SPRINGER CREEK BRIDGE RIPRAP EROSION
SLOCAN, BC

DRAWING SCHEDULE	
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EXISTING PLAN AND PROFILE VIEW	100-03
CREEK SECTIONS	100-04 & 05

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
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36755

Mar 5, 2026

SNTG Permit Number 1001083

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SCALE N/A

Designed Robin Bruce, P.Eng. Date Jan. 27, 2026
Checked Ryan Williams, P.Geo Date Jan. 27, 2026
Drawn Nicole Harvey Date Jan. 27, 2026

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SPRINGER CREEK BRIDGE RIPRAP EROSION
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VILLAGE OF SLOCAN

TITLE PAGE

ORGINAL SIGNED and SEALED BY:
ROBIN BRUCE, P.ENG.

DESIGN ENGINEER:
ROBIN BRUCE, P.ENG.

FILE No. 24.510.05.01

DRAWING No. 100-01 | 1

CANCEL PRINTS BEARING PREVIOUS NUMBER

GENERAL NOTES:

This drawing package in intended to be read in conjunction with the SNT Geotechnical Ltd. design memo "Springer Creek Bridge Riprap Erosion Repair", dated December, 2025.

1. Site Preparation

We anticipate the following activities will be required prior to or during construction. This is not a complete list. Specifics on construction sequencing will be left to the contractor, provided approval is granted by the Village representative.

- Remove minor trees/shrubs to facilitate access
- Remove bridge and store on-site
- Locate and delineate 150mm water supply pipe (exact location unknown)
- Install approved stream diversion method (one side at a time)
- Remove existing riprap apron (east and west abutments)
- Subexcavate creek bed and regrade bank per depths and grades specified in drawings

2. Environmental

All stipulations contained within the Masse Environmental CEMP, dated June 3, 2025; the BC Provincial Section 11 application; and the federal DFO Fish Permit application must be adhered to. The following is not a complete list.

- Conduct all machine operations from the top of the bank
- To prevent the spread of Whirling Disease, all equipment shall be free of mud and dirt and appropriately disinfected according to the Provincial requirements and recommendations prior to and after use (before mobilization to and from site)
- The footprint of the new riprap shall not exceed the previously existing riprap apron footprint
- All riprap materials shall be sourced from a quarry with documented verification of supplying non-acid-generating (NAG) rock. If such verification is unavailable, ARD-ML testing shall be conducted per MOTT Technical Circular T-04/13. The contractor is fully responsible for supplying and using NAG materials
- Restore all disturbed areas to their preconstruction condition and seed with a native seed blend for riparian areas
- Initiate and complete all in-stream works within the fish window (Kootenay Region) - July 16 to August 31
- Any vegetation clearing occurring within bird breeding season (~April 15 to August 15) shall be preceded by a nest survey conducted by a qualified biologist and approved by an RPBio
- Adhere to all environmental guidelines, stipulations, and management plans including, but not limited to: fuel and fluids; erosion and sediment; water and air quality; waste management; and wildlife management
- A worksite isolation (creek diversion) plan shall be submitted to and approved by the Village representative prior to any in-stream works. This may include use of gravel-filled coffer bags
- All works shall proceed in accordance with the field review stipulations outlined in the referenced CEMP document. Where surveys/site observation are required, no work shall be conducted without express approval of the RPBio or their representative

3. Geotechnical

3.1. Preparation and Material Management

- Remove existing riprap apron material from the affected areas at the east and west abutments. Subject to approval by the Field Engineer, existing riprap may be repurposed in the upper tiers of the repair
- Source and deliver new riprap material to the site. Imported riprap shall meet a minimum standard of MoTT Class 500kg riprap and must consist of well graded, hard, durable, sound, angular, non-acid generating blocky rock and must be approved by the Field Engineer prior to placement
- Gradation requirements for MoTT Class 500kg riprap are outlined in the table below:

Percent Finer by Weight ($D_{\%}$)	Diameter (mm)
D_{100}	1220 (maximum diameter)
D_{85}	1030
D_{50}	715
D_{15}	330

