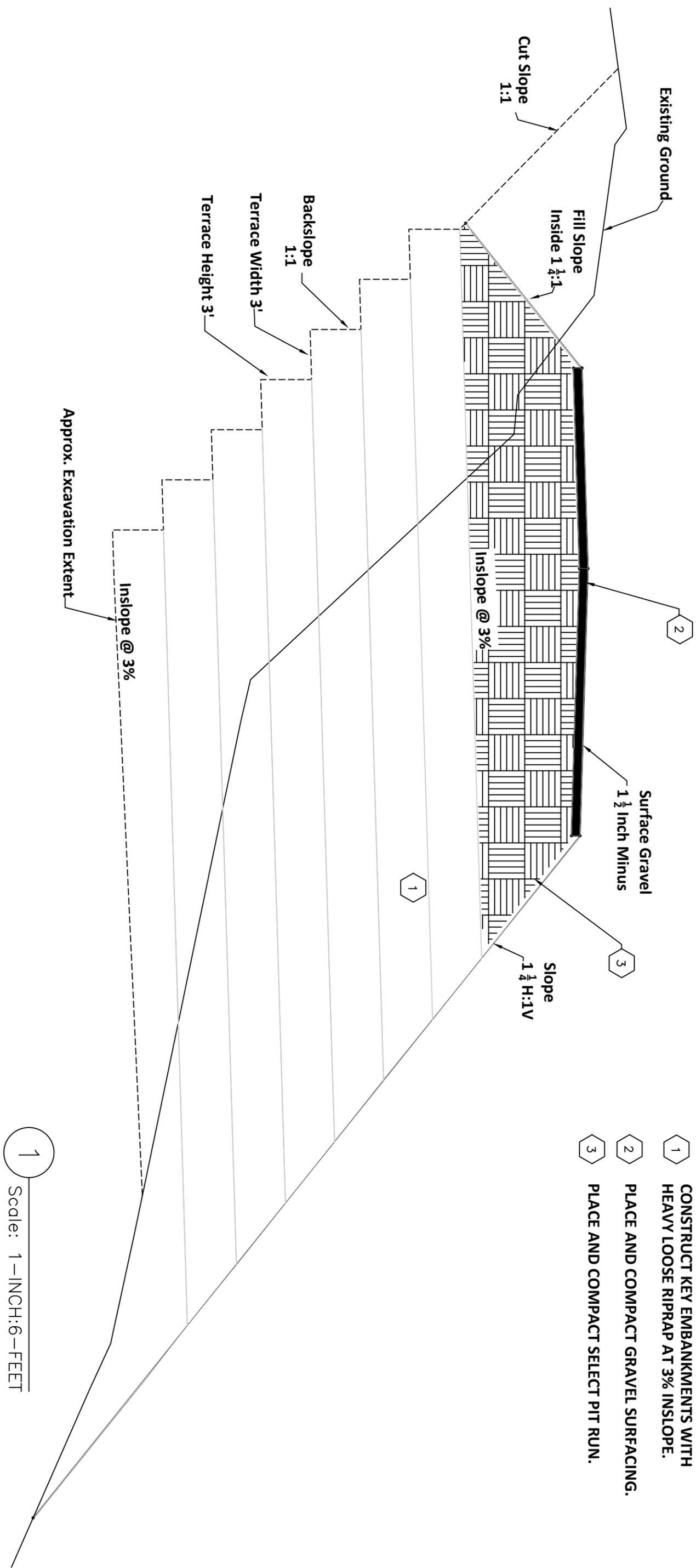
DATE: 12/17/2019

S-1000 ROAD REPAIR

CULVERT CROSS SECTIONS

SHEET  
4  
OF  
5

- CONSTRUCTION NOTES:**
- ① CONSTRUCT KEY EMBANKMENTS WITH HEAVY LOOSE RIPRAP AT 3% INSLOPE.
  - ② PLACE AND COMPACT GRAVEL SURFACING.
  - ③ PLACE AND COMPACT SELECT PIT RUN.



① Scale: 1-INCH:6- FEET

DESIGN BY: Scott Hanna/T. Szymoniak  
 DRAWN BY: Scott Hanna/Alicia Compton  
 CHECKED BY: Brett Freeman  
 DATE: 12/17/2019

**S-1000 ROAD REPAIR**

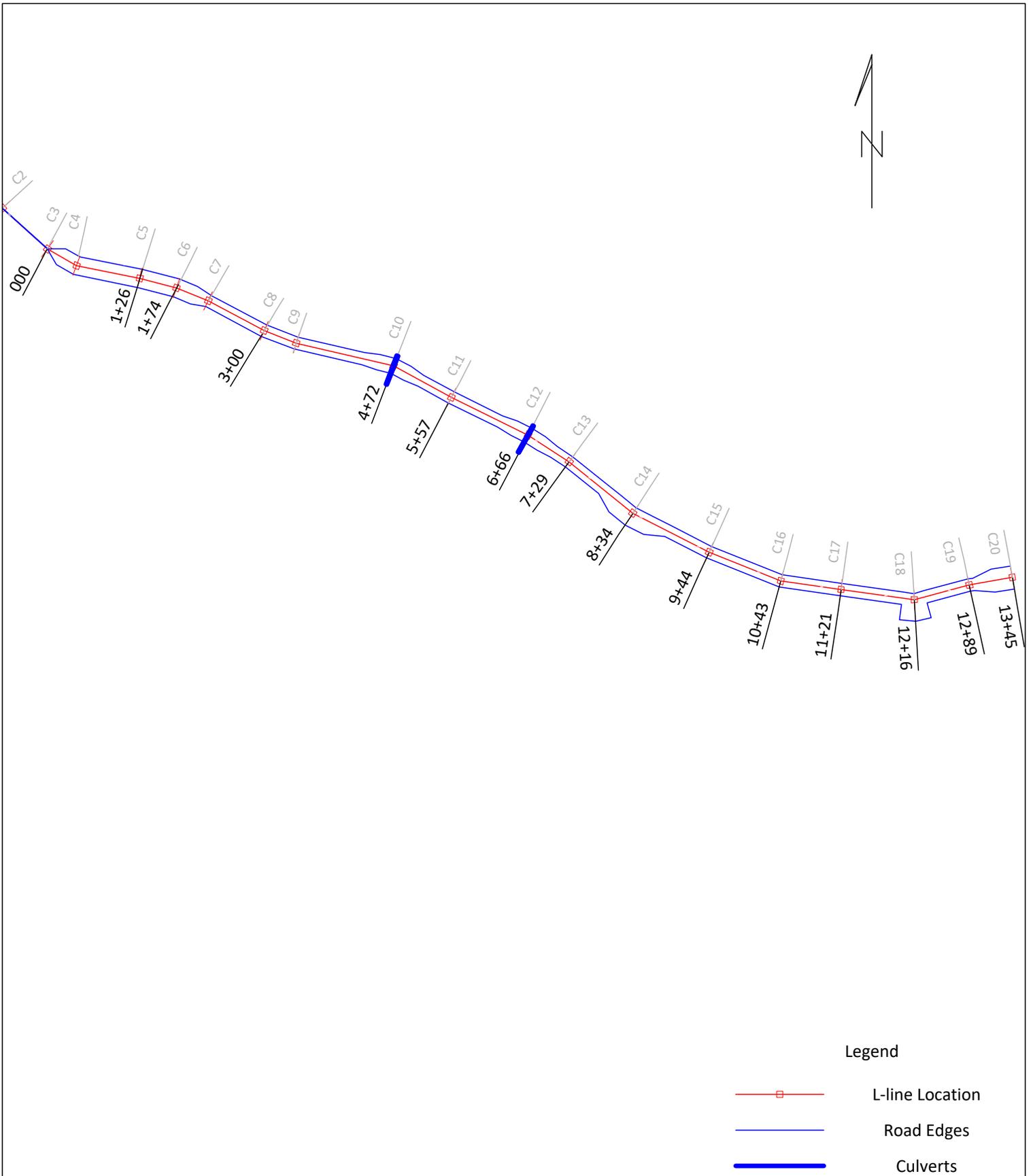
**KEY EMBANKMENT DETAIL**

SHEET  
5  
OF  
5

S-1002 CONSTRUCTION DETAIL

Page 1 of 5

PLAN VIEW

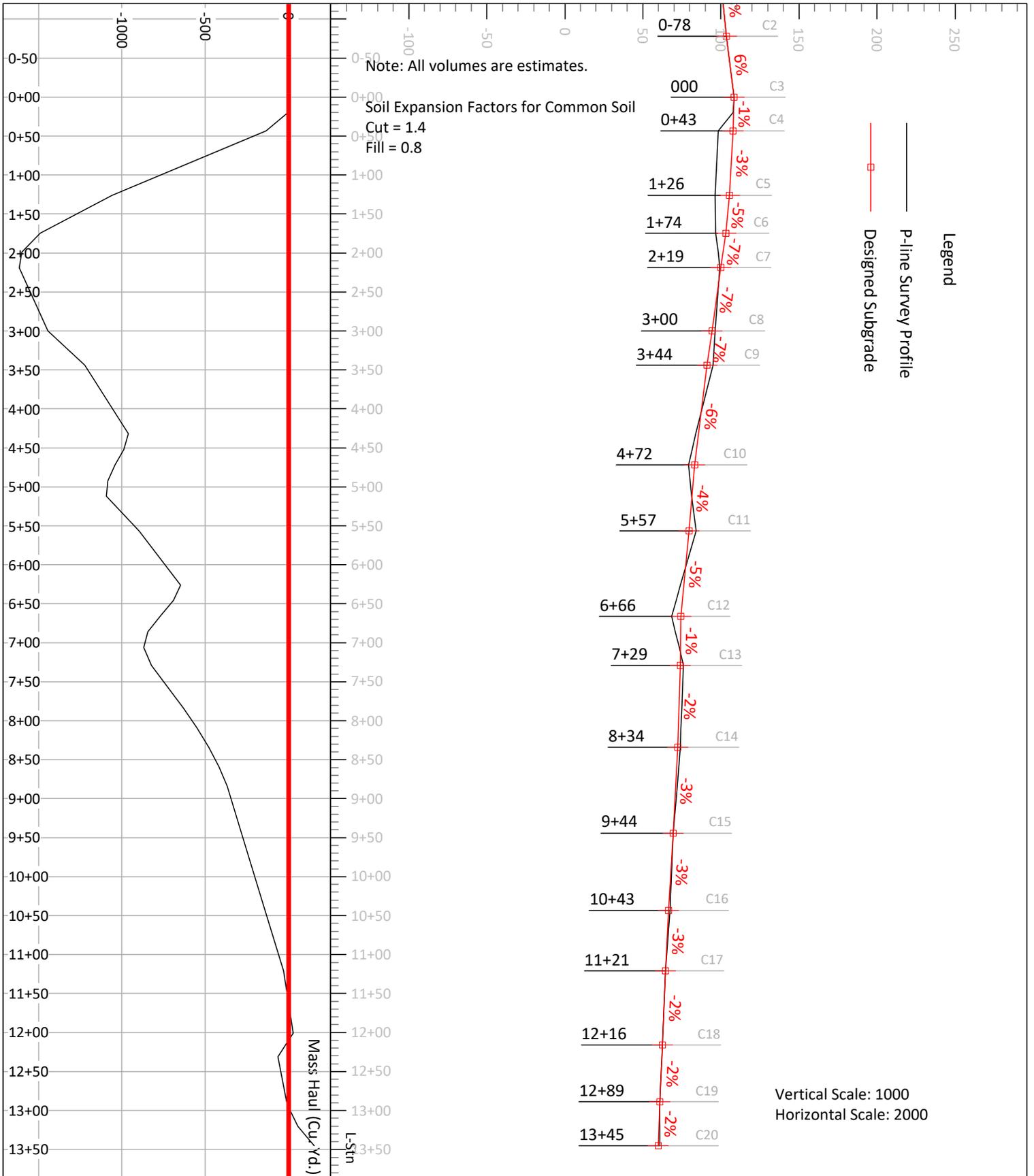


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# S-1002 CONSTRUCTION DETAIL

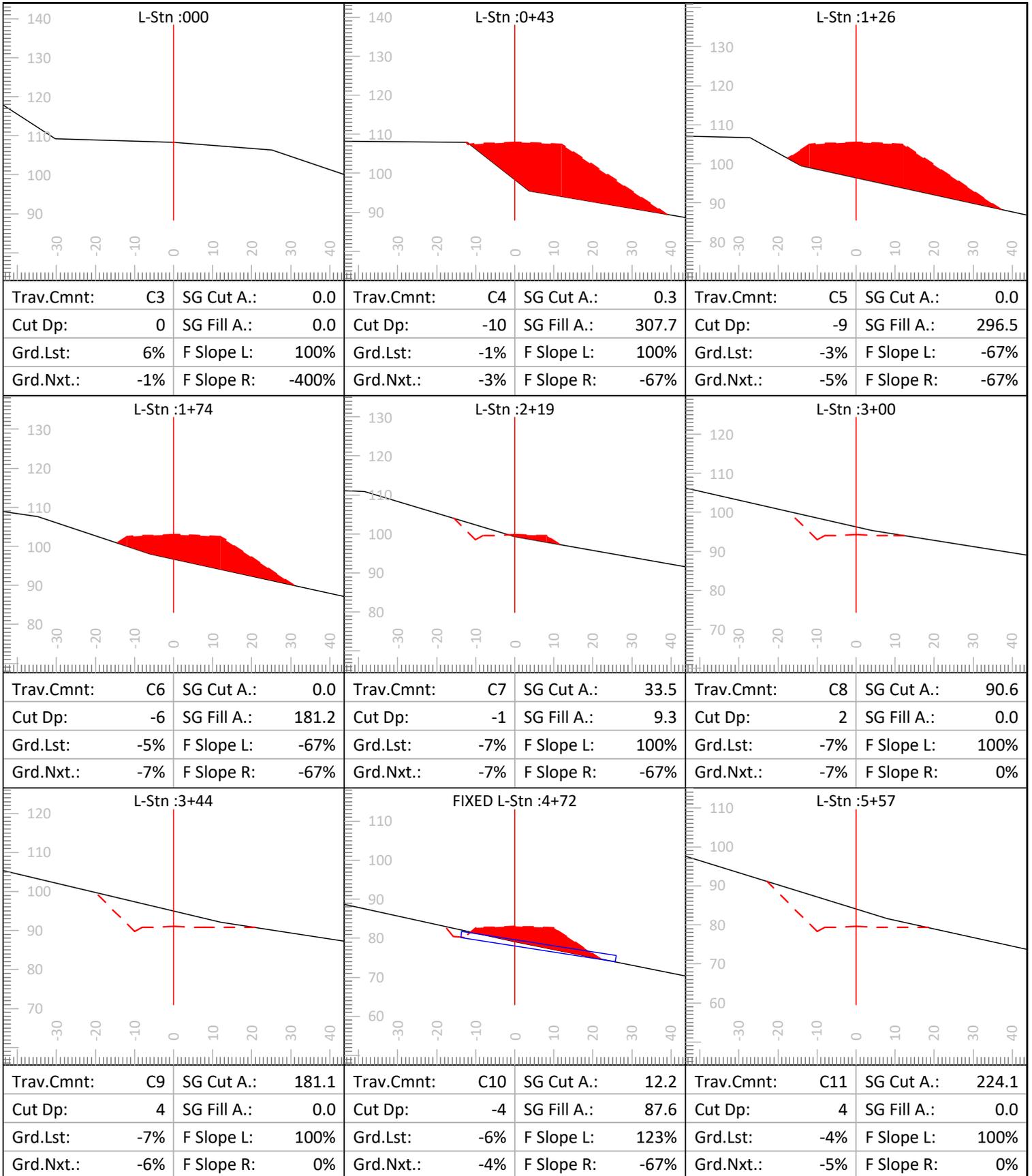
Page 2 of 5

## PROFILE VIEW



S-1002 CONSTRUCTION DETAIL

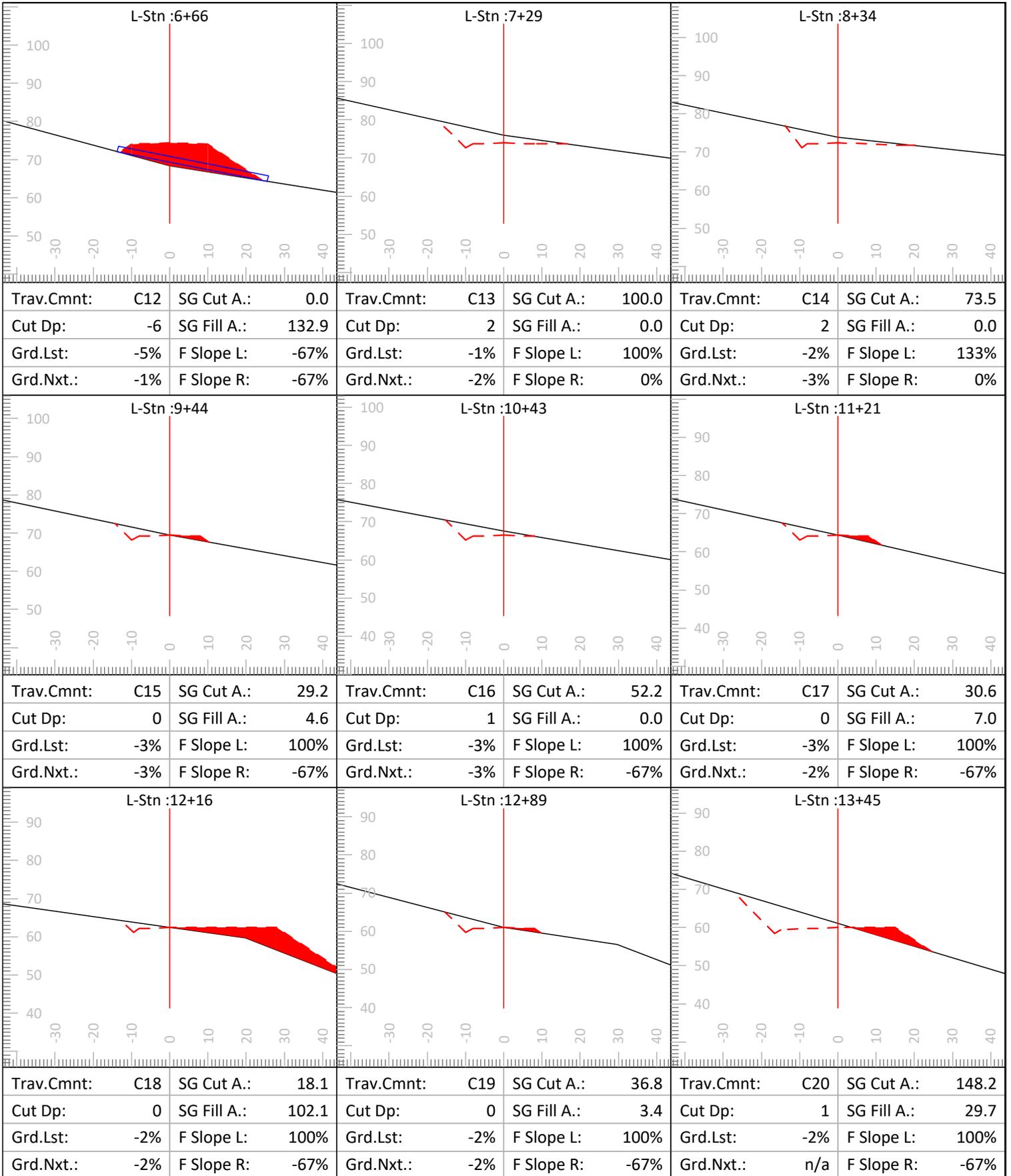
Page 3 of 5  
CROSS SECTIONS



Vertical Scale: 400  
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S-1002 CONSTRUCTION DETAIL

Page 4 of 5  
CROSS SECTIONS



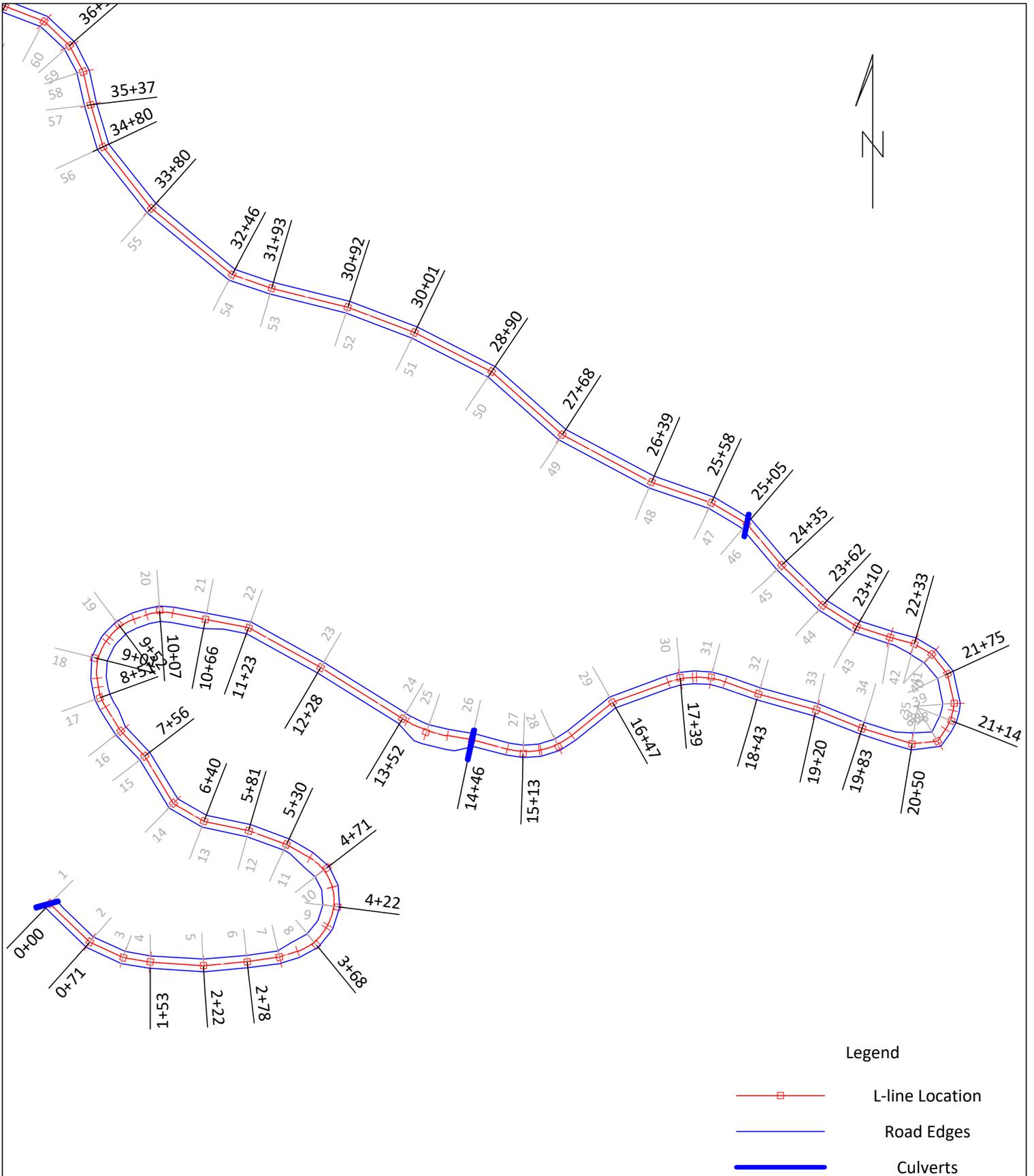
S-1002 CONSTRUCTION DETAIL

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<u>Station</u>	<u>HD</u>	<u>Fill</u>	<u>Azimuth (0° Decl.)</u>	<u>Circle</u>	<u>Slope Ratio</u>	<u>HD</u>	<u>Cut</u>	
0+43	65.5	27.0	0°	16.5 at 13°	1½:1	49.5	25.0	
1+26	81.0	27.5	10°	35.5	1½:1	45.5	21.5	
1+74	59.5	18.0	22°	24.5	1½:1	35.0	14.5	
4+72	56.5		171°					18" x 40' CPP
6+66	56.5		195°					18" x 40' CPP
10+43	66.0		212°					C/L RP
13+45	82.5		191°					E.O.R.

