

Atlantic Pilotage Authority







Herring Cove Breakwater Replacement

Issued for Tender

Atlantic Pilotage Authority

Herring Cove Breakwater Replacement

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END OF SECTION

1. GENERAL

- .1 The project is located at the Breakwater Structure in Herring Cove in the Halifax Regional Municipality, Nova Scotia. The Work generally involves encapsulating the existing timber crib structure with armour stone. The Work includes but not is necessarily limited to:
- .1 Mobilization and demobilization, including all plant, labour, equipment, security measures, and temporary facilities as specified and as required to carry out the work.
 - .2 Environmental protection including the provision of netting, floating booms, silt curtains, and work platforms. Disposal of debris or removed materials in the water is prohibited.
 - .3 Selective removal and disposal of concrete deck sections, damaged timber crib and ballast, as shown on the Drawings.
 - .4 Determination of existing harbour bottom conditions, in consultation with the Consultant, to determine if it is suitable for placing armour stone.
 - .5 Provisional excavation and off-site disposal of unsuitable material, and supply and installation of filter stone, to facilitate placing of armour stone, as shown on the Drawings and directed by the Consultant.
 - .6 Supply and installation of armour stone, as shown on the Drawings and directed by the Consultant.
 - .7 Installation of new timber wheel guard at end of existing timber crib section which is to remain.

2. LIST OF
DRAWINGS

<u>Dwg. No.</u>	<u>Title</u>
S01	Existing Conditions and Removals
S02	New Breakwater Plan and Sections
S03	New Breakwater Sections

END OF SECTION

1. A complete Tender is comprised of the following:
 - a) The Tender Form in its entirety, with all pages and spaces for entry of information by Tenderers filled in as instructed.
 - b) Addenda received by the Tenderer during the tendering period.
 - c) Tender Security (refer to clause 12 herein).
2. The tender shall be submitted in a sealed envelope marked as follows:

TENDER FOR

Atlantic Pilotage Authority
Herring Cove Breakwater Replacement
Contract No. 190248.00

and must be delivered to the following address **up until 2:00 p.m.**, local time, on **Wednesday, March 4th, 2020**, hereinafter referred to as the Tender Closing.

Atlantic Pilotage Authority
1791 Barrington Street, Suite 1801
Halifax, NS B3J 3K9

Attention: Sean Griffiths, CEO

3. Tender opening will occur promptly following Tender Closing. Tender opening will be public.
 4. Before tendering, Tenderers shall have examined the site of the work and shall have satisfied themselves as to the working conditions, including labour conditions and labour rules, the nature and kind of work to be done, any special risks associated therewith and all other matters which may be necessary in order to form a proper conception under which the work will be required to be performed. Tenderers shall not be entitled to claim at any time after closing of tenders that there was any misunderstanding in regard to all such conditions.
 5. When forming their estimates and preparing their tenders, Tenderers shall take full cognizance of the content of all the Contract Documents listed in Section 00 41 43.
 6. Any ambiguities, inconsistencies, or uncertainties in the Contract Documents which may become apparent to Tenderers when tendering shall be advised in writing to the Consultant at 1505 Barrington Street, Suite 901, Attention: Jeff MacKenzie, P.Eng., at jeffmac@cbcl.ca or Fax: 902-423-3938, not less than three (3) working days before Tender Closing. Tenderers will be advised simultaneously of any decisions on such matters as necessary by means of addenda (which will be serially numbered) and all addenda issued shall be incorporated into the Contract Documents.
-

7. Tenderer shall fill in the Completion Time and is notified that the completion date based on this may be taken into account in considering the tenders.
 8. All tenders shall be valid for acceptance for sixty (60) calendar days from the Closing Date.
 9. The Agreement is included in the Contract Documents at the time of tendering is only for information and shall not be completed at the time of tendering.
 10. The appending of any qualifying clauses to the tender or failure to comply with these instructions and with all other relevant provisions contained in the documents in the completing of any tender may render such tender liable to disqualification as determined by the Owner.
 11. Contract Price to exclude HST. Harmonized sales tax shall be indicated as a separate amount and included in the Total Amount Payable.
 12. Each tender shall be accompanied by Tender Security in the amount of ten percent (10%) of the Total Amount Payable in evidence of the bona fide nature of the tender.
 - .13 Tender Security shall be in favour of the Owner and shall be in the form of a Certified Cheque, irrevocable Letter of Credit or a Bid Bond which shall guarantee to the Owner that in the event of the successful Tenderer declining to enter into a formal agreement with the Owner as called for in the Contract Documents, or declining or neglecting to provide the Insurance or Contract Security required by the Contract Documents, then the Owner will be reimbursed the additional cost of accepting another tender or Tender Security amount, whichever is the lesser.
 - .1 The bonds shall be issued by a company whose guarantee bonds are acceptable to the Government of Canada. Use the latest edition of CCDC Form 220.
 14. The Tender Security of the unsuccessful Tenderers will be returned to them after the Owner enters into a formal agreement with the successful Tenderer or the expiration of validity of their tenders, whichever occurs first.
 15. On the written acceptance by the Owner of a tender, that tender becomes the Contract and the Tenderer who has submitted it becomes the Contractor. The Contractor will be required to enter into a formal agreement with the Owner following receipt of a written notice of acceptance from the Owner. The written notice of acceptance forms a Contract Agreement until the formal "Agreement" is executed.
 16. Within seven (7) days of written acceptance of a tender that tender shall provide Contract Security in the amount and form as specified in GC 11.2 and as supplemented in Section 00 73 10, and Insurance as specified in GC 11.1.
-

17. Complete the Tender Form in ink and have corrections initialled by the individual signing the tender.
18. Where manufactured articles are described or specified in the Contract Documents by name, catalogue number of a manufacturer or supplier, Tenderers shall tender on the basis of using only such articles. Procedure concerning substitution of a specified article with another shall be in accordance with equivalents and alternates in Section 01 60 00.
19. The Owner will not defray any expenses whatsoever incurred by Tenderers in the preparation and submission of their tenders. The Owner reserves the right to waive any formality or technicality in any tender.
20. The Owner reserves the right to accept or to reject any or all tenders received, or to select a tender which is deemed by the Owner to be in its best interests. The Owner reserves the right to negotiate with the lowest compliant tenderer in the event that all tendered prices are higher than anticipated.
21. Tenders, which in the opinion of the Owner are considered to be informal or unbalanced, may be rejected.
22. Tenders may be amended or withdrawn without penalty, by letter, or facsimile, at (902) 423-3938, prior to Tender Closing. Amendments shall not disclose either original or revised total price.
 - .1 Head amendment or withdrawal as follows: "[Amendment]/[Withdrawal] of Tender for the "Atlantic Pilotage Authority, Contract No. 190248.00". Sign and seal as required for tender, and submit at address given for receipt of tenders. All Submissions must be received prior to Tender Closing.
 - .2 For response submitted by fax, responders may revise their bid by facsimile or letter, provided that the revision is received prior to Closing. Revisions by facsimile must be sent to the facsimile number as indicated above. The Owner will not be responsible for any failure attributable to the mechanical or electronic transmission or reception of the facsimile.
23. Tenderers are to attend a mandatory site meeting, held at the Herring Cove Breakwater at 11:00 am on Wednesday, February 26th, 2020. Questions may be asked and description of the Work may be discussed during this meeting, however no minutes of the meeting will be distributed. Modifications made by way of addenda, to tendering requirements or the Contract Documents, shall be binding.

1. SALUTATION:

- .1 To: Atlantic Pilotage Authority
1791 Barrington Street, Suite 1801
Halifax, NS B3J 3K9
- .2 For: Herring Cove Breakwater Replacement
Contract No. 190248.00
- .3 From: _____

2. TENDERER DECLARES:

- .1 That this tender was made without collusion or fraud.
- .2 That the proposed work was carefully examined.
- .3 To have personal knowledge of the location of the proposed Work and is informed as to the actual conditions and requirements, including labour conditions and labour rules and shall not claim at any time after execution of the Agreement that there was any misunderstanding in regard to such conditions and requirements.
- .4 That Contract Documents and Addenda No. ___ to ___ inclusive were carefully examined.
- .5 That all the above were taken into consideration in preparation of this Tender.

3. TENDERER AGREES:

- .1 To enter into a contract to supply all labour, material and equipment and to do all work necessary to construct the Work as described and specified herein for the unit prices stated in Subsection 4 hereunder, Schedule of Quantities and Unit Prices.
- .2 That the estimated Contract Price shall be the sum of the products of the tendered unit prices multiplied by the estimated quantities in Subsection 4 hereunder.
- .3 That this Tender is valid for acceptance for sixty (60) days from the time of Tender Closing.
- .4 That measurement and payment for items listed in Subsection 4 hereunder shall be in accordance with corresponding items in Section 01 22 00 Measurement and Payment.
- .5 Upon request to provide evidence of ability and experience within
-

7 days of request, including experience in similar work, work currently under contract, senior supervisory staff available for the project, equipment available for use on the Work, and financial resources.

- .6 To execute in triplicate the Agreement and forward same together with the specified contract security and insurance documents to the Owner within fourteen (14) days of written notice of award.
 - .7 That failure to enter into a formal contract and give specified insurance documents and contract security within time required will constitute grounds for forfeiture of certified cheque or enforcement of bid bond.
 - .8 That if certified cheque is forfeited, Owner will retain difference in money between amount of Tender and amount for which Owner legally contracts with another party to perform the Work and will refund balance, if any, to Tenderer.
 - .9 Declares to have carefully examined the documents and Addenda No. ____ to ____ referred to in the first paragraph of this Tender Form, and the Tenderer hereby accepts and agrees to the same as forming a part of the Contract.
 - .10 Understands that in the event that the tendered Contract Price is not within the project budget, the Owner has the right to negotiate the Contract with the low bidder or reject all tenders received.
 - .11 Agrees that the Warranty Period defined in the Contract Documents shall be for a period of one (1) year from the date of Substantial Performance of the Work.
 - .12 Understands that Substantial Performance of the Work will be established in accordance with General Conditions of the Contract and applicable lien legislation.
 - .13 Understands that after the issuance of the certificate of Substantial Performance of the Work by the Consultant, provided that the Contractor has relieved the Owner from any and all claims, demands and lien claims for and in respect of the Contract, and has completed all outstanding items and corrected all deficiencies, the Contractor shall submit an application for Final Payment and the Consultant will thereafter prepare the Final Certificate for payment in accordance with the General Conditions of the Contract and applicable lien legislation
 - .14 Understands that the payment of holdback will be in accordance with the General Conditions of the Contract and subject to the provisions of the lien legislation applicable to the Place of Work.
-

- .15 Understands the occupational Health and Safety Legislation and any Workers or Workplace compensation legislation applicable to the Place of the Work and declares that they are in good standing and have all necessary certification as required by such legislation.
- .16 Agrees that time shall be construed as being of the essence of the Contract.
- .17 That the Contract Documents include:
- .1 Tender Form
 - .2 Form of Agreement
 - .3 CCDC 18-2001, Civil Work Contract
 - .4 Supplementary General Conditions
 - .5 List of Technical Specifications
 - .6 Drawings
- | <u>Dwg. No.</u> | <u>Title</u> |
|-----------------|----------------------------------|
| S01 | Existing Conditions and Removals |
| S02 | New Breakwater Plan and Sections |
| S03 | New Breakwater Sections |
- .7 Addenda as issued and as confirmed in subsection 2.4 of this section.
-

4. SCHEDULE OF QUANTITIES AND UNIT PRICES

Item No.	Description	Unit of Measurement	Estimated Quantity	Unit Price	Total Price
1.	Mobilization/ Demobilization	L.S.	1		
2.	Removals - Concrete	L.S.	1		
3.	Removals - Timber Crib/Ballast	L.S.	1		
4.	Armour Stone				
	.1 2.0 to 5.0 tonne	m ³	100		
	.2 5.0 to 7.0 tonne	m ³	215		
	.3 7.0 to 10.0 tonne	m ³	560		
5.	Excavation - Unsuitable (Provisional)	m ³	770		
6.	Filter Stone (Provisional)	m ³	770		
				SUBTOTAL \$	

TENDER SUMMARY

ESTIMATED CONTRACT PRICE (Excluding HST) \$ _____
Add HST (15% of the Estimated Contract Price) \$ _____
TOTAL AMOUNT PAYABLE \$ _____

TENDERER'S HST REGISTRATION NO. _____

5. COMPLETION TIME

1. Tenderer agrees to complete Substantial Performance of the Work within _____ weeks from written notification of Award.

6. SIGNATURE *

DATED THIS _____ DAY OF _____, 202__.

[Seal]

Name of Firm Tendering

Signature of Signing Officer

Witness

Name and Title (Printed)

Witness

Signature of Signing Officer

Name and Title (Printed)

Company Address

Telephone No.

Fax No.

*NOTE: Tenders submitted by or on behalf of any Corporation must be signed and sealed in the name of such Corporation by a duly authorized officer or agent.

END

**CIVIL WORKS CONTRACT
CCDC 18-2001
AGREEMENT BETWEEN OWNER AND CONTRACTOR**

AGREEMENT BETWEEN OWNER AND CONTRACTOR

This Agreement made on the ____ day of _____ in the year _____.

by and between

_____ hereinafter called the "*Owner*"

and

_____ hereinafter called the "*Contractor*"

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

ARTICLE A-1 THE WORK

The *Contractor* shall:

1.1 perform the *Work* required by the *Contract Documents* for _____

_____ *insert above the title of the Work*

located at _____ *insert above the Place of the Work*

for which the Agreement has been signed by the parties, and for which _____

_____ *insert above the name of the Consultant*

is acting as and is hereinafter called the "*Consultant*" and

1.2 do and fulfill everything indicated by the *Contract Documents*, and

1.3 commence the *Work* by the ____ day of _____ in the year _____ and, subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Substantial Performance of the Work*, by the ____ day of _____ in the year _____

ARTICLE A-2 AGREEMENTS AND AMENDMENTS

- 2.1 The *Contract* supersedes all prior negotiations, representations, or agreements, either written or oral, relating in any manner to the *Work*, including the bidding documents that are not expressly listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS.
- 2.2 The *Contract* may be amended only as provided in the *Contract Documents*.

ARTICLE A-3 CONTRACT DOCUMENTS

- 3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement - THE WORK:
- Agreement Between *Owner* and *Contractor*
 - Definitions
 - The General Conditions of the Contract
 - *

- * *(Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g.:*
- *Supplementary Conditions;*
 - *Schedule of Prices;*
 - *Specifications, giving a list of contents with section numbers and titles, number of pages, and date;*
 - *Drawings, giving drawing number, title, date, revision date or mark;*
 - *Addenda, giving title, number, date;*
 - *Information documents, or parts thereof, to be incorporated in the Contract Documents identifying them by title, date, name of preparer and, if not included in their entirety, the page or sheet numbers to be included).*

ARTICLE A-4 CONTRACT PRICE

4.1 * *Unit Prices* form the basis for payment of the *Contract Price*. Quantities in the *Schedule of Prices* are estimated. The estimated *Contract Price*, which is the total extended amount indicated in the *Schedule of Prices*, is:

OR

* A lump sum stipulated price forms the basis for payment of the *Contract Price*. The *Contract Price* is:

* *(Strike out inapplicable paragraph)*

_____/100 dollars \$ _____

4.2 All amounts are in Canadian funds and exclude Value Added Taxes.

4.3 These amounts shall be subject to adjustments as provided in the *Contract Documents*.

ARTICLE A-5 PAYMENT

5.1 Subject to the provisions of the *Contract Documents*, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a holdback of _____ percent (_____%), the *Owner* shall in Canadian funds:

- .1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* together with such *Value Added Taxes* as may be applicable to such payment, and
- .2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, and
- .3 upon the issuance of the final certificate for payment, pay to the *Contractor* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.

5.2 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payments shall be made to the *Contractor* in accordance with the provisions of GC 11.1 - INSURANCE.

5.3 Interest

- .1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by arbitration or court, interest at two percent (2%) per annum above the prime rate on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded and adjusted on a monthly basis. The prime rate shall be the rate of interest quoted by _____ for prime business loans. *(Insert name of chartered lending institution whose prime rate is to be used)*
- .2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.3.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the General Conditions - DISPUTE RESOLUTION or otherwise, from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until it is paid.

ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES

6.1 Notices in writing between the parties or between them and the *Consultant* shall be considered to have been received by the addressee on the date of delivery if delivered to the individual, or to a member of the firm, or to an officer of the corporation for whom they are intended by hand or by registered post; or if sent by regular post, to have been delivered within 5 *Working Days* of the date of mailing when addressed as follows:

The *Owner* at _____

street and number and postal box number if applicable

post office or district, province or territory, postal code

The *Contractor* at _____

street and number and postal box number if applicable

post office or district, province or territory, postal code

The *Consultant* at _____

street and number and postal box number if applicable

post office or district, province or territory, postal code

ARTICLE A-7 LANGUAGE OF THE CONTRACT

7.1 When the *Contract Documents* are prepared in both the English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English/French* language shall prevail.

* (Complete this statement by striking out inapplicable term)

7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.

ARTICLE A-8 SUCCESSION

8.1 The *Contract* shall enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and assigns.

In witness whereof the parties hereto have executed this Agreement by the hands of their duly authorized representatives.

SIGNED AND DELIVERED
in the presence of:

Owner

name of Owner

signature

name and title of person signing

signature

name and title of person signing

WITNESS

signature

name and title of person signing

Contractor

name of Contractor

signature

name and title of person signing

WITNESS

signature

name and title of person signing

- N.B. Where legal jurisdiction, local practice, or Owner or Contractor requirement calls for:
- (a) proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership; or
 - (b) the affixing of a corporate seal, this Agreement should be properly sealed.

**CIVIL WORKS CONTRACT
CCDC 18 – 2001
DEFINITIONS**

DEFINITIONS

The following definitions shall apply to all *Contract Documents*.

1. **Change Directive**
A *Change Directive* is a written instruction prepared by the *Consultant* and signed by the *Owner* directing the *Contractor* to proceed with a change in the *Work* within the general scope of the *Contract Documents* prior to the *Owner* and the *Contractor* agreeing upon an adjustment in *Contract Price* and *Contract Time* .
2. **Change Order**
A *Change Order* is a written amendment to the *Contract* prepared by the *Consultant* and signed by the *Owner* and the *Contractor* stating their agreement upon:
 - a change in the *Work*;
 - the method of adjustment or the amount of the adjustment in the *Contract Price*, if any; and
 - the extent of the adjustment in the *Contract Time*, if any.
3. **Construction Equipment**
Construction Equipment means all machinery and equipment, either operated or not operated, that is required for preparing, fabricating, conveying, erecting, or otherwise performing the *Work* but is not incorporated into the *Work*.
4. **Consultant**
The *Consultant* is the person or entity identified as such in the Agreement. The *Consultant* is the Engineer or other entity licensed to practise in the province or territory of the *Place of the Work*. The term *Consultant* means the *Consultant* or the *Consultant's* authorized representative.
5. **Contract**
The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities, and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties.
6. **Contract Documents**
The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments agreed upon between the parties.
7. **Contract Price**
When *Unit Prices* form the basis of payment, the *Contract Price* is the sum of the product of each *Unit Price* stated in the *Schedule of Prices* multiplied by the appropriate actual quantity of each item that is incorporated in or made necessary by the *Work*, plus lump sums, if any, and allowances, if any, stated in the *Schedule of Prices*. When a lump sum stipulated price forms the basis of payment, the *Contract Price* is the amount stipulated in Article A-4 of the Agreement - CONTRACT PRICE.
8. **Contract Time**
The *Contract Time* is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement - THE WORK from commencement of the *Work* to *Substantial Performance of the Work*.
9. **Contractor**
The *Contractor* is the person or entity identified as such in the Agreement. The term *Contractor* means the *Contractor* or the *Contractor's* authorized representative as designated to the *Owner* in writing.
10. **Drawings**
The *Drawings* are the graphic and pictorial portions of the *Contract Documents*, wherever located and whenever issued, showing the design, location, and dimensions of the *Work*, generally including plans, elevations, sections, details, schedules, and diagrams.
11. **Owner**
The *Owner* is the person or entity identified as such in the Agreement. The term *Owner* means the *Owner* or the *Owner's* authorized agent or representative as designated to the *Contractor* in writing, but does not include the *Consultant*.
12. **Place of the Work**
The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

13. **Product**
Product or *Products* means material, machinery, equipment, and fixtures forming the *Work*, but does not include *Construction Equipment*.
14. **Project**
The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.
15. **Provide**
Provide means to supply and install.
16. **Schedule of Prices**
The *Schedule of Prices* is the schedule listed in Article A-3 - CONTRACT DOCUMENTS identifying items of work, estimated quantities, units of measure, and *Unit Prices*.
17. **Shop Drawings**
Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Contractor* provides to illustrate details of portions of the *Work*.
18. **Specifications**
The *Specifications* are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, and the services necessary for the performance of the *Work*.
19. **Subcontractor**
A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work*, or to supply *Products* worked to a special design for the *Work*.
20. **Substantial Performance of the Work**
Substantial Performance of the Work is as defined in the lien legislation applicable to the *Place of the Work*. If such legislation is not in force or does not contain such definition, or if the *Work* is governed by the Civil Code of Quebec, *Substantial Performance of the Work* shall have been reached when the *Work* is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.
21. **Supplemental Instruction**
A *Supplemental Instruction* is an instruction, not involving adjustment in the *Contract Price* or *Contract Time*, in the form of *Specifications*, *Drawings*, schedules, samples, models, or written instructions, consistent with the intent of the *Contract Documents*. It is to be issued by the *Consultant* to supplement the *Contract Documents* as required for the performance of the *Work*.
22. **Supplier**
A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products* not worked to a special design for the *Work*.
23. **Temporary Work**
Temporary Work means temporary supports, structures, facilities, services, and other temporary things, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.
24. **Unit Price**
A *Unit Price* is the amount payable for a single unit of work as stated in the *Schedule of Prices*.
25. **Value Added Taxes**
Value Added Taxes means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which is by the *Contractor* as imposed by the tax legislation.
26. **Work**
The *Work* means the total construction and related services required by the *Contract Documents*.
27. **Working Day**
Working Day means a day other than a Saturday, Sunday, statutory holiday or statutory vacation day that is observed by the construction industry in the area of the *Place of the Work*.

