

INVITATION TO TENDERERS

Village of Salmo

Contract: Glendale Avenue Bridge Repairs

Reference No.:

The Owner invites tenders for:

Supply and install concrete block (lockblock) retaining walls with cast in place concrete infill, reinforced concrete apron slabs, and riprap bank protection at both bridge abutments. See "2.0 Scope of Work" on attached document titled *Glendale Ave Bridge Repairs – Apron and Riprap*, Document No. 22E241-C3E-001.

Contract Documents are available during normal business hours at:

Address: Village of Salmo
423 Davies Avenue
Salmo, BC V0G 1Z0

Or by email: mail@wsaeng.ca

Tenders are scheduled to close at:

Tender closing time: 2:00 pm local time

Tender closing date: Thursday, October 12, 2023 at:

Address: Village of Salmo (as above)

Pretender Site Visit will be held on October 4, 2023 at 8:30am, commencing at the Village Office (423 Davies Avenue, Salmo, BC)

Direct bid enquiries to: Ange Qualizza, CAO
Village of Salmo
250-357-9433
cao@salmo.ca

Direct technical enquires to: Dan Sahlstrom
WSA Engineering (2012) Ltd.
888-617-6927
dans@wsaeng.ca

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UNIT
PRICE
CONTRACT

VILLAGE OF SALMO
GLENDALE BRIDGE REPAIR
INSTRUCTIONS TO TENDERERS PART I

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2009

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UNIT
PRICE
CONTRACT

VILLAGE OF SALMO
GLENDALE BRIDGE REPAIR
INSTRUCTIONS TO TENDERERS PART I

IT – PART I
IT - 1
2009

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

(TO BE READ WITH “INSTRUCTIONS TO TENDERERS - PART II”
CONTAINED IN THE EDITION OF THE PUBLICATION
“MASTER MUNICIPAL CONSTRUCTION DOCUMENTS” SPECIFIED IN ARTICLE 2.2 BELOW)

Owner: VILLAGE OF SALMO
(NAME OF OWNER)

Contract: Glendale Bridge Repair
(TITLE OF CONTRACT)

Reference No. _____
(OWNER'S CONTRACT REFERENCE NO.)

1.0 Introduction

1.1 These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following work:
Supply and install concrete block (lockblock) retaining walls with
cast in place concrete infill, reinforced concrete apron slabs, and riprap bank protection at both bridge abutments. See “2.0 Scope of Work” on attached document titled *Glendale Ave Bridge Repairs – Apron and Riprap*, Document No. 22E241-C3E-001.

(BRIEF DESCRIPTION OF THE WORK)

1.2 Direct all inquiries regarding the *Contract*, to:
Dan Sahlstrom, P.Eng.
WSA Engineering (2012) Ltd.

(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIES)

Address: 2248 Columbia Avenue
Castlegar, BC V1N 2X1

Phone: 888 617 - 6927

Email: mail@wsaeng.ca

2.0 Tender Documents

2.1 The tender documents which a tenderer should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled “Schedule of Contract Documents”. Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the drawings listed in Schedule 2 to the Agreement, entitled “List of *Contract Drawings*”.

2.2 A portion of the *Contract Documents* are included by reference. Copies of these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings. They are those contained in the publication entitled “Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings”. Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the *Tender Closing Date*. All sections of this publication are by reference included in the *Contract Documents*.

2.3 Any additional information made available to tenderers prior to the *Tender Closing Time* by the *Owner* or representative of the *Owner*, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgment about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

3.0 Submission of Tenders

3.1 Tenders must be submitted in a sealed envelope, marked on the outside with the above *Contract* Title and Reference No., and must be received by the office of:

Ange Qualizza, CAO

(TITLE OF POSITION)
Village of Salmo

on or before:

Tender Closing Time: 14 : 00 , 00 local time

Tender Closing Date: October 12, 2023

at Village of Salmo

Address: PO Box 1000
423 Davies Avenue
Salmo, BC V0G 1Z0

Email: cao@salmo.ca

3.2 Late tenders will not be accepted or considered, and will be returned unopened.

4.0 Additional Instructions to Tenderers

INSERT UNDER THIS PARAGRAPH 4 ANY REQUIRED ADDITIONAL INSTRUCTIONS TO TENDERERS

- 4.1 Master Municipal Construction Documents – General Conditions, Specifications and Standard Detail Drawings are available for purchase from the MMCD Association through WSA Engineering (2012) Ltd., Castlegar BC or directly from the Association at: www.mmcd.net
- 4.2 Faxed revisions to sealed tenders will be accepted up to Tender Closing Time. Do not fax complete tender or reveal total tender amount.
- 4.3 Upon award of this tender, the successful Contractor is required to purchase a business license from the Village of Salmo prior to their commencement of work.
- 4.4 Tender Opening
Tenders will be opened publicly by the Village of Salmo.
- 4.5 Contract
Upon award the Tenderer will be required to complete the form of agreement (sample attached). Once the contract is fully executed a signed copy will be returned to the vendor.
- 4.6 Permits
The Contractor shall apply and pay for all necessary permits or licenses
- 4.7 Contractor's Qualifications
The Contractor must be registered in good standing with Work Safe BC. A clearance letter of good standing with Work Safe BC must be provided.

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

BETWEEN *OWNER* AND *CONTRACTOR*

This agreement made in duplicate this

_____ day of _____, 20_____.

Contract: **Glendale Bridge Repair**
(TITLE OF CONTRACT)
Reference No. _____
(OWNER'S CONTRACT REFERENCE NO.)

BETWEEN:

The _____
Village of Salmo
(NAME OF OWNER)

(the "*Owner*")

AND:

(NAME AND OFFICE ADDRESS OF CONTRACTOR)

(the "*Contractor*")

The *Owner* and the *Contractor* agree as follows:

- Article 1 The Work Start / Completion Dates**
- 1.1 The *Contractor* will perform all *Work* and provide all labour, equipment and material and do all things strictly as required by the *Contract Documents*.
 - 1.2 The *Contractor* will commence the *Work* in accordance with the *Notice to Proceed*. The *Contractor* will proceed with the *Work* diligently, will perform the *Work* generally in accordance with the construction schedules as required by the *Contract Documents* and will achieve *Substantial Performance* of the *Work* on or before _____ December 20, 2023 _____ subject to (INSERT DATE OF SUBSTANTIAL PERFORMANCE) the provisions of the *Contract Documents* for adjustments to the *Contract Time*.

Article 2 Contract Documents

- 1.3 Time shall be of the essence of the *Contract*.
- 2.1 The "Contract Documents" consist of the documents listed or referred to in Schedule 1, entitled "Schedule of Contract Documents", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the Contract Documents. All of the Contract Documents shall constitute the entire *Contract* between the *Owner* and the *Contractor*.
- 2.2 The *Contract* supersedes all prior negotiations, representations or agreements, whether written or oral, and the *Contract* may be amended only in strict accordance with the provisions of the Contract Documents.

Article 3 Contract Price

- 3.1 The price for the *Work* ("Contract Price") shall be the sum in Canadian dollars of the following
- 1.1.1 the product of the actual quantities of the items of *Work* listed in the Schedule of Quantities and Prices which are incorporated into or made necessary by the *Work* and the unit prices listed in the Schedule of Quantities and Prices; plus
 - 1.1.2 all lump sums, if any, as listed in the Schedule of Quantities and Prices, for items relating to or incorporated into the *Work*; plus
 - 1.1.3 any adjustments, including any payments owing on account of *Changes* and agreed to Extra Work, approved in accordance with the provisions of the Contract Documents.
- 3.2 The Contract Price shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.

Article 4 Payment

- 4.1 Subject to applicable legislation and the provisions of the Contract Documents, the *Owner* shall make payments to the *Contractor*.
- 4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the Contract Documents then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

Article 5 Rights and Remedies

- 5.1 The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.
- 5.2 Except as specifically set out in the Contract Documents, no action or failure to act by the *Owner*, Contract Administrator or *Contractor* shall constitute a waiver of any of the parties' rights or duties afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

Article 6 Notices

- 6.1 Communications among the *Owner*, the Contract Administrator and the *Contractor*, including all written notices required by the Contract Documents, may be delivered by hand, or by fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:

Village of Salmo

PO Box 1000, 423 Davies Avenue

Salmo, BC V0G 1Z0

Email: cao@salmo.ca
Attention: Ange Qualizza, CAO

The *Contractor*:

Fax: _____
Attention: _____

The Contract Administrator:

WSA Engineering (2012) Ltd.

2248 Columbia Avenue

Castlegar, BC V1N 2X1

Email: mail@wsaeng.ca
Attention: Dan Sahlstrom, P.Eng.

- 6.2 A communication or notice that is addressed as above shall be considered to have been received
 - 1.1.4 immediately upon delivery, if delivered by hand; or

- 1.1.5 immediately upon transmission if sent by fax and received in hard copy; or
- 1.1.6 after 5 *Days* from date of posting if sent by registered mail.

- 6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.
- 6.4 The sender of a notice by fax assumes all risk that the fax is received in hard copy.

Article 7 General

- 7.1 This *Contract* shall be construed according to the laws of British Columbia.
- 7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.
- 7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.
- 7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall ensure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Owner:

Village of Salmo

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

(INCLUDE IN LIST ALL DOCUMENTS INCLUDING, IF ANY, SUPPLEMENTARY GENERAL CONDITIONS, SUPPLEMENTARY SPECIFICATIONS, SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 1 Schedule of Contract Documents

The following is an exact and complete list of the Contract Documents, as referred to in Article 2.1 of the Agreement.

NOTE: The documents noted with "*" are contained in the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings", edition dated 2009____. All sections of this publication are included in the Contract Documents.