# S-1100 CONSTRUCTION DETAILS

Page 1 of 15

PLAN VIEW

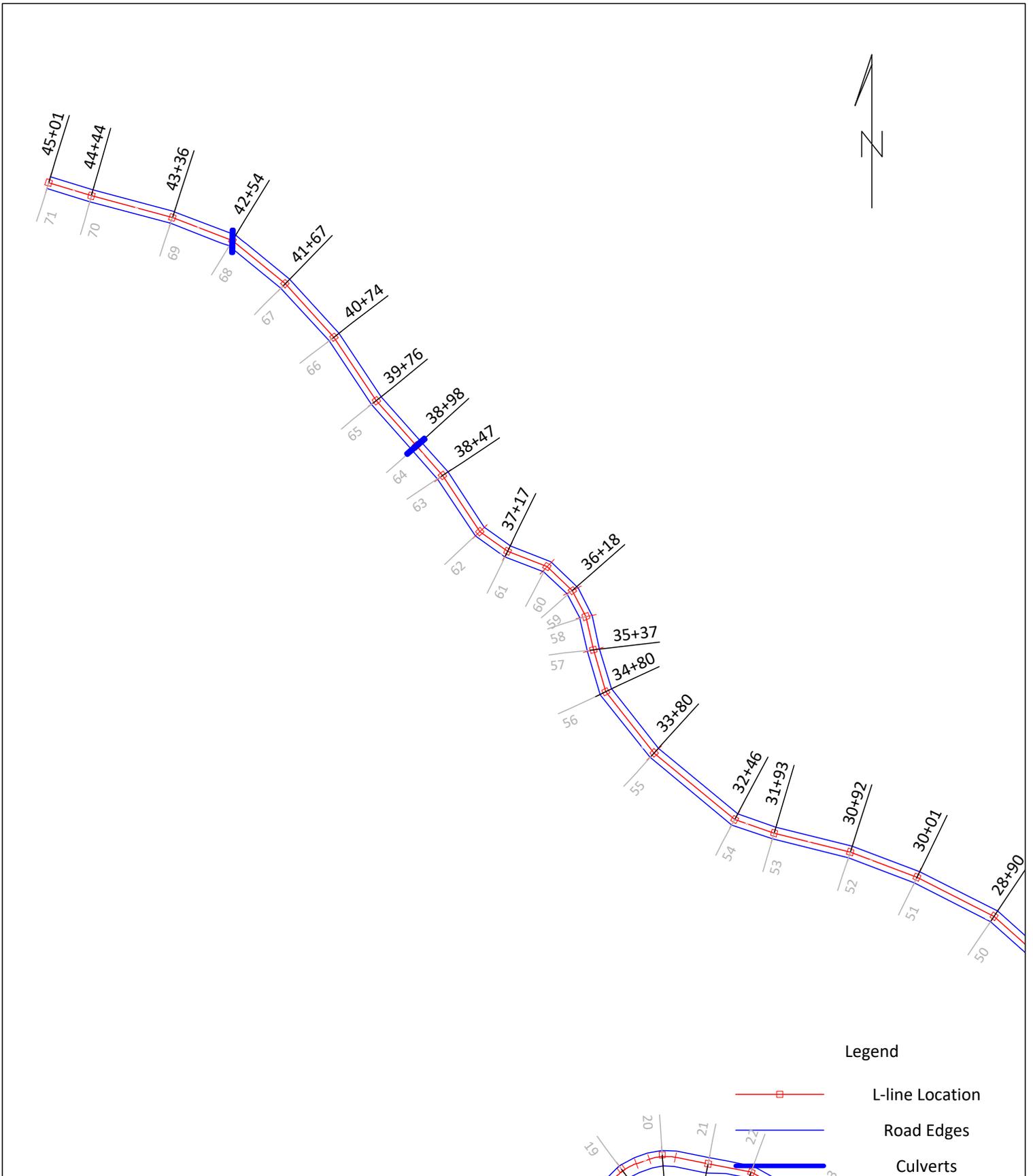


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S-1100 CONSTRUCTION DETAILS

Page 2 of 15

PLAN VIEW

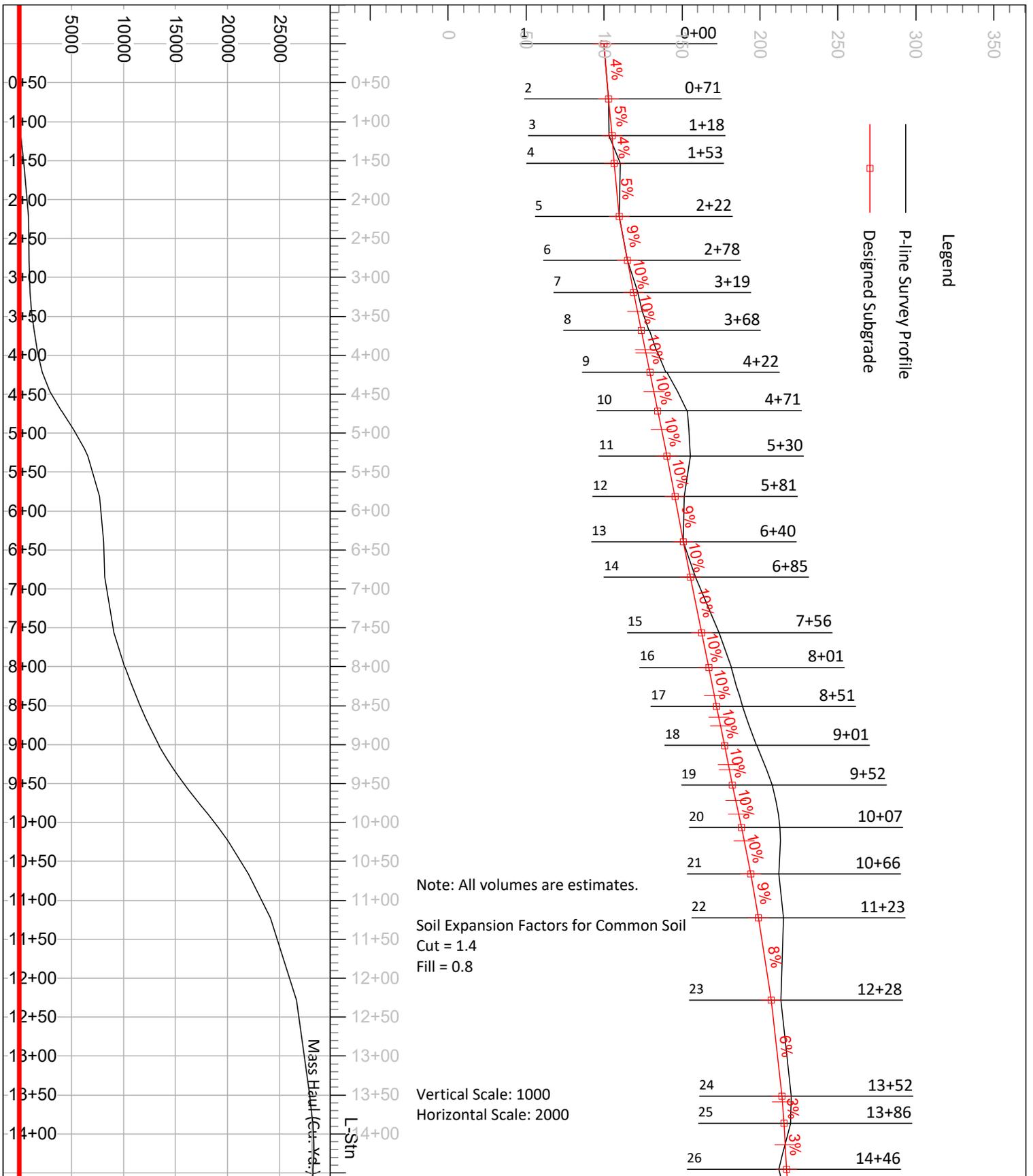


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# S-1100 CONSTRUCTION DETAILS

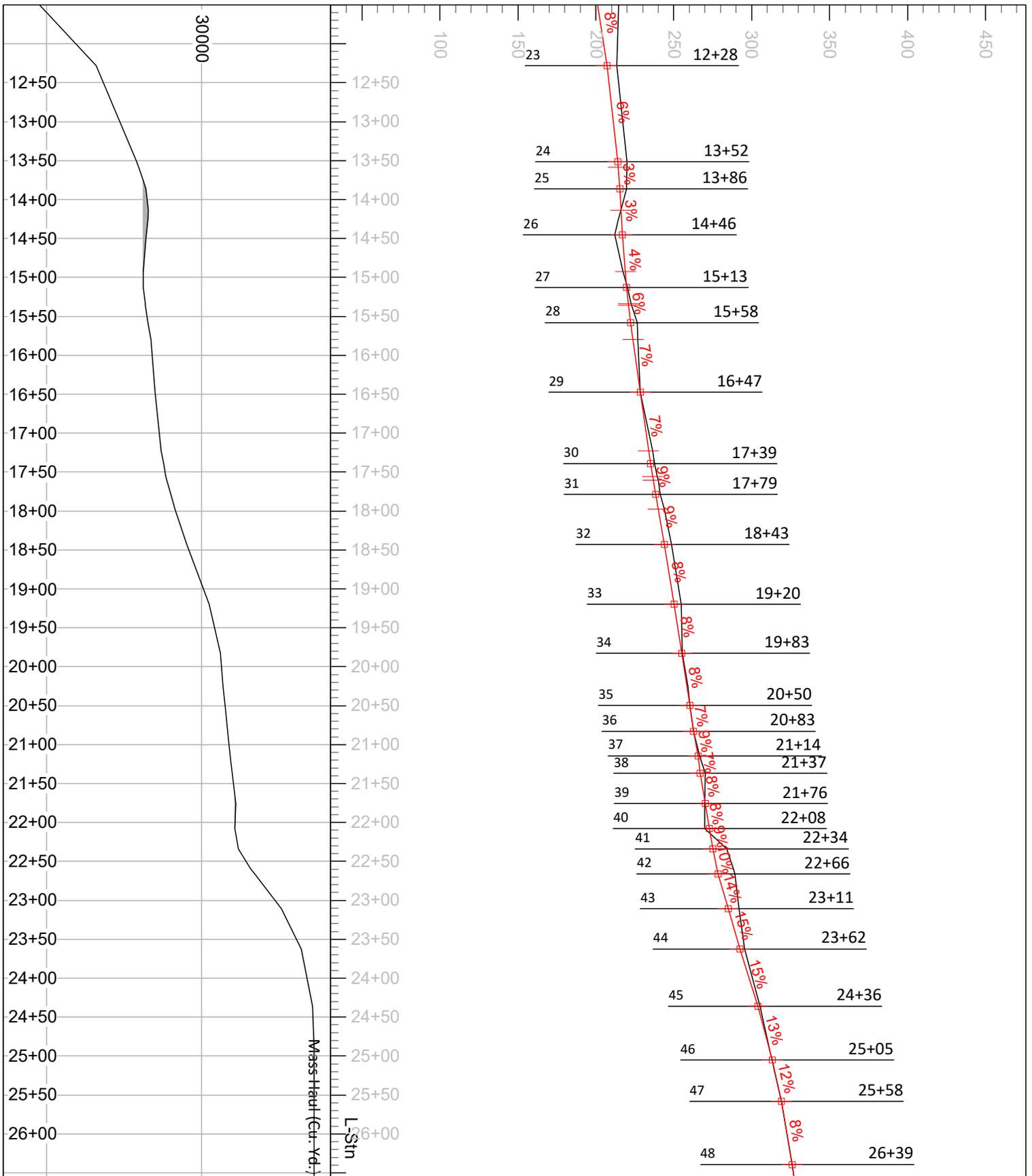
Page 3 of 15

## PROFILE VIEW



S-1100 CONSTRUCTION DETAILS

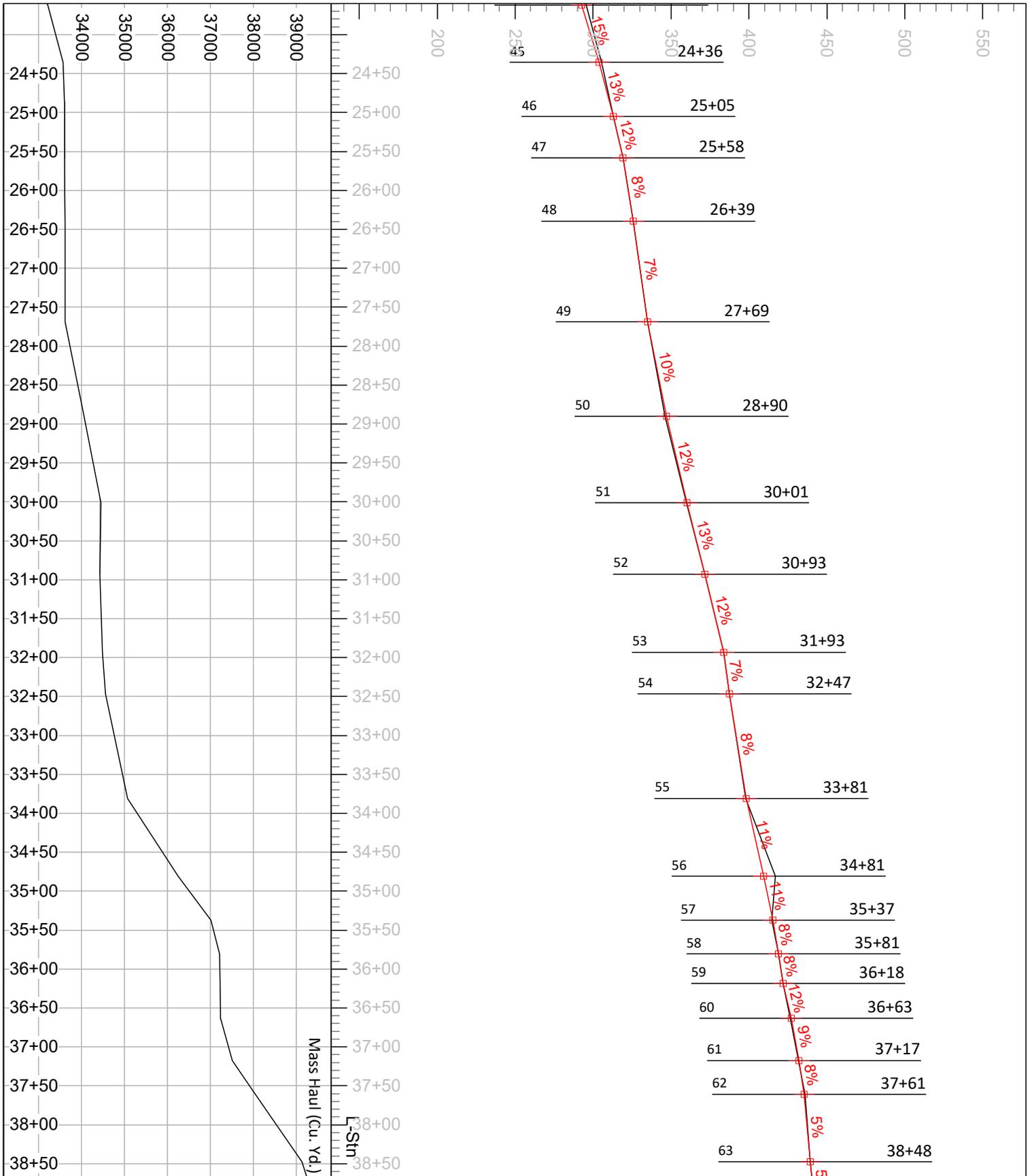
PROFILE VIEW



S-1100 CONSTRUCTION DETAILS

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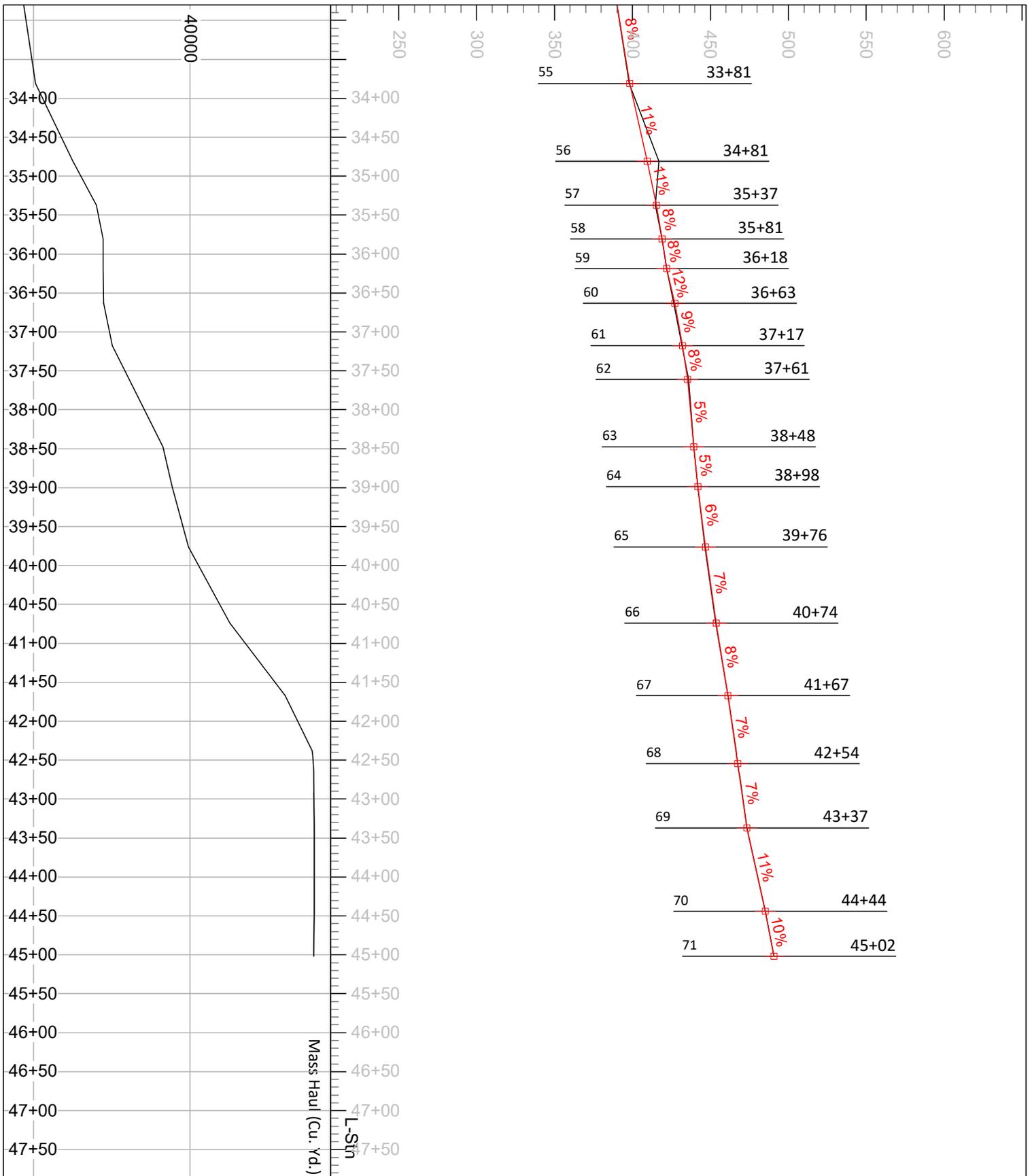
PROFILE VIEW



S-1100 CONSTRUCTION DETAILS

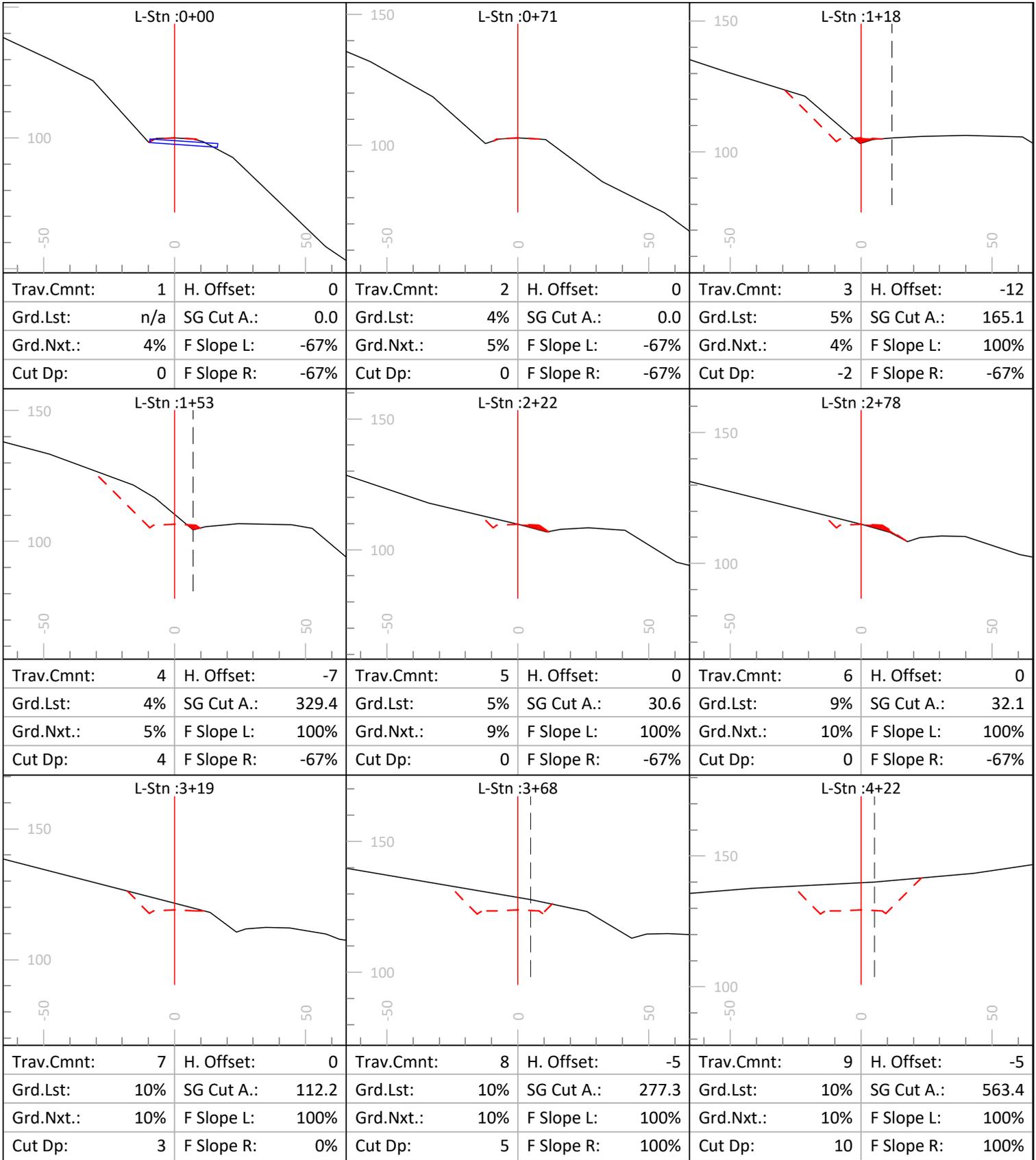
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PROFILE VIEW