**GENERAL CONDITIONS OF THE
CIVIL WORKS CONTRACT
CCDC 18 – 2001**

GENERAL CONDITIONS OF THE CIVIL WORKS CONTRACT

PART 1 GENERAL PROVISIONS

GC 1.1 CONTRACT DOCUMENTS

- 1.1.1 The intent of the *Contract Documents* is to include the labour, *Products*, and services necessary for the performance of the *Work* by the *Contractor* in accordance with these documents. It is not intended, however, that the *Contractor* shall supply products or perform work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.
- 1.1.2 Except for the provisions of article 12.3.6, nothing contained in the *Contract Documents* shall create any contractual relationship between:
- .1 the *Owner* and a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any of the *Work*.
 - .2 the *Consultant* and the *Contractor*, a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any of the *Work*.
- 1.1.3 The *Contract Documents* are complementary, and what is required by any one shall be as binding as if required by all.
- 1.1.4 Words and abbreviations which have well known technical or trade meanings are used in the *Contract Documents* in accordance with such recognized meanings.
- 1.1.5 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.
- 1.1.6 Neither the organization of the *Specifications* nor the arrangement of *Drawings* shall control the *Contractor* in dividing the work among *Subcontractors* and *Suppliers*.
- 1.1.7 If there is a conflict within the *Contract Documents*:
- .1 the order of priority of documents, from highest to lowest, shall be
 - the Agreement between the *Owner* and the *Contractor*,
 - the Definitions,
 - Supplementary Conditions,
 - the General Conditions,
 - the *Specifications*,
 - material and finishing schedules,
 - the *Drawings*.
 - .2 *Drawings* of larger scale shall govern over those of smaller scale of the same date.
 - .3 dimensions shown on *Drawings* shall govern over dimensions scaled from *Drawings*.
 - .4 later dated documents shall govern over earlier documents of the same type.
- 1.1.8 The *Owner* shall provide the *Contractor*, without charge, sufficient copies of the *Contract Documents* to perform the *Work*.
- 1.1.9 *Specifications*, *Drawings*, models, and copies thereof furnished by the *Consultant* are and shall remain the *Consultant's* property, with the exception of the signed *Contract* sets, which shall belong to each party to the *Contract*. All *Specifications*, *Drawings*, and models furnished by the *Consultant* are to be used only with respect to the *Work* and are not to be used on other work. These *Specifications*, *Drawings*, and models are not to be copied or altered in any manner without the written authorization of the *Consultant*.
- 1.1.10 Models furnished by the *Contractor* at the *Owner's* expense are the property of the *Owner*.

GC 1.2 LAW OF THE CONTRACT

- 1.2.1 The law of the *Place of the Work* shall govern the interpretation of the *Contract*.

GC 1.3 RIGHTS AND REMEDIES

- 1.3.1 Except as expressly provided in the *Contract Documents*, 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.
- 1.3.2 No action or failure to act by the *Owner*, *Consultant*, or *Contractor* shall constitute a waiver of any right or duty afforded any of them under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

GC 1.4 ASSIGNMENT

- 1.4.1 Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld.

PART 2 ADMINISTRATION OF THE CONTRACT

GC 2.1 AUTHORITY OF THE CONSULTANT

- 2.1.1 The *Consultant* will have authority to act on behalf of the *Owner* only to the extent provided in the *Contract Documents*, unless otherwise modified by written agreement as provided in paragraph 2.1.2.
- 2.1.2 The duties, responsibilities, and limitations of authority of the *Consultant* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner*, the *Contractor*, and the *Consultant*.
- 2.1.3 If the *Consultant's* employment is terminated, the *Owner* shall immediately appoint or reappoint a *Consultant* against whom the *Contractor* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Consultant*.

GC 2.2 ROLE OF THE CONSULTANT

- 2.2.1 The *Consultant* will provide administration of the *Contract* as described in the *Contract Documents* during construction until issuance of the final certificate for payment, and subject to GC 2.1 - AUTHORITY OF THE CONSULTANT and with the *Owner's* concurrence, from time to time until the completion of any correction of defects as provided in paragraph 12.3.3 of GC 12.3 - WARRANTY.
- 2.2.2 The *Consultant* may provide at the *Place of the Work*, one or more project representatives to assist in carrying out the *Consultant's* responsibilities. The duties, responsibilities, and limitations of authority of such project representatives shall be as set forth in writing to the *Contractor*.
- 2.2.3 The *Consultant* will review the *Work* at intervals appropriate to the progress of construction to:
 - .1 become familiar with the progress and quality of the *Work*,
 - .2 determine if the *Work* is proceeding in general conformity with the *Contract Documents*, and
 - .3 verify quantities of *Work* performed under a *Schedule of Prices*.
- 2.2.4 Based on the *Consultant's* observations and evaluation of the *Contractor's* applications for payment, the *Consultant* will determine the amounts owing to the *Contractor* under the *Contract* and will issue certificates for payment as provided in Article A-5 of the Agreement - PAYMENT, GC 5.6 - PROGRESS PAYMENT, and GC 5.10 - FINAL PAYMENT.
- 2.2.5 The *Consultant* will not be responsible for and will not have control, charge, or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the *Work* in accordance with the applicable construction safety legislation, other regulations, or general construction practice. The *Consultant* will not be responsible for the *Contractor's* failure to carry out the *Work* in accordance with the *Contract Documents*. The *Consultant* will not have control over, charge of, or be responsible for the acts or omissions of the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or any other persons performing portions of the *Work*.

- 2.2.6 The *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Documents* and shall make findings as to the performance thereunder by both parties to the *Contract*, except with respect to GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER. Interpretations and findings of the *Consultant* shall be consistent with the intent of the *Contract Documents*. When making such interpretations and findings the *Consultant* will not show partiality to either the *Owner* or the *Contractor*.
- 2.2.7 Matters in question relating to the performance of the Work or the interpretation of the *Contract Documents*, except for GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER, shall be referred initially to the *Consultant* by notice in writing given to the *Consultant* and to the other party for the *Consultant's* interpretation and finding which will be given by notice in writing to the parties within a reasonable time. With respect to claims, the *Consultant* will make findings as set out in GC 6.6 - CLAIMS, paragraph 6.6.5.
- 2.2.8 The *Consultant* will have authority to reject work which in the *Consultant's* opinion does not conform to the requirements of the *Contract Documents*. Whenever the *Consultant* considers it necessary or advisable, the *Consultant* will have authority to require inspection or testing of work, whether or not such work is fabricated, installed, or completed. However, neither the authority of the *Consultant* to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the *Consultant* to the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or other persons performing any of the *Work*.
- 2.2.9 During the progress of the *Work* the *Consultant* will furnish *Supplemental Instructions* to the *Contractor* with reasonable promptness or in accordance with a schedule for such instructions agreed to by the *Consultant* and the *Contractor*.
- 2.2.10 The *Consultant* will review and take appropriate action upon such *Contractor's* submittals as *Shop Drawings*, *Product data*, and *samples*, as provided in the *Contract Documents*.
- 2.2.11 The *Consultant* will prepare *Change Orders* and *Change Directives* as provided in GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 2.2.12 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* as provided in GC 5.7 - SUBSTANTIAL PERFORMANCE OF THE WORK.
- 2.2.13 All certificates issued by the *Consultant* will be to the best of the *Consultant's* knowledge, information, and belief. By issuing any certificate, the *Consultant* does not guarantee the *Work* is correct or complete.
- 2.2.14 The *Consultant* will receive and review written warranties and related documents required by the *Contract* and provided by the *Contractor* and will forward such warranties and documents to the *Owner* for the *Owner's* acceptance.

GC 2.3 REVIEW AND INSPECTION OF THE WORK

- 2.3.1 The *Owner* and the *Consultant* shall have access to the *Work* at all times. The *Contractor* shall provide sufficient, safe, and proper facilities at all times for the review of the *Work* by the *Consultant* and the inspection of the *Work* by authorized agencies. If parts of the *Work* are in preparation at locations other than the *Place of the Work*, the *Owner* and the *Consultant* shall be given access to such work whenever it is in progress.
- 2.3.2 If work is designated for tests, inspections, or approvals in the *Contract Documents*, or by the *Consultant's* instructions, or the laws or ordinances of the *Place of the Work*, the *Contractor* shall give the *Consultant* reasonable notice of when the work will be ready for review and inspection. The *Contractor* shall arrange for and shall give the *Consultant* reasonable notice of the date and time of inspections by other authorities.
- 2.3.3 The *Contractor* shall furnish promptly to the *Consultant* two copies of certificates and inspection reports relating to the *Work*.
- 2.3.4 If the *Contractor* covers, or permits to be covered, work that has been designated for special tests, inspections, or approvals before such special tests, inspections, or approvals are made, given or completed, the *Contractor* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good covering work at the *Contractor's* expense.

- 2.3.5 The *Consultant* may order any portion or portions of the *Work* to be examined to confirm that such work is in accordance with the requirements of the *Contract Documents*. If the work is not in accordance with the requirements of the *Contract Documents*, the *Contractor* shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the *Contract Documents*, the *Owner* shall pay the cost of examination and restoration.
- 2.3.6 The *Contractor* shall pay the cost of making any test or inspection, including the cost of samples required for such test or inspection, if such test or inspection is designated in the *Contract Documents* to be performed by the *Contractor* or is designated by the laws or ordinances of the *Place of the Work*.
- 2.3.7 The *Contractor* shall pay the cost of samples required for any test or inspection to be performed by the *Consultant* or the *Owner* if such test or inspection is designated in the *Contract Documents*.

GC 2.4 DEFECTIVE WORK

- 2.4.1 The *Contractor* shall promptly remove from the *Place of the Work* and replace or re-execute defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work has been incorporated in the *Work* and whether or not the defect is the result of poor workmanship, use of defective products, or damage through carelessness or other act or omission of the *Contractor*.
- 2.4.2 The *Contractor* shall make good promptly other contractors' work destroyed or damaged by such removals or replacements at the *Contractor's* expense.
- 2.4.3 If in the opinion of the *Consultant* it is not expedient to correct defective work or work not performed as provided in the *Contract Documents*, the *Owner* may deduct from the amount otherwise due to the *Contractor* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Owner* and the *Contractor* do not agree on the difference in value, they shall refer the matter to the *Consultant* for a determination.

PART 3 EXECUTION OF THE WORK

GC 3.1 CONTROL OF THE WORK

- 3.1.1 The *Contractor* shall have total control of the *Work* and shall effectively direct and supervise the *Work* so as to ensure conformity with the *Contract Documents*.
- 3.1.2 The *Contractor* shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the *Work* under the *Contract*.

GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

- 3.2.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to other contractors and to perform work with own forces.
- 3.2.2 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Owner* shall:
- .1 provide for the co-ordination of the activities and work of other contractors and *Owner's* own forces with the *Work* of the *Contract*;
 - .2 assume overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*;
 - .3 enter into separate contracts with other contractors under conditions of contract which are compatible with the conditions of the *Contract*;
 - .4 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 - INSURANCE and co-ordinate such insurance with the insurance coverage of the *Contractor* as it affects the *Work*; and
 - .5 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of other contractors or the *Owner's* own forces.

- 3.2.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Contractor* shall:
- .1 afford the *Owner* and other contractors reasonable opportunity to introduce and store products and use the *Owner's* or other contractor's construction equipment to execute their work;
 - .2 cooperate with other contractors and the *Owner* in reviewing their construction schedules; and
 - .3 where part of the *Work* is affected by or depends upon for its proper execution the work of other contractors or *Owner's* own forces, promptly report to the *Consultant* in writing and prior to proceeding with that part of the *Work*, any apparent deficiencies in such work
- 3.2.4 Where the *Contract Documents* identify the work to be performed by other contractors or the *Owner's* own forces, the *Contractor* shall coordinate and schedule the *Work* with the work of other contractors and the *Owner's* own forces and interface as specified in the *Contract Documents*.
- 3.2.5 Where a change in the *Work* is required as a result of the co-ordination and interface of the work of other contractors or *Owner's* own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 3.2.6 Disputes, and other matters in question between the *Contractor* and other contractors shall be dealt with as provided in Part 8 of the General Conditions - DISPUTE RESOLUTION provided the other contractors have reciprocal obligations. The *Contractor* shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the *Owner* contains a similar agreement to arbitrate.

GC 3.3 TEMPORARY WORK

- 3.3.1 The *Contractor* shall have the sole responsibility for the design, erection, operation, maintenance, and removal of *Temporary Work*.
- 3.3.2 The *Contractor* shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform those functions referred to in paragraph 3.3.1 where required by law or by the *Contract Documents* and in all cases where such *Temporary Work* is of such a nature that professional engineering skill is required to produce safe and satisfactory results.
- 3.3.3 Notwithstanding the provisions of GC 3.1 - CONTROL OF THE WORK, paragraph 3.3.1, and paragraph 3.3.2 or provisions to the contrary elsewhere in the *Contract Documents* where such *Contract Documents* include designs for *Temporary Work* or specify a method of construction in whole or in part, such designs or methods of construction shall be considered to be part of the design of the *Work* and the *Contractor* shall not be held responsible for that part of the design or the specified method of construction. The *Contractor* shall, however, be responsible for the execution of such design or specified method of construction in the same manner as for the execution of the *Work*.

GC 3.4 DOCUMENT REVIEW

- 3.4.1 The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency, or omission the *Contractor* may discover. Such review by the *Contractor* shall be to the best of the *Contractor's* knowledge, information, and belief and in making such review the *Contractor* does not assume any responsibility to the *Owner* or the *Consultant* for the accuracy of the review. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* did not discover. If the *Contractor* does discover any error, inconsistency, or omission in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Consultant*.

GC 3.5 CONSTRUCTION SCHEDULE

- 3.5.1 The *Contractor* shall:
- .1 prepare and submit to the *Owner* and the *Consultant* prior to the first application for payment, a construction schedule that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;
 - .2 monitor the progress of the *Work* relative to the construction schedule and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and
 - .3 advise the *Consultant* of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions - CHANGES IN THE WORK.

GC 3.6 SUPERVISION

- 3.6.1 The *Contractor* shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the *Place of the Work* while the *Work* is being performed. The appointed representative shall not be changed except for valid reason.
- 3.6.2 The appointed representative shall represent the *Contractor* at the *Place of the Work* and notices and instructions given to the appointed representative by the *Consultant* shall be held to have been received by the *Contractor*.

GC 3.7 LAYOUT OF THE WORK

- 3.7.1 The *Owner* shall, in consultation with the *Contractor*, establish reference points for construction which are necessary for the *Contractor* to proceed with the *Work*.
- 3.7.2 The *Contractor* shall be responsible for laying out the *Work*, shall preserve and protect the established reference points, and shall not change or relocate the established reference points without the approval of the *Consultant*.
- 3.7.3 The *Contractor* shall advise the *Consultant* whenever any established reference point is lost, destroyed, damaged, or requires relocation as a result of the *Contractor's* operations. The cost to reestablish any reference point that is lost, destroyed, damaged, or requires relocation as a result of the *Contractor's* operations, shall be at the *Contractor's* expense.

GC 3.8 SUBCONTRACTORS AND SUPPLIERS

- 3.8.1 The *Contractor* shall preserve and protect the rights of the parties under the *Contract* with respect to work to be performed under subcontract, and shall:
- .1 enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform their work as provided in the *Contract Documents*;
 - .2 incorporate the terms and conditions of the *Contract Documents* into all contracts or written agreements with *Subcontractors* and *Suppliers*; and
 - .3 be as fully responsible to the *Owner* for acts and omissions of *Subcontractors*, *Suppliers*, and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.
- 3.8.2 The *Contractor* shall indicate in writing, at the request of the *Owner*, those *Subcontractors* or *Suppliers* whose bids have been received by the *Contractor* which the *Contractor* would be prepared to accept for the performance of a portion of the *Work*. Should the *Owner* not object before signing the *Contract*, the *Contractor* shall employ those *Subcontractors* or *Suppliers* so identified by the *Contractor* in writing for the performance of that portion of the *Work* to which their bid applies.
- 3.8.3 The *Owner* may, for reasonable cause, at any time before the *Owner* has signed the *Contract*, object to the use of a proposed *Subcontractor* or *Supplier* and require the *Contractor* to employ one of the other subcontract bidders.
- 3.8.4 If the *Owner* requires the *Contractor* to change a proposed *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the differences occasioned by such required change.

- 3.8.5 The *Contractor* shall not be required to employ as a *Subcontractor* or *Supplier*, a person or firm to which the *Contractor* may reasonably object.
- 3.8.6 The *Owner*, through the *Consultant*, may provide to a *Subcontractor* or *Supplier* information as to the percentage of the *Subcontractor's* or *Supplier's* work which has been certified for payment.

GC 3.9 LABOUR AND PRODUCTS

- 3.9.1 The *Contractor* shall provide and pay for labour, *Products*, tools, *Construction Equipment*, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the *Work* in accordance with the *Contract*.
- 3.9.2 *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with those specified and their use acceptable to the *Consultant*.
- 3.9.3 The *Contractor* shall maintain good order and discipline among the *Contractor's* employees engaged on the *Work* and shall not employ on the *Work* anyone not skilled in the tasks assigned.

GC 3.10 DOCUMENTS AT THE SITE

- 3.10.1 The *Contractor* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and the *Consultant*.

GC 3.11 SHOP DRAWINGS

- 3.11.1 The *Contractor* shall provide *Shop Drawings* as required in the *Contract Documents*.
- 3.11.2 The *Contractor* shall review all *Shop Drawings* prior to submission to the *Consultant*. The *Contractor* represents by this review that:
- .1 the *Contractor* has determined and verified all field measurements, field construction conditions, materials, *Product* requirements, catalogue numbers, and similar data or will do so; and
 - .2 the *Contractor* has checked and co-ordinated each *Shop Drawing* with the requirements of the *Contract Documents*.
- 3.11.3 The *Contractor* shall confirm the review of each shop drawing by stamp, date, and signature of the person responsible for the review. At the time of submission the *Contractor* shall notify the *Consultant* in writing of any deviations in the *Shop Drawings* from the requirements of the *Contract Documents*.
- 3.11.4 The *Contractor* shall submit *Shop Drawings* to the *Consultant* to review in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of other contractors. Upon request of the *Contractor* or the *Consultant*, they jointly shall prepare a schedule of the dates for submission and return of *Shop Drawings*. *Shop Drawings* which require approval of any legally constituted authority having jurisdiction shall be submitted to such authority by the *Contractor* for approval.
- 3.11.5 The *Contractor* shall submit *Shop Drawings* in the form specified or as the *Consultant* may direct. The *Consultant* will review and return *Shop Drawings* in accordance with the schedule agreed upon, or otherwise with reasonable promptness so as to cause no delay. The *Consultant's* review is for conformity to the design concept and for general arrangement only. The *Consultant's* review shall not relieve the *Contractor* of responsibility for errors or omissions in the *Shop Drawings* or for meeting all requirements of the *Contract Documents* unless the *Consultant* expressly notes the acceptance of a deviation on the *Shop Drawings*.
- 3.11.6 Upon the *Consultant's* request, the *Contractor* shall revise and resubmit *Shop Drawings* which the *Consultant* rejects as inconsistent with the *Contract Documents* unless otherwise directed by the *Consultant*. The *Contractor* shall notify the *Consultant* in writing of any revisions to the resubmission other than those requested by the *Consultant*.

GC 3.12 USE OF THE WORK

- 3.12.1 The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of employees to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of Work* with *Products*.
- 3.12.2 The *Contractor* shall not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety of the *Work*.

GC 3.13 CUTTING AND REMEDIAL WORK

- 3.13.1 The *Contractor* shall do the cutting and remedial work required to make the several parts of the *Work* come together properly.
- 3.13.2 The *Contractor* shall co-ordinate the *Work* to ensure that this requirement is kept to a minimum.
- 3.13.3 Should the *Owner*, the *Consultant*, other contractors or anyone employed by them be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 3.13.4 Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Work*.

GC 3.14 CLEANUP

- 3.14.1 The *Contractor* shall maintain the *Work* in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner*, other contractors or their employees.
- 3.14.2 Before applying for *Substantial Performance of the Work* as provided in GC 5.7 - SUBSTANTIAL PERFORMANCE OF THE WORK, the *Contractor* shall remove waste products and debris, other than that resulting from the work of the *Owner*, other contractors or their employees, and shall leave the *Work* clean and suitable for use or occupancy by the *Owner*. The *Contractor* shall remove products, tools, *Construction Equipment* and *Temporary Work* not required for the performance of the remaining work.
- 3.14.3 Prior to application for the final certificate for payment, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary Work*, and waste products and debris, other than those resulting from the work of the *Owner*, other contractors or their employees.

PART 4 ALLOWANCES

GC 4.1 CASH ALLOWANCES

- 4.1.1 The *Contract Price* includes the cash allowances, if any, stated in the *Contract Documents*. The scope of work or costs included in such cash allowances shall be as described in the *Contract Documents*.
- 4.1.2 The *Contract Price*, and not the cash allowances, includes the *Contractor's* overhead and profit in connection with such cash allowances.
- 4.1.3 Expenditures under cash allowances shall be authorized by the *Owner* through the *Consultant*.
- 4.1.4 Where costs under any cash allowance exceed the amount of the allowance, the *Contractor* shall be compensated for the excess incurred and substantiated plus an amount for overhead and profit on the excess as set out in the *Contract Documents*. Where costs under any cash allowance are less than the amount of the allowance, the *Owner* shall be credited for the unexpended portion of the cash allowance, but not for the *Contractor's* overhead and profit on such amount. Multiple cash allowances shall not be combined for the purpose of calculating the foregoing.
- 4.1.5 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the actual cost and each cash allowance.