3.2. Excavation and Embankment Preparation

- Excavate surface materials to prepare the area for the new apron. Slope embankments in front of the abutments at 100% (1H:1V)
- Do not excavate or disturb the existing 150mm diameter water supply pipe
- Do not undermine existing concrete abutments during excavation. Adhere strictly to any excavation setbacks from the abutments as guided by the Field Engineer
- Do not disturb any private property
- Subexcavate creek bed at the toe of the proposed riprap apron to approximately 0.7m depth. This is necessary to facilitate proper embedment of the base tier of riprap for scour protection
- All excavated soils containing organics, deemed unsuitable by the Field Engineer, or not required for the construction works shall be hauled off-site to an approved waste facility

3.3. Riprap Placement and Construction

- The riprap apron must be constructed in a bottom-up manner, starting with the lowest tier at the excavated toe
- The largest clasts must be used in the base tier and be embedded below the creek bed by approximately 2/3 of their diameter for scour protection
- Clast diameter of subsequent, higher tiers shall generally decrease toward the top of the apron. Use smaller clasts to fill interstitial spaces such that the final structure is dense and stable
- The toe of the previously existing riprap apron shall not be exceeded with the new construction (i.e. encroachment into the creek shall not exceed the footprint of the previous apron)
- Final slopes of the riprap aprons for the east and west abutments are estimated at 100% and 90%, respectively
- Guidance during all phases of excavation and riprap placement will be provided by the Field Engineer and must be adhered to. This may include excavation setbacks from the abutments and staging requirements for excavation/riprap placement that shall be assessed based on ground conditions observed at the time of construction

3.4. Required Field Reviews

- The Field Engineer shall be present during all works involving:
- Riprap removal
- Excavation
- Embankment preparation
- Riprap placement
- No work related to the above phases shall proceed in the absence of the Field Engineer without their prior express approval. Commencement of each phase shall not proceed until prior phases have been approved in writing by the Field Engineer.

3.5. Estimated Material Quantities

- The following table outlines estimated material quantities for the construction. Values given are approximate and for planning purposes only. The Contractor shall be wholly responsible for verifying necessary material quantities

Material	Estimated Quantity
Excavation (existing riprap + soil embankment)	50m³
Riprap (total required within the new aprons)	75m³
Wastage (soil, organics)	30m³

3.6. Site Restoration

The work site and affected areas must be cleaned-up and restored to their pre-construction conditions, as best as reasonably practicable. This includes but is not limited to the following activities:

- Replace and secure the pedestrian bridge to its pre-construction condition
- Remove and properly dispose of all excess, surplus, or unsuitable materials from the site
- Re-grade disturbed areas to match the surrounding terrain and drainage patterns
- Re-seed all disturbed soil surfaces with a seed mix approved by the Village representative
- Remove and properly dispose of all construction debris, temporary works, and equipment from the site
- Ensure the site is left free of hazards and visually unacceptable materials

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SLOCAN, BC

VILLAGE OF SLOCAN

GENERAL NOTES

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FILE No. 24.510.05.01

DRAWING No. 100-02 | 1

CANCEL PRINTS BEARING PREVIOUS NUMBER

N

RETAINING WALL

PEDESTRIAN BRIDGE

ABANDONED FOOTING

BM2

150mm Ø WATER SUPPLY PIPE - EXACT LOCATION AND DEPTH UNKNOWN

EAST ABUTMENT

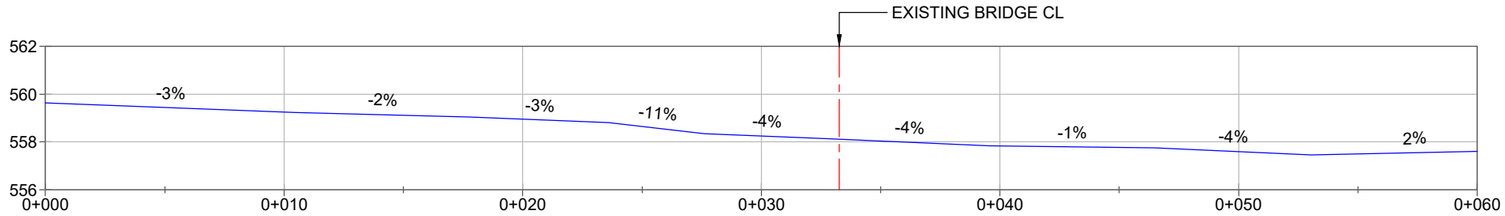
WEST ABUTMENT

BM1

62 60 55 50 45 40 35 30 25 20 15 10 5 0

558.5 559.5 560.5 563.5 562.5 560.5 560.0 561.5

SPRINGER CREEK STREAM PROFILE
1:250



SURVEY BENCHMARKS (LOCAL COORDINATES)				
POINT #	DESCRIPTION	EASTING (X)	NORTHING (Y)	ELEVATION (Z)
225	BM1	466386.900	5512731.400	562.500
226	BM2	466372.500	5512744.400	562.200