S-1100 CONSTRUCTION DETAILS

Page 7 of 15  
CROSS SECTIONS

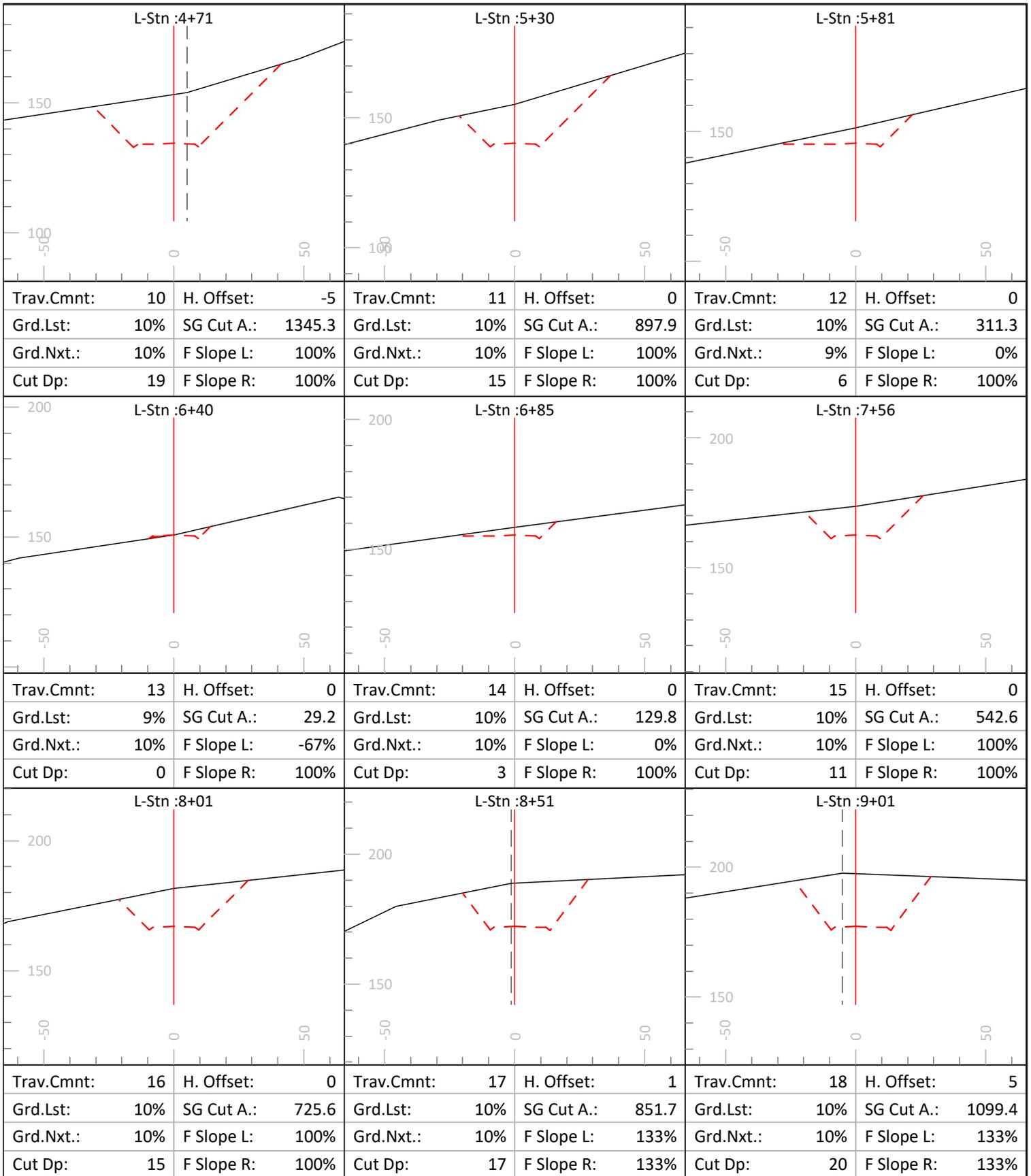


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Horizontal Scale: 500

Legend	
	Existing Ground
	P-line
	L-line
	Design Road

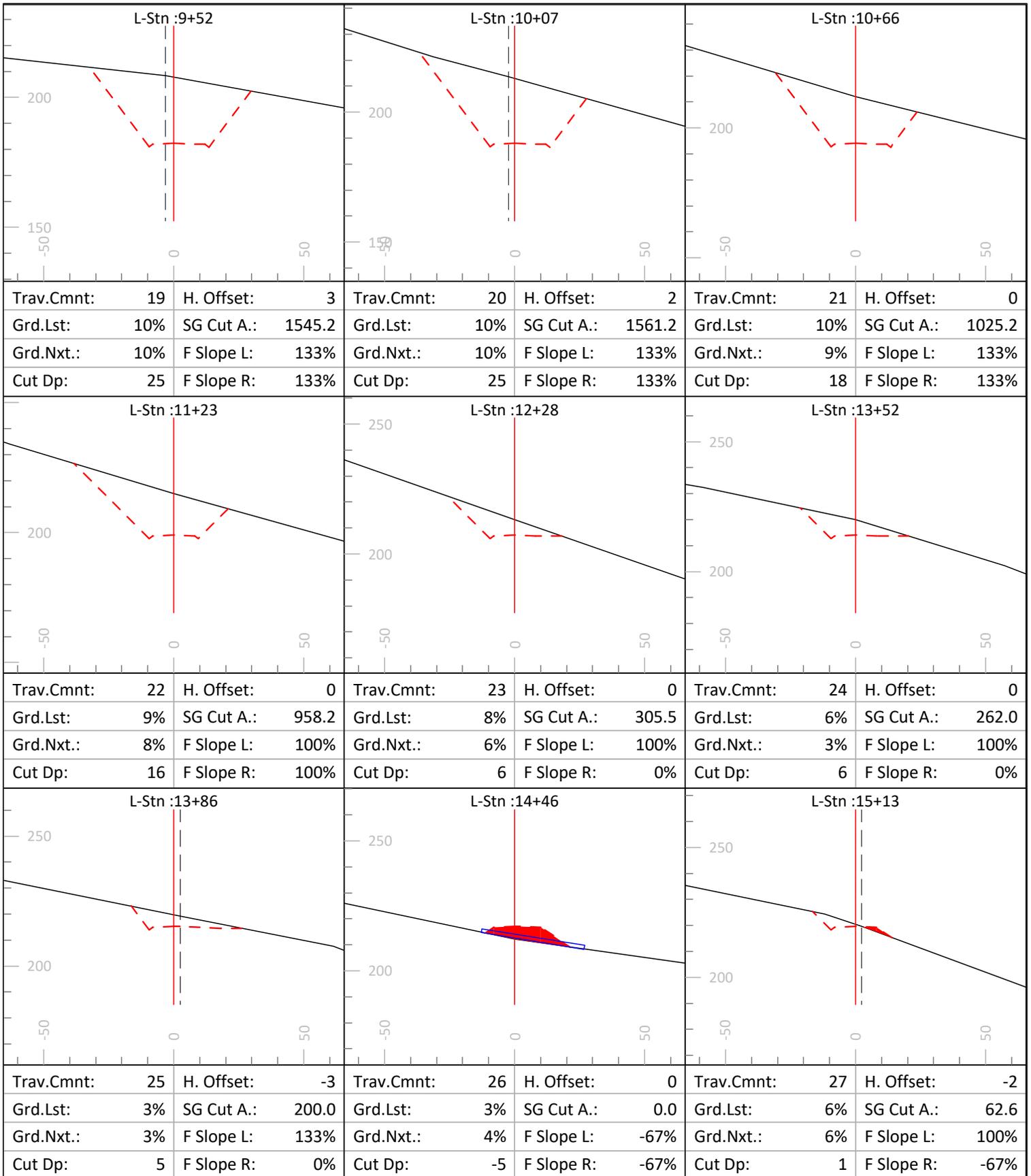
S-1100 CONSTRUCTION DETAILS

Page 8 of 15  
CROSS SECTIONS



S-1100 CONSTRUCTION DETAILS

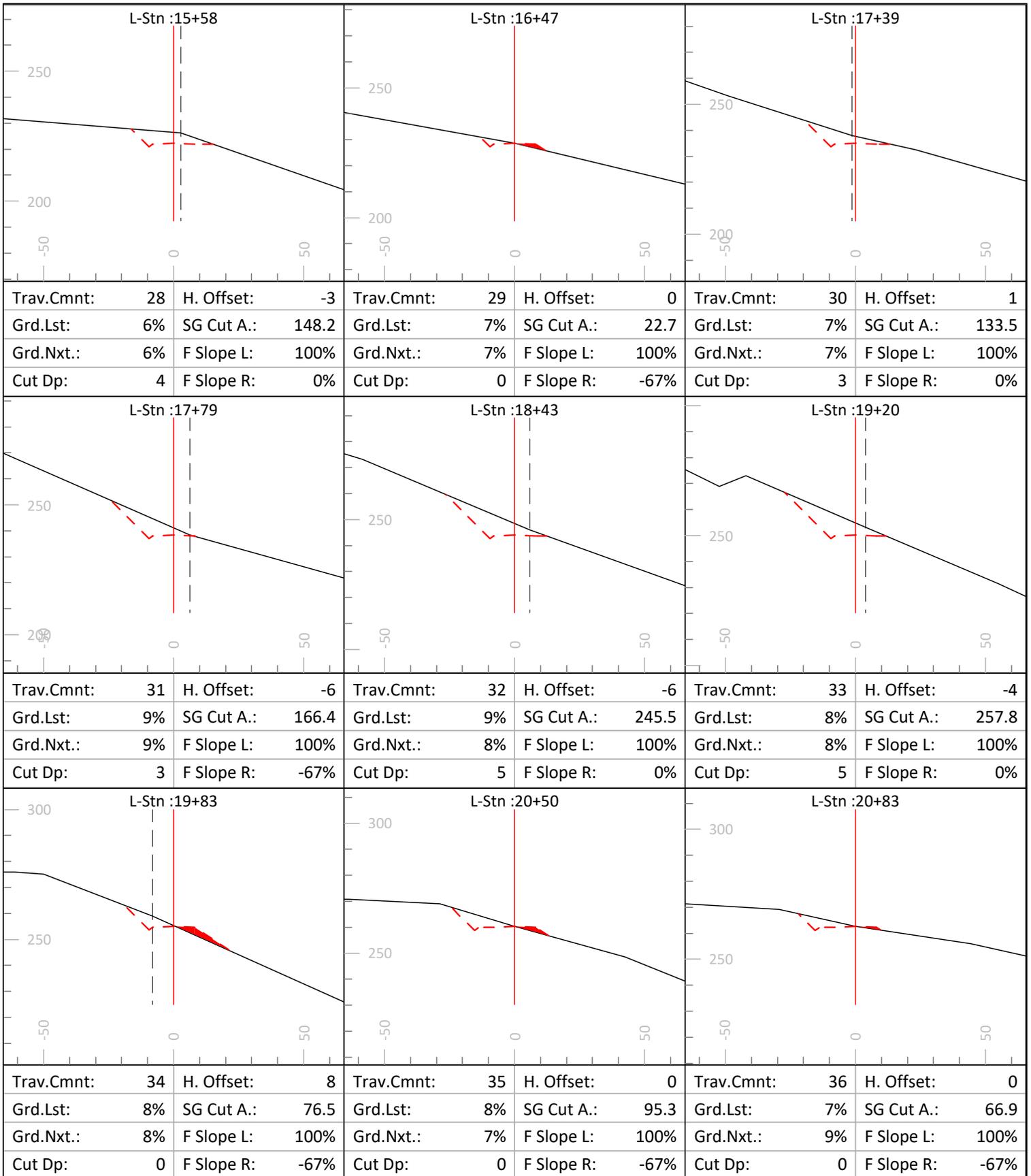
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CROSS SECTIONS



S-1100 CONSTRUCTION DETAILS

Page 10 of 15

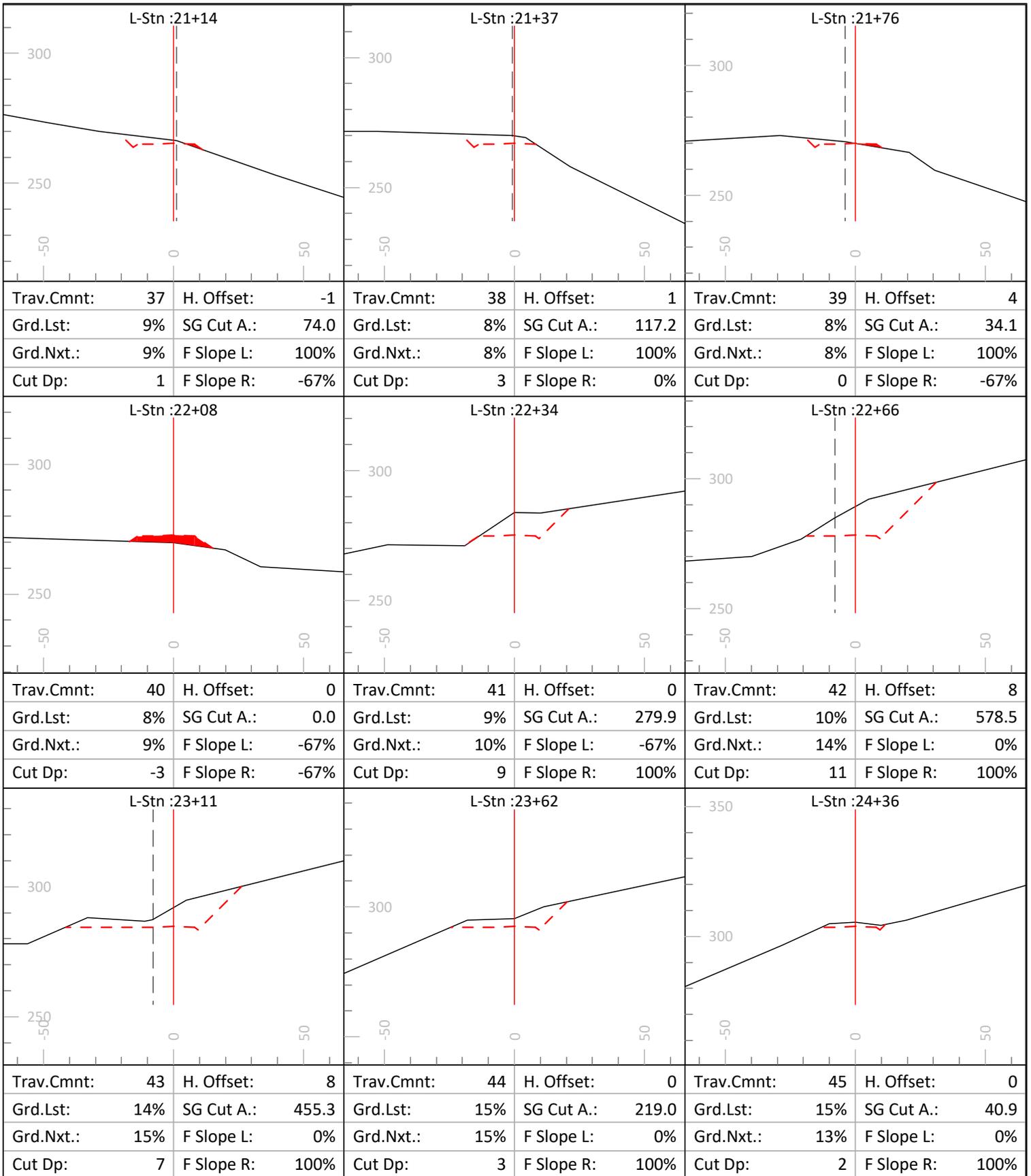
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S-1100 CONSTRUCTION DETAILS

Page 11 of 15

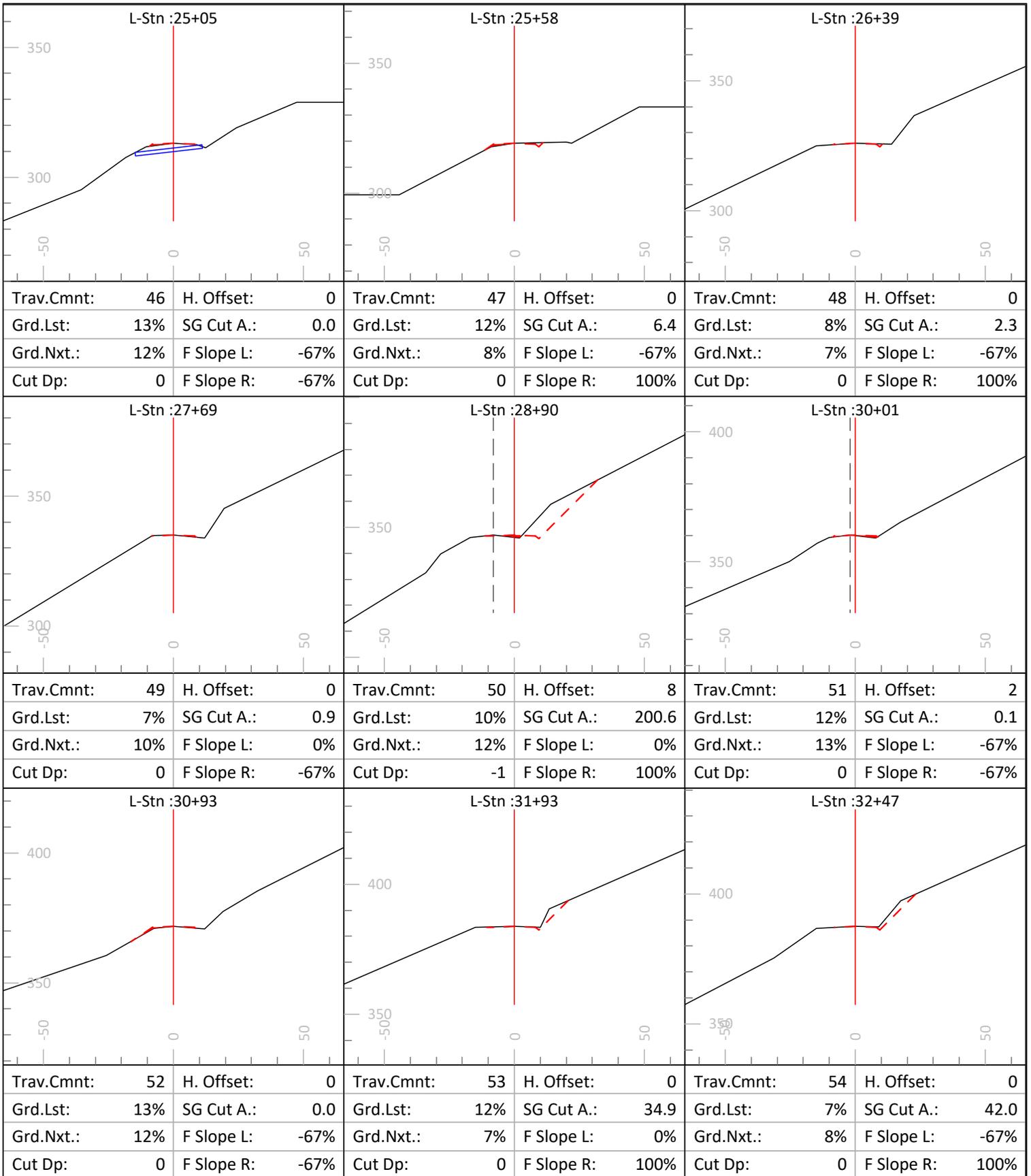
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S-1100 CONSTRUCTION DETAILS

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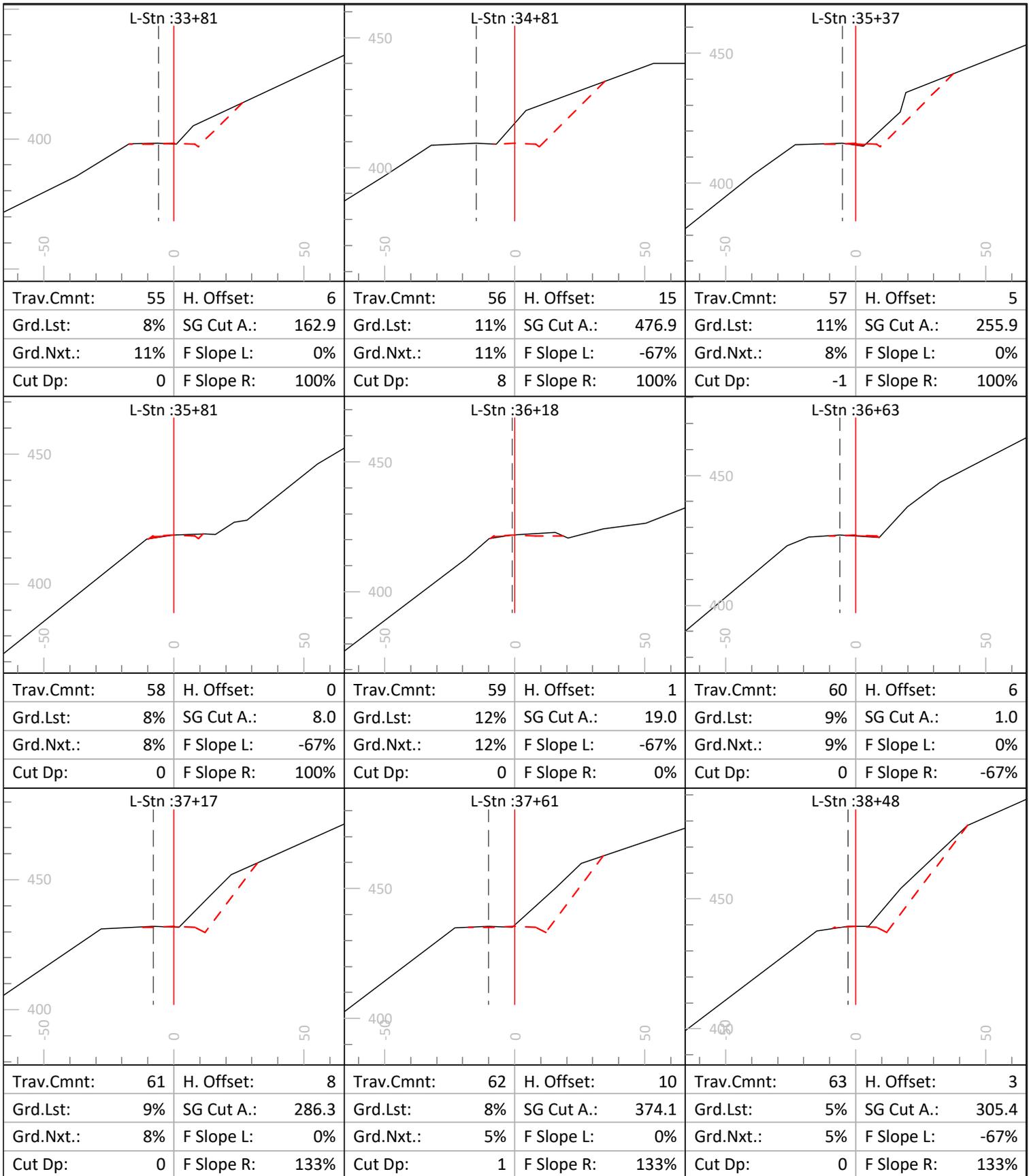
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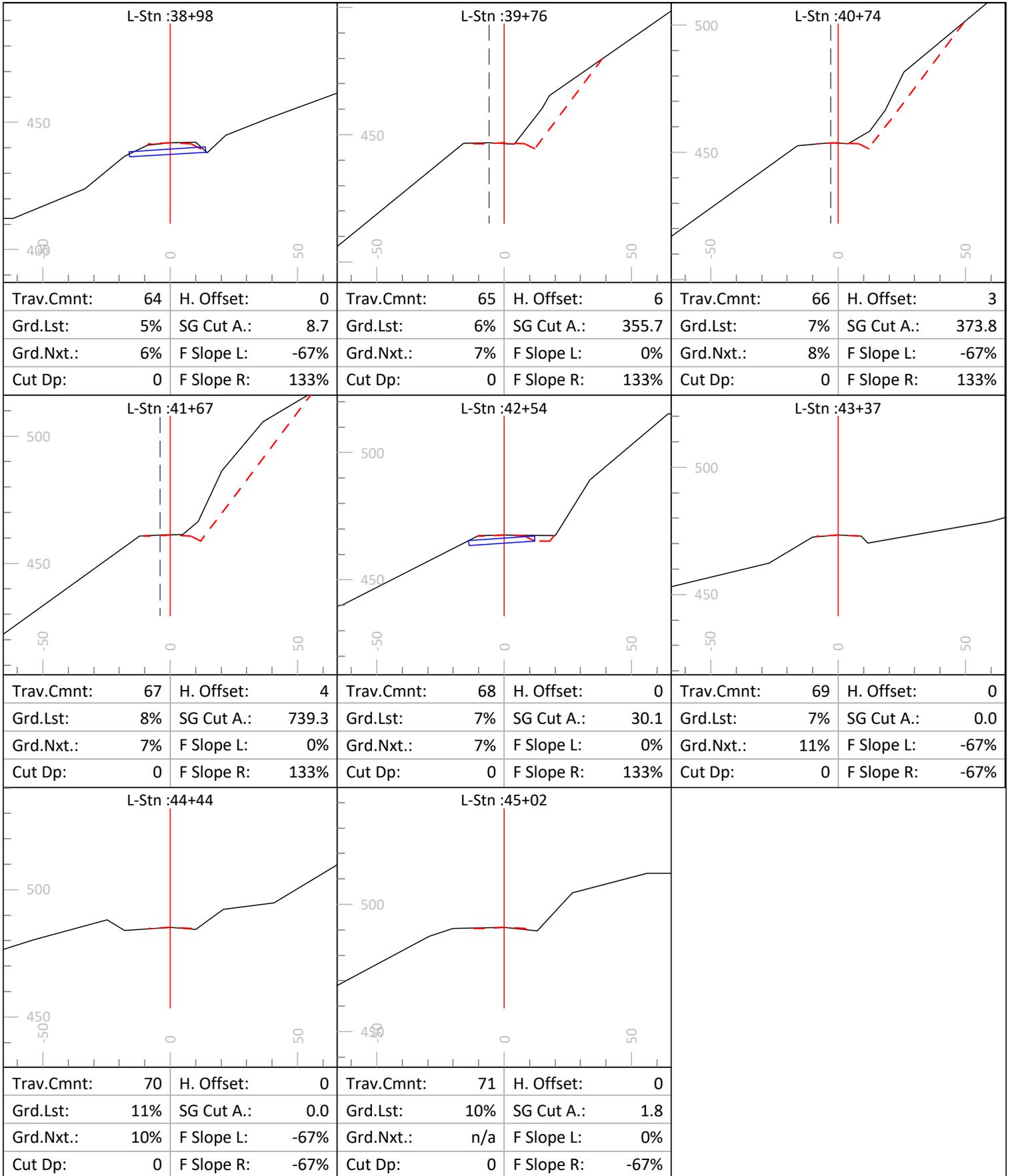
S-1100 CONSTRUCTION DETAILS

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CROSS SECTIONS



S-1100 CONSTRUCTION DETAILS



## S-1100 CONSTRUCTION DETAILS

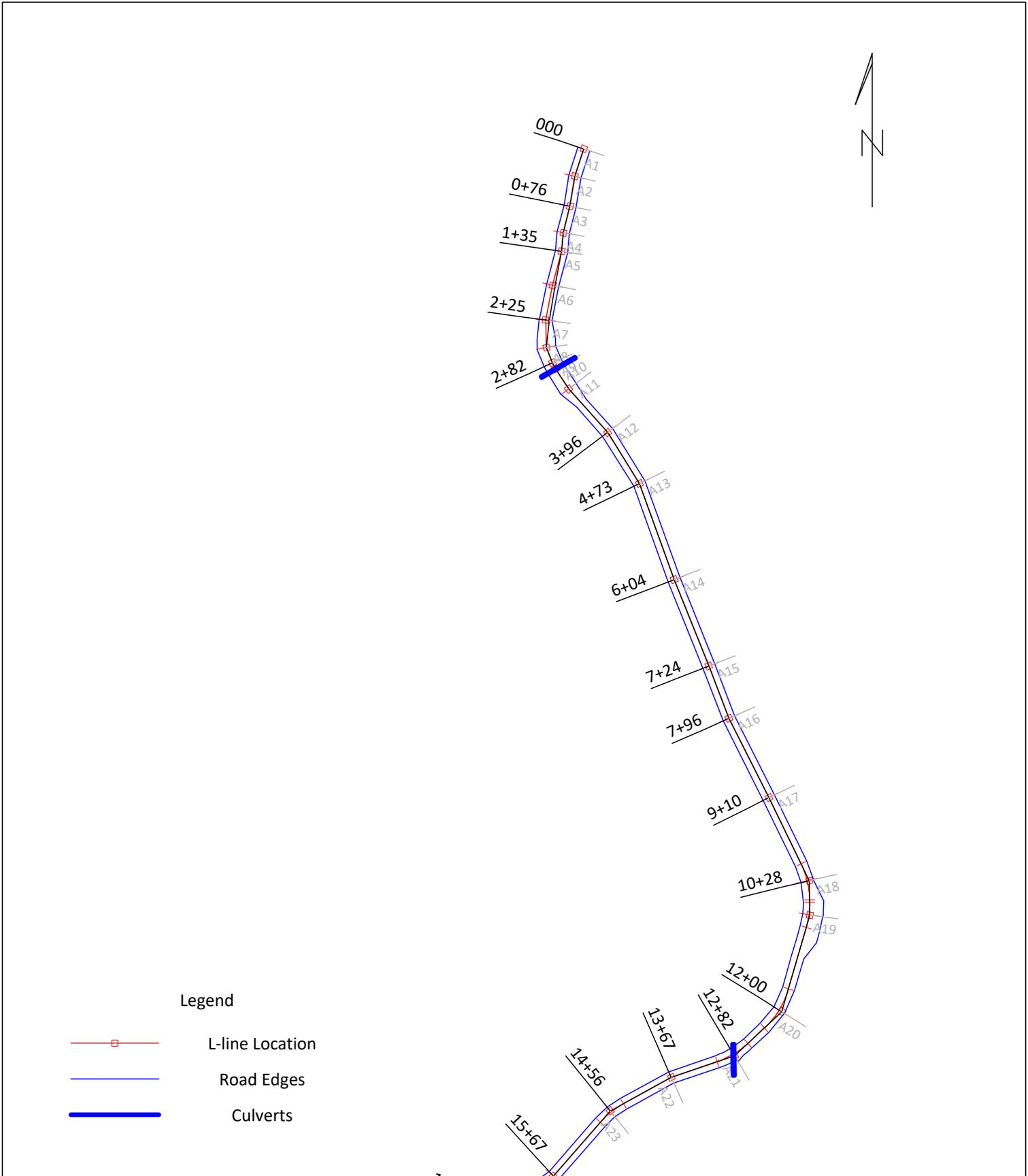
Page 15 of 15

<u>Reference Point Information</u>						<u>Slope Stake Information</u>		<u>Description</u>
<u>Station</u>	<u>HD</u>	<u>Cut</u>	<u>Azimuth (0° Decl.)</u>	<u>Circle</u>	<u>Slope Ratio</u>	<u>HD</u>	<u>Cut</u>	
1+18	54.3	28.9	208	24.1	1:1	30.2	18.7	
3+68	76.0	12.5	125	50.2	1:1	25.8	7.1	
4+71	60.3	40.6	210	12.3	1:1	48.0	35.0	
5+81	72.1	21.1	189	50.2	1:1	22.3	10.6	
7+56	45.6	19.2	216	18.1	1:1	27.5	16.2	
8+51	68.7	22.8	244	37.3	¾:1	31.4	20.2	
	65.5	-2.5	60	43.5	¾:1	22.0	13.5	
9+52	95.3	41.5	146	61.1	¾:1	34.2	30.7	
	47.5	24.3	328	17.0	¾:1	30.5	20.0	
10+66	51.1	33.0	173	19.0	¾:1	32.1	27.6	
11+23	56.1	33.5	184	15.6	1:1	40.5	27.2	
14+46	55.1		184					18" x 40' CPP
22+34	47.7	21.5	156	19.5	1:1	28.2	16.4	
23+11	41.8	19.6	186	13.1	1:1	28.7	16.2	
28+90	51.7	32.9	206	15.1	1:1	36.6	24.5	
33+81	52.4	28.1	218	22.6	1:1	29.8	18.0	
35+37						51.2	27.3	

