Alberni Valley

Community Forest

ROAD DEVELOPMENT REPORT

Cutblock: W15

Prepared By: Andrew Kenyon, RPF

Reviewed By: Darin Brown, RFT

Date: April 16, 2013

Meridian Forest Services Ltd.

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Forest Services Ltd.

W15 Road Development Report

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Introduction

The following report summarizes the road reactivation and construction required to build Weiner Connector and access spurs for cutblock W15.

All new roads are marked with printed black on pink "Road Centerline" ribbon. Stations are marked with double pink ribbons and white ribbons and pink metal tags. Culverts are marked with pink "Culvert" ribbon on the high and low sides of right of way.

Detailed road designs have been completed for all of the proposed roads, see Appendix 3. A short section of Weiner Main will require three quarter bench construction. Ballast material will be required for sections of new construction , particularly the rock ballasting and culvert armouring as seen in the best practice recommendations for road works in a community watershed that are contained in the AVCF FSP and Appendix 6 of this report.

Safety Highlights

Steep Road Grades

No road segments with gradients greater than 18% exists within the setting. Prior to commencing log hauling operations the contractor must perform a risk assessment of the current conditions and adjust hauling activities to fit the traction conditions. Hauling for W15 will not be permitted when ice and or snow is on the logging roads leading to or in the given setting (very low traction level). This has been determined using FERRIC steep grade decent guidelines. The Ministry of Transportation guidelines are to be followed once hauling on the highway.

Rock Fall Hazards

A rock fall hazard has been identified in cutblock W15. It is adjacent road station 1+178, along the bluffs within the Timber Leave Area (TLA). The area may be viewed on the harvest and road instructions map.

Rainfall Shutdown

Cutblock W15 is within Rainfall Shutdown Area "5"

Shutdown Criteria: Activities must shut down if: The total rainfall reaches 36 mm in 24 hours. Onsite rain gages should be used and monitored daily. Start-Up Criteria: Activities may start-up when: The total rainfall is equal to or less than 30 mm in 24 hours. Refer to the Return to Work guide in the tender document for more information. Adequate recovery time should be given before building operations commence after a shutdown (see Appendix 5 for more details).

Falling of Snags and Danger Trees

Due to the heavy infestation of root rot in the area there are snags and danger trees in W15. The following instructions are to be followed if dealing with snags and danger trees:

In accordance with the Cutting Permit Authority and Work Safe BC Regulations, all snags and danger trees that endanger workers within a distance of 50m outside the cutblock boundaries, or within one and a half tree lengths, (whichever is greater), are approved for falling under these harvest instructions. All danger trees and snags outside the cutblock boundaries that are required to be felled must be recorded on a map and provided to AVCF once falling has been completed. AVCF will be notified immediately if danger trees and/or snags are identified in groups and removal will result in the cutblock boundary being substantially impacted. Felled snags and danger trees up to 50m outside of the falling boundary meeting utilization specifications will be recovered.

EXCEPTION- Wildlife Tree Patch (WTP) - Snags or danger trees can be felled within a WTP for safety reasons although only the portion of the felled snag or danger tree that falls outside the WTP can be recovered.

Recreational Use

The Sproat Lookout Trail Network lies within the proposed harvest area, see map for locations. The trails appear to be active and well maintained. An effort was made during the layout phase to protect the recreational trails while improving access to the area for the public. Evidence of motorized vehicular use was also noticed along old road grades. Adequate signs are to be posted to inform the public user groups of active blasting, logging and hauling during operations. All harvesting and road operations are to maintain the integrity of the trail network where operationally feasible and insure no danger trees, snags or debris is left on or surrounding the trails.

Road Construction and Reactivation

All roads were located along or off of existing old grades to minimize ground disturbance, ecological impact and improve economic feasibility. Road measure up will be necessary post road construction to ensure the correct ground types and percentage of drilling or blasting is assigned. All roads have profiled out to no greater than 18% favorable or 10% adverse, see appendix 3 for profiles.

Weiner Connector is a combination of old grades and new construction. A portion of new construction from 0+625 to 0+647 has been deemed ¾ bench construction. Excess material is to be end hauled and spoiled back at road station 0+518. Spur W15 S-2, new construction is required to insure future log hauling can access Weiner Connector. Spur W15-S5 is required to reduce hoe chucking distances. All other roads utilize existing old grades but are treated as new construction due the road works and existing second growth trees in the road prism.

The suitability of native material for road construction is uncertain. A potential quarry exists at approximately 0+856 on the Weiner Connector where rock is present at the surface. Other potential quarry locations may be identified during road construction.

All stream crossing for the proposed roads are to be armored with coarse rock material to minimize sedimentation. Two wood box culverts (WBC) have been prescribed, a 1x3 on W15-S3 and a 1X5 on W15-S4. If any in stream works are required during installation then the fisheries work window from July 15th to Sept 15th is to be followed. The culvert log sizing table attached to the road instructions on
the back of the map is to be used.

W15 Road Development Report

Table 1: Weiner Creek Construction Summary

Road	Start Station	End Station	Total (m)	Construction Type	Comments
Weiner Connector	0+000	0+518	518	New Construction OM	Located on old grade, grubbing and stripping required. Rebuild new subgrade, establish ditch-line and drainage structures.
	0+518	0+601	83	New Construction TR	Cut and Fill Construction 0+518 Possible Spoil Site
	0+601	0+625	24	New Construction MR	Cut and Fill Construction
	0+625	0+647	22	New Construction MR	¾ Bench, key in rock high side of road. Material is to be end hauled and spoiled at 0+518.
	0+647	0+792	145	New Construction MR	Cut and Fill Construction
	0+792	0+810	18	New Construction HR	Cut and Fill Construction
	0+810	0+856	46	New Construction TR	Cut and Fill Construction
	0+856	0+929	73	New Construction MR	Cut and Fill Construction, Quarry Location
	0+929	1+056	127	New Construction TR	Cut and Fill Construction
	1+056	1+084	28	New Construction MR	Cut and Fill Construction
	1+084	1+371	287	New Construction TR	Cut and Fill Construction

	1+371	1+691	320	New Construction OM	Located on old grade, grubbing and stripping required. Rebuild new subgrade, establish ditch-line
Weiner Connector	1+691	1+745	54	New Construction TR	Cut and Fill Construction
	1+745	1+764	19	New Construction OM	Located on old grade, grubbing and stripping required. Rebuild new subgrade, establish ditch-line and drainage structures.
W15-S1	0+000	0+218	218	New Construction OM	Located on old grade, grubbing and stripping required. Rebuild new subgrade, establish ditch-line and drainage structures.
W15-S2	0+000	0+064	64	New Construction TR	Cut and Fill Construction
W15-S3	0+000	0+213	213	New Construction OM	Located on old grade, grubbing and stripping required. Rebuild new subgrade, establish ditch-line and drainage structures.
W15-S4	0+000	0+440	440	New Construction OM	Located on old grade, grubbing and stripping required. Rebuild new subgrade, establish ditch-line and drainage structures.
W15-S5	0+000	0+145	145	New Construction TR	Cut and Fill Construction
Total Road					2844m

Table 2: Weiner Creek Culvert Summary

Road Name	Station	Riparian Class	Culvert/WBC Size (mm)
Weiner Connector	0+051	S4	600
Weiner Connector	0+290	-	600
Weiner Connector	0+358	NCD	600
Weiner Connector	0+429	S4	800
Weiner Connector	0+701	-	600
Weiner Connector	0+947	NCD	600
Weiner Connector	1+098	NCD	600
Weiner Connector	1+221	-	600
Weiner Connector	1+442	-	600
Weiner Connector	1+550	-	600
Weiner Connector	1+690	-	600
Weiner Connector	1+745	-	600
W15-S1	0+102	-	600
W15-S2	0+025	NCD	600
W15-S2	0+056	-	600
W15-S3	0+010	-	600
W15-S3	0+034	S3	1x3
W15-S4	0+096	S3	1x5
W15-S5	0+010	-	600
Total CMPs			17
Total WBC's			2

Riparian Management Area Infringements

Table 5: RMA Infringements

Case	Road	Sections	Stream and Stream Class	RMA	Infringement
1	Weiner Connector	0+741 to 0+779	Stream 5 (S4)	30	38m
2	W15-S2	0+025 to 0+064	Stream 1 (S2)	50	39m
3	W15-S3	0+000 to 0+075	Stream 3 (S3)	40	Crossing
4	W15-S4	0+005 to 0+138	Stream 2 (S3)	40	Crossing
5	W15-S5	0+000 to 0+105	Stream 2 (S3)	40	105m

RMA Infringement Rationale

Case 1, RMA infringement on Weiner Connector cannot be avoided as the mainline is controlled by the presence of heavy rock in this area and is already climbing at 16%. Case 2, W15-S2 is a proposed spur that will be necessary to allow trucks to haul on and access AS-12. This spur cannot be moved as it is controlled by grades and the bridge on Weiner Creek. Case 5, Spur W15-S5 is to be constructed to allow access to timber for cutblock W15. It would be impracticable to log the setting without this spur. All other RMA infringements are stream crossings on old grades that are to be reactivated.

Required Permits and Notifications

Affected water licensees or affected water purveyors must be notified at least 48 hours before commencement of road construction, re-activation or deactivation in a community watershed.

All of the roads described in this report are under permit at this time. Road Permit number R18553 amendment #5 has been approved, see Appendix 7.

Appendices

Appendix 1: AVCF CP 004 Road Instruction Map

ALBERNI VALLEY COMMUNITY FOREST

ROAD INSTRUCTIONS MAP

Cutblock: W15

Forest Region: Coast
Forest District: South Island
Land District: Barclay
Cascades: West C
Tenure: K2D
Geographic Coordinates:
Lat: 49° 17' 51"
Long: 125° 00' 44"
Author: B. Bayley
Map Date: 16-Jan-2013

Scale: 1:5,000

Datum: NAD83
Mapsheet: 92F.025
Map Revision: 1a
Revised Date: 04-Apr-2013

See Instructions on reverse

SAFETY COORDINATES:
Lat: 49° 17' 51"
Long: 125° 00' 44"

Due Diligence

Two falling corners and/or road stations must be referenced in the field with the release map on a continual basis before, and during the felling of any timber within this setting. If you are unsure of your location, Stop Work and call a supervisor.

Forest and Range Practices Act

How to follow plan:
1) Always read and understand your plans and maps.
2) Always match your plan and map to what you find on the ground and then check that you can do the work.
3) Stop and ask if you cannot follow the plan and map.
4) Know your responsibilities. Ask if you are unsure.
Due Dilligence means following these steps.

Timbermarking requirements:
All decked timber must be sufficiently marked (at least 10%) when the setting is inactive.

MAP LEGEND

Boundary Features:
Falling Boundary
Machine Free Zone
Adjacent Block-Planned Harvested
Legal Boundary
Pruning
Feathering
Road Features:
Built Road
Deactivated Road
Proposed Road
Backspar Trail
Access Trail
Bridge
Road Station
Existing Culvert
New Culvert
Culvert to be replaced
Natural Features:
Windthrow
Snag
Swamp
Slide
Rock Bluff
Karst Feature
Resource Features:
Hazard
Single Tree Retention
Monumental Cedar
Archaeological Feature/CMT
Quarry/Gravel Pit
Bear Den/Bird Nest
Helipad/Service Landing
Index Contour
Intermediate Contour
Riparian Features:
Fish Streams (S1-S4)
Non Fish streams (S5, S6)
Unclassified Creek
Non Classified Drainage
Gully
FSZ Stream
Reach Break/Fish Barrier
Stream ID
Lakes/Wetlands:
Lakes Class 1, 2, 3, 4
Wetlands Class 1, 2, 3, 4, 5
Sensitive and Designated Areas:
Wildlife Tree Retention Area
Timber Leave Area
Special Management Zone

Road Construction:
Steep Grade
Full Bench EndHaul
Full Bench Partial EndHaul
Spoil Site
RMA Infringement
Road Reactivation:
Case 1
Case 2
Case 3
Case 4
A Additional Works. See Comments.

Field Marking Standards:

Activity	Ribbon	Paint
Falling Boundary	FALLING BOUNDARY	●
Internal Boundaries	FALLING BOUNDARY	●
Reconnaissance Lines		
Traverse Stations (All)		
Cruise Strips / Plots		
Road Location	ROAD LOCATION	●
Culturally Modified Tree	CMT	
Landings / Tower Settings		
Deflection Lines		
Streams		
Reserve Zones (All)	FALLING BOUNDARY	●
Management Zones (All)		
Reserve Trees (Painted)	L	●

Riparian Class	RMZ	RRZ
S1	20	50
S2	20	30
S3	20	20
S4	30	0
S5	30	0
S6	20	0
W1	40	10
W2	20	10
W3	30	0
W4	30	0
W5	40	10
L1	0	10
L2	20	10
L3	30	0
L4	30	0

RMA Infringements:
Avoid Sidecast within these locations.
End Haul any material outside the RMA areas.

Weiner Connector
0+741 to 0+779

W15-S2
0+033 to 0+064

W15-S3
0+000 to 0+075

W15-S4
0+005 to 0+138

W15-S5
0+000 to 0+105

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K2D
0R1

K2D

Hammermark for R/W only

Approved for R/W Falling & Construction Only

HAZARD ALERT

1) A rock fall hazard has been identified and workers must be made aware of this.

TIMBERMARK	Ha of R/W	VOLUME
K2D/0R1	1.6	
K2D/004	3.4	
TOTAL	5.0	
CRUISE VOL/HA (m3)		
ENG VOL/HA (m3)		
HAUL DISTANCE		
SPROAT DRY LAND		20.2km
Distance to Post Office Port Alberni		22.0km
Travel Time from Port Alberni		25min

CULVERTS		
SIZE	TYPE	NUMBER
600	CMP	16
800	CMP	1
1x3	WBC	1
1x5	WBC	1
TOTAL		19

ROAD NAME	START	END	TOTAL
Weiner Connector	0	1764	1764
W15-S1	0	218	218
W15-S2	0	64	64
W15-S3	0	213	213
W15-S4	0	440	440
W15-S5	0	145	145
Field Work:	MFS		Dec-12
Checked By:	AVCF		
AVCF CORP:	PHASE		DATE
CONTRACTOR:	PHASE		DATE

SPECIES	%
Fd	82%
Hw	15%
Hm	0%
Cw	3%
Yc	0%
Pw	0%
Dr	0%
OG	
SG	100%

PROFESSIONAL SEAL AND SIGNATURE

REGISTERED PROFESSIONAL FORESTER PROVINCE OF BRITISH COLUMBIA ANDREW KENYON NO. 4759

Andrew Kenyon 2013.04.16 13:39:22 -07'00'

I certify that I have reviewed this document, and while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.

AVCF CORP: DATE

MAP 2 of 2 | **Cutting Permit: 004** | **Road Permit:** | **W15 - WEINER CONNECTOR**

ALBERNI VALLEY COMMUNITY FOREST

ROAD INSTRUCTIONS MAP

Cutblock: W15

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0+741 to 0+779

W15-S2
0+033 to 0+064

W15-S3
0+000 to 0+075

W15-S4
0+005 to 0+138

W15-S5
0+000 to 0+105

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Proposed Road
Backspar Trail
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New Culvert
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Natural Features:
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Snag
Swamp
Slide
Rock Bluff
Karst Feature

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Single Tree Retention
Monumental Cedar
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Gully
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Lakes/Wetlands:
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Wetlands Class 1, 2, 3, 4, 5

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Special Management Zone

Road Construction:
Steep Grade
Full Bench EndHaul
Full Bench Partial EndHaul
Spoil Site
RMA Infringement

Road Reactivation:
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Case 2
Case 3
Case 4
A Additional Works. See Comments.

K2D 0R1

K2D

Hammermark for R/W only

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Management Zones (All)		
Reserve Trees (Painted)	L	

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S2	20	30
S3	20	20
S4	30	0
S5	30	0
S6	20	0
W1	40	10
W2	20	10
W3	30	0
W4	30	0
W5	40	10
L1	0	10
L2	20	10
L3	30	0
L4	30	0

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Approved for R/W Falling & Construction Only

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ENG VOL/HA (m3)		
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Field Work:	MFS		Dec-12
Checked By:	AVCF		
AVCF CORP:	PHASE		DATE
CONTRACTOR:	PHASE		DATE

SPECIES	%
Fd	82%
Hw	15%
Hm	0%
Cw	3%
Yc	0%
Pw	0%
Dr	0%
OG	
SG	100%

PROFESSIONAL SEAL AND SIGNATURE

REGISTERED PROFESSIONAL FORESTER PROVINCE OF BRITISH COLUMBIA ANDREW KENYON NO. 4739

Andrew Kenyon
2013.04.16 13:39:35 -07'00'

I certify that I have reviewed this document, and while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals.

AVCF CORP: DATE

MAP 2 of 2 **Cutting Permit: 004** **Road Permit:** **W15 - WEINER CONNECTOR**

Appendix 2: Road Instructions

ROAD INSTRUCTIONS – OPENING#W15

ACCESS ROAD: AS12 **CUTTING PERMIT: N0. 4** **TIMBERMARK: K2D 0R1**

RAINFALL SHUTDOWN CRITERIA

Cutblock W15 is within Rainfall Shutdown Area "**5**"

Shutdown Criteria: Activities must shut down if: The total rainfall reaches 36 mm in 24 hours. Onsite rain gages should be used and monitored daily.

Start-Up Criteria: Activities may start-up when: The total rainfall is equal to or less than 30 mm in 24 hours. Refer to the Return to work guide in the tender document for more information.

Adequate recovery time should be given before building operations commence after a shutdown.

ROAD NAME	START STATION	END STATION	TYPE OF WORK/COMMENTS
Weiner Connector	0+000	0+518	New Construction. Located on old grade that has mature timber. Grubbing and stripping required. Re-build a new subgrade. Re-establish ditch-line and install new drainage structures.
Weiner Connector	0+518	1+1371	New Construction. Cut and fill construction.
Weiner Connector	1+371	1+691	New Construction. Located on old grade that has mature timber. Grubbing and stripping required. Re-build a new subgrade. Re-establish ditch-line and install new drainage structures.
Weiner Connector	1+691	1+745	New Construction. Cut and fill construction.
Weiner Connector	1+745	1+764	New Construction. Located on old grade that has mature timber. Grubbing and stripping required. Re-build a new subgrade. Re-establish ditch-line and install new drainage structures.
W15-S1	0+000	0+218	New Construction. Located on old grade that has mature timber. Grubbing and stripping required. Re-build a new subgrade. Re-establish ditch-line and install new drainage structures.
W15-S2	0+000	0+064	New Construction. Cut and fill construction.
W15-S3	0+000	0+213	New Construction. Located on old grade that has mature timber. Grubbing and stripping required. Re-build a new subgrade. Re-establish ditch-line and install new drainage structures.
W15-S4	0+000	0+440	New Construction. Located on old grade that has mature timber. Grubbing and stripping required. Re-build a new subgrade. Re-establish ditch-line and install new drainage structures.
W15-S5	0+000	0+145	New Construction. Cut and fill construction.

ROAD NAME	STATION	RIPARIAN ID	RIPARIAN CLASS	DEBRIS TRANSPORT POTENTIAL	CULVERT / BRIDGE SIZE	DESIGNED PEAK FLOW	Special instructions for operations within or adjacent to RMA
Weiner Connector	0+051	-	S4	Low	600	Q-100	OPENING W15 LIES WITHIN THE SPROAT LAKE COMMUNITY WATERSHED. ALL STREAM CROSSINGS ARE TO BE ARMORED WITH COARSE ROCK MATERIAL TO MINIMIZE THE TRANSPORT OF FINES DOWN STREAM. IF ANY IN STREAM WORKS ARE REQUIRED DURING INSTALLATION OF THE 1x3 AND 1X5 WBC THEN THE FISHERIES WORK WINDOW FROM JULY 15TH – SEPT. 15TH IS TO BE FOLLLOWED. LOG CULVERT SIZING TABLE SEEN BELOW IS TO BE USED.
Weiner Connector	0+290	-	-	Low	600	X-Drain	
Weiner Connector	0+358	-	NCD	Low	600	Q-100	
Weiner Connector	0+429	-	S4	Low	800	Q100	
Weiner Connector	0+701	-	-	-	600	X-Drain	
Weiner Connector	0+947	-	NCD	Low	600	Q-100	
Weiner Connector	1+098	-	NCD	Low	600	Q-100	
Weiner Connector	1+221	-	-	-	600	X-Drain	
Weiner Connector	1+442	-	-	-	600	X-Drain	
Weiner Connector	1+550	-	-	-	600	X-Drain	
Weiner Connector	1+690	-	-	-	600	X-Drain	
Weiner Connector	1+745	-	-	-	600	X-Drain	
W15-S1	0+102	-	-	-	600	X-Drain	
W15-S2	0+025	-	NCD	Low	600	Q-100	
W15-S2	0+056	-	-	-	600	X-Drain	
W15-S3	0+010	-	-	-	600	X-Drain	
W15-S3	0+034	3	S3	Low	1x3	Q-100	
W15-S4	0+096	2R1	S3	Low/Mod	1x5	Q-100	
W15-S5	0+010	-	-	-	600	X-Drain	

GENERAL INSTRUCTIONS

All employees, supervisors and contractors associated with these Road Instructions shall be fully advised of their contents and requirements.

All litter including cable, oil buckets, grease tubes, newspapers, and lunch garbage is to be placed in appropriate garbage containers and removed from the site for proper disposal concurrent with all operations.

ADDITIONAL INSTRUCTIONS

[1] R/W clearing widths to be 25 meters unless a larger width is required for safety or otherwise prescribed.

[2] Prior approval must be obtained from AVCF if falling beyond right-of-way clearing is required for spoil sites or quarries.

[3] Proposed cross-drain culvert locations are approximate. Site specific installation to within ±25m is acceptable. Installation beyond this distance constitutes a 'change of plan' and requires prior approval from AVCF.

[4] Equipment must not be fuelled or serviced within the riparian management area (RMA) of a stream, lake or wetland. Do not park any equipment within an RMA overnight.

[5] Ensure that licensed water works are notified of road activities 48 hours prior to activity.

RMA distances: STREAMS: S1 - 70 meters, S2 – 50 meters, S3 – 40 meters, S4 – 30 meters, S5 – 30 meters, S6 – 20 meters, LAKES: L1 – 10 meters, L3 – 30 meters, WETLANDS: W1, W5 – 50meters, W3 – 30 meters.

[6] Avoid quarry locations within the RMA of any stream; where avoidance is not practical, quarries may be located within the RMA of a S6 stream if no impacts (i.e. increased sedimentation) will occur to the stream. All other streams (i.e. S1 to S5) require prior approval from AVCF before a quarry may be located within its RMA. Do not deck or process wood within RMA's.

[7] Cultural Resources: If an unidentified cultural heritage resource is encountered within the cutblock during any harvesting phase, operations will cease in the immediate vicinity of the feature and AVCF shall be notified immediately.

[8] Wildlife Resources: In the event any unidentified bear dens or raptor nest trees are encountered during falling, but before the tree has been cut, the faller will go elsewhere for the day and report this potential wildlife tree to a AVCF Supervisor. Fallers are not to return to the vicinity of the wildlife tree until notification from AVCF has been given. If the discovery of a bear den or potential nest tree occurs while the tree is being felled, the decision to proceed is at the faller's discretion in regards to safety and Worksafe BC requirements. If it is unsafe to leave the tree partially cut, the faller will complete falling the tree and report the incident to AVCF.

[9] Fish Streams: Due to the close proximity of fish streams, ensure a high level of diligence is maintained regarding stream bank protection, in-stream woody debris disturbance and protection of stream banks at designated crossings.

[10] Invasive Plants: Broom occurs along sections of the highway on route to the block. Follow FSP measures for invasive plants. Cut and remove plants in association with road reactivation, clean machinery as required. Monitor and treat broom and other invasive species during early establishment. Grass seed exposed soil on or adjacent to roads, trails, and landing sites as soon as possible following harvest.

FALLING of SNAGS and DANGER TREES

In accordance with the Cutting Permit Authority and WorkSafe BC Regulations, all snags and danger trees that endanger workers within a distance of 50m outside the cutblock boundaries, or within one and a half tree lengths, (whichever is greater), are approved for falling under these harvest instructions. All danger trees and snags outside the cutblock boundaries that are required to be felled must be recorded on a map and provided to AVCF once falling has been completed. AVCF will be notified immediately if danger trees and/or snags are identified in groups and removal will result in the cutblock boundary being substantially impacted. Felled snags and danger trees up to 50m outside of the falling boundary meeting utilization specifications will be recovered.

EXCEPTION- Wildlife Tree Patch (WTP) areas - Snags or danger trees can be felled within a WTP for safety reasons although only the portion of the felled snags or danger trees that fall outside the WTP can be recovered.

CUTBLOCK BOUNDARY TREATMENTS

All marked boundary trees except snags and danger trees must remain standing during and after the completion of harvesting. Trees located along and adjacent to the cutblock edges (i.e. within the harvest boundary) that must be felled outside the harvest area must be recovered unless a physical, safety or environmental issue exists (e.g. deep gullies, steep breaks, fish creek, etc.). Trees that cannot be recovered may be left standing, if they are safe to leave, as wildlife trees. These trees must be recorded on a map and provided to AVCF once falling is complete; If unsure how to proceed, contact AVCF.

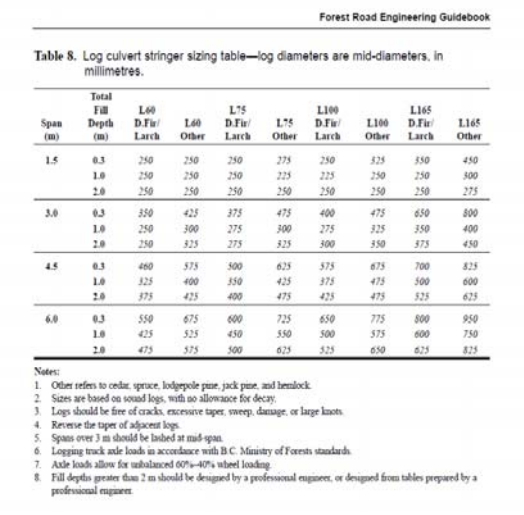
SAFETY

Road and in-block safety hazards associated with block W15 have been identified on the harvest and road instruction maps. In the event additional in-block safety hazards (temporary or permanent) are encountered or develop during road construction or harvesting phases, a plan must be developed to address the hazard. Any identified permanent hazards must be reported back to AVCF (using Hazard/Issue Report Form).

STEEP GRADES

Road segments with gradients > 18% have been identified on the Harvest and Road instruction Plan Map. Prior to commencing log hauling operations the contractor must perform a risk assessment of the current conditions and adjust hauling activities to suit the traction conditions. Hauling for W15 will not be permitted when ice and or snow is on the logging roads leading to or in the given setting (very low traction level). This has been determined using FERRIC step grade decent guidelines. The Ministry of Transportation guidelines are to be followed once on the highway.

Source: Forest Road Engineering Guidebook, Ministry of Forest 2002



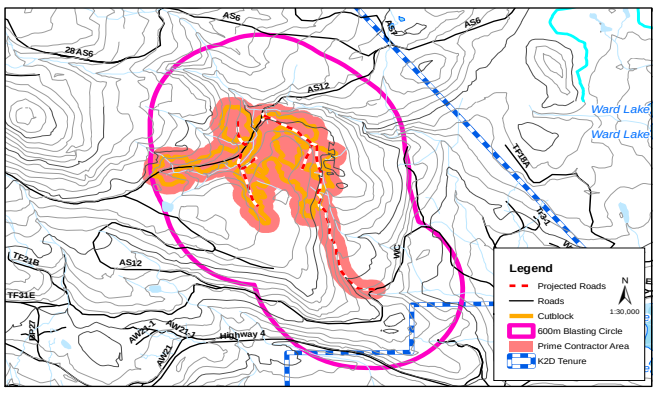
Forest Road Engineering Guidebook

Table 8. Log culvert stringer sizing table—log diameters are mid-diameters, in millimetres.

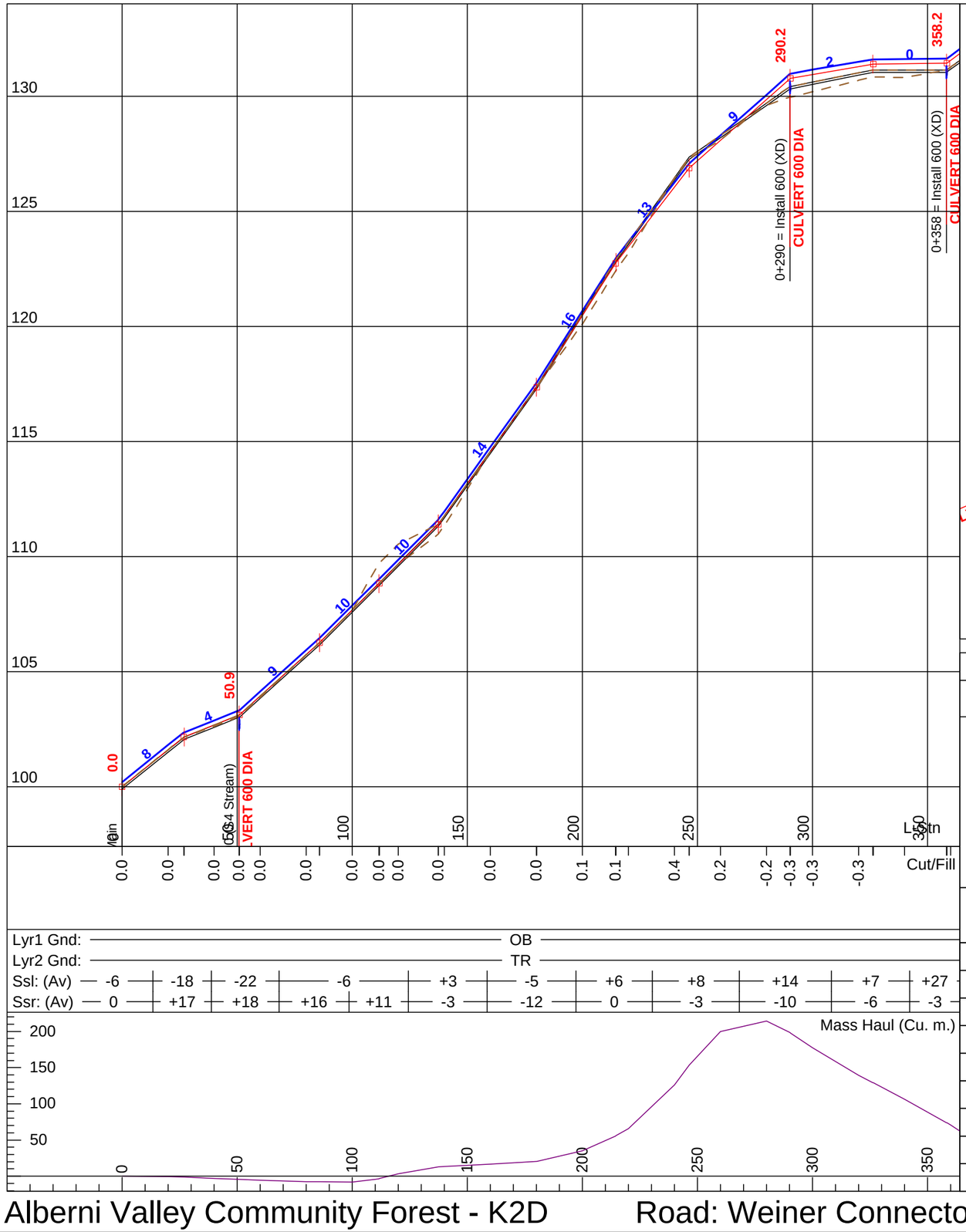
Span (m)	Total Fill Depth (m)	L60 D.Fir/ Larch	L60 Other	L75 D.Fir/ Larch	L75 Other	L100 D.Fir/ Larch	L100 Other	L165 D.Fir/ Larch	L165 Other
1.5	0.3	250	250	250	275	250	325	350	450
	1.0	250	250	250	225	225	250	250	300
	2.0	250	250	250	250	250	250	250	275
3.0	0.3	350	425	375	475	400	475	650	800
	1.0	250	300	275	300	275	325	350	400
	2.0	250	325	275	325	300	350	375	450
4.5	0.3	460	575	500	625	575	675	700	825
	1.0	325	400	350	425	375	475	500	600
	2.0	375	425	400	475	425	475	525	625
6.0	0.3	550	675	600	725	650	775	800	950
	1.0	425	525	450	550	500	575	600	750
	2.0	475	575	500	625	525	650	625	825

Notes:
1. Other refers to cedar, spruce, lodgepole pine, jack pine, and hemlock.
2. Sizes are based on sound logs, with no allowance for decay.
3. Logs should be free of cracks, excessive taper, sweep, damage, or large knots.
4. Reverse the taper of adjacent logs.
5. Spans over 3 m should be lashed at mid-span.
6. Logging truck axle loads in accordance with B.C. Ministry of Forests standards.
7. Axle loads allow for unbalanced 60%-40% wheel loading.
8. Fill depths greater than 2 m should be designed by a professional engineer, or designed from tables prepared by a professional engineer.

PRIME CONTRACTOR – Workplace Area of Responsibility



Appendix 3: Road Profiles



Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: Weiner Connector

Road Design

0+000 to 1+764

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
50.9	600	10.0
290.2	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

Designed By: Meridian Forest Services Ltd.