LEGEND
- STREAM CENTERLINE
- PRESENT WATER
- HIGH WATER
- EXISTING ROAD EDGE
- RETAINING WALL
- EXISTING RIPRAP
- TOP OF BANK
- PRIVATE LAND BOUNDARY

0 2 1:250 12m

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VILLAGE OF SLOCAN

EXISTING PLAN AND PROFILE VIEW

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CANCEL PRINTS BEARING PREVIOUS NUMBER

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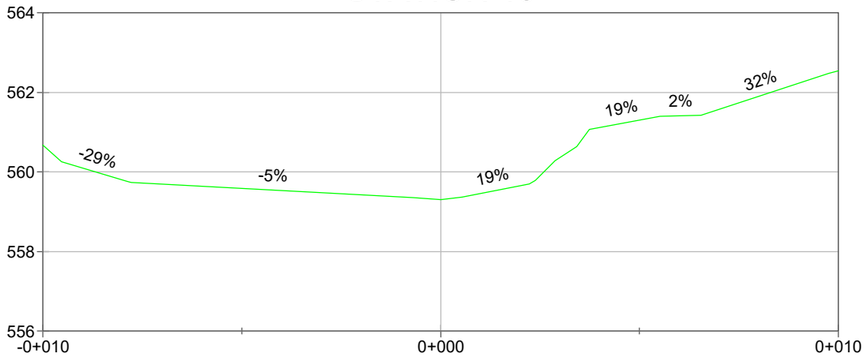

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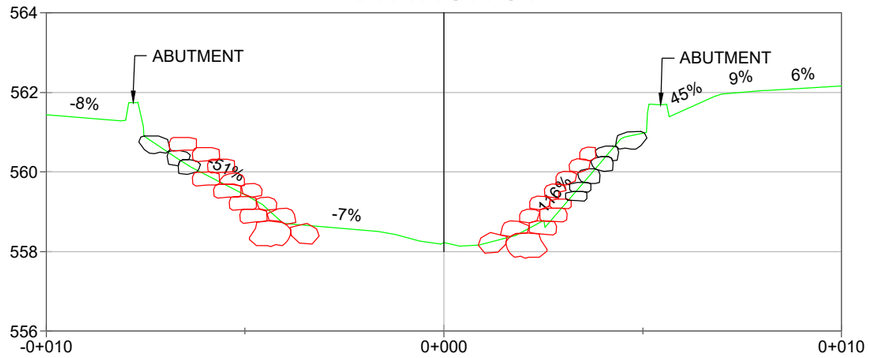

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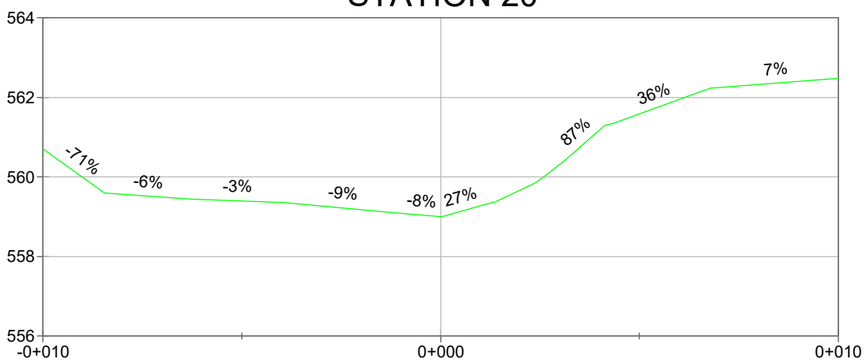

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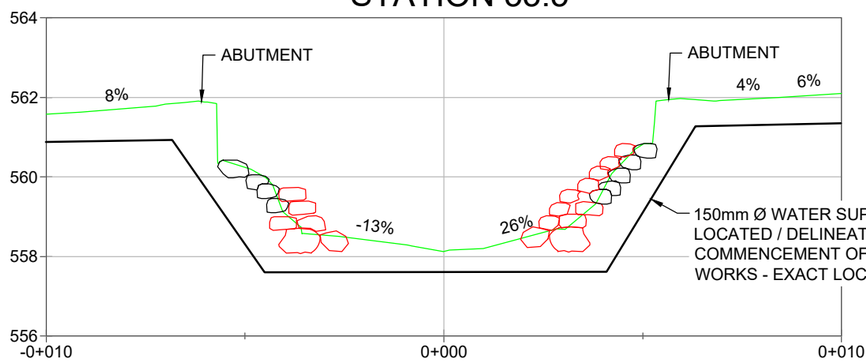