S-1121A CONSTRUCTION DETAIL

Page 1 of 16

PLAN VIEW



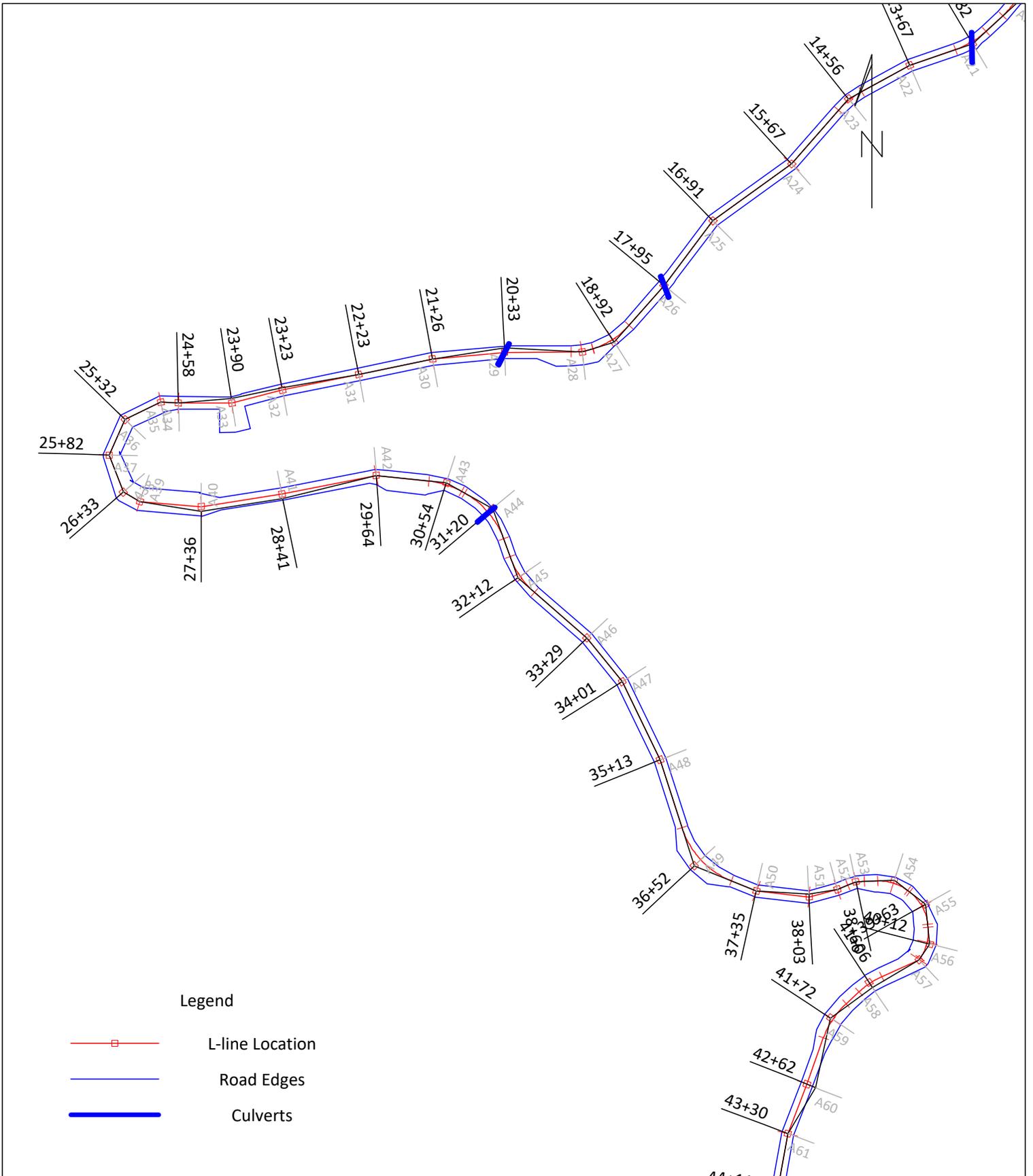
Legend

-  L-line Location
-  Road Edges
-  Culverts

Horizontal Scale: 2000

S-1121A CONSTRUCTION DETAIL

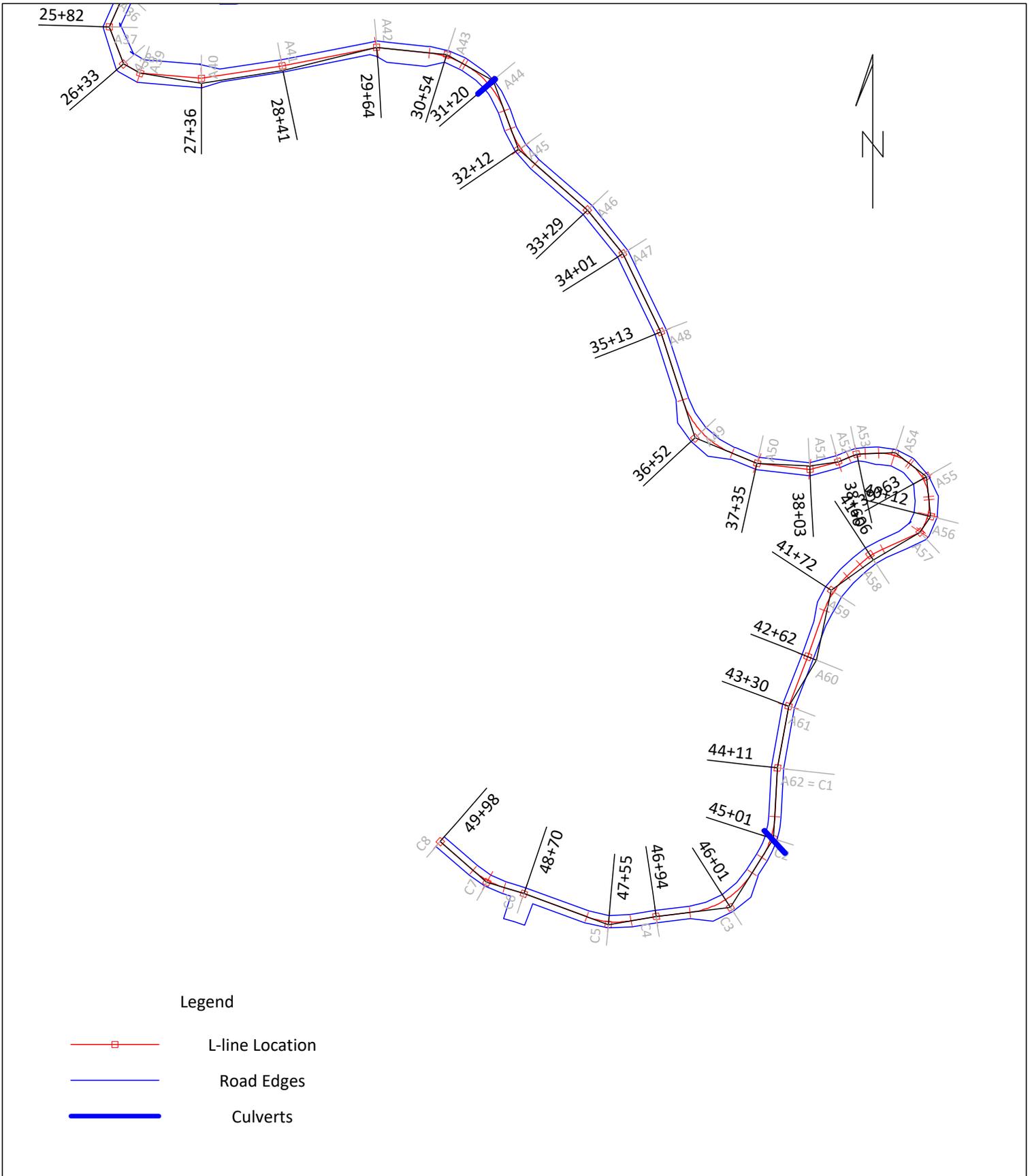
PLAN VIEW



Horizontal Scale: 2000

S-1121A CONSTRUCTION DETAIL

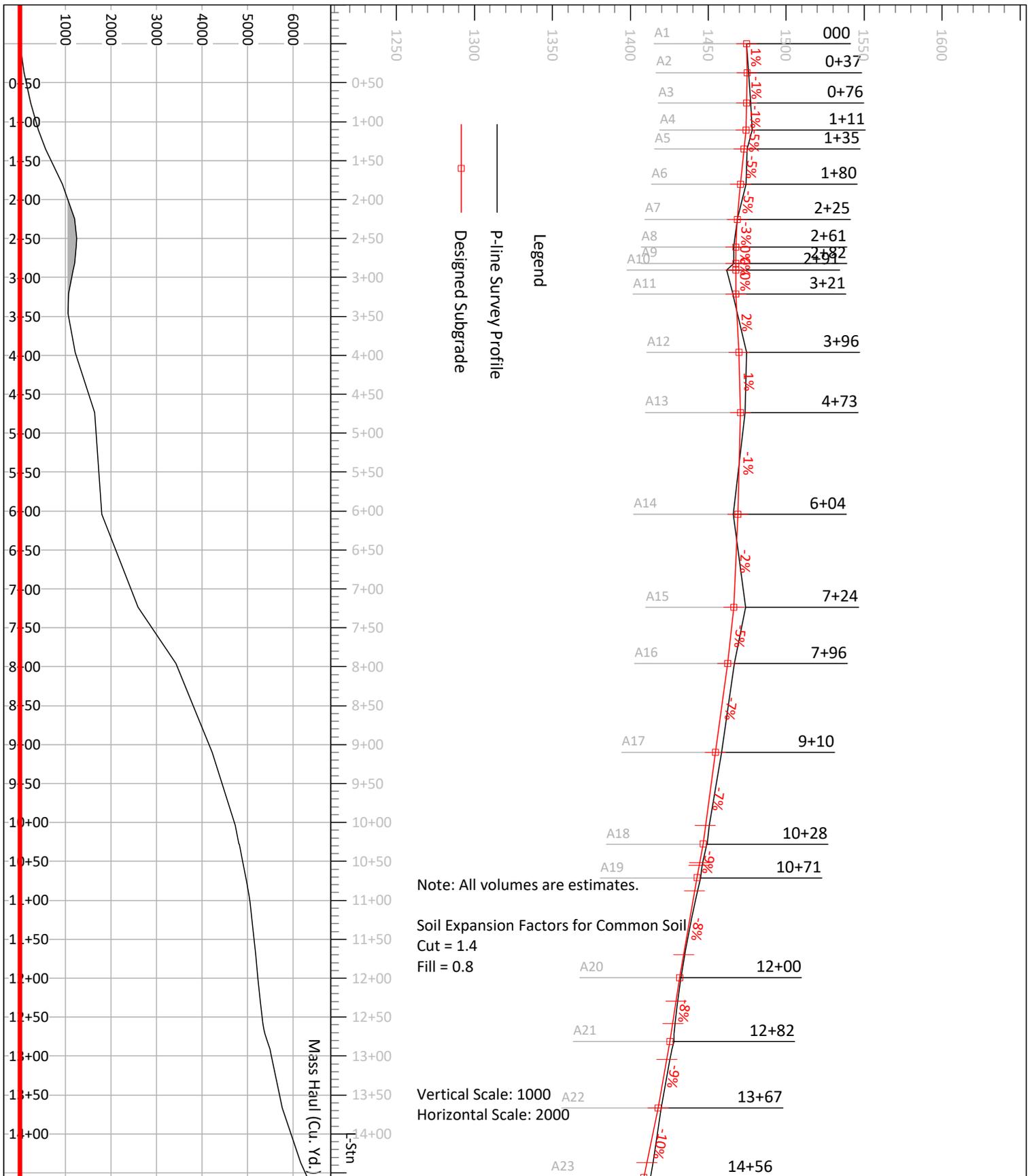
PLAN VIEW



Horizontal Scale: 2000

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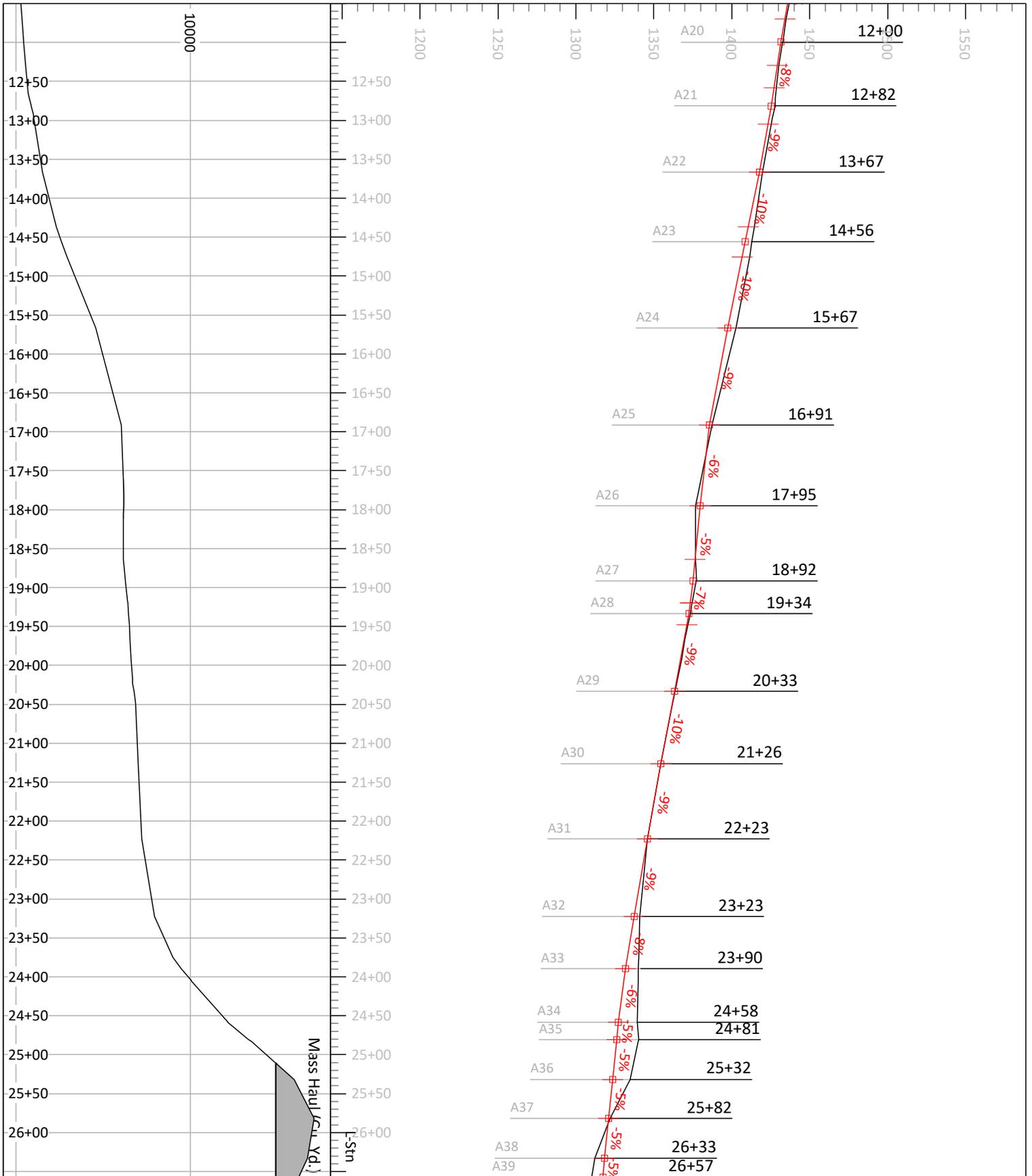
PROFILE VIEW