- 8.1 Agreement, including all Schedules;
- 8.2 Supplementary General Conditions (if any, insert title and edition date);
- 8.3 General Conditions*;
- 8.4 Supplementary Specifications (if any, insert title and edition date);
- 8.5 Specifications*;
- 8.6 Supplementary Standard Detail Drawings (if any, insert title and edition date);
- 8.7 Standard Detail Drawings*;
- 8.8 Executed Form of Tender, including all Appendices;
- 8.9 Contract Documents listed in Schedule 2 to the Agreement.—"List of Contract Documents";
- 8.10 Instructions To Tenderers - Part I;
- 8.11 Instructions to Tenderers - Part II*;
- 8.12 The following Addenda:

(ADDENDA, IF ANY)

FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.

Owner: Village of Salmo

Contract: Glendale Avenue Bridge Repairs

Reference No.

(OWNER'S CONTRACT REFERENCE NO.)

To Owner:

**WE, THE
UNDERSIGNED:**

1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

_____ ;

(ADDENDA, IF ANY)

1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and

1.3 have complied with the Instructions to Tenderers; and

**ACCORDINGLY WE
HEREBY OFFER**

2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and

2.2 to achieve Substantial Performance of the *Work* on or before _____ December 20, 2023 _____; and

(WORK DURATION OR DATE)

2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes *GST*.

WE CONFIRM:

3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.

- WE CONFIRM:**
- 4.1 that the following appendices are attached to and form a part of this tender:
- 4.1.1 the appendices as required by paragraph 5.3 of the Instructions to Tenderers – Part II; and
- 4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers – Part II.
- WE AGREE:**
- 5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of 30 calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:
- 5.1.1 within 15 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:
- .1 a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the Contract Price, covering the performance of the Work including the Contractor's obligations during the Maintenance Period, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*; **or**:
- .1 the contractor may leave with the Village the cash, bank draft or letter of credit submitted as bid security in the amount of 10% of the Tender Price. This security to be used as outlined in the General Conditions of the contract for the Performance and Labour and Material Payment Bonds listed above. This security will be returned to the contractor upon Total Performance of the works as described in GC 18.7
- .2 a Baseline Construction Schedule, as provided by GC 4.6.1;
- .3 a "clearance letter" indicating that the tenderer is in Worksafe BC compliance; and
- .4 a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place and;

FORM OF TENDER

WE AGREE:

- 5.1.2 within 2 *Days* of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and
- 5.1.3 sign the Contract Documents as required by GC 2.1.2.
- 6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:
 - 6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or
 - 6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,
then such failure or refusal will be deemed to be a refusal by us to enter into the *Contract* and the *Owner* may, on written notice to us, award the *Contract* to another party. We further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:
 - 6.1.3 the face value of the *Bid Security*; and
 - 6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

**OUR ADDRESS IS AS
FOLLOWS:**

Phone: _____

Fax: _____

Attention: _____

This Tender is executed this
_____ day of _____, 20 _____.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Form of Tender – Appendix 1

Glendale Avenue Bridge Repairs

SCHEDULE OF QUANTITIES AND PRICES

(See paragraph 4.1 of the Instructions to Tenderers – Part I)

(All prices and Quotations including the Contract Price shall include all taxes, but shall not include GST.
GST shall be shown separately.)

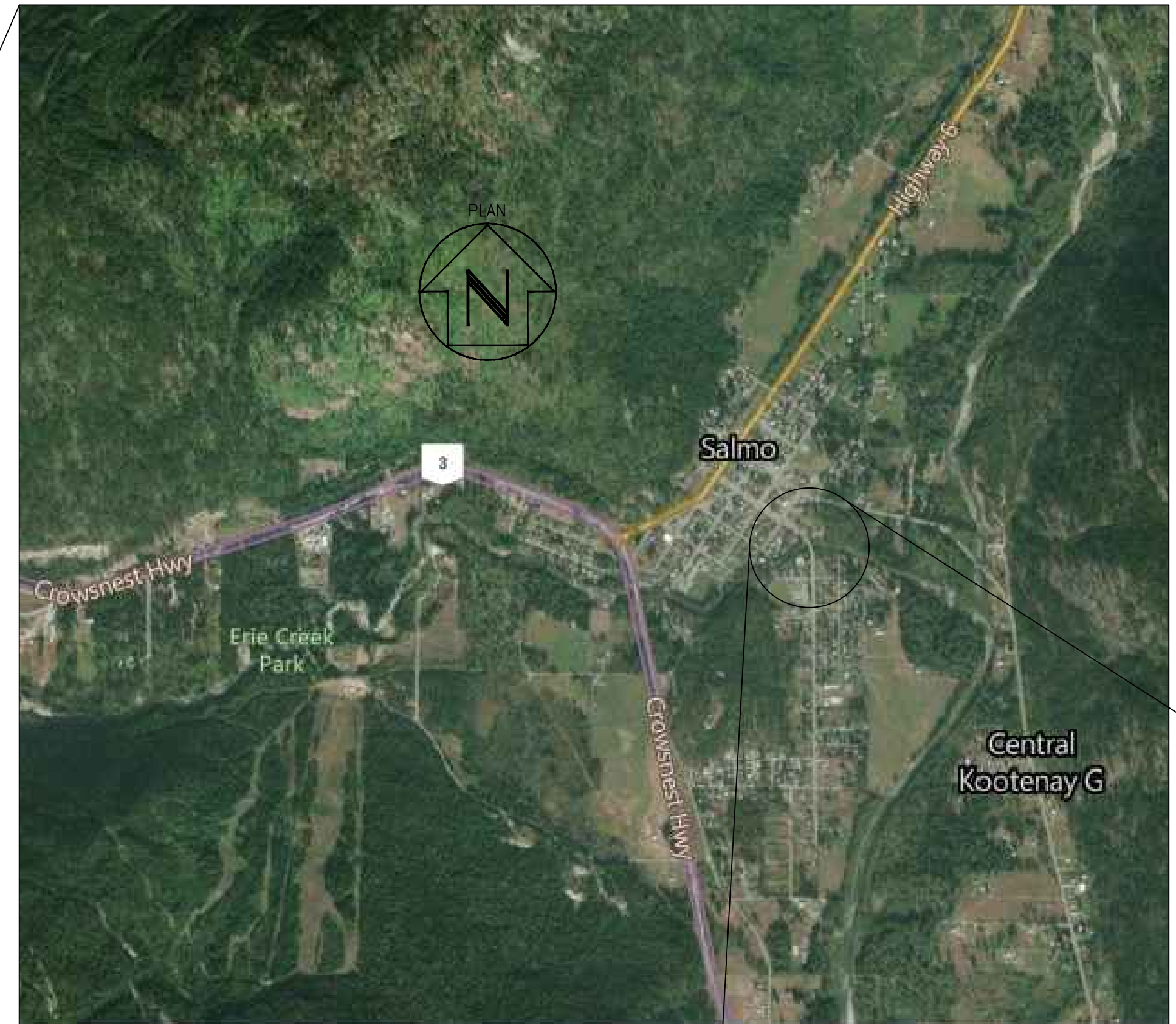
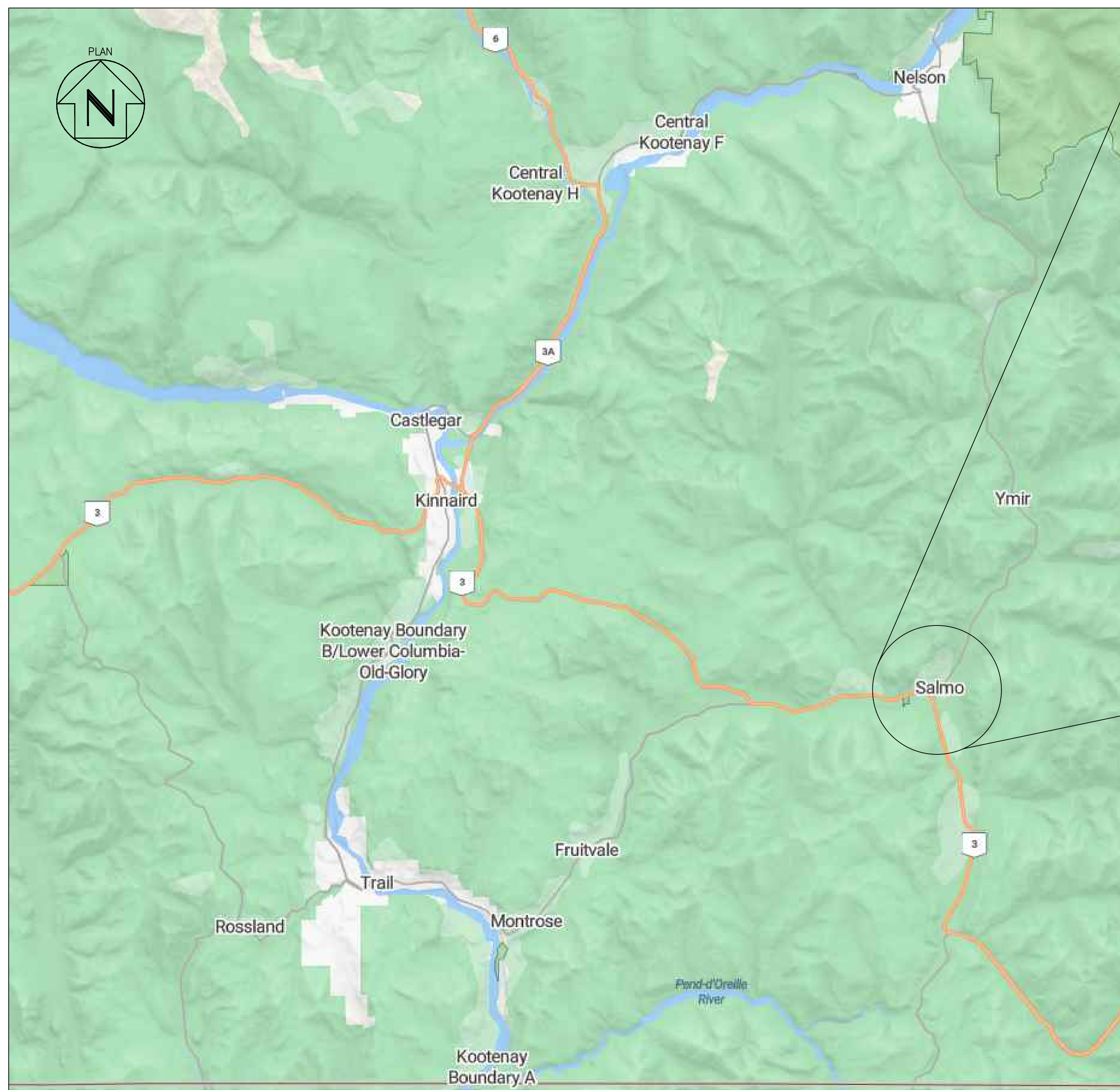
ITEM NO.	MMCD REF.	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT
1	31 24 13 1.8.5	Common Excavation: North and south ends of bridge: Remove and dispose off site of existing concrete apron, slab, sidewalk. Excavate existing soil to subgrade elevation. Dispose of unsuitable soil off site. (Road base and subbase meeting contract specifications may be stockpiled for reuse.)	L/S	1	
2		Remove, store, and protect existing barricade. Replace barricade upon completion of all work.	L/S	1	
3	31 24 13 1.8.9	Prepare subgrade to receive lockblock retaining wall, backfill, and geogrid.	Square meter	168	
4		Supply and install lockblock retaining wall on both north and south ends of bridge, including geogrid and backfill to top of blocks.	Per Block (2 half blocks = 1 unit)	70	
5	03 30 53 1.5.3	Construct cast in place abutment detail per Section C Drawing SK4	Each	4	