MERIDIAN Forest Services Ltd.
PO Box 275
#15-1010 Shearme Road
Coombs, BC V0R 1M0
www.meridianforest.ca

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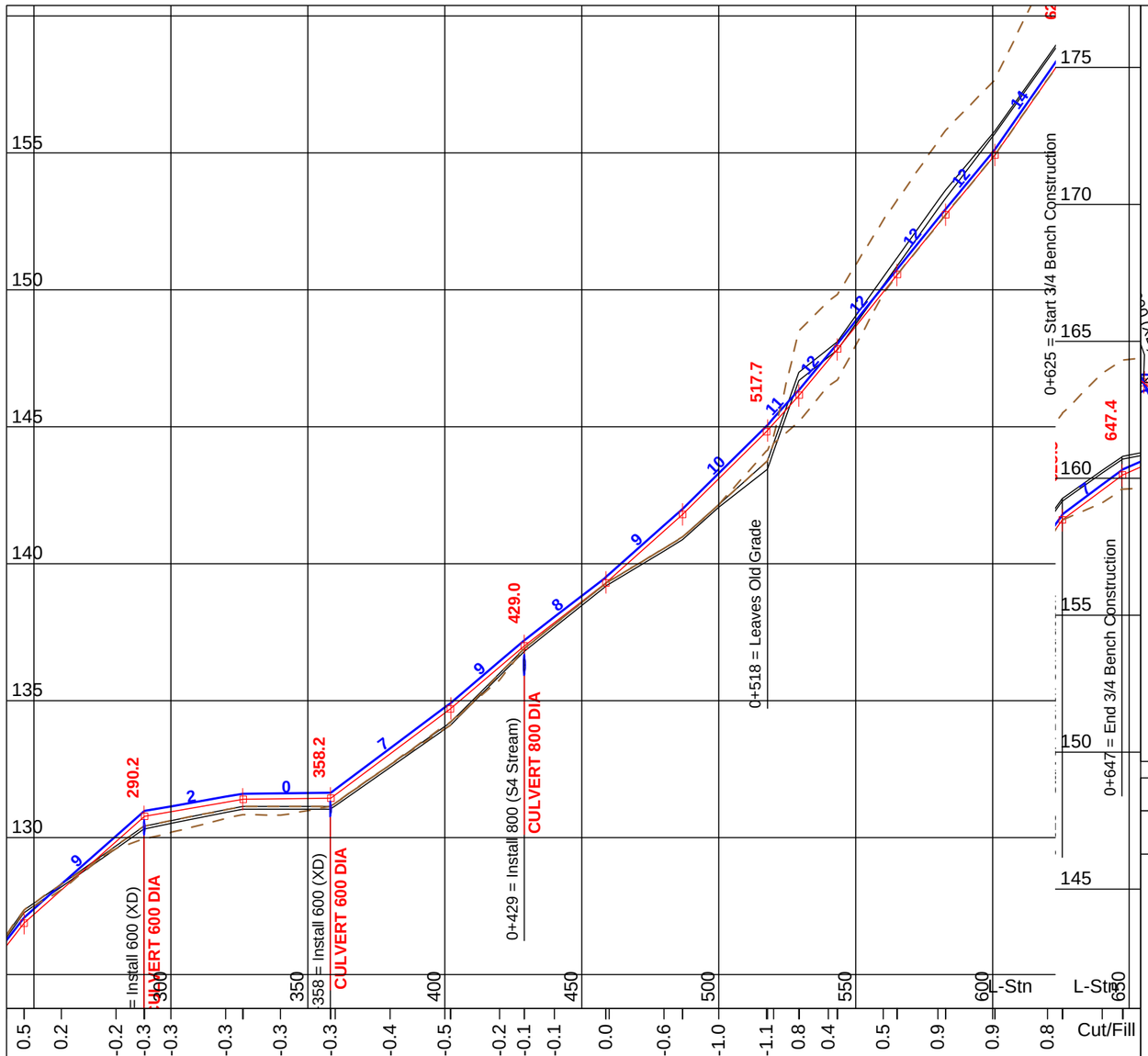

Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: Weiner Connector

Road Design

0+000 to 1+764

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
358.2	600	10.0
429.0	800	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

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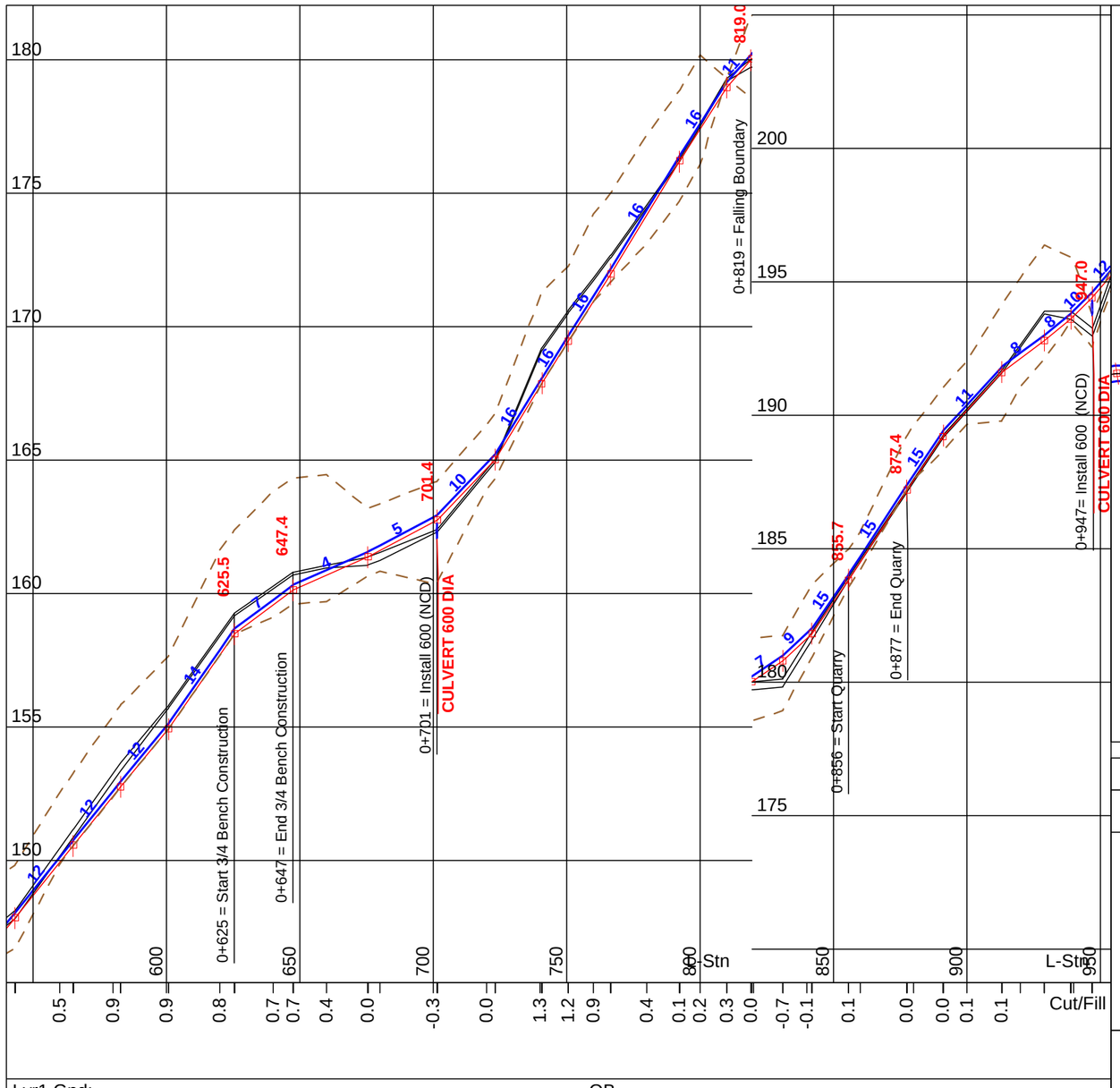

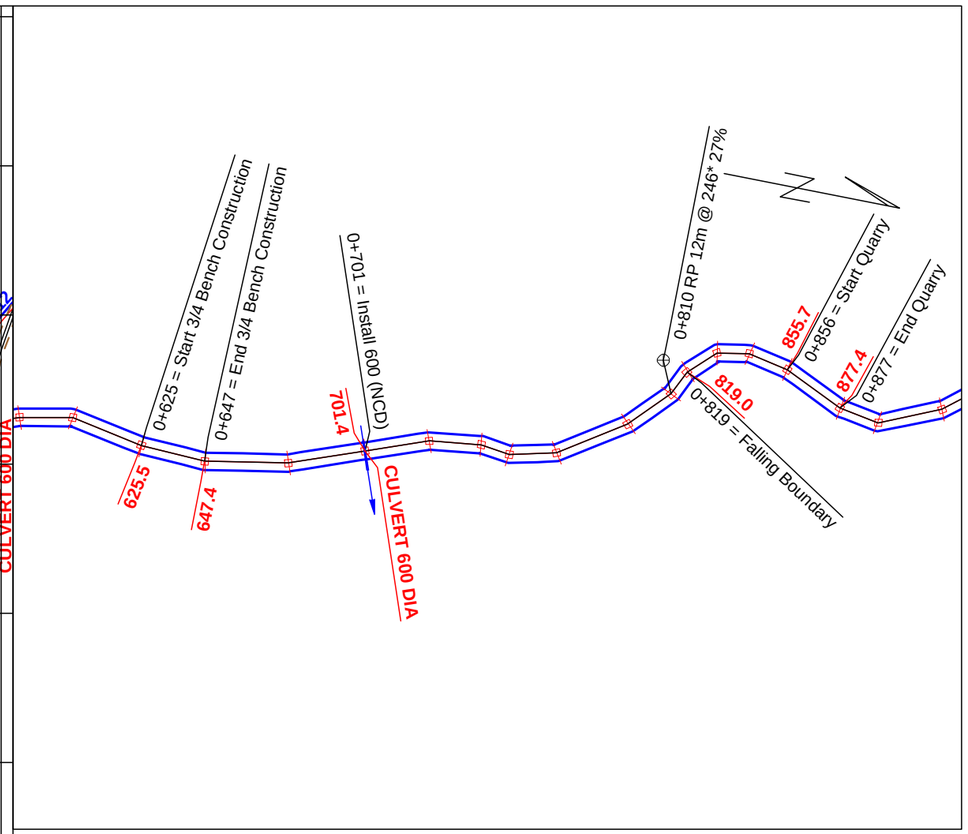

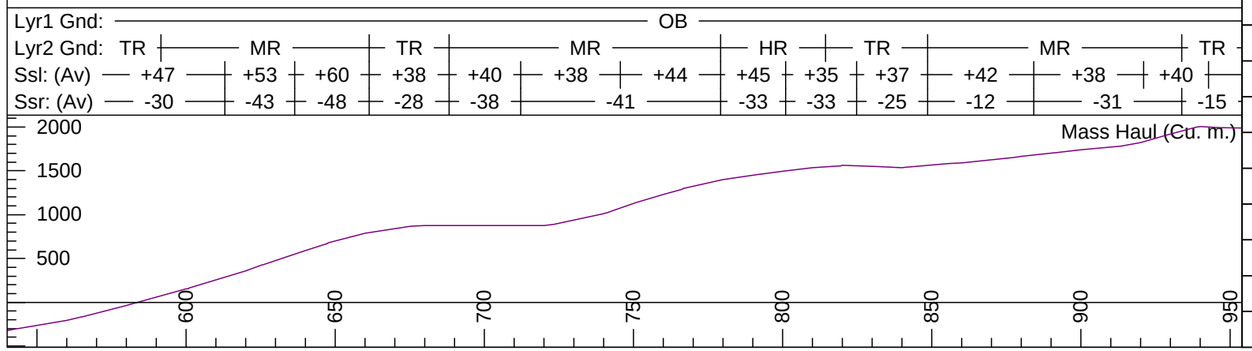

Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: Weiner Connector

Road Design

0+000 to 1+764

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
701.4	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
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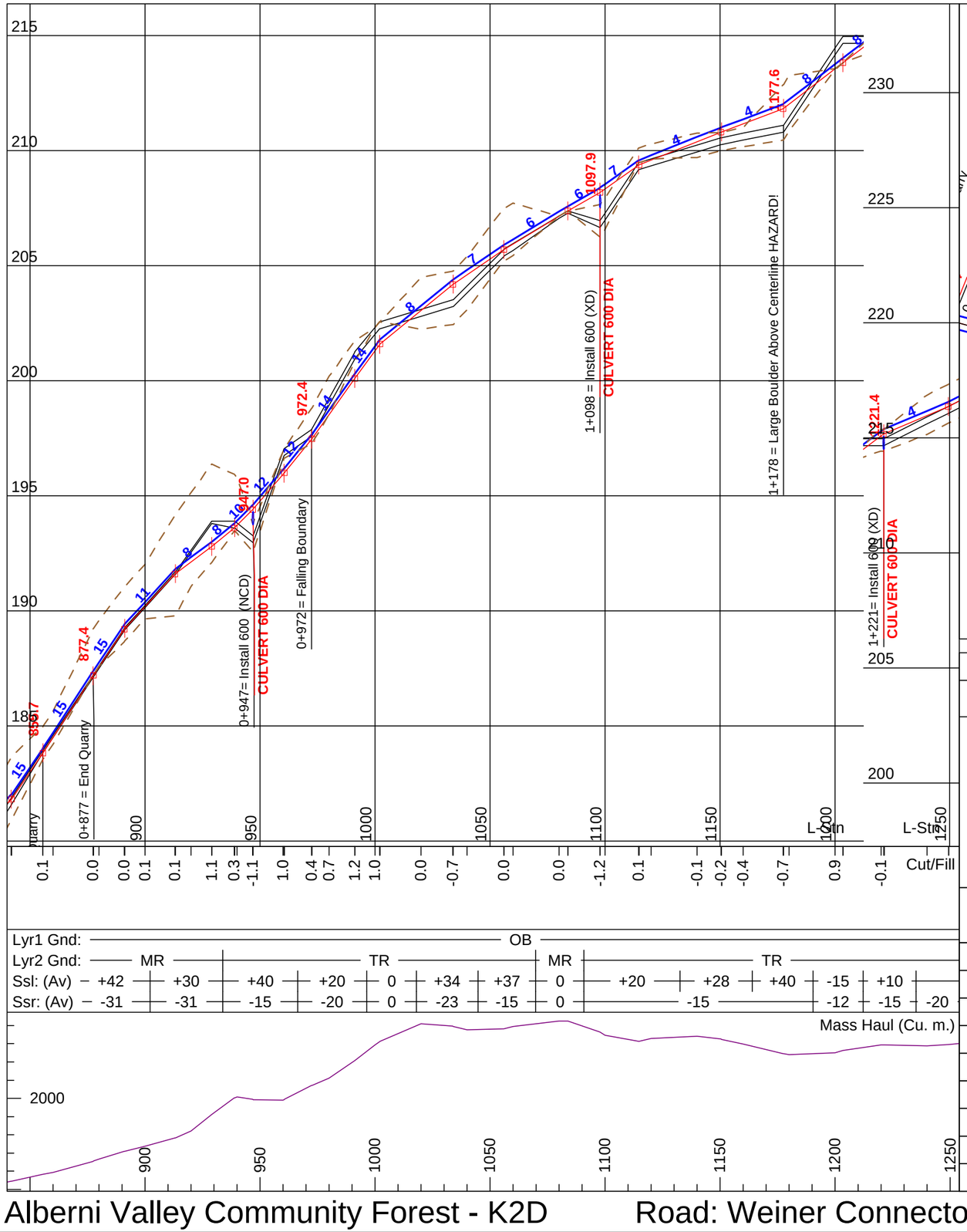

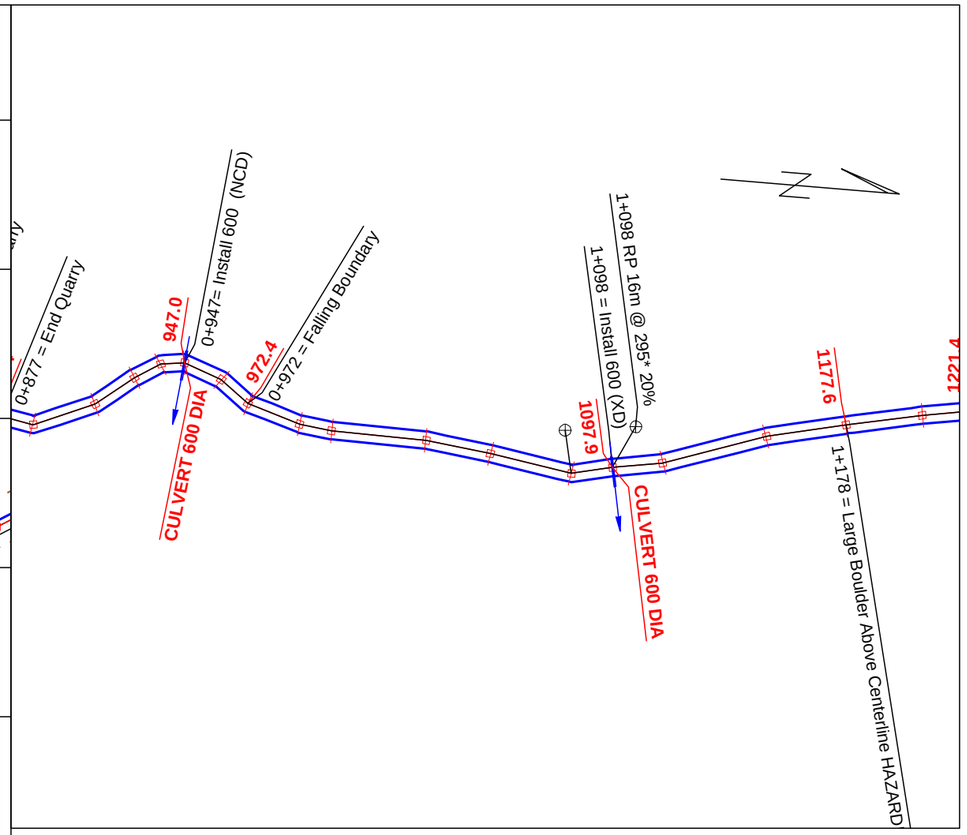

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
947.0	600	10.0
1097.9	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- ⊕ Reference Points (RP)

Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: Weiner Connector

Road Design

0+000 to 1+764

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

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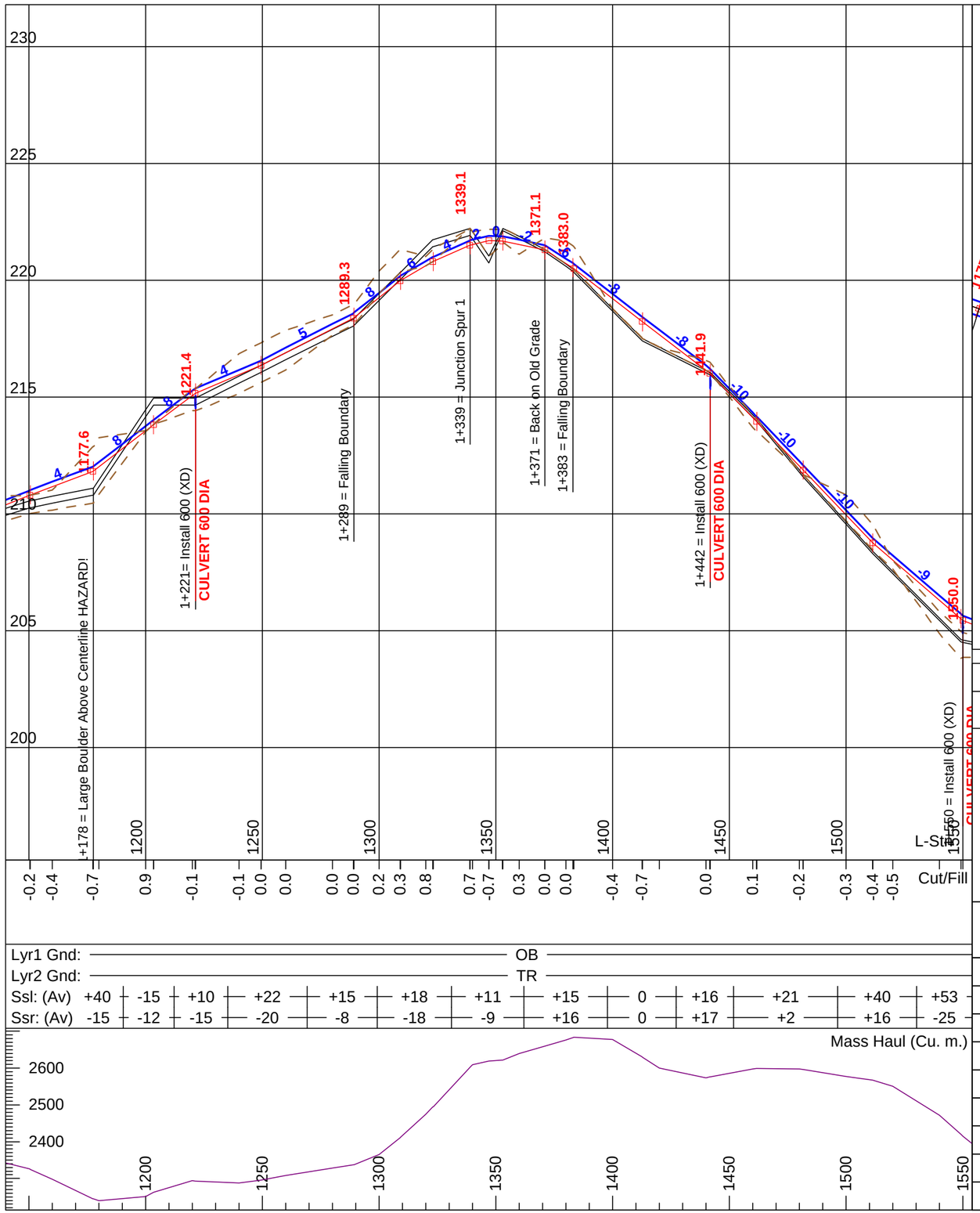

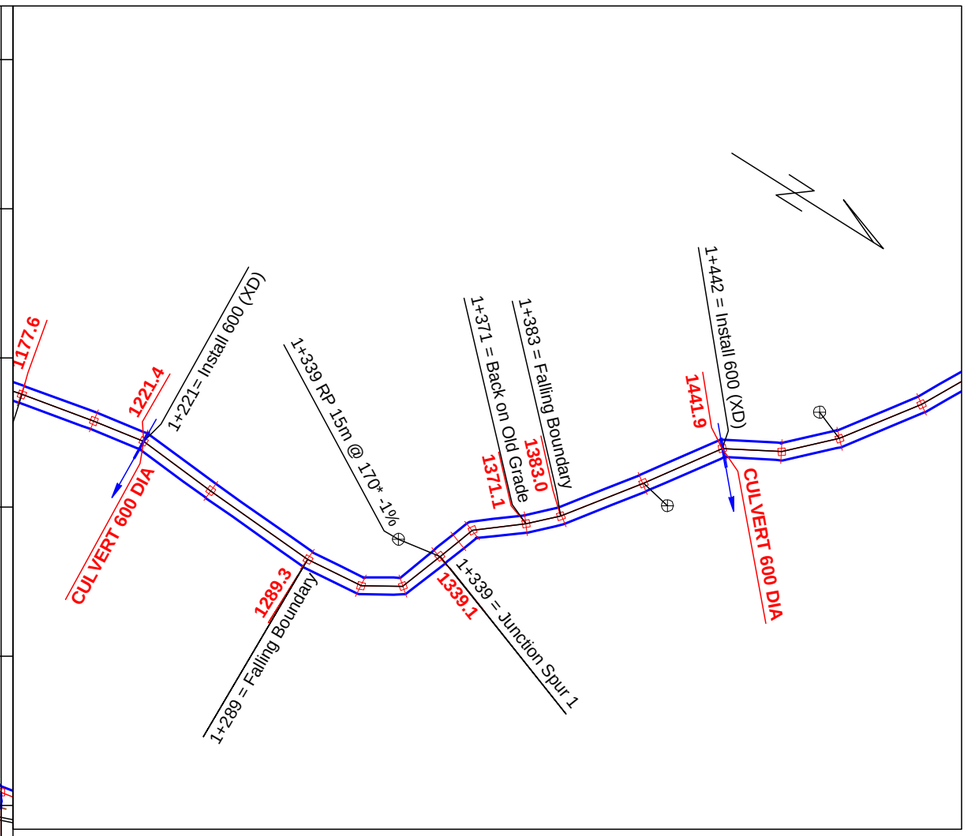

Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: Weiner Connector

Road Design

0+000 to 1+764

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
1221.4	600	10.0
1441.9	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
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LEGEND

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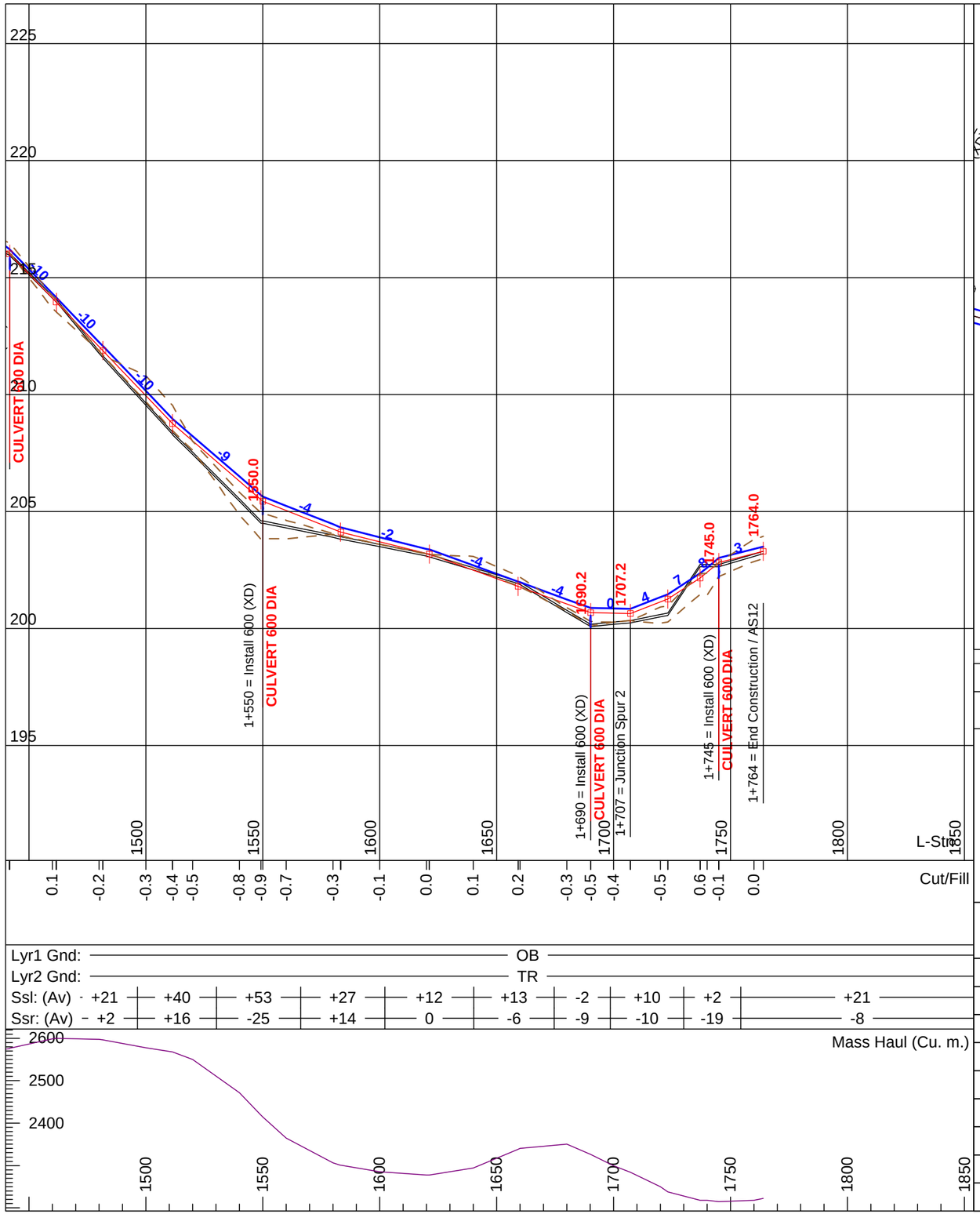

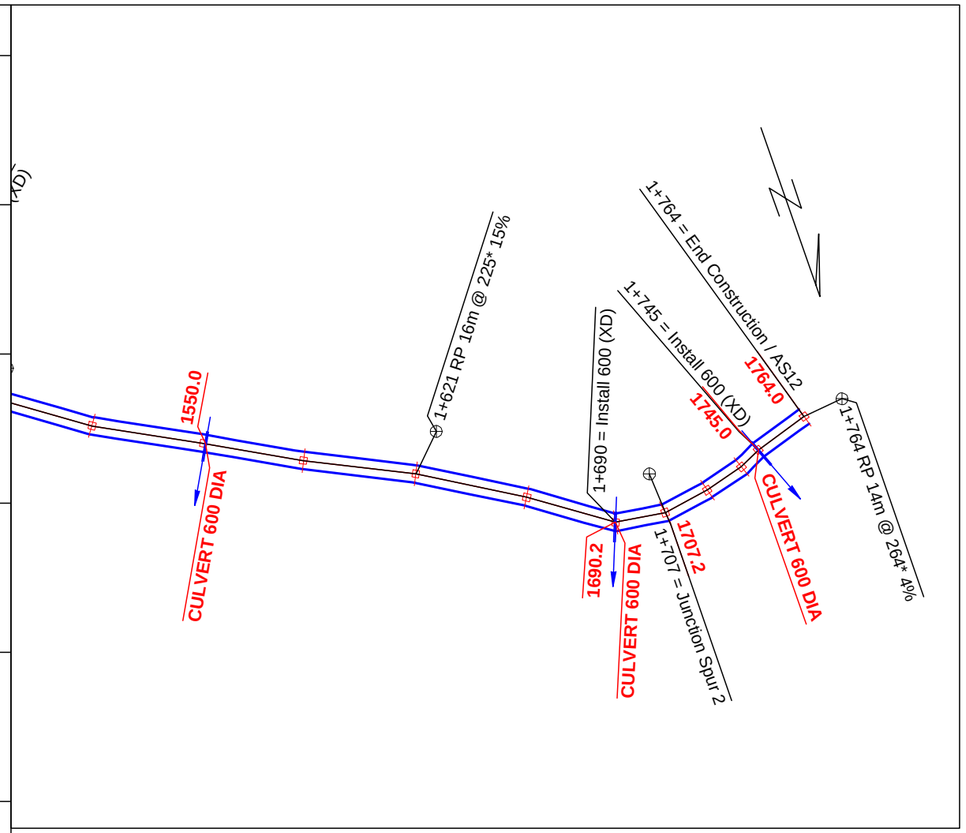

Alberni Valley Community Forest K2D
Sproat Unit

Cutblock: W15
Road: Weiner Connector

Road Design

0+000 to 1+764

Notes:
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(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
1550.0	600	10.0
1690.2	600	10.0
1745.0	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
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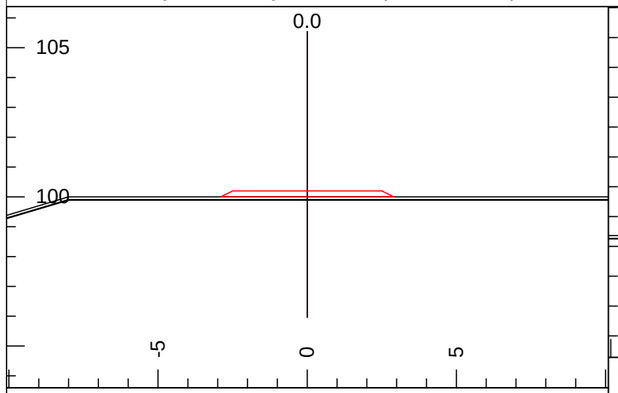

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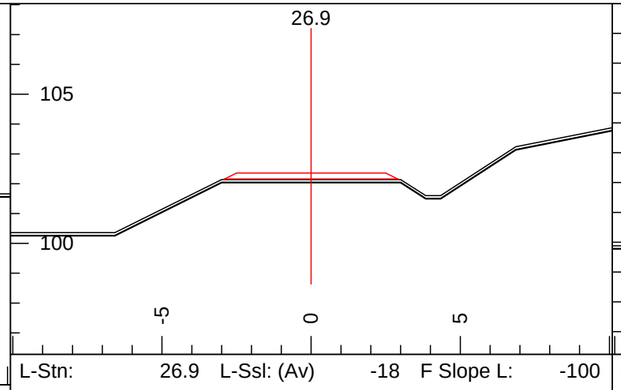

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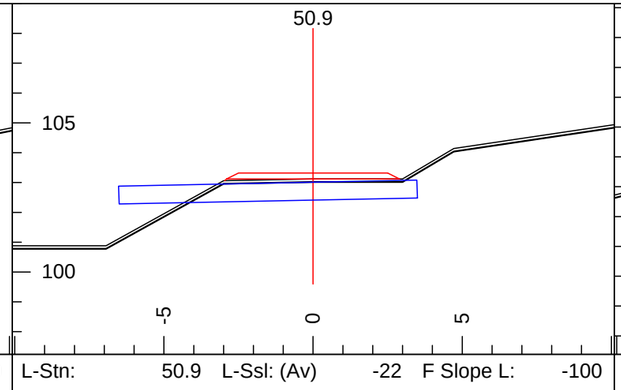

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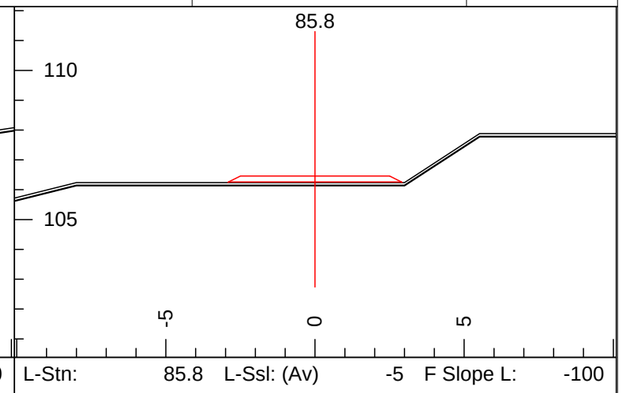
Grd.Lst:	4	Super R:	0				



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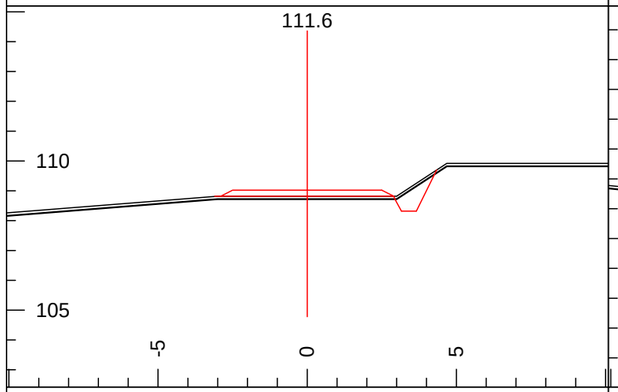

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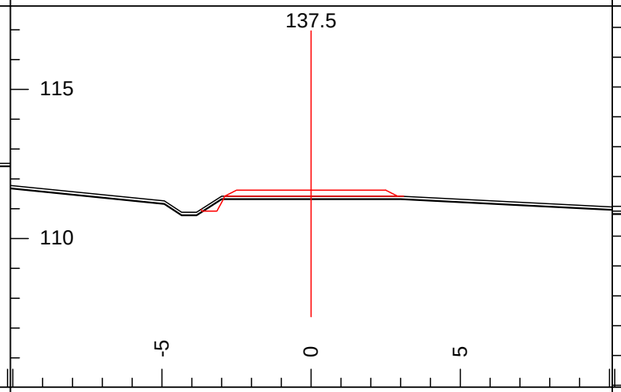