S-1121A CONSTRUCTION DETAIL

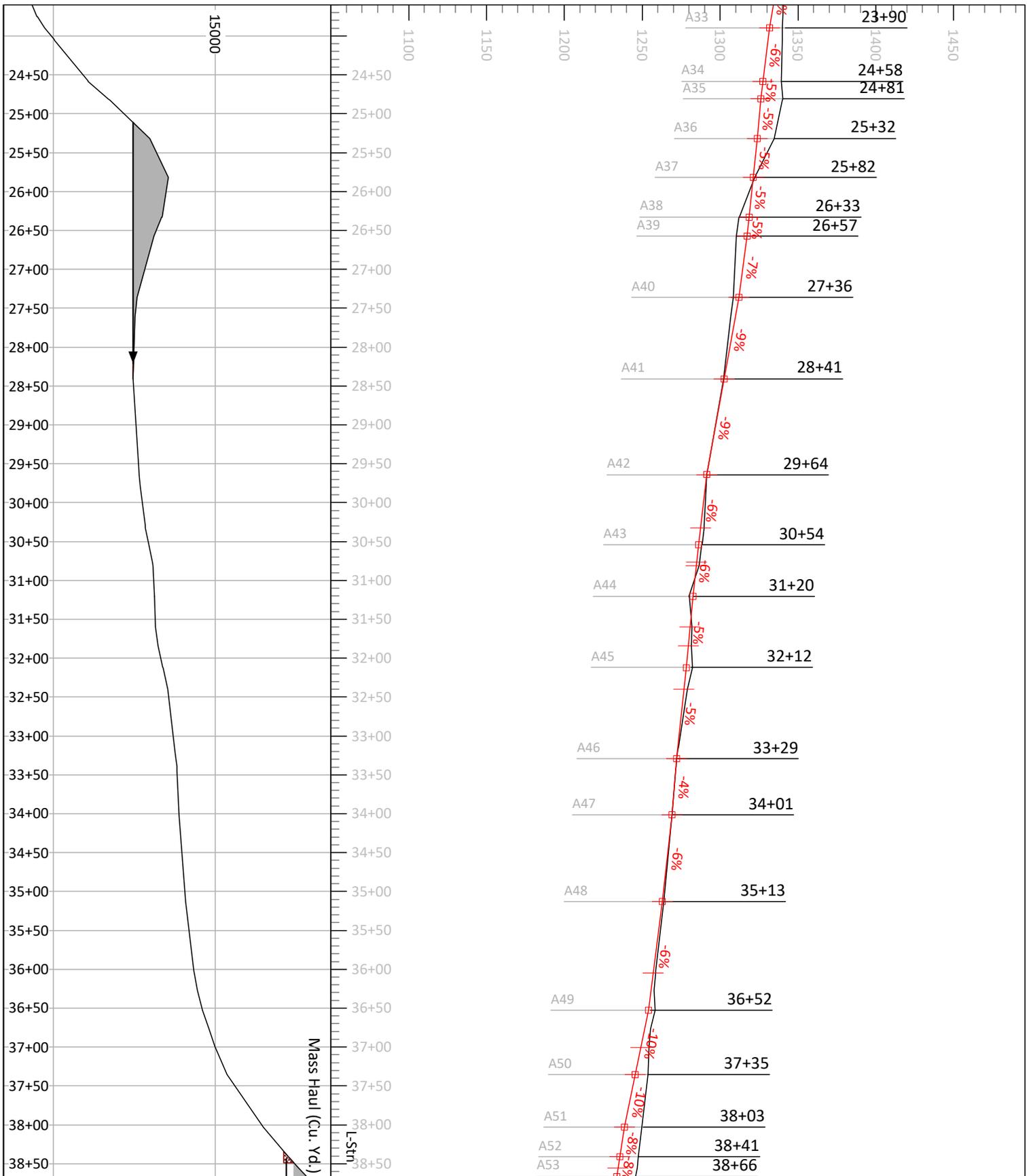
Page 5 of 16

PROFILE VIEW



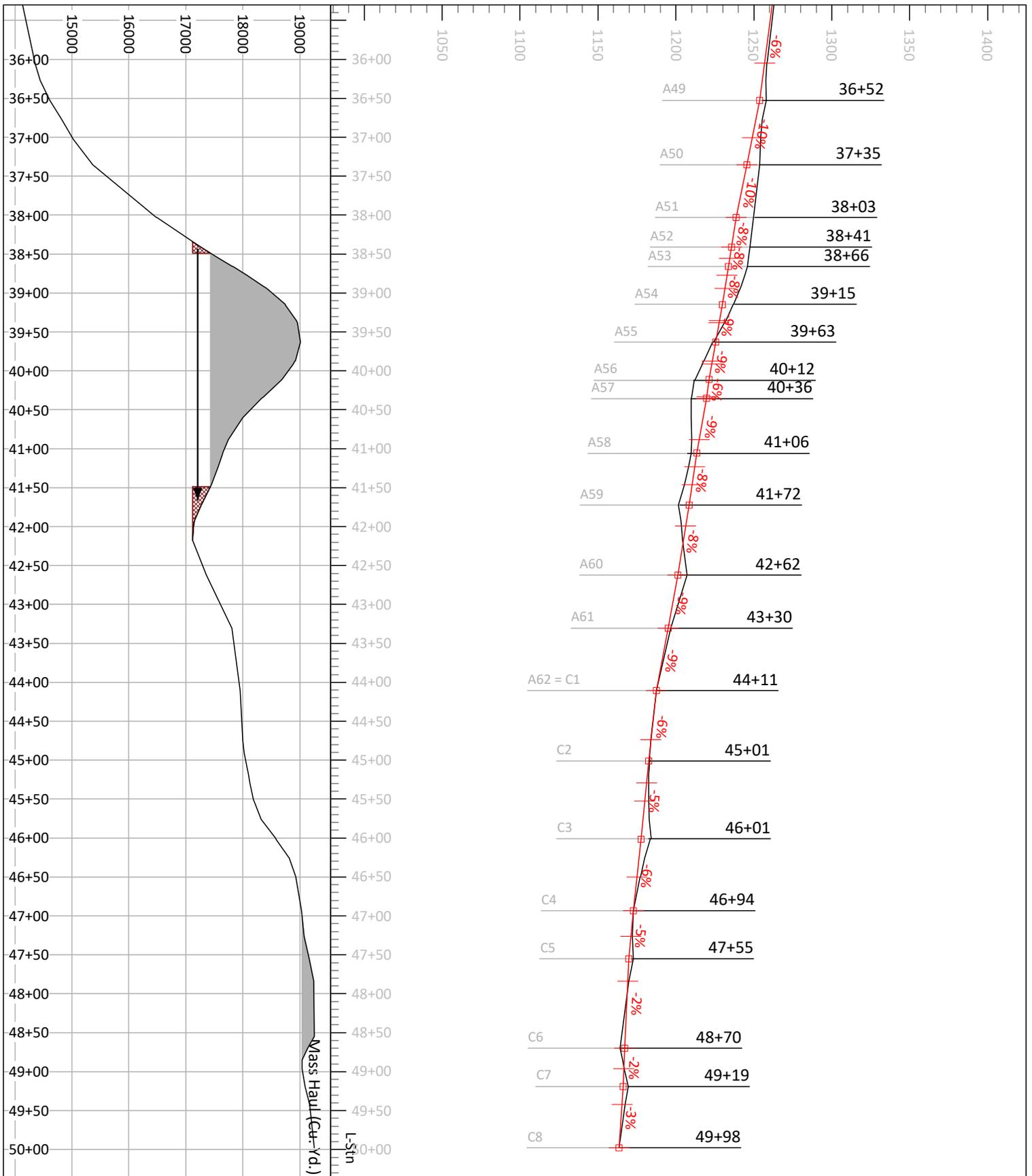
S-1121A CONSTRUCTION DETAIL

PROFILE VIEW



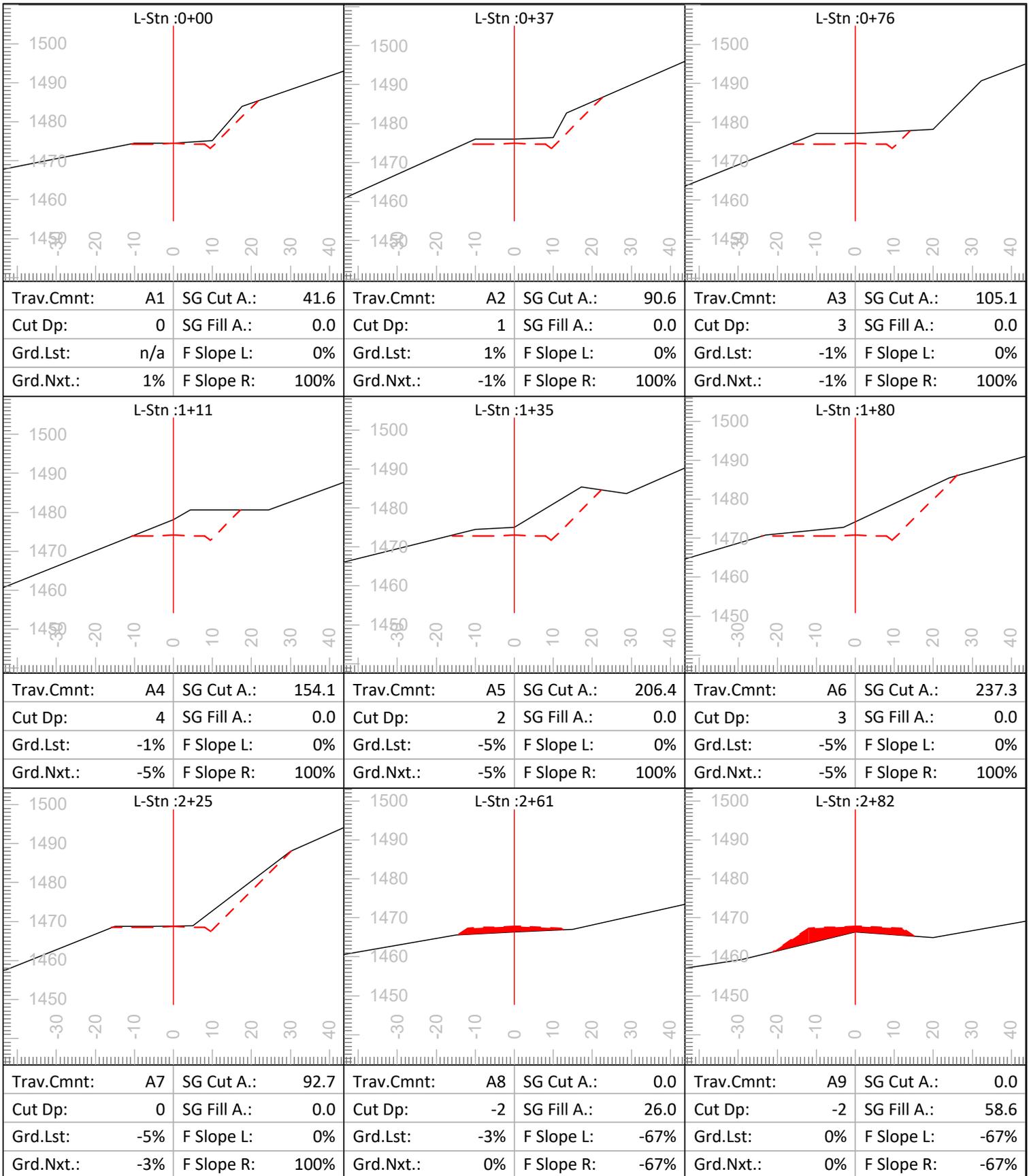
S-1121A CONSTRUCTION DETAIL

PROFILE VIEW



S-1121A CONSTRUCTION DETAIL

CROSS SECTIONS

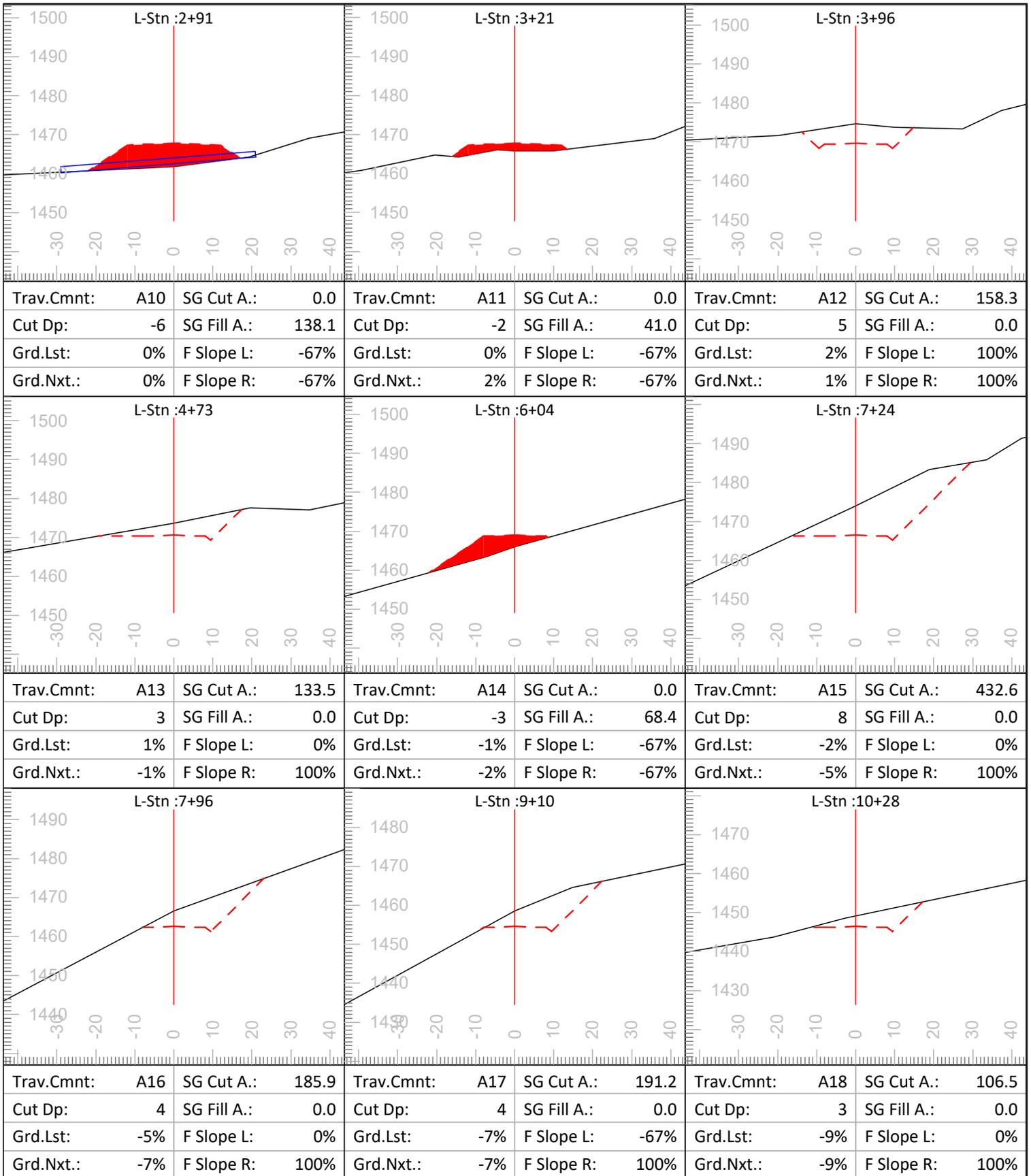


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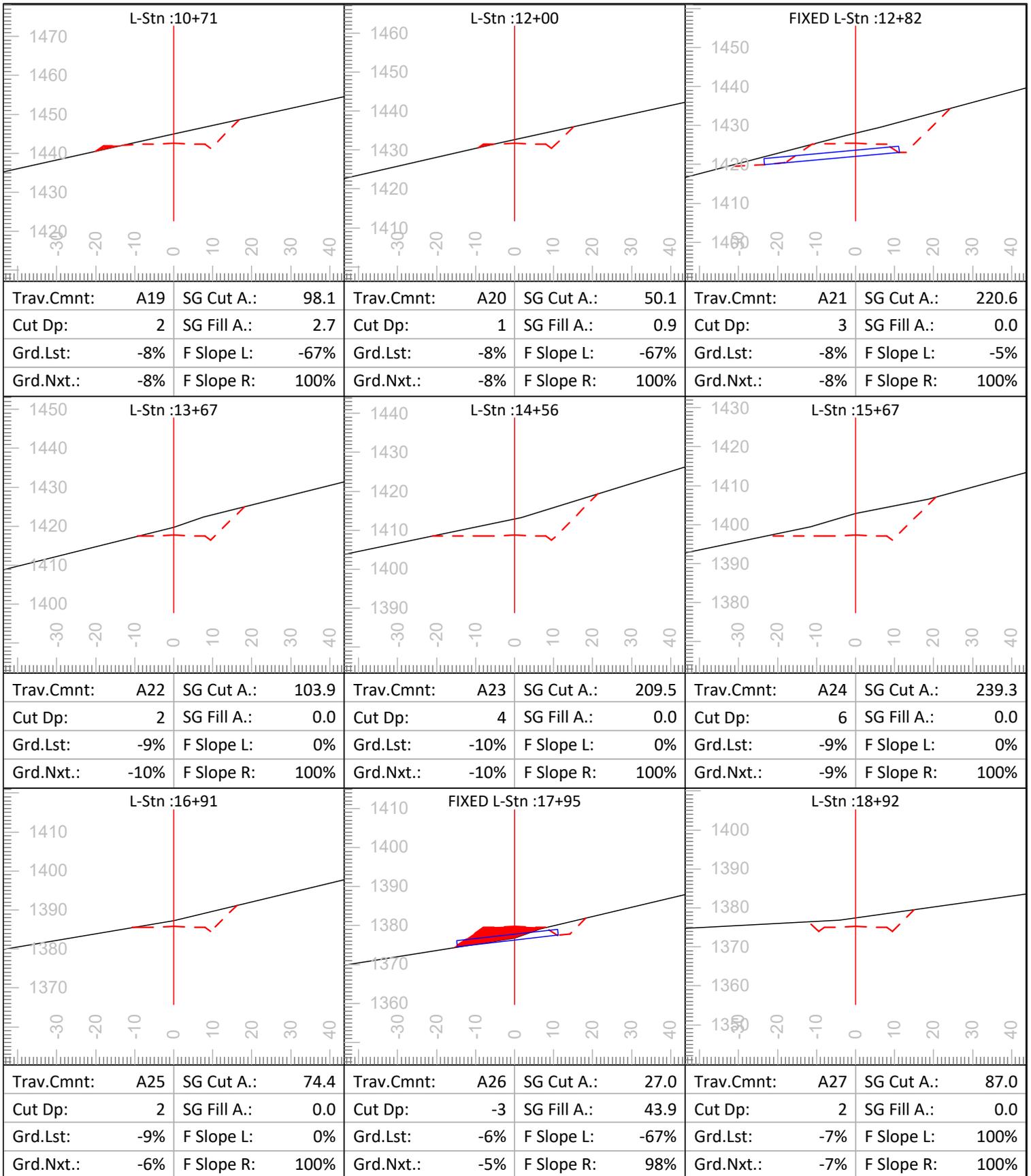
S-1121A CONSTRUCTION DETAIL

CROSS SECTIONS



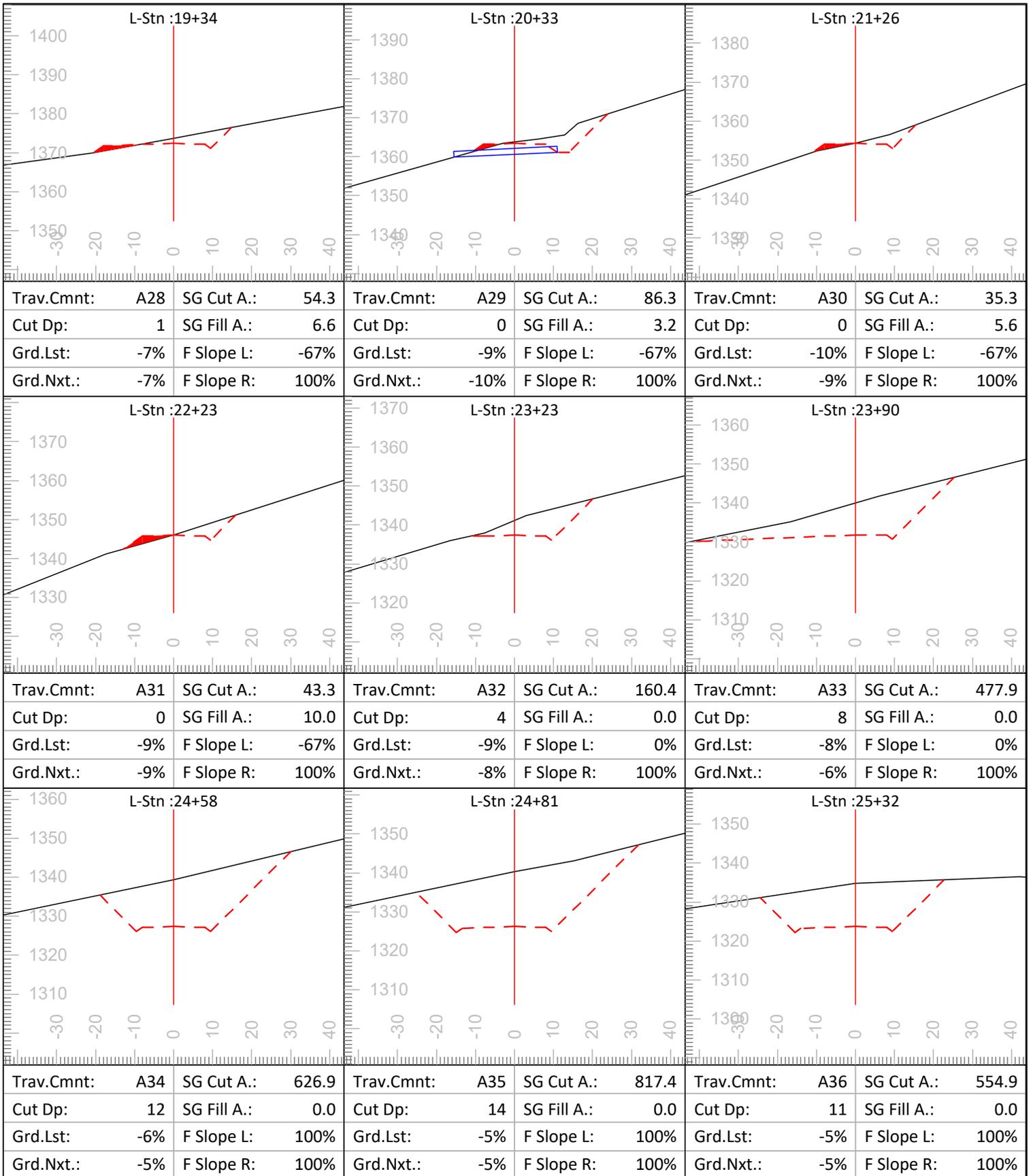
S-1121A CONSTRUCTION DETAIL

CROSS SECTIONS



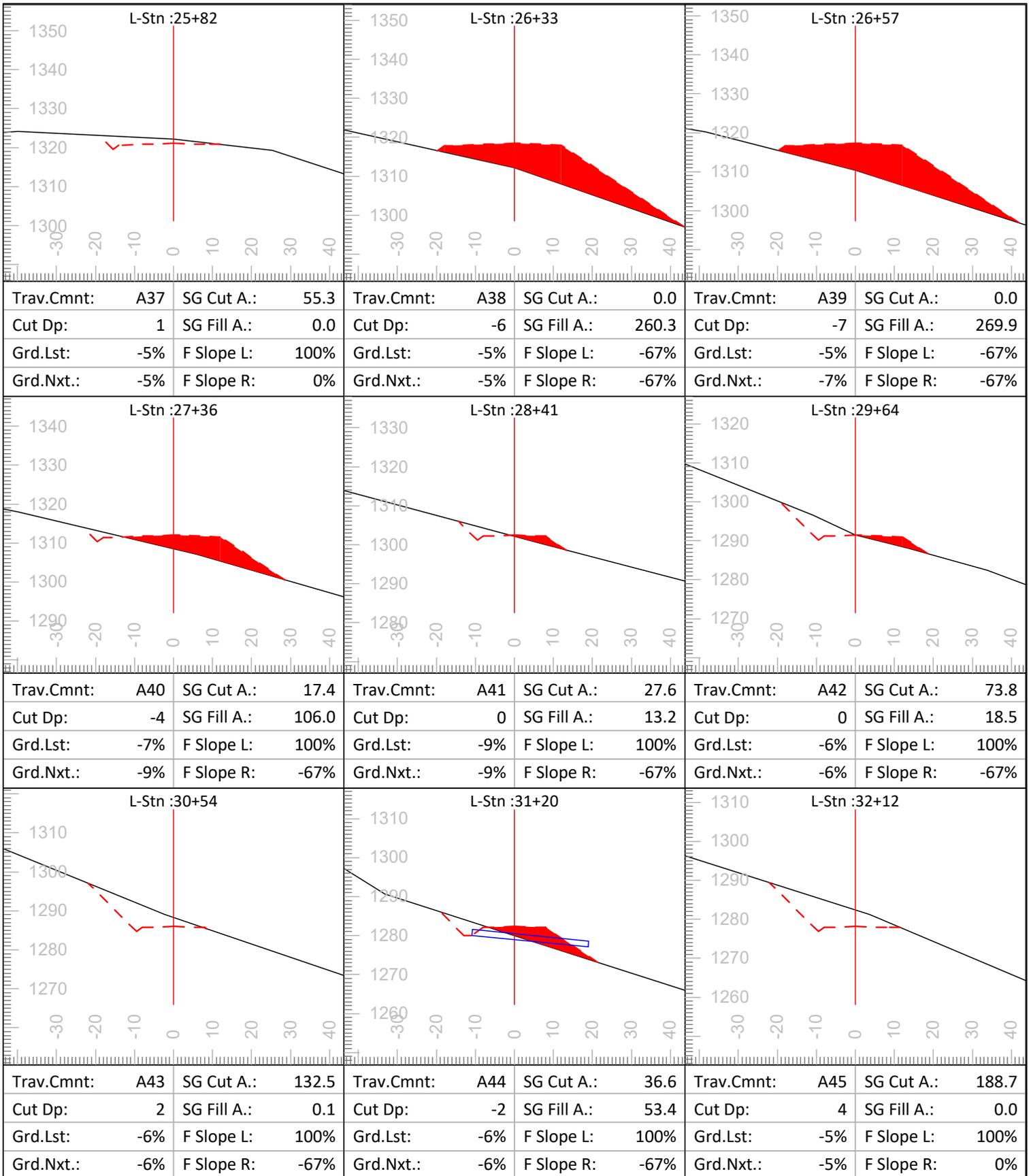
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CROSS SECTIONS



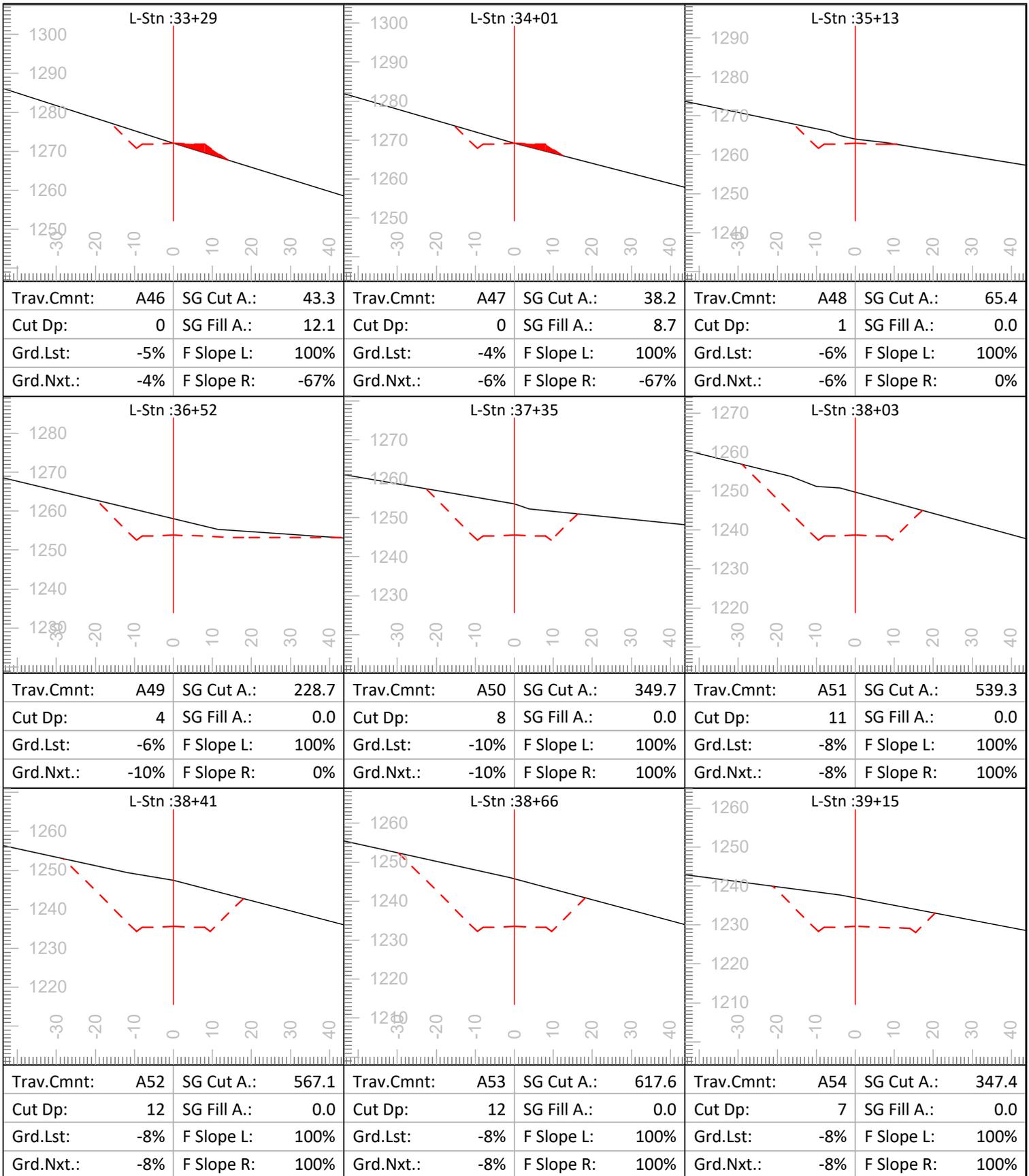
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CROSS SECTIONS