6	32 11 23 1.4.2	Supply and place compacted 19mm crush minus aggregate layer. Allow 300mm thickness.	Square meter	168	
7	03 30 53 1.5.3	Install new concrete slab and reinstate sidewalk in kind.	Square meter	168	
8	Supplementary Specification 1.0	Supply and install fish barrier instream. Includes large earth filled bulk bags, poly and geotextile cloth	Lineal meter	60	
9		Remove and stockpile existing riprap. Excavate abutment slopes to base of proposed riprap and dispose of excess material	L/S	1	
10		Supply and install riprap bank protection, using approved rock on both north and south ends of bridge. (reuse existing riprap as applicable and supplement with new)	Cubic meter	250	

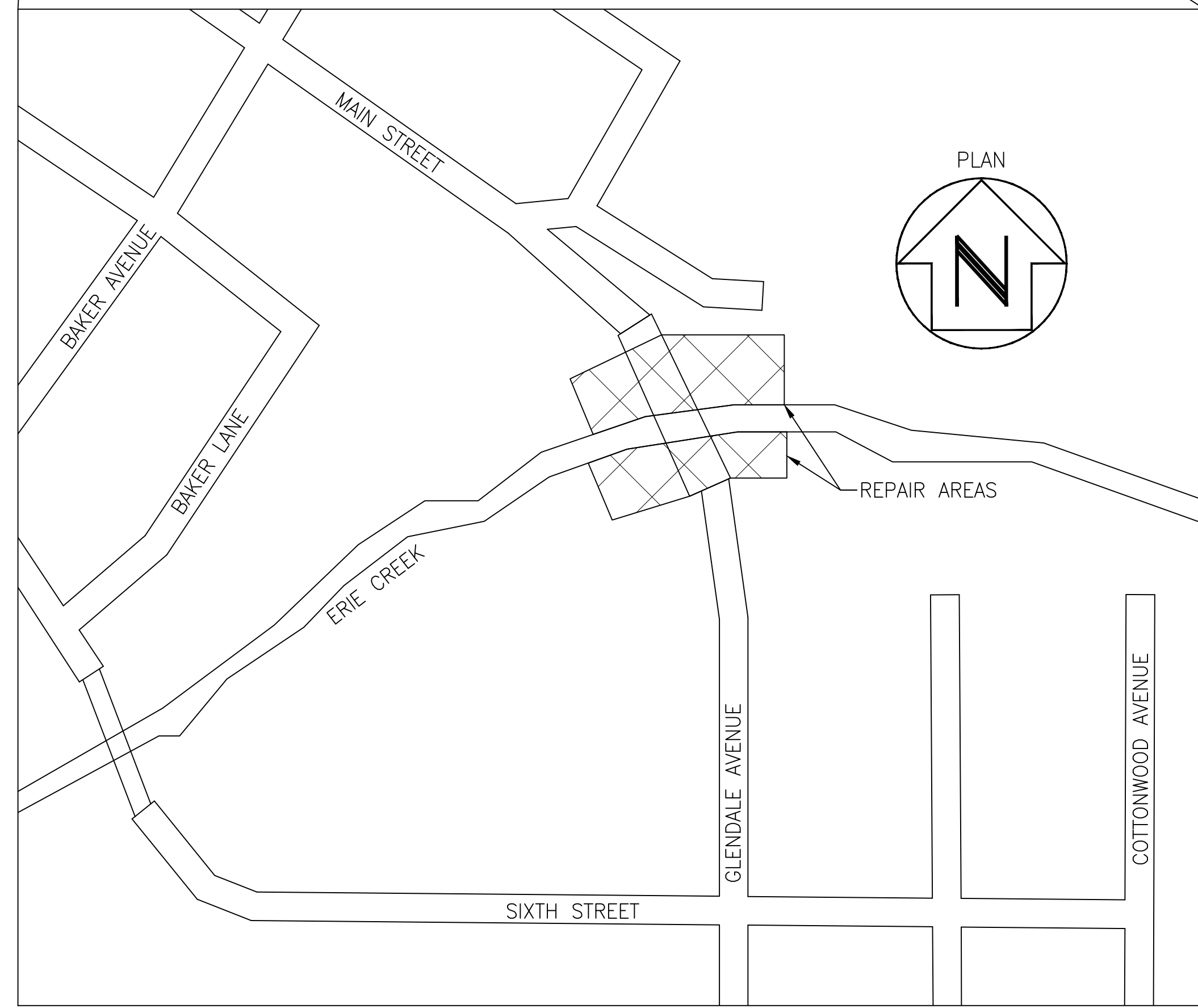
TENDER PRICE \$ _____

GST \$ _____

TENDER PRICE plus GST \$ _____



**PRELIMINARY
NOT FOR CONSTRUCTION**

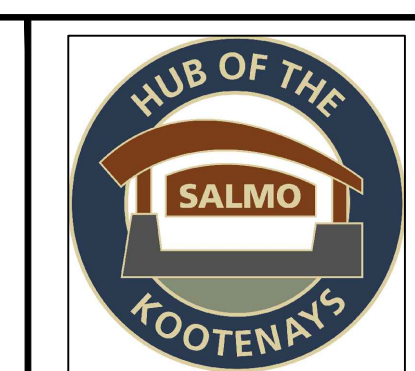


GLENDALE AVENUE – ERIE CREEK BRIDGE CROSSING – SLAB AND RIP RAP REPAIRS

REFERENCE

- BACKGROUND ORTHOPHOTO SCREEN SHOTS FROM MICROSOFT BING MAPS REPRINTED WITH PERMISSION FROM MICROSOFT CORPORATION. RETRIEVED MARCH 24, 2023

REV.	ISSUE FOR REVIEW	DATE	BY	CHK'D	APP'D	NO.	DWG. NO.	REFERENCE DRAWINGS	ENGINEERING REVIEW															
1	ISSUE FOR REVIEW	2023/03/30	T.SUKKAU	F.MACKINNON	J.TOWNSEND	1	22E241-SK1 THROUGH SK5	GLENDALE BRIDGE SLAB AND RIP RAP REPAIR DRAWINGS	<table border="1"> <tr> <td>DESIGN CHECKED BY</td> <td>-</td> <td>-</td> </tr> <tr> <td>CHECKED BY</td> <td>-</td> <td>-</td> </tr> <tr> <td>DESIGNED BY</td> <td>J.TOWNSEND</td> <td>2023/03/20</td> </tr> <tr> <td>DRAWN BY</td> <td>T.SUKKAU</td> <td>2023/03/21</td> </tr> <tr> <td>NAME</td> <td></td> <td>DATE</td> </tr> </table>	DESIGN CHECKED BY	-	-	CHECKED BY	-	-	DESIGNED BY	J.TOWNSEND	2023/03/20	DRAWN BY	T.SUKKAU	2023/03/21	NAME		DATE
DESIGN CHECKED BY	-	-																						
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PROJECT NUMBER:	22E241
SCALE:	AS NOTED

REDWOOD ENGINEERING LTD
Trail, B.C. Canada
 605/250-1688
 605/250-1984
 www.redwoodengineering.com