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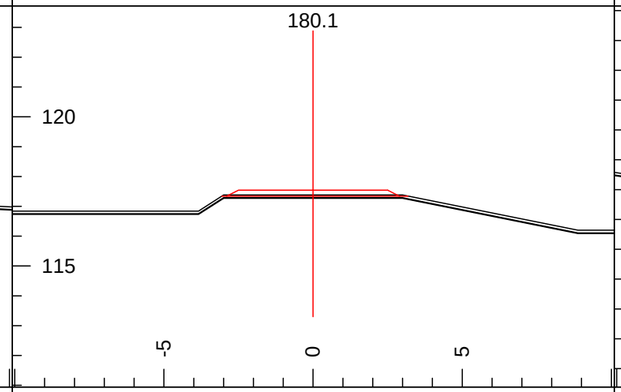

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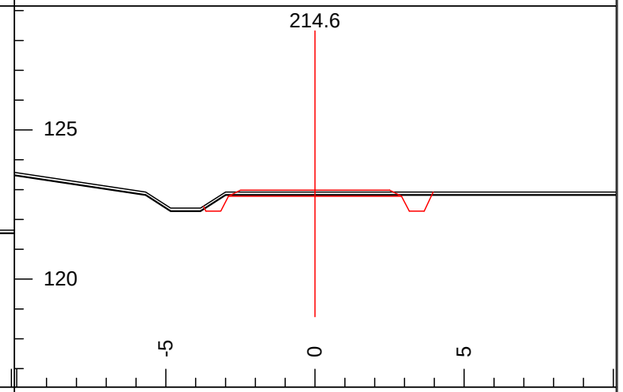

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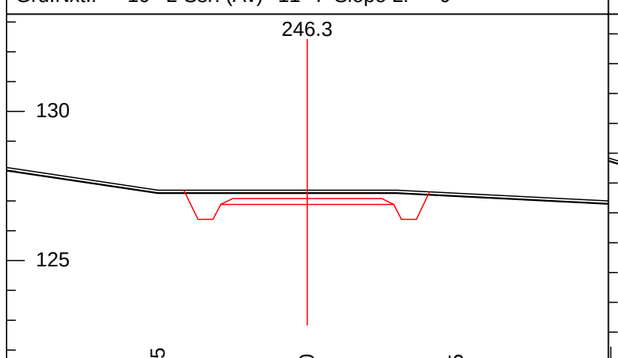
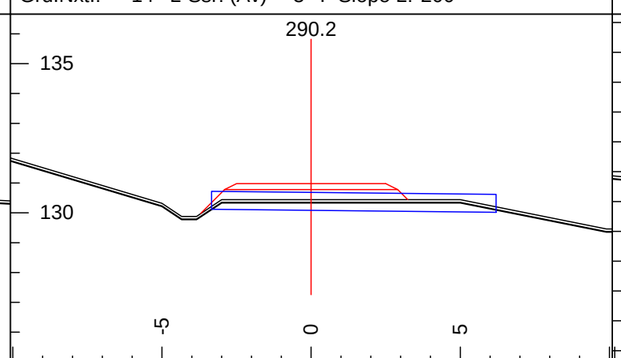
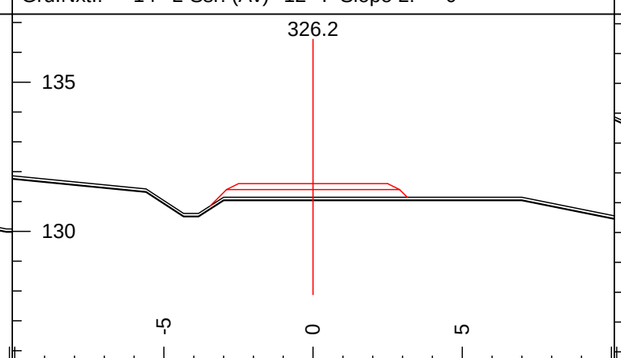


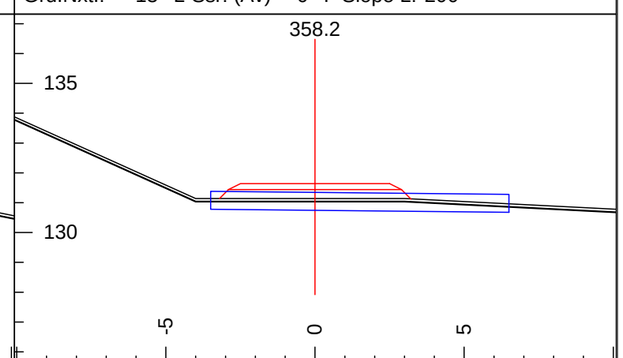
L-Stn:	246.3	Grd.Lst:	13	Super L:	0	F Slope R:	200
P-Stn:	246.3	L-Ssl: (Av)	8	Super R:	0	Cut Dp:	0.5
Grd.Nxt.:	13	L-Ssr: (Av)	-3	F Slope L:	200		



L-Stn:	290.2	L-Ssl: (Av)	14	F Slope L:	-100		
P-Stn:	290.2	L-Ssr: (Av)	-10	F Slope R:	-100		
Grd.Nxt.:	9	Super L:	0	Cut Dp:	-0.3		
Grd.Lst:	9	Super R:	0				

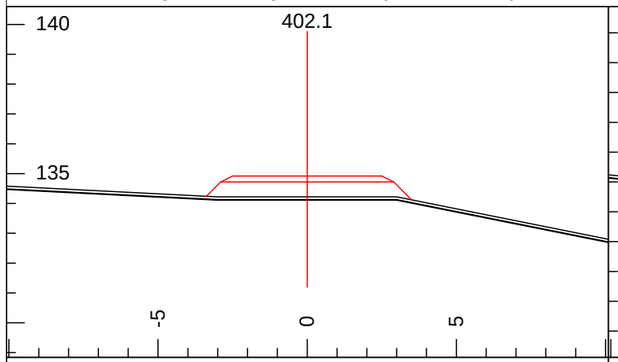


L-Stn:	326.2	L-Ssl: (Av)	7	F Slope L:	-100		
P-Stn:	326.2	L-Ssr: (Av)	-6	F Slope R:	-100		
Grd.Nxt.:	2	Super L:	0	Cut Dp:	-0.3		
Grd.Lst:	2	Super R:	0				

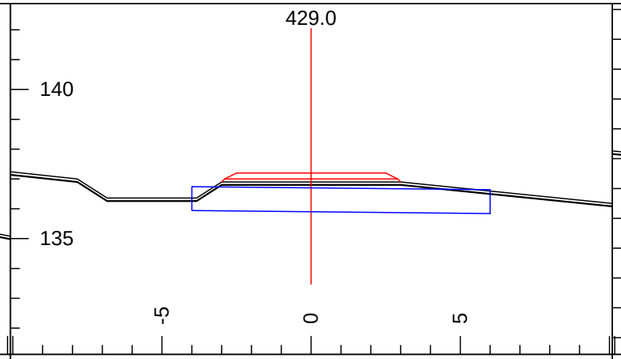


L-Stn:	358.2	L-Ssl: (Av)	27	F Slope L:	-100		
P-Stn:	358.2	L-Ssr: (Av)	-3	F Slope R:	-100		
Grd.Nxt.:	0	Super L:	0	Cut Dp:	-0.3		
Grd.Lst:	0	Super R:	0				

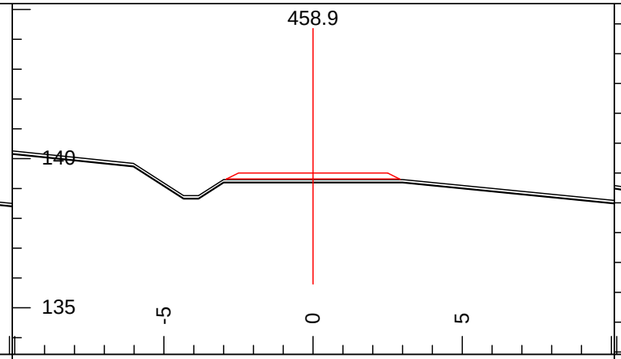
ROADENG Section	Scale 1:200	P. 2
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15_Weiner_Connector_Profile		12/12/21



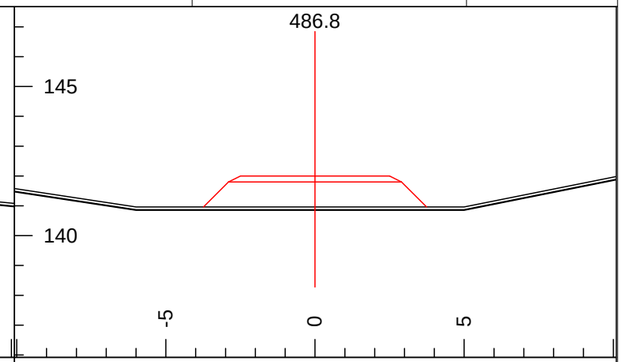
L-Stn:	402.1	L-Ssl: (Av)	3	F Slope L:	-100
P-Stn:	402.1	L-Ssr: (Av)	-14	F Slope R:	-100
Grd.Nxt.:	9	Super L:	0	Cut Dp:	-0.5
Grd.Lst:	9	Super R:	0		



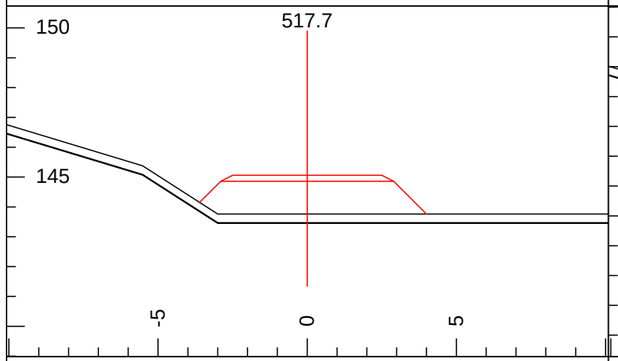
L-Stn:	429.0	L-Ssl: (Av)	3	F Slope L:	-100
P-Stn:	429.0	L-Ssr: (Av)	-7	F Slope R:	-100
Grd.Nxt.:	9	Super L:	0	Cut Dp:	-0.1
Grd.Lst:	9	Super R:	0		



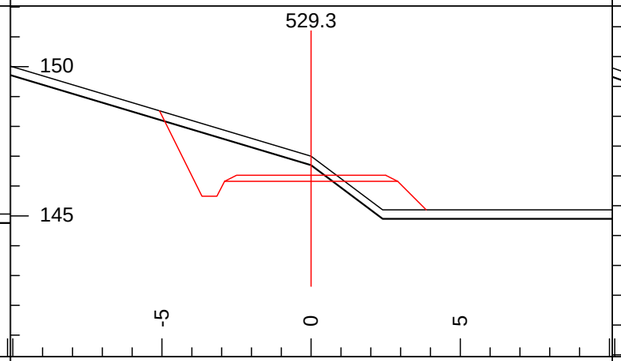
L-Stn:	458.9	L-Ssl: (Av)	9	F Slope L:	-100
P-Stn:	458.9	L-Ssr: (Av)	-7	F Slope R:	-100
Grd.Nxt.:	9	Super L:	0	Cut Dp:	0.0
Grd.Lst:	9	Super R:	0		



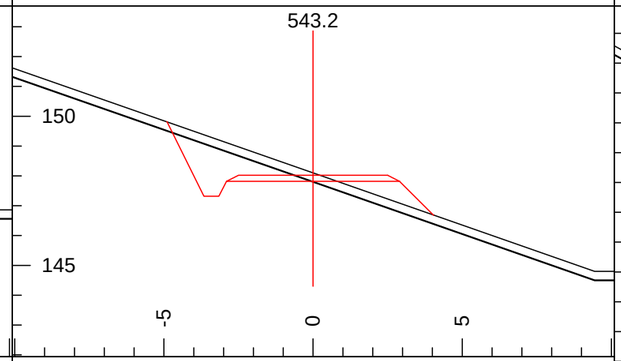
L-Stn:	486.8	L-Ssl: (Av)	6	F Slope L:	-100
P-Stn:	486.8	L-Ssr: (Av)	10	F Slope R:	-100
Grd.Nxt.:	10	Super L:	0	Cut Dp:	-0.8
Grd.Lst:	10	Super R:	0		



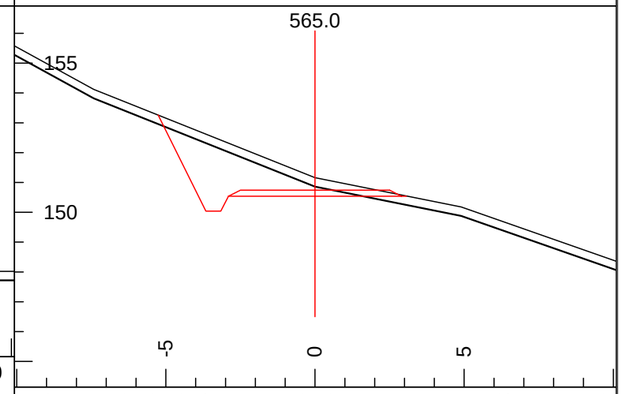
L-Stn:	517.7	L-Ssl: (Av)	30	F Slope L:	-100
P-Stn:	517.7	L-Ssr: (Av)	0	F Slope R:	-100
Grd.Nxt.:	11	Super L:	0	Cut Dp:	-1.1
Grd.Lst:	11	Super R:	0		



L-Stn:	529.3	L-Ssl: (Av)	30	F Slope L:	200
P-Stn:	529.3	L-Ssr: (Av)	-18	F Slope R:	-100
Grd.Nxt.:	11	Super L:	0	Cut Dp:	0.8
Grd.Lst:	11	Super R:	0		

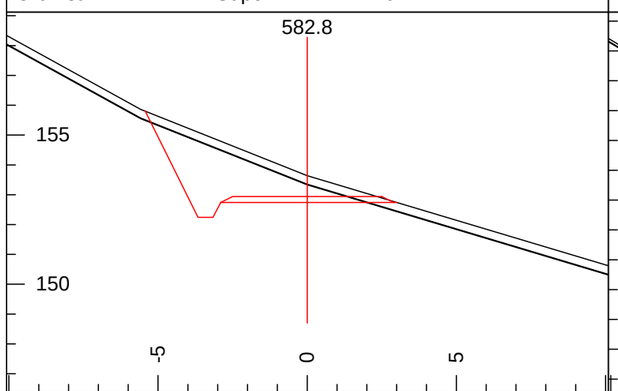


L-Stn:	543.2	L-Ssl: (Av)	35	F Slope L:	200
P-Stn:	543.2	L-Ssr: (Av)	-33	F Slope R:	-100
Grd.Nxt.:	12	Super L:	0	Cut Dp:	0.3
Grd.Lst:	12	Super R:	0		



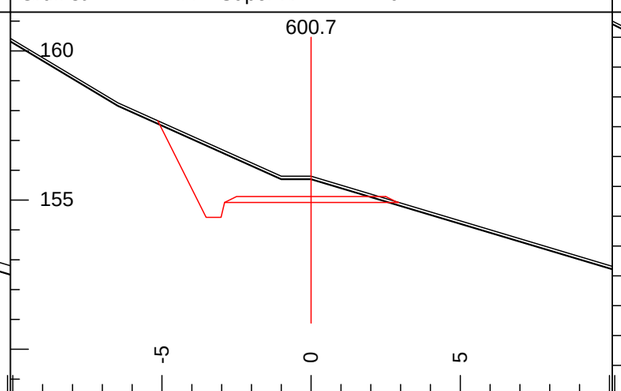
L-Stn:	565.0	Grd.Lst:	12	Super L:	0
P-Stn:	565.0	L-Ssl: (Av)	44	Super R:	0
Grd.Nxt.:	12	L-Ssr: (Av)	-28	F Slope L:	200

F Slope R:	0
Cut Dp:	0.6



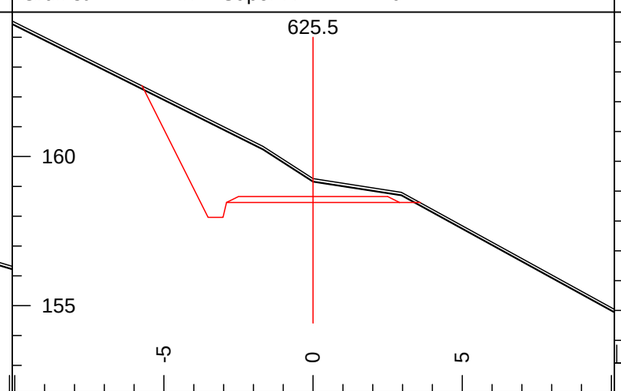
L-Stn:	582.8	Grd.Lst:	12	Super L:	0
P-Stn:	582.8	L-Ssl: (Av)	47	Super R:	0
Grd.Nxt.:	12	L-Ssr: (Av)	-30	F Slope L:	200

F Slope R:	0
Cut Dp:	0.9



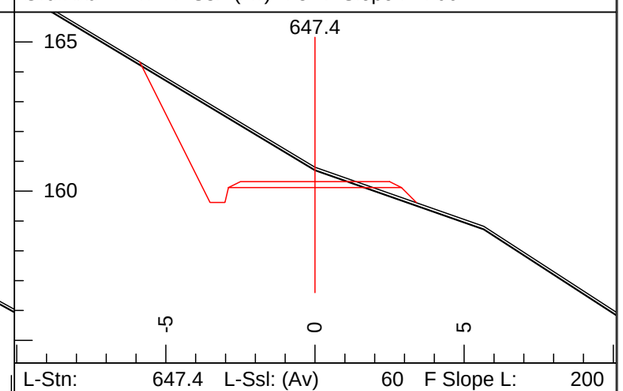
L-Stn:	600.7	Grd.Lst:	12	Super L:	0
P-Stn:	600.7	L-Ssl: (Av)	46	Super R:	0
Grd.Nxt.:	12	L-Ssr: (Av)	-30	F Slope L:	200

F Slope R:	0
Cut Dp:	0.9



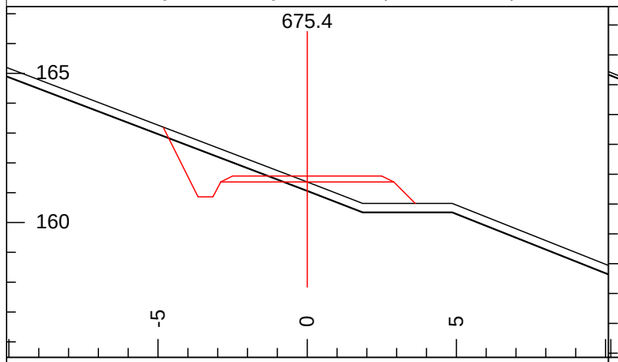
L-Stn:	625.5	Grd.Lst:	14	Super L:	0
P-Stn:	625.5	L-Ssl: (Av)	53	Super R:	0
Grd.Nxt.:	14	L-Ssr: (Av)	-43	F Slope L:	200

F Slope R:	0
Cut Dp:	0.8

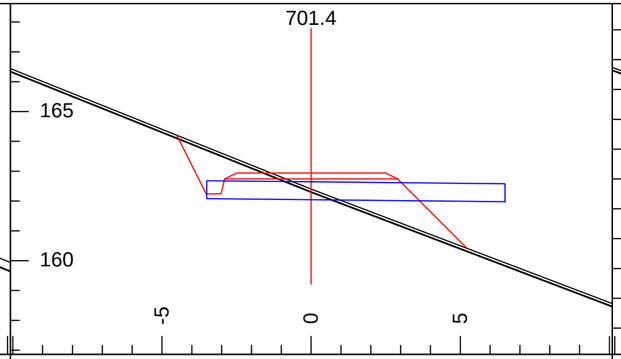


L-Stn:	647.4	L-Ssl: (Av)	60	F Slope L:	200
P-Stn:	647.4	L-Ssr: (Av)	-48	F Slope R:	-100
Grd.Nxt.:	7	Super L:	0	Cut Dp:	0.7
Grd.Lst:	7	Super R:	0		

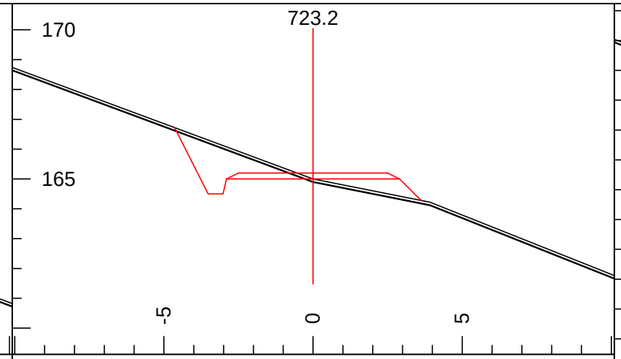
ROADENG Section	Scale 1:200	P. 3
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15_Weiner_Connector_Profile		12/12/21



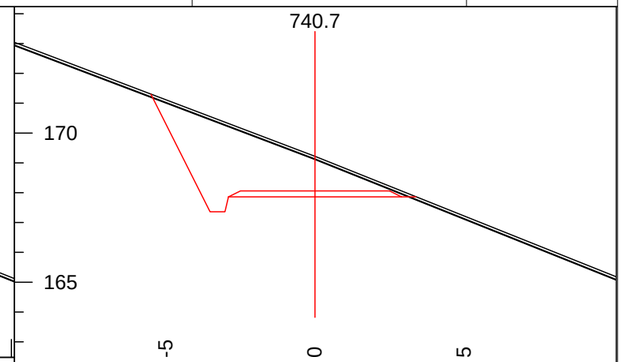
L-Stn:	675.4	L-Ssl: (Av)	38	F Slope L:	200
P-Stn:	675.4	L-Ssr: (Av)	-28	F Slope R:	-100
Grd.Nxt.:	4	Super L:	0	Cut Dp:	0.0
Grd.Lst:	4	Super R:	0		



L-Stn:	701.4	L-Ssl: (Av)	40	F Slope L:	200
P-Stn:	701.4	L-Ssr: (Av)	-38	F Slope R:	-100
Grd.Nxt.:	5	Super L:	0	Cut Dp:	-0.3
Grd.Lst:	5	Super R:	0		

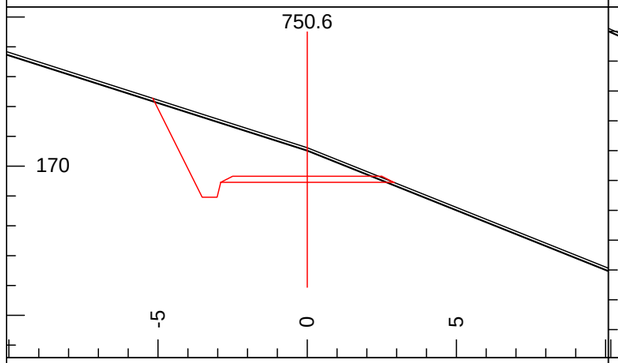


L-Stn:	723.2	L-Ssl: (Av)	37	F Slope L:	200
P-Stn:	723.2	L-Ssr: (Av)	-32	F Slope R:	-100
Grd.Nxt.:	16	Super L:	0	Cut Dp:	0.0
Grd.Lst:	16	Super R:	0		

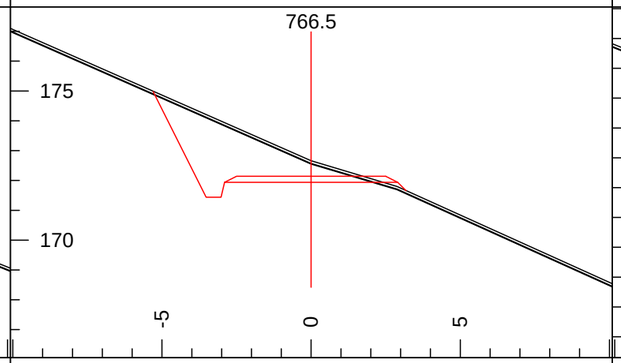


L-Stn:	740.7	Grd.Lst:	16	Super L:	0
P-Stn:	740.7	L-Ssl: (Av)	38	Super R:	0
Grd.Nxt.:	16	L-Ssr: (Av)	-40	F Slope L:	200

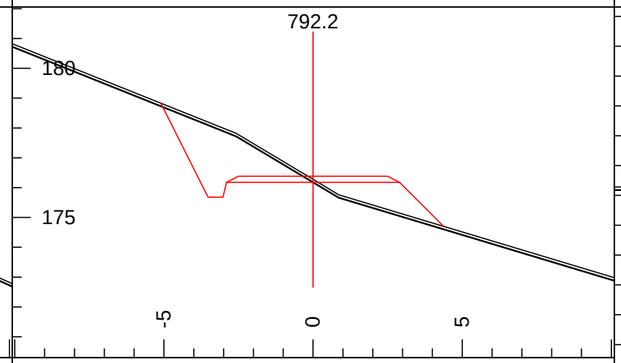
F Slope R:	0
Cut Dp:	1.4



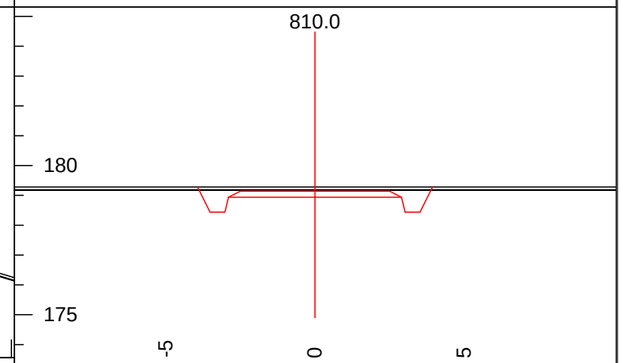
L-Stn:	750.6	L-Ssl: (Av)	32	F Slope L:	200
P-Stn:	750.6	L-Ssr: (Av)	-40	F Slope R:	-100
Grd.Nxt.:	16	Super L:	0	Cut Dp:	1.2
Grd.Lst:	16	Super R:	0		



L-Stn:	766.5	L-Ssl: (Av)	44	F Slope L:	200
P-Stn:	766.5	L-Ssr: (Av)	-41	F Slope R:	-100
Grd.Nxt.:	16	Super L:	0	Cut Dp:	0.7
Grd.Lst:	16	Super R:	0		

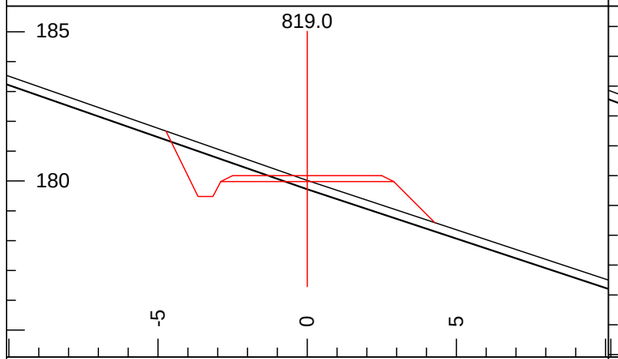


L-Stn:	792.2	L-Ssl: (Av)	45	F Slope L:	200
P-Stn:	792.2	L-Ssr: (Av)	-33	F Slope R:	-100
Grd.Nxt.:	16	Super L:	0	Cut Dp:	0.1
Grd.Lst:	16	Super R:	0		

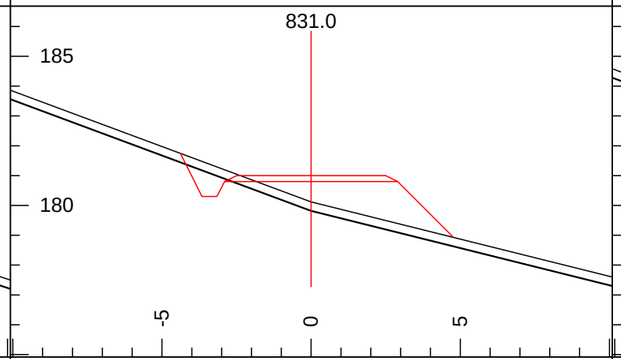


L-Stn:	810.0	Grd.Lst:	16	Super L:	0
P-Stn:	810.0	L-Ssl: (Av)	0	Super R:	0
Grd.Nxt.:	16	L-Ssr: (Av)	0	F Slope L:	200

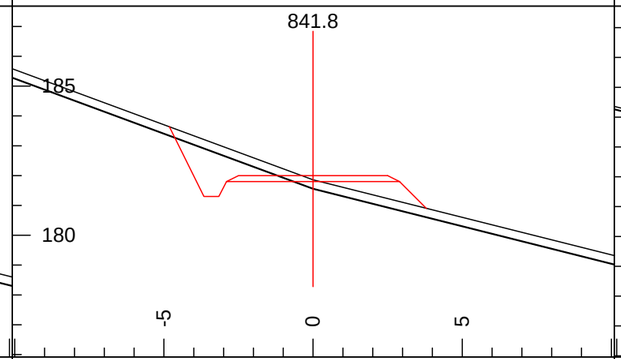
F Slope R:	200
Cut Dp:	0.3



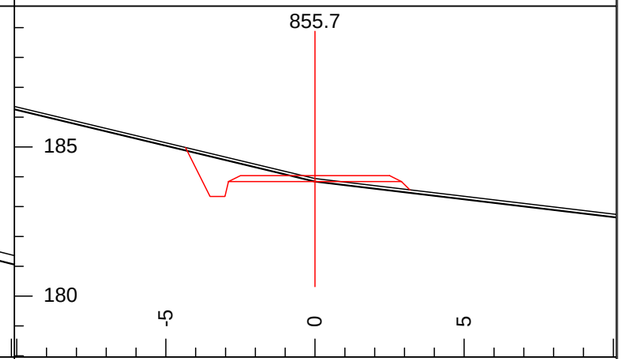
L-Stn:	819.0	L-Ssl: (Av)	35	F Slope L:	200
P-Stn:	819.0	L-Ssr: (Av)	-33	F Slope R:	-100
Grd.Nxt.:	11	Super L:	0	Cut Dp:	0.0
Grd.Lst:	11	Super R:	0		



L-Stn:	831.0	L-Ssl: (Av)	37	F Slope L:	200
P-Stn:	831.0	L-Ssr: (Av)	-25	F Slope R:	-100
Grd.Nxt.:	7	Super L:	0	Cut Dp:	-0.7
Grd.Lst:	7	Super R:	0		

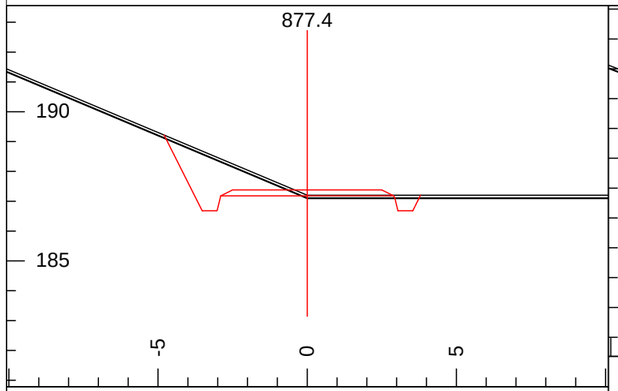


L-Stn:	841.8	L-Ssl: (Av)	37	F Slope L:	200
P-Stn:	841.8	L-Ssr: (Av)	-25	F Slope R:	-100
Grd.Nxt.:	9	Super L:	0	Cut Dp:	0.1
Grd.Lst:	9	Super R:	0		

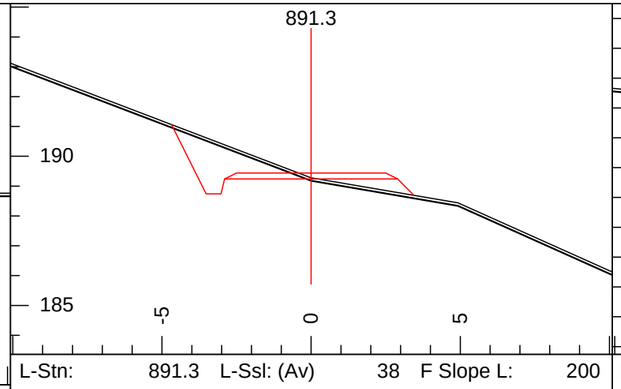


L-Stn:	855.7	L-Ssl: (Av)	24	F Slope L:	200
P-Stn:	855.7	L-Ssr: (Av)	-12	F Slope R:	-100
Grd.Nxt.:	15	Super L:	0	Cut Dp:	0.1
Grd.Lst:	15	Super R:	0		

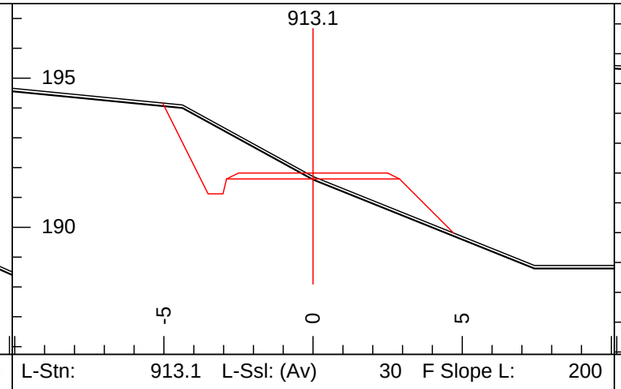
ROADENG Section	Scale 1:200	P. 4
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15_Weiner_Connector_Profile		12/12/21



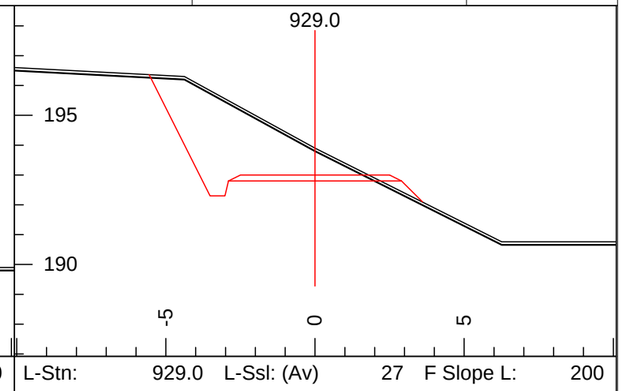
L-Stn:	877.4	Grd.Lst:	15	Super L:	0	F Slope R:	200
P-Stn:	877.4	L-Ssl: (Av)	42	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	15	L-Ssr: (Av)	0	F Slope L:	200		



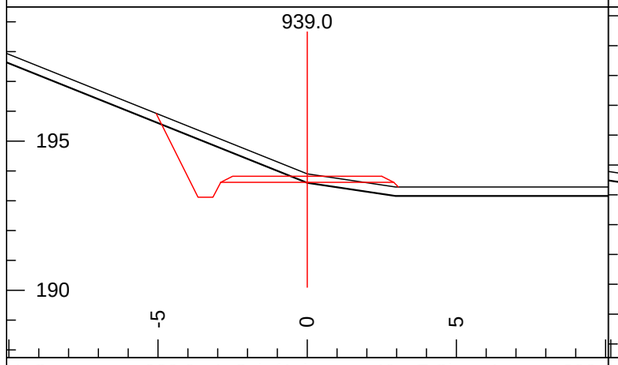
L-Stn:	891.3	L-Ssl: (Av)	38	F Slope L:	200		
P-Stn:	891.3	L-Ssr: (Av)	-31	F Slope R:	-100		
Grd.Nxt.:	11	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	11	Super R:	0				