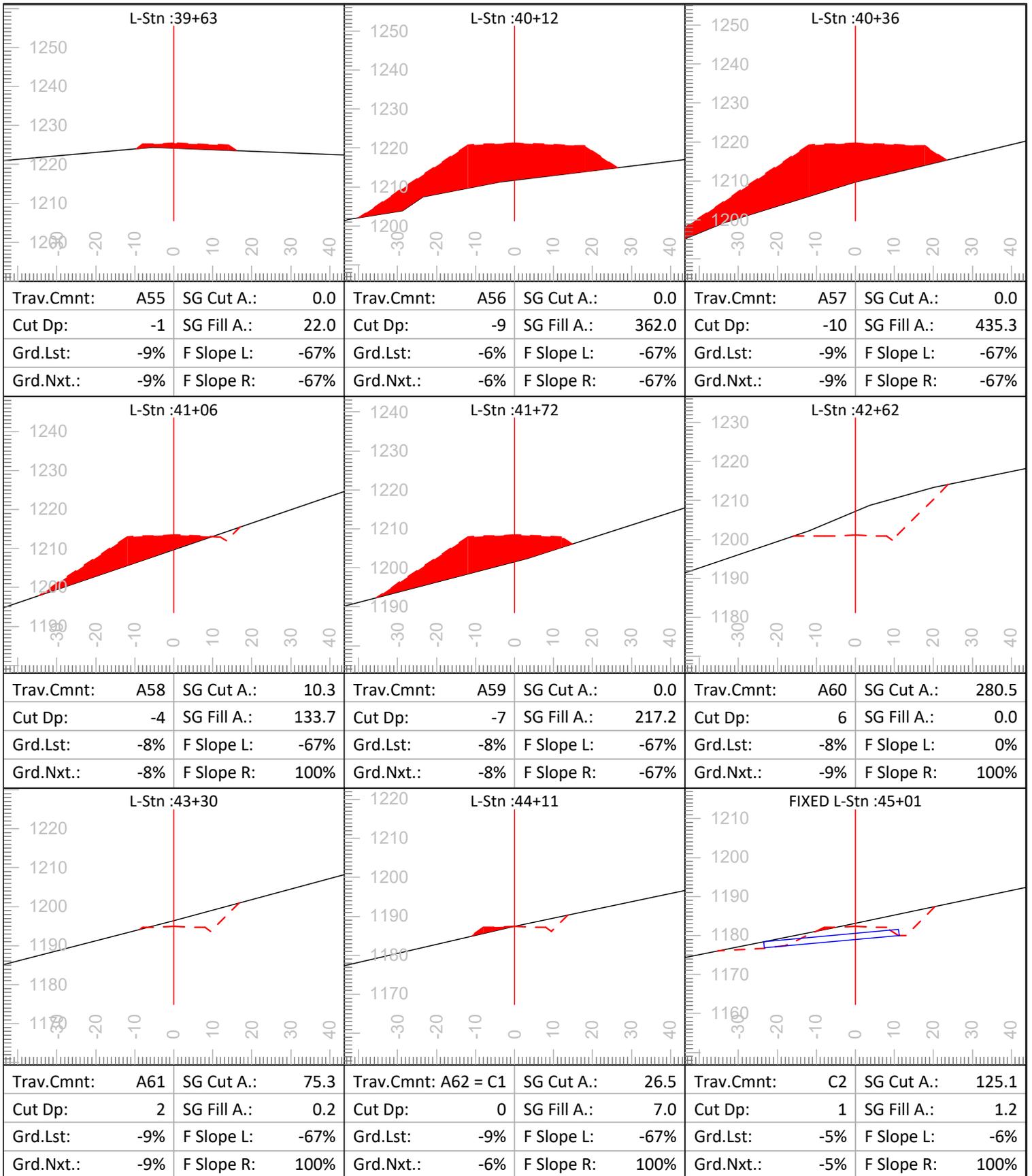
S-1121A CONSTRUCTION DETAIL

CROSS SECTIONS



S-1121A CONSTRUCTION DETAIL

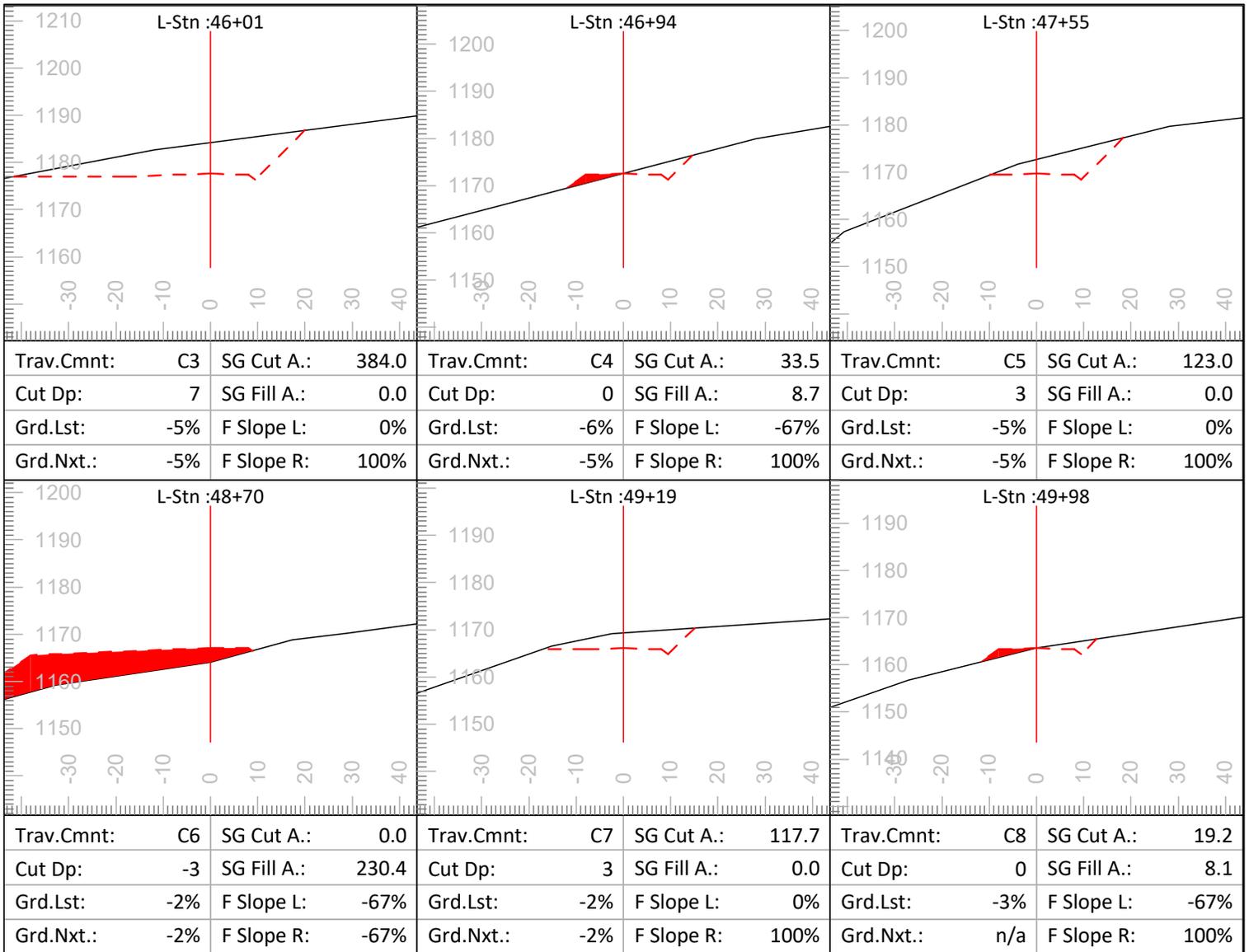
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S-1121A CONSTRUCTION DETAIL

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CROSS SECTIONS



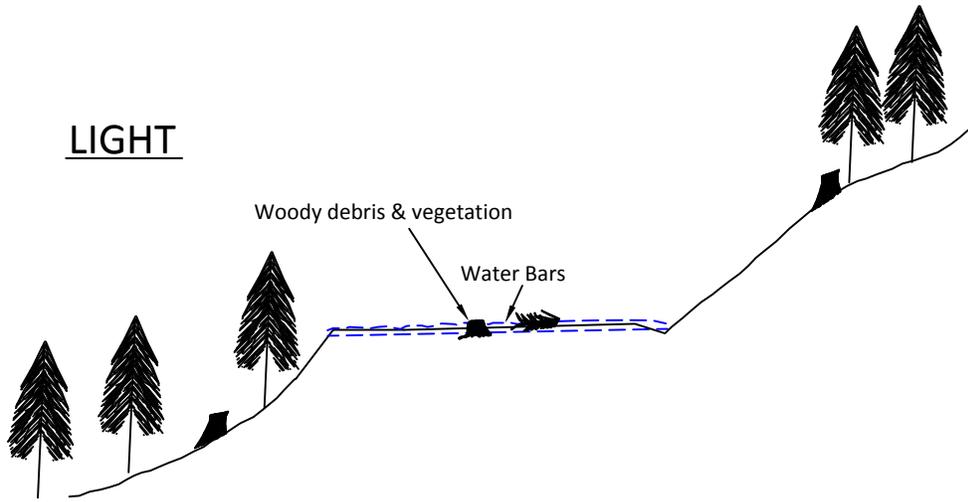
## S-1121A CONSTRUCTION DETAIL

Page 16 of 16

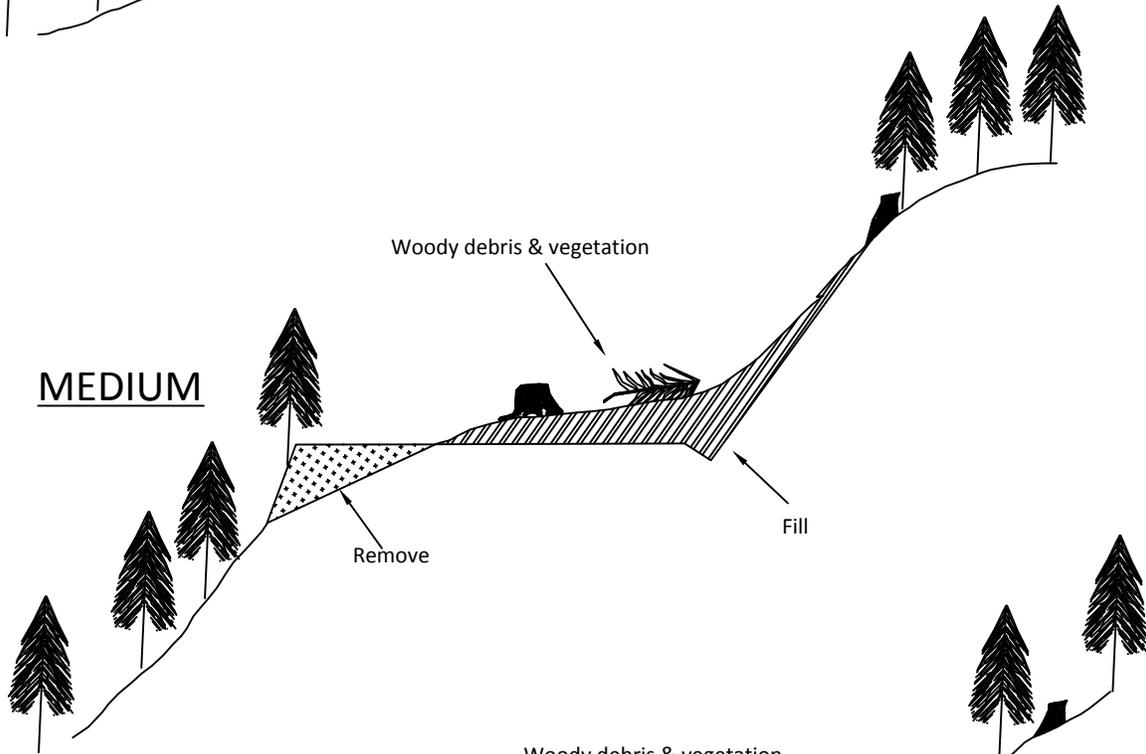
Reference Point (RP) Tag Information						Slope Stake Information		Description
Station	HD	Cut	Azimuth (0° Decl.)	Circle	Slope Ratio	HD	Cut	
2+91	53.5		55					18" x 50' CPP
7+24	54.0	24.0	52	23.0	1:1	31.0	20.0	
7+96	57.0	18.5	44	32.0	1:1	25.0	13.0	
9+10	52.0	20.5	47	26.5	1:1	25.5	12.5	
10+28	43.5	12.0	62	20.5	1:1	23.0	8.0	
12+82	56.5		143					18" x 40' CPP
17+95	54.5		110					18" x 30' CPP
20+33	70.0		152					18" x 30' CPP
23+90	56.0	24.0	151	25.0	1:1	31.0	17.5	
24+58	66.0	30.0	152	35.5	1:1	30.5	19.5	
25+32	52.0	21.0	132	27.0	1:1	25.0	14.0	
31+20	48.0		188					18" x 30' CPP
33+29	39.5		188					C/L RP
37+35	43.0	17.0	163	18.5	1:1	24.5	12.0	
38+41	60.0	28.5	137	29.0	1:1	31.0	19.5	
39+15	36.5	16.0	152	14.0	1:1	22.5	11.0	
41+72	47.5		91					18" x 40' CPP
42+62	63.0	23.5	101	35.5	1:1	27.5	14.5	
45+01	47.5		91					18" x 40' CPP
46+01	47.5		151					C/L RP
49+98	59.0		36					C/L RP

# ROAD ABANDONMENT CROSS SECTIONS

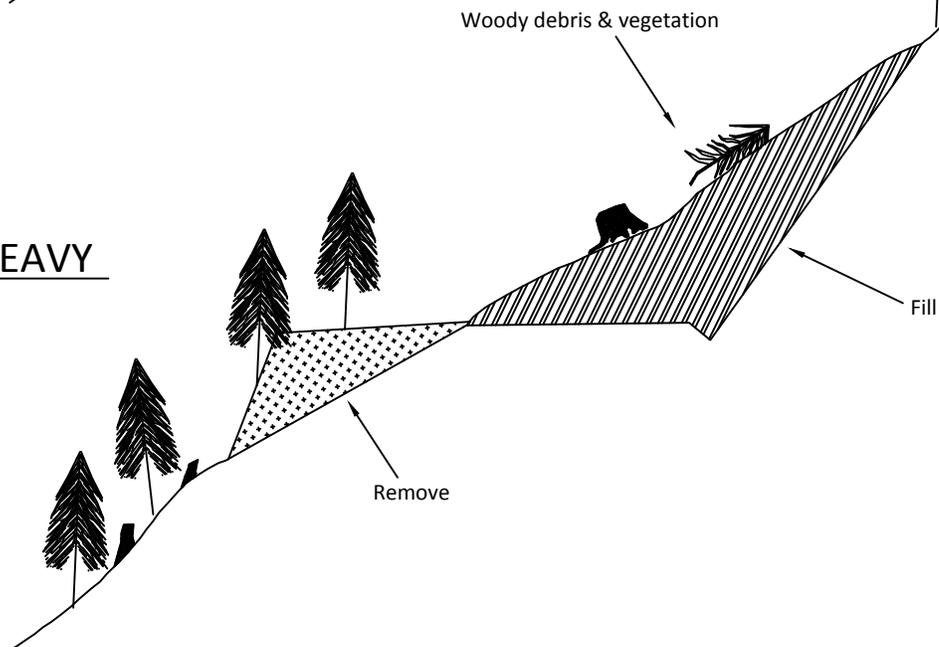
LIGHT



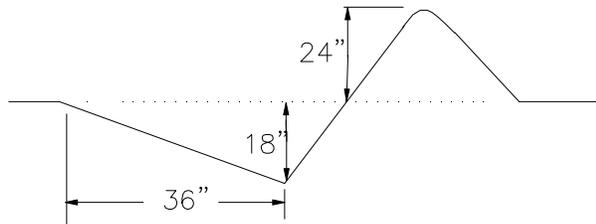
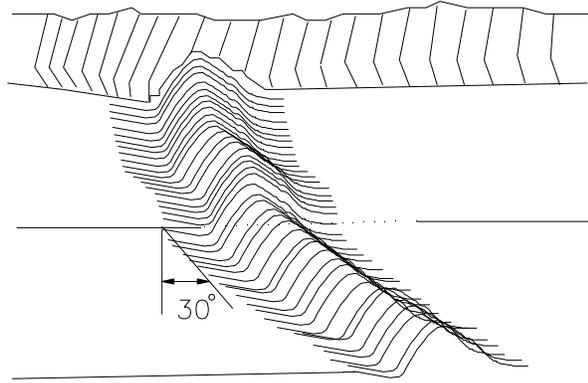
MEDIUM



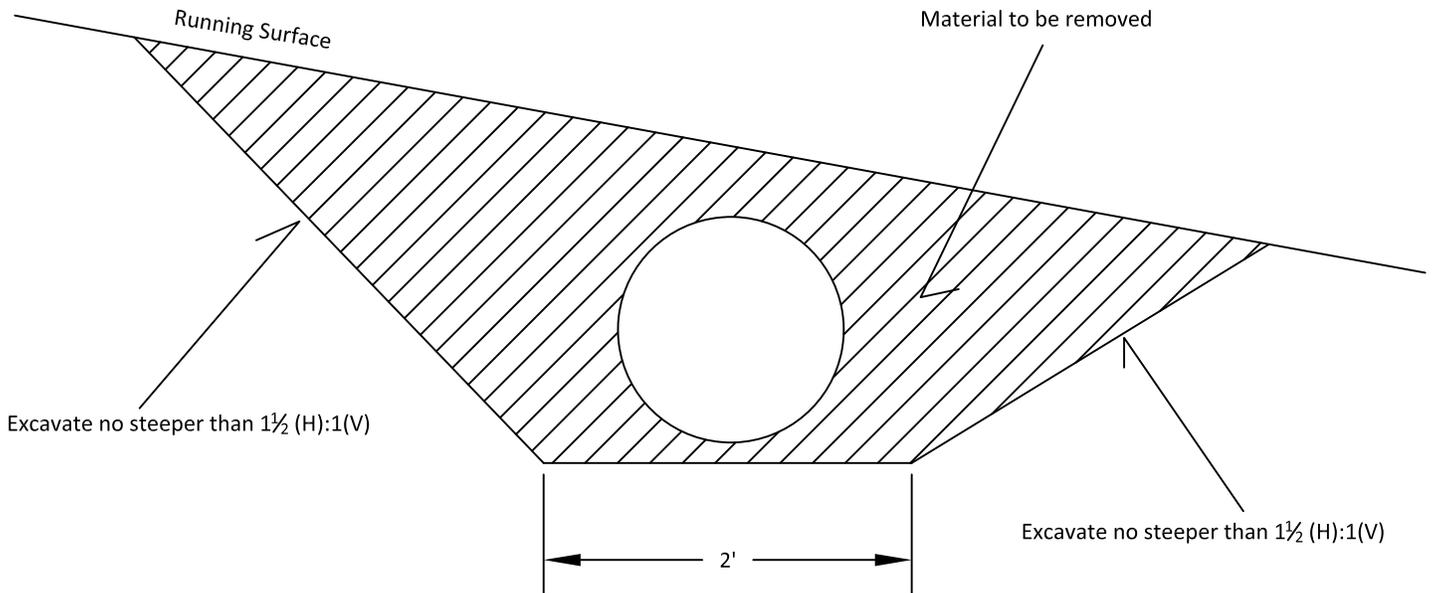
HEAVY



# NON-DRIVABLE WATER BAR DETAIL



## CROSS DRAIN REMOVAL DETAIL



1) Excavated material may be wasted on the road surface on the downhill side of the excavation. Waste material shall be sloped no steeper than 1½ (H):1(V).

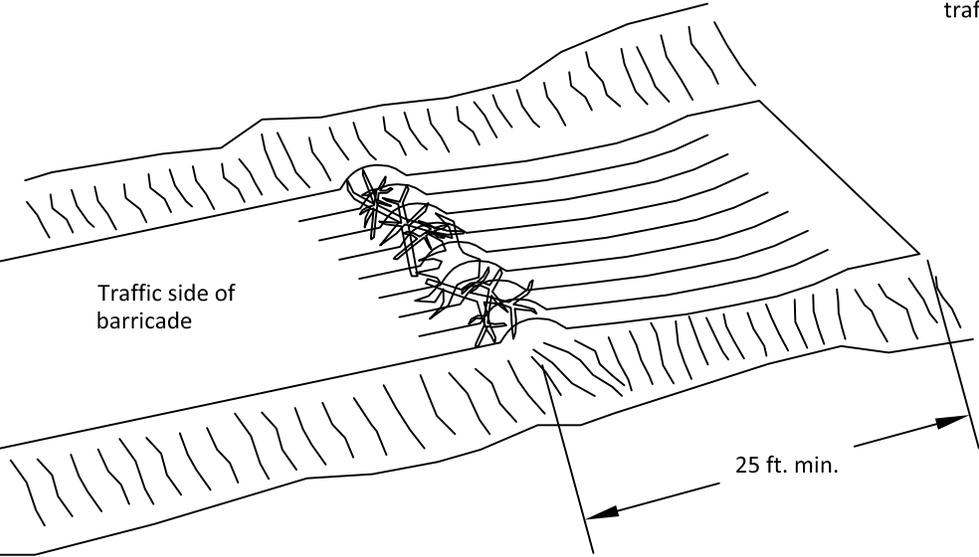
2) Resulting trench shall be keyed into the ditchline and sloped towards the outside edge of the road with a drop of at least 1 foot in 10 feet.

# EARTHEN BARRICADE DETAIL

PLAN VIEW

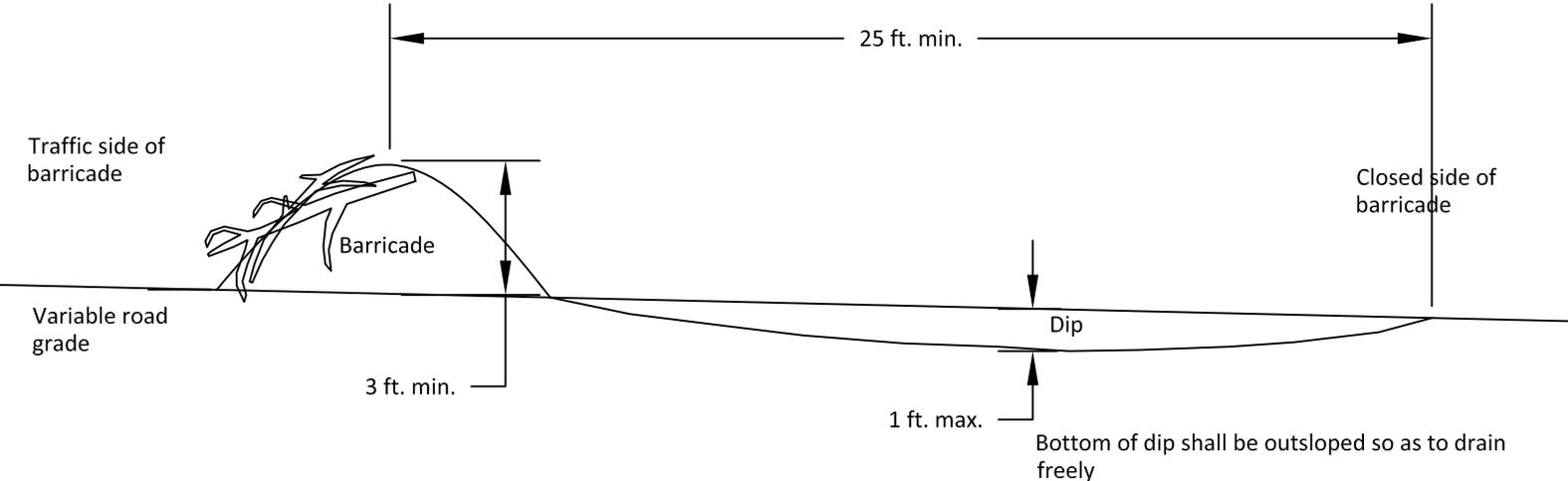
(Not to scale)

Slash and root wads shall be incorporated into traffic side of the barricade.



PROFILE VIEW

(Not to scale)





ROCK SOURCE DEVELOPMENT PLAN

JAMES PIT

1. 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 for Construction Work" (296-155 WAC), Washington Department of Labor and Industries.
  
2. Purchaser shall arrange with the Contract Administrator to review the following designated pit(s) and examine the area before beginning any operations. A rock source plan of operations shall be developed and agreed upon by the Contract Administrator and Purchaser before beginning any operations.

<u>Pit Name</u>	<u>Legal Description</u>	<u>Maximum Pit Face Height</u>	<u>Requirements</u>
JAMES PIT	33, T06N, R04E	30 Feet	Mining shall occur between stations 23+00 and 27+00 of RS-1200 road as indicated on the ROCK SOURCE DEVELOPMENT PLAN MAP.

3. All vegetation including stumps shall be cleared a minimum of 25 feet beyond the top of all working faces. The Purchaser shall maintain a minimum of 15 foot wide area stripped to rock from the pit face at all times.
  
4. All overburden and excavated material from construction of equipment access trail that cannot be use for processing rock shall be end hauled, placed, and compacted at the designated Waste Areas. Waste Area compaction requirements are specified in the COMPACTION LIST.
  
5. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the designated Waste Area.
  
6. Upon request by the Contract Administrator, the Purchaser will submit an informational drilling and shooting plan five working days prior to any drilling.
  
7. Drilling and rock extraction may begin when the Contract Administrator has approved, in writing, all of the clearing, grubbing and overburden removal.
  
8. Working bench width shall be a minimum of 20 feet.
  
9. Upon request by the Contract Administrator, the Purchaser will submit an informational drilling and shooting report after blasting has occurred.