TITLE:
**GLENDALE AVE, SALMO, BC
 ERIE CREEK BRIDGE CROSSING
 SLAB AND RIP RAP REPAIRS
 COVER PAGE**

DWG. NO. **22E241-SK1**

REV. **A**

GENERAL NOTES

- 1. CONCRETE "JUMBO" or "LOCK" BLOCKS TO BE STANDARD SIZE (1500mm x 750mm x 750mm) OR APPROVED EQUAL AND OF STANDARD GRADE (UTILITY/ECONOMY GRADE BLOCKS ARE NOT TO BE USED) ALL BLOCK LIFT LUGS TO BE CHECKED FOR DAMAGE AND CORROSION PRIOR TO LIFTING.
2. BACKFILL TO BE PIT RUN 76mm MINUS.
3. BACKFILL SHALL BE SPREAD IN UNIFORM LAYERS NOT EXCEEDING 200mm IN UNCOMPACTED THICKNESS. UNLESS OTHERWISE SPECIFIED, ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR DRY DENSITY PRIOR TO PLACEMENT OF EACH SUCCEEDING LAYER.
4. GEOGRID TO BE TENSAR STRUCTURAL GEOGRID UX1500MSE OR APPROVED EQUAL.
5. PLACE GEOGRID WITH STRONG AXIS PERPENDICULAR TO WALL, EXTEND TO FRONT FACE OF WALL AND SANDWICH BETWEEN BLOCKS. TRIM GEOGRID AT BLOCK LUGS.
6. PULL GEOGRID TIGHT WHEN PLACING BACKFILL.
7. DELIVERY, STORAGE, AND HANDLING:
A. CONTRACTOR SHALL CHECK THE GEOGRID UPON DELIVERY TO ASSURE THAT THE PROPER MATERIAL HAS BEEN RECEIVED.
B. GEOGRID SHALL BE STORED ABOVE -23C.
C. CONTRACTOR SHALL PREVENT EXCESSIVE MUD, CEMENTITIOUS MATERIAL, OR OTHER FOREIGN MATERIALS FROM COMING IN CONTACT WITH THE GEOGRID MATERIAL.
8. REFERENCE STANDARDS:
SEE SPECIFIC GEOGRID MANUFACTURER'S REFERENCE STANDARDS. ADDITIONAL STANDARDS:
A. ASTM D4595 - TENSILE PROPERTIES OF GEOTEXTILES BY THE WIDE-WIDTH STRIP METHOD
B. ASTM D5262 - TEST METHOD FOR EVALUATING THE UNCONFINED CREEP BEHAVIOR OF GEOGRIDS
C. ASTM D6638 - GRID CONNECTION STRENGTH (SRW-U1)
D. ASTM D6916 - SRW BLOCK SHEAR STRENGTH (SRW-U2)
E. GRI-GG4 - GRID LONG TERM ALLOWABLE DESIGN STRENGTH (LTADS)
F. ASTM D6706 - GRID PULLOUT OF SOIL
9. LOCATIONS AND ELEVATIONS BASED ON SURVEY PROVIDED BY KOOTENAY TECHNICAL SURVEYS.
10. CONSTRUCTION SHALL FOLLOW ALL SPECIFICATIONS WITHIN BC MOTI SS2020 - STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. RELEVANT SECTIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
A. BC MOTI SS2020 SECTION 201 - ROADWAY AND DRAINAGE EXCAVATION
B. BC MOTI SS2020 SECTION 211 - PORTLAND CEMENT CONCRETE
C. BC MOTI SS2020 SECTION 205 - RIPRAP
D. BC MOTI SS2020 SECTION 942 - PRECAST CONCRETE INTERLOCKING MODULAR BLOCK

FIELD REVIEWS

ALL WORK IS TO BE INSPECTED BY AND COMPLETED TO THE SATISFACTION OF THE ENGINEER. FAILURE TO NOTIFY THE ENGINEER AT THE REQUIRED TIMES OF FIELD REVIEWS NOTED BELOW ASSUMES THE OWNER DOES NOT REQUIRE REVIEWS AND WILL ASSUME LIABILITY FOR THE INSTALLATION OF THE PRODUCT.

PROVIDE 24 HOURS NOTICE TO ENGINEER FOR FIELD REVIEWS.

FIELD REVIEW REQUIREMENTS:

- FIELD REVIEW IS REQUIRED AFTER RIP RAP TOE INSTALLATION
- FIELD REVIEW IS REQUIRED PRIOR TO PLACING FIRST ROW BLOCKS
- ENGINEER OF RECORD TO BE ONSITE DURING BACKFILL PLACEMENT
- FIELD REVIEW IS REQUIRED BEFORE ALL CONCRETE POURS
- FIELD REVIEW IS REQUIRED AFTER CONSTRUCTION FOR FINAL REVIEW

WALL CONSTRUCTION

- 1. FOUNDATION SOIL PREPARATION:
A. FOUNDATION SOIL SHALL BE EXCAVATED TO THE LINES AND GRADES AS SHOWN ON THE CONSTRUCTION DRAWINGS.
B. FOUNDATION SOIL SHALL BE EXAMINED BY THE ENGINEER OF RECORD TO ASSURE THAT THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS ASSUMED DESIGN STRENGTH.
C. OVER-EXCAVATED AREAS SHALL BE FILLED WITH COMPACTED BACKFILL MATERIAL APPROVED BY EOR.
D. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING STRUCTURES AND UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL ENSURE ALL SURROUNDING STRUCTURES ARE PROTECTED FROM THE EFFECTS OF WALL EXCAVATION.
2. WALL CONSTRUCTION:
WALL CONSTRUCTION SHALL BE AS SPECIFIED ON THE DRAWINGS.
3. GEOGRID INSTALLATION:
A. INSTALL BLOCK WALL TO DESIGNATED HEIGHT OF FIRST GEOGRID LAYER. BACKFILL NOT TO EXCEED 200mm LIFTS BEHIND WALL TO DEPTH EQUAL TO DESIGNED GRID LENGTH BEFORE GRID IS INSTALLED.
B. CUT GEOGRID TO DESIGN EMBEDMENT LENGTH AND PLACE ON TOP OF BLOCK TO WITHIN 25mm OF THE CONCRETE RETAINING WALL FACE. EXTEND AWAY FROM WALL APPROXIMATELY 3% ABOVE HORIZONTAL ON COMPACTED INFILL SOILS.
C. LAY GEOGRID AT THE PROPER ELEVATION AND ORIENTATIONS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE ENGINEER OF RECORD.
D. CORRECT ORIENTATION OF THE GEOGRID SHALL BE VERIFIED BY THE CONTRACTOR AND ENGINEER OF RECORD. STRENGTH DIRECTION IS TYPICALLY PERPENDICULAR TO WALL FACE.
E. FOLLOW MANUFACTURER'S GUIDELINES FOR OVERLAP REQUIREMENTS.
F. PLACE NEXT COURSE OF BLOCK ON TOP OF GRID. REMOVE SLACK AND FOLDS IN GRID AND STAKE TO HOLD IN PLACE.
G. ADJACENT SHEETS OF GEOGRID SHALL BE BUTTED AGAINST EACH OTHER AT THE WALL FACE TO ACHIEVE 100 PERCENT COVERAGE.
H. GEOGRID LENGTHS SHALL BE CONTINUOUS. SPLICING PARALLEL TO THE WALL FACE IS NOT PERMITTED.
4. FILL PLACEMENT:
A. BACKFILL SHALL BE PLACED IN LIFTS AND COMPACTED AS SPECIFIED.
B. BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK OR MOVEMENT OF THE GEOGRID.
C. ONLY HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 900mm BEHIND THE WALL. THIS AREA SHALL BE DEFINED AS THE CONSOLIDATION ZONE. COMPACTION IN THIS ZONE SHALL BEGIN BY RUNNING THE PLATE COMPACTOR DIRECTLY ON THE BLOCK AND THEN COMPACTING IN PARALLEL PATHS TO THE WALL FACE UNTIL THE ENTIRE CONSOLIDATION ZONE HAS BEEN COMPACTED. A MINIMUM OF TWO PASSES OF THE PLATE COMPACTOR ARE REQUIRED WITH MAXIMUM LIFTS OF 200mm.
D. WHEN FILL IS PLACED AND COMPACTION CANNOT BE DEFINED IN TERMS OF STANDARD PROCTOR DENSITY, THEN COMPACTION SHALL BE PERFORMED USING ORDINARY COMPACTION PROCESS AND COMPACTED SO THAT NO DEFORMATION IS OBSERVED FROM THE COMPACTION EQUIPMENT OR TO THE SATISFACTION OF THE ENGINEER OF RECORD.
E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID. A MINIMUM FILL THICKNESS OF 150mm IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TURNING OF TRACKED VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.
F. RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 15km/h. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.
G. THE BACKFILL SHALL BE COMPACTED TO ACHIEVE 95% STANDARD PROCTOR (ASTM D698). SOIL TESTS OF THE INFILL SOIL SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO THE PLACEMENT OF ANY MATERIAL. THE CONTRACTOR IS RESPONSIBLE FOR ACHIEVING THE SPECIFIED COMPACTION REQUIREMENTS. THE ENGINEER OF RECORD MAY DIRECT THE CONTRACTOR TO REMOVE, CORRECT OR AMEND ANY SOIL FOUND NOT IN COMPLIANCE WITH THESE WRITTEN SPECIFICATIONS.
H. AN INDEPENDENT TESTING FIRM SHALL BE HIRED BY THE OWNER TO PROVIDE SERVICES. INDEPENDENT FIRM TO KEEP INSPECTION LOG AND PROVIDE WRITTEN REPORTS AT PREDETERMINED INTERVALS TO THE OWNER.
J. TESTING FREQUENCY SHOULD BE SET TO ESTABLISH A PROPER COMPACTION PROTOCOL TO CONSISTENTLY ACHIEVE THE MINIMUM COMPACTION REQUIREMENTS SET BY THE DESIGN REQUIREMENTS. IF FULL TIME INSPECTION AND TESTING AT 200mm LIFTS IS NOT PROVIDED, THEN THE FOLLOWING TESTING FREQUENCY SHOULD BE FOLLOWED:
i. ONE TEST FOR EVERY 200mm OF VERTICAL FILL PLACED AND COMPACTED, FOR EVERY 7.5m OF RETAINING WALL LENGTH, STARTING ON THE FIRST COURSE OF BLOCK.
ii. VARY COMPACTION TEST LOCATIONS TO COVER THE ENTIRE AREA OF REINFORCED ZONE, INCLUDING THE AREA COMPACTED BY THE HAND-OPERATED COMPACTION EQUIPMENT.
iii. ONCE PROTOCOL IS DEEMED ACCEPTABLE, TESTING CAN BE CONDUCTED RANDOMLY AT LOCATIONS AND FREQUENCIES DETERMINED BY THE ON-SITE SOILS ENGINEER.