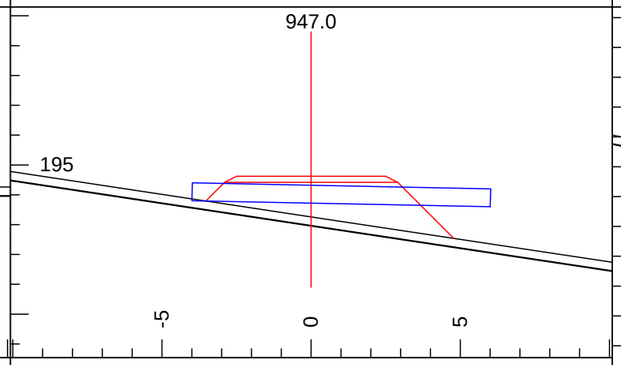
L-Stn:	913.1	L-Ssl: (Av)	30	F Slope L:	200		
P-Stn:	913.1	L-Ssr: (Av)	-30	F Slope R:	-100		
Grd.Nxt.:	8	Super L:	0	Cut Dp:	0.1		
Grd.Lst:	8	Super R:	0				



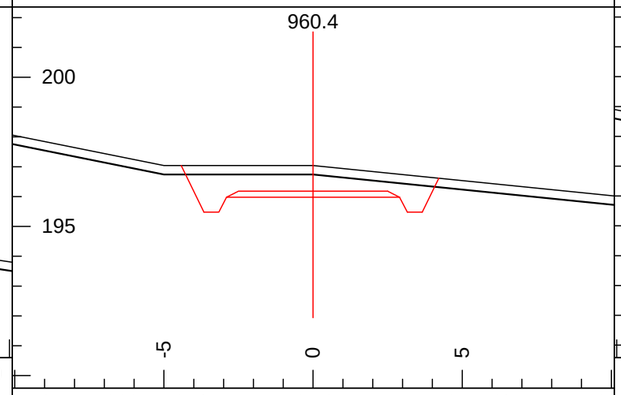
L-Stn:	929.0	L-Ssl: (Av)	27	F Slope L:	200		
P-Stn:	929.0	L-Ssr: (Av)	-31	F Slope R:	-100		
Grd.Nxt.:	8	Super L:	0	Cut Dp:	1.1		
Grd.Lst:	8	Super R:	0				



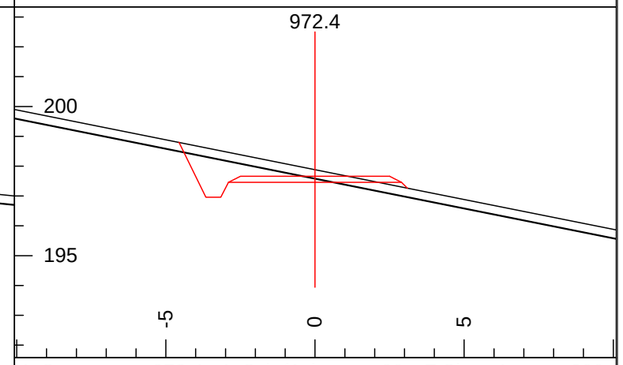
L-Stn:	939.0	L-Ssl: (Av)	40	F Slope L:	200		
P-Stn:	939.0	L-Ssr: (Av)	-4	F Slope R:	-100		
Grd.Nxt.:	10	Super L:	0	Cut Dp:	0.3		
Grd.Lst:	10	Super R:	0				



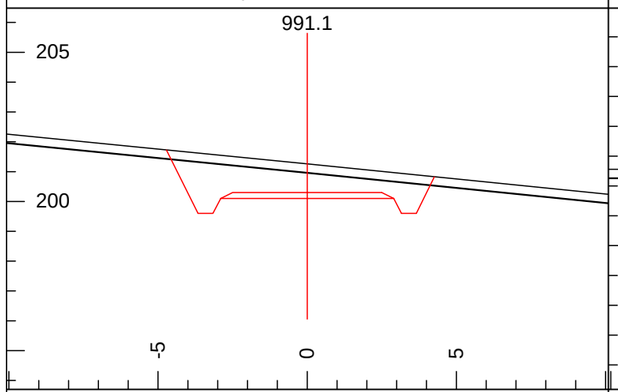
L-Stn:	947.0	L-Ssl: (Av)	15	F Slope L:	-100		
P-Stn:	947.0	L-Ssr: (Av)	-15	F Slope R:	-100		
Grd.Nxt.:	12	Super L:	0	Cut Dp:	-1.2		
Grd.Lst:	12	Super R:	0				



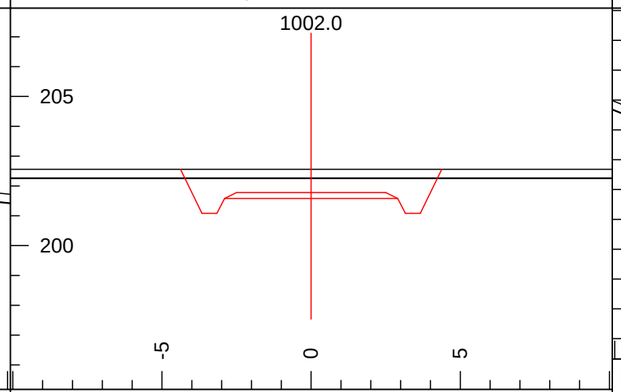
L-Stn:	960.4	Grd.Lst:	12	Super L:	0	F Slope R:	200
P-Stn:	960.4	L-Ssl: (Av)	10	Super R:	0	Cut Dp:	1.1
Grd.Nxt.:	12	L-Ssr: (Av)	-10	F Slope L:	200		



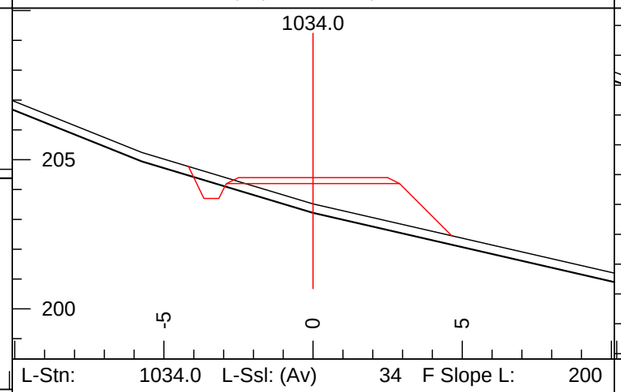
L-Stn:	972.4	L-Ssl: (Av)	20	F Slope L:	200		
P-Stn:	972.4	L-Ssr: (Av)	-20	F Slope R:	-100		
Grd.Nxt.:	12	Super L:	0	Cut Dp:	0.4		
Grd.Lst:	12	Super R:	0				



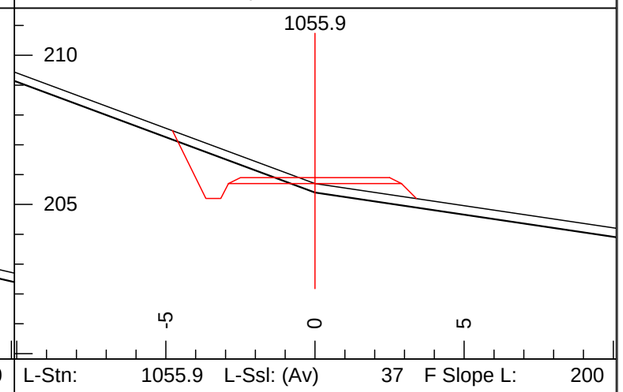
L-Stn:	991.1	Grd.Lst:	14	Super L:	0	F Slope R:	200
P-Stn:	991.1	L-Ssl: (Av)	10	Super R:	0	Cut Dp:	1.2
Grd.Nxt.:	14	L-Ssr: (Av)	-10	F Slope L:	200		



L-Stn:	1002.0	Grd.Lst:	14	Super L:	0	F Slope R:	200
P-Stn:	1002.0	L-Ssl: (Av)	0	Super R:	0	Cut Dp:	1.0
Grd.Nxt.:	14	L-Ssr: (Av)	0	F Slope L:	200		

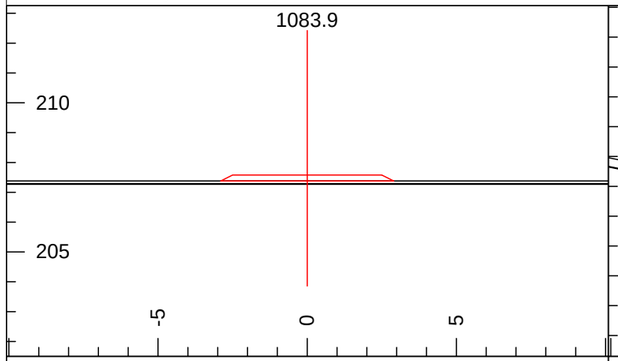


L-Stn:	1034.0	L-Ssl: (Av)	34	F Slope L:	200		
P-Stn:	1034.0	L-Ssr: (Av)	-23	F Slope R:	-100		
Grd.Nxt.:	7	Super L:	0	Cut Dp:	-0.7		
Grd.Lst:	7	Super R:	0				

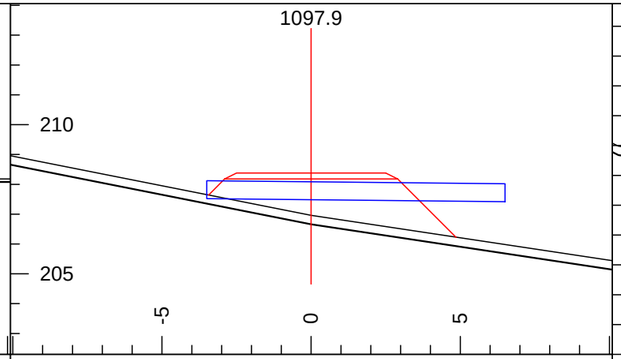


L-Stn:	1055.9	L-Ssl: (Av)	37	F Slope L:	200		
P-Stn:	1055.9	L-Ssr: (Av)	-15	F Slope R:	-100		
Grd.Nxt.:	7	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	7	Super R:	0				

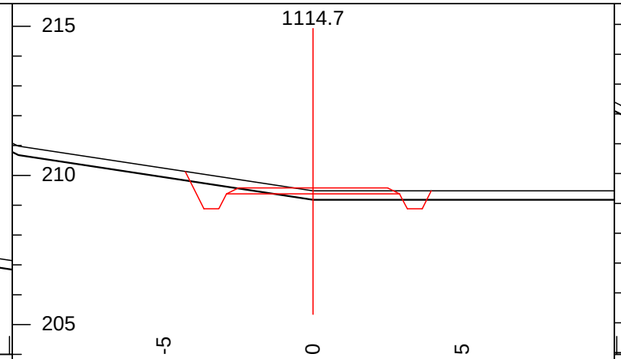
ROADENG Section	Scale 1:200	P. 5
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15_Weiner_Connector_Profile		12/12/21



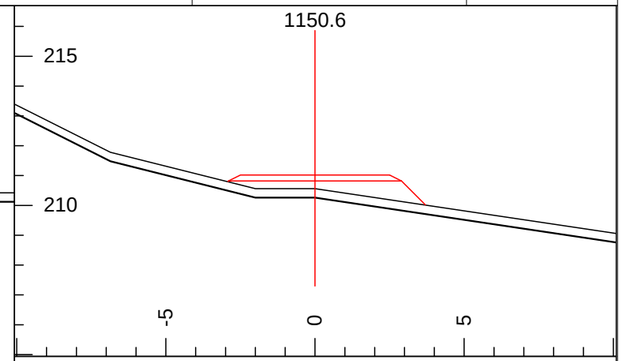
L-Stn:	1083.9	L-Ssl: (Av)	0	F Slope L:	-100
P-Stn:	1083.9	L-Ssr: (Av)	0	F Slope R:	-100
Grd.Nxt.:	6	Super L:	0	Cut Dp:	0.0
Grd.Lst:	6	Super R:	0		



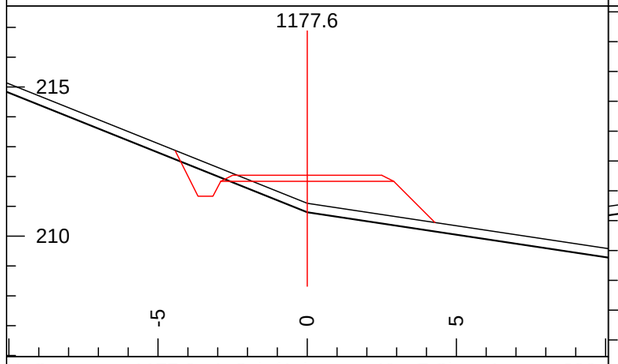
L-Stn:	1097.9	L-Ssl: (Av)	20	F Slope L:	-100
P-Stn:	1097.9	L-Ssr: (Av)	-15	F Slope R:	-100
Grd.Nxt.:	7	Super L:	0	Cut Dp:	-1.2
Grd.Lst:	7	Super R:	0		



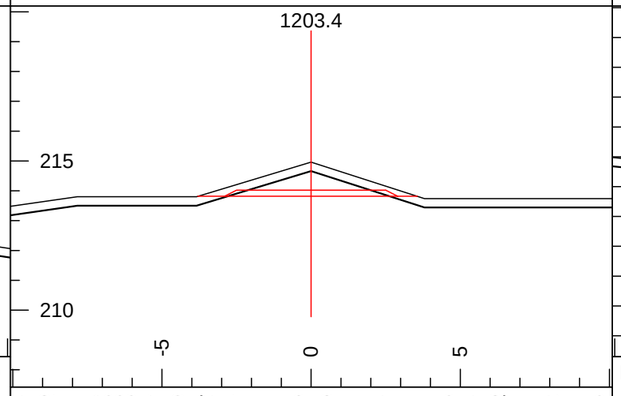
L-Stn:	1114.7	Grd.Lst:	7	Super L:	0	F Slope R:	200
P-Stn:	1114.7	L-Ssl: (Av)	15	Super R:	0	Cut Dp:	0.1
Grd.Nxt.:	7	L-Ssr: (Av)	0	F Slope L:	200		



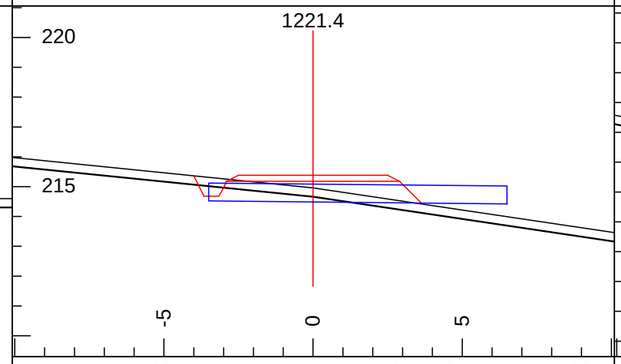
L-Stn:	1150.6	L-Ssl: (Av)	28	F Slope L:	-100
P-Stn:	1150.6	L-Ssr: (Av)	-15	F Slope R:	-100
Grd.Nxt.:	4	Super L:	0	Cut Dp:	-0.3
Grd.Lst:	4	Super R:	0		



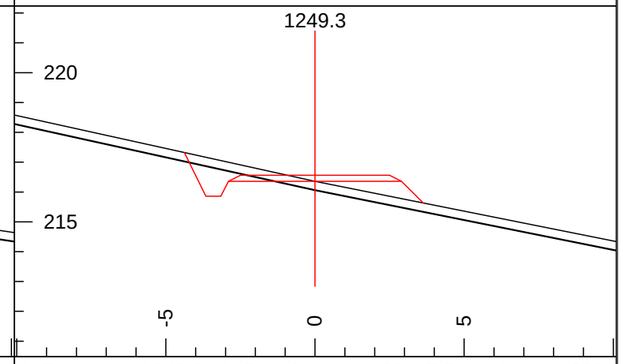
L-Stn:	1177.6	L-Ssl: (Av)	40	F Slope L:	200
P-Stn:	1177.6	L-Ssr: (Av)	-15	F Slope R:	-100
Grd.Nxt.:	8	Super L:	0	Cut Dp:	-0.7
Grd.Lst:	8	Super R:	0		



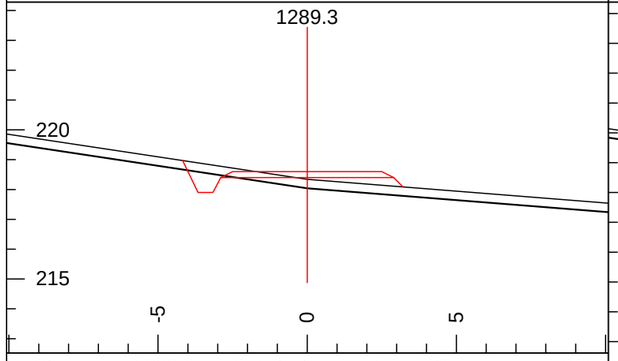
L-Stn:	1203.4	Grd.Lst:	8	Super L:	0	F Slope R:	0
P-Stn:	1203.4	L-Ssl: (Av)	-15	Super R:	0	Cut Dp:	1.1
Grd.Nxt.:	8	L-Ssr: (Av)	-12	F Slope L:	0		



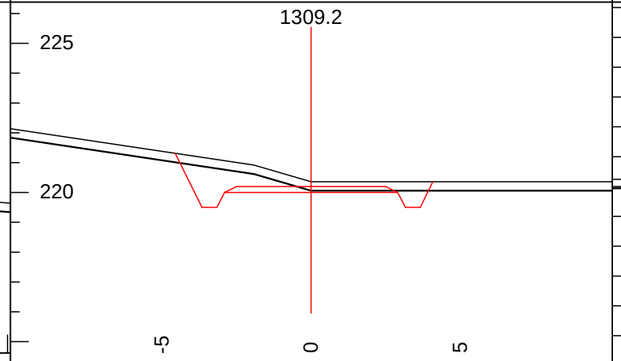
L-Stn:	1221.4	L-Ssl: (Av)	10	F Slope L:	200		
P-Stn:	1221.4	L-Ssr: (Av)	-15	F Slope R:	-100		
Grd.Nxt.:	4	Super L:	0	Cut Dp:	-0.2		
Grd.Lst:	4	Super R:	0				



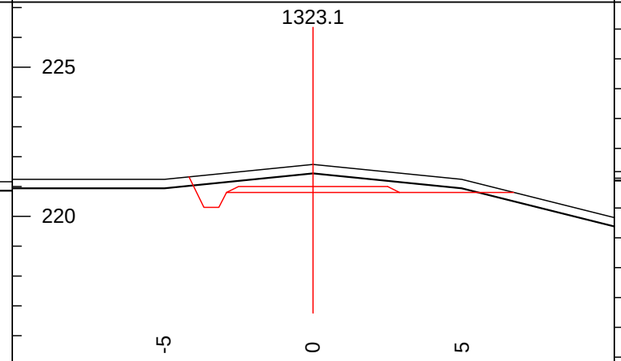
L-Stn:	1249.3	L-Ssl: (Av)	22	F Slope L:	200
P-Stn:	1249.3	L-Ssr: (Av)	-20	F Slope R:	-100
Grd.Nxt.:	4	Super L:	0	Cut Dp:	0.0
Grd.Lst:	4	Super R:	0		



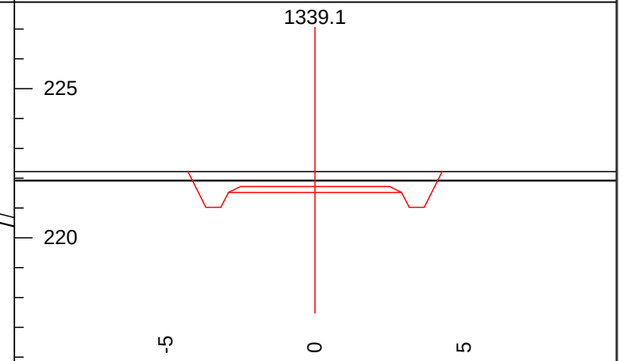
L-Stn:	1289.3	L-Ssl: (Av)	15	F Slope L:	200
P-Stn:	1289.3	L-Ssr: (Av)	-8	F Slope R:	-100
Grd.Nxt.:	8	Super L:	0	Cut Dp:	-0.1
Grd.Lst:	8	Super R:	0		



L-Stn:	1309.2	Grd.Lst:	6	Super L:	0	F Slope R:	200
P-Stn:	1309.2	L-Ssl: (Av)	18	Super R:	0	Cut Dp:	0.4
Grd.Nxt.:	6	L-Ssr: (Av)	0	F Slope L:	200		

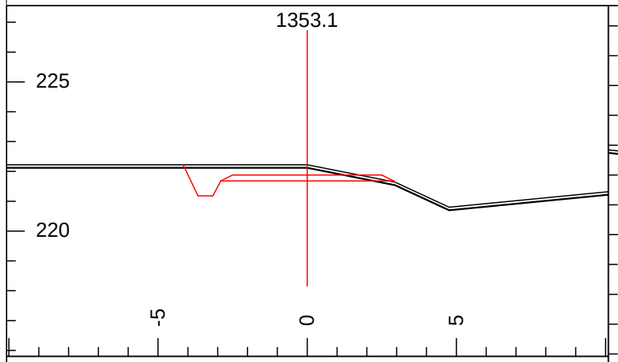


L-Stn:	1323.1	Grd.Lst:	4	Super L:	0	F Slope R:	0
P-Stn:	1323.1	L-Ssl: (Av)	-5	Super R:	0	Cut Dp:	0.9
Grd.Nxt.:	4	L-Ssr: (Av)	-18	F Slope L:	200		

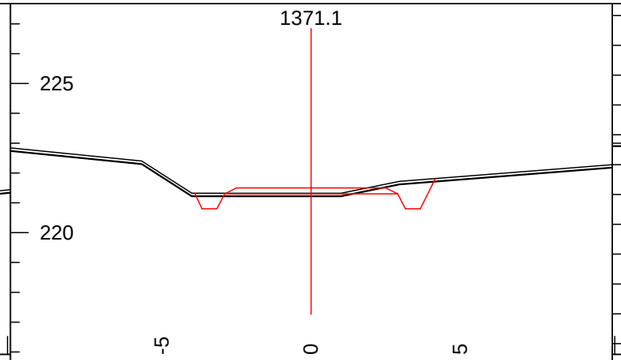


L-Stn:	1339.1	Grd.Lst:	2	Super L:	0	F Slope R:	200
P-Stn:	1339.1	L-Ssl: (Av)	0	Super R:	0	Cut Dp:	0.7
Grd.Nxt.:	2	L-Ssr: (Av)	0	F Slope L:	200		

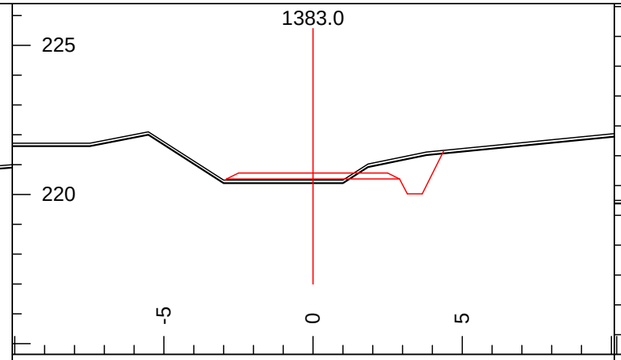
ROADENG Section	Scale 1:200	P. 6
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15_Weiner_Connector_Profile		12/12/21



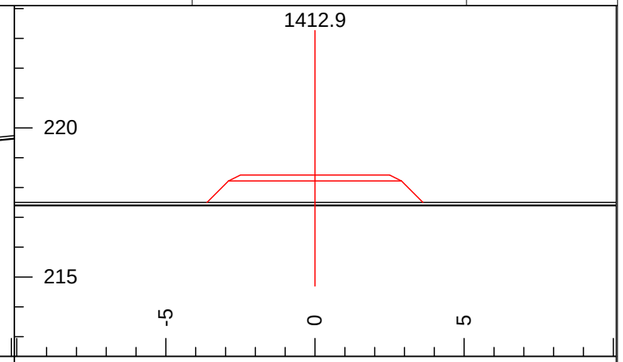
L-Stn:	1353.1	L-Ssl: (Av)	0	F Slope L:	200
P-Stn:	1353.1	L-Ssr: (Av)	-9	F Slope R:	-100
Grd.Nxt.:	-2	Super L:	0	Cut Dp:	0.5
Grd.Lst:	-2	Super R:	0		



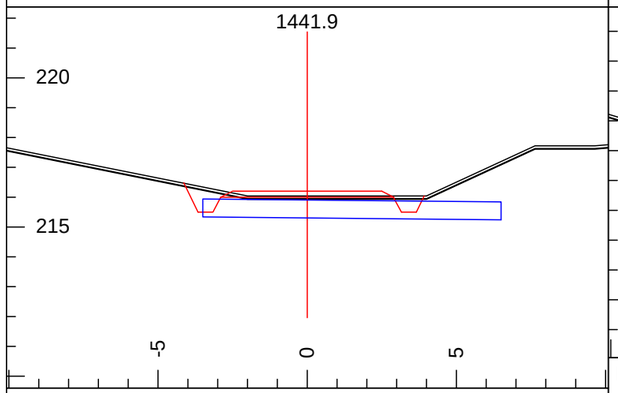
L-Stn:	1371.1	Grd.Lst:	-6	Super L:	0	F Slope R:	200
P-Stn:	1371.1	L-Ssl: (Av)	15	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	-6	L-Ssr: (Av)	10	F Slope L:	200		



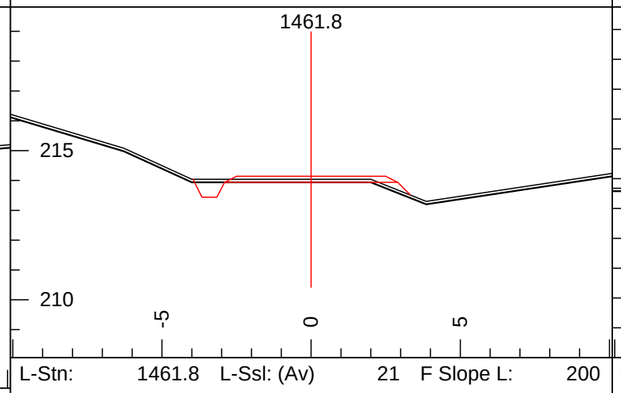
L-Stn:	1383.0	L-Ssl: (Av)	12	F Slope L:	-100
P-Stn:	1383.0	L-Ssr: (Av)	16	F Slope R:	200
Grd.Nxt.:	-6	Super L:	0	Cut Dp:	0.0
Grd.Lst:	-6	Super R:	0		



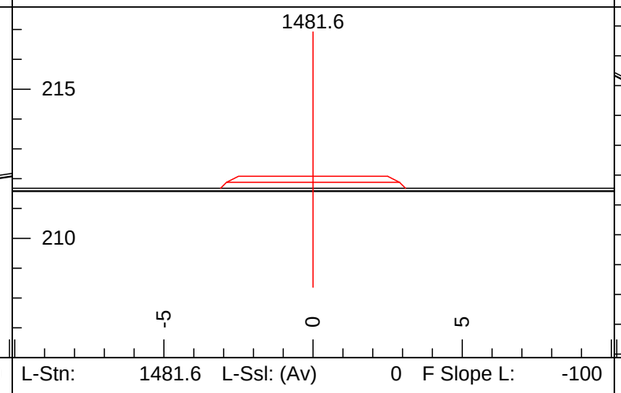
L-Stn:	1412.9	L-Ssl: (Av)	0	F Slope L:	-100
P-Stn:	1412.9	L-Ssr: (Av)	0	F Slope R:	-100
Grd.Nxt.:	-8	Super L:	0	Cut Dp:	-0.7
Grd.Lst:	-8	Super R:	0		



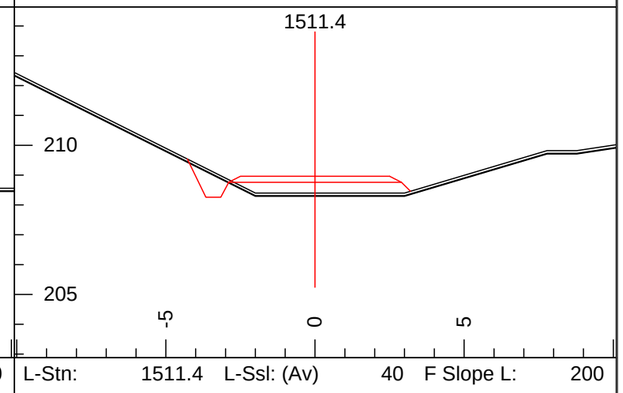
L-Stn:	1441.9	Grd.Lst:	-10	Super L:	0	F Slope R:	200
P-Stn:	1441.9	L-Ssl: (Av)	16	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	-10	L-Ssr: (Av)	17	F Slope L:	200		



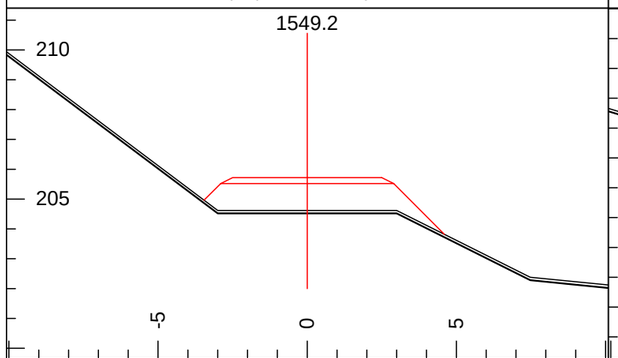
L-Stn:	1461.8	L-Ssl: (Av)	21	F Slope L:	200		
P-Stn:	1461.8	L-Ssr: (Av)	2	F Slope R:	-100		
Grd.Nxt.:	-10	Super L:	0	Cut Dp:	0.1		
Grd.Lst:	-10	Super R:	0				



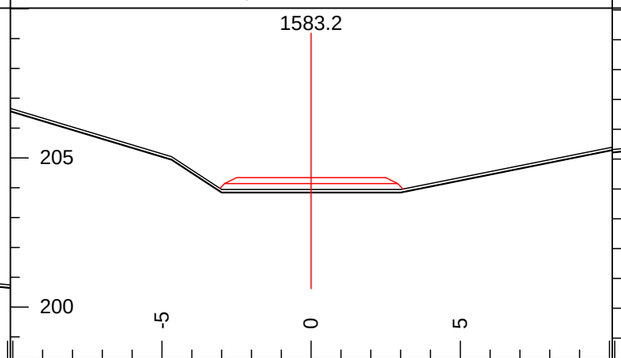
L-Stn:	1481.6	L-Ssl: (Av)	0	F Slope L:	-100		
P-Stn:	1481.6	L-Ssr: (Av)	0	F Slope R:	-100		
Grd.Nxt.:	-10	Super L:	0	Cut Dp:	-0.2		
Grd.Lst:	-10	Super R:	0				



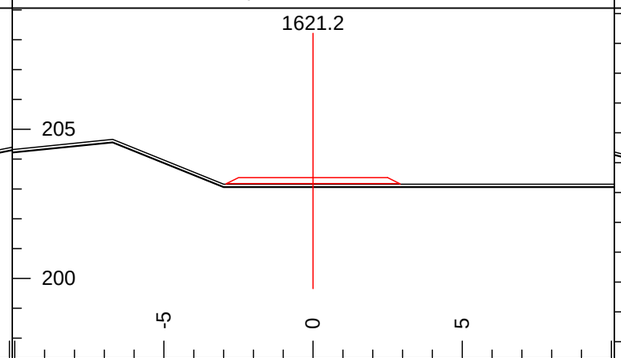
L-Stn:	1511.4	L-Ssl: (Av)	40	F Slope L:	200		
P-Stn:	1511.4	L-Ssr: (Av)	16	F Slope R:	-100		
Grd.Nxt.:	-9	Super L:	0	Cut Dp:	-0.4		
Grd.Lst:	-9	Super R:	0				



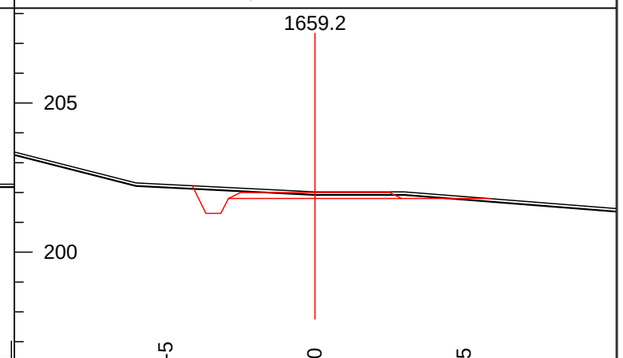
L-Stn:	1549.2	L-Ssl: (Av)	53	F Slope L:	-100
P-Stn:	1549.2	L-Ssr: (Av)	-25	F Slope R:	-100
Grd.Nxt.:	-9	Super L:	0	Cut Dp:	-0.9
Grd.Lst:	-9	Super R:	0		



L-Stn:	1583.2	L-Ssl: (Av)	27	F Slope L:	-100
P-Stn:	1583.2	L-Ssr: (Av)	14	F Slope R:	-100
Grd.Nxt.:	-4	Super L:	0	Cut Dp:	-0.2
Grd.Lst:	-4	Super R:	0		

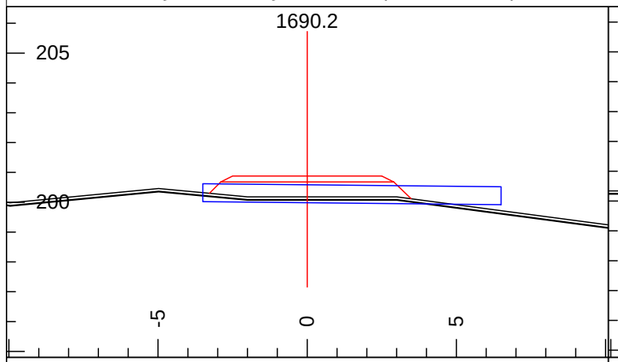


L-Stn:	1621.2	L-Ssl: (Av)	12	F Slope L:	-100
P-Stn:	1621.2	L-Ssr: (Av)	0	F Slope R:	-100
Grd.Nxt.:	-4	Super L:	0	Cut Dp:	0.0
Grd.Lst:	-4	Super R:	0		