ROCK SOURCE DEVELOPMENT PLAN

JAMES PIT

Page 2 of 3

10. The pit floor shall have continuity of slope with a smooth and neat condition that provides drainage at a minimum of 3 percent. All knobs, bumps, or extrusions shall be removed to the designated floor level by excavation or drill and shoot techniques. No sediment shall enter live water.
11. The location and amount of material deposited in a temporary stockpile is subject to approval by the Contract Administrator. All stockpiled material shall be maintained in a neat and useable condition.
12. Oversize material remaining in the pit at the conclusion of use shall not exceed 5 percent of the total volume mined during that operation. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of operations, all remaining oversize material shall be located as directed by the Contract Administrator.
13. Upon completion of pit operations, the following shall occur:
  - a. The maximum slope of pit walls must be consistent with recognized engineering standards for the type of material being excavated in accordance with the following table:

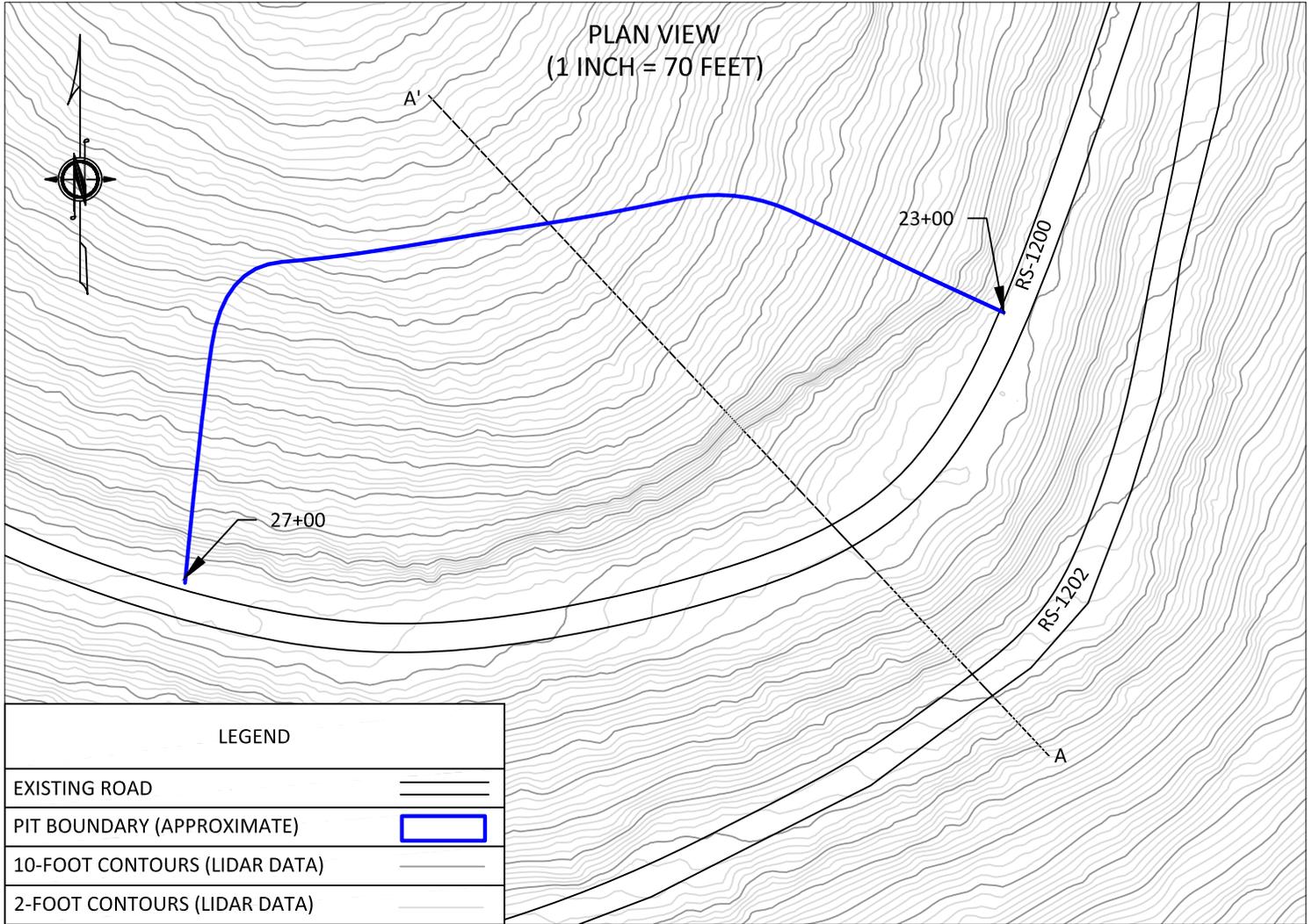
<u>Material</u>	<u>Maximum Slope Ratio (Horiz. :Vert.)</u>	<u>Maximum Slope Percent</u>
Sand	2:1	50
Gravel	1.5:1	67
Common Earth	1:1	100
Fractured Rock	½ :1	200
Solid Rock	0:1	vertical

- b. Pit walls may not be undermined or over steepened. Pit walls must be maintained in a condition that minimizes the possibility of walls sliding or failing.
- c. Pit faces and walls shall be scaled and cleared of loose and overhanging material.
- d. Benches shall have safety berms constructed or access blocked to highway vehicles.
- e. The pit area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life.
- f. All exposed soils in the Waste Areas shall be grass seeded in accordance with Section 8 of Road Plan.
- g. The pit area shall be worked and left in a condition that future operations may proceed in an orderly manner.
- h. The site shall be cleared of all temporary structures, equipment and rubbish, block access roads with existing on-site rip rap as directed by the Contract Administrator, and shall be left in a neat and presentable condition.
- i. The Purchaser shall obtain written approval of final rock source condition and compliance with the terms of this plan.

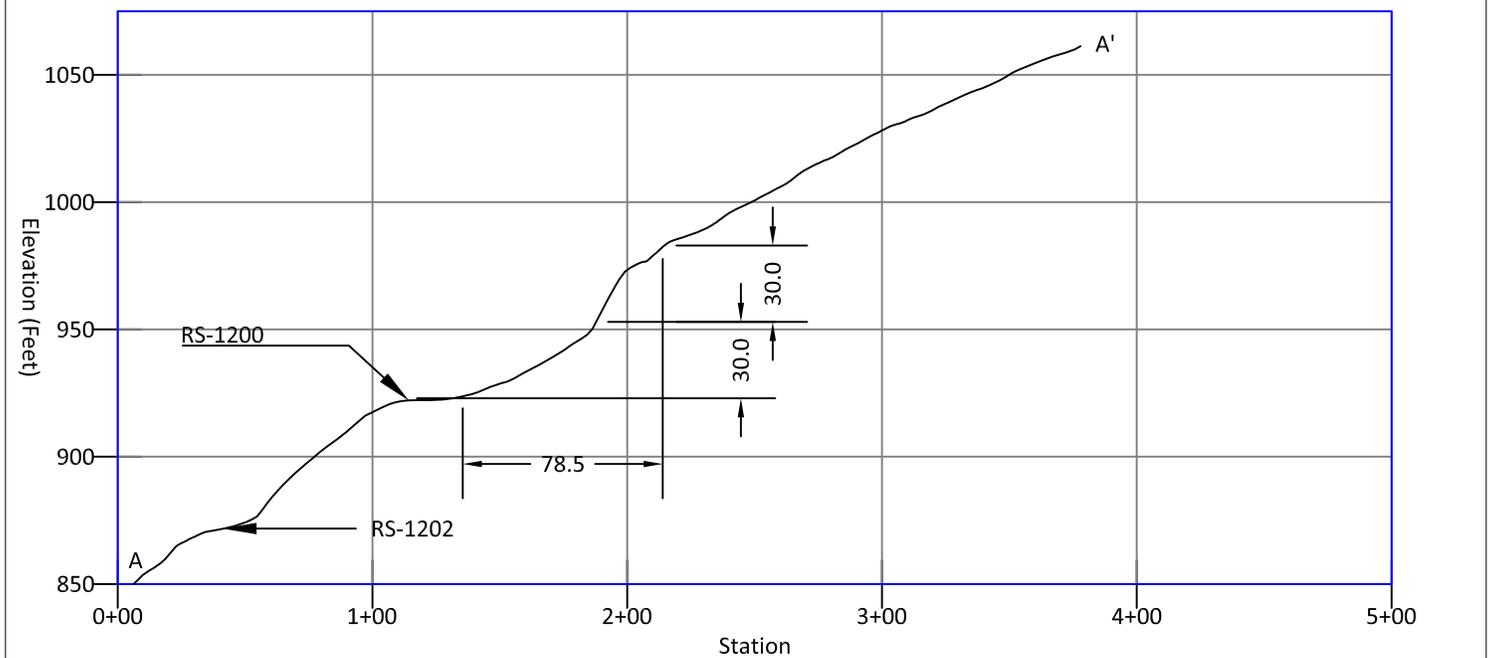
ROCK SOURCE DEVELOPMENT PLAN

JAMES PIT

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A-A' PROFILE



DEPARTMENT OF NATURAL RESOURCES

ROAD DEVELOPMENT COST SUMMARY

Page 1 of 10

REGION	PACIFIC CASCADE		
DISTRICT	YACOLT		
SALE/PROJECT NAME	PICK UP STICKS	CONTRACT NUMBER: 30-098580	
LEGAL DESCRIPTION	Section(s)33, 34,35, T06N, R04E; Section(s) 29,30,31,32, T06N, R05E, W.M.		
ROAD NUMBER	RS-1001, S-1002, S-1100, S-1121A, S-1121A2, S-1221, S-2070, S-2072B	RS-1200, S-1000, S-1100, S-1121	RS-1000, S-1000, S-1120
ROAD STANDARD	Construction	Reconstruction	Maintenance
NUMBER OF STATIONS	139.03	50.42	155.29
CLEARING AND GRUBBING	\$32,283	\$3,892	
EXCAVATION AND FILL	\$268,497	\$88,973	
MISC. MAINTENANCE			\$13,649
ROCK:			
Surfacing	\$15,434	\$0	\$64,926
Ballast	\$137,825	\$52,064	\$4,055
Rip Rap	\$190,624	\$274	\$29
CULVERTS	\$31,736	\$4,527	\$3,266
GENERAL EXPENSES	\$67,640	\$14,973	\$8,593
MOBILIZATION	\$6,616	\$6,616	\$6,616
TOTAL COSTS	\$750,655	\$171,319	\$101,134
COST PER STATION	\$5,399	\$3,398	\$651
ROAD CLOSURE COSTS	\$5,902		
		TOTAL (All Roads) =	\$1,029,010
		TOTAL (All roads excluding optional rock) =	\$998,504
		SALE VOLUME MBF =	9,861
		TOTAL COST PER MBF (All Roads) =	\$104.35
		TOTAL COST PER MBF (All roads excluding optional rock) =	\$101.26

Compiled by: Scott Hanna

Date: 1/6/2020

## CONSTRUCTION COSTS

SALE NAME: PICK UP STICKS

CONTRACT NUMBER: 30-098580

### CLEARING AND GRUBBING

<u>Road</u>	<u>Type</u>	<u>Average Side Slope (%)</u>	<u>Average MBF/acre</u>	<u>Production Factor</u>	<u>Running Surface (ft)</u>	<u>Total Stations</u>	<u>\$/Station</u>	<u>Sub-Total</u>
RS-1001	Optional	10	20	2.00	12	4.36	\$110.00	\$479.60
S-1000	Required	30	40	4.89	12	4.38	\$295.85	\$1,295.82
S-1002	Optional	40	71	7.00	12	13.45	\$462.00	\$6,213.90
S-1100	Required	40	50	5.67	12	8.86	\$343.04	\$3,039.33
S-1121A	Required	40	35	4.50	12	19.02	\$321.75	\$6,119.69
S-1121A	Optional	34	30	4.11	12	20.29	\$226.05	\$4,586.55
S-1121A2	Optional	40	5	2.33	12	5.16	\$128.15	\$661.25
S-1221	Optional	30	35	4.50	12	7.37	\$247.50	\$1,824.08
S-2070	Optional	30	40	4.89	12	15.22	\$268.95	\$4,093.42
S-2072B	Optional	30	40	4.89	12	14.76	\$268.95	\$3,969.70

**CLEAR AND GRUB TOTAL = \$32,283.34**

### EXCAVATION

<u>Road</u>	<u>Type</u>	<u>Average Side Slope (%)</u>	<u>Material Type</u>	<u>Production Factor</u>	<u>Running Surface (ft)</u>	<u>Total Stations</u>	<u>\$/Station</u>	<u>Sub-Total</u>
RS-1001	Optional	10	Common Soil	1.50	12	4.36	\$150.00	\$654.00
S-1000	Required	30	Common Soil	2.50	12	4.38	\$250.00	\$1,095.00
S-1002	Optional	40	Common Soil	4.25	12	13.45	\$425.00	\$5,716.25
S-1100	Required	40	Common Soil	4.25	12	8.86	\$425.00	\$3,765.50
S-1121A	Required	40	Common Soil	4.25	12	19.02	\$425.00	\$8,083.50
S-1121A	Optional	30	Common Soil	2.50	12	20.29	\$250.00	\$5,072.50
S-1121A2	Optional	40	Common Soil	4.25	12	5.16	\$425.00	\$2,193.00
S-1221	Optional	30	Common Soil	2.50	12	7.37	\$250.00	\$1,842.50
S-2070	Optional	30	Common Soil	2.50	12	15.22	\$250.00	\$3,805.00
S-2072B	Optional	30	Common Soil	2.50	12	14.76	\$250.00	\$3,690.00

### FULL BENCH/END HAUL

<u>Road</u>	<u>Cubic Yards</u>	<u>From Station</u>	<u>To Station</u>	<u>Drill (\$/cy)</u>	<u>Exc. (\$/cy)</u>	<u>Haul (\$/cy)</u>	<u>Dozer (\$/cy)</u>	<u>Sub-Total</u>
S-1000	2,800	64+29	68+67	\$0.51	\$3.66	\$1.26	\$0.68	\$17,108.00
S-1100	24,902	0+00	12+28	\$0.00	\$3.62	\$1.90	\$0.68	\$154,392.40
S-1100	2,660	21+14	24+35	\$0.00	\$3.28	\$1.94	\$0.68	\$15,694.00
S-1121A	3,050	6+04	10+04	\$0.00	\$2.61	\$0.72	\$0.68	\$12,230.50
S-1121A	2,475	36+52	38+41	\$0.00	\$2.51	\$0.71	\$0.79	\$9,924.75

### SWITCHBACK

<u>Road</u>	<u>From Station</u>	<u>To Station</u>	<u>Length (ft)</u>	<u>Cut Vol (cy)</u>	<u>Fill Vol (cy)</u>	<u>Compact (\$/cy)</u>	<u>Dozer (\$/cy)</u>	<u>Sub-Total</u>
S-1121A	24+05	28+41	436	3,522	1,216	\$0.49	\$1.82	\$7,005.88
S-1121A	38+41	41+72	331	1,778	1,768	\$0.49	\$1.74	\$3,960.04

**CONSTRUCTION COSTS**

**BORROW (Material needed to construct the road grade)**

<u>Road</u>	<u>From Station</u>	<u>To Station</u>	<u>Length (ft)</u>	<u>Fill Vol (cy)</u>	<u>Haul (\$/cy)</u>	<u>Compact (\$/cy)</u>	<u>Dozer (\$/cy)</u>	<u>Sub-Total</u>
S-1002	0+00	2+19	219	1,700	\$0.84	\$0.50	\$0.93	\$3,859.00
S-1121A	41+72	42+17	45	170	\$0.97	\$0.58	\$0.40	\$331.50

**GRADE, SHAPE AND COMPACT SUBGRADE**

<u>Total Stations</u>	<u>\$/Station</u>							<u>Sub-Total</u>
139.03	\$32.49							\$4,517.08

**SOIL EROSION CONTROL**

<u>Total Stations</u>	<u>Average Width (ft)</u>	<u>Application Rate (lbs/ac)</u>	<u>Seed Quantity (lbs)</u>	<u>Material Cost (\$/lb)</u>	<u>Application Cost (\$/sta)</u>			<u>Sub-Total</u>
139.03	40	50	638	\$2.85	\$12.50			\$3,556.18

**EXCAVATION TOTAL = \$268,496.58**

**CULVERTS**

<u>Description</u>	<u>Dia (inches)</u>	<u>Length (feet)</u>	<u>Downspt. (ft)</u>	<u>Cost/ft</u>	<u>Straw Bales</u>	<u>\$/Bale</u>	<u>Markers (\$)</u>	<u>Sub-total</u>
X-Drain	18	590	60	\$21.76				\$14,144.00
Stream x-ing	24	100	0	\$30.14	2	\$9.19		\$3,032.38
Stream x-ing	48	0	0	\$0.00				\$0.00

**CULVERT TOTAL = \$31,736.38**

## RECONSTRUCTION COSTS

SALE NAME: PICK UP STICKS

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CONTRACT NUMBER: 30-098580

### CLEARING AND GRUBBING

<u>Road</u>	<u>Type</u>	<u>Average Side Slope (%)</u>	<u>Average MBF/Acre</u>	<u>Production Factor</u>	<u>Running Surface (ft)</u>	<u>Total Stations</u>	<u>\$/Station</u>	<u>Sub-Total</u>
RS-1200	Required	5	0	1.00	12	6.30	\$80.00	\$504.00
S-1100	Required	50	25	3.72	12	17.47	\$148.80	\$2,599.54
S-1121	Required	30	5	2.33	12	8.46	\$93.20	\$788.47

**CLEAR AND GRUB TOTAL = \$3,892.01**

### EXCAVATION

<u>Road</u>	<u>Type</u>	<u>Average Side Slope (%)</u>	<u>Material Type</u>	<u>Production Factor</u>	<u>Running Surface (ft)</u>	<u>Total Stations</u>	<u>\$/Station</u>	<u>Sub-Total</u>
RS-1200	Required	5	Common Soil	1.25	12	6.30	\$93.75	\$590.63
S-1100	Required	30	Common Soil	2.50	12	17.47	\$187.50	\$3,275.63
S-1121	Required	30	Common Soil	2.50	12	8.46	\$187.50	\$1,586.25

### FULL BENCH/END HAUL

<u>Road</u>	<u>Cubic Yards</u>	<u>From Station</u>	<u>To Station</u>	<u>Drill (\$/cy)</u>	<u>Exc. (\$/cy)</u>	<u>Haul (\$/cy)</u>	<u>Dozer (\$/cy)</u>	<u>Sub-Total</u>
RS-1200	200	20+70	27+00	\$0.00	\$1.99	\$1.23	\$0.68	\$780.00
S-1100	8,000	24+35	42+54	\$0.00	\$6.31	\$1.15	\$0.68	\$65,120.00
S-1100	2,400	24+35	42+54	\$0.00	\$3.17	\$2.23	\$0.79	\$14,856.00

### GRADE, SHAPE AND COMPACT SUBGRADE

<u>Total Stations</u>	<u>Cost/Station</u>						<u>Sub-Total</u>
50.42	\$32.49						\$1,638.15

### SOIL EROSION CONTROL

<u>Total Stations</u>	<u>Average Width (ft)</u>	<u>Application Rate (lbs/ac)</u>	<u>Seed Quantity (lbs)</u>	<u>Material Cost (\$/lb)</u>	<u>Application Cost (\$/sta)</u>		<u>Sub-Total</u>
50.42	30	50	174	\$2.85	\$12.50		\$1,126.15

**EXCAVATION TOTAL = \$88,972.81**

### CULVERTS

<u>Description</u>	<u>Dia (inches)</u>	<u>Length (feet)</u>	<u>Downspt. (ft)</u>	<u>Cost/ft</u>	<u>Straw Bales</u>	<u>\$/Bale</u>	<u>Markers (\$)</u>	<u>Sub-Total</u>
X-Drain	18	90	20	\$24.33				\$2,676.30
Stream x-ing	24	30	30	\$30.54	2	\$9.19		\$1,850.78
Stream x-ing	48	0	0	\$0.00				\$0.00

**CULVERT TOTAL = \$4,527.08**

**MAINTENANCE COSTS**

SALE NAME: PICK UP STICKS

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CONTRACT NUMBER: 30-098580

**MAINTENANCE ACTIVITY TYPE**

	<u>\$/Station</u>	<u>Total Stations</u>	<u>Sub-Total</u>
Grade, shape, and compact existing surface	\$30.43	125.85	\$3,829.62
Light brushing	\$24.62	139.84	\$3,442.86
Ditch Cleaning	\$68.87	40.23	\$2,770.64
Ditch Cleaning with endhaul	\$109.05	21.33	\$2,326.04
Clean culvert inlet/outlets	\$7.32	61.56	\$450.62

**SOIL EROSION CONTROL**

<u>Total Stations</u>	<u>Average Width (ft)</u>	<u>Application Rate (lbs/ac)</u>	<u>Seed Quantity (lbs)</u>	<u>Material Cost (\$/lb)</u>	<u>Application Cost (\$/sta)</u>		<u>Sub-Total</u>
61.56	3	50	21	\$2.85	\$12.50		\$829.35

**MISC TOTAL = \$13,649.13**

**CULVERTS**

<u>Description</u>	<u>Dia (inches)</u>	<u>Length (feet)</u>	<u>Downspt. (ft)</u>	<u>Cost/ft</u>	<u>Straw Bales</u>	<u>\$/Bale</u>	<u>Marker (\$)</u>	<u>Sub-Total</u>
Contingency	18	110	0	\$21.50				\$2,365.00

**CULVERT TOTAL = \$3,265.80**

SURFACING COSTS

SALE NAME: PICK UP STICKS

CONTRACT NUMBER: 30-098580

<u>Source No.</u>	<u>Pit Name</u>	<u>Base Cost (\$/yd<sup>3</sup>)</u>	<u>Application Cost (\$/yd<sup>3</sup>)</u>
Rock Source No. 1	JAMES PIT	\$6.99	\$2.00

<u>Road Name</u>	<u>Type</u>	<u>Total Length (sta)</u>	<u>Rock Source</u>	<u>Optional Rock</u>	<u>Rock Product</u>	<u>Haul Cost (\$/yd<sup>3</sup>)</u>	<u>Crushing Cost (\$/yd<sup>3</sup>)</u>	<u>Cubic Yards</u>	<u>Sub-Total</u>
S-1000	Maintenance	64.29	Rock Source No. 1	--	1½" Minus	\$2.76	\$4.75	1967	\$32,455.50
S-1000	Construction	4.38	Rock Source No. 1	--	1½" Minus	\$4.02	\$4.75	152	\$2,699.52
S-1000	Maintenance	57.11	Rock Source No. 1	--	1½" Minus	\$4.41	\$4.75	1789	\$32,470.35
S-1100	Construction	24.35	Rock Source No. 1	--	1½" Minus	\$3.68	\$4.75	731	\$12,734.02

<u>Type</u>	<u>Total</u>
Construction	\$15,433.54
Reconstruction	\$0.00
Maintenance	\$64,925.85

BALLAST COSTS

SALE NAME: PICK UP STICKS

CONTRACT NUMBER: 30-098580

<u>Source No.</u>	<u>Pit Name</u>	<u>Base Cost (\$/yd<sup>3</sup>)</u>	<u>Application Cost (\$/yd<sup>3</sup>)</u>
Rock Source No. 1	JAMES PIT	\$6.99	\$2.00

<u>Road Name</u>	<u>Type</u>	<u>Total Length (sta)</u>	<u>Rock Source</u>	<u>Optional Rock</u>	<u>Rock Product</u>	<u>Haul Cost (\$/yd<sup>3</sup>)</u>	<u>Crushing Cost (\$/yd<sup>3</sup>)</u>	<u>Cubic Yards</u>	<u>Sub-Total</u>
RS-1200	Reconstruction	6.3	Rock Source No. 1	--	3" Minus	\$0.59	\$4.20	189	\$2,604.42
S-1000	Construction	4.38	Rock Source No. 1	--	SPR	\$4.02	\$0.00	348	\$4,527.48
S-1002	Construction	13.45	Rock Source No. 1	Optional	3" Minus	\$3.71	\$4.20	729	\$12,320.10
S-1100	Construction	24.35	Rock Source No. 1	--	SPR	\$4.29	\$0.00	1983	\$26,334.24
S-1100	Reconstruction	35.66	Rock Source No. 1	--	3" Minus	\$4.75	\$4.20	2325	\$41,710.50
S-1120	Maintenance	4.45	Rock Source No. 1	--	3" Minus	\$6.59	\$4.20	205	\$4,054.90
S-1121	Reconstruction	8.46	Rock Source No. 1	--	3" Minus	\$6.73	\$4.20	389	\$7,748.88
S-1121A	Construction	20.33	Rock Source No. 1	--	3" Minus	\$6.99	\$4.20	1447	\$29,200.46
S-1121A	Construction	29.65	Rock Source No. 1	--	3" Minus	\$7.61	\$4.20	2272	\$47,257.60
S-1121A2	Construction	5.16	Rock Source No. 1	Optional	3" Minus	\$7.61	\$4.20	344	\$7,155.20
S-1221	Construction	7.37	Rock Source No. 1	Optional	3" Minus	\$7.82	\$4.20	525	\$11,030.25

<u>Type</u>	<u>Total</u>
Construction	\$137,825.33
Reconstruction	\$52,063.80
Maintenance	\$4,054.90

RIP RAP COSTS

SALE NAME: PICK UP STICKS

CONTRACT NUMBER: 30-098580

<u>Source No.</u>	<u>Pit Name</u>	<u>Base Cost (\$/yd³)</u>
Rock Source No. 1	JAMES PIT	\$7.34

<u>Road Name</u>	<u>Activity Type</u>	<u>Armoring (\$/yd³)</u>	<u>Bedding (\$/yd³)</u>	<u>Backfill (\$/yd³)</u>	<u>Armoring (yd³)</u>	<u>Bedding (yd³)</u>	<u>Backfill (yd³)</u>	<u>Haul (\$/cy)</u>	<u>Sub-Total</u>
S-1000	Maintenance	\$25.26			1			\$3.99	\$29.25
S-1000	Construction	\$25.26	\$14.09	\$13.91	0.5	755	9800	\$4.09	\$190,140.58
S-1002	Construction	\$25.26			2			\$4.05	\$58.62
S-1100	Construction	\$25.26			1.5			\$7.29	\$48.83
S-1100	Reconstruction	\$25.26	\$12.09		2.5	5		\$10.44	\$201.90
S-1121	Reconstruction	\$25.26			2			\$10.86	\$72.24
S-1121A	Construction	\$25.26	\$12.09		12	6			\$375.66

<u>Type</u>	<u>Total</u>
Construction	\$190,623.69
Reconstruction	\$274.14
Maintenance	\$29.25

**MOBILIZATION COSTS**

SALE NAME: PICK UP STICKS

CONTRACT NUMBER: 30-098580

LOWBOY HAUL (Round Trip)		
<u>DIST. (mi)</u>	<u>ROADWAY</u>	<u>AVE SPEED (mph)</u>
40.0	Highway	35
10.0	County/ Mainline	25
10.0	Forest Roads	5