LIST OF STRUCTURAL DRAWINGS

- SK1: COVER SHEET
SK2: GENERAL NOTES
SK3: REPAIR PLAN
SK4: LOCKBLOCK PLANS
SK5: REPAIR SECTION
1. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS. COORDINATE STRUCTURAL WORK WITH ELECTRICAL DRAWINGS FOR DETAILED DIMENSIONS.
2. THE DRAWINGS SHOW THE COMPLETED PROJECT. THEY DO NOT INCLUDE PROVISIONS THAT MAY BE REQUIRED FOR CONSTRUCTION AND SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY AND ALL CONSTRUCTION PROCEDURES USED IN CARRYING OUT THE WORKS, INCLUDING THE REQUISITE ENGINEERING AND DESIGN OF TEMPORARY STRUCTURES, FORMWORK, SHORING ETC.
3. ONLY DRAWINGS DESIGNATED 'ISSUE FOR CONSTRUCTION' IN THE REVISION DESCRIPTION ARE TO BE USED FOR CONSTRUCTION PURPOSES
4. DESIGN CODES:
- 2018 BRITISH COLUMBIA BUILDING CODE - PART 4 REGIONAL DISTRICT OF CENTRAL KOOTENAY BUILDING BYLAW NO. 2200-2010
- CSA S6-19 CANADIAN HIGHWAY BRIDGE DESIGN CODE
LOADS:
A) TRAFFIC CL-625 TRUCK

CONCRETE

- 1. PROVIDE CONCRETE AND PERFORM WORK TO CSA-A23.1.
2. MINIMUM 28 DAY COMPRESSIVE STRENGTHS AS INDICATED BELOW. ALL CONCRETE SHALL BE NORMAL WEIGHT - 24 kN/m³, TYPE GU CEMENT WITH STONE AGGREGATE SIZE AS NOTED:

Table with 4 columns: SLAB/INFILL, STRENGTH, MAX AGG SIZE, SLUMP, AIR CONT %

- 3. THE OWNER SHALL ARRANGE FOR AN INDEPENDENT CSA CERTIFIED TESTING AGENCY TO PERFORM CONCRETE TESTS FOR EACH POUR.
4. THE CONTRACTOR SHALL NOTIFY THE SELECTED TESTING AGENCY 24 HOURS IN ADVANCE OF POURS.
5. THE CONTRACTOR SHALL CO-OPERATE FULLY WITH THE TESTING AGENCY.
6. DO NOT USE ADMIXTURES OTHER THAN AIR ENTRAINMENT, STANDARD WATER REDUCERS OR SUPER PLASTICIZERS WITHOUT PRIOR APPROVAL OF THE ENGINEER. NO CALCIUM CHLORIDE PERMITTED IN CONCRETE.
7. REJECT ALL CONCRETE WHEN TIME BETWEEN BATCHING AND PLACING EXCEEDS 2 HOURS.
8. DO NOT ADD WATER TO THE CONCRETE ON SITE.
9. CONSOLIDATE ALL CONCRETE USING MECHANICAL VIBRATORS.
10. PROTECT CONCRETE FROM ADVERSE WEATHER CONDITIONS DURING CURING IN ACCORDANCE WITH CSA A23.1.
11. CONSTRUCT FORMWORK IN ACCORDANCE WITH WORKSAFEBC REGULATIONS AND CSA S269.1. FORMWORK AND SHORING DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR.
12. FORMWORK SHALL NOT BE STRIPPED UNTIL CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF 10 MPA.
13. THE STRENGTH OF CONCRETE FOR STRIPPING SHALL BE CONFIRMED BY TESTING OF FIELD CURED TEST CYLINDERS.
14. CONSTRUCTION JOINTS TO BE ROUGH AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. SUBMIT PROPOSED DETAILS AND LOCATIONS OF ALL CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS TO THE ENGINEER FOR APPROVAL.
15. EMBEDMENT OF CONDUITS, PIPES, AND SLEEVES IN FOOTING AND PEDESTAL TO BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO POURING.

CONCRETE REINFORCEMENT

- 1. REINFORCING SHALL BE BILLET STEEL AND CONFORM TO THE FOLLOWING STANDARDS: ALL DEFORMED REINFORCING BAR: CSA G30.18 400 MPA
WELDED WIRE MESH: CSA G30.5 & G30.15
2. ALL REINFORCING SHALL BE NEW AND STRAIGHT, FREE OF RUST, SCALE AND OIL.
3. PLACE REINFORCING BARS TO CSA A23.1. TIE ALL BARS SECURELY IN PLACE TO PREVENT DISPLACEMENT. SUPPORT FOOTING REINFORCING ON SUITABLE CHAIRS OR SUPPORTS AT MAXIMUM 914mm CENTERS.
4. REBAR CAGES ARE TO BE SECURED WITHIN THE FORMS TO PROVIDE THE CORRECT FORM CLEARANCE. HOOKED DOWELS SHALL BE PROVIDED TO MATCH PEDESTAL VERTICAL BAR. DOWEL HOOK TO BE PLACED ON BOTTOM MAT OF FOOTING REBAR AND EXTEND A LAP LENGTH WITH THE PEDESTAL VERTICALS.
5. PROVIDE CLEAR CONCRETE COVER FOR REBAR AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS:
SURFACE POURED AGAINST GROUND: 75mm
FORMED SURFACE EXPOSED TO GROUND OR WEATHER: 60mm
6. NO SPLICING OF BARS IS PERMITTED FOR BARS SHOWN ON THE DRAWINGS WITH STANDARD LENGTHS. MECHANICAL AND WELDED SPLICING OF REBAR IS NOT PERMITTED.
7. BEND RADII AND REBAR DETAILS SHALL BE IN CONFORMANCE WITH CSA A23.1
8. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI DETAILING MANUAL OR THE REINFORCING STEEL INSTITUTE OF CANADA DETAILING MANUAL.
9. REINFORCING TO BE CONTINUOUS UNLESS NOTED. UNLESS NOTED OTHERWISE, EMBEDMENT AND LAP LENGTHS TO BE IN ACCORDANCE WITH THE SCHEDULE ON THE DRAWINGS. WHERE REINFORCEMENT LAPS ARE REQUIRED IN ADJACENT BARS, STAGGER LAPS A MINIMUM OF 1219mm UNLESS NOTED OTHERWISE.
10. 90 DEGREE AND 180 DEGREE HOOKS SHALL BE DETAILED AS STANDARD HOOKS UNLESS NOTED OTHERWISE.
11. UNLESS NOTED OTHERWISE ON THE DRAWINGS THE FOLLOWING REINFORCEMENT SPLICES SHALL APPLY. USE TENSION SPLICE WHERE NO SPLICE TYPE IS INDICATED ON THE DRAWINGS.

Table with 2 columns: BAR SIZE, TENSION SPLICE - CLASS B

- 12. UNLESS NOTED OTHERWISE ON THE DRAWINGS THE FOLLOWING REINFORCEMENT EMBEDMENT LENGTHS SHALL APPLY. USE TENSION AND COMPRESSION EMBEDMENT LENGTHS AS INDICATED ON THE DRAWINGS. USE TENSION EMBEDMENT WHERE NO EMBEDMENT TYPE IS INDICATED ON THE DRAWINGS.

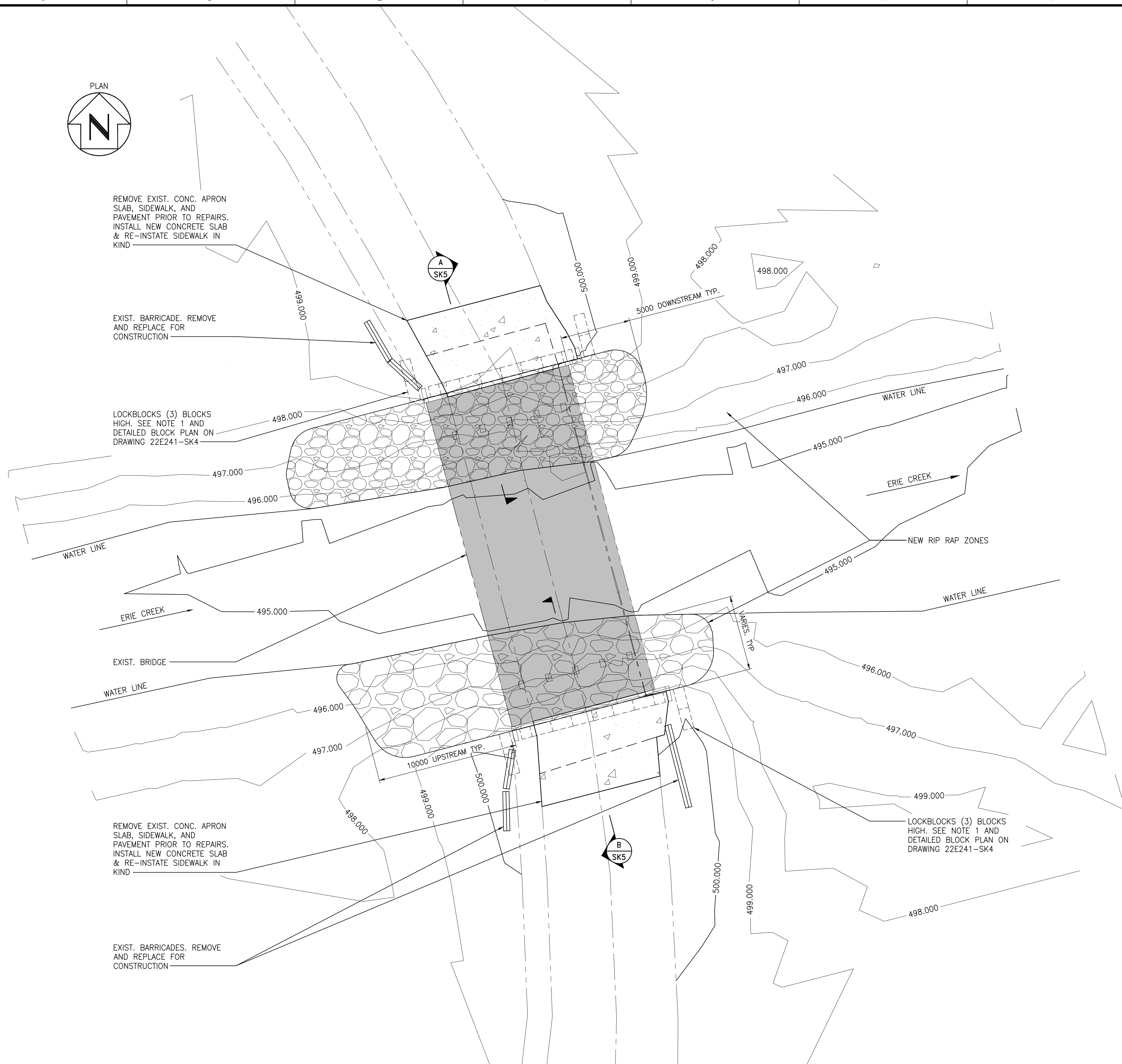
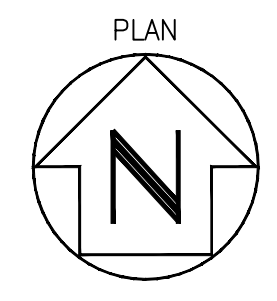
Table with 3 columns: BAR SIZE, COMP. EMBEDMENT, TENSION EMBEDMENT