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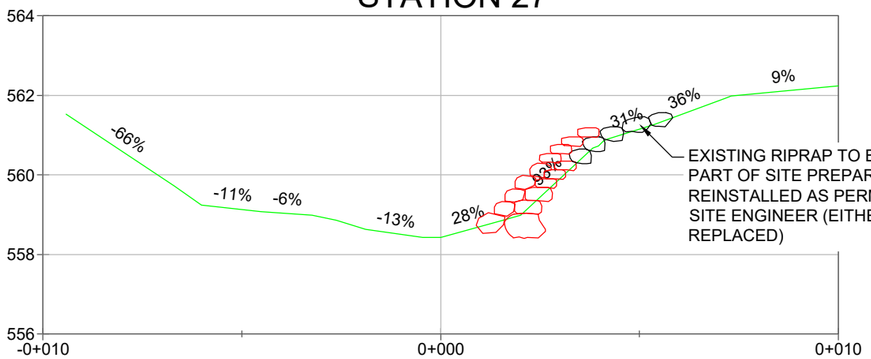

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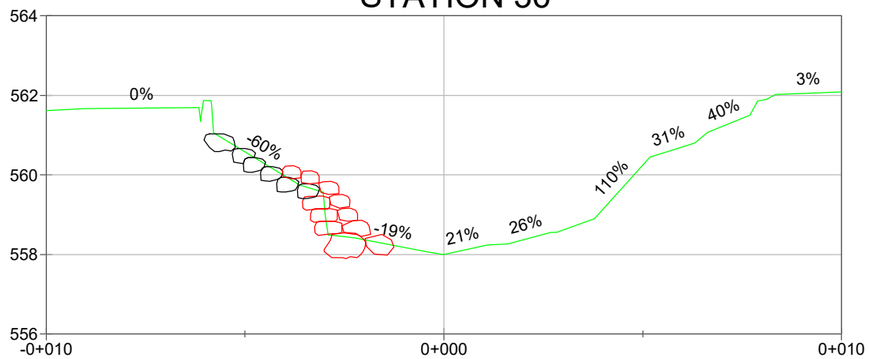

0 1.5 1:150 7.5m

LEGEND
EXISTING RIPRAP
PROPOSED RIPRAP

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DRAWING No. 100-04 | 1

CANCEL PRINTS BEARING PREVIOUS NUMBER

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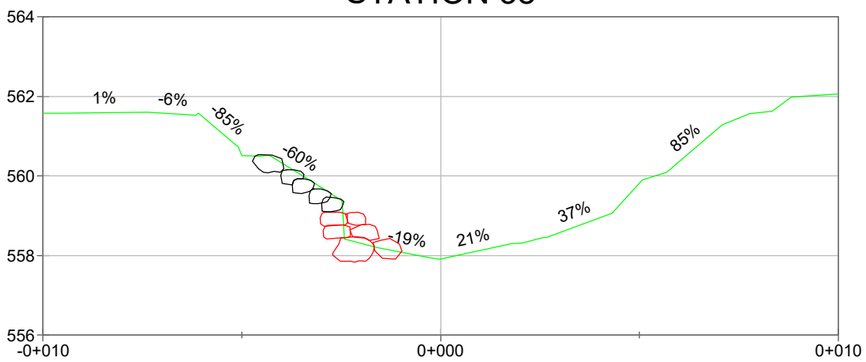