- 4.1.6 The value of the work performed under a cash allowance is eligible to be included in progress payments.
- 4.1.7 The *Contractor* and the *Consultant* shall jointly prepare a schedule that shows when the *Consultant* and *Owner* must authorize ordering of items called for under cash allowances to avoid delaying the progress of the *Work*.

GC 4.2 CONTINGENCY ALLOWANCE

- 4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Contract Documents*.
- 4.2.2 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 4.2.3 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.2 and the contingency allowance.

PART 5 PAYMENT

GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

- 5.1.1 The *Owner* shall, at the request of the *Contractor*, before signing the *Contract*, and promptly from time to time thereafter, furnish to the *Contractor* reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*.
- 5.1.2 The *Owner* shall notify the *Contractor* in writing of any material change in the *Owner's* financial arrangements during performance of the *Contract*.

GC 5.2 BASIS OF PAYMENT FOR UNIT PRICE WORK

- 5.2.1 Payment for *Unit Price* work shall be based on the *Unit Prices* in the *Contract*.
- 5.2.2 The *Contractor* shall measure the *Work* and the *Consultant* will verify such measurements to determine payment to the *Contractor* in accordance with the measurement provisions of the *Contract Documents*.

GC 5.3 BASIS OF PAYMENT FOR LUMP SUM WORK

- 5.3.1 Payment for lump sum work shall be based on the stipulated price(s) in the *Contract*.

GC 5.4 BASIS OF PAYMENT FOR COST PLUS WORK

- 5.4.1 Payment for cost plus work shall be based on the cost of such work, as provided in paragraph 5.4.2, plus a fee calculated as a percentage of the cost of such work, for the *Contractor's* overhead and profit. The percentage amount shall be as provided in the *Contract Documents* but shall not be applied to the cost of *Construction Equipment* when such cost is based on rates which already include the *Contractor's* overhead and profit.
- 5.4.2 The cost of cost plus work shall be at rates prevailing in the locality of the *Place of the Work* and shall include the following cost elements as applicable to such work:
- .1 wages and benefits paid for labour in the direct employ of the *Contractor* under applicable collective bargaining agreements, or under a salary or wage schedule agreed upon by the *Owner* and *Contractor*;
 - .2 salaries, wages, and benefits of the *Contractor's* personnel, when stationed at the field office, in whatever capacity employed; or personnel at shops or on the road, engaged in expediting the production or transportation of materials or equipment;
 - .3 contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries, or other remuneration paid to employees of the *Contractor* and included in the cost of the *Work* as provided in paragraphs 5.4.2.1 and 5.4.2.2;
 - .4 travel and subsistence expenses of the *Contractor's* personnel described in paragraphs 5.4.2.1 and 5.4.2.2;
 - .5 the cost of all *Products* including cost of transportation thereof;

- .6 the cost of materials, supplies, *Construction Equipment*, *Temporary Work*, and hand tools not owned by the workers, including transportation, and maintenance thereof, which are consumed in the performance of the *Work*; and cost less salvage value on such items used but not consumed, which remain the property of the *Contractor*;
 - .7 the cost of all tools and *Construction Equipment*, exclusive of hand tools used in the performance of the *Work*, whether rented from or provided by the *Contractor* or others, including installation, minor repairs and replacements, dismantling, removal, transportation and delivery cost thereof;
 - .8 deposits lost;
 - .9 the amounts of all subcontracts;
 - .10 the cost of quality assurance such as independent inspection and testing services;
 - .11 charges levied by authorities having jurisdiction at the *Place of the Work*;
 - .12 royalties, patent license fees, and damages for infringement of patents and cost of defending suits therefor subject always to the *Contractor's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;
 - .13 any adjustment in premiums for all bonds and insurance which the *Contractor* is required, by the *Contract Documents*, to purchase and maintain;
 - .14 any adjustment in taxes and duties for which the *Contractor* is liable;
 - .15 charges for long distance telephone and facsimile communications, courier services, expressage, and petty items incurred in relation to the performance of the *Work*;
 - .16 the cost of removal and disposal of waste products and debris; and
 - .17 cost incurred due to emergencies affecting the safety of persons or property.
- 5.4.3 The *Contractor* shall obtain the *Owner's* approval prior to subcontracting or entering into other agreements for cost plus work.
- 5.4.4 The *Consultant* may refuse to certify payment for all or part of the cost of any item under any cost element, where the item in question was unsuitable, unnecessary or the cost was otherwise improperly incurred in the performance of the *Work*.
- 5.4.5 The *Contractor* shall keep full and detailed accounts and records necessary for the documentation of the cost of cost plus work and shall provide the *Consultant* with copies thereof when requested.
- 5.4.6 The *Owner* shall be afforded reasonable access to all of the *Contractor's* books, records, correspondence, instructions, drawings, receipts, vouchers, and memoranda related to the cost of cost plus work, and for this purpose the *Contractor* shall preserve such records for a period of one year from the date of *Substantial Performance of the Work*.

GC 5.5 APPLICATIONS FOR PROGRESS PAYMENT

- 5.5.1 Applications for payment on account as provided in Article A-5 of the Agreement - PAYMENT may be made monthly as the *Work* progresses.
- 5.5.2 Applications for payment shall be dated the last day of the agreed monthly payment period and the amount claimed shall be for the value, proportionate to the amount of the *Contract*, of work performed and *Products* delivered to the *Place of the Work* at that date.
- 5.5.3 Where the basis of payment of the *Contract Price* is *Unit Prices*, applications for payment shall include quantity measurements and any other data requested by the *Consultant* to assist the *Consultant* in evaluating the application and verifying quantity measurements.
- 5.5.4 Where the basis of payment of the *Contract Price* is a lump sum stipulated price:
- .1 the *Contractor* shall submit to the *Consultant*, at least 10 *Working Days* before the first application for payment, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment;
 - .2 the schedule of values shall be made out in such form and supported by such evidence as the *Consultant* may reasonably direct and when accepted by the *Consultant*, shall be used as the basis for applications for payment, unless it is found to be in error; and
 - .3 the *Contractor* shall include a statement based on the schedule of values with each application for payment.

5.5.5 Where the basis of payment for a portion of the *Work* is cost plus, applications for payment shall be based on the cost of the work performed plus the amount of the fee earned, in accordance with GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.

5.5.6 Applications for payment for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall be supported by such evidence as the *Consultant* may reasonably require to establish the value and delivery of the *Products*.

GC 5.6 PROGRESS PAYMENT

5.6.1 The *Consultant* will issue to the *Owner*, no later than 5 *Working Days* after the receipt of an application for payment from the *Contractor* submitted in accordance with GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT, a certificate for payment in the amount applied for or in such other amount as the *Consultant* determines to be properly due. If the *Consultant* amends the application, the *Consultant* will promptly notify the *Contractor* in writing giving reasons for the amendment.

5.6.2 The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement - PAYMENT no later than 5 *Working Days* after the date of a certificate for payment issued by the *Consultant*.

5.6.3 Where the basis of payment of the *Contract Price* is *Unit Prices*, quantities for progress payments shall be considered approximate until final verification of quantities by the *Consultant*. A certificate for progress payment shall not be construed as the *Consultant's* final verification of quantities. Final verification of quantities will be made after all work of an item is completed.

GC 5.7 SUBSTANTIAL PERFORMANCE OF THE WORK

5.7.1 When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall prepare and submit to the *Consultant* a comprehensive list of items to be completed or corrected and apply for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.

5.7.2 No later than 15 *Working Days* after the receipt of the *Contractor's* list and application, the *Consultant* will review the *Work* to verify the validity of the application and notify the *Contractor* whether the *Work* or the designated portion of the *Work* is substantially performed.

5.7.3 The *Consultant* will state the date of *Substantial Performance of the Work* or designated portion of the *Work* in a certificate.

5.7.4 Immediately following the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

GC 5.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

5.8.1 After the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor* shall:

- .1 submit an application for payment of the holdback amount,
- .2 submit a sworn or affirmed statement that all accounts for labour, subcontracts, *Products*, *Construction Equipment*, and other indebtedness which may have been incurred by the *Contractor* in the *Substantial Performance of the Work* and for which the *Owner* might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified amount in dispute.

5.8.2 After the receipt of an application for payment from the *Contractor* and the sworn or affirmed statement as provided in paragraph 5.8.1, the *Consultant* will issue a certificate for payment of the holdback amount.

- 5.8.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate holdback account, the *Owner* shall, 5 *Working Days* prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Contractor*.
- 5.8.4 In the common law jurisdictions, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the day following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*. Where lien legislation does not exist or apply, the holdback amount shall be due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between the parties. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.
- 5.8.5 In the Province of Quebec, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable no later than 30 days after the issuance of the certificate. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

GC 5.9 PROGRESSIVE RELEASE OF HOLDBACK

- 5.9.1 In the common law jurisdictions, where legislation permits and where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the first *Working Day* following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the *Place of the Work*.
- 5.9.2 In the Province of Quebec, where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, no later than 30 days after such certification by the *Consultant*. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.
- 5.9.3 Notwithstanding the provisions of the preceding paragraph, and notwithstanding the wording of such certificates, the *Contractor* shall ensure that such subcontract work or *Products* is protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when such certificates were issued.

GC 5.10 FINAL PAYMENT

- 5.10.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment.
- 5.10.2 The *Consultant* will, no later than 15 *Working Days* after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and notify the *Contractor* that the application is valid or give reasons why it is not valid.
- 5.10.3 When the *Consultant* finds the *Contractor's* application for final payment valid, the *Consultant* will promptly issue a final certificate for payment.
- 5.10.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the *Place of the Work*, the *Owner* shall, no later than 5 *Working Days* after the issuance of a final certificate for payment, pay the *Contractor* as provided in Article A-5 of the Agreement - PAYMENT.

GC 5.11 WITHHOLDING OF PAYMENT

- 5.11.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, there are items of work that cannot be performed, payment in full for that portion of the *Work* which has been performed as certified by the *Consultant* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, until the remaining portion of the *Work* is finished, only such an amount that the *Consultant* determines is sufficient and reasonable to cover the cost of performing such remaining work.

GC 5.12 NON-CONFORMING WORK

- 5.12.1 No payment by the *Owner* under the *Contract* nor partial or entire use or occupancy of the *Work* by the *Owner* shall constitute an acceptance of any portion of the *Work* or *Products* which are not in accordance with the requirements of the *Contract Documents*.

PART 6 CHANGES

GC 6.1 CHANGES

- 6.1.1 The *Owner*, through the *Consultant*, without invalidating the *Contract*, may make:
- .1 changes in the *Work* consisting of additions, deletions, or other revisions to the *Work* by *Change Order* or *Change Directive*, and
 - .2 changes to the *Contract Time* for the *Work*, or any part thereof, by *Change Order*.
- 6.1.2 The *Contractor* shall not perform a change in the *Work* without a *Change Order* or a *Change Directive*.

GC 6.2 CHANGE ORDER

- 6.2.1 When a change in the *Work* or the *Contract Time* is proposed or required, the *Consultant* will provide notice in writing to the *Contractor* describing the proposed change. The *Contractor* shall present, in a form acceptable to the *Consultant*, a method of adjustment or an amount of adjustment of the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change.
- 6.2.2 The method of adjustment of the *Contract Price* presented by the *Contractor* may be:
- .1 *Unit Prices* listed in the *Schedule of Prices* that are applicable to the change in the *Work* or, if *Unit Prices* listed in the *Schedule of Prices* are not directly applicable, by unit prices deduced or extrapolated from such *Unit Prices*,
 - .2 a lump sum or unit price quotation, or
 - .3 the cost plus method as provided in GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 6.2.3 When the *Owner* and *Contractor* agree to the adjustments in the *Contract Price* and *Contract Time* or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a *Change Order*, signed by *Owner* and *Contractor*. The value of the work performed as the result of a *Change Order* shall be included in applications for progress payment.

GC 6.3 CHANGE DIRECTIVE

- 6.3.1 If the *Owner* requires the *Contractor* to proceed with a change in the *Work* prior to the *Owner* and the *Contractor* agreeing upon the adjustment in *Contract Price* and *Contract Time*, the *Owner*, through the *Consultant*, shall issue a *Change Directive*.
- 6.3.2 A *Change Directive* shall only be used by the *Owner* to direct a change in the *Work* that is within the general scope of the *Contract Documents*.
- 6.3.3 Upon receipt of a *Change Directive*, the *Contractor* shall proceed promptly with the change in the *Work*.

- 6.3.4 The adjustment in the *Contract Price* for a change in the *Work* carried out by way of a *Change Directive* shall be on the basis of the *Contractor's* actual expenditures and savings attributable to the change. If a change in the *Work* results in expenditures only, the change in the *Work* shall be valued as cost plus work in accordance with GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 6.3.5 If a change in the *Work* results in savings only, the amount of the credit shall be the actual cost savings to the *Contractor*, without deduction for overhead or profit.
- 6.3.6 If a change in the *Work* results in both expenditures and savings, the change in the *Work* shall be valued as specified in GC 6.3.4 and GC 6.3.5, except that overhead and profit on the cost plus work shall be payable only on the net increase, if any, with respect to that change in the *Work*.
- 6.3.7 Pending determination of the final amount of a *Change Directive*, the undisputed value of the work performed as the result of a *Change Directive* is eligible to be included in progress payments.
- 6.3.8 If the *Owner* and *Contractor* do not agree on the proposed adjustment in the *Contract Time* or the method of determining it, the adjustment shall be referred to the *Consultant* for determination.
- 6.3.9 If at any time after the start of the work directed by a *Change Directive*, the *Owner* and the *Contractor* reach agreement on the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order* signed by *Owner* and *Contractor*.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

- 6.4.1 If the *Owner* or the *Contractor* discover conditions at the *Place of the Work* which are:
- .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Work* which differ materially from those indicated in the *Contract Documents*; or
 - .2 physical conditions, other than conditions due to weather, that are of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the *Contract Documents*;
- then the observing party shall notify the other party in writing before conditions are disturbed and in no event later than 5 *Working Days* after first observance of the conditions.
- 6.4.2 The *Consultant* will promptly investigate such conditions and make a finding. If the finding is that the conditions differ materially and this would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, will issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.
- 6.4.3 If the *Consultant* finds that the conditions at the *Place of the Work* are not materially different or that no change in the *Contract Price* or the *Contract Time* is justified, the *Consultant* will report the reasons for this finding to the *Owner* and the *Contractor* in writing.
- 6.4.4 The *Contractor* shall not be entitled to an adjustment in the *Contract Price* or the *Contract Time* if such conditions were reasonably apparent prior to the time of bid closing.

GC 6.5 DELAYS

- 6.5.1 If the *Contractor* is delayed in the performance of the *Work* by an action or omission of the *Owner*, *Consultant*, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.
- 6.5.2 If the *Contractor* is delayed in the performance of the *Work* by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.

- 6.5.3 If the *Contractor* is delayed in the performance of the *Work* by
- .1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the *Contractor* is a member or to which the *Contractor* is otherwise bound),
 - .2 fire, unusual delay by common carriers or unavoidable casualties,
 - .3 abnormally adverse weather conditions, or
 - .4 any other cause beyond the *Contractor's* control, other than one resulting from a default of or breach of *Contract* by the *Contractor*,
- then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the *Owner*.
- 6.5.4 No extension shall be made for delay unless notice in writing of the cause of delay is given to the *Consultant* not later than 10 *Working Days* after the commencement of delay, providing however, that in the case of a continuing cause of delay only one notice shall be necessary.
- 6.5.5 If no schedule is made under paragraph 2.2.9 of GC 2.2 - ROLE OF THE CONSULTANT, then no request for extension shall be made because of failure of the *Consultant* to furnish instructions until 10 *Working Days* after demand for such instructions has been made and not then, unless the request is reasonable.

GC 6.6 CLAIMS

- 6.6.1 If the *Contractor* intends to make a claim for additional payment, or if the *Owner* intends to make a claim for a credit to the *Contract Price* or for damages of any kind, the party that intends to make the claim shall give notice in writing of intent to claim to the other party and to the *Consultant* as soon as practicable, but no later than 10 *Working Days* after commencement of the event or series of events giving rise to the claim. Failure to provide such notification shall invalidate the claim.
- 6.6.2 Upon commencement of the event or series of events giving rise to the claim, the party intending to make a claim shall:
- .1 take all reasonable measures to mitigate any loss or damage which may be incurred as a result of such event or series of events, and
 - .2 keep such records as may be necessary to support the claim.
- 6.6.3 Within 30 *Working Days* after commencement of the event or series of events giving rise to the claim, or such other reasonable time as may be agreed by the *Consultant*, the party making the claim shall submit to the *Consultant* a detailed account of the amount claimed and the grounds upon which the claim is based.
- 6.6.4 Where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, at such intervals as the *Consultant* may reasonably require, submit further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account with 30 *Working Days* after the end of the effects resulting from the event or series of events.
- 6.6.5 The *Consultant's* findings, with respect to a claim made by either party, will be given by notice in writing to the other party within 30 *Working Days* after receipt thereof by the *Consultant*, or such other time period as may be agreed by the parties. If such finding is not acceptable to both parties, the claim shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION.

GC 6.7 QUANTITY VARIATIONS

- 6.7.1 The *Owner* or the *Contractor* may request an adjustment to a *Unit Price* contained in a *Schedule of Prices* included in the *Contract* provided that the actual quantity of the item in the *Schedule of Prices* exceeds or falls short of the estimated quantity by more than 15%.
- 6.7.2 Where the actual quantity exceeds the estimated quantity by more than 15%, a *Unit Price* adjusted pursuant to paragraph 6.7.1 shall apply only to the quantity that exceeds 115% of the estimated quantity.

- 6.7.3 Where the actual quantity falls short of the estimated quantity by more than 15%, a *Unit Price* adjusted pursuant to paragraph 6.7.1 shall not exceed the *Unit Price* that would cause the extended amount to equal the original extended amount derived from the original *Unit Price* and estimated quantity.
- 6.7.4 If either party requests adjustment of a *Unit Price*, both parties shall make all reasonable efforts to agree on a revised *Unit Price*. The agreed revised *Unit Price* shall be recorded in a Change Order.
- 6.7.5 If agreement on a revised *Unit Price* is not reached, the matter shall be subject to final determination in accordance with Part 8 - DISPUTE RESOLUTION. Pending determination of the revised *Unit Price*, payment for the *Work* performed shall be included in progress payments based on the unrevised *Unit Price*.

PART 7 DEFAULT NOTICE

GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, STOP THE WORK, OR TERMINATE THE CONTRACT

- 7.1.1 If the *Contractor* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Contractor's* insolvency, or if a receiver is appointed because of the *Contractor's* insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, by giving the *Contractor* or receiver or trustee in bankruptcy notice in writing, terminate the *Contract*.
- 7.1.2 If the *Contractor* neglects to prosecute the *Work* properly or otherwise fails to comply with the requirements of the *Contract* to a substantial degree and if the *Consultant* has given a written statement to the *Owner* and *Contractor* that sufficient cause exists to justify such action, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, notify the *Contractor* in writing that the *Contractor* is in default of the *Contractor's* contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such notice.
- 7.1.3 If the default cannot be corrected in the 5 *Working Days* specified, the *Contractor* shall be in compliance with the *Owner's* instructions if the *Contractor*:
 - .1 commences the correction of the default within the specified time, and
 - .2 provides the *Owner* with an acceptable schedule for such correction, and
 - .3 corrects the default in accordance with such schedule.
- 7.1.4 If the *Contractor* fails to correct the default in the time specified or subsequently agreed upon, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may:
 - .1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* provided the *Consultant* has certified such cost to the *Owner* and the *Contractor*, or
 - .2 terminate the *Contractor's* right to continue with the *Work* in whole or in part or terminate the *Contract*.
- 7.1.5 If the *Owner* terminates the *Contractor's* right to continue with the *Work* as provided in paragraphs 7.1.1 and 7.1.4, the *Owner* shall be entitled to:
 - .1 take possession of the *Work* and *Products* delivered to the *Place of the Work*, subject to the rights of third parties, and finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense, and
 - .2 withhold further payment to the *Contractor* until a final certificate for payment is issued, and
 - .3 charge the *Contractor* the amount by which the full cost of finishing the *Work* as certified by the *Consultant*, including compensation to the *Consultant* for the *Consultant's* additional services and a reasonable allowance as determined by the *Consultant* to cover the cost of corrections to work performed by the *Contractor* that may be required under GC 12.3 - WARRANTY, exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference, and
 - .4 on expiry of the warranty period, charge the *Contractor* the amount by which the cost of corrections to the *Contractor's* work under GC 12.3 - WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the *Contractor* the difference.
- 7.1.6 The *Contractor's* obligation under the *Contract* as to quality, correction, and warranty of the work performed by the *Contractor* up to the time of termination shall continue in force after such termination.

GC 7.2 CONTRACTOR'S RIGHT TO STOP THE WORK OR TERMINATE THE CONTRACT

- 7.2.1 If the *Owner* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Owner's* insolvency, or if a receiver is appointed because of the *Owner's* insolvency, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, by giving the *Owner* or receiver or trustee in bankruptcy notice in writing, terminate the *Contract*.
- 7.2.2 If the *Work* is stopped or otherwise delayed for a period of 20 *Working Days* or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or of anyone directly or indirectly employed or engaged by the *Contractor*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, by giving the *Owner* notice in writing, terminate the *Contract*.
- 7.2.3 The *Contractor* may notify the *Owner* in writing, with a copy to the *Consultant*, that the *Owner* is in default of the *Owner's* contractual obligations if:
- .1 the *Owner* fails to furnish, when so requested by the *Contractor*, reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*, or
 - .2 the *Consultant* fails to issue a certificate as provided in GC 5.3 PROGRESS PAYMENT, or
 - .3 the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by arbitration or court, or
 - .4 the *Owner* violates the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, confirms by written statement to the *Contractor* that sufficient cause exists.
- 7.2.4 The *Contractor's* notice in writing to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the notice in writing, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, stop the *Work* or terminate the *Contract*.
- 7.2.5 If the *Contractor* terminates the *Contract* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*.