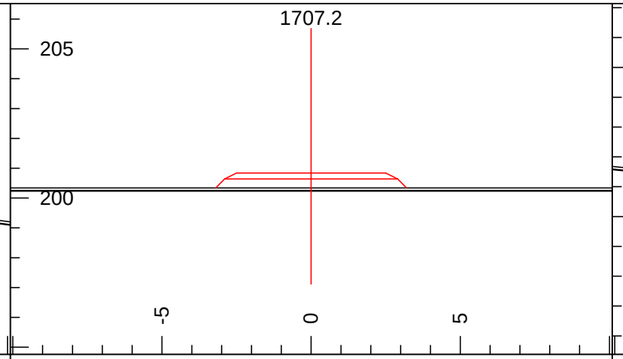


L-Stn:	1659.2	Grd.Lst:	-4	Super L:	0	F Slope R:	0
P-Stn:	1659.2	L-Ssl: (Av)	13	Super R:	0	Cut Dp:	0.2
Grd.Nxt.:	-4	L-Ssr: (Av)	-6	F Slope L:	200		

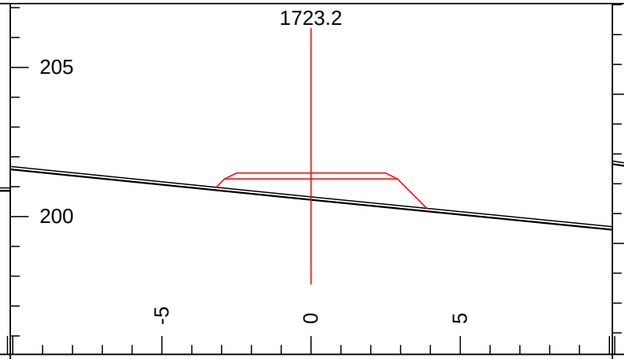
ROADENG Section	Scale 1:200	P. 7
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15_Weiner_Connector_Profile		12/12/21



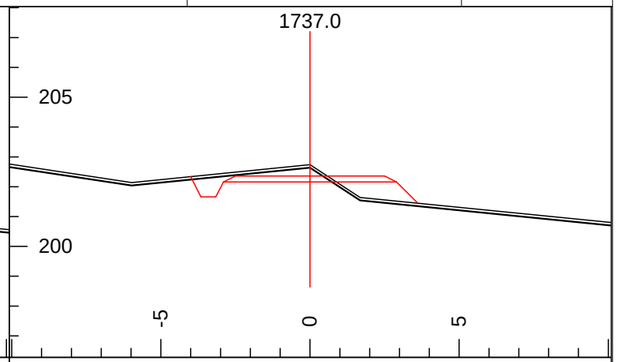
L-Stn:	1690.2	L-Ssl: (Av)	-2	F Slope L:	-100
P-Stn:	1690.2	L-Ssr: (Av)	-9	F Slope R:	-100
Grd.Nxt.:	-4	Super L:	0	Cut Dp:	-0.5
Grd.Lst:	-4	Super R:	0		



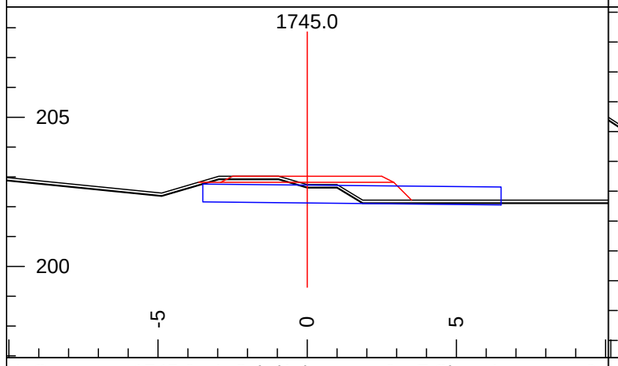
L-Stn:	1707.2	L-Ssl: (Av)	0	F Slope L:	-100
P-Stn:	1707.2	L-Ssr: (Av)	0	F Slope R:	-100
Grd.Nxt.:	0	Super L:	0	Cut Dp:	-0.3
Grd.Lst:	0	Super R:	0		



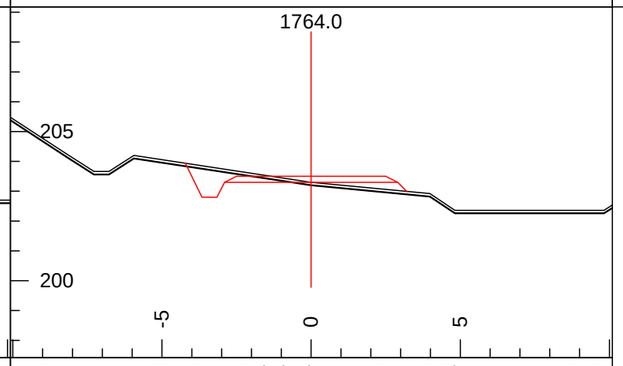
L-Stn:	1723.2	L-Ssl: (Av)	10	F Slope L:	-100
P-Stn:	1723.2	L-Ssr: (Av)	-10	F Slope R:	-100
Grd.Nxt.:	4	Super L:	0	Cut Dp:	-0.6
Grd.Lst:	4	Super R:	0		



L-Stn:	1737.0	L-Ssl: (Av)	0	F Slope L:	200
P-Stn:	1737.0	L-Ssr: (Av)	-19	F Slope R:	-100
Grd.Nxt.:	8	Super L:	0	Cut Dp:	0.6
Grd.Lst:	8	Super R:	0		



L-Stn:	1745.0	L-Ssl: (Av)	2	F Slope L:	0
P-Stn:	1745.0	L-Ssr: (Av)	-5	F Slope R:	-100
Grd.Nxt.:	3	Super L:	0	Cut Dp:	-0.1
Grd.Lst:	3	Super R:	0		

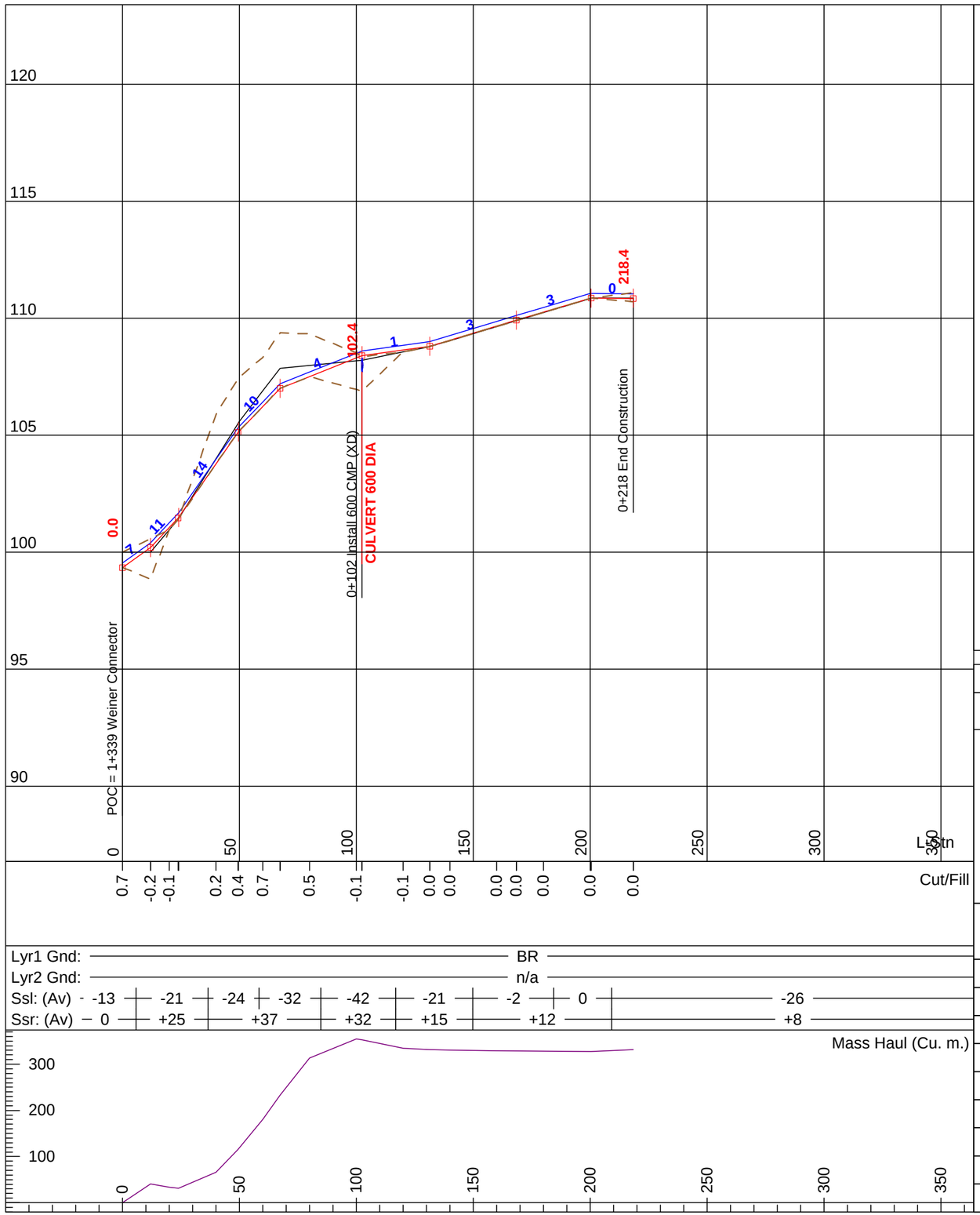


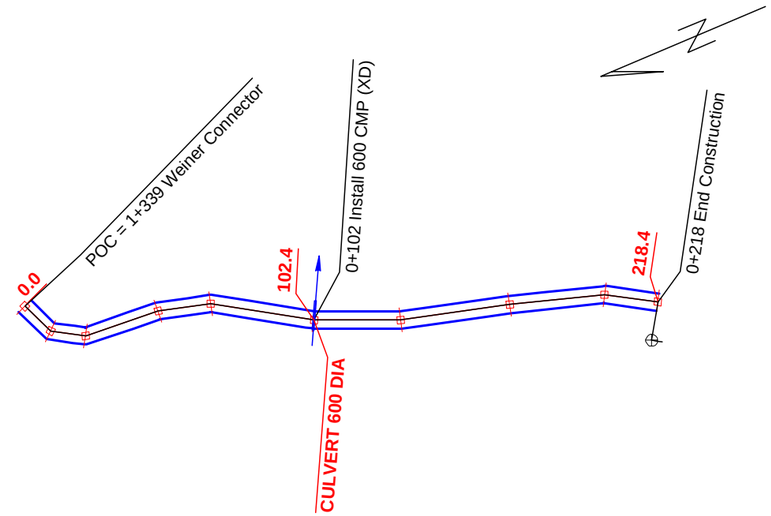
L-Stn:	1764.0	L-Ssl: (Av)	21	F Slope L:	200
P-Stn:	1764.0	L-Ssr: (Av)	-8	F Slope R:	-100
Grd.Nxt.:	n/a	Super L:	0	Cut Dp:	0.0
Grd.Lst:	3	Super R:	0		

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
0.0	OB	-6	0					0.0
26.8	OB	-18	17			0.0	1.4	-1.4
26.9	OB	-18	17			0.0	0.0	-1.4
50.9	OB	-22	18			0.0	3.1	-4.5
51.0	OB	-22	18			0.0	0.0	-4.5
85.8	OB	-5	16			0.0	3.2	-7.7
85.8	OB	-5	16			0.0	0.0	-7.7
111.6	OB	-6	11		0.5	4.8	0.5	-3.4
111.8	OB	-6	11		0.5	0.1	0.0	-3.3
137.4	OB	3	-3	-0.7		16.0	0.0	12.8
137.5	OB	3	-3	-0.7		0.0	0.0	12.8
180.1	OB	-5	-12			7.7	0.0	20.5
180.2	OB	-5	-12			0.0	0.0	20.5
214.4	OB	6	0	-0.6	-0.2	35.0	0.0	55.5
214.6	OB	6	0	-0.6	-0.2	0.4	0.0	55.9
246.3	OB	8	-3	0.2	0.1	97.1	0.0	153.0
246.4	OB	8	-3	0.2	0.1	0.3	0.0	153.4
290.2	OB	14	-10			70.3	25.1	198.6
290.4	OB	14	-10			0.0	0.4	198.2
326.2	OB	7	-6			0.0	68.9	129.3
326.4	OB	7	-6			0.0	0.3	129.0
358.2	OB	27	-3			0.0	55.0	74.0
358.4	OB	27	-3			0.0	0.3	73.7
402.0	OB	3	-14			0.0	106.4	-32.7
402.1	OB	3	-14			0.0	0.3	-33.1
429.0	OB	3	-7			0.0	50.0	-83.0
429.0	OB	3	-7			0.0	0.0	-83.1
458.8	OB	9	-7			0.0	10.2	-93.2
458.9	OB	9	-7			0.0	0.0	-93.2
486.8	OB	6	10			0.0	76.7	-170.0
486.8	OB	6	10			0.0	0.2	-170.2
517.4	OB	30	0			0.0	199.0	-369.1
517.7	OB	30	0			0.0	2.3	-371.4
529.3	OB	30	-18	1.8	-0.2	35.1	42.6	-378.9
529.4	OB	30	-18	1.8	-0.2	1.1	0.2	-378.1
543.2	OB	35	-33	1.4		88.4	15.8	-305.5
543.4	OB	35	-33	1.4		0.9	0.2	-304.8
565.0	OB	44	-28	2.1	-0.2	144.9	9.8	-169.8
565.2	OB	44	-28	2.1	-0.2	1.6	0.0	-168.2
582.8	OB	47	-30	2.5	-0.2	161.4	0.0	-6.8
582.8	OB	47	-30	2.5	-0.2	0.3	0.0	-6.5
600.7	OB	46	-30	2.4	-0.2	163.1	0.0	156.6
600.8	OB	46	-30	2.4	-0.2	0.8	0.0	157.4
625.5	OB	53	-43	3.6	-0.2	266.3	0.0	423.7
625.6	OB	53	-43	3.6	-0.2	1.7	0.0	425.4
647.4	OB	60	-48	3.9	-0.2	251.4	3.0	673.8
647.6	OB	60	-48	3.9	-0.2	2.1	0.0	675.9
675.4	OB	38	-28	1.3		219.1	26.8	868.1
675.6	OB	38	-28	1.3		0.8	0.3	868.6
701.4	OB	40	-38	1.1		82.4	75.3	875.7
701.6	OB	40	-38	1.2		0.6	1.0	875.3
723.2	OB	37	-32	1.4		65.8	54.2	886.9
723.2	OB	37	-32	1.4		0.1	0.0	887.0
740.6	OB	38	-40	3.1	-0.2	141.3	8.6	1019.7
740.7	OB	38	-40	3.1	-0.2	1.6	0.0	1021.4
750.6	OB	32	-40	2.5	-0.2	114.2	0.0	1135.6
750.6	OB	32	-40	2.5	-0.2	0.3	0.0	1135.9
766.5	OB	44	-41	2.7	-0.2	158.7	0.2	1294.4
766.6	OB	44	-41	2.7	-0.2	0.9	0.0	1295.3
792.2	OB	45	-33	2.3	-0.2	198.6	31.6	1462.3
792.4	OB	45	-33	2.3	-0.2	1.0	0.4	1462.9
810.0	OB	0	0	0.0	0.0	100.3	26.4	1536.8
810.0	OB	0	0	0.0	0.0	0.0	0.0	1536.8
819.0	OB	35	-33	1.1		31.8	8.7	1559.9
819.4	OB	35	-33	1.1		1.6	0.9	1560.6
831.0	OB	37	-25	0.4		27.9	41.0	1547.5
831.0	OB	37	-25	0.4		0.1	0.2	1547.4
841.8	OB	37	-25	1.3		28.8	32.3	1543.9
842.0	OB	37	-25	1.3		0.7	0.2	1544.4

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
842.0	OB	37	-25	1.3				1544.4
855.6	OB	24	-12	0.8	-0.2	47.1	9.8	1581.8
855.7	OB	24	-12	0.8	-0.2	0.2	0.0	1581.9
877.4	OB	42	0	1.7	-0.3	76.3	4.1	1654.2
877.6	OB	42	0	1.7	-0.3	0.8	0.0	1655.0
891.0	OB	38	-31	1.5		58.3	4.1	1709.2
891.3	OB	38	-31	1.5		1.0	0.2	1710.1
913.0	OB	30	-30	2.2		98.7	26.7	1782.1
913.1	OB	30	-30	2.2		0.8	0.3	1782.5
929.0	OB	27	-31	3.3	-0.2	145.7	16.4	1911.8
929.0	OB	27	-31	3.3	-0.2	0.2	0.0	1912.0
938.8	OB	40	-4	1.7	-0.2	91.1	1.6	2001.5
939.0	OB	40	-4	1.7		1.1	0.0	2002.6
946.8	OB	15	-15			21.3	29.6	1994.3
947.0	OB	15	-15			0.0	1.3	1993.0
960.4	OB	10	-10	0.6	0.1	55.7	55.0	1993.7
960.6	OB	10	-10	0.5	0.1	1.4	0.0	1995.1
972.4	OB	20	-20	0.8	-0.2	76.1	0.5	2070.7
972.6	OB	20	-20	0.8	-0.2	0.8	0.0	2071.5
991.1	OB	10	-10	1.1	0.2	135.9	0.3	2207.1
991.2	OB	10	-10	1.1	0.2	0.9	0.0	2208.1
1002.0	OB	0	0	0.5	0.5	104.4	0.0	2312.5
1002.2	OB	0	0	0.5	0.5	1.5	0.0	2314.0
1033.8	OB	34	-23	0.0		134.0	51.3	2396.6
1034.0	OB	34	-23	0.0		0.2	1.1	2395.7
1055.9	OB	37	-15	1.2		47.0	60.9	2381.8
1056.0	OB	37	-15	1.2		0.4	0.1	2382.1
1083.8	OB	0	0			53.8	10.7	2425.2
1083.9	OB	0	0			0.0	0.0	2425.1
1097.8	OB	20	-15			0.0	60.7	2364.4
1097.9	OB	20	-15			0.0	0.4	2364.0
1114.7	OB	15	0	0.2	-0.4	21.0	70.9	2314.1
1114.8	OB	15	0	0.2	-0.4	0.4	0.0	2314.5
1150.4	OB	28	-15			47.0	36.0	2325.5
1150.6	OB	28	-15			0.0	0.6	2324.9
1177.4	OB	40	-15	0.5		12.7	92.6	2245.0
1177.6	OB	40	-15	0.4		0.3	1.0	2244.3
1203.4	OB	-15	-12	-0.2	-0.2	60.1	41.7	2262.7
1203.4	OB	-15	-12	-0.2	-0.2	0.2	0.0	2262.9
1221.2	OB	10	-15	-0.3		41.7	11.8	2292.8
1221.4	OB	10	-15	-0.3		0.1	0.3	2292.6
1249.3	OB	22	-20	0.4		42.7	39.6	2295.7
1249.4	OB	22	-20	0.4		0.2	0.1	2295.8
1289.0	OB	15	-8	0.1		73.2	31.7	2337.2
1289.3	OB	15	-8	0.1		0.4	0.1	2337.4
1309.0	OB	18	0	0.8	-0.2	76.3	2.9	2410.8
1309.2	OB	18	0	0.8	-0.1	1.0	0.0	2411.8
1323.1	OB	-5	-18	0.0	-0.2	82.9	0.0	2494.7
1323.1	OB	-5	-18	0.0	-0.2	0.0	0.0	2494.7
1338.8	OB	0	0	0.2	0.2	106.7	0.0	2601.4
1339.1	OB	0	0	0.2	0.2	1.9	0.0	2603.3
1347.0	OB	11	0	0.0		26.3	10.3	2619.4
1352.8	OB	0	-9	0.2	-0.2	10.7	8.6	2621.5
1353.1	OB	0	-9	0.2	-0.2	0.9	0.0	2622.4
1371.0	OB	15	10	-0.3	0.2	38.8	1.8	2659.4
1371.1	OB	15	10	-0.3	0.2	0.1	0.0	2659.6
1383.0	OB	12	16		0.6	24.9	1.0	2683.4
1383.4	OB	12	16		0.6	0.8	0.1	2684.1
1412.6	OB	0	0			18.2	71.1	2631.2
1412.9	OB	0	0			0.0	1.4	2629.8
1441.6	OB	16	17	0.2	-0.3	9.4	63.4	2575.8
1441.9	OB	16	17	0.2	-0.3	0.4	0.0	2576.1
1461.6	OB	21	2	-0.2	-0.2	24.8	1.5	2599.4
1461.8	OB	21	2	-0.2	-0.2	0.2	0.0	2599.6
1481.6	OB	0	0			9.5	13.0	2596.0
1481.6	OB	0	0			0.0	0.0	2596.0
1511.4	OB	40	16	0.4		18.5	47.2	2567.3
1511.4	OB	40	16	0.4		0.0	0.1	2567.2
1549.2	OB	53	-25			3.5	151.6	2419.2

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
1549.2	OB	53	-25			0.0	4.5	2419.2
1550.0	OB	53	-25			0.0	113.5	2414.7
1583.2	OB	27	14			0.0	0.2	2301.2
1583.4	OB	27	14			0.0	23.0	2301.0
1621.2	OB	12	0			0.0	0.0	2278.0
1621.2	OB	12	0			60.8	0.6	2278.0
1659.2	OB	13	-6	0.1	-0.2	0.0	0.0	2338.3
1659.2	OB	13	-6	0.1	-0.2	27.4	39.4	2338.3
1690.2	OB	-2	-9			0.0	0.1	2326.3
1690.2	OB	-2	-9			0.0	42.0	2326.2
1707.2	OB	0	0			0.0	0.1	2284.2
1707.2	OB	0	0			0.0	45.9	2284.1
1723.2	OB	10	-10			0.0	0.2	2238.2
1723.2	OB	10	-10			14.8	34.6	2238.1
1737.0	OB	0	-19	-0.1	-0.2	0.0	0.0	2218.2
1737.0	OB	0	-19	-0.1	-0.2	8.6	12.1	2218.2
1745.0	OB	2	-5	-0.2		0.0	0.0	2214.6
1745.0	OB	2	-5	-0.2		22.3	14.5	2214.6
1764.0	OB	21	-8	0.3		0.0	0.0	2222.5
1764.0	OB	21	-8	0.3				2222.5





Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: W15-S1

Road Design

0+000 to 0+218

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
102.4	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

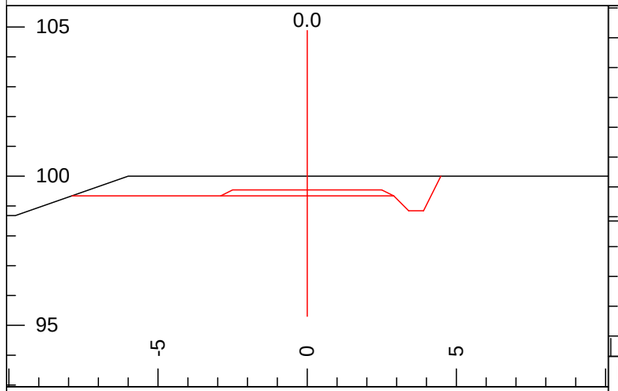
- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

Designed By: Meridian Forest Services Ltd.

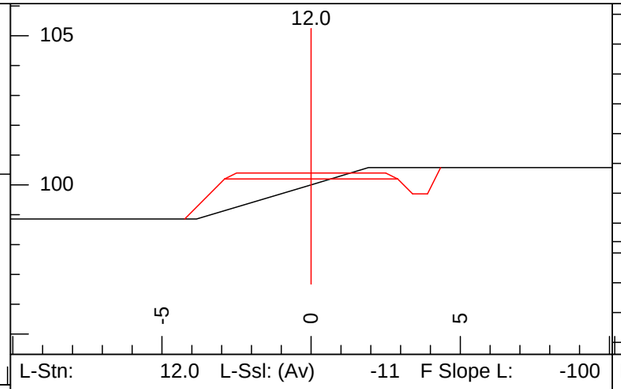
MERIDIAN Forest Services Ltd.
PO Box 275
#15-1010 Shearme Road
Coombs, BC V0R 1M0
www.meridianforest.ca

M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S1_Profile.dsn

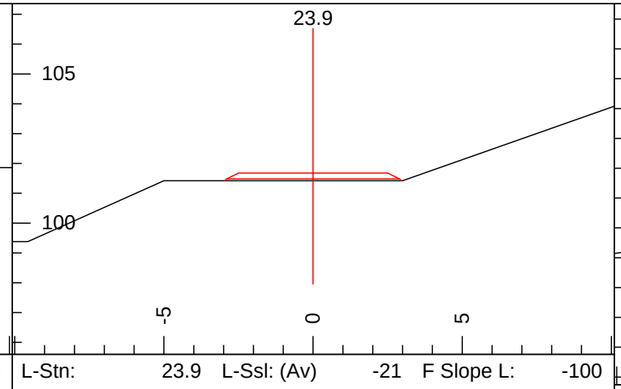
ROADENG Section	Scale 1:200	P. 1
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S1_Profile		12/12/21



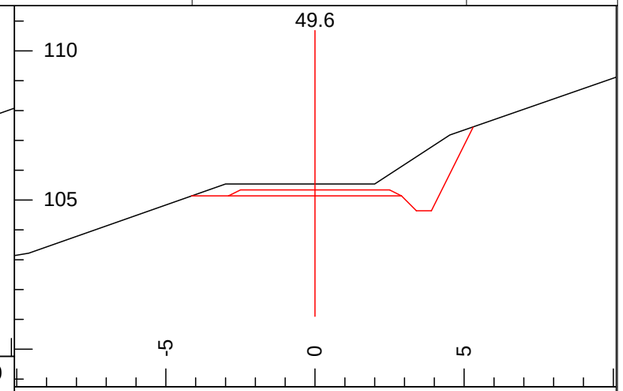
L-Stn:	0.0	Grd.Lst:	n/a	Super L:	0	F Slope R:	200
P-Stn:	0.0	L-Ssl: (Av)	-13	Super R:	0	Cut Dp:	0.7
Grd.Nxt.:	7	L-Ssr: (Av)	0	F Slope L:	0		



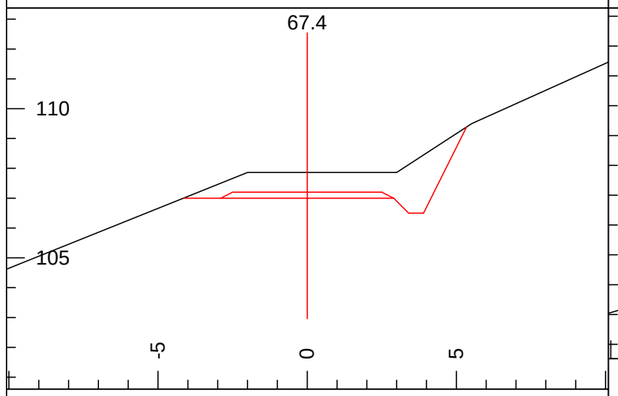
L-Stn:	12.0	L-Ssl: (Av)	-11	F Slope L:	-100		
P-Stn:	12.0	L-Ssr: (Av)	6	F Slope R:	200		
Grd.Nxt.:	7	Super L:	0	Cut Dp:	-0.2		
Grd.Lst:	7	Super R:	0				



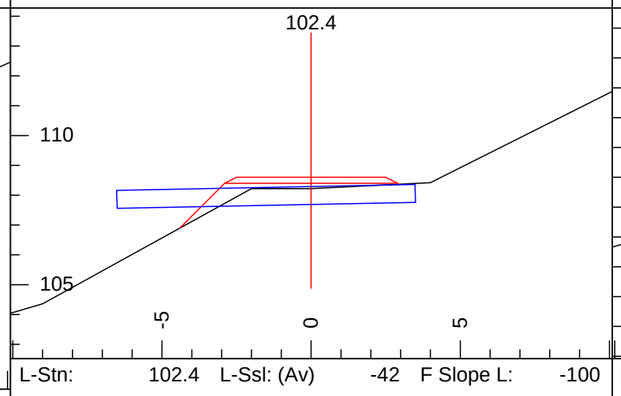
L-Stn:	23.9	L-Ssl: (Av)	-21	F Slope L:	-100		
P-Stn:	23.9	L-Ssr: (Av)	25	F Slope R:	-100		
Grd.Nxt.:	14	Super L:	0	Cut Dp:	-0.1		
Grd.Lst:	14	Super R:	0				



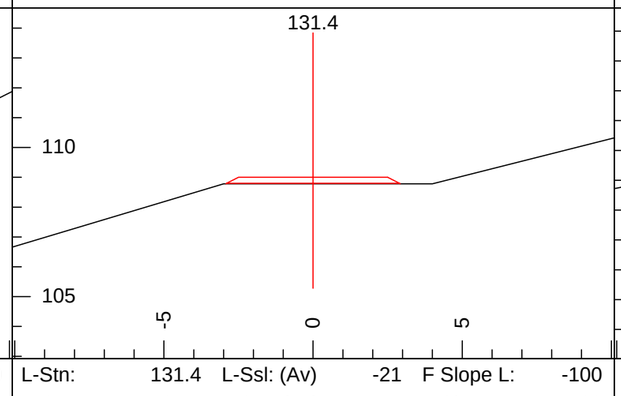
L-Stn:	49.6	Grd.Lst:	10	Super L:	0	F Slope R:	200
P-Stn:	49.6	L-Ssl: (Av)	-24	Super R:	0	Cut Dp:	0.4
Grd.Nxt.:	10	L-Ssr: (Av)	36	F Slope L:	0		



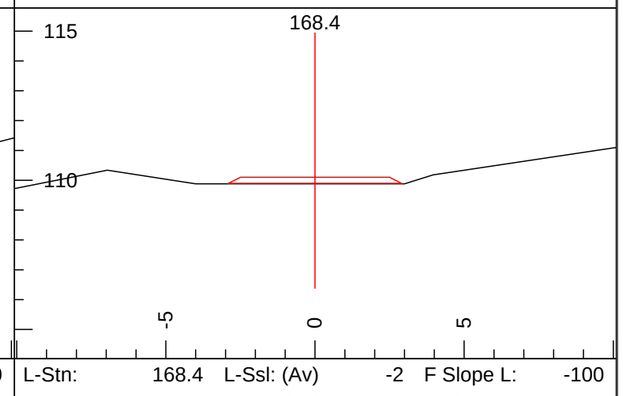
L-Stn:	67.4	Grd.Lst:	4	Super L:	0	F Slope R:	200
P-Stn:	67.4	L-Ssl: (Av)	-32	Super R:	0	Cut Dp:	0.9
Grd.Nxt.:	4	L-Ssr: (Av)	37	F Slope L:	0		



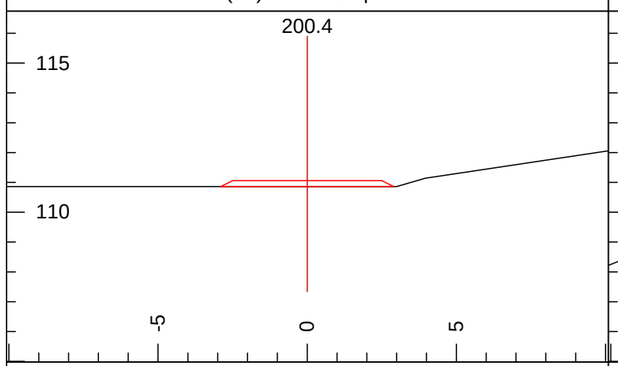
L-Stn:	102.4	L-Ssl: (Av)	-42	F Slope L:	-100		
P-Stn:	102.4	L-Ssr: (Av)	32	F Slope R:	-100		
Grd.Nxt.:	1	Super L:	0	Cut Dp:	-0.2		
Grd.Lst:	1	Super R:	0				



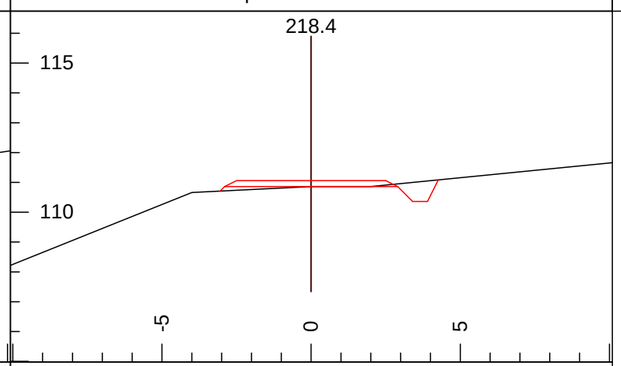
L-Stn:	131.4	L-Ssl: (Av)	-21	F Slope L:	-100		
P-Stn:	131.4	L-Ssr: (Av)	15	F Slope R:	-100		
Grd.Nxt.:	1	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	1	Super R:	0				



L-Stn:	168.4	L-Ssl: (Av)	-2	F Slope L:	-100		
P-Stn:	168.4	L-Ssr: (Av)	12	F Slope R:	-100		
Grd.Nxt.:	3	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	3	Super R:	0				