CONSTRUCTION TOLERANCES

- 1. MAXIMUM STRUCTURAL VARIATION FROM PLUMB 1:400.
2. MAXIMUM STRUCTURAL VARIATION FROM LEVEL 6mm IN 3048mm TO A MAXIMUM OF 10mm.
3. WHERE CLOSER TOLERANCES ARE SPECIFIED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS, THEY SHALL TAKE PRECEDENCE.

PRELIMINARY NOT FOR CONSTRUCTION

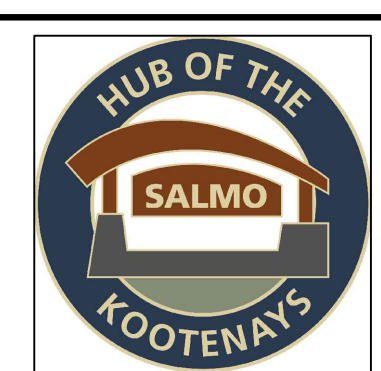
Table with columns for revision, approval, design, and project information. Includes logos for Hub of the Salmo Kootenays and Redwood Engineering Ltd.



**PRELIMINARY
NOT FOR CONSTRUCTION**

PLAN - ABUTMENT AND RIP RAP REPAIRS
1:150

9									APPROVAL	J.HETH	-
8											
7											
6											
5								DESIGN CHECKED BY	-	-	
4								CHECKED BY	-	-	
3								DESIGNED BY	J.TOWNSEND	2023/03/20	
2								DRAWN BY	T.SUKKAU	2023/03/21	
1	22E241-SK1 THROUGH SK5	GLLENDALE BRIDGE SLAB AND RIP RAP REPAIR DRAWINGS						NAME		DATE	
REV.	NO.	REVISION DESCRIPTION	DATE	BY	CHK'D	APP'D	NO.	DWG. NO.	REFERENCE DRAWINGS	ENGINEERING REVIEW	



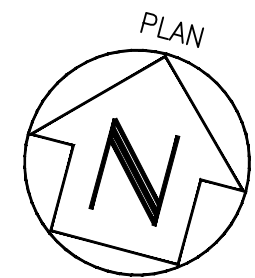
PROJECT NUMBER:	22E241
SCALE:	AS NOTED

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 605/2094-1984
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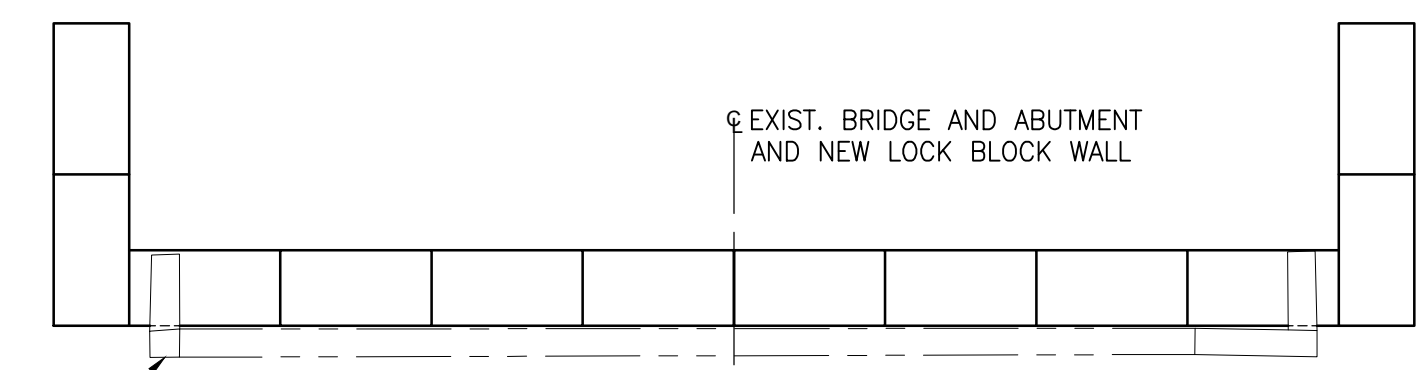
TITLE
**GLLENDALE AVE, SALMO, BC
 ERIE CREEK BRIDGE CROSSING
 SLAB AND RIP RAP REPAIRS
 REPAIR PLAN**