PART 8 DISPUTE RESOLUTION

GC 8.1 AUTHORITY OF THE CONSULTANT

- 8.1.1 Differences between the parties to the *Contract* as to the interpretation, application or administration of the *Contract* or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instance by findings of the *Consultant* as provided in GC 2.2 - ROLE OF THE CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION.
- 8.1.2 If a dispute arises under the *Contract* in respect of a matter in which the *Consultant* has no authority under the *Contract* to make a finding, the procedures set out in paragraph 8.1.3 and paragraphs 8.2.3 to 8.2.8 of GC 8.2 - NEGOTIATION, MEDIATION, AND ARBITRATION, and in GC 8.3 - RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.
- 8.1.3 If a dispute is not resolved promptly, the *Consultant* will give such instructions as in the *Consultant's* opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the *Contract Documents*, the *Owner* shall pay the *Contractor* costs incurred by the *Contractor* in carrying out such instructions which the *Contractor* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Work*.

GC 8.2 NEGOTIATION, MEDIATION, AND ARBITRATION

- 8.2.1 In accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40, the parties shall appoint a Project Mediator
- .1 within 20 *Working Days* after the *Contract* was awarded, or
 - .2 if the parties neglected to make an appointment within the 20 *Working Day* period, within 10 *Working Days* after either party by notice in writing requests that the Project Mediator be appointed.
- 8.2.2 A party shall be conclusively deemed to have accepted a finding of the *Consultant* under GC 2.2 - ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a notice in writing of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*. The responding party shall send a notice in writing of reply to the dispute within 10 *Working Days* after receipt of the notice of dispute setting out particulars of this response and any relevant provisions of the *Contract Documents*.
- 8.2.3 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, frank, candid and timely disclosure of relevant facts, information, and documents to facilitate these negotiations.
- 8.2.4 After a period of 10 *Working Days* following receipt of a responding party's notice in writing of reply under paragraph 8.2.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40.
- 8.2.5 If the dispute has not been resolved within 10 *Working Days* after the Project Mediator was requested under paragraph 8.2.4 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving notice in writing to both parties.
- 8.2.6 By giving a notice in writing to the other party, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.2.5, either party may refer the dispute to be finally resolved by arbitration under the latest edition of the Rules for Arbitration of Construction Disputes as provided in CCDC 40. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.
- 8.2.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.2.6 is not binding on the parties and, if a notice is not given under paragraph 8.2.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.
- 8.2.8 If neither party requires by notice in writing given within 10 *Working Days* of the date of notice requesting arbitration in paragraph 8.2.6 that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.2.6 shall be
- .1 held in abeyance until
 - (1) *Substantial Performance of the Work*,
 - (2) the *Contract* has been terminated, or
 - (3) the *Contractor* has abandoned the *Work*,whichever is earlier, and
 - .2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.2.6.

GC 8.3 RETENTION OF RIGHTS

- 8.3.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the notices required under Part 8 of the General Conditions - DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3.

- 8.3.2 Nothing in Part 8 of the General Conditions - DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the *Place of the Work* and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.2.6 to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

PART 9 PROTECTION OF PERSONS AND PROPERTY

GC 9.1 PROTECTION OF WORK AND PROPERTY

- 9.1.1 The *Contractor* shall protect the *Work* and the *Owner's* property and property adjacent to the *Place of the Work* from damage which may arise as the result of the *Contractor's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:
- .1 errors in the *Contract Documents*;
 - .2 acts or omissions by the *Owner*, the *Consultant*, other contractors, their agents and employees.
- 9.1.2 Before commencing any work, the *Contractor* shall determine the location of all known underground utilities and structures indicated in the *Contract Documents* or that are reasonably apparent in an inspection of the *Place of the Work*.
- 9.1.3 Should the *Contractor* in the performance of the *Contract* damage the *Work*, the *Owner's* property, or property adjacent to the *Place of the Work*, the *Contractor* shall be responsible for the making good such damage at the *Contractor's* expense.
- 9.1.4 Should damage occur to the *Work* or *Owner's* property for which the *Contractor* is not responsible, as provided in paragraph 9.1.1, the *Contractor* shall make good such damage to the *Work* and, if the *Owner* so directs, to the *Owner's* property. The *Contract Price* and *Contract Time* shall be adjusted as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.

GC 9.2 DAMAGES AND MUTUAL RESPONSIBILITY

- 9.2.1 If either party to the *Contract* should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone for whom the other party is responsible in law, then that party shall be reimbursed by the other party for such damage. The reimbursing party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party.
- 9.2.2 If the *Contractor* has caused damage to the work of another contractor on the *Project*, the *Contractor* shall upon due notice in writing settle with the other contractor by negotiation or arbitration. If the other contractor makes a claim against the *Owner* on account of damage alleged to have been so sustained, the *Owner* shall notify the *Contractor* in writing and may require the *Contractor* to defend the action at the *Contractor's* expense. The *Contractor* shall satisfy a final order or judgment against the *Owner* and pay the costs incurred by the *Owner* arising from such action.
- 9.2.3 If the *Contractor* becomes liable to pay or satisfy a final order, judgment, or award against the *Owner*, then the *Contractor*, upon undertaking to indemnify the *Owner* against any and all liability for costs, shall have the right to appeal in the name of the *Owner* such final order or judgment to any and all courts of competent jurisdiction.

GC 9.3 TOXIC AND HAZARDOUS SUBSTANCES

- 9.3.1 For the purposes of applicable environmental legislation, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.
- 9.3.2 Prior to the *Contractor* commencing the *Work*, the *Owner* shall:
- .1 take all reasonable steps to determine whether any toxic or hazardous substances are present at the *Place of the Work*, and
 - .2 provide the *Consultant* and the *Contractor* with a written list of any such substances that are known to exist and their locations.

- 9.3.3 The *Owner* shall take all reasonable steps to ensure that no person suffers injury, sickness, or death and that no property is damaged or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.3.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with legal requirements, to dispose of, store or otherwise render harmless toxic or hazardous substances which were present at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.3.5 If the *Contractor*
- .1 encounters toxic or hazardous substances at the *Place of the Work*, or
 - .2 has reasonable grounds to believe that toxic or hazardous substances are present at the *Place of the Work*, which were not disclosed by the *Owner*, as required under paragraph 9.3.2, or which were disclosed but have not been dealt with as required under paragraph 9.3.4, the *Contractor* shall
 - .3 take all reasonable steps, including stopping the *Work*, to ensure that no person suffers injury, sickness, or death and that no property is damaged or destroyed as a result of exposure to or the presence of the substances, and
 - .4 immediately report the circumstances to the *Consultant* and the *Owner* in writing.
- 9.3.6 If the *Contractor* is delayed in performing the *Work* or incurs additional costs as a result of taking steps required under paragraph 9.3.5.3, the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the *Contractor* shall be reimbursed for reasonable costs incurred as a result of the delay and as a result of taking those steps.
- 9.3.7 Notwithstanding paragraphs 2.2.6 and 2.2.7 of GC 2.2 - ROLE OF THE CONSULTANT, or paragraph 8.1.1 of GC 8.1 - AUTHORITY OF THE CONSULTANT, the *Consultant* may select and rely upon the advice of an independent expert in a dispute under paragraph 9.3.6 and, in that case, the expert shall be deemed to have been jointly retained by the *Owner* and the *Contractor* and shall be jointly paid by them.
- 9.3.8 The *Owner* shall indemnify and hold harmless the *Contractor*, the *Consultant*, their agents and employees, from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or resulting from exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*. This obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity set out in GC 12.1 - INDEMNIFICATION or which otherwise exist respecting a person or party described in this paragraph.
- 9.3.9 GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES shall govern over the provisions of paragraph 1.3.1 of GC 1.3 RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

GC 9.4 ARTIFACTS AND FOSSILS

- 9.4.1 Fossils, coins, articles of value or antiquity, structures, and other remains or things of scientific or historic interest discovered at the *Place or Work* shall, as between the *Owner* and the *Contractor*, be deemed to be the absolute property of the *Owner*.
- 9.4.2 The *Contractor* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.4.1, and shall notify the *Consultant* immediately upon discovery of such items.
- 9.4.3 The *Consultant* will investigate the impact on the *Work* of the discoveries identified in paragraph 9.4.1. If conditions are found that would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, shall issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.

GC 9.5 CONSTRUCTION SAFETY

- 9.5.1 Subject to paragraph 3.2.2.2 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, the *Contractor* shall be solely responsible for construction safety at the *Place or the Work* and for compliance with the rules, regulations, and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the *Work*.

PART 10 GOVERNING REGULATIONS

GC 10.1 TAXES AND DUTIES

- 10.1.1 The *Contract Price* shall include all taxes and customs duties in effect at the time of the bid closing except for *Value Added Taxes* payable by the *Owner* to the *Contractor* as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.
- 10.1.2 Any increase or decrease in costs to the *Contractor* due to changes in such included taxes and duties after the time of bid closing shall increase or decrease the *Contract Price* accordingly.

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

- 10.2.1 The laws of the *Place of the Work* shall govern the *Work*.
- 10.2.2 Except for the permits and fees, including those required under paragraph 10.2.3, which the *Contract Documents* specify as the responsibility of the *Contractor*, the *Owner* shall obtain and pay for all necessary approvals, permits, permanent easements, and rights of servitude.
- 10.2.3 The *Contractor* shall obtain and pay for permits, licenses, inspections and certificates necessary for performance of the *Work* and customarily obtained after signing of the *Contract*.
- 10.2.4 The *Contractor* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the *Work* and which relate to the *Work*, to the preservation of the public health, and to construction safety.
- 10.2.5 The *Contractor* shall not be responsible for verifying that the *Contract Documents* are in compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Work*. If the *Contract Documents* are in variance therewith, or if, subsequent to the time of bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Contractor* shall notify the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will make the changes required to the *Contract Documents* as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 10.2.6 If the *Contractor* fails to notify the *Consultant* in writing; and fails to obtain direction as required in paragraph 10.2.5; and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the *Contractor* shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses, and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.
- 10.2.7 If, subsequent to the time of bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 - CLAIMS.

GC 10.3 PATENT FEES

- 10.3.1 The *Contractor* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Contractor* shall hold the *Owner* harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention by the *Contractor* or anyone for whose acts the *Contractor* may be liable.
- 10.3.2 The *Owner* shall hold the *Contractor* harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention in executing anything for the purpose of the *Contract*, the model, plan, or design of which was supplied to the *Contractor* as part of the *Contract Documents*.

GC 10.4 WORKERS' COMPENSATION

- 10.4.1 Prior to commencing the *Work*, *Substantial Performance of the Work*, and the issuance of the final certificate for payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*, including payments due thereunder.
- 10.4.2 At any time during the term of the *Contract*, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.

PART 11 INSURANCE AND CONTRACT SECURITY

GC 11.1 INSURANCE

- 11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, the *Contractor* shall provide, maintain, and pay for the insurance coverages specified in GC 11.1 - INSURANCE. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the *Work* until the date of the final certificate for payment. Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.
- .1 General Liability Insurance:
General liability insurance shall be in the joint names of the *Contractor*, the *Owner*, and the *Consultant*, with limits of not less than \$2,000,000 per occurrence and with a property damage deductible not exceeding \$2,500. The insurance coverage shall not be less than the insurance required by IBC Form 2100, or its equivalent replacement, provided that IBC Form 2100 shall contain the latest edition of the relevant CCDC endorsement form. To achieve the desired limit, umbrella, or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, on an ongoing basis for a period of 6 years following *Substantial Performance of the Work*. Where the *Contractor* maintains a single, blanket policy, the addition of the *Owner* and the *Consultant* is limited to liability arising out of the *Work* and all operations necessary or incidental thereto. The policy shall be endorsed to provide the *Owner* with not less than 30 days notice in writing in advance of any cancellation, and of change or amendment restricting coverage.
 - .2 Automobile Liability Insurance:
Automobile liability insurance in respect of licensed vehicles shall have limits of not less than \$2,000,000 inclusive per occurrence for bodily injury, death, and damage to property, covering all licensed vehicles owned or leased by the *Contractor*, and endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of any cancellation, change or amendment restricting coverage. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.
 - .3 Aircraft and Watercraft Liability Insurance:
Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft if used directly or indirectly in the performance of the *Work*, including use of additional premises, shall be subject to limits of not less than \$2,000,000 inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof and limits of not less than \$2,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of cancellation, change, or amendment restricting coverage.

.4 Property and Boiler and Machinery Insurance:

- (1) "All risks" property insurance shall be in the joint names of the *Contractor*, the *Owner*, the *Consultant*, and all *Subcontractors*, insuring not less than the sum of the amount of the *Contract Price* and the full value, as stated in the Supplementary Conditions, of *Products* that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding \$2,500. The insurance coverage shall not be less than the insurance required by IBC Form 4042 or its equivalent replacement, provided that IBC Form 4042 shall contain the latest edition of the relevant CCDC endorsement form. The coverage shall be maintained continuously until 5 *Working Days* after the date of the final certificate for payment.
- (2) Boiler and machinery insurance shall be in the joint names of the *Contractor*, the *Owner*, and the *Consultant* for not less than the replacement value of the boilers, pressure vessels, and other insurable objects forming part of the *Work*. The insurance provided shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form" and shall be maintained continuously from commencement of use or operation of the property insured and until 5 *Working Days* after the date of the final certificate for payment.
- (3) The policies shall allow for partial or total use or occupancy of the *Work*. If because of such use or occupancy the *Contractor* is unable to provide coverage, the *Contractor* shall notify the *Owner* in writing. Prior to such use or occupancy the *Owner* shall provide, maintain, and pay for all risk property and boiler insurance insuring the full value of the *Work*, as in sub-paragraphs (1) and (2), including coverage for such use or occupancy and shall provide the *Contractor* with proof of such insurance. The *Contractor* shall refund to the *Owner* the unearned premiums applicable to the *Contractor's* policies upon termination of coverage.
- (4) The policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. The *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of *Contract Time* relative to the extent of the loss or damage as the *Consultant* may recommend in consultation with the *Contractor*.
- (5) The *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount at which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds and as provided in GC 5.5 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.6 - PROGRESS PAYMENT. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*.
- (6) In the case of loss or damage to the *Work* arising from the work of another contractor, or *Owner's* own forces, the *Owner*, in accordance with the *Owner's* obligations under paragraph 3.2.2.4 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, shall pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as provided in GC 5.5 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.6 - PROGRESS PAYMENT.

.5 Contractors' Equipment Insurance:

"All risks" contractors' equipment insurance covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, including boiler insurance on temporary boilers and pressure vessels, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of cancellation, change, or amendment restricting coverage. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* agrees to waive the equipment insurance requirement.

11.1.2 The *Contractor* shall be responsible for deductible amounts under the policies except where such amounts may be excluded from the *Contractor's* responsibility by the terms of GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

11.1.3 Where the full insurable value of the *Work* is substantially less than the *Contract Price*, the *Owner* may reduce the amount of insurance required or waive the course of construction insurance requirement.

- 11.1.4 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Contractor* and the *Consultant*. The *Contractor* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the amount which is due or may become due to the *Contractor*.
- 11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.

GC 11.2 CONTRACT SECURITY

- 11.2.1 The *Contractor* shall, prior to commencement of the *Work* or within the specified time, provide to the *Owner* any contract security specified in the *Contract Documents*.
- 11.2.2 If the *Contract Documents* require surety bonds to be provided, such bonds shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the fulfillment of the *Contract*. The form of such bonds shall be in accordance with the latest edition of the CCDC approved bond forms.

PART 12 INDEMNIFICATION — WAIVER — WARRANTY

GC 12.1 INDEMNIFICATION

- 12.1.1 The *Contractor* shall indemnify and hold harmless the *Owner* and the *Consultant*, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings (hereinafter called "claims"), by third parties that arise out of, or are attributable to, the *Contractor's* performance of the *Contract* provided such claims are:
- .1 attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and
 - .2 caused by negligent acts or omissions of the *Contractor* or anyone for whose acts the *Contractor* may be liable, and
 - .3 made in writing within a period of 6 years from the date of *Substantial Performance of the Work* as set out in the certificate of *Substantial Performance of the Work*, or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work*.
- The *Owner* expressly waives the right to indemnity for claims other than those stated above.
- 12.1.2 The obligation of the *Contractor* to indemnify hereunder shall be limited to \$2,000,000 per occurrence from the commencement of the *Work* until *Substantial Performance of the Work* and thereafter to an aggregate limit of \$2,000,000.
- 12.1.3 The *Owner* shall indemnify and hold harmless the *Contractor*, the *Contractor's* agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the *Place of the Work*.
- 12.1.4 GC 12.1 - INDEMNIFICATION shall govern over the provisions of paragraph 1.3.1 of GC 1.3 - RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

GC 12.2 WAIVER OF CLAIMS

- 12.2.1 Waiver of Claims by *Owner*
- As of the date of the final certificate for payment, the *Owner* expressly waives and releases the *Contractor* from all claims against the *Contractor* including without limitation those that might arise from the negligence or breach of contract by the *Contractor* except one or more of the following:
- .1 those made in writing prior to the date of the final certificate for payment and still unsettled;
 - .2 those arising from the provisions of GC 12.1 - INDEMNIFICATION or GC 12.3 - WARRANTY;
 - .3 those arising from the provisions of paragraph 9.3.5 of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS and arising from the *Contractor* bringing or introducing any toxic or hazardous substances and materials to the *Place of the Work* after the *Contractor* commences the *Work*.

In the Common Law provinces GC 12.2.1.4 shall read as follows:

- .4 those made in writing within a period of 6 years from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work* and arising from any liability of the *Contractor* for damages resulting from the *Contractor's* performance of the *Contract* with respect to substantial defects or deficiencies in the *Work* for which the *Contractor* is proven responsible. As used herein "substantial defects or deficiencies" means those defects or deficiencies in the *Work* which affect the *Work* to such an extent or in such a manner that a significant part or the whole of the *Work* is unfit for the purpose intended by the *Contract Documents*.

In the Province of Quebec GC 12.2.1.4 shall read as follows:

- .4 those arising under the provisions of Article 2118 of the Civil Code of Quebec.

12.2.2 Waiver of Claims by *Contractor*

As of the date of the final certificate for payment, the *Contractor* expressly waives and releases the *Owner* from all claims against the *Owner* including without limitation those that might arise from the negligence or breach of contract by the *Owner* except:

- .1 those made in writing prior to the *Contractor's* application for final payment and still unsettled; and
- .2 those arising from the provisions of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES or GC 10.3 - PATENT FEES.

- 12.2.3 GC 12.2 - WAIVER OF CLAIMS shall govern over the provisions of paragraph 1.3.1 of GC 1.3 - RIGHTS AND REMEDIES, GC 6.6 - CLAIMS, and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

GC 12.3 WARRANTY

- 12.3.1 Except for extended warranties as described in paragraph 12.3.6, the warranty period under the *Contract* is one year from the date of *Substantial Performance of the Work*.
- 12.3.2 The *Contractor* shall be responsible for the proper performance of the *Work* to the extent that the design and *Contract Documents* permit such performance.
- 12.3.3 Subject to paragraph 12.3.2, the *Contractor* shall correct promptly, at the *Contractor's* expense, defects or deficiencies in the *Work* which appear prior to and during the warranty periods specified in the *Contract Documents*.
- 12.3.4 The *Owner*, through the *Consultant*, shall promptly give the *Contractor* notice in writing of observed defects and deficiencies which occur during the one-year warranty period.
- 12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.3.
- 12.3.6 Any extended warranties required beyond the one-year warranty period, as described in paragraph 12.3.1, shall be as specified in the *Contract Documents*. Extended warranties shall be issued by the warrantor to the benefit of the *Owner*. The *Contractor's* responsibility with respect to extended warranties shall be limited to obtaining any such extended warranties from the warrantor. The obligations under such extended warranties are solely the responsibility of the warrantor.

THESE SUPPLEMENTARY GENERAL CONDITIONS AMEND THE DEFINITIONS AND GENERAL CONDITIONS OF THE CIVIL WORKS CONTRACT (CCDC 18 - 2001).

AGREEMENT BETWEEN OWNER AND CONTRACTOR

Page 4, after Article A-8 insert the following new articles:

"ARTICLE A-9 SEVERABILITY

9.1 Each and every paragraph, section, clause, sub-clause or other component of the Contract is severable one from the other. Should it be found by a court of competent jurisdiction that any one or more paragraphs or parts thereof are null and void, the validity of the remaining paragraphs or parts thereof shall not be affected.

ARTICLE A-10 TIME OF THE ESSENCE

10.1 Time shall be deemed to be of the essence of the performance of the Contractor's obligations herein under."

DEFINITIONS

Page 6, delete Definition 7 and replace with the following new definition:

"7. The Contract Price shall be the sum of the products of the actual final quantities that are incorporated in, or made necessary by the Work, as confirmed by count and measurement, multiplied by the appropriate Unit Prices from the Tender Form together with any adjustments that are made in accordance with the provisions of the Contract Documents plus the amount of Harmonized Sales Tax."

Page 7, after definitions for Project, add new definitions for Project Documents as follows:

27. Approved or Approval

"Approved" or "Approval" means acceptance by the Consultant in accordance with the Consultant's responsibilities described in Clause GC 2.2 ROLE OF THE CONSULTANT.

28. Total Amount Payable

Total Amount Payable means the sum of the Contract Price in the Tender Form, subject to adjustments made in accordance with the provisions of the Contract Documents plus the amount of Value Added Taxes.

29. Period of Delay

The period of time from the date stated in the Agreement and the actual date of Substantial Performance; if any.