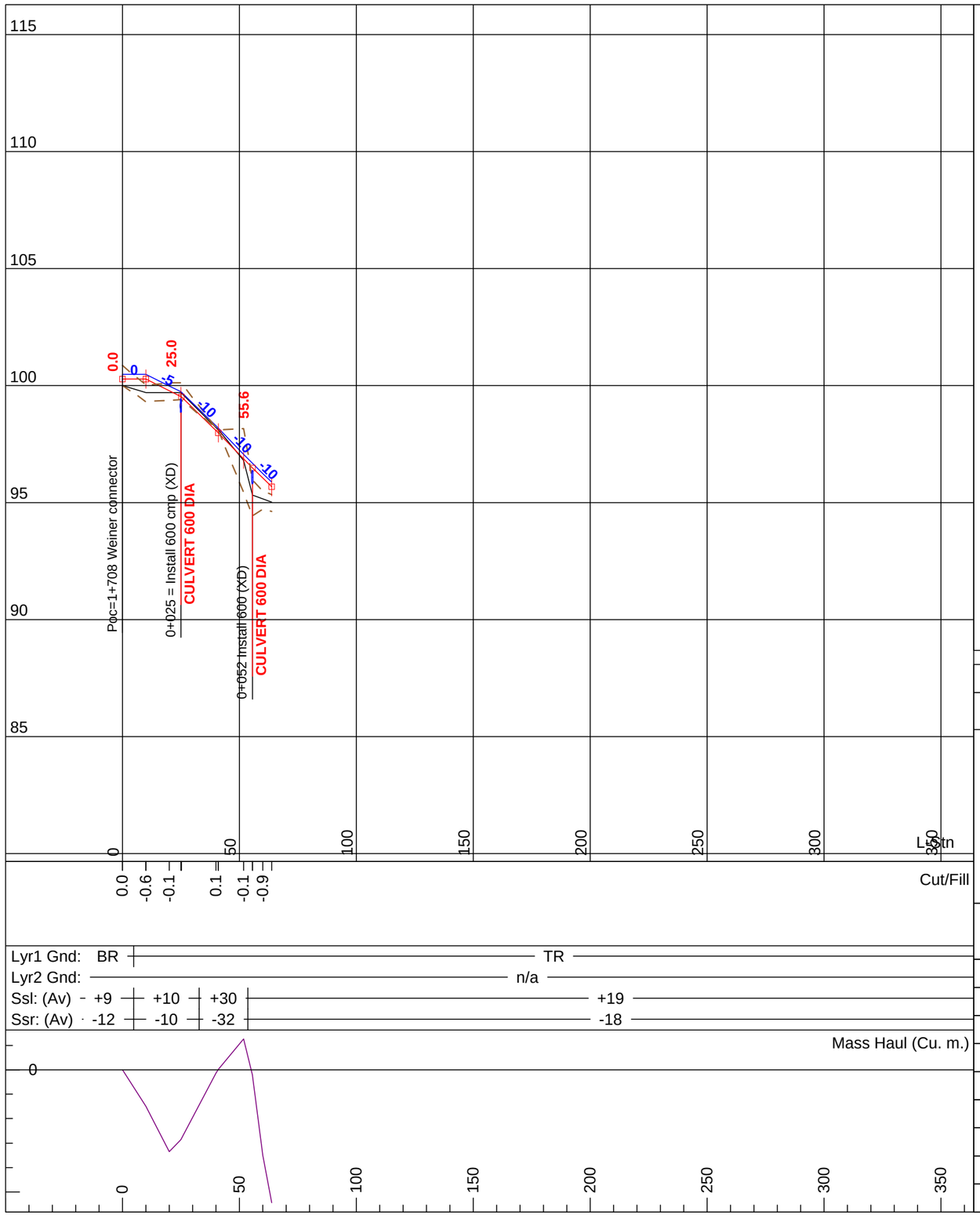


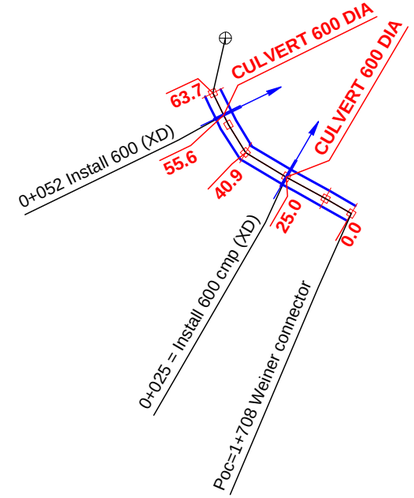
L-Stn:	200.4	L-Ssl: (Av)	0	F Slope L:	-100		
P-Stn:	200.4	L-Ssr: (Av)	12	F Slope R:	-100		
Grd.Nxt.:	3	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	3	Super R:	0				



L-Stn:	218.4	L-Ssl: (Av)	-26	F Slope L:	-100		
P-Stn:	218.4	L-Ssr: (Av)	8	F Slope R:	200		
Grd.Nxt.:	n/a	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	72	Super R:	0				

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
0.0	BR	-13	0			56.5	16.1	0.0
12.0	BR	-11	6			6.2	14.7	40.3
23.9	BR	-21	25			86.9	2.4	31.8
49.6	BR	-24	36			117.1	0.0	116.4
67.4	BR	-32	37			132.8	14.0	233.4
102.4	BR	-42	32			0.0	21.0	352.3
131.4	BR	-21	15			0.0	2.5	331.3
168.4	BR	-2	12			0.0	1.6	328.7
200.4	BR	0	12			6.7	1.9	327.1
218.4	BR	-26	8					331.9





Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: W15-S2

Road Design

0+000 to 0+064

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
25.0	600	10.0
55.6	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

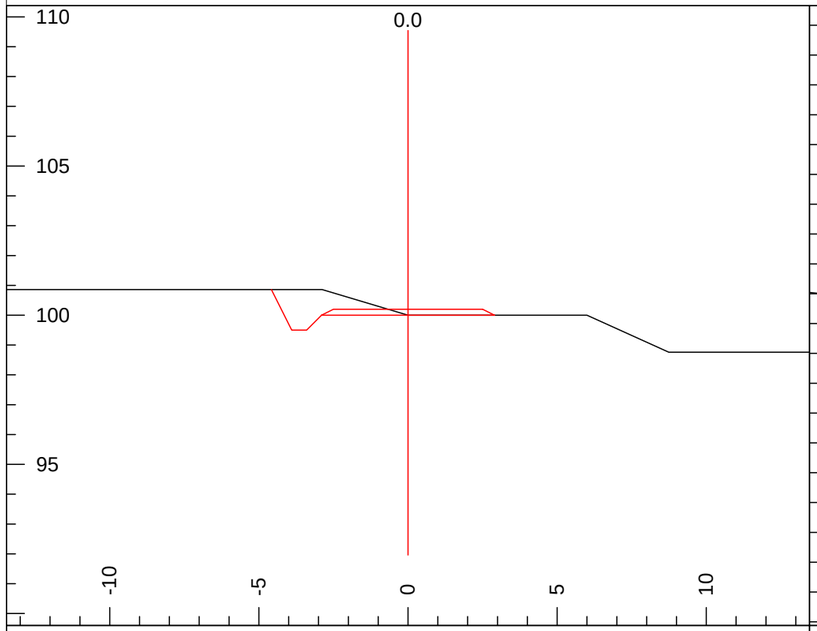
Designed By: Meridian Forest Services Ltd.

MERIDIAN Forest Services Ltd.
PO Box 275
#15-1010 Shearme Road
Coombs, BC V0R 1M0
www.meridianforest.ca

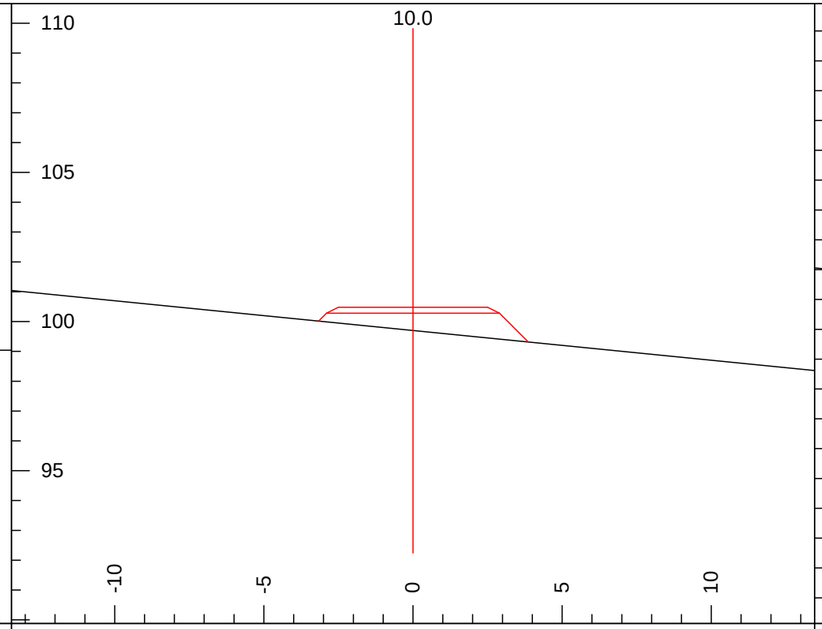
SAFE CERTIFIED

M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S2_Profile.dsn

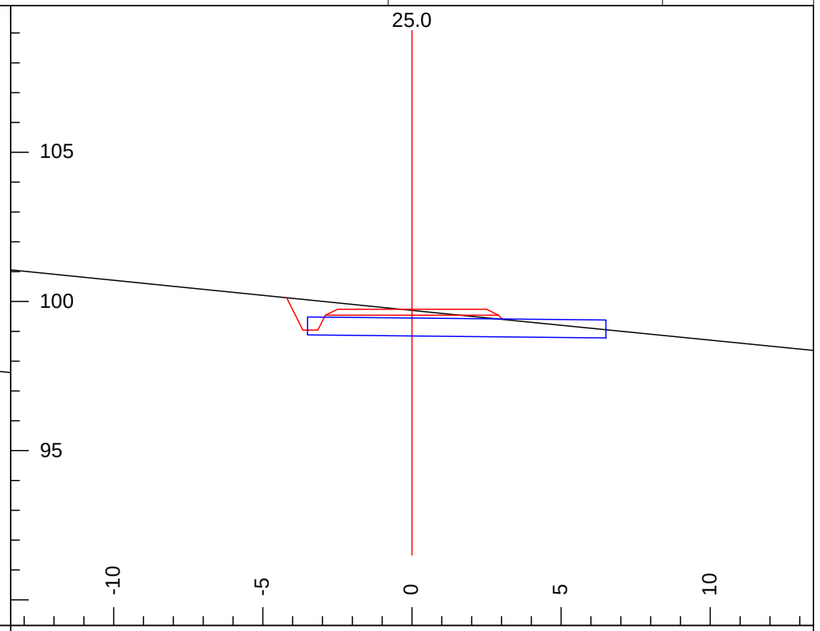
ROADENG Section	Scale 1:200	P. 1
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S2_Profile		12/12/21



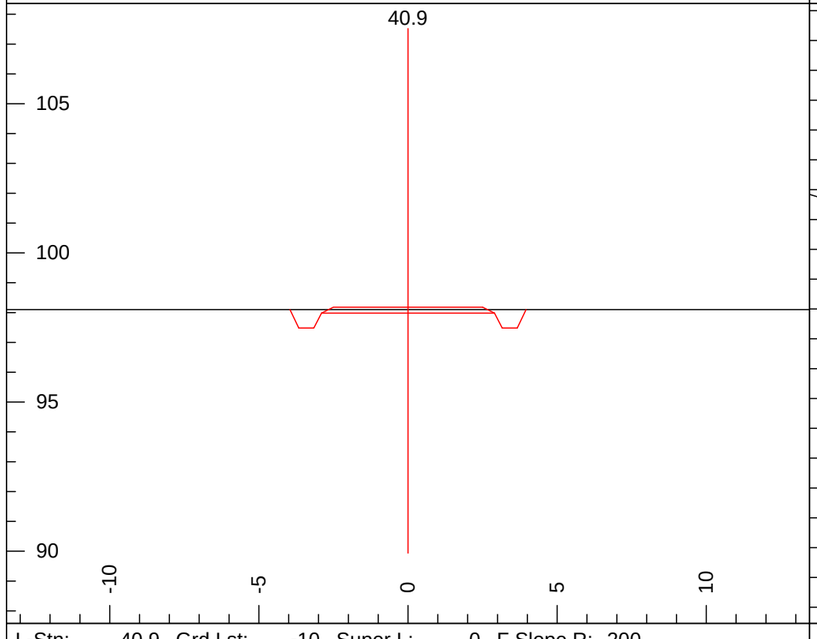
L-Stn:	0.0	Grd.Lst:	n/a	Super L:	0	F Slope R:	0	
P-Stn:	0.0	L-Ssl: (Av)	9	Super R:	0	Cut Dp:	0.0	
Grd.Nxt.:	1001	L-Ssr: (Av)	-12	F Slope L:	200			



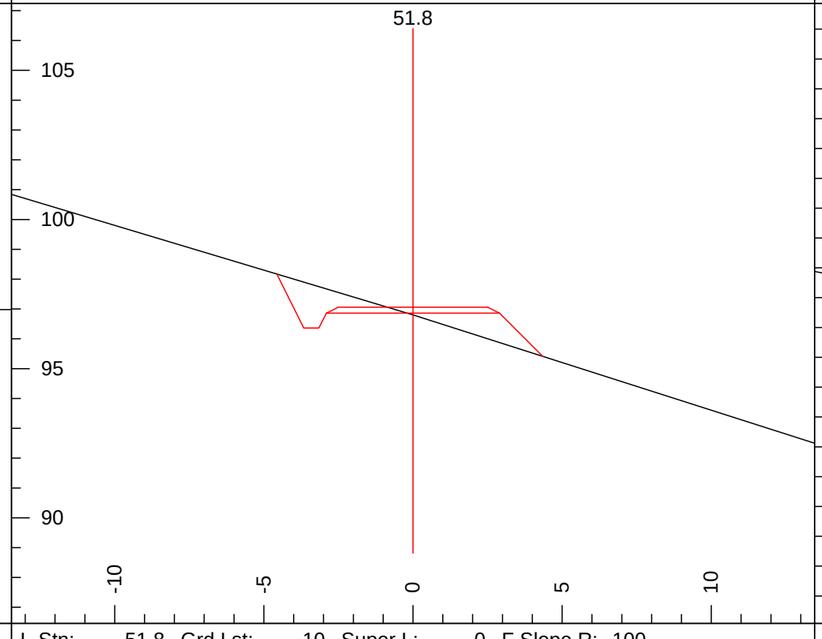
L-Stn:	10.0	Grd.Lst:	0	Super L:	0	F Slope R:	-100	
P-Stn:	10.0	L-Ssl: (Av)	10	Super R:	0	Cut Dp:	-0.6	
Grd.Nxt.:	0	L-Ssr: (Av)	-10	F Slope L:	-100			



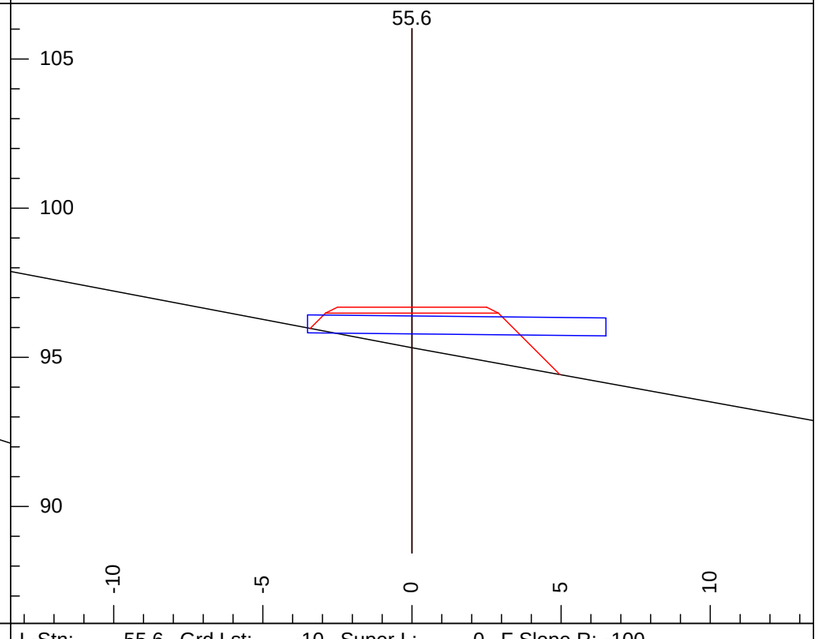
L-Stn:	25.0	Grd.Lst:	-5	Super L:	0	F Slope R:	-100	
P-Stn:	25.0	L-Ssl: (Av)	10	Super R:	0	Cut Dp:	0.2	
Grd.Nxt.:	-5	L-Ssr: (Av)	-10	F Slope L:	200			



L-Stn:	40.9	Grd.Lst:	-10	Super L:	0	F Slope R:	200	
P-Stn:	40.9	L-Ssl: (Av)	0	Super R:	0	Cut Dp:	0.1	
Grd.Nxt.:	-10	L-Ssr: (Av)	0	F Slope L:	200			

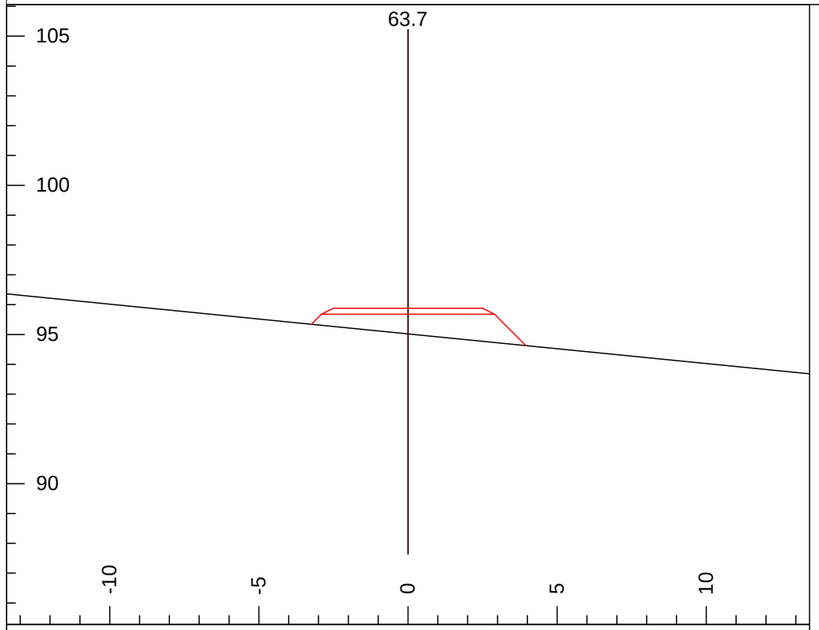


L-Stn:	51.8	Grd.Lst:	-10	Super L:	0	F Slope R:	-100	
P-Stn:	51.8	L-Ssl: (Av)	30	Super R:	0	Cut Dp:	-0.1	
Grd.Nxt.:	-10	L-Ssr: (Av)	-32	F Slope L:	200			



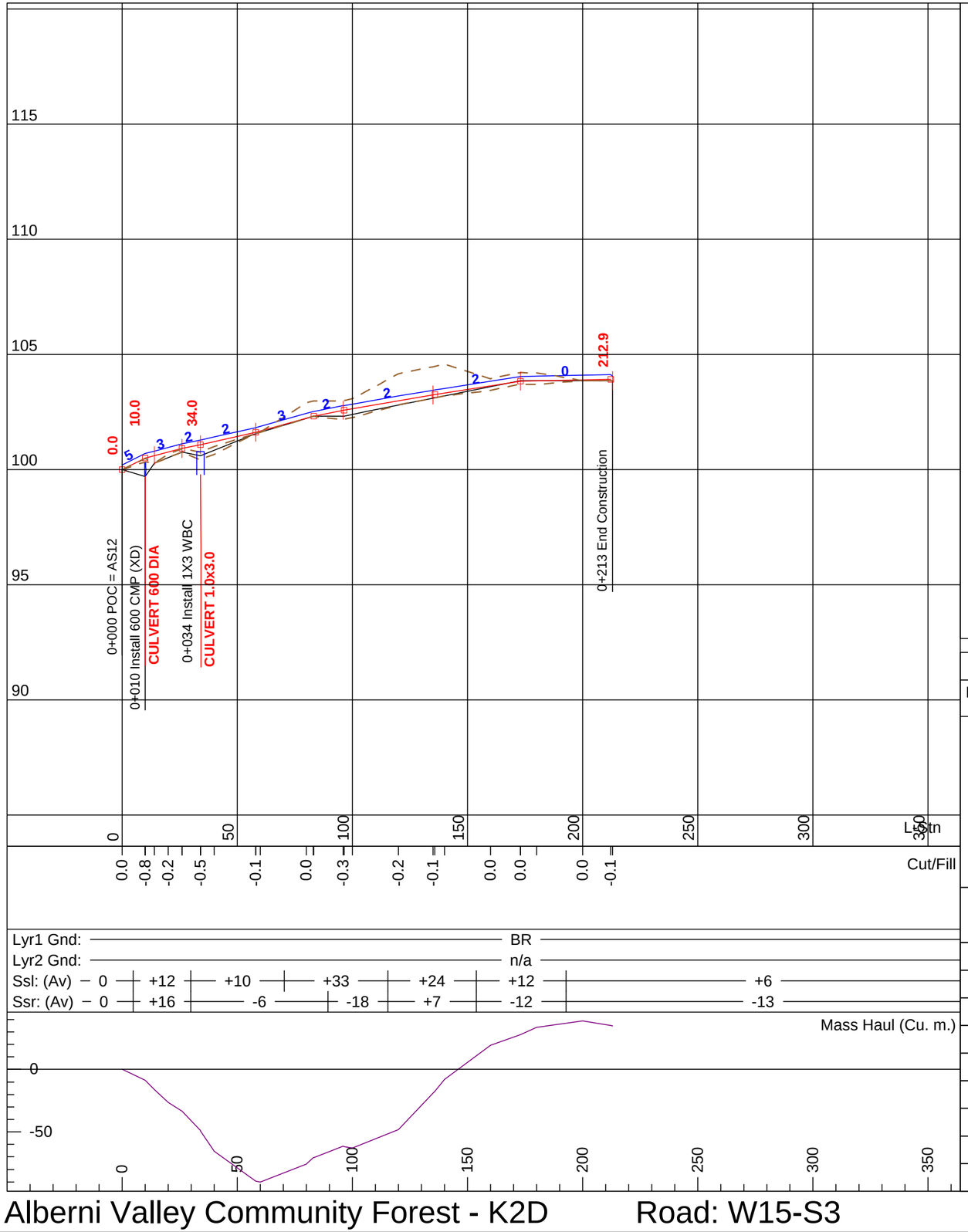
L-Stn:	55.6	Grd.Lst:	-10	Super L:	0	F Slope R:	-100	
P-Stn:	55.6	L-Ssl: (Av)	19	Super R:	0	Cut Dp:	-1.2	
Grd.Nxt.:	-10	L-Ssr: (Av)	-18	F Slope L:	-100			

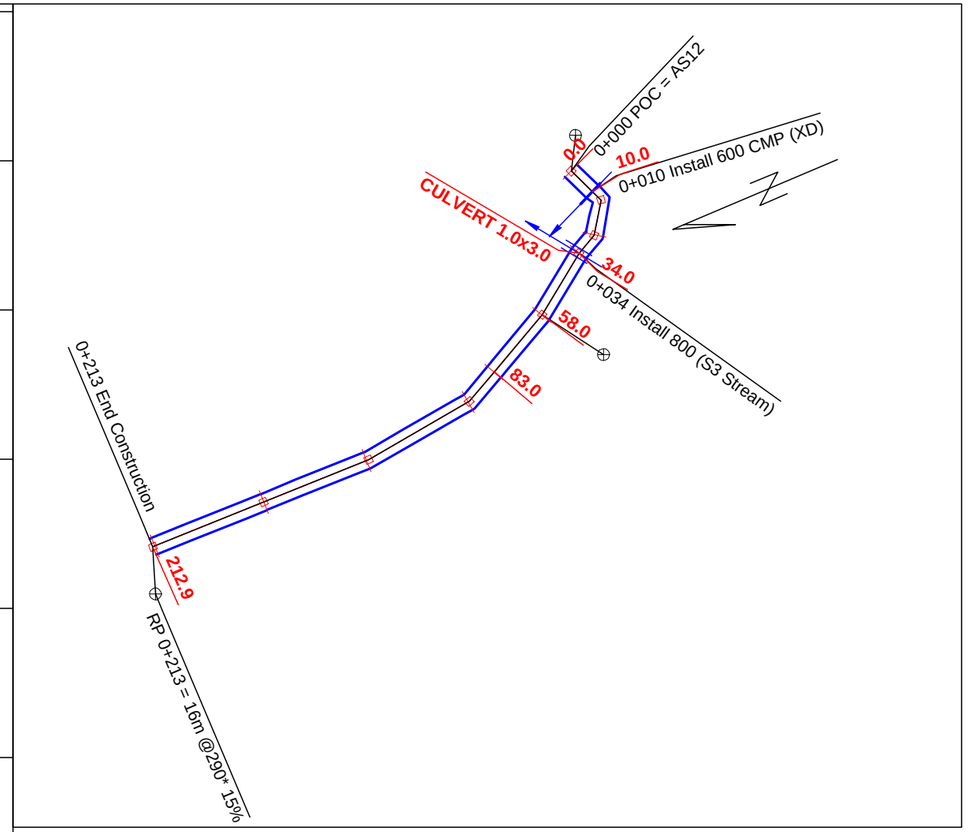
ROADENG Section	Scale 1:200	P. 2
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S2_Profile		12/12/21



L-Stn:	63.7	Grd.Lst:	-10	Super L:	0	F Slope R:	-100
P-Stn:	63.7	L-Ssl: (Av)	10	Super R:	0	Cut Dp:	-0.7
Grd.Nxt.:	n/a	L-Ssr: (Av)	-10	F Slope L:	-100		

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
0.0	BR	9	-12			9.2	24.0	0.0
10.0	TR	10	-10			11.6	25.2	-14.9
25.0	TR	10	-10			29.5	0.8	-28.5
40.9	TR	0	0			24.8	12.3	0.3
51.8	TR	30	-32			5.2	20.2	12.7
55.6	TR	19	-18			0.0	52.1	-2.3
63.7	TR	10	-10					-54.5





Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: W15-S3

Road Design

0+000 to 0+213

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank H m.	Bank H m.	SG Cut Cu. m.	SG Fill Cu. m.	Mass H Cu. m.
0.0	BR	0	0					0.0
14.0	BR	0	0			0.0	16.2	-16.2
26.0	BR	12	0			0.0	17.1	-33.3
34.0	BR	5	-5			0.0	15.8	-49.0
58.0	BR	10	0			0.0	40.4	-89.4
96.0	BR	17	-18			40.1	12.2	-61.5
135.0	BR	24	7			77.1	34.5	-19.0
172.9	BR	12	-12			59.7	12.9	27.8
212.9	BR	6	-13			14.5	7.4	34.9

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

Designed By: Meridian Forest Services Ltd.

MERIDIAN Forest Services Ltd.
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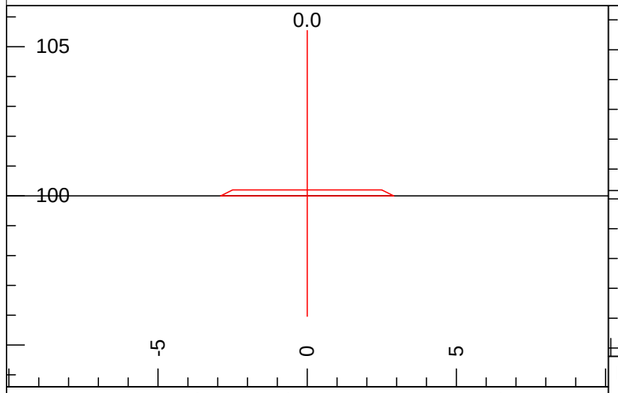
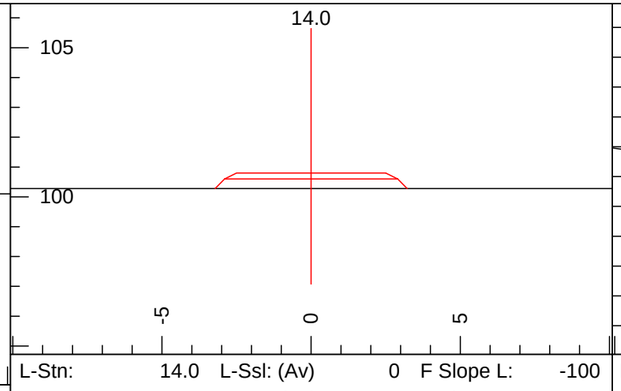
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S3_Profile.dsn

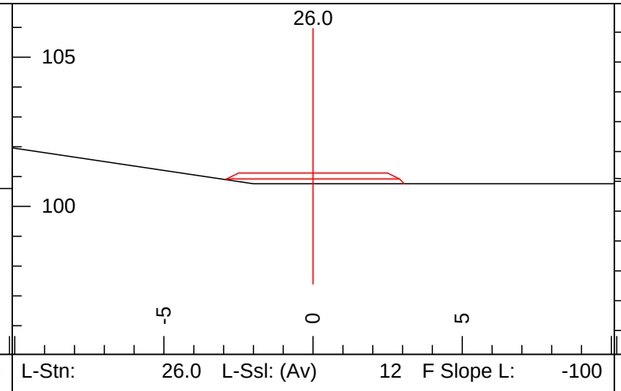
ROADENG Section	Scale 1:200	P. 1
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S3_Profile		12/12/21



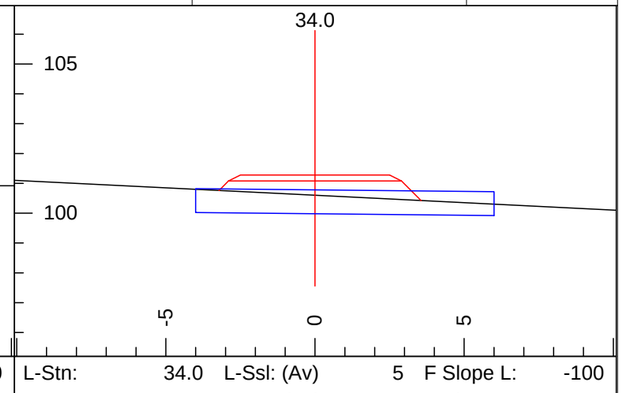
L-Stn:	0.0	Grd.Lst:	n/a	Super L:	0	F Slope R:	0
P-Stn:	0.0	L-Ssl: (Av)	0	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	5	L-Ssr: (Av)	0	F Slope L:	0		



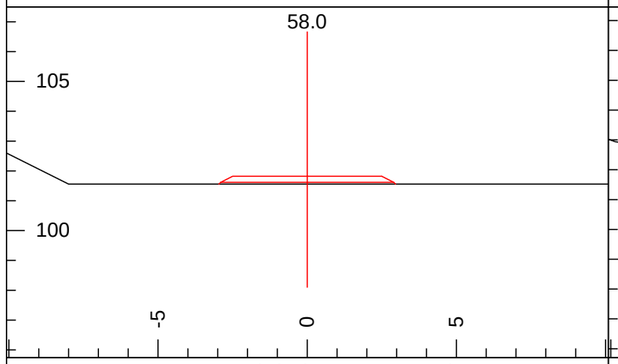
L-Stn:	14.0	L-Ssl: (Av)	0	F Slope L:	-100		
P-Stn:	14.0	L-Ssr: (Av)	0	F Slope R:	-100		
Grd.Nxt.:	3	Super L:	0	Cut Dp:	-0.3		
Grd.Lst:	3	Super R:	0				



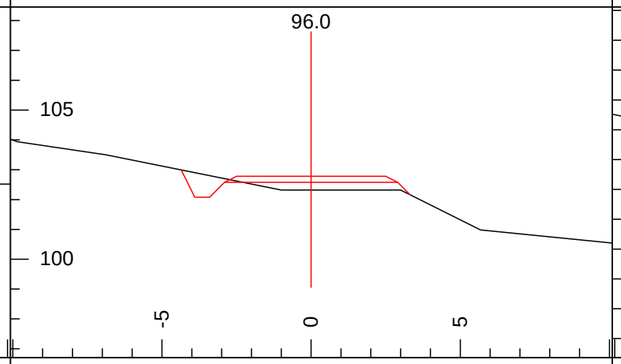
L-Stn:	26.0	L-Ssl: (Av)	12	F Slope L:	-100		
P-Stn:	26.0	L-Ssr: (Av)	0	F Slope R:	-100		
Grd.Nxt.:	2	Super L:	0	Cut Dp:	-0.2		
Grd.Lst:	2	Super R:	0				



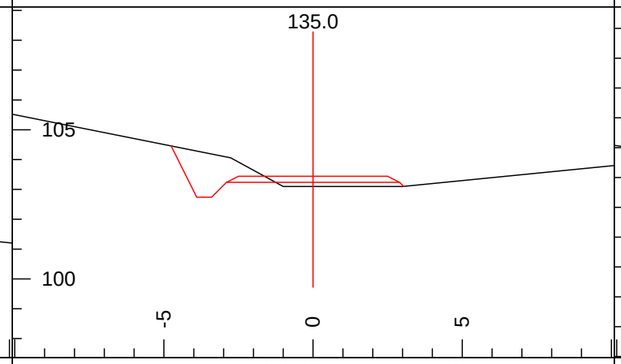
L-Stn:	34.0	L-Ssl: (Av)	5	F Slope L:	-100		
P-Stn:	34.0	L-Ssr: (Av)	-5	F Slope R:	-100		
Grd.Nxt.:	2	Super L:	0	Cut Dp:	-0.5		
Grd.Lst:	2	Super R:	0				



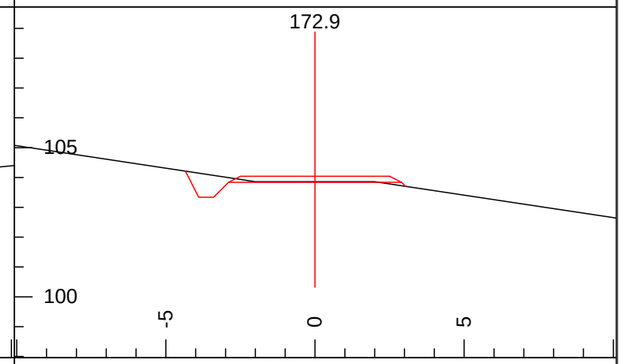
L-Stn:	58.0	L-Ssl: (Av)	10	F Slope L:	-100		
P-Stn:	58.0	L-Ssr: (Av)	0	F Slope R:	-100		
Grd.Nxt.:	2	Super L:	0	Cut Dp:	-0.1		
Grd.Lst:	2	Super R:	0				



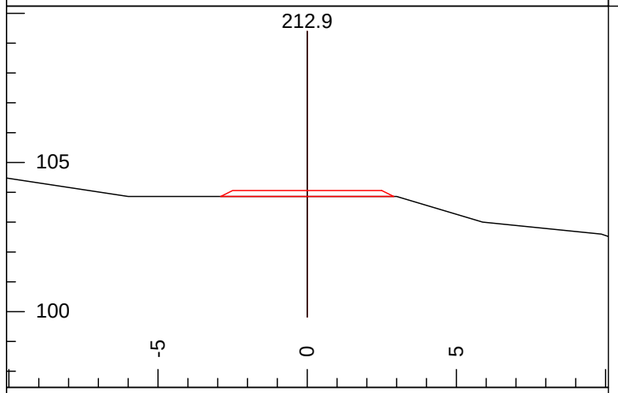
L-Stn:	96.0	L-Ssl: (Av)	17	F Slope L:	200		
P-Stn:	96.0	L-Ssr: (Av)	-18	F Slope R:	-100		
Grd.Nxt.:	2	Super L:	0	Cut Dp:	-0.3		
Grd.Lst:	2	Super R:	0				



L-Stn:	135.0	L-Ssl: (Av)	24	F Slope L:	200		
P-Stn:	135.0	L-Ssr: (Av)	7	F Slope R:	-100		
Grd.Nxt.:	2	Super L:	0	Cut Dp:	-0.1		
Grd.Lst:	2	Super R:	0				