DWG. NO. **22E241-SK3**

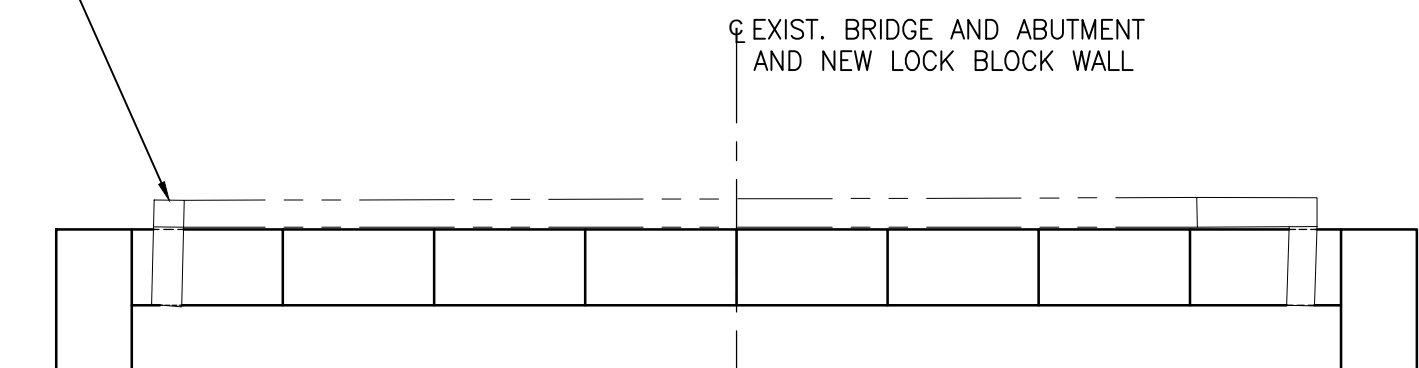
REV. **A**



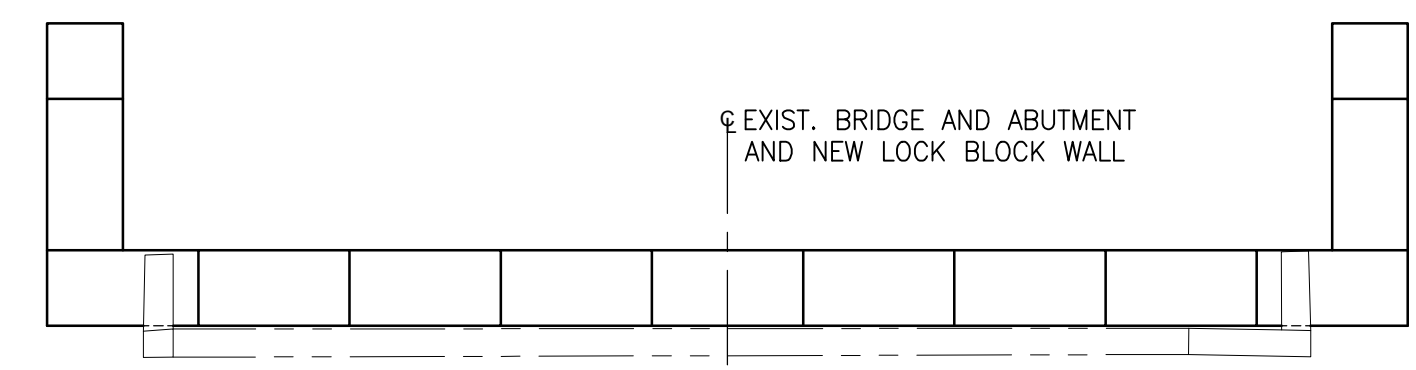
EXISTING ABUTMENT, TYP ALL LOCKBLOCK PLANS



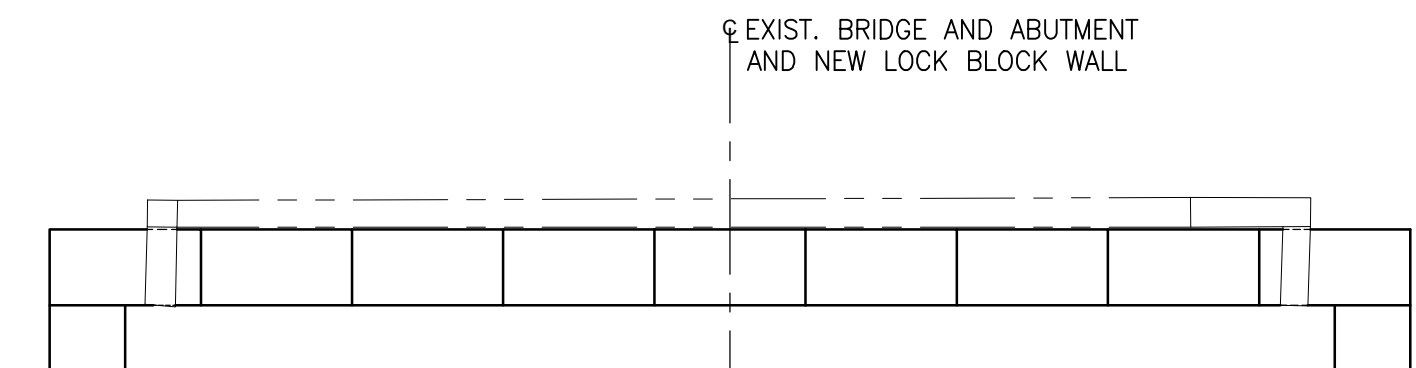
BOTTOM COURSE



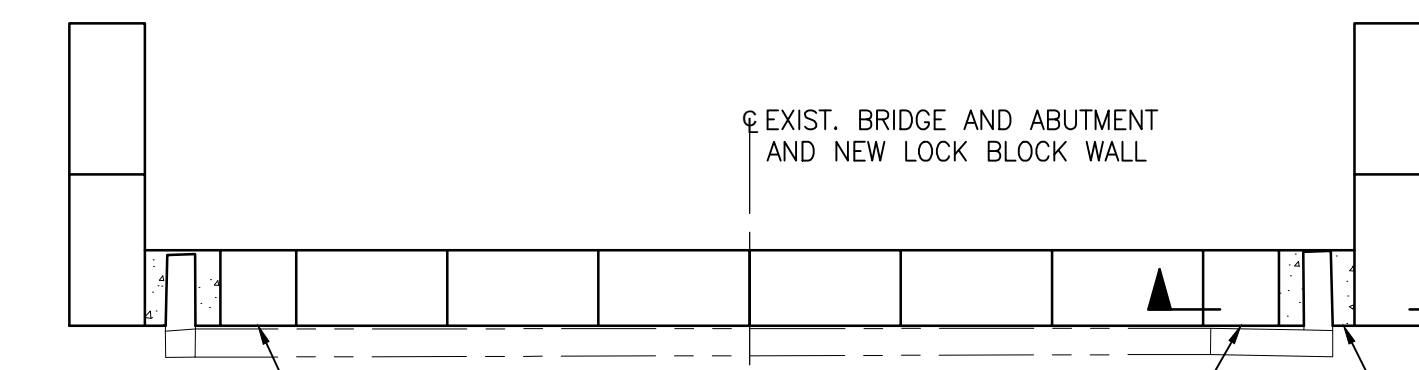
MIDDLE COURSE



BOTTOM COURSE



MIDDLE COURSE



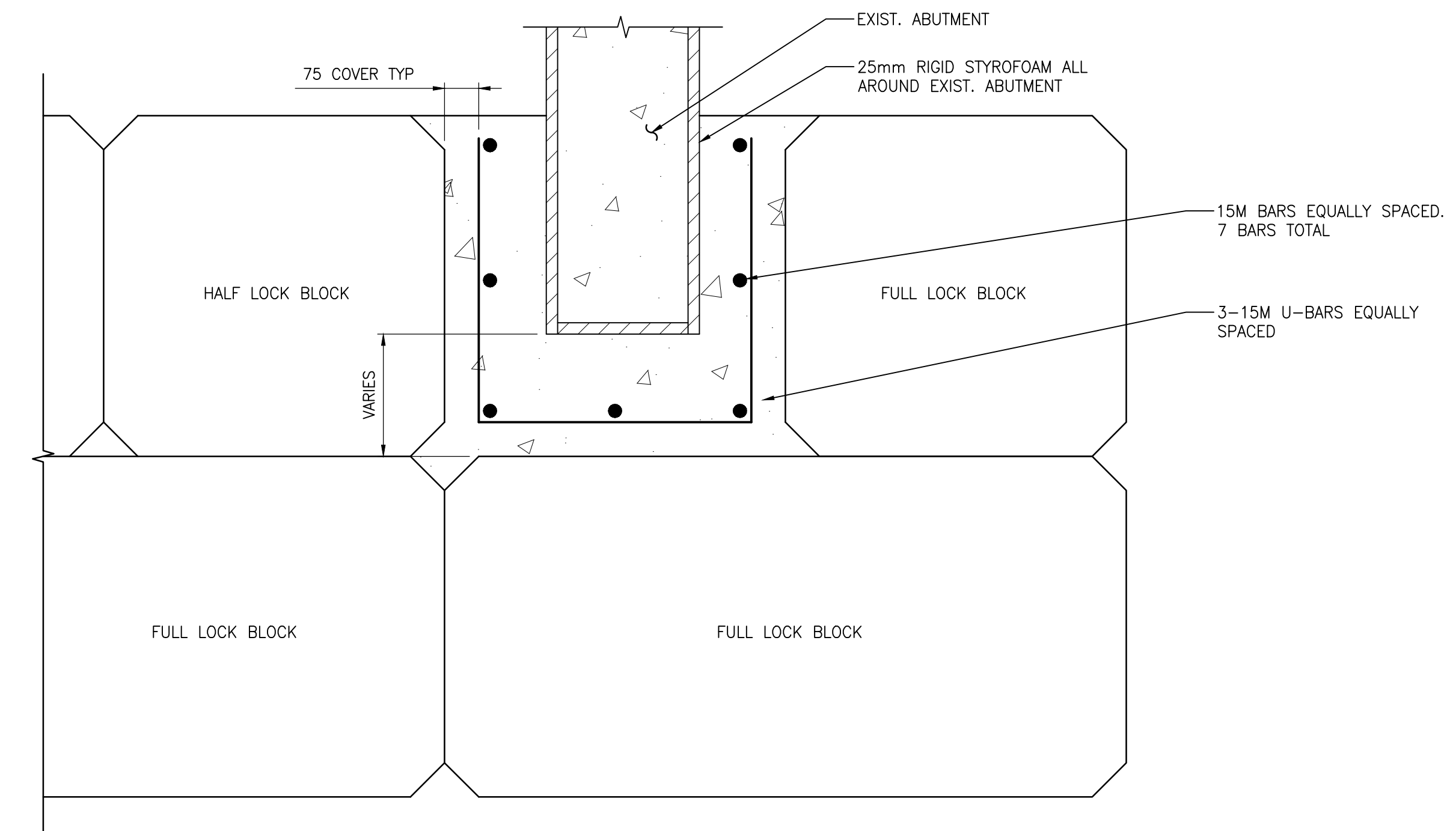
TOP COURSE

PLAN - NORTH ABUTMENT LOCKBLOCK PLANS
1:75

PLAN - SOUTH ABUTMENT LOCKBLOCK PLANS
1:75

LOCK BLOCK SCHEDULE

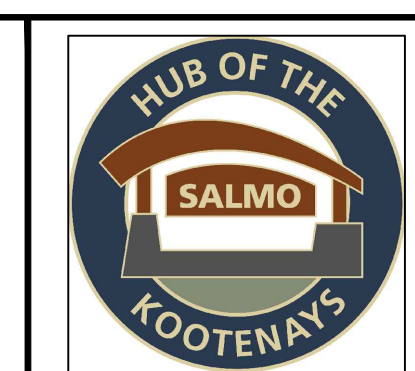
- 46 FULL SIZE BLOCKS
- 4 HALF BLOCKS
- 10 FULL SIZE FLAT TOP BLOCKS
- 4 HALF SIZE FLAT TOP BLOCKS



SECTION C
1:10 TYPICAL 4 LOCATIONS

**PRELIMINARY
NOT FOR CONSTRUCTION**

9									APPROVAL	J.HETH	-
8											
7											
6											
5								DESIGN CHECKED BY	-	-	
4								CHECKED BY	-	-	
3								DESIGNED BY	J.TOWNSEND	2023/03/20	
2								DRAWN BY	T.SUKKAU	2023/03/21	
1	ISSUE FOR REVIEW	2023/03/30	T.SUKKAU	F.MACKINNON	J.TOWNSEND			NO.	DWG. NO.	REFERENCE DRAWINGS	ENGINEERING REVIEW