30. Project Documents

Project Documents are those documents prepared to supplement the Standard Specifications for the Work on a specific Project. Where applicable, they consist of the Information for Tenderers, Tender Form, Form of Agreement, Technical Specifications, drawings and addenda.

SECTION 00 72 45 - GENERAL CONDITIONS OF CONTRACT

GC 2.4 - DEFECTIVE WORK

Page 11, within clause 2.4.3, add the following sentence at the end of the clause:

"If the Engineer determination is not accepted by either party, then the matter shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION."

GC 3.4 DOCUMENT REVIEW

Page 12, add clause 3.4.2 as follows:

"3.4.2 The doctrine of contra proferentem shall not apply in the interpretation of Contract meaning that if there is any ambiguous language in the Contract it shall not be interpreted more strongly against the party who prepared or drafted the ambiguous language.

GC 3.7 - LAYOUT OF THE WORK

Page 13, delete clause 3.7.1 in its entirety and replace with the following:

"3.7.1 The Contractor shall have all reference points established on site by a licensed surveyor, at the place of the Work, at no additional cost to the Owner."

GC 3.11 - SHOP DRAWINGS

Page 14, clause 3.11.4, delete second sentence and replace to read:

"Contractor shall prepare and jointly review with Engineer, a schedule of dates for submission of shop drawings."

Page 15, add new GC 3.15 as follows:

GC 3.15 CLOSEOUT DOCUMENTS

"3.15.1 Fifteen working days before the application for Substantial Performance is made, submit the following closeout documents to the Consultant for review if required by the Contract Documents:

- .1 Record Drawing/As-Built Drawings.
- .2 Any other documentation identified as a Closeout document

in Section 01 78 00.

- 3.15.2 Should the Contractor fail to submit any of the required documents above this will constitute a contractual deficiency in an amount determined by the Consultant and will be subject to finishing holdback procedures granted under the lien legislation at the Place of Work.

GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK

Page 17, after clause 5.4.2, add the following clause and renumber subsequent subclauses:

- "5.4.3 The percentage fee as stated in clause 5.4.1 shall be ten percent (10%) of the cost plus work, but shall not be applied to the cost of construction equipment when such cost is based on rates which already include overhead and profit."

GC 5.6 - PROGRESS PAYMENT

Page 18, in clause 5.6.1, line 1, change "5 working days" to read "10 calendar days" and in line 2, change "GC5.2" to read "GC 5.5".

Page 18, delete clause 5.6.2 in its entirety and replace with the following:

- "5.6.2 The Owner shall make payment to the Contractor on account as provided in Article A-5 of the Agreement - PAYMENT on or before twenty (20) calendar days after the later of:
- .1 receipt by the Engineer of the application for payment;
 - or
 - .2 the last day of the monthly payment period covered by the application for payment."

Page 18, after clause 5.6.3, add the following new clause:

- "5.6.4 The Contractor shall agree interim quantities with the Engineer for the purposes of progress payment claims, prior to submission of progress payment application.
- "5.6.5 The Contractor shall pay promptly any and all accounts for labour, services and materials used for the purpose of the fulfillment of this Contract as and when such accounts become due and payable and shall furnish the Engineer with proof of payment of such accounts in such form and as often as the Engineer may request."

GC 5.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

Page 18, clause 5.8.1.2, first line change "sworn or affirmed statement" to read "Statutory Declaration on CCDC Form 9A, latest edition"

Page 18, after clause 5.8.1.2, add the following:

- "5.8.1.3 Submit a certificate by deed search to the Owner by a solicitor licensed to practice law in the Province of the Place of Work, certifying that no lien associated with the Work exists against the Owner's property or Work;
- 5.8.1.4 Submit a clearance letter from the Workers' Compensation Board.
- 5.8.1.5 All such documents shall be dated not earlier than the expiry of the lien period."

Page 18, clause 5.8.2, first line, change "sworn or affirmed statement" to read "Statutory Declaration on CCDC Form 9A, latest edition"

Page 19, add new clause 5.8.4.1 as follows:

- "5.8.4.1 If, within sixty (60) days after the issue of the Certificate of Substantial Performance, the Contractor has not corrected all the documented deficiencies, the Owner shall retain sufficient monies, as determined by the Consultant, to cover the cost of completing said deficiencies. These monies shall be held in addition to holdback monies retained in accordance with the provisions of the Contract and subject to the terms of the Lien legislation of the Place of Work."

GC 5.10 - FINAL PAYMENT

Page 19, delete clause 5.10.1 in its entirety and replace with the following:

- "5.10.1 When the Contractor considers that the Work is completed, the Contractor shall submit an application for final payment. The Contractor's application for final payment is considered to be valid when:
- .1 Work has been completed in compliance with the Contract Documents and the Engineer is satisfied that all the requirements of the Contract have been fulfilled by the Contractor.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Equipment and systems have been tested, adjusted and balanced and are fully operational and written reports as outlined in the Contract Documents have been provided to the Engineer.
 - .4 Certificates required by utility companies, manufacturer's representative and inspectors have been submitted.
 - .5 Spare parts, maintenance materials, warranties and bonds have been provided.
- 5.10.2 If Work is deemed incomplete by the Engineer, complete outstanding items and request re-inspection.
- 5.10.3 If, in the opinion of the Engineer, it is not expedient to

correct defective work or work is not performed in accordance with the requirements of the Contract, the Owner may deduct from the Contract Price the difference in value between work performed and that called for by the Contract Documents, the amount of which shall be determined by the Engineer."

Page 19, renumber existing clauses 5.10.2, 5.10.3 and 5.10.4 to 5.10.4, 5.10.5, and 5.10.6 respectively. In renumbered clause 5.10.6, change "5 working days" to read "20 calendar days".

GC 6.2 - CHANGE ORDER

Page 20, within clause 6.2.2.1 after "the Work" add "to the limits set forth in GC 6.7 - Quantity Variations".

Page 20, add new clauses 6.2.4 and 6.2.5 as follows:

- "6.2.4 The mark-up of agreed upon changes are as follows:
- .1 Work performed by the Contractor's own forces will be the cost of the Work plus ten (10%) percent overhead and profit.
 - .2 Work performed by the subcontractor's force will be the cost of work plus 15% overhead and profit. Where the Work can be done by the Contractor's forces, as determined by the Consultant, but is done by the subcontractors forces, the mark-up for overhead and profit will be limited to ten (10%) percent.
- 6.2.5 Before the approval of any change order over \$1,000 in value the Consultant is entitled to receive, upon request, at a minimum the following breakdown of cost associated with such change order:
- .1 Labour rates, excluding operators.
 - .2 Equipment rates including operators.
 - .3 Supervisory staff rates.
 - .4 Subcontractor invoices where applicable.
 - .5 Overhead costs including worker's compensation, site trailer, cost as applicable, insurance, bonding, small tool expenses, CPP, EI contributions.
- 6.2.6 No compensation for extra work or material shall be allowed unless such work or material is ordered in writing by the Consultant.
- 6.2.7 Whenever any extra work or claim for extra work is in progress, the Contractor shall, each working day, report to the Consultant in writing and in full detail, the amount and cost of the labour and materials used in carrying out such work on the preceding working day and no claim for compensation for such work or materials shall be considered or allowed unless such report shall have been made. The Consultant shall not allow any compensation for the cost of repairs to equipment or in respect of construction equipment of any kind idle on the Site except as
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directed by the Consultant in writing or for damage to anything used in performing any such extra work or making any such alteration.

6.2.8 The price applicable to any work omitted from the Contract, which shall be deducted from the Contract Price, shall be mutually agreed upon by the Contractor and the Consultant in which case the price shall be comparable to prices quoted on work of similar nature."

GC 6.3 - CHANGE DIRECTIVE

Page 21, in clause 6.3.8, add the following sentence at the end of the paragraph:

"If such determination by the Engineer is not accepted by either party, then the decision shall be made in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION."

GC 6.5 - DELAYS

Page 21, clause 6.5.2, delete last sentence of paragraph and replace with the following sentence:

"The Contractor will not be reimbursed by the Owner for costs incurred by the Contractor as a result of such delay."

GC 9.5 - CONSTRUCTION SAFETY

Page 27, after GC 9.5.1, add the following:

"9.5.2 W.H.M.I.S. - Workplace Hazardous Materials Information Systems & Hazardous Products Act - Government of Canada Regulations under the Hazardous Products Act and the regulation regarding the handling and storage of hazardous materials must be complied with (reference: Regulation 88-221). These regulations stipulate that employees must be trained in the proper handling of workplace hazardous material."

GC 10.1 - TAXES AND DUTIES

Page 28, after clause 10.1.2, add the following:

"10.1.3 The Contractor shall indicate on each application for payment, as a separate amount, the appropriate Harmonized Sales Tax that the Owner is legally obliged to pay. This amount will be paid to the Contractor in addition to the amount certified for payment under the Contract."

GC 10.2 - LAWS, NOTICES, PERMITS AND FEES

Page 28, delete clause 10.2.2 and replace with the following:

"10.2.2 The Contractor shall obtain all permits, such as those from the Department of Highways; licenses; letters of approval and certificates and pay the fees required for the performance of the Work which are in force at the date of tender closing, but this shall not include the obtaining of permanent easements or rights-of-way."

Page 28, in clause 10.2.3, add new sentences to end of clause as follows:

"Various jurisdictions have requirements for posting non-refundable fees before excavations are carried out within public rights-of-way. The Contractor is responsible for the determination of the requirement for each specific project and for any required deposits."

GC 11.2 - CONTRACT SECURITY

Page 31, delete GC 11.2.1 in its entirety and replace with the following:

"11.2.1 The Contractor shall, prior to commencement of the Work, provide to the Owner a Performance Bond and a Labour and Materials Bond, each in the amount of 50% of the Total Amount Payable or an Irrevocable Letter of Credit in the amount of 20% of the Total Amount Payable. The Irrevocable Letter of Credit shall be issued by a certified financial institution for a period of no less than twelve (12) months after the issue of Substantial Performance Certificate. Include the cost of providing the Irrevocable Letter of Credit in Contract Price. Should it become apparent that the final cost of the project will exceed the Total Amount Payable by more than 10%, the Contractor shall arrange to have his bonds or Irrevocable Letter of Credit reissued, based on the projected final cost."

Page 31, add new clause GC 11.2.3 as follows:

"11.2.3 The Contract Security will be retained until the expiration of the Warranty Period."

GC 12.3 - WARRANTY

Page 22, add new clause GC 12.3.7 as follows:

"12.3.7 All work of repair or replacement carried out during the Warranty Period shall be maintained for a period of one (1) year from the date of the Engineer's acceptance of the work of repair or replacement notwithstanding that the Warranty Period expires before the expiration of the said year. This clause shall not apply to normal operation maintenance, which shall be carried out by the Owner."

1.1 Documents
Required

- .1 Maintain at job site, one (1) copy each of the following:
 - .1 Contract drawings;
 - .2 Specifications;
 - .3 Addenda;
 - .4 Reviewed shop drawings/submissions;
 - .5 Change Orders;
 - .6 Other modifications to Contract;
 - .7 Field test reports;
 - .8 Copy of approved work schedule;
 - .9 Manufacturer's installation and application instructions.

1.2 Work Schedule and
Completion Dates

- .1 Prepare and submit to the Consultant with five (5) days of notification of Contract award, one (1) copy of the construction schedule, in the form of a bar chart, showing the dates for commencement and completion of each major activity of the work, including the work of subcontractors; dates of submissions, review and return of all drawings, etc.; the dates of Substantial Completion; and intended man hours of labour and equipment for each major items of work. If the schedule as submitted is unacceptable in any way, submit without delay a revised schedule satisfactory to the Consultant.
 - .2 The Consultant will notify the Contractor in writing of acceptance of the Construction Schedule. Comply with the Dates of the Construction Schedule at all times. If, for any reason the Construction Schedule is not followed, immediately notify the Consultant of the changes and submit a revised schedule for acceptance. Upon written acceptance by the Consultant, this schedule will become the Construction Schedule.
 - .3 Whenever required, give further written particulars concerning this schedule. The submission to and acceptance by the Consultant of the Contractor's Construction Schedule or the furnishing of details and particulars thereto will not relieve the Contractor of any duties and responsibilities under the Contract.
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1.3 Measurement
Responsibilities

- .1 Notify the Consultant sufficiently in advance of operations to permit required measurements for payment purposes.

1.4 Contractor's
Use of Site

- .1 Co-operate with users of existing facilities and as per direction of the Consultant. Do not impede access to the breakwater property.
- .2 Should interferences occur, take directions from the Consultant.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Move stored products or equipment which interfere with operations of the Consultant or other Contractors.
- .5 Obtain and pay for use of additional storage or work areas needed for operations.
- .6 Comply with all regulations and authorities having jurisdiction over the work, whether on land or on water.
- .7 Do not damage existing structures as a result of operations. Repair any said damage at no additional expense to the Contract.
- .8 Provide temporary barriers and warning signs in location where work is adjacent to areas used by public.

1.6 Codes and
Standards

- .1 Perform work in accordance with National Building Code of Canada (NBC) and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements apply.
 - .2 Meet or exceed requirements of specified standards, codes and referenced documents. When a standard or code is outdated, the latest edition will supersede the referenced date.
 - .3 Observe and enforce construction safety measures by Canadian Construction Safety Code and Construction Safety Code of Nova Scotia. In the event of conflict between any provisions of above
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authorities, the most stringent provision will apply.

- 1.7 Project Meeting .1 The Consultant will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.
- 1.8 Setting Out of Work
- .1 Do all detail surveys necessary for the work, including locating and maintaining working points, and establishing lines and elevations. Perform all layout work, and carefully preserve benchmarks, reference points and stakes.
- .2 Provide such masts, scaffolds, batter boards, lines, straight edges, templates and other devices as may be necessary to facilitate layout, construction and inspection of the work. Whenever necessary, suspend work for such reasonable time as may be necessary to permit the Consultant to check or inspect any portion of the work. No extra compensation or time for completion will be granted because of this suspension of work.
- .3 Reference elevations for the various features of the specified works to be referenced and properly related to a benchmark, which will be approved by the Consultant.
- .4 Verify all grades, lines, levels, and dimensions shown on the drawings and report any errors or inconsistencies to the Consultant before commencing work. Establish all grades, lines, levels required to facilitate the work.
- 1.9 Contract Documents
- .1 Contract Drawings:
- .1 The drawings listed in these "Plans and Specifications" marked "A" and any additional drawings issued at a later date by the Consultant.
- .2 The Consultant may furnish additional drawings to assist in proper execution of work. These drawings will be issued for clarification only. Such drawings will have same meaning and intent as if they were included with plans referred to in Contract Documents.
- .3 The drawings indicate the extent and general dimensions of the work. Make all necessary measurements to ensure that the result of the work is in accordance with the intent.
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- .4 Verify all existing conditions in field prior to proceeding with work.
 - .2 Contract Specifications:
 - .1 The general requirements and technical specifications are written solely for the General Contractor. They are organized into the NMS format of separate divisions and sections.
 - .2 Specification language is the "Short Form Type", for example, where the word "provide" occurs, interpret it to mean "the Contractor shall furnish all labour, material and equipment necessary to complete the work".
 - .3 These Specifications and accompanying drawings are intended to describe and provide for a finished project. They are intended to be complementary, and what is called for by either will be as binding as if called for by both. Understand that the work herein described will be complete in every detail, notwithstanding that every item necessarily involved is not particularly mentioned, and Contractor will be held to provide all labour, materials and equipment necessary for the entire completion of the work and will not avail himself of any errors or omissions.
 - 1.10 Permits and Regulations
 - .1 The following regulatory approvals have been obtained, copies of which are located in Appendix A:
 - .1 Fisheries and Oceans Canada, Fish and Fish Habitat Protection Program.
 - .2 Nova Scotia Lands and Forestry, Beaches Act.
 - .3 Transport Canada, Canadian Navigable Waters Act.
 - .2 Carry out all Work in accordance with above noted approvals. Include all costs to comply with above approvals in contract price as no extra will be accepted by the Owner.
 - .3 Apply for, obtain and pay for all necessary permits, approvals and other authorizations required for the work.
 - .4 Comply with all by-laws, ordinances and regulations of all authorities having jurisdiction.
 - .5 Pay for any Municipal permits as required.
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1.11 Cutting, Fitting
& Patching

- .1 Execute cutting (including excavation), fitting and patching required to make work fit properly.
- .2 Make cuts with clean, true, smooth edges. Make patched inconspicuous in final assembly.
- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .4 Obtain the Consultant's approval before cutting, boring or sleeving, or excavating adjacent to load-bearing members.

1.12 Record of
Construction

- .1 As work progresses, maintain accurate records to show all deviations from the contract drawings, with particular reference to work which will be concealed. Prior to the inspection of the work for the issuance of the Final Certificate of Completion, provide the Consultant with one set of white prints of the drawings with all deviations shown neatly thereon.
- .2 Provide "as built" cross sections of any excavation, dredging or fill work.

1.13 Maintenance
of Shipping

- .1 Liaise with the local port officials to coordinate activities such that any interference is minimized.

1.14 Cooperation and
Assistance to
Consultant

- .1 Co-operate with the Consultant on inspection of the work.
- .2 Provide assistance when requested.
- .3 Provide small motor boat with operator for Consultant's use when requested.

1.15 Datum

- .1 The datum referred to in this Specification is Chart Datum. Chart Datum is, by International Agreement a plane below which the tide will seldom fall. The Canadian Hydrographic Service has adopted the plane of the lowest normal tide (L.N.T.) as Chart Datum. As the rise, fall and range of tides varies daily, the Canadian Tide and Current Tables, as issued by the Canadian Hydrographic Service, should be consulted for
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tidal predictions and other tidal information relating to work.

1.16 Contractor's
Representative

- .1 Continuously maintain on the site an authorized representative to whom communication may be addressed and who will be competent to speak for the Contractor in discussing work methods.

1.17 Laws, Standards
Taxes and Fees

- .1 Comply with all laws and standards governing all or any part of the work, pay all applicable taxes and pay for all permits and certificates required in respect of the execution of the work. Where variances exist between the requirements of agencies governing all or any part of the work, the most restrictive will govern, but in no instance will the standards established by the drawings and this Specification, which exceed such requirements, be reduced.

1.18 Protection
and Repair

- .1 Repair any damage resulting from operations under this contract.

1.19 Location of
Equipment Fixtures

- .1 Location of equipment, fixtures or any and appurtenances indicated are to be considered approximate.

1.20 Inspection
and Testing

- .1 The Consultant may employ an Inspector and/or Testing Company to ensure work conforms with contracts.

END OF SECTION

PART 1 - GENERAL

1. Unit prices for all items in the Schedule of Quantities and Unit Prices are full compensation for the work necessary to complete each item in the contract and in combination for all work necessary to complete the Work as a whole.
 2. For all items as applicable include all of the following as required where individual quantities are not provided in the Tender Form: traffic control, location of inground services by external utilities and coordination of work by external utilities (Water, Electrical, Gas, etc.), environmental protection, protection of existing trees, clearing, grubbing, common excavation, shoring, dewatering, backfilling, bedding, compaction, disposal of surplus materials, reinstatement of all disturbed surfaces with matching materials and thicknesses, testing, recording as-constructed features, and all incidentals.
 3. The unit and lump sum prices for all items in the Form of Tender "Schedule of Quantities and Unit Prices" shall include the cost for furnishing all materials, labour, tools, and equipment necessary to complete the work in accordance with the Contract, the Drawings and Specification, and shall cover all costs of surety, insurance, permits, coordination with Owner and/or other contractors on-site, assistance to the Consultant, site offices and other general costs. Each item shall include for all necessary supervision, labour, materials, plant and services, security provisions, survey and all operations and allowances customary and necessary to complete each item and the Contract as a whole notwithstanding the fact that not every such necessary operation is mentioned or included specifically for measurement.
 4. All measurement shall be along a horizontal plane unless otherwise indicated.
 5. The numbers of items described below correspond to the numbers of the items in Section 00 41 43, subsection 4, Schedule of Quantities and Unit Prices.
 6. Provisional items shall mean that the unit price as tendered shall be included in the estimated Contract Price and that the Owner reserves the right to delete all or portions of this item from the estimated Contract Price.
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PART 2 - ITEMS

1. Mobilization/Demobilization

Unit of Measurement: Lump Sum (L.S.)

This item includes: all costs associated with the transport of all equipment to and from the site. This item includes but is not limited to marine barges, diving and marine monitoring equipment, and all other equipment necessary to complete the Work. 50% of the lump sum will be paid upon complete mobilization and 50% of the lump sum will be paid upon complete demobilization.

2. Removals - Concrete

Unit of Measurement: Lump Sum (L.S.)

This item includes: removal and off-site disposal of concrete debris where shown on the Project Drawings.

3. Removals - Timber Crib/Ballast

Unit of Measurement: Lump Sum (L.S.)

This item includes: removal and off-site disposal of timber crib, ballast and hardware as shown on the Project Drawings.

4. Armour Stone

Unit of Measurement: cubic metre (m³)

Method of Measurement: surface-to-surface volume method between bathymetric/topographic survey taken before and after placement of armour stone.

This item includes: supply and placement of armour stone to the lines and elevations shown on the Project Drawings.

5. Excavation - Unsuitable (Provisional)

Unit of Measurement: cubic metre (m³)

Method of Measurement: surface-to-surface volume method between bathymetric survey taken before and after the removal of unsuitable material.

This item includes: excavation and off-site disposal of unsuitable material. Written authorization of the Consultant is required to claim against this item.

6. Filter Stone (Provisional)

Unit of Measurement: cubic metre (m³)

Method of Measurement: surface-to-surface volume method between

bathymetric/topographic survey taken before and after placement of filter stone.

This item includes: supply and placement of filter stone to the lines and elevations shown on the Project Drawings. Written authorization of the Consultant is required to claim against this item.