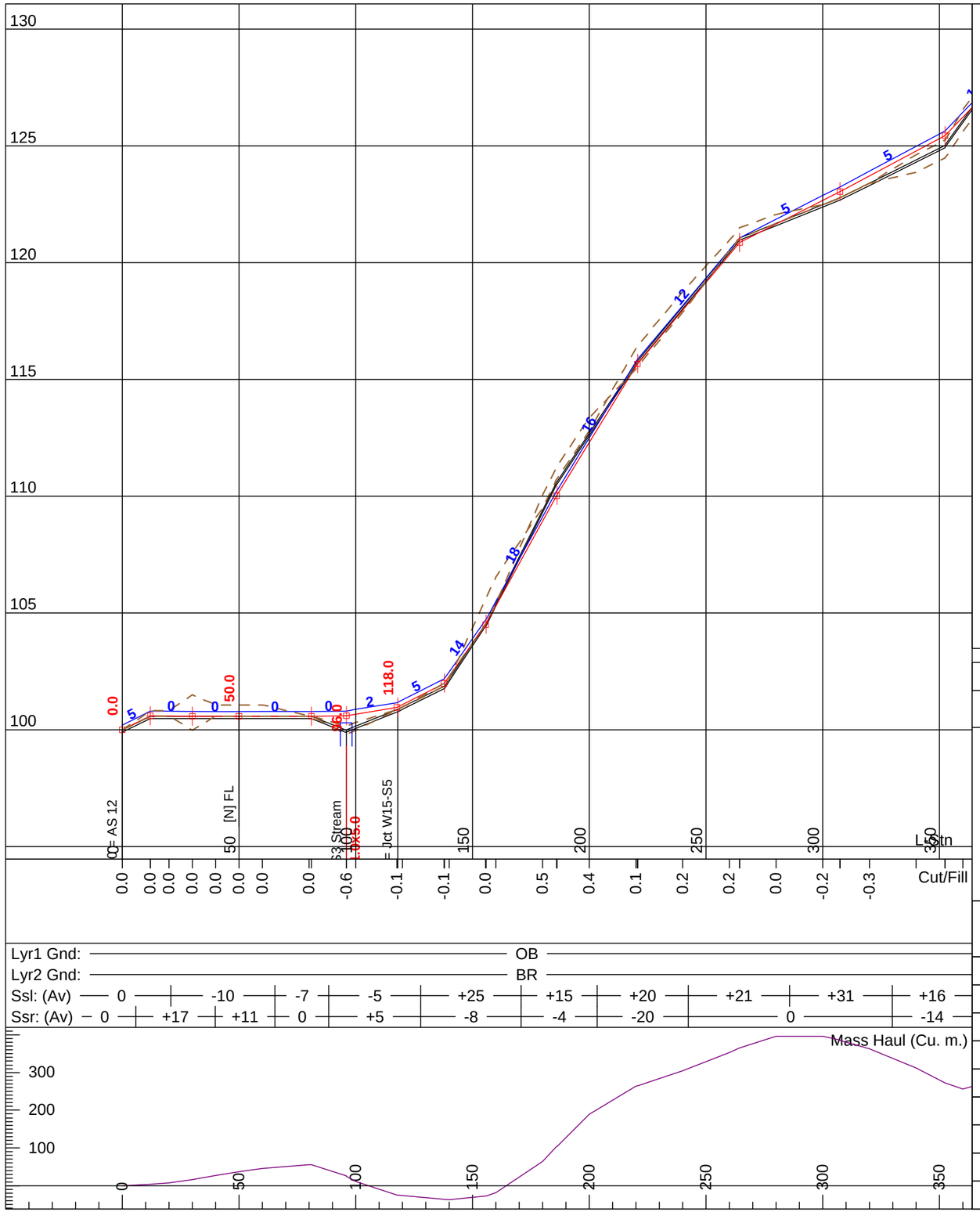


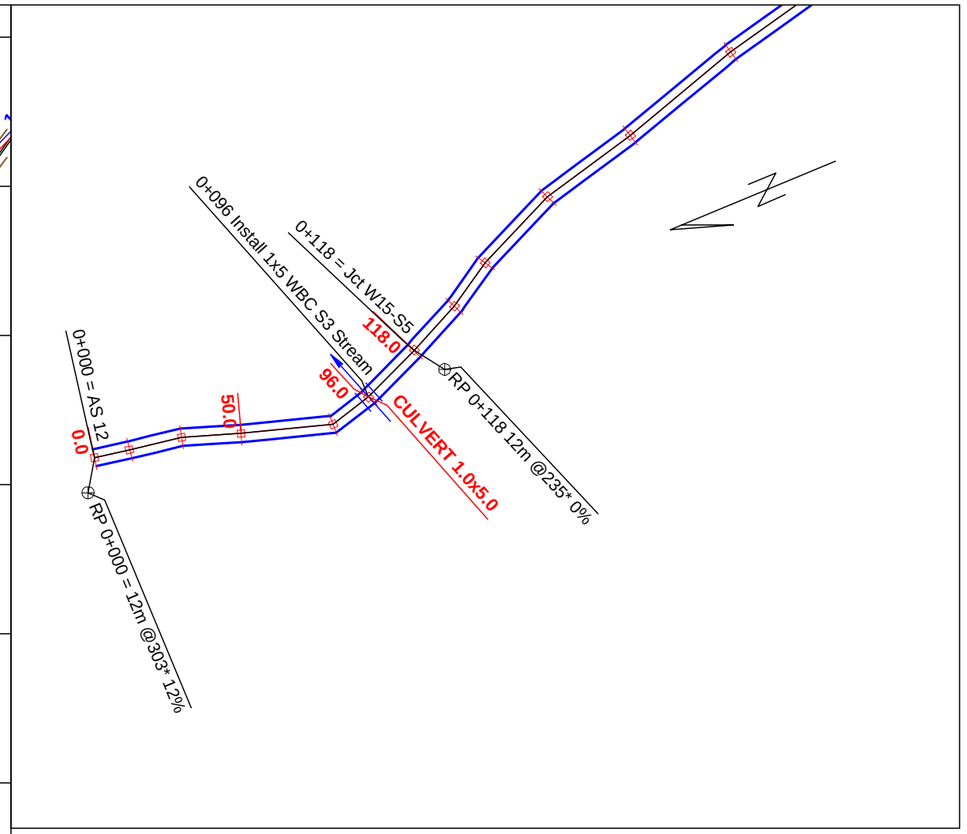
L-Stn:	172.9	L-Ssl: (Av)	12	F Slope L:	200		
P-Stn:	172.9	L-Ssr: (Av)	-12	F Slope R:	-100		
Grd.Nxt.:	0	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	0	Super R:	0				



L-Stn:	212.9	Grd.Lst:	-10	Super L:	0	F Slope R:	0
P-Stn:	212.9	L-Ssl: (Av)	6	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	n/a	L-Ssr: (Av)	-13	F Slope L:	0		

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
0.0	BR	0	0			0.0	16.2	0.0
14.0	BR	0	0			0.0	17.1	-16.2
26.0	BR	12	0			0.0	15.8	-33.3
34.0	BR	5	-5			0.0	40.4	-49.0
58.0	BR	10	0			40.1	12.2	-89.4
96.0	BR	17	-18			77.1	34.5	-61.5
135.0	BR	24	7			59.7	12.9	-19.0
172.9	BR	12	-12			14.5	7.4	27.8
212.9	BR	6	-13					34.9





Alberni Valley Community Forest K2D
Sproat Unit

Cutblock: W15
Road: W15-S4

Road Design

0+000 to 0+440

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
96.0		8.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

Designed By: Meridian Forest Services Ltd.

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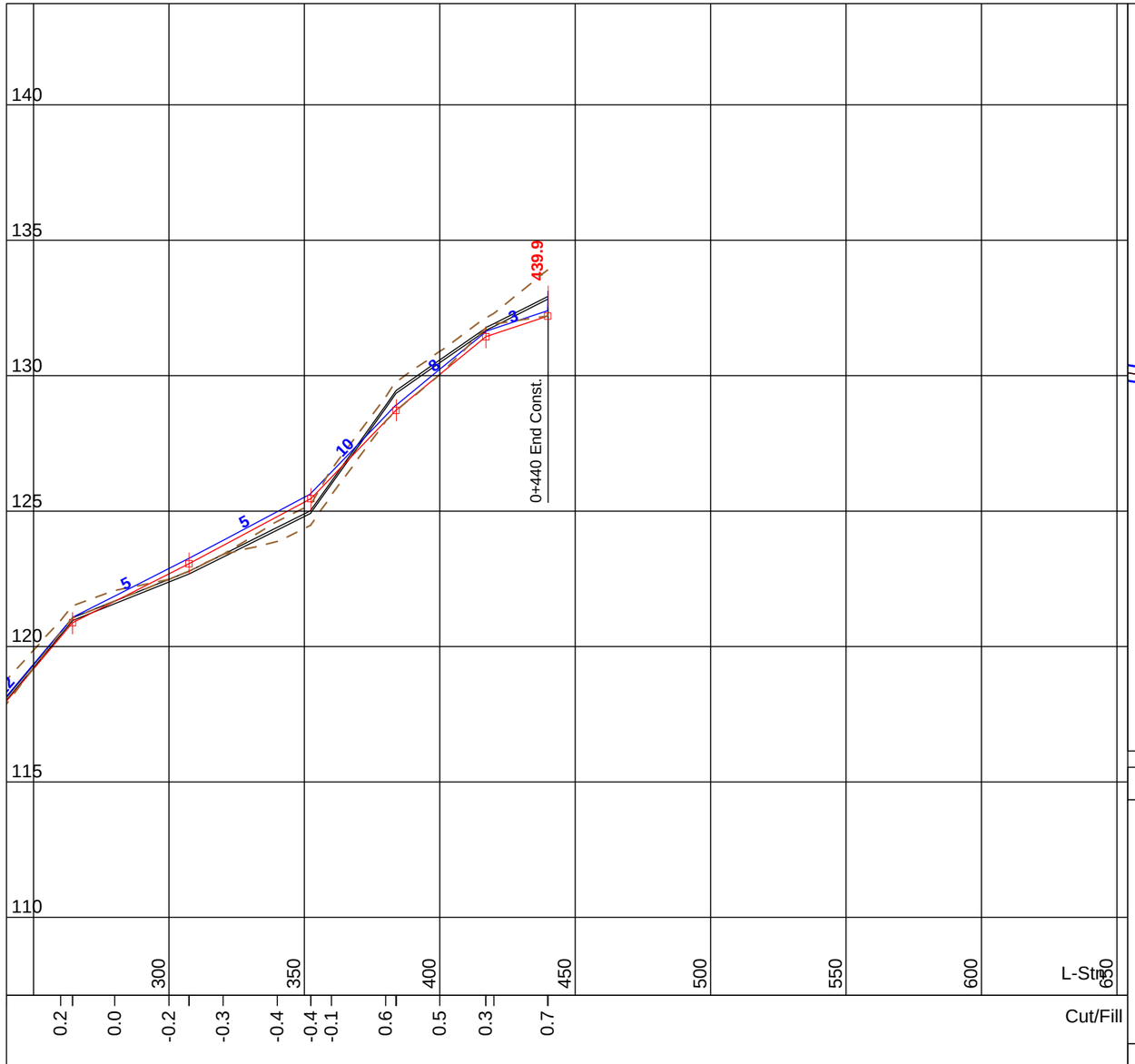
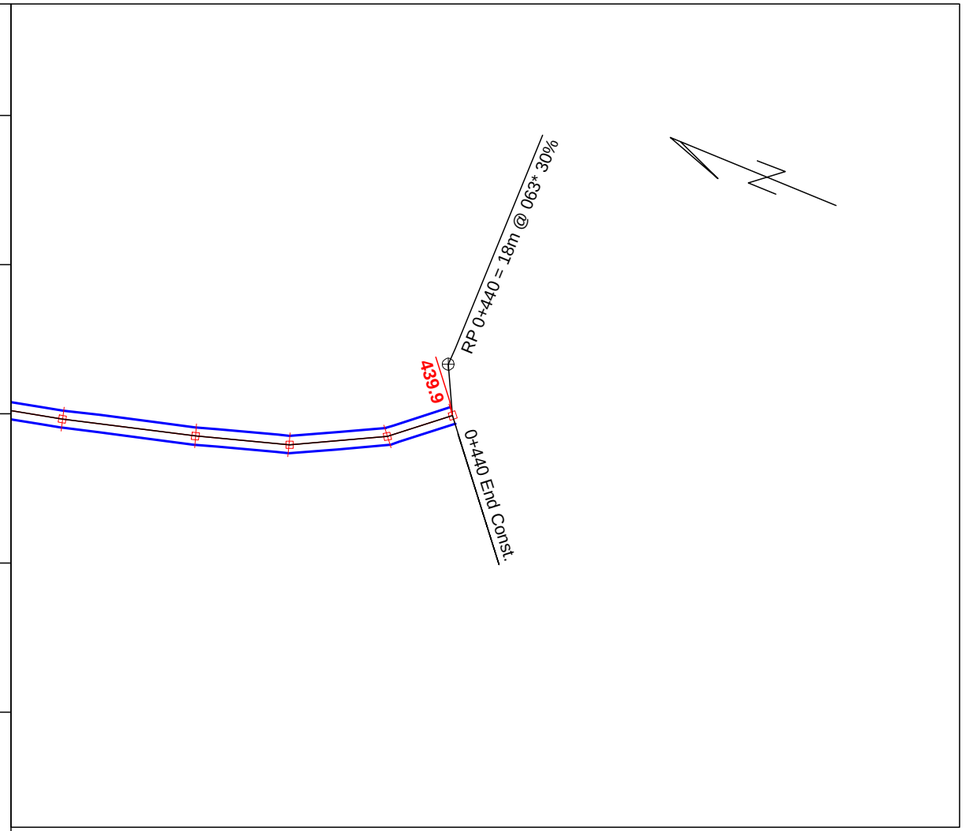
PO Box 275
#15-1010 Shearme Road
Coombs, BC V0R 1M0
www.meridianforest.ca

M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S4_Profile.dsn





Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: W15-S4

Road Design

0+000 to 0+440

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

Designed By: Meridian Forest Services Ltd.

MERIDIAN Forest Services Ltd.
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#15-1010 Shearme Road
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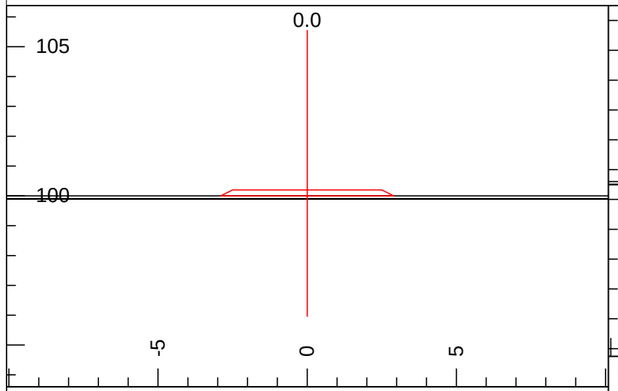
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S4_Profile.dsn

ROADENG Section	Scale 1:200	P. 1
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S4_Profile		12/12/21



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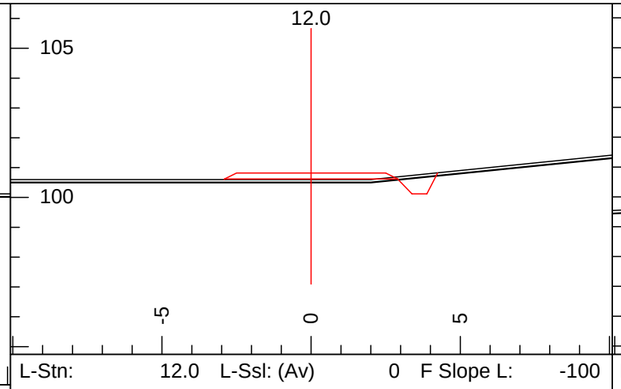
P-Stn:	0.0	L-Ssl: (Av)	0	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	5	L-Ssr: (Av)	0	F Slope L:	0		



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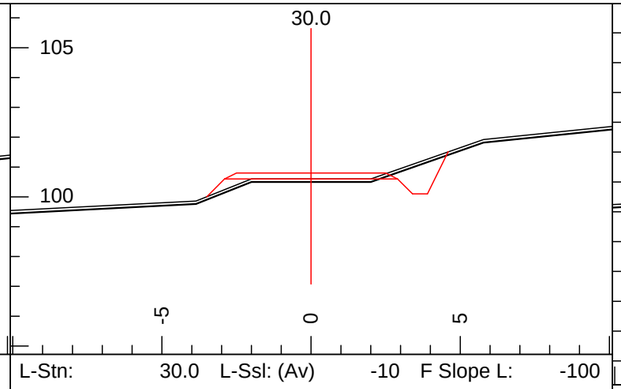
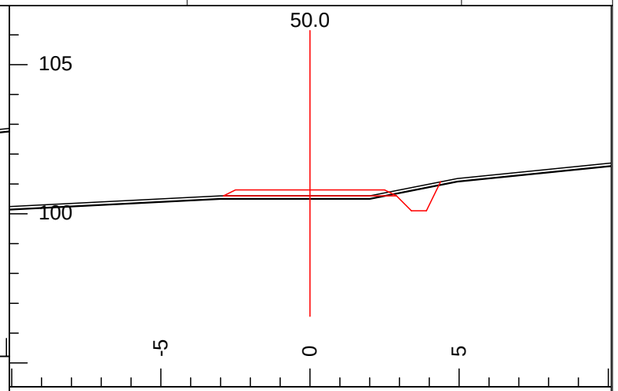
P-Stn:	12.0	L-Ssr: (Av)	8	F Slope R:	200		
Grd.Nxt.:	5	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	5	Super R:	0				



L-Stn:	30.0	L-Ssl: (Av)	-10	F Slope L:	-100		
P-Stn:	30.0	L-Ssr: (Av)	17	F Slope R:	200		
Grd.Nxt.:	0	Super L:	0	Cut Dp:	0.0		
Grd.Lst:	0	Super R:	0				



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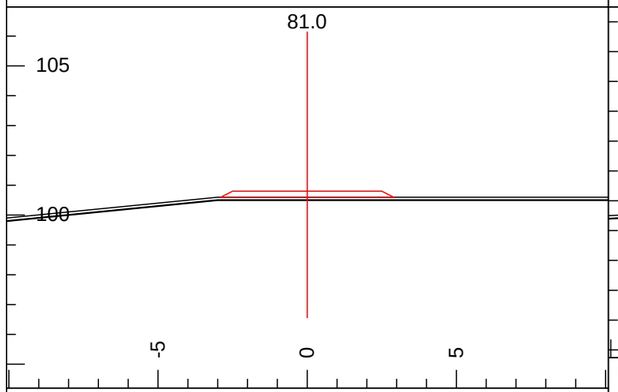
P-Stn:	50.0	L-Ssl: (Av)	-3	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	0	L-Ssr: (Av)	11	F Slope L:	0		



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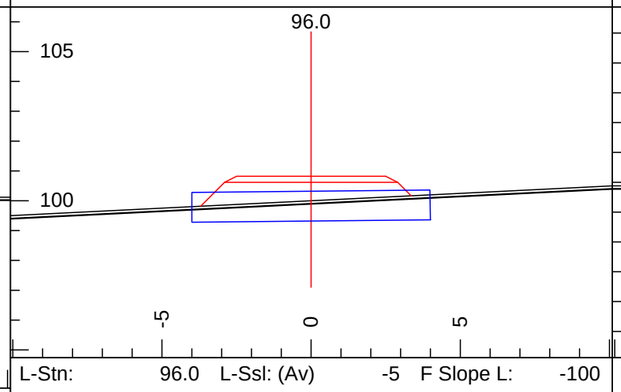
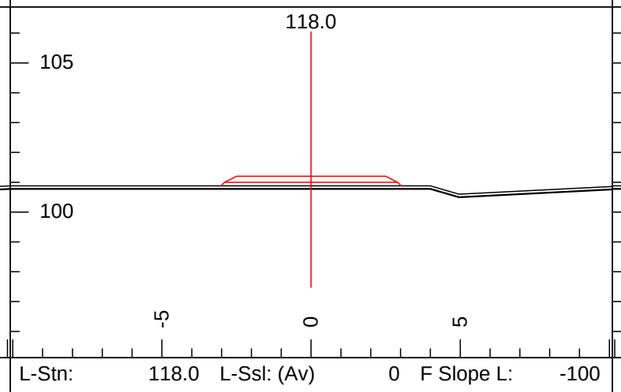
P-Stn:	81.0	L-Ssl: (Av)	-7	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	0	L-Ssr: (Av)	0	F Slope L:	0		



L-Stn:	96.0	L-Ssl: (Av)	-5	F Slope L:	-100		
P-Stn:	96.0	L-Ssr: (Av)	5	F Slope R:	-100		
Grd.Nxt.:	0	Super L:	0	Cut Dp:	-0.6		
Grd.Lst:	0	Super R:	0				



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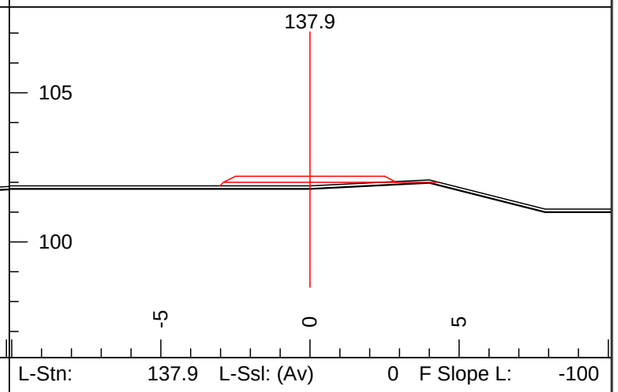
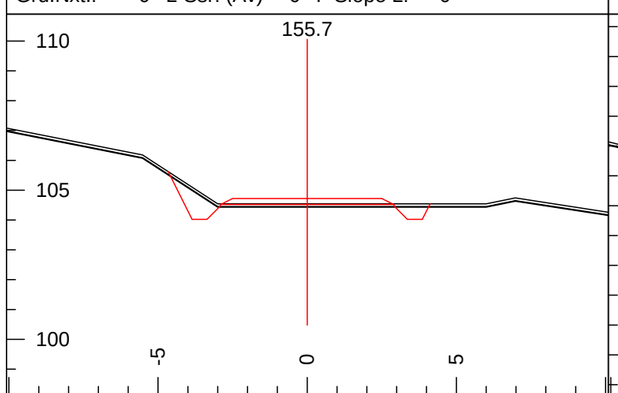
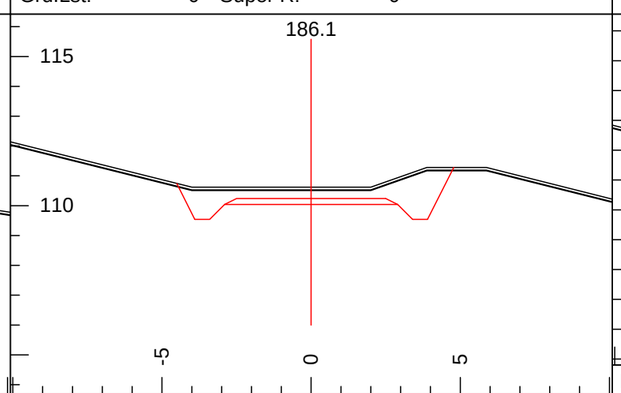
P-Stn:	118.0	L-Ssr: (Av)	0	F Slope R:	-100		
Grd.Nxt.:	5	Super L:	0	Cut Dp:	-0.1		
Grd.Lst:	5	Super R:	0				



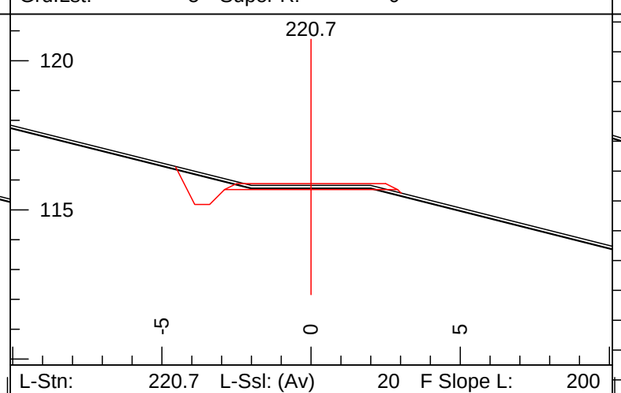
L-Stn:	137.9	L-Ssl: (Av)	0	F Slope L:	-100		
P-Stn:	137.9	L-Ssr: (Av)	-8	F Slope R:	0		
Grd.Nxt.:	14	Super L:	0	Cut Dp:	-0.1		
Grd.Lst:	14	Super R:	0				



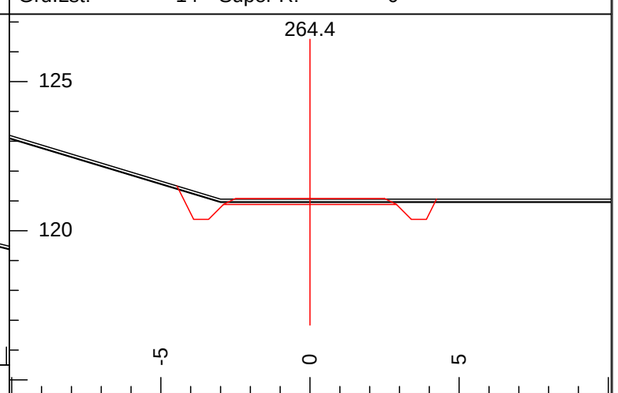
L-Stn:	155.7	Grd.Lst:	18	Super L:	0	F Slope R:	200
P-Stn:	155.7	L-Ssl: (Av)	25	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	18	L-Ssr: (Av)	-3	F Slope L:	200		



L-Stn:	186.1	Grd.Lst:	16	Super L:	0	F Slope R:	200
P-Stn:	186.1	L-Ssl: (Av)	15	Super R:	0	Cut Dp:	0.6
Grd.Nxt.:	16	L-Ssr: (Av)	-4	F Slope L:	200		

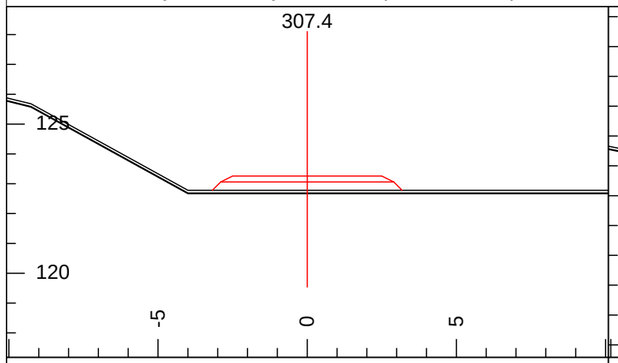


L-Stn:	220.7	L-Ssl: (Av)	20	F Slope L:	200		
P-Stn:	220.7	L-Ssr: (Av)	-20	F Slope R:	-100		
Grd.Nxt.:	12	Super L:	0	Cut Dp:	0.1		
Grd.Lst:	12	Super R:	0				

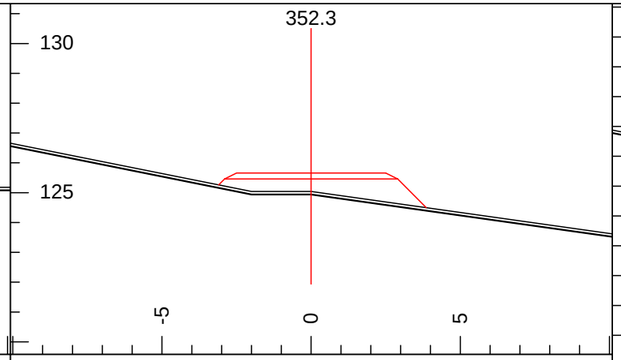


L-Stn:	264.4	Grd.Lst:	12	Super L:	0	F Slope R:	200
P-Stn:	264.4	L-Ssl: (Av)	21	Super R:	0	Cut Dp:	0.2
Grd.Nxt.:	12	L-Ssr: (Av)	0	F Slope L:	200		

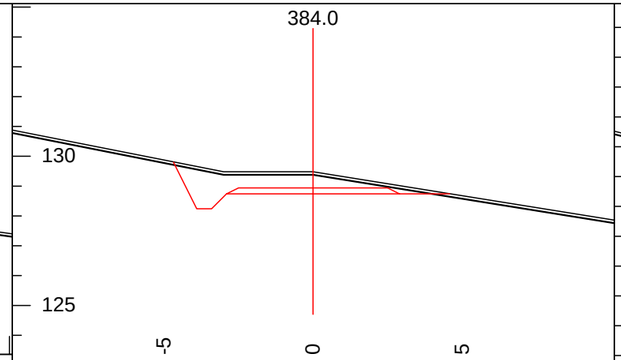
ROADENG Section	Scale 1:200	P. 2
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W 15-S4_Profile		12/12/21



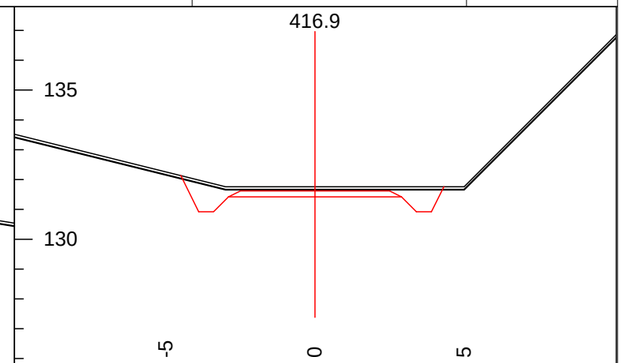
L-Stn:	307.4	L-Ssl: (Av)	31	F Slope L:	-100
P-Stn:	307.4	L-Ssr: (Av)	0	F Slope R:	-100
Grd.Nxt.:	5	Super L:	0	Cut Dp:	-0.3
Grd.Lst:	5	Super R:	0		



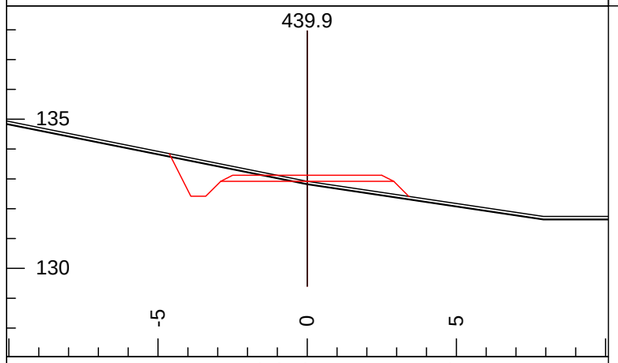
L-Stn:	352.3	L-Ssl: (Av)	16	F Slope L:	-100
P-Stn:	352.3	L-Ssr: (Av)	-14	F Slope R:	-100
Grd.Nxt.:	5	Super L:	0	Cut Dp:	-0.4
Grd.Lst:	5	Super R:	0		



L-Stn:	384.0	Grd.Lst:	8	Super L:	0	F Slope R:	0
P-Stn:	384.0	L-Ssl: (Av)	14	Super R:	0	Cut Dp:	0.7
Grd.Nxt.:	8	L-Ssr: (Av)	-16	F Slope L:	200		

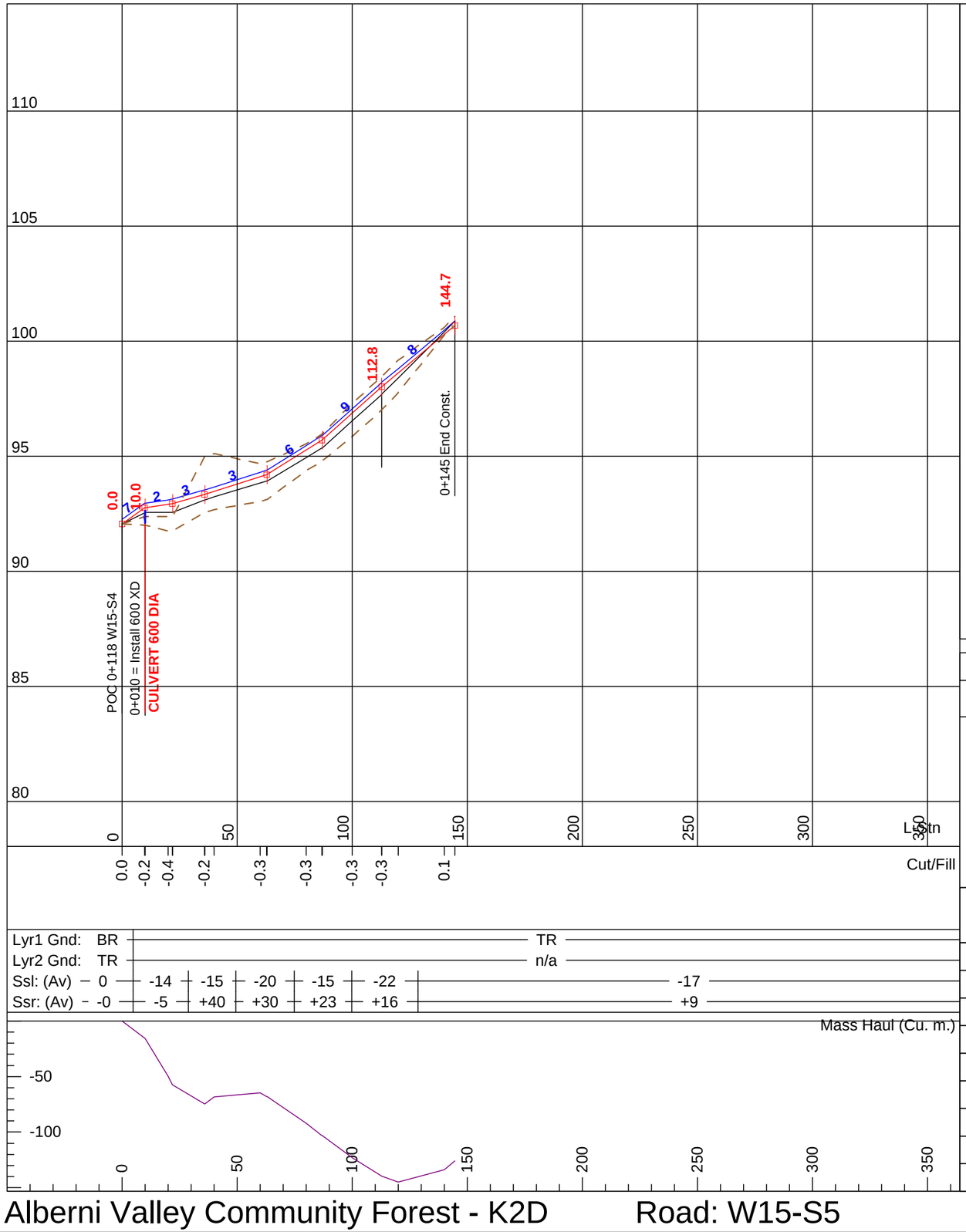


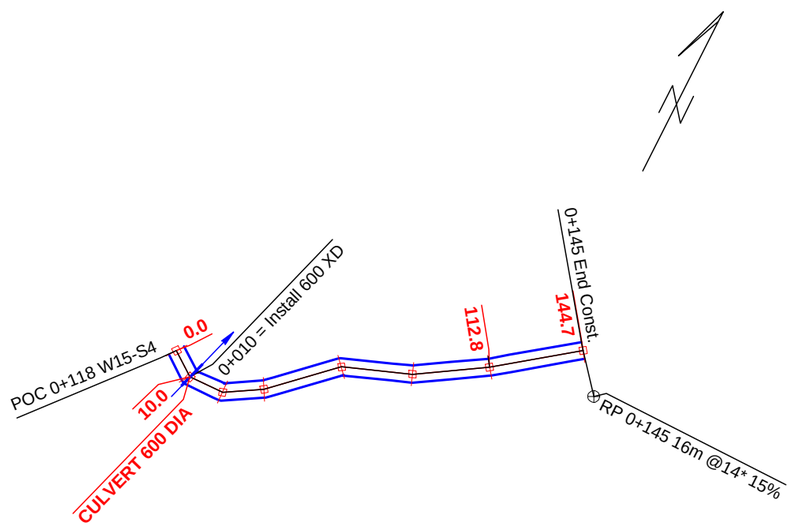
L-Stn:	416.9	Grd.Lst:	8	Super L:	0	F Slope R:	200
P-Stn:	416.9	L-Ssl: (Av)	18	Super R:	0	Cut Dp:	0.3
Grd.Nxt.:	8	L-Ssr: (Av)	50	F Slope L:	200		



L-Stn:	439.9	L-Ssl: (Av)	20	F Slope L:	200
P-Stn:	439.9	L-Ssr: (Av)	-12	F Slope R:	-100
Grd.Nxt.:	n/a	Super L:	0	Cut Dp:	0.0
Grd.Lst:	2076	Super R:	0		

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
0.0	OB	0	0					0.0
12.0	OB	0	8		-0.1	3.9	0.5	3.4
30.0	OB	-10	17		0.6	15.5	2.3	16.6
50.0	OB	-3	11		0.2	21.4	1.4	36.6
81.0	OB	-7	0			19.0	0.0	55.6
96.0	OB	-5	5			0.0	30.1	25.6
118.0	OB	0	0			0.0	50.4	-24.8
137.9	OB	0	-8			0.6	12.2	-36.4
155.7	OB	25	-3	0.7	-0.3	13.9	4.6	-27.1
186.1	OB	15	-4	0.4	0.9	131.4	0.0	104.3
220.7	OB	20	-20	0.5	-0.2	160.7	0.2	264.8
264.4	OB	21	0	0.3	-0.1	100.6	0.5	364.9
307.4	OB	31	0			43.1	22.3	385.7
352.3	OB	16	-14			0.0	113.4	272.4
384.0	OB	14	-16	0.8	-0.2	71.2	33.5	310.0
416.9	OB	18	50	0.4	0.0	142.4	0.0	452.5
439.9	OB	20	-12	0.6		131.2	0.0	583.6





Alberni Valley Community Forest K2D Sproat Unit

Cutblock: W15
Road: W15-S5

Road Design

0+000 to 0+145

Notes:
(1) Side slopes are derived from an average of the first slope % measured off of centerline in 20m segments.