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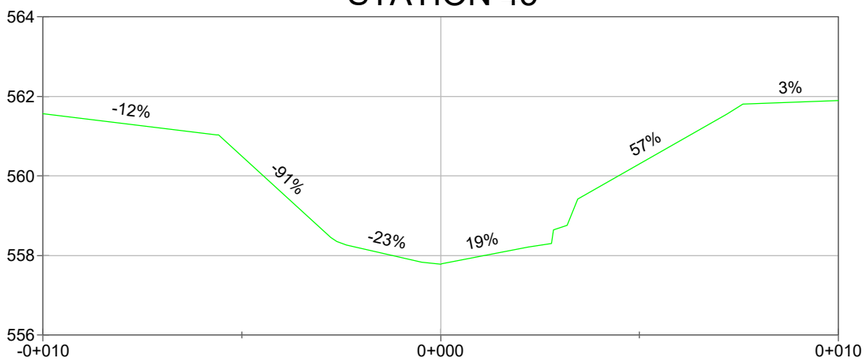

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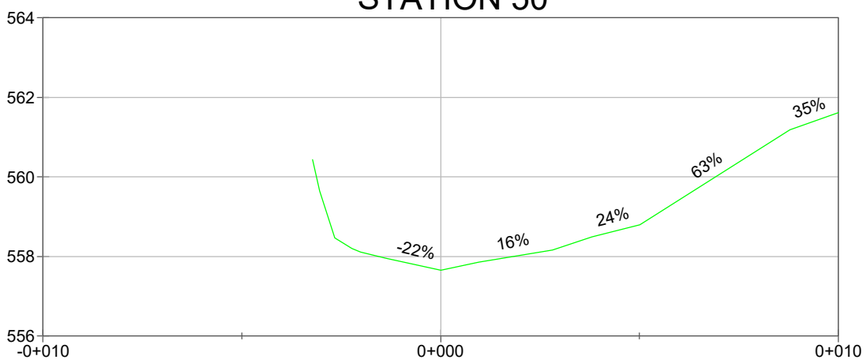

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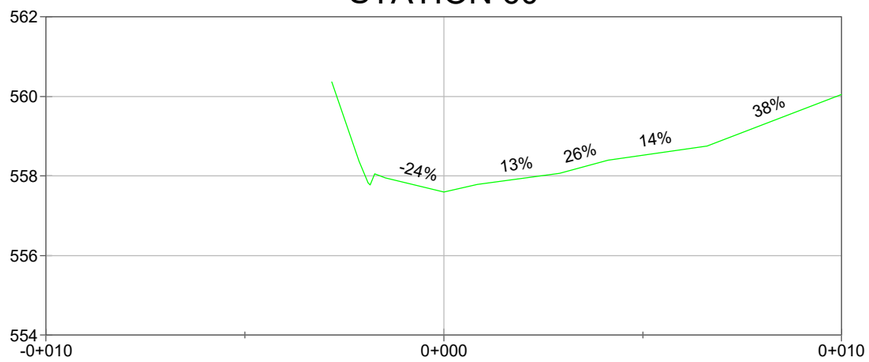

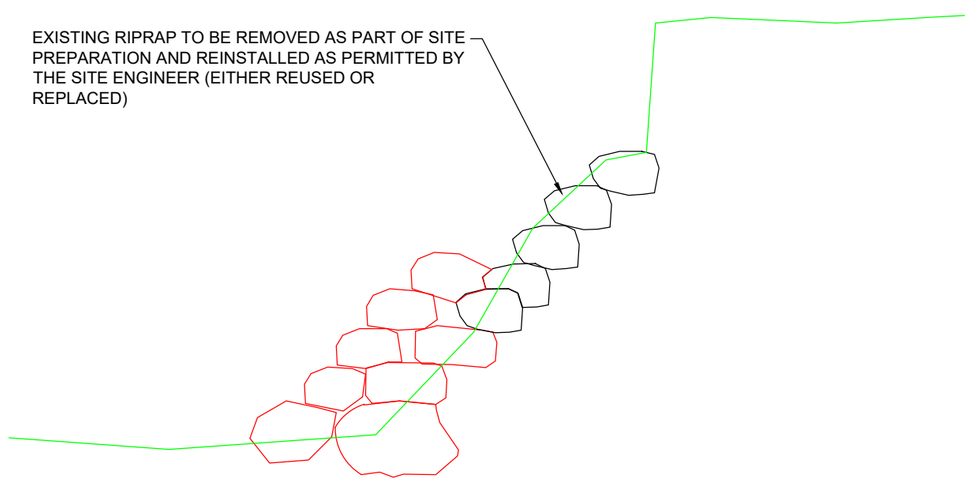

EMBEDDED ROCK DETAIL
(NOT TO SCALE)

0 1.5 1:150 7.5m

LEGEND
EXISTING RIPRAP
PROPOSED RIPRAP

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