1. General
 - .1 Submit to the Consultant, for review, shop drawings, product data, samples and other information specified.
 - .2 Until submission is reviewed, work involving relevant product may not proceed.
 - .3 Provide all submittals electronically, in pdf file format.
 2. Shop Drawings
 - .1 Drawings to be scanned originals prepared by Contractor, subcontractor, supplier or distributor, which illustrate appropriate portion of work, showing fabrication, layout, setting or erection details as specified in appropriate sections.
 - .2 Identify details by reference to sheet and detail numbers shown on Contract Drawings.
 3. Product Data
 - .1 Certain specification sections specify that manufacturer's standard schematic drawings, catalogue sheets, diagrams schedules, performance chart, illustrations and other standard descriptive data will be accepted in lieu of shop drawings.
 4. Samples
 - .1 Submit samples in sizes and quantities specified.
 - .2 Construct field samples and mock-ups at locations acceptable to the Consultant.
 - .3 Accepted samples will become standards of workmanship and material against which, installed work will be checked on project.
 5. Miscellaneous Data
 - .1 Provide certificates, methodologies, design and test results as required.
 6. Coordination of Submissions
 - .1 Review shop drawings, product data, samples and miscellaneous data prior to submissions.
 - .2 Verify:
 - .1 Field Measurements.
 - .2 Field Construction Criteria.
 - .3 Catalogue numbers and similar data.
 - .3 Coordinate each submission with requirements of work and contract documents. Individual
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submissions will not be reviewed until all related information is available.

- .4 Contractor's responsibility for errors and omissions in submission is not relieved by the Consultant's review of submissions.
- .5 Contractor's responsibility for deviations in submission from requirements in Contract documents is not relieved by the Consultant's review of submission, unless the Consultant gives written acceptance of specified deviations.
- .6 Notify the Consultant, in writing at time of submission, of deviations from requirements of contract documents stating reasons for deviations.
- .7 After the Consultant's review, distribute copies.

7. Submission Requirements

- .1 Schedule submissions at least 14 days before dates reviewed submissions will be needed.
 - .2 Submit all shop drawings and product data electronically in pdf file format. Files must be legible and below 10Mb in size or broken into multiple pdf files.
 - .3 Accompany submissions with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample submitted.
 - .5 Other pertinent data.
 - .4 Submissions to include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Separate details when pertinent.
 - .4 Identification of product or material.
 - .5 Relation to adjacent structure or materials.
 - .6 Field dimensions, clearly identified as such.
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.7 Specification Section Number.

.8 Applicable standards such as CSA or CGSB numbers.

.9 Contractor's stamp, initialed or signed, certifying review of submission, verification of field measurements and compliance with contract documents.

8. Shop Drawings
Review

- .1 The review of shop drawings by the Consultant is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that the Consultant approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review does not relieve the Contractor of their responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and contract documents. Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all sub-trades.

9. Other Reviews

- .1 As for shop drawings above, other reviews are for the sole purpose of ascertaining the general concept.

END OF SECTION

PART 1 - GENERAL

- 1.1 Section Includes .1 Fire Safety Requirements
- .2 Hot Work Permit
- 1.2 Related Work .1 Section 01 35 28: Health and Safety
- 1.3 References .1 National Fire Code of Canada, 2015.
- 1.4 Definitions .1 Hot Work defined as:
- .1 Welding work
- .2 Cutting of materials by use of torch or other open flame devices
- .3 Grinding with equipment which produces sparks.
- 1.5 Submittals .1 Submit copy of Hot Work Procedures, to the Consultant for review, within 14 calendar days after contract award.
- .2 Include sample of Hot Work Permit.
- .3 Submit above documents in accordance with the submittal general requirements specified in Section 01 33 00.
- 1.6 Fire Safety & Hot Work Requirement .1 Implement and follow fire safety measures during Work. Comply with following:
- .1 National Fire Code, 2015
- .2 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Consultant will advise on the course of action to be followed.
- .3 Hot Work Requirements:
- .1 Obtain the Consultant's written Authorization to Proceed for the performance of Hot Work on site as may be required in the course of Work.
- .2 To obtain authorization submit to the Consultant for review:
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.1 Contractor's Hot Work Procedures to be followed on site in accordance with clause 1.8 below.

.2 Type of work and frequency of situations which will require Hot Work.

.3 Upon confirmation that effective fire safety measures will be implemented for hot work, the Consultant will grant Authorization to Proceed.

.4 In most cases, the Consultant will issue only one written authorization covering the entire construction project and duration of work. However in some cases, depending on the nature or phasing of work, the quantity of various trades needing to perform welding and cutting on site, or other deemed situation, the Consultant might designate certain portions of the work as separate entities, each entity requiring individual written authorization to proceed. Follow the Consultant's directives in this regard.

.4 Do not perform any Hot Work until receipt of the Consultant's written Authorization to Proceed.

1.7 Conformance

.1 Ensure that Hot Work Procedures, as established for project and agreed upon with the Consultant, are stringently followed. Enforce use and compliance by all workers.

.2 Brief all workers and subcontractors on Hot Work Procedures and Permit system.

1.8 Hot Work Procedures

.1 Develop Hot Work Procedures, to be followed when Hot Work is required as part of the work.

.2 Describe safe work practices and sequence of activities to be followed on site by Contractor and workers to minimize the potential occurrence of a fire resulting from Hot Work.

.3 Hot Work Procedures to include:

.1 Requirement to perform hazard assessment of the site or immediate work area, based on type and extent of Hot Work required, in accordance with Hazard Assessment and Safety Plan requirements of Section 01 35 29. Carry out hazard assessment for each hot work event.

.2 Use of a Hot Work Permit system, issued by an authorized person in Contractor's employ, for each event when Hot Work is required, granting permission to carry out hot work.

.3 Provision of a designated person (s) to carryout a Fire Safety Watch for a minimum of 30 minutes immediately upon completion of the hot work.

.4 Procedures to comply with fire safety codes and standards specified herein and specified in Section 01 35 29.

.5 Generic procedures, if used, must be edited, supplemented with pertinent information and tailored to reflect specific project conditions. Clearly label as being the Hot Work Procedures applicable to this contract.

.6 Include within procedures the step by step process on how to prepare and issue the Hot Work Permit.

.7 Hot Work Procedures to be in typewritten format, listing step by step procedures and worker instructions, clearly establishing and allocating responsibilities of:

.1 Worker (s)

.2 Designated person authorized to issue the Hot Work Permit,

.3 Fire Safety Watcher,

.4 Subcontractors and Contractor.

1.9 Hot Work Permit

.1 Develop "Hot Work Permit" form for review by the Consultant.

.2 Hot Work Permit form to include, as a minimum, the following data:

.1 Project name and project number.

.2 Specific area where hot work will be performed.

.3 Date when permit issued.

.4 Description on type of hot work to be carried out.

.5 Special precautions required, including type of fire extinguisher needed.

.6 Name and signature of authorized person, designated by Contractor, to issue the permit

.7 Name of worker (s) (clearly printed) to which the permit is being issued.

.8 Time duration of permit (not to exceed 8 hours) indicating "Start" time & date and "Completion" time & date when Hot Work permit will be in effect.

.9 Worker signature with date and time when hot work terminated.

.10 Specified period of time requiring Safety Watch.

.11 Name and signature of person designated Fire Safety Watcher, complete with time & date when safety watch terminated, certifying that the surrounding area was under his continual watch and inspection for the minimum time period specified in Permit and commenced immediately upon the completion of Hot Work.

.3 Only use industry Standard forms if all data specified above is included on form.

.4 Each Hot Work Permit to be completed in full and signed as follows:
.1 Authorized person issuing Permit before hot work commences;
.2 Worker(s) upon completion of Hot Work;
.3 Fire Safety Watcher upon termination of safety watch and;
.4 Returned to Contractor's Site Superintendent for safe keeping.

1.10 Documents
On-Site

.1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.

.2 Upon request, make available to the Consultant or to authorized safety representative for inspection.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Work .1 Section 01 35 24: Special Procedures on Fire Safety Requirements.
- 1.2 Compliance Requirements .1 Comply with the Occupational Health and Safety Act for the Province of Nova Scotia, and the Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code.
- .3 Observe and enforce construction safety Requirements measures required by:
- .1 2015 National Building Code of Canada, Part 8;
- .2 Provincial Worker's Compensation Board;
- .3 Municipal statutes and ordinances.
- .4 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Consultant will advise on the course of action to be followed.
- .5 Maintain Workers' Compensation Coverage for duration of Contract. Submit Letter of Good Standing to the Consultant upon request.
- 1.3 Responsibility .1 Be responsible for safety of persons and property on work site and for protection of general public circulating adjacent to work operations to extent that they may be affected by conduct of Work.
- .2 Enforce compliance by workers and other persons granted access to work site with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- 1.4 Site Control and Access .1 Control work site and entry points. Grant and allow entry to only workers and other persons so authorized. Immediately stop non-authorized persons from circulating within construction areas and remove from site.
-

- .2 Implement procedures for granting permission to enter onto work site to all persons who require access. Procedures to include the provision of a site safety orientation session.
- .3 Delineate and isolate construction areas from other areas of site by use of appropriate means. Erect barricades, fences, hoarding and temporary lighting as required. See Section 01 50 00 for minimum type of barriers acceptable.
- .4 Erect signage at entry points and at other strategic locations around site, clearly identifying construction area(s) as being "off-limits" to non-authorized persons. Signage must be professionally made in both official languages or by use of well understood graphic symbols.
- .5 Secure site at night time or provide security guard as deemed necessary to protect site against entry.
- .6 Confirm persons granted access are fitted and wear appropriate personal protective equipment (PPE). Be responsible for the provision of such PPE to persons who require access to conduct work or perform inspections.

1.5 Protection

- .1 Provide temporary facilities for protection and safe passage of public pedestrians and vehicular traffic around and adjacent to work site.
- .2 Provide safety barricades, lights and signage on work site as required to provide a safe working environment for workers.
- .3 Carry out work placing emphasis on health and safety of public, building employees, site personnel and protection of the environment.
- .4 Should unforeseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise the Consultant verbally and in writing.

1.6 Filing of Notice

- .1 File Notice of Project with the Nova Scotia Department of Labour and Advanced Education and other Notices with Provincial authorities prior to commencement of Work.
-

1.7 Permits and Compliance Certificates

- .1 Obtain permits, licenses and compliance certificates not listed in Section 01 10 10, subsection 1.10 but required for the Work, at appropriate times and frequency as stipulated by authorities having jurisdiction.
- .2 Where particular permit or compliance certificate cannot be obtained at the required stage of work, notify the Consultant in writing and obtain the Consultant's approval to proceed prior to carrying out that portion of work.
- .3 Post all permits on site.

1.8 Hazard Assessments

- .1 Implement and carry out a health and safety hazard assessment program as part of the work. Program to include:
 - .1 Initial hazard assessment carried out immediately upon notification of contract award and prior to commencement of work.
 - .2 On-going hazard assessments performed during the progress of work identifying new or potential health risks and safety hazards not previously known. As a minimum, carry out hazard assessments when:
 - .1 New subtrade work, new subcontractor(s) or new workers arrive at the site to commence another portion of the work.
 - .2 The scope of work has been changed by Change Order.
 - .3 Potential hazard or weakness in current health and safety practices are identified by the Consultant or by an authorized safety representative.
 - .3 Hazard assessments to be project and site specific, based on review of contract documents, site and weather conditions.
 - .4 Each hazard assessment to be made in writing. Keep copies of all assessments on site for duration of work. Upon request, make available to the Consultant for inspection.

1.9 Safety Meetings

- .1 Hold regular (weekly) safety meetings to review potential hazards.
 - .2 Provide site safety orientation session to all workers and other authorized persons prior to granting them access to work site. Brief persons
-

on site conditions and on the minimum site safety rules in force at site.

- .3 Conduct site specific occupational health and safety meetings during the entire work as follows:
 - .1 Formal meetings on a minimum monthly basis
 - .2 Informal tool box meetings on a regular basis from a predetermined schedule.
- .4 Keep workers informed of anticipated hazards, on safety practices and procedures to be followed and of other pertinent safety information related to:
 - .1 Progress of Work;
 - .2 New sub-trades arriving on site and;
 - .3 Changes in site and project conditions.
- .5 Record and post minutes of meetings. Make copies available to the Consultant upon request.

1.10 Safety Supervision and Inspections

- .1 Designate competent person or persons to be present on site at all times during work, responsible for supervising health and safety and conducting safety inspections of work site.
 - .2 Assign responsibility, obligation and authority to such designated person(s) to stop and start work as deemed necessary for reasons of health and safety.
 - .3 Provide names of designated individuals to the Consultant.
 - .4 Cooperate with Health and Safety Site Coordinator responsible for the entire site or facility.
 - .5 Conduct regularly scheduled safety inspections of work site as follows:
 - .1 Informal Inspections: carry out on a minimum bi-weekly basis. Note deficiencies and remedial action taken in a log book or diary.
 - .6 Distribute monthly reports to subcontractors for their pursuance. Follow-up and ensure appropriate action and corrective measures are taken.
 - .7 Maintain safety inspection documentation on site.
-

- .8 All persons in Contractor's employ responsible for health and safety requirements specified in the Contract Documents to be Inspections competent in Occupational Health and Construction Safety as defined in the Provincial Occupational Health And Safety Act.
- 1.11 Training
- .1 Ensure that workers, subcontractors and other authorized persons granted access to site are trained and have been fully instructed, by a competent instructor, on:
 - .1 Safe operation of tools and equipment.
 - .2 Proper wearing and use of personal protective equipment (PPE) as applicable to the purpose and activities to be conducted on site.
 - .3 Safe work practices and procedures to be followed during the performance of their given work tasks or function on site.
 - .4 Site Conditions and minimum site safety rules provided through site orientation sessions.
 - .2 Make training records readily available for review by the Consultant upon request.
- 1.12 Minimum Site Safety Rules
- .1 Notwithstanding the requirement to abide by federal and provincial health and safety regulations, the following safety rules shall be considered minimum requirements at the work site and obeyed by all persons granted access:
 - .1 Wear personal protective equipment (PPE) appropriate to function and task on site; the minimum requirements being hard hat, safety footwear, eye protection and personal floatation device (PFD).
 - .2 Immediately report unsafe activities, conditions, near-miss accidents, injuries and damages.
 - .3 Maintain site in tidy condition.
 - .4 Obey warning signs and safety tags.
 - .2 The following actions or conduct by Contractor, workers and sub-contractors will be considered as non conformance with the health and safety requirements of the contract for which a Non-Compliance Notification will be issued to the General Contractor by the Consultant:
 - .1 Failure to follow the minimum site safety rules specified above.
 - .2 Negligence resulting in serious injury or major property damage.
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- .3 Deliberate non-compliance with Federal and Provincial Acts and Regulations.
- .4 Falsification of information in Workers Compensation Reports, safety reports and other health and safety related documents submitted to the Consultant or to Authority having jurisdiction.
- .5 Possession of firearms on site.
- .6 Possession of non-prescriptive illegal drugs or alcohol.
- .7 Action, or lack thereof, resulting in the issuance of Warnings, Fines or Stop Work Orders from a Provincial Authority having jurisdiction.
- .8 Violation of other specified health and safety rules and requirements as determined by the Consultant.

- .3 The final decision as to what constitutes a safety violation or non-compliance issue will be made by the Consultant.
- .4 Non-Compliance Notifications may result in disciplinary measures taken as specified under the Non-Compliance Disciplinary Measures specified elsewhere in this section.
- .5 Brief workers on site safety rules, and on the disciplinary measures to be taken for violation or non compliance of such rules. Post such information on site.

1.13 Accident Reporting

- .1 Investigate and report incidents and accidents as outlined in Provincial Occupational Safety and Health Act and Regulations.
- .2 Investigate and immediately report to the Consultant incidents and accidents which results, or has the potential of resulting in:
 - .1 Injuries requiring medical aid,
 - .2 Property damage in excess of \$5000.00,
 - .3 Interruption to facility operations with potential loss to the Owner in excess of \$5000.00,
 - .4 Required notification to Workers' Compensation Board or other regulatory agencies as stipulated by applicable regulations.

1.14 Tools and Equipment Safety

- .1 Implement and follow a scheduled tool and equipment inspection/maintenance program at work
-

site. Regularly check tools, equipment and machinery for safe operation and perform maintenance at pre-established time and frequency intervals as recommended by manufacturer. Include subcontractor's equipment as part of the inspection process.

- .2 Use standardized checklists to ensure established safety checks are stringently followed.
- .3 Immediately tag and remove items found faulty or defective off site.
- .4 Maintain written documentation on each inspection. Make available to the Consultant upon request.

1.15 Hazardous
Products

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets on site. Provide copies of all data sheets to the Consultant upon receipt of materials on site.
- .3 Post all MSDS data sheets on site, in a Products common area, visible to workers.

1.16 Powder Actuated
Devices

- .1 Use powder actuated fastening devices only after receipt of written permission from the Consultant.

1.17 Posting of
Documents

- .1 Post documents indicated herein and as required by Authority having jurisdiction.

1.18 Records
On-Site

- .1 Maintain on site copy of safety documentation as specified in this section and other safety related reports and documents issued to or received from authorities having jurisdiction.

END OF SECTION

1. Related Requirements

- .1 Have particular requirements for inspection and testing carried out by testing laboratory designated by the Owner are specified under various sections.

2. Appointment and Payment

- .1 The Owner will appoint and pay for services of testing laboratory except for the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by the Contractor under the supervision of the Consultant.
- .2 Where tests or inspections by designated testing laboratory reveal work not in accordance with contract requirements, pay costs for additional tests or inspections as the Consultant may require to verify acceptability of corrected work.

3. Contractor's Responsibilities

- .1 Furnish labour and facilities to:
 - .1 Provide access to work to be inspected and tested.
 - .2 Facilitate inspections and tests.
 - .3 Make good work disturbed by inspection and test.
 - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
 - .2 Notify the Consultant sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
 - .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
 - .4 Pay costs for uncovering and making good work that is covered before required inspection or
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testing is completed and approved by the
Consultant.

END OF SECTION

1. Access
 - .1 Provide and maintain adequate access to project site.
 - .2 If authorized to use existing roads or structures for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractor's use of roads.
 2. Storage Sheds
 - .1 Provide adequate weather tight sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather.
 - .2 Make arrangements for on-site storage areas with the Owner.
 3. Sanitary Facilities
 - .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
 - .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
 4. Parking
 - .1 Make arrangements for parking space for work force with the Owner.
 5. Power
 - .1 Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.
 - .2 Install temporary facilities for power such as pole lines and cables to approval of local power supply authority.
 6. Barricades
 - .1 Provide and maintain sufficient barricades, fencing, notices, warning signs, light signals, etc. for the protection of adjoining property and to warn others and workmen engaged on the job of the dangers caused by the work.
 - .2 Types and location of barricades, etc. to be in accordance with local regulations and to the satisfaction of the Consultant.
 - .3 The presence of such barricades, lights, etc. does not relieve the Contractor of the responsibility for any damages.
 7. Security
 - .1 Make arrangements for security of equipment, materials, damages resulting from fire and theft.
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8. Site Signs
and Notices

- .1 Only Project Identification and the Consultant/ Contractor signboards and notices for safety or instruction are permitted on site.
- .2 Format, location and quantity of site signs and notices to be accepted by the Owner.
- .3 Signs and notices for safety or instruction to be in English or commonly understood graphic symbols.

9. Removal of
Temporary Facilities

- .1 Remove temporary facilities from site when directed by the Consultant.
- .2 When project is closed down for a period of time, keep temporary facilities operational until no longer required by the Consultant.

END OF SECTION

- 1.1 General
- .1 Use new material and equipment unless otherwise specified.
 - .2 Submit following information for any or all materials and products proposed for supply within seven (7) days of request by the Consultant:
 - .1 Name and address of manufacturer
 - .2 Trade name, model and catalogue number
 - .3 Performance, descriptive and test data
 - .4 Manufacturer's installation or application instructions
 - .5 Evidence of arrangements to procure.
 - .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
 - .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.
- 1.2 Manufacturer's Instructions
- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
 - .2 Notify the Consultant in writing of any conflict between these specifications and manufacturers' instructions. The Consultant will designate which document is to be followed.
- 1.3 Fastenings - General
- .1 All fastenings are to be the sizes indicated on the contract plans and are to be hot dipped galvanized to CSA G164 unless otherwise noted.
- 1.4 Delivery and Storage
- .1 Deliver, store and maintain packaged material and equipment with manufacturer's seal and labels intact.
 - .2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.
 - .3 Store material and equipment in accordance and Storage with supplier's instructions.
-

- 1.5 Conformance .1 When material or equipment is specified by standard or performance specifications, upon request of the Consultant, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.
- 1.6 Substitution .1 Proposals for substitution may be submitted only after award of Contract. Such requests must include statements of respective costs of items originally specified and proposed substitutions.
- .2 Proposals will be considered by the Consultant if:
- .1 Products selected by tenderer from those specified, are not available, or
- .2 Delivery date of products from those specified would unduly delay completion of Contract, or
- .3 Alternative products to those specified, which are brought to attention of, and considered by the Consultant as equivalent to those specified and will result in a credit to Contract amount.
- .3 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as result of substitution.
- .4 Amounts of all credits arising from approval of substitutions will be determined by the Consultant. No substitutions will be permitted without prior written approval of the Consultant.
- .5 The Consultant reserves the right for acceptance or rejection of substitution of materials.
- 1.7 Construction Equipment and Plant .1 On request, prove to the satisfaction of the Consultant that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.
- .2 Maintain construction equipment and plant in good operating order.
-

1.8 Damaged and
Rejected Materials

- .1 Immediately replace, repair or otherwise make good any material damaged, broken or defaced during construction to the satisfaction of the Consultant.
- .2 Remove rejected materials from site.

END OF SECTION

1.1 Record
Drawings

- .1 The Consultant will provide two (2) sets of white prints for record drawing purposes.
- .2 Maintain project record drawings and accurately record deviations from contract documents caused by site conditions and changes ordered by the Consultant.
- .3 Mark changes in red coloured ink.
- .4 Record following information:
 - .1 Elevations of various elements in relation to Chart Datum.
 - .2 Field changes in dimensions and details.
 - .3 Changes made by Change Order.
- .5 At completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to the Consultant.