(2) Watch for Rockfall in steep areas.

(3) Follow AVCF Rainfall Shutdown Guidelines.

(4) Background information is approximate. Refer closely to Contruction and Harvest maps.

CULVERT SUMMARY

P-Stn m.	Cul DIA mm.	Cul Len m.
10.0	600	10.0

SOIL TYPE LEGEND

Symbol	Material Type	Cut Slope	Fill Slope
LB	Local Ballast	100%	67%
PR	Pit Run Ballast	100%	67%
RB	Rock Ballast	100%	67%
TR	Toe Rock	200%	67%
MR	Medium Rock	400%	100%
HR	High Rock	400%	100%
XR	Heavy Rock	400%	100%
XX	Extra Heavy Rock	400%	100%

LEGEND

- Profile Finished Grade
- Profile Subgrade
- Profile/Plan P-line Topography
- Profile/Plan Slope Stakes
- Plan Road Edges
- Culverts
- Reference Points (RP)

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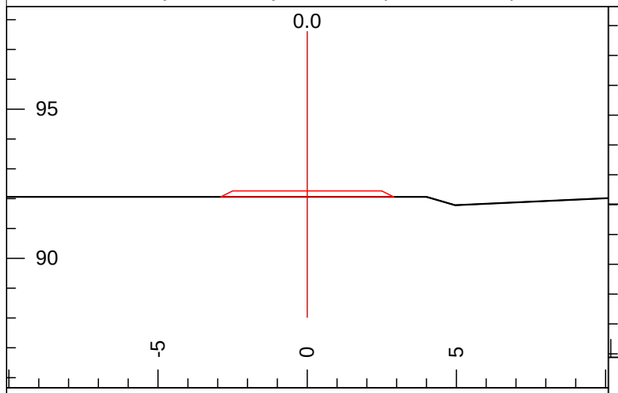
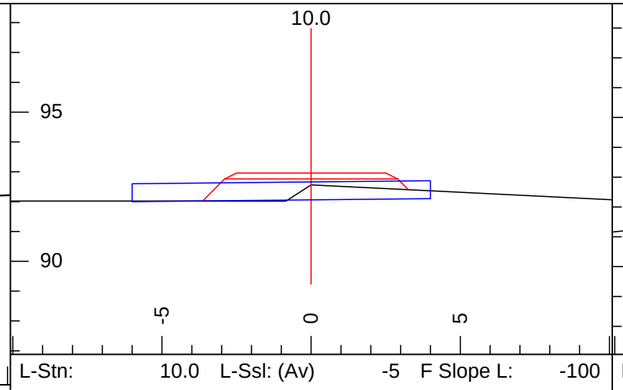
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15-S5_Profile.dsn

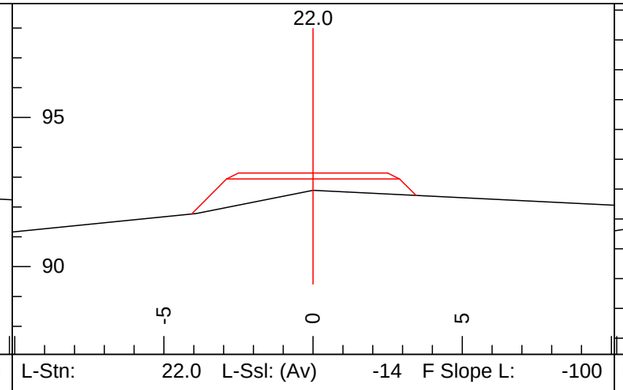
ROADENG Section	Scale 1:200	P. 1
M:\Alberni Valley Community Forest Corp\Cutblocks\Sproat Unit\W15\Roads\Design\W15-S5_Profile		12/12/21



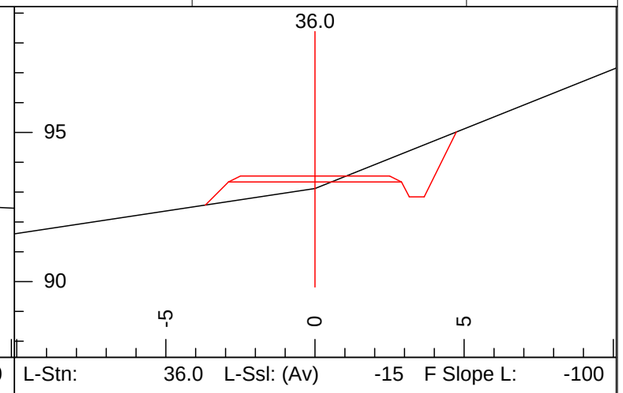
L-Stn:	0.0	Grd.Lst:	n/a	Super L:	0	F Slope R:	0
P-Stn:	0.0	L-Ssl: (Av)	0	Super R:	0	Cut Dp:	0.0
Grd.Nxt.:	7	L-Ssr: (Av)	0	F Slope L:	0		



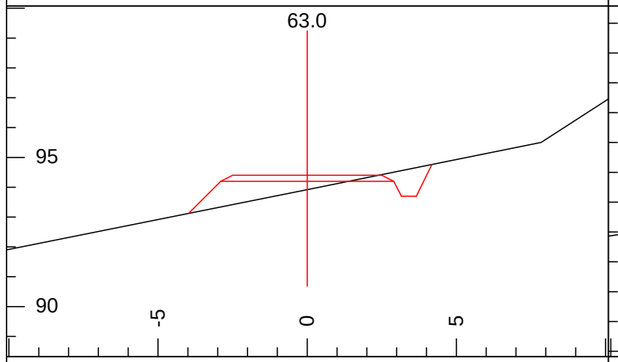
L-Stn:	10.0	L-Ssl: (Av)	-5	F Slope L:	-100
P-Stn:	10.0	L-Ssr: (Av)	-5	F Slope R:	-100
Grd.Nxt.:	2	Super L:	0	Cut Dp:	-0.2
Grd.Lst:	2	Super R:	0		



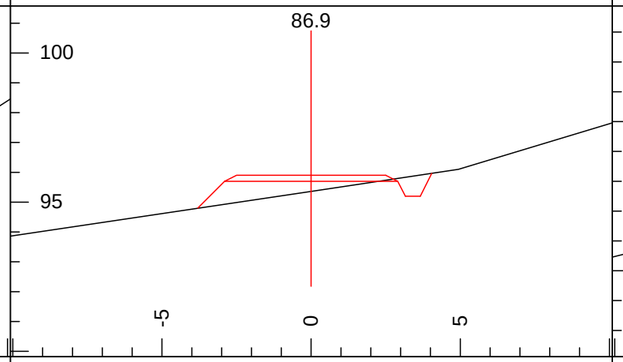
L-Stn:	22.0	L-Ssl: (Av)	-14	F Slope L:	-100
P-Stn:	22.0	L-Ssr: (Av)	-5	F Slope R:	-100
Grd.Nxt.:	3	Super L:	0	Cut Dp:	-0.4
Grd.Lst:	3	Super R:	0		



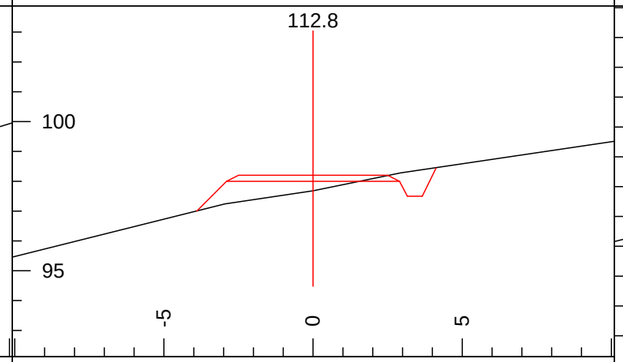
L-Stn:	36.0	L-Ssl: (Av)	-15	F Slope L:	-100
P-Stn:	36.0	L-Ssr: (Av)	40	F Slope R:	200
Grd.Nxt.:	3	Super L:	0	Cut Dp:	-0.2
Grd.Lst:	3	Super R:	0		



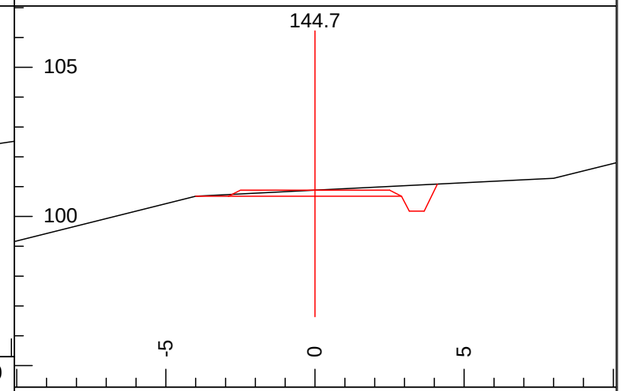
L-Stn:	63.0	L-Ssl: (Av)	-20	F Slope L:	-100
P-Stn:	63.0	L-Ssr: (Av)	30	F Slope R:	200
Grd.Nxt.:	6	Super L:	0	Cut Dp:	-0.3
Grd.Lst:	6	Super R:	0		



L-Stn:	86.9	L-Ssl: (Av)	-15	F Slope L:	-100
P-Stn:	86.9	L-Ssr: (Av)	23	F Slope R:	200
Grd.Nxt.:	9	Super L:	0	Cut Dp:	-0.3
Grd.Lst:	9	Super R:	0		



L-Stn:	112.8	L-Ssl: (Av)	-22	F Slope L:	-100
P-Stn:	112.8	L-Ssr: (Av)	16	F Slope R:	200
Grd.Nxt.:	9	Super L:	0	Cut Dp:	-0.3
Grd.Lst:	9	Super R:	0		



L-Stn:	144.7	Grd.Lst:	8	Super L:	0	F Slope R:	200
P-Stn:	144.7	L-Ssl: (Av)	-17	Super R:	0	Cut Dp:	0.2
Grd.Nxt.:	n/a	L-Ssr: (Av)	9	F Slope L:	0		

P-Stn m.	Lyr1 Gnd	Ssl %	Ssr %	Bank Ht. L m.	Bank Ht. R m.	SG Cut V. Cu. m.	SG Fill V. Cu. m.	Mass H. Cu. m.
0.0	BR	0	0			0.0	15.6	0.0
10.0	TR	-5	-5			0.0	42.0	-15.6
22.0	TR	-14	-5			22.2	39.1	-57.6
36.0	TR	-15	40			58.3	51.9	-74.4
63.0	TR	-20	30			18.9	54.2	-68.0
86.9	TR	-15	23			21.7	57.9	-103.3
112.8	TR	-22	16			42.8	29.2	-139.5
144.7	TR	-17	9					-125.9

Appendix 4: Culvert List Discharge Calculation

Culvert List Discharge Calculation

Block #: W15

Block Name: AS12/Weiner Connector

Instructions: Enter stream dimensions, enter culvert size (pipe or box) that exceeds area of stream at prescribed return period Q equivalent area

Road Name and Station	Stream # & Class or X-drain	average width at crossing	average HWM depth at crossing	Q2 A	Q10 Ac	Q100 Ac	Round Pipe Culvert Installed	Round Pipe Culvert Installed End Area	Wood Box Culvert Installed		Wood Culvert Installed End Area
									HEIGHT	LENGTH	
(m)		(m)		(m2)	(m2)	(m2)	(mm)	(m2)	(m)	(m)	(m2)
Weiner Connector											
0+051	S4	0.90	0.01	0.01	0.02	0.03	600	0.28			0.00
0+290	X-Drain	-	-	0.00	0.00	0.00	600	0.28			0.00
0+358	NCD	0.30	0.05	0.02	0.03	0.05	600	0.28			0.00
0+429	S4	1.10	0.10	0.11	0.22	0.33	800	0.50			0.00
0+701	NCD	0.30	0.01	0.00	0.01	0.01	600	0.28			0.00
0+947	NCD	0.55	0.01	0.01	0.01	0.02	600	0.28			0.00
1+098	NCD	0.30	0.01	0.00	0.01	0.01	600	0.28			0.00
1+221	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
1+442	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
1+550	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
1+690	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
1+745	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
W15-S1											
0+102	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
W15-S2											
0+025	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
0+056	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
W15-S3											
0+010	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00
0+034	3 S-3	1.30	0.10	0.13	0.26	0.39		0.00	1	3	3.00
W15-S4											
0+096	2R1 S-3	4.00	0.15	0.6	1.20	1.80		0.00	1	5	5.00
W15-S5											
0+010	X-Drain	-	-	0	0.00	0.00	600	0.28			0.00

ALL STREAM CROSSINGS ARE TO BE ARMORED WITH COARSE ROCK MATERIAL TO MINIMIZE THE TRANSPORT OF FINES DOWN STREAM.

RPF SIGNATURE AND SEAL

Prepared By: Andrew Kenyon
Name (Printed)

Signing RPF: Andrew Kenyon
RPF Name (Printed)

21/12/2012
Date Signed (dd/mm/yy)

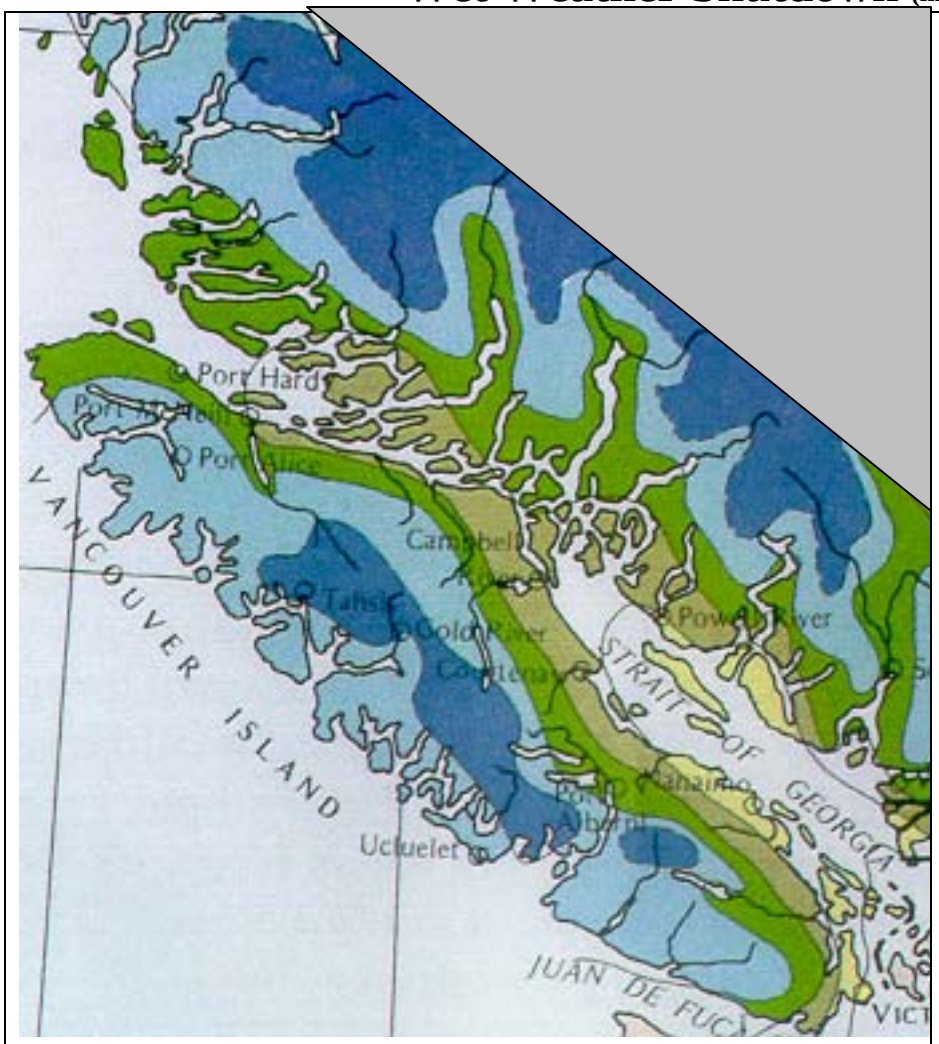
4739
RPF Number

Andrew Kenyon 2013.04.16 13:38:01 -07'00'

"I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals."

Appendix 5: Wet Weather Shutdown Guidelines

Wet Weather Shutdown (modified Nov 7, 2006)



Zone	Mean Annual Precip (mm)	Shutdown Threshold (mm/24 hours)
1	750	20
2	1500	40
3	2500	60
4	3000	75
5	3500	90

TABLE B Local Soil Type	Multiplier Factor
Very Erodible (e.g. lacustrine)	0.4
Erodible (e.g. organics, sands)	0.6
Least Erodible (e.g. colluvium, till)	0.8
Bedrock	1.0

TABLE C Slope Modifier	Multiplier Factor
0% - 57	1.0
57% - 70%	0.9
71% - 88%	0.8
89% +	0.7

Instructions:

1) Use base shutdown threshold from Table A
2) Multiply by Soil Type Modifier from Table B
3) Multiply result by Slope Modifier from Table C

Result is rainfall shutdown threshold in millimeters in a 24 hour period

Example

Zone¤	Table·A:·Mean·Annual·¤	Shutdown· Threshold¤
°¤	Precipitation·(mm)¤	(mm/24·hours)¤
1¤	750¤	20¤
2¤	1500¤	40¤
3¤	2500¤	60¤
4¤	3000¤	75¤
5¤	3500¤	90¤

TABLE·B·Local·Soil·Type¤	Multiplier¤
°¤	Factor¤
Very·Erodible·(e.g.· lacustrine)¤	0.4¤
Erodible·(e.g.·organics,· sands)¤	0.6¤
Least·Erodible·(e.g.· colluvium,·till)¤	0.8¤
Bedrock¤	1.0¤

TABLE·C·Slope·Modifier¤	Multiplier¤
°※	Factor¤
0%·-·57¤	1.0¤
·57%·-·70%¤	0.9¤
71%·-·88%¤	0.8¤
89%·+¤	0.7¤

For Dark Blue Zone 5; 24 Hr Shutdown Criteria = 90 x 0.8 x 0.8 = 58 mm

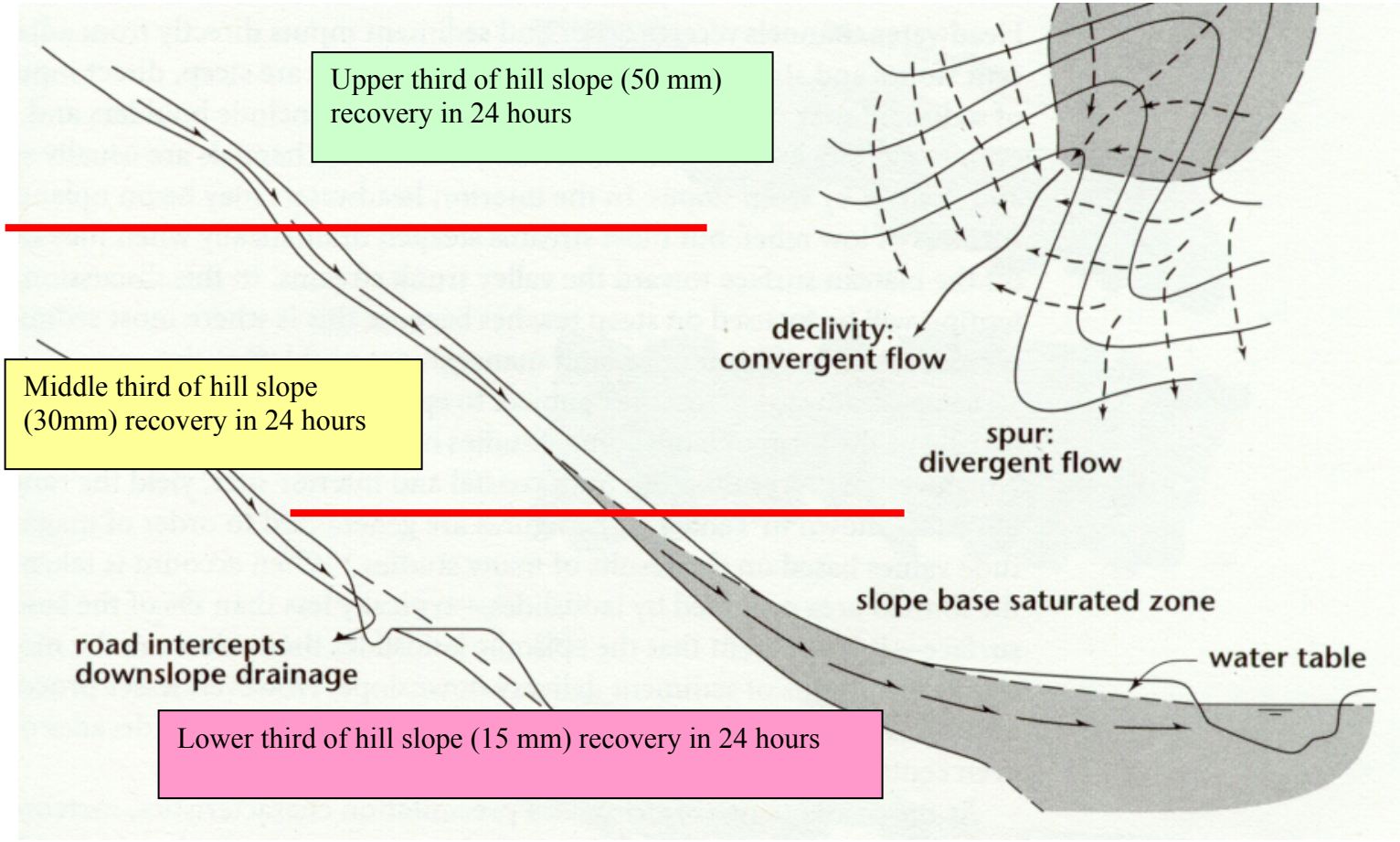
Return to Work Estimation Guide

Water balance returns to normal after a heavy rainfall period subject to a number of variables

- -slope position
- -slope gradient
- -soil type and depth (or proximity to bedrock)

Where a road is located above the worksite, interception by ditch lines may have the effect of increasing the recovery rate for lower slope positions

Using the following sketch as a guide, identify the slope position of the planned activity (upper, middle and lower thirds)
In an **average** situation precipitation input is reduced in a 24 hour period by the indicated values based on slope position



Appendix 6: Best Management Practices For Community Watershed

(Practices Derived from Econ Forest Consulting Roads Report June 2011 and Sproat Lake CWAP Report 2008)

Best Management Practices for Community Watersheds

Refer also to Section 5.2.4 of the AVCF FSP.

Ditch Cleaning: where needed, ditches are to be cleaned when conditions are dry. Ditch spoil is not to be windrowed along the road shoulder. On moderate slopes, the ditch spoil could be thinly spread on the slope below the road, but not heaped or piled against trees. Where the road is on steep slopes, the ditch spoil should be end hauled to a suitable spoil site.

Culvert replacement: Where required culvert replacements are to be done during dry weather (except for emergency repairs or replacements). The inlet and outlet areas on new culverts, and the adjacent fill slopes, are to be armoured to prevent erosion or sloughing into the creek.

Rock Ballasting of road surface: For new road construction, where the road is close to a stream channel, the road surface is to be ballasted with clean rock. The road surface is also to be rock ballasted for 30 meters either side of stream culverts.

Road grading practices: grading is to be avoided during heavy rain.

Shutdown or harvest completion: In preparation for a shutdown for a period longer than 30 days or at a harvest completion, the following measures will be taken:

> No excavated or end hauled material will be left piled in such a way as to become unstable during the shutdown period. Spoil sites, piles and fills will be sloped uniformly to prevent instability.
>
> Ditches and culverts will be left clear and functional, with adequate inlet basins to minimize the potential for plugging.
>
> On sections of steep grades, cross ditches and back-up swales will be constructed where needed to minimize ditch erosion.
>
> If road construction has reached a drainage course but a drainage structure has not been installed prior to shutdown, the drainage course will be left open and unimpeded.
>
> Where exposed silty soils could erode and enter surface streams or ditches connected to streams, silt fences, hay bales or erosion blankets will be applied as needed for temporary protection.

Appendix 7: Road Permit R18553

File: 11400-25, R18553, Amendment #5

Alberni Valley Community Forest Corporation
7500 Airport Road
Port Alberni, British Columbia
V9Y 8Y9

Dear Sir/Madam:

Reference is made to your application dated February 28, 2013 for an amendment of Road Permit (RP) No. R18553 within Alberni Valley Community Forest Licence K2D.

Pursuant to paragraph 1.01 and 2.01 of RP No. R18553, the roads identified in the list below, and the attached map shall form an integral part of the document for RP No. R18553 and should be attached thereto.

This amendment pertains to the construction, maintenance and use of the following roads associated with harvest development within the *Alberni Valley Community Forest Corporation 2011 to 2016 Forest Stewardship Plan approved June 6, 2011:*

Licensee Road Name	**Sec. Designation on Exhibit A Map**	**Station(from)**	**Station(to)**
Weiner Connector		**0+000**	**1+764**
W15-S1		**0+000**	**0+218**
W15-S2		**0+000**	**0+064**
W15-S3		**0+000**	**0+213**
W15-S4		**0+000**	**0+440**
W15-S5		**0+000**	**0+145**

All operations are to conform to the *Forest and Range Practices Act*. The Forest Road Engineering Guidebook may be used to assist achieving compliance with the Act.

Yours truly,

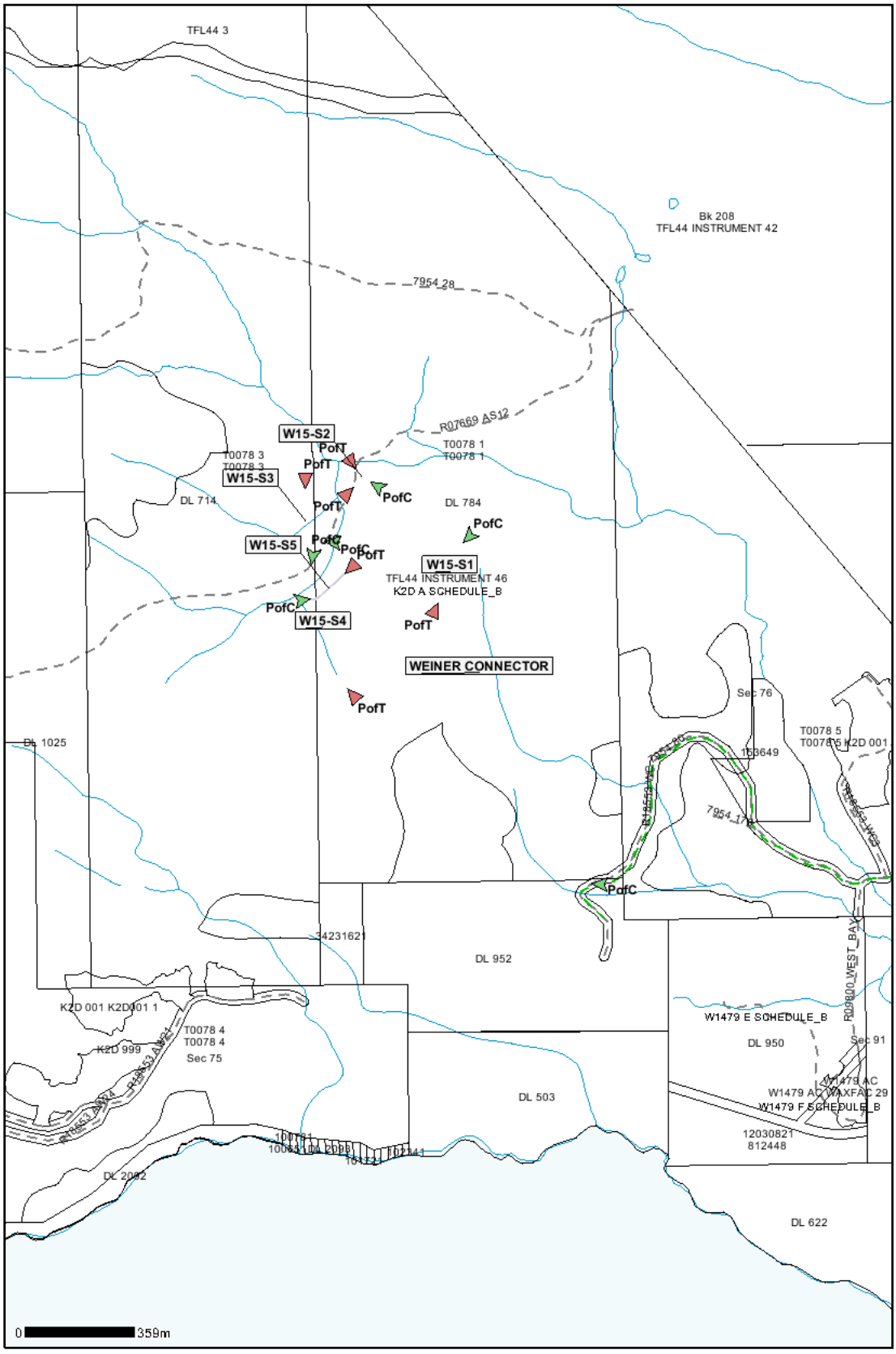
_____

Attachment: Exhibit A Map (ESF 1194037)

Ministry of Forests, Lands and Natural Resource Operations
South Island Natural Resource District
Location:
4885 Cherry Creek Road
Port Alberni BC
Mailing Address:
4885 Cherry Creek Road
Port Alberni BC V9Y 8E9
Tel: (250) 731-3000
Fax: (250) 731-3010

EXHIBIT A

MAP OF : R18553 Amendment # 5 (shown in bold black)			
FOREST REGION : RCO FOREST DISTRICT : DSI	TSA : 38 LAND DISTRICT : CLAYOQUOT DISTRICT	PULPWOOD AGREEMENT :	MGT UNIT TYPE : COMMUNITY FOREST MGT UNIT NO :
ESF SUBMISSION ID : 1194037 BCGS MAPSHEET NO : 92F.025	SCALE : 1:20000 at A Size Length (Km): 2.844	UTM : 10 NAD : NAD 83	DRAWN BY : FTA DATE : Feb 26, 2013



Legend

- Tenure Application
- Tenure Road Application
- Retired Tenure Road
- P of C
- P of T
- Tenure Feature
- Range
- TFL
- Provincial Forest
- Forest Service Road
- Highway
- Municipal Road
- Non Status Road
- Recreation Trails
- Road Permit
- SUP Road
- Right of Way
- Schedule B CP Road
- Mineral Tenure Points
- Cities
- Waterbodies
- River/Stream
- Coastline / Island

WEINER CONNECTOR (Length: 1.764 Km, R/W: 75 m)
PofC UTM10 354522, 5461307
PofT UTM10 353797, 5462632
W15-S1 (Length: 0.218 Km, R/W: 75 m)
PofC UTM10 354148, 5462437
PofT UTM10 354059, 5462245
W15-S2 (Length: 0.064 Km, R/W: 75 m)
PofC UTM10 353854, 5462648
PofT UTM10 353809, 5462691
W15-S3 (Length: 0.213 Km, R/W: 75 m)
PofC UTM10 353697, 5462459
PofT UTM10 353640, 5462634
W15-S4 (Length: 0.44 Km, R/W: 75 m)
PofC UTM10 353650, 5462386
PofT UTM10 353752, 5461975
W15-S5 (Length: 0.145 Km, R/W: 75 m)
PofC UTM10 353642, 5462274
PofT UTM10 353759, 5462353