PROJECT NUMBER: 22E241

SCALE AS NOTED

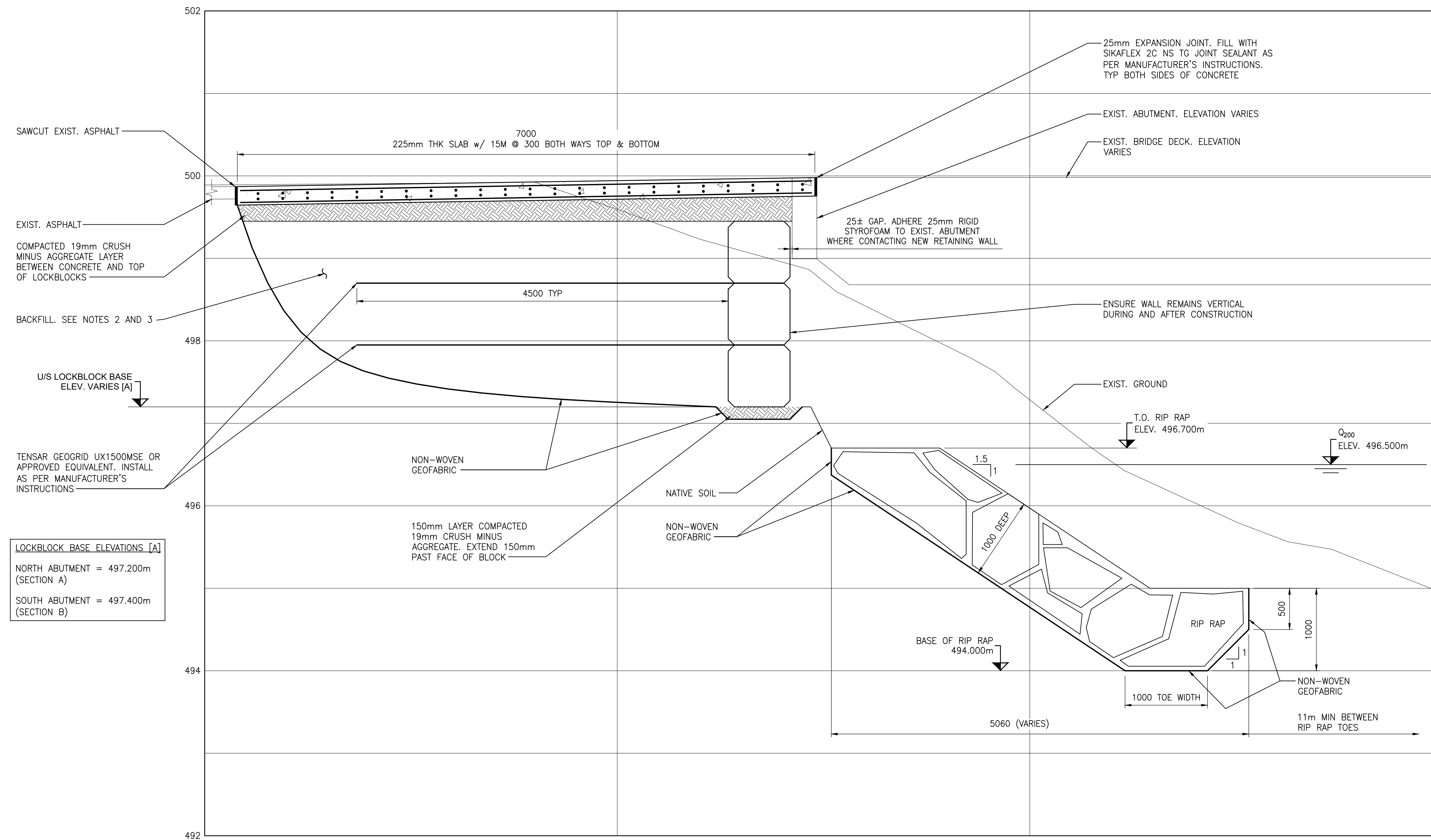
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602/250-1984
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TITLE
GLENDALE AVE, SALMO, BC
ERIE CREEK BRIDGE CROSSING
SLAB AND RIP RAP REPAIRS
LOCKBLOCK PLANS

DWG. NO. 22E241-SK4

REV. A



LOCKBLOCK BASE ELEVATIONS [A]

NORTH ABUTMENT = 497.200m (SECTION A)

SOUTH ABUTMENT = 497.400m (SECTION B)

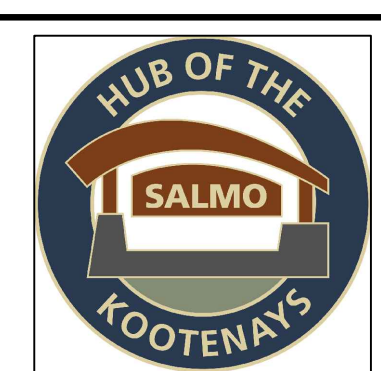
CLASS OF RIP RAP (kg)	NOMINAL THICKNESS (mm)	ROCK GRADATION: PERCENT SMALLER THAN GIVEN MASS AND SIZE					
		15%	50%	85%			
250	1000	25kg	260mm	250kg	565mm	750kg	815mm

SECTION A B
1:30 SK3 SK3

**PRELIMINARY
NOT FOR CONSTRUCTION**

REV.	ISSUE FOR REVIEW	DATE	BY	CHK'D	APP'D	NO.	DWG. NO.	REFERENCE DRAWINGS	ENGINEERING REVIEW
1	ISSUE FOR REVIEW	2023/03/30	T.SUKKAU	F.MACKINNON	J.TOWNSEND	1	22E241-SK1 THROUGH SK5	GLENDALE BRIDGE SLAB AND RIP RAP REPAIR DRAWINGS	NAME DATE

APPROVAL	J.HETH	-
DESIGN CHECKED BY	-	-
CHECKED BY	-	-
DESIGNED BY	J.TOWNSEND	2023/03/20
DRAWN BY	T.SUKKAU	2023/03/21



PROJECT NUMBER:	22E241
SCALE:	AS NOTED

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Trail, B.C. Canada
605/25094-1688
605/25094-1984
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TITLE
GLENDALE AVE, SALMO, BC
ERIE CREEK BRIDGE CROSSING
SLAB AND RIP RAP REPAIRS
REPAIR SECTION

DWG. NO. 22E241-SK5



REV. A



GLENDALE AVE BRIDGE REPAIRS – APRON AND RIPRAP

To:	James Heth – Chief Administrative Officer – Village of Salmo
Cc:	
Project Name:	Glendale Ave Bridge Repairs – Apron Slab and Riprap – Class 3 Estimate
Project No:	22E241
Document No:	22E241-C3E-001

REVISION HISTORY			
Rev	Date	Description	Completed By
0	April 25, 2023	Issued for Record	Redwood Engineering Ltd.

Approvals			
Prepared By	F. MacKinnon, EIT		Date APRIL 26, 2023
Reviewed By	J. Townsend, P.Eng.		Date APR 26 / 23
Approved By Village of Salmo			Date

PERMIT TO PRACTICE
 REDWOOD ENGINEERING LTD.

RR SIGNATURE: *F. Burch*

DATE: 2023-04-26

PERMIT NUMBER: 1000559
 ENGINEERS & GEOSCIENTISTS
 BRITISH COLUMBIA



GLENDALE AVE BRIDGE REPAIRS – APRON AND RIPRAP

2.0 SCOPE OF WORK

General

The complete scope of work is described by the construction drawings shown in Appendix 3.

The repairs focus on installing retaining walls and riprap at both abutments.

Two (2) concrete block (Lock-Block) retaining walls shall be installed to retain the fill supporting the apron slabs and prevent future erosion. The retaining walls shall be three (3) blocks high for the length of the ballast walls. Cast-in-place concrete infill is required in the top course of blocks where the wall intersects the existing ballast wall.

The existing apron slabs will require demolition to install the new retaining wall. New cast-in-place reinforced concrete apron slabs shall be installed after the retaining walls to replace the existing apron slabs.

The existing riprap bank protection has deteriorated. A new riprap blanket shall be installed from 10m upstream to 5m downstream of the bridge. The riprap will provide bank stability and prevent erosion from high water events.

Battery Limits

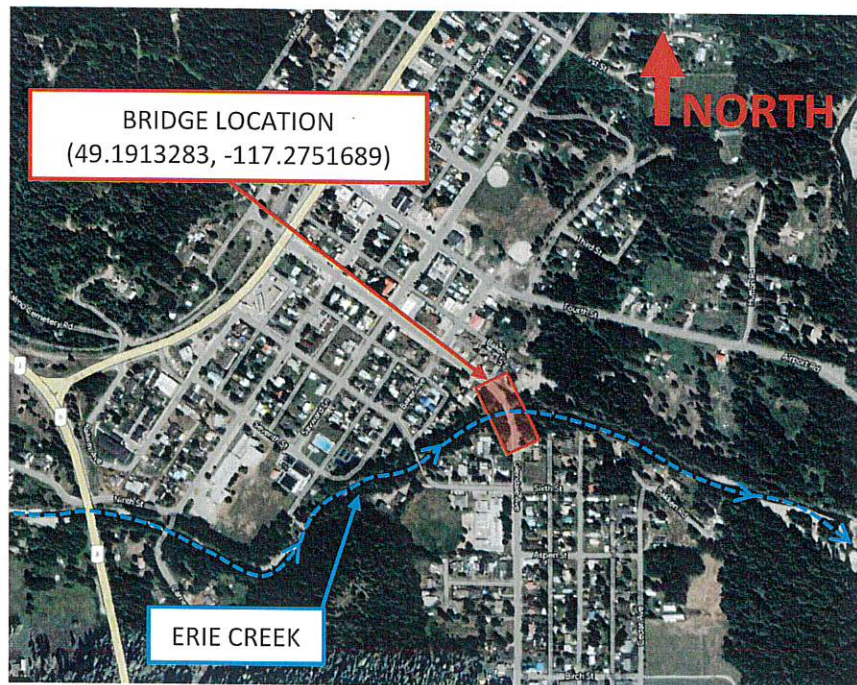


Figure 1: Battery Limits of Repair Area – Satellite Photo of The Village of Salmo (Google Maps 2023)

SUPPLEMENTARY SPECIFICATION 1.0

Proposed Fish Barrier – Glendale Bridge – Erie Creek

Bulk bags – Sturdy. Need poly and small bags to get a decent seal.



Alternative Methods – Subject to Approval by contract Administrator and Environmental Monitor.

A.1. Turbidity curtain – easy to deploy. May be expensive and take time to order unless one is available locally (YRB, McNally have one).



A.2. Geotextile fence – inexpensive, can be made using t-stakes, non-woven geotextile and wire fence support, with sandbags/rocks on the bottom. More labour to install and remove.