END OF SECTION

1. General
 - .1 Conduct cleaning and disposal operations to comply with local ordinances and antipollution laws.
 - .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
 - .3 Prevent accumulation of waste which creates hazardous conditions.

2. Cleaning During Construction
 - .1 Maintain the work, at least on a daily basis free from accumulations of waste material and debris.
 - .2 Provide on-site containers for collection of waste materials, and debris.
 - .3 Remove waste materials, and debris from site.
 - .4 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces.

3. Final Cleaning
 - .1 In preparation for acceptance of the project on an interim or final certificate of completion perform final cleaning.
 - .2 Remove grease, dust, dirt, stains, and other foreign materials, from exterior finished surfaces.

END OF SECTION

PART 1 - GENERAL

- 1.1 Definitions
- .1 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
 - .2 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
 - .3 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
 - .4 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project.
 - .2 Returning reusable items including pallets or unused products to vendors.
 - .5 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
 - .6 Separate Condition: refers to waste sorted into individual types.
 - .7 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.
 - .8 Waste Management Coordinator (WMC): Contractor representative responsible for supervising waste management activities.
- 1.2 Waste Management Workplan
- .1 Prior to commencement of work, prepare a Waste Management Workplan.
 - .2 Workplan to include:
 - .1 Waste reduction practices.
 - .2 Material source separation process.
-

- .3 Procedures for sending recyclables to recycling facilities.
- .4 Procedures for sending non-salvageable items and waste to approved waste processing facility or landfill site.
- .5 Training and supervising workforce on waste management at site.
- .6 Descriptions of and anticipated quantities in percentages of materials to be salvaged reused, recycled and landfilled.
- .7 Schedule of selective demolition.
- .8 Number and location of dumpsters.
- .9 Anticipated frequency of tippage.
- .10 Name and address of haulers, waste facilities and waste receiving organizations.

- .3 Develop Workplan in collaboration with all subcontractors to ensure all waste management issues and opportunities are addressed.
- .4 Implement and manage all aspects of Waste Management Workplan for duration of work.
- .5 Revise Workplan as work progresses addressing new opportunities for diversion of waste from landfill.
- .6 Workplan to identify a Waste Management Coordinator. This individual will be the Contractor's representative responsible for supervising all waste management activities as well as coordinating related required submittals and reporting.

1.3 Submittals

- .1 Provide submittals, including the Waste Management Work Plan, in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit copies of certified receipts from authorized disposal sites and reuse and recycling facilities for material removed from site on a weekly basis.
 - .1 Written authorization from the Consultant is required to deviate from haulers, facilities and receiving organizations listed in Waste Management Workplan.
 - .2 Include copy of weigh bills, scale tickets and disposal receipts for all waste disposed.
-

1.4 Storage, Handling .1
And Protection

Store materials to be reused, recycled and salvaged in locations as directed by the Consultant.

.2 Unless specified otherwise, materials for removal become Contractor's property.

.3 Handle, stockpile and protect material destined for removal off Site.

1.5 Disposal
Requirements

.1 Burying or burning of waste materials on site is prohibited.

.2 Disposal of waste, volatile materials, mineral spirits, oil, paint, paint thinner or unused preservative material into waterways, storm, or sanitary sewers is prohibited.

.3 Do not dispose of preservative treated wood through incineration.

.4 Do not dispose of preservative treated wood with other materials destined for recycling or reuse.

.5 Dispose of treated wood, end pieces, wood scraps and sawdust at a construction and demolition waste approved facility.

.6 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.

.7 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.

.8 Transport waste intended for landfill in separated condition, following rules and recommendations of Landfill Operator in support of their effort to divert, recycle and reduce amount of solid waste placed in landfill.

- .9 Sale of salvaged items is not permitted on site.
- .10 Remove materials from deconstruction as deconstruction/disassembly work progresses.
- 1.6 Tipping Fees
 - .1 All tipping fees are to be covered in the Stipulated Price provided. No additional payments will be made to cover waste disposal.
- 1.7 Scheduling
 - .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.
- PART 2 - PRODUCTS Not Applicable
- PART 3 - EXECUTION
- 3.1 Application
 - .1 Dispose of all materials as required by regulatory codes, regulations, acts and municipal by-laws.
 - .2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes
- 3.2 Cleaning
 - .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
 - .2 Clean-up work area as work progresses.
 - .3 Separate materials to be reused/recycled into specified sort areas.
- 3.3 Diversion Of Materials
 - .1 Separate materials from general waste stream and stockpile in separate piles or containers, as approved by the Consultant, and consistent with applicable fire regulations.
 - .1 Mark containers or stockpile areas.
 - .2 Provide instruction on disposal practices.

END OF SECTION

PART 1 - GENERAL

- 1.1 Scope Of Work .1 This section covers the supply, transport and placement of armour stone and filter stone to replace damaged section of existing breakwater and to provide protection to undamaged section.
- 1.2 References .1 ASTM C88-18, Test Methods for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate
- .2 ASTM C127-15, Test Method for Specific Gravity and Absorption of Coarse Aggregate
- .3 ASTM C136-14, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- .4 ASTM C535-16, Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- .5 ASTM D5312/D5312M-12(R2013), Test Method for Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions
- .6 ASTM D5240/D5240-12(R2013), Standard Test Method for Evaluation of Durability of Rock for Erosion Control using Sodium Sulphate or Magnesium Sulphate.
- .7 ASTM D5313-12(R2013), Test Method for Evaluation of Durability of Rock for Erosion Control Under Wetting and Drying Conditions.
- 1.3 Definitions .1 In describing stone construction, reference will be made to Courses, Neat Lines, Survey Control Lines, Quality Control and Quality Assurance. The following definitions will pertain to these terms:
- .1 Course: A course of stone is defined as the overall thickness for the given stone classification as shown on the Contract Drawings.
- .2 Neat Lines: These are the lines shown on the drawings which depict the limits of the various types of stone materials. The tolerances for stone placement, as described in this section, will be measured from the neat lines.
- .3 Survey Control Lines (SCL): These are the
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lines to which all stone structure surveys shall be referenced.

.4 Quality Control (QC): Contractor is responsible for the development and implementation of a QC program throughout the project to assure compliance with the specifications.

.5 Quality Assurance (QA): QA activities will be performed jointly by the Contractor and the Consultant, with the support of the Contractor. These activities are intended to provide independent observations of conformance to the specifications, and in no way relieve the Contractor of their responsibilities for Quality Control.

- 1.4 Source Approval .1 Source(s) of all stone materials to be incorporated into the work requires the approval of the Consultant.
- .2 Inform the Consultant of proposed source(s) of materials and submit stone quality test results at least one (1) week prior to shipping material to site.
- .3 Individually select armour stone at the source and mark for delivery to the site.
- .4 Acceptance of material at the source does not preclude future rejection at the site if it fails to conform to the requirements specified.
- 1.5 Stone Materials QC/QA Program .1 Quality Control (QC) Program:
- .1 Establish and maintain, Quality Control for all stone production, hauling and placement under this contract to assure compliance with the specifications.
- .2 Exercise care in loading, hauling, unloading and placing of stone during all phases of construction to prevent cracking and splitting that would otherwise lead to rejection at the job site.
- .3 Maintaining a daily log, compiled in tabular format, presented in a clear and legible fashion indicating the following as a minimum:
- .1 Quantity of stone produced to date for each stone type,
- .2 Quantity of stone shipped to date for each stone type.
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- .3 Loading trucks with stone from one classification only.
- .4 Maintaining separate stockpiles of stone materials by stone classification. Stone may only be shipped to the site from stockpiled materials.
- .5 Visually inspecting all armour stone for blast fractures, size and quality factors to verify that stone meets the quality requirements of this section.
- .6 Conducting stone gradations and quality/durability tests, and making appropriate production modifications on each stone classification as required to verify that they meet the gradation and geometric requirements of this section.

- .2 Quality Assurance (QA) Activities:
 - .1 Quality Assurance activities will be performed jointly by the Contractor and Consultant. These activities are intended to provide independent observations of conformance to the requirements of this section prior to shipment of the stone to the site, and in no way relieve the Contractor of their responsibilities for Quality Control (QC) and in-place requirements.
 - .3 The Consultant may also perform Quality Assurance (QA) activities at the project site.

1.6 Stone Gradation
Test Requirements

- .1 Armour Stone:
 - .1 It is anticipated that at least one (1) Quality Assurance gradation test will be conducted for each of the three (3) armour stone class designations used in the Project, unless gradation test results or observations of stone materials indicate additional gradation tests are required.
 - .2 The Consultant will randomly select a representative sample of stone designations. For each of the armour stone class sample sizes will be as follows unless otherwise determined by the Consultant:

<u>Armour Stone Class Designation</u>	<u>Number of Armour Stone Pieces</u>
2.0 to 5.0 tonne	60
5.0 to 7.0 tonne	60

7.0 to 10.0 tonne

30

Weigh the total sample to within 1%. Each individual stone in the sample will then be measured along three mutually perpendicular axes (dimensions a, b and c; a is the maximum length of the stone, b is the maximum width perpendicular to the long axis and c is the thickness of the stone perpendicular to the plane of the a and b axis) and the measurements recorded. Individual stone weights will then be initially estimated based on the measured volume (e.g., measured volume = a x b x c) multiplied by the saturated surface dry (SSD) stone density for that stone type. Adjust the individual initial estimated weights by an adjustment factor equal to the ratio of the actual total sample weight divided by the sum of the individual initial estimated weights. The resulting adjusted stone weights will be used to assemble a gradation curve for the sample. Alternatively, the Contractor may elect to weigh every stone in the sample, in which case the gradation curves will be assembled using the actual measured stone weights.

.2 Filter Stone:

.1 It is anticipated that at least one (1) Quality Assurance gradation test will be conducted for the filter stone, unless gradation test results or observations of stone materials indicate additional gradation tests are required.

.2 Quality Assurance gradation tests for filter stone will be undertaken in accordance with Article 1.6.1.2 above, random sample to consist of 100 stones. Alternative methods may be considered, subject to approval by the Consultant.

.3 Provide the Consultant with loaders, certified scales, other equipment, and operators of such equipment as required to gather samples and measure/weigh each individual stone. Methods used to weigh each individual stone must be accurate to ± 5 kg for stones larger than 50 kg, and to ± 0.5 kg for stones smaller than 50 kg.

1.7 Stone Placement
QC/QA Program

.1 Quality Control (QC) Program:

.1 Establish and maintain Quality Control for all work performed at the job site to assure

compliance with the specifications.

.2 Maintain records of all Quality Control tests, surveys, inspections, and corrective actions, and submit copies to the Consultant.

.3 Handle, transport and store stone to ensure that stockpiles are not contaminated with other soils and materials and to limit the segregation of material sizes.

.4 Provide range poles, marker buoys, templates, batter boards and/or any other means of guidance and control as necessary to construct the stone courses to the required tolerances.

.5 Maintain temporary vertical and horizontal control monuments in the immediate vicinity of the work being performed.

.6 Perform construction surveys as necessary to perform the work required by the Contract Documents. Equipment and methods by which construction surveys are performed are the Contractor's option.

.2 Quality Assurance (QA) Activities:

.1 Perform verification surveys as the work progresses to verify that lines, grades and thicknesses for the completed work are within the specified tolerances. Perform verification surveys with a GPS Topographic Survey Equipment total station survey instrument and range pole-mounted prism; surveyor's level, range pole and surveyor's tape; tag line and sounding basket; or other methods that are consistent with the requirements of this section and subject to the approval of the Consultant. Fit range poles, if used, with a flat, durable base, the dimensions of which are subject to the approval of the Consultant. Provide personnel and other equipment necessary to adequately and safely perform verification surveys.

.2 Conduct verification surveys in the presence of the Consultant unless waived by the Consultant.

.3 Survey existing conditions (i.e. original or excavated beach or seabed) prior to placement of stone materials. At a minimum, locate survey lines at the cross sections shown on the drawings, with elevation readings taken every 2m along each line, and at every break in grade. Extend surveys at least 3 m (horizontally) beyond the extents of the proposed stone work.

.4 Survey each stone course following placement. Measure survey lines at the same

locations as the existing conditions surveys. Take elevation readings every 2m along each line, and at every break in grade. Extend surveys at least 3m (horizontally) beyond the extents of the stone work.

.5 Horizontally reference verification surveys to the Survey Control Line (SCL) and vertically reference to Chart Datum (CD).

.6 For each verification survey performed, transmit a verification survey record containing the following information to the Consultant:

.1 Structure and stone type surveyed;

.2 Verification survey location (with respect to SCL's;

.3 Date and time of survey;

.4 Weather conditions;

.5 Names of participants;

.6 Field notes;

.7 Cross-section plot showing SCL, neat lines and individual elevation readings referenced to CD.

.7 The exact format of the verification survey record is subject to the approval of the Consultant. Submit a sample to the Consultant for approval prior to the commencement of stone placement and to include transmittal of the verification survey ASCII file on a daily basis.

.8 Before any stone placement over existing grade, excavated grade or a previously placed stone type, surveys of the existing grade, excavated grade or previously placed stone type must be verified by the Consultant.

.9 Approval of a cross-section does not constitute final acceptance.

1.8 Production Schedule

.1 All stone materials must be produced and prepared for delivery according to the approved construction schedule.

1.9 Submittals

.1 At least two (2) weeks prior to the commencement of stone placing operations, submit the intended construction procedures to the Consultant. These procedures must contain the following information as a minimum:

.1 Material sources and test results for stone materials in accordance with the requirements of this section.

.2 Method of transport for stone materials.

.3 Details of the intended stone placement

methods and sequence.

.4 Survey control and verification survey procedures.

- .2 Submit gradation test results, stone quantity tabulations, or other data required for the stone Quality Assurance program at any time during the project as requested by the Consultant or as directed by the Contract Documents.
- .3 Make stone source inspector and loading facility logs available at any time during the project for review by the Consultant.

1.10 Waste Management and Disposal

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Collect and separate for disposal paper, plastic, polystyrene, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .3 Divert unused geotextiles from landfill to plastic recycling facility as approved by the Consultant.
- .4 Divert unused metal materials from landfill to metal recycling facility as approved by the Consultant.
- .5 Divert unused concrete materials from landfill to local quarry facility as approved by the Consultant.
- .6 Fold up metal handing, flatten and place in designated area for recycling.

1.11 Interference to Navigation

- .1 Be familiar with vessel movements and fishery activities in area affected by construction operations.
 - .2 Plan and execute work, in a manner that will not impede navigation, including movement of vessels at the facility.
 - .3 Plan and execute work, in a manner that will not
-

interfere with fishing operations or access to marine structures by land or water.

- .4 The Consultant or Owner will not be responsible for loss of time, equipment, material or any other charges related to interference with moored vessels in the harbour or other Contractor's operations.
- .5 Keep the Marine Communications and Traffic Services Centre, Fisheries and Oceans Canada, informed of construction operations, in order that necessary notice to Mariners may be issued.

1.12 Regulatory Requirements

- .1 Comply with municipal, provincial and national codes and regulations relating to project.
- .2 Mark floating equipment with sound and light signals in accordance with Collision Regulations made pursuant to the Canada Shipping Act and Notice to Mariners.

1.13 Existing Conditions

- .1 It is important that Contractors intending to bid on Work visit the site and ascertain what preparatory work will be required to complete the Work as shown on the Project Drawings. Be aware of:
 - .1 Condition of existing structures over which material must be hauled.
 - .2 Preparation, maintenance and removal of temporary roadways to and on the breakwater for the use of trucks, cranes, excavators, draglines, etc.
 - .3 Preparation, maintenance and removal of all temporary causeways and/or fills as required for trucks, loaders, excavators, cranes, draglines, etc.
 - .4 Exercise extreme care to prevent damage to the land.
 - .5 The requirement to construct and maintain haul roads. Remove all temporary roads at the completion of the project and restore the land to its original condition.
 - .6 Include all costs associated in unit rates.

PART 2 - PRODUCTS

- 2.1 General .1 All stone materials meet all requirements specified in this section of the specifications. The Consultant, at any time during the Contract, may reject materials at the source or at the project site for failure to meet the specified requirements. Acceptance of material at the source does not preclude future rejection at the site if it fails to conform to the specified requirements. Remove materials that have been delivered to the project site and are rejected, whether in stockpile or in place in a structure, from the project.
- 2.2 Stone Quality .1 General:
.1 Stone to be dense, hard, sound, close-grained, durable rock, free of overburden material, and highly resistant to weathering and disintegration under freezing/thawing and wetting/drying conditions and be of a quality to ensure permanence of the structure in the climate in which it is to be used. Slate, sandstone, shale and stone containing mica are not acceptable.
.2 All stone must be free from detrimental cracks, seams and other defects that tend to increase deterioration from natural causes or cause breakage in handling and/or placing. Stone with high argillaceous or shale content is more susceptible to weathering, abrasion, thin bedding, close fracturing and other undesirable rock properties and will not be accepted.
.3 Stone to be free from damage as a result of blasting during production. Blast damage is a significant cause of rejection of stone. Blast cracks that have the potential of causing more than 20% loss of weight of an individual stone, if the crack opens in service, are not acceptable. Stones with minor cracking may be reworked at the Contractor's option, with cracked portions being removed by jacking or other suitable method. The remaining stone, if within the gradation limits, may be re-evaluated for acceptance.
- .2 Stone Quality/Durability Tests:
.1 Test stone materials to be used in Work for quality/durability during quarry start-up and
-

production operations.

.2 The following rock durability test specifications must be met or exceeded by all stone materials:

<u>Description</u>	<u>Test Method</u>	<u>Acceptance Criteria</u>
Specific Gravity	ASTM C127	minimum 2.65
Absorption	ASTM C127	maximum 2%
LA Abrasion	ASTM C131	maximum 20% loss after 500 revolutions
MgSO ₄ Soundness	ASTM C88	maximum 10% loss after 5 cycles

.3 If these test results suggests borderline or questionable material, conduct the following additional tests:

<u>Description</u>	<u>Test Method</u>	<u>Acceptance Criteria</u>
Freeze-Thaw	ASTM D5312	max. 0.5% loss after 40 cycles
Wet-Dry	ASTM D5313	max. 0.5% loss after 80 cycles

.4 Obtain test samples of the proposed stone at no additional expense to the Contract. Samples selected for testing will be representative of material formations in the quarry to be used for this project. The Consultant must be present for and agree upon the selection of all test samples prior to shipment. The Consultant may personally select all samples if they so elect.

.5 Ship the samples or delivered, at no additional expense to the Contract, to a suitable testing facility.

.6 Allow sufficient time for the testing to be completed such that there are no delays in the start of construction.

.7 Previous test results for stone materials quarried from the same area (ie. the same working face and rock unit) of the quarry may be accepted at the discretion of the Consultant.

.8 Submit stone quality test results at least one (1) week prior to shipment of stone to site.

- 2.3 Gradation and Shape Requirements .1 Place material meeting the gradation and shape requirements listed below in the work at the locations as shown on the Contract Drawings. Gradation limits are in-place requirements. Make adjustments in production, transportation and placement methods as necessary to assure final placed materials are within specified ranges. Stone to be well graded, and not exhibit gap grading or scalping from individual size ranges. Armour stone and filter stone outside the specified grading ranges may be acceptable at the discretion of the Consultant.
- 2.4 Armour Stone .1 Armour stone to be angular in shape, with the ratio of maximum to minimum dimensions (aspect ratio) not exceeding 2.0.
- .2 Armour stone class designation '2.0 to 5.0 tonne' to conform to 3.5 tonne median weight and:
- .1 No more than 5% must be less than 1,000 kg.
 - .2 No more than 10% must be less than 2,000 kg.
 - .3 No less than 70% must be less than 5,000 kg.
 - .4 No less than 97% must be less than 8,000 kg.
- .3 Armour stone class designation '5.0 to 7.0 tonne' to conform to 6.0 tonne median weight and:
- .1 No more than 5% must be less than 3,000 kg.
 - .2 No more than 10% must be less than 5,000 kg.
 - .3 No less than 70% must be less than 7,000 kg.
 - .4 No less than 97% must be less than 9,000 kg.
- .4 Armour stone class designation '7.0 to 10.0 tonne' to conform to 8.5 tonne median weight and:
- .1 No more than 5% must be less than 5,000 kg.
 - .2 NO more than 10% must be less than 7,000 kg.
 - .3 No less than 70% must be less than 10,000 kg.
 - .4 NO less than 97% must be less than 13,000 kg.
- 2.5 Provisional Filter Stone .1 Filter stone to be angular in shape, with the ration of maximum to minimum dimensions (aspect ratio) not exceeding 2.0.
-

- .2 Filter stone to conform to 500 to 1200 kg class designation, 850 kg median weight and:
 - .1 No more than 5% must be less than 200 kg.
 - .2 No more than 10% must be less than 500 kg.
 - .3 No less than 70% must be less than 1,200 kg.
 - .4 No less than 97% must be less than 2,000 kg.

PART 3 - EXECUTION

- 3.1 Excavation and Grading
 - .1 If required, excavate and/or grade seabed to lines and grades shown on the drawings in such manner that stone layers/courses can be placed to the required thicknesses and grades.

 - 3.2 Filter Stone
 - .1 Use equipment suitable for handling stone of the specified size. Handle the material in such a manner to minimize damage to the stones and the structure, and to minimize disturbance, slumping and degradation of the adjacent materials and/or underlying seabed.
 - .2 Dumping and dozing of stone materials will only be allowed if it can be demonstrated that the resulting gradation meets the requirements specified in Section 2.3 herein, including the maximum allowable percentage below the minimum stone size.
 - .3 Place material uniformly within the lines and grades indicated on the drawings and within the tolerances described in this section.
 - .4 Handle the material and place in such a manner as to minimize segregation and provide a well graded mass.
 - .5 Perform shaping and finishing to the required tolerances, as well as verification surveys of intermediate stone courses, immediately prior to the commencement of placement of overlying stone courses.