<u>Number of Equipment to Mobilize</u>	<u>Equipment Description</u>	<u>Move-in Costs (\$)</u>	<u>Pilot Cars</u>	<u>Mobilization (\$/mile)</u>	<u>Begin Mileage</u>	<u>End Mileage</u>	<u>Total Miles</u>	<u>Internal Mobilization Costs (\$/mile)</u>	<u>Sub-total Cost</u>
1	Brush Cutter	\$500.00		\$22.00	0.00	0.00	0.00	\$0.00	\$500.00
1	Graders	\$1,132.00		\$52.25	0.00	6.75	6.75	\$352.69	\$1,484.69
0	Loader (Small)	\$1,132.00		\$26.00	0.00	0.00	0.00	\$0.00	\$0.00
1	Loader (Med. & Large)	\$1,132.00		\$29.00	0.00	0.00	0.00	\$0.00	\$1,132.00
2	Rollers & Compactors	\$1,132.00		\$36.67	0.00	6.75	6.75	\$495.05	\$3,254.10
0	Excavators (Small)	\$1,132.00		\$22.00	0.00	0.00	0.00	\$0.00	\$0.00
1	Excavators (Med.)	\$1,132.00		\$29.00	0.00	0.00	0.00	\$0.00	\$1,132.00
1	Excavators (Large)	\$1,000.00	2	\$115.00	0.00	6.75	6.75	\$776.25	\$1,853.39
0	Tired Backhoes/Skidders	\$1,132.00		\$30.00	0.00	0.00	0.00	\$0.00	\$0.00
1	Tractors (D6)	\$1,132.00		\$43.24	0.00	0.00	0.00	\$0.00	\$1,132.00
0	Tractors (D7)	\$1,132.00		\$30.00	0.00	0.00	0.00	\$0.00	\$0.00
1	Tractor (D8)	\$1,132.00	2	\$84.00	0.00	6.75	6.75	\$567.00	\$1,776.14
4	Dump Truck (10 cy)	\$100.00		\$9.80	0.00	6.75	6.75	\$264.60	\$1,458.40
1	Dump Truck (Off-Highway)	\$1,124.93		\$29.00	0.00	0.00	0.00	\$0.00	\$1,124.93
0	Water Truck (1500 Gal)	\$0.00		\$10.00	0.00	0.00	0.00	\$0.00	\$0.00
0	Water Truck (2500 Gal)	\$0.00		\$10.50	0.00	0.00	0.00	\$0.00	\$0.00
1	Move In/Set-up 2 Stage Crusher	\$5,000.00	2	\$422.85	0.00	0.00	0.00	\$0.00	\$5,000.00

TOTAL MOVE-IN COSTS: \$19,847.65

**ROAD CLOSURE COSTS**

SALE NAME: PICK UP STICKS

CONTRACT NUMBER: 30-098580

<u>Road</u>	<u>From Station</u>	<u>To Station</u>	<u>Total Stations</u>	<u>Type</u>
RS-1001	0+00	4+36	4.36	Heavy
S-1002	2+19	13+45	11.26	Light
S-1221	1+07	7+37	6.30	Light
S-2070	52+27	67+49	15.22	Heavy
S-2072B	0+00	14+76	14.76	Heavy

<u>Description</u>	<u>Cost/Station</u>	<u>Total Stations</u>	<u>Sub-Total</u>
Water barring	\$32.36	17.56	\$568.24
Wood placement	\$30.00	51.90	\$1,557.00
Cross drain removal and disposal	\$6.17	51.90	\$320.22
Road surface ripping	\$17.25	34.34	\$592.37
Earthen barricade	\$85.00	5.00	\$425.00

**SOIL EROSION CONTROL**

<u>Total Stations</u>	<u>Average Width (ft)</u>	<u>Application Rate (lbs/ac)</u>	<u>Seed Quantity (lbs)</u>	<u>Material Cost (\$/lb)</u>	<u>Application Cost (\$/sta)</u>	<u>Sub-Total</u>
51.90	15	50	89	\$2.85	\$12.50	\$902.40

**TOTAL = \$4,365.23**

Overhead & General Exp. Add      10%      **\$436.52**

<u>Description</u>	<u>\$ per Move</u>	<u># of Moves</u>	<u>Sub-total</u>
Dump Trucks	100	1	\$100
Excavator	1,000	1	\$1,000
<b>Total Mobilization =</b>			<b>\$1,100</b>

**ROAD CLOSURE TOTAL = \$5,901.75**



## 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 (optional and required) prior to haul*

#### EXCISE TAX EXEMPT ACTIVITIES

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

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

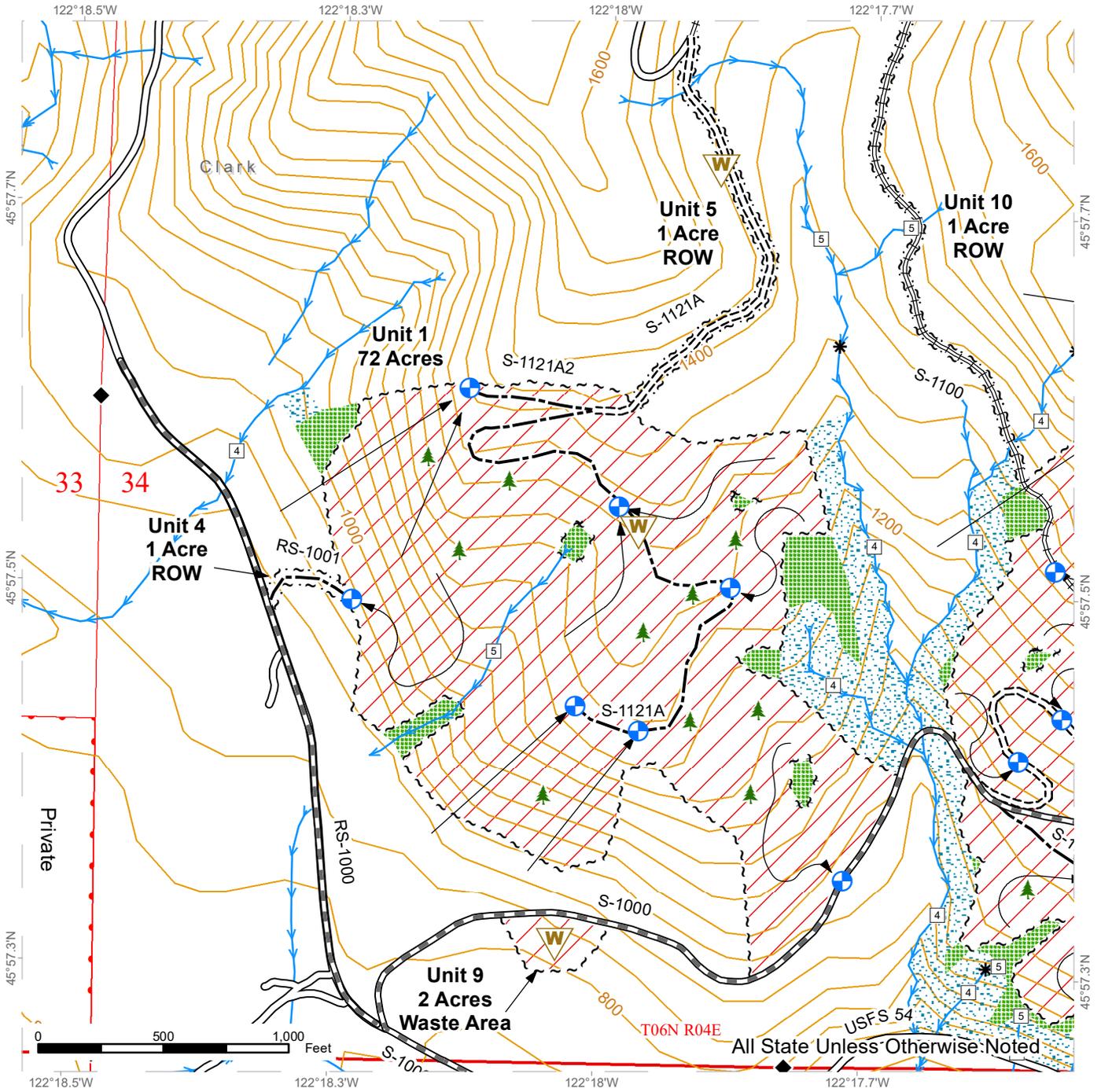
All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contract. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact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

(Revised 9/18)

# LOGGING PLAN MAP

**SALE NAME:** PICK UP STICKS  
**AGREEMENT#:** 30-098580  
**TOWNSHIP(S):** T6R4E, T5R4E, T6R5E  
**TRUST(S):** Common School and Indemnity (3), Escheat (9), Normal School (8), State Forest Purchase (2), State Forest Transfer (1)

**REGION:** Pacific Cascade Region  
**COUNTY(S):** Clark, Skamania  
**ELEVATION RGE:** 920-2640



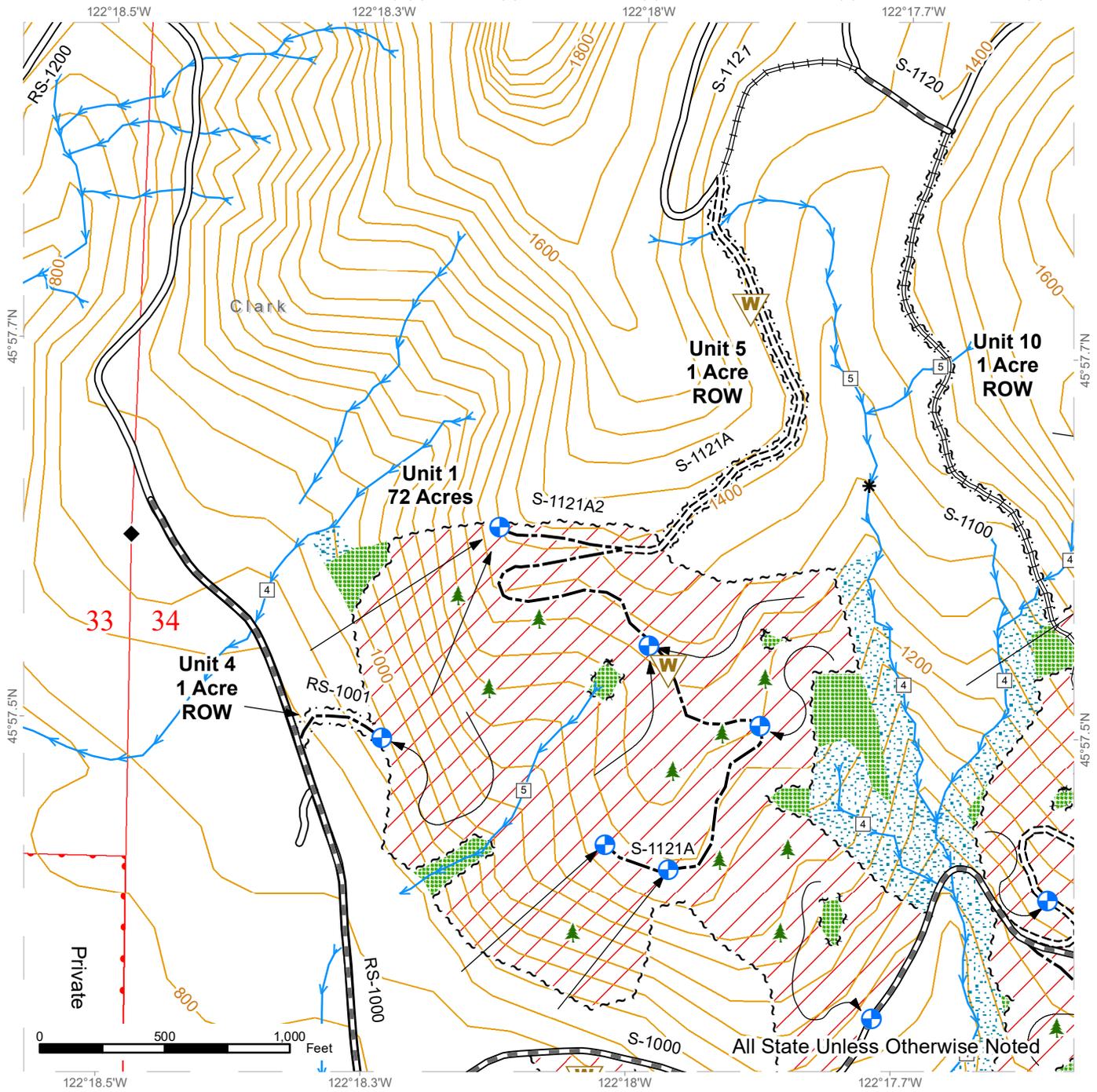
Variable Retention Harvest	Landing - Proposed	Sale Boundary Tags
Ground Harvest	Leave Tree Area <1/4-acre	Timber Type Change
Cable Harvest	Waste Area	Leave Tree Tags
Leave Tree Area	Existing Roads	Right of Way Tags
Riparian Mgt Zone	Required Pre-Haul Maintenance	Flag Line
Streams	Required Construction	
Stream Type	Required Reconstruction	
Stream Type Break	Optional Construction	
Survey Monument		



# LOGGING PLAN MAP

**SALE NAME:** PICK UP STICKS  
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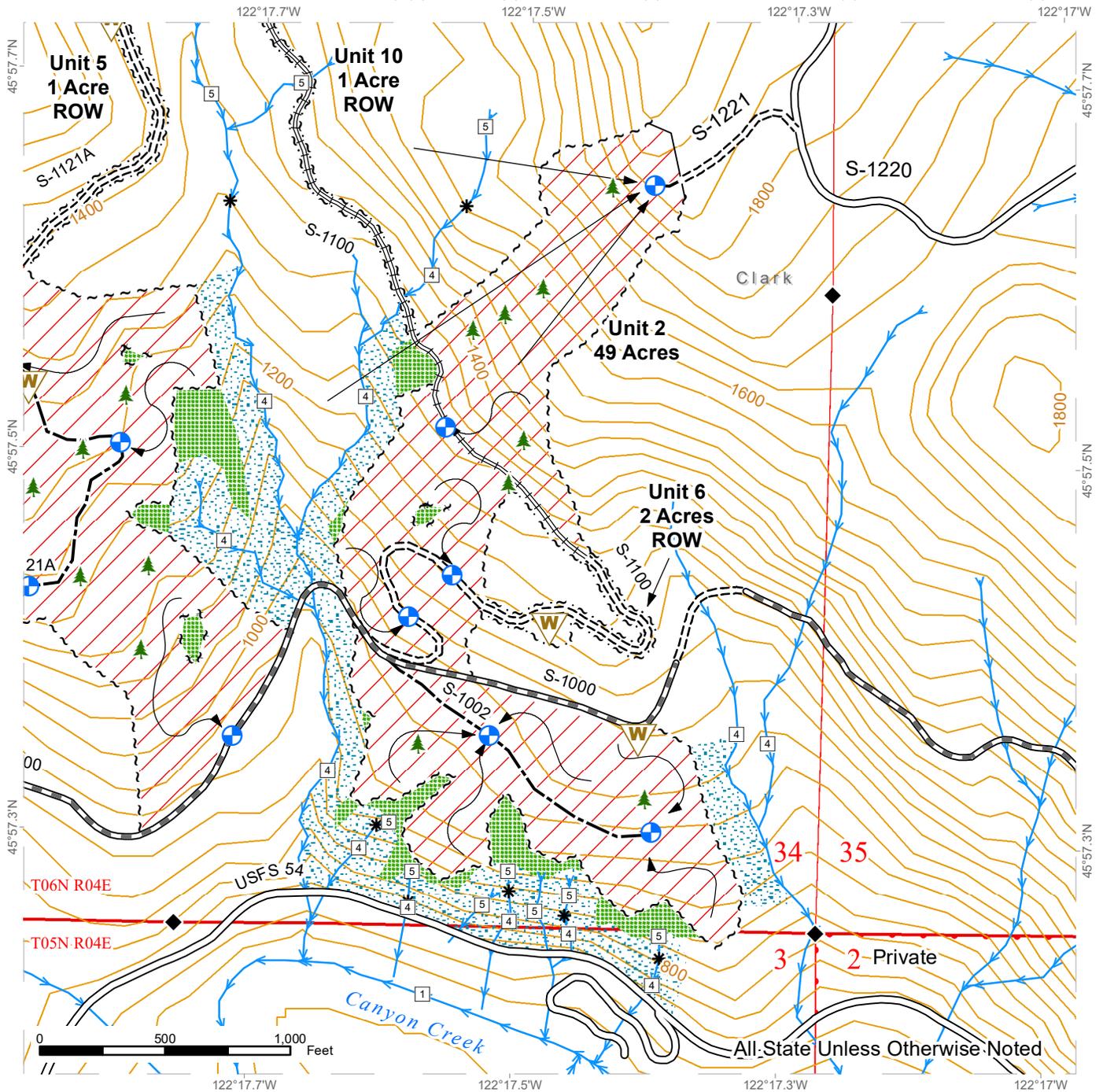


Variable Retention Harvest	Landing - Proposed	Sale Boundary Tags
Ground Harvest	Leave Tree Area <1/4-acre	Timber Type Change
Cable Harvest	Waste Area	Leave Tree Tags
Leave Tree Area	Existing Roads	Right of Way Tags
Riparian Mgt Zone	Required Pre-Haul Maintenance	Flag Line
Streams	Required Construction	
Stream Type	Required Reconstruction	
Stream Type Break	Optional Construction	
Survey Monument		

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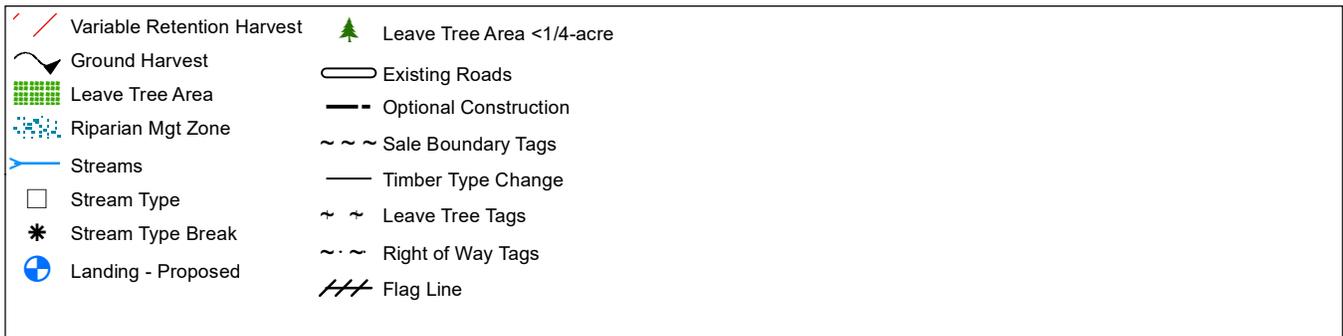
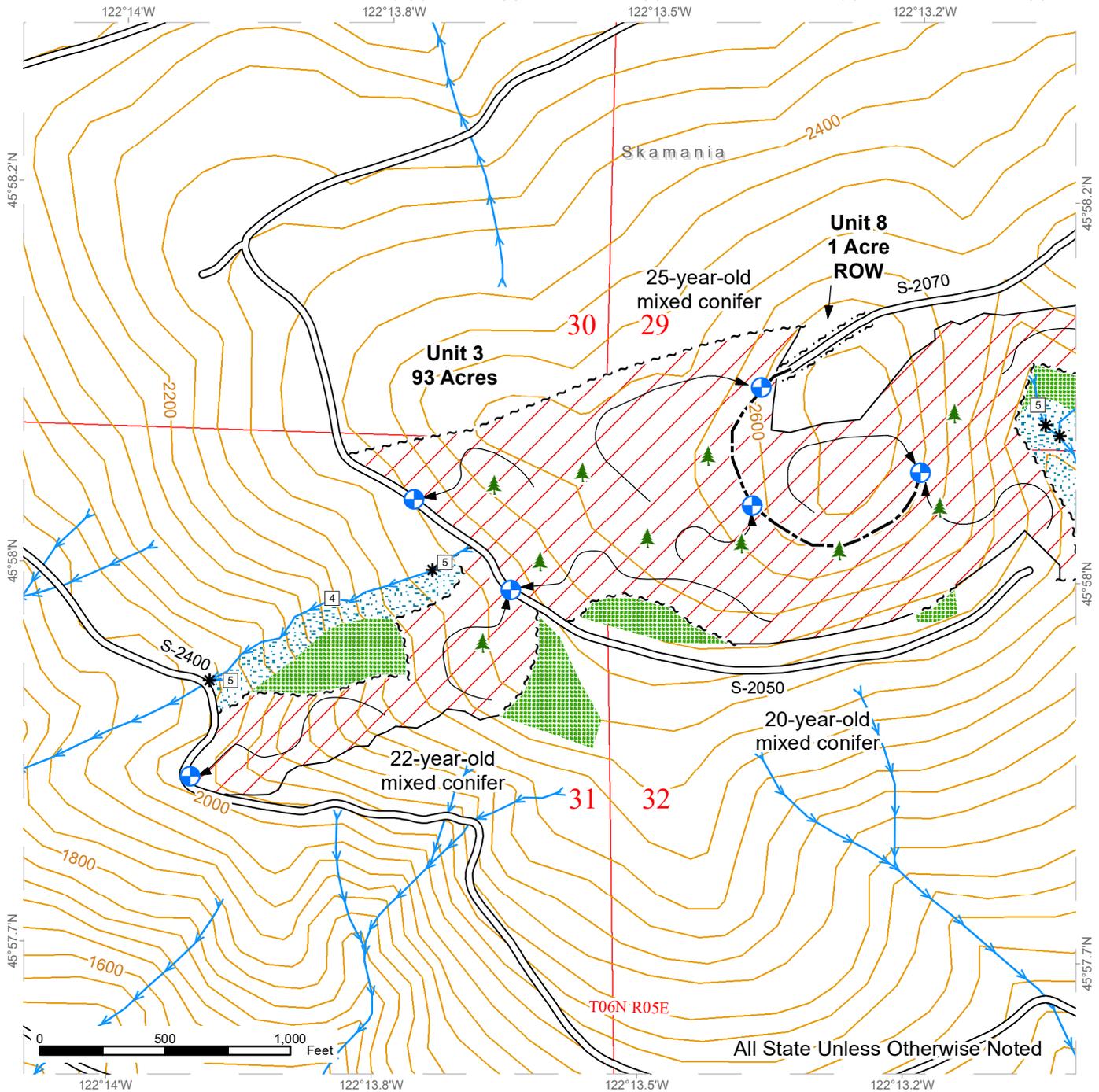
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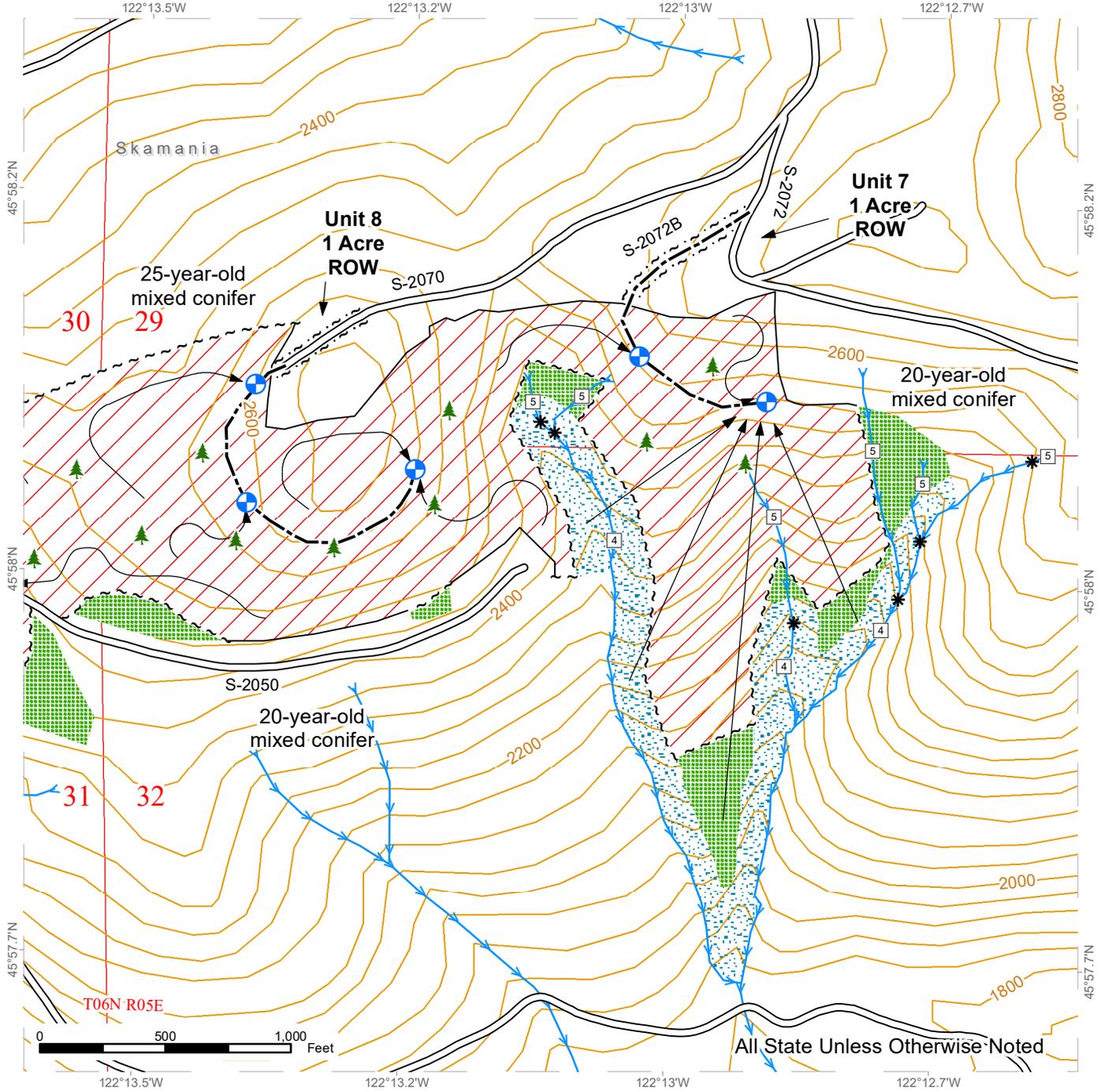
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# LOGGING PLAN MAP

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**TOWNSHIP(S):** T6R4E, T5R4E, T6R5E  
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**REGION:** Pacific Cascade Region  
**COUNTY(S):** Clark, Skamania  
**ELEVATION RGE:** 920-2640



All State Unless Otherwise Noted

Variable Retention Harvest	Leave Tree Area <1/4-acre
Ground Harvest	Existing Roads
Cable Harvest	Optional Construction
Leave Tree Area	Sale Boundary Tags
Riparian Mgt Zone	Timber Type Change
Streams	Leave Tree Tags
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Landing - Proposed	