 - 3.3 Armour Stone
 - .1 Use equipment suitable for handling armour stone of the specified size. Handle the material in
-

such a manner as to minimize damage to the stones and the structure, and to minimize disturbance, slumping and degradation of the adjacent materials and/or underlying seabed. Excessive drops or tumbling of stones will not be permitted.

- .2 Place armour stones individually in a manner that best utilizes the natural shape of the stone within the grades and tolerances specified.
- .3 Commence placement at the toe of the slope and proceed upwards. Place each stone so that it is stable, secure and supported by stones below. Offset gaps between stones in adjacent layers.
- .4 The armour stones must be stable, tightly placed and interlocked together, with stone to stone contact and no overhanging or loose stones. Select, rotate, rehandle after initial placement, and replace stones as required to achieve a stable and interlocked mass to the Consultant's satisfaction and approval.
- .5 Remove undersize material, including that resulting from breakage, as determined by the Consultant, at no additional expense to the Contract.
- .6 Do not place armour stones over snow or ice.
- .7 Select and sort stones during placement as required to meet these placement specifications.

3.4 Tolerances

- .1 General:
 - .1 Consider the layer thicknesses and slopes shown on the Contract Drawings the target thicknesses and grades.
 - .2 Finished surfaces of filter stone and armour stone courses to be within + 0.60 to $0.40D_{n50}$ of the lines and slopes shown on the Contract Drawings. (D_{n50} is the nominal diameter (dimension of the equivalent cube) of the stone).
 - .3 The tolerances of two (2) consecutive finished surface profiles must be positive.
 - .4 Tolerances outside the limits prescribed above may be acceptable at the discretion of the Consultant.
-

- 3.5 Protection
- .1 Conduct all necessary repairs to the work during construction, including reshaping of slopes and replacement of materials displaced by waves, currents or any other cause.
 - .2 Take into account anticipated weather conditions and degree of exposure of site in setting requirements for protection.
 - .3 Schedule and carry out construction so that each phase of work is not left exposed longer than necessary.
 - .4 Progress of placement of stone to be recorded daily by the Consultant with Contractor's concurrence. Replacement of material lost due to storm wave action or tidal erosion damage to be based on daily journal of work progress and will be considered incidental to the Work.

- 3.6 Roadways
- .1 Construction, maintenance and removal of working roadway layers to be the responsibility of the Contractor and will be considered incidental to the Work.
 - .2 Carry out construction, maintenance and removal of causeways, fills, etc. as required.

END OF SECTION

APPENDIX A
REGULATORY APPROVALS



PO Box 1006, P500
Dartmouth, NS, B2Y 4A2

November 28, 2019

Our file *Notre référence*
19-HMAR-00518

Sean Griffiths
Atlantic Pilotage Authority
1791 Barrington Street
TD Tower, Suite 1801
Halifax, NS, B3J 3K9

Subject: Breakwater repair, Herring Cove, Halifax County, NS – Implementation of Measures to Avoid and Mitigate Serious Harm to Fish, Prohibited Effects on Listed Aquatic Species at Risk, and Introduction of non-Indigenous Species

Dear Sean Griffiths:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on November 21, 2019. We understand that you propose to:

- Repair the existing breakwater that sustained damage during recent storm events. The new breakwater will be constructed around the perimeter of the existing timber crib structure and will extend between 2.2 m and 13.5 m from the base of the existing structure. Stone sizes used to construct the breakwater will range between 2-8 tonnes (1.1 m – 1.5 m diameter). The largest rocks will be placed on the exposed outer face of the existing timber crib structure, while smaller rocks will be placed along the sheltered inner face.
- It is anticipated that construction materials will be barged to the site, and that work will primarily take place from a barge outfitted with an excavator or crane.
- The total footprint of new stone around the breakwater will be up to 403 m², including 91 m² of benthic substrate that was previously occupied by the damaged crib.
- Remove the remnants of the damaged section and dispose of all materials off site. These materials include creosote treated timbers, rock ballast and sections of reinforced concrete decking.

Our review considered the following information:

- Information provided in the Request for Review, prepared by CBCL Ltd. and submitted to DFO-FFHPP on November 21, 2019, including design drawings, site images, aerial photos, and habitat classification.

In addition, the following aquatic species which are not locally indigenous have been identified in the vicinity of your proposed work, undertaking, or activity:

- Green crab (*Carcinus maenas*)

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by other means than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*;
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*;
- the introduction of aquatic species into regions or bodies of water frequented by fish where they are not indigenous, which is prohibited under section 10 of the *Aquatic Invasive Species Regulations*.

The aforementioned impacts are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:

- The successful contractor will prepare an Environmental Protection Plan prior to the commencement of project activities which will include Erosion and Sediment Control, Contaminant Prevention, and Spill Control/Response Plans.
- Site isolation measures (e.g., sediment curtain) for containing suspended sediment will be implemented when conducting work in-water.
- Any other applicable measures listed on the DFO Projects Near Water Website: <https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not require an authorization under the *Fisheries Act*, the *Aquatic Invasive Species Regulations* or the *Species at Risk Act*.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals, and prevent the introduction of non-indigenous species.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by other means than fishing and the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>).

A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Jennifer FitzGerald at our Dartmouth office at (902) 225-6944, or by email at jennifer.fitzgerald@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,



Jennifer FitzGerald
Regulatory Review Biologist
Fish and Fish Habitat Protection Program

cc:

Colin McVarish, Environmental Scientist, CBCL Ltd.

Mike Kew, Technician Forest Resources, Department of Lands and Forestry

CP#4184037

November 28, 2019

Atlantic Pilotage Authority Canada
c/o Lisa MacDonald
P.O. box 606
1505 Barrington Street, Unit 901
Halifax, NS B3J 2R7

Dear Ms. MacDonald:

This is a permit issued pursuant to the *Beaches Act*, for you, your agents or independent contractors (the "Permit Holder") to repair a breakwater at Herring Cove, Halifax County. The approximate location is shown on the attached sketch marked Schedule "A".

For the purposes of this permit, all references to "the Crown", the "Minister of Lands and Forestry" or the "Department of Lands and Forestry" (the Department) includes their respective agents and assigns. The work must be carried out in accordance with your application dated November 22, 2019 and this permit, including the following terms and conditions:

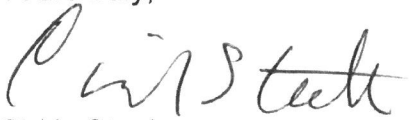
1. This permit authorizes repairing the existing breakwater within the boundaries of PID 40680456 by placing stone around the perimeter of the existing timber crib structure extending between 2.2 metres and 13.5 metres from the base of the existing structure. The total footprint of the new stone around the breakwater will be up to 403 square metres. The approximate location is shown outlined in bold on the attached Schedule "A";
2. The work must be done in accordance with the advice outlined in the attached letter, dated November 28, 2019, Fisheries Protection Program, Fisheries and Oceans Canada (DFO), and attached as Schedule "B". If the proposed work has changed since the issuance of this letter, the advice may no longer apply, and you must consult with DFO to determine if they require further review of your application, you must then contact the Department as a new permit may be required.
3. The Permit Holder named in this permit shall not assign or transfer this permit without the prior written consent of the Department;
4. All costs of this transaction will be paid by the Permit Holder;

5. Unless sooner revoked as provided for herein, this permit shall be **valid for one year** starting from the date of your signature. The Department may revoke this permit at any time, and for any reason whatsoever, by serving notice to you at your last known address;
6. The work authorized by this permit must not interfere with the property rights of any other individual. It is the Permit Holder's responsibility to identify any such individuals whose rights may be affected and obtain their consent before commencing work. Her Majesty the Queen in right of the Province of Nova Scotia, the Minister of Lands and Forestry, agents and employees shall not be liable for any claims which may result from the Permit Holder's failure to comply with this or any other condition of this permit and the Permit Holder shall indemnify and save harmless Her Majesty the Queen in right of the Province of Nova Scotia, the Minister of Lands and Forestry, agents and employees from any claims which may result from failure to comply with this or any other condition of this permit;
7. It is the responsibility of the Permit Holder to obtain all permits, authorizations or permissions required from the appropriate federal, provincial or municipal authorities and any groups or individuals for the proposed work described herein, and the signature(s) on this permit confirms the Permit Holder's agreement to indemnify and hold harmless Her Majesty the Queen in right of the Province of Nova Scotia, the Minister of Lands and Forestry, agents and employees from any and all liability arising from the failure to obtain such permits, authorizations and permissions. The Department does not, by the fact of issuing this permit, covenant or provide any assurance that any other required approvals or authorizations will be issued by the Province of Nova Scotia, any other level of government, or other body. Failure to obtain and keep current such approvals and permits will be considered a breach of the terms of this permit;
8. An approval from Transport Canada pursuant to the Navigation Protection Act (NPA) may be required if the work described herein is built or placed in, over, under, through or across any navigable waterway in Canada. Information regarding the NPA may be viewed at <https://www.tc.gc.ca/eng/3programs-621.html>, or by contacting the Navigation Protection Program at (506) 851-3113.
9. Her Majesty the Queen in right of the Province of Nova Scotia, the Minister of Lands and Forestry, agents and employees shall not be liable for any injury or damage (including death) to the person or for the loss of or damage to the property in any manner based upon, occasioned by or in any way attributable to the performance of any act under this permit;
10. The Permit Holder shall at all times indemnify and save harmless Her Majesty the Queen in right of the Province of Nova Scotia, the Minister of Lands and Forestry, agents and employees from and against all claims, demands, losses, costs, debts, damages, actions, suits or other proceedings by whomever made, sustained, brought or prosecuted in any manner based upon, occasioned by, arising out of or attributable in any way to the performance or purported performance of the Permit Holder, its servants, agents or independent contractors;

11. The Permit Holder must comply with all municipal, provincial and federal laws, regulations, permits and approvals including, but not limited to, environmental, labor, industrial, safety standards, public health, fire and in particular the holder of this permit must comply with the *Occupational Health and Safety Act and Regulations* and if required, register under and comply with all of the provisions of the *Workers Compensation Act* for the Province of Nova Scotia.

To acknowledge acceptance of the above terms and conditions you must countersign this letter in the space provided and return **it together with a cheque or money order in the amount of \$71.60 made payable to the "Minister of Finance"**, to the attention of Samantha Hines, Land Administration Officer, Land Administration Division, at the above address. The permission given in this letter is not in effect until this document is signed and returned to our office.

Yours truly,



Cindy Steele
Manager, Land Services Branch

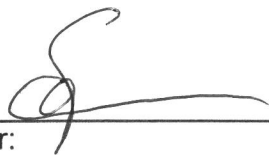
Attachment

- c Jason MacIntosh, NS Lands and Forestry
- Patrick Lynch, NS Lands and Forestry
- Referrals Secretariat, DFO, HMD

Re: CP#4184037, Herring Cove, Halifax County

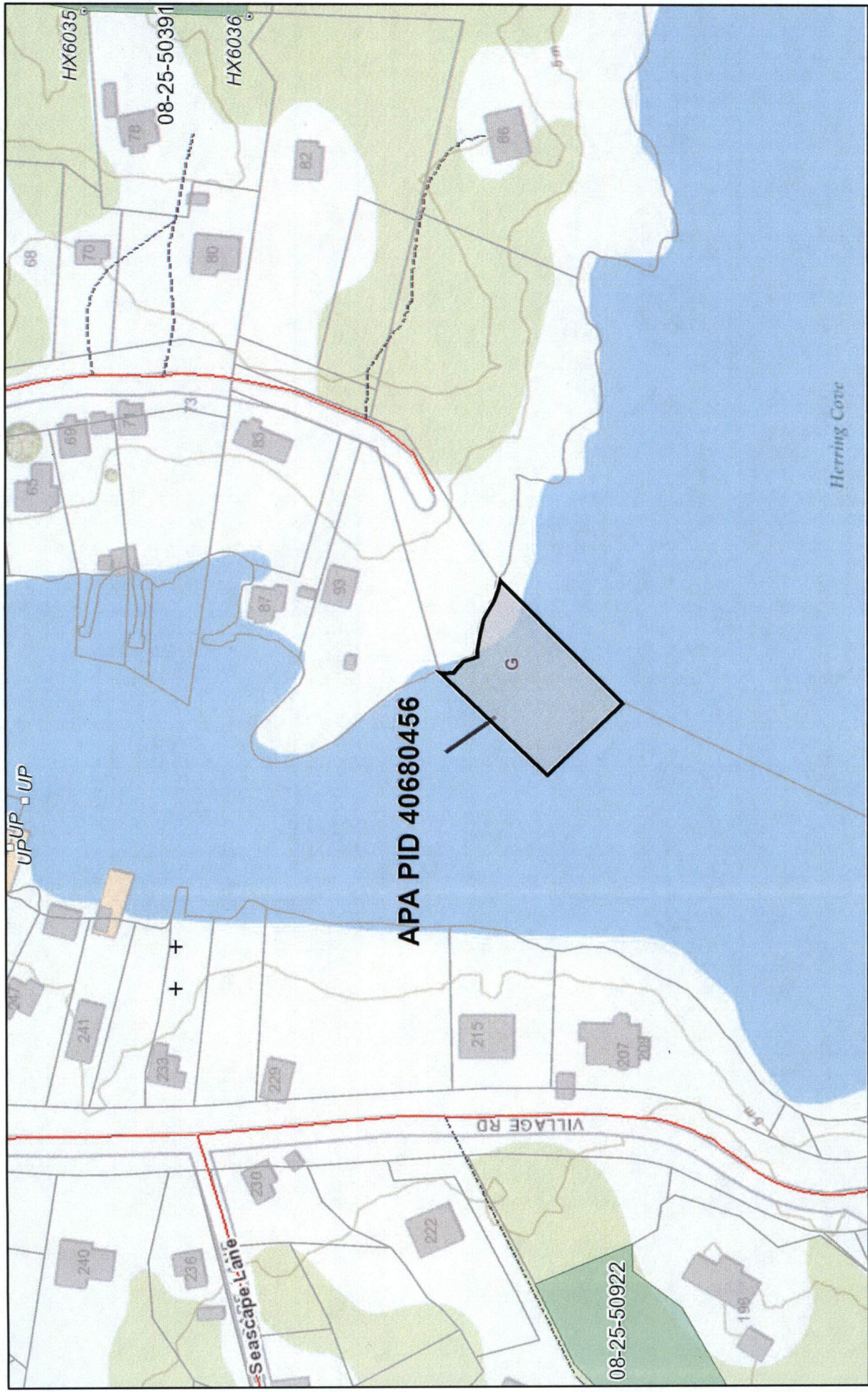
By signing below, I the undersigned hereby agree to the above terms and conditions:

November 28, 2019
Date



Per:
Title:

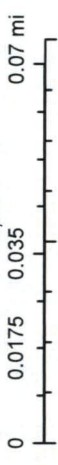
Schedule A CP#4184037



November 22, 2019

polygonLayer	polylineLayer	Road Point	1Km Interval
Override 1	Override 1	RRCL60	Trans Canada Highways
Labels	RRRTT60		

1:2,257



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

Schedule B



Fisheries and Oceans
Canada

Pêches et Océans
Canada

PO Box 1006, P500
Dartmouth, NS, B2Y 4A2

November 28, 2019

Our file Notre référence
19-HMAR-00518

Sean Griffiths
Atlantic Pilotage Authority
1791 Barrington Street
TD Tower, Suite 1801
Halifax, NS, B3J 3K9

Subject: Breakwater repair, Herring Cove, Halifax County, NS – Implementation of Measures to Avoid and Mitigate Serious Harm to Fish, Prohibited Effects on Listed Aquatic Species at Risk, and Introduction of non-Indigenous Species

Dear Sean Griffiths:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on November 21, 2019. We understand that you propose to:

- Repair the existing breakwater that sustained damage during recent storm events. The new breakwater will be constructed around the perimeter of the existing timber crib structure and will extend between 2.2 m and 13.5 m from the base of the existing structure. Stone sizes used to construct the breakwater will range between 2-8 tonnes (1.1 m – 1.5 m diameter). The largest rocks will be placed on the exposed outer face of the existing timber crib structure, while smaller rocks will be placed along the sheltered inner face.
- It is anticipated that construction materials will be barged to the site, and that work will primarily take place from a barge outfitted with an excavator or crane.
- The total footprint of new stone around the breakwater will be up to 403 m², including 91 m² of benthic substrate that was previously occupied by the damaged crib.
- Remove the remnants of the damaged section and dispose of all materials off site. These materials include creosote treated timbers, rock ballast and sections of reinforced concrete decking.

Our review considered the following information:

- Information provided in the Request for Review, prepared by CBCL Ltd. and submitted to DFO-FFHPP on November 21, 2019, including design drawings, site images, aerial photos, and habitat classification.

In addition, the following aquatic species which are not locally indigenous have been identified in the vicinity of your proposed work, undertaking, or activity:

- Green crab (*Carcinus maenas*)

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by other means than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*;
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*;
- the introduction of aquatic species into regions or bodies of water frequented by fish where they are not indigenous, which is prohibited under section 10 of the *Aquatic Invasive Species Regulations*.

The aforementioned impacts are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:

- The successful contractor will prepare an Environmental Protection Plan prior to the commencement of project activities which will include Erosion and Sediment Control, Contaminant Prevention, and Spill Control/Response Plans.
- Site isolation measures (e.g., sediment curtain) for containing suspended sediment will be implemented when conducting work in-water.
- Any other applicable measures listed on the DFO Projects Near Water Website: <https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not require an authorization under the *Fisheries Act*, the *Aquatic Invasive Species Regulations* or the *Species at Risk Act*.

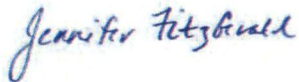
Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals, and prevent the introduction of non-indigenous species.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by other means than fishing and the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>).

A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Jennifer FitzGerald at our Dartmouth office at (902) 225-6944, or by email at jennifer.fitzgerald@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,



Jennifer FitzGerald
Regulatory Review Biologist
Fish and Fish Habitat Protection Program

cc:

Colin McVarish, Environmental Scientist, CBCL Ltd.

Mike Kew, Technician Forest Resources, Department of Lands and Forestry



Navigation Protection Program
Programs Group
Transport Canada
P.O. Box 42, 95 Foundry Street,
Moncton, N.B.
E1C 8K6

Your file:

Our file:
2003-200217

February 11, 2020

Attention: Atlantic Pilotage Authority
1801-1791 Barrington Street,
Halifax, NS
B3J 3K9

RE: Approval under the *Canadian Navigable Waters Act* (CNWA), for the construction of the following work below located at Herring Cove, at approximately 44°34'10.0"N, 63°33'25.0"W, in the Province of Nova Scotia.

- Breakwater

Please find enclosed an approval for the above-noted work issued by the Minister of Transport under subsection 7(6) of the CNWA. This approval replaces any previous approvals that have been issued in relation to this work (if any) and will be the sole approval for this work until such time as a new approval is issued for any future changes.

In order to issue this approval, the Minister has considered each of the factors listed in subsection 7(7) of the Act, additional information provided by you (if applicable) and any adverse effects that the decision to approve the work may have on the rights of the Indigenous peoples of Canada recognized and affirmed by section 35 of the *Constitution Act, 1982*.

This approval relates only to the interference of your work with navigation under the CNWA and does not grant any rights related to the ownership of the bed of the navigable water.

Please note that it is the owner's responsibility to comply with any other applicable laws and regulations.

Should you have any questions, please do not hesitate to contact our office in Moncton by phone at 506-851-3113 or by e-mail at NPPATL-PPNATL@tc.gc.ca.

Respectfully,

Mélanie LeBlanc
Officer, Navigation Protection Program
Programs Group
Transport Canada
Atlantic Region



Navigation Protection Program
Programs Group
Transport Canada
P.O. Box 42, 95 Foundry Street,
Moncton, N.B.
E1C 8K6

Your file:

Our file:
2003-200217

APPROVAL

APPLICANT: Atlantic Pilotage Authority
1801-1791 Barrington Street,
Halifax, NS
B3J 3K9

WORK: Breakwater

SITE LOCATION: Located at approximately 44°34'10.0"N, 63°33'25.0"W,
Herring Cove, in the province of Nova Scotia

As per the application (detailed above) to the Minister of Transport, submitted pursuant to the *Canadian Navigable Waters Act*, for an approval of the work per the attached plans and described in the attached documents, the Minister hereby approves the work pursuant to subsection 7(6) for the construction of the above mentioned work, in accordance with the following terms and conditions:

- The project is to be constructed in accordance with the approved plans.
- Advise the Canadian Coast Guard, Marine Communications and Traffic Services (MCTS) Sydney at (902) 564-7751 or toll-free 1-800-686-8676 sufficiently in advance of commencement of work, when deploying cautionary buoys, and when discontinuing the cautionary buoys in order to allow for appropriate Notices to Shipping/Mariners action.
- Advise the Supervisor of Operations, Aids to Navigation & Waterways, Canadian Coast Guard at (902) 566-7936 sufficiently in advance of commencement of work for the potential removal or relocation of LL 522.1 near the newly extended breakwater.
- Place a yellow cautionary buoy during the construction phase, carrying a 1nm nominal range yellow light with flash characteristic (Fl)4s, 150mm retro-reflective tape and an integrated radar reflector in the immediate area of the work extension. The buoy shall be removed when construction is completed.
- All work and associated equipment shall be removed from the waterway at owner's expense in the event the operation of the work is terminated.
- Any rocks or debris in the vicinity of the proposed breakwater construction resulting from any construction activity are to be cleared to ensure safe navigation for vessels in the immediate area.
- All vessels navigating the waterway must be allowed access through or around the work site at all times during construction and must be assisted as necessary.

SIGNED on February 11, 2020 in Moncton, New Brunswick

Mélanie LeBlanc
Officer, Navigation Protection Program
Programs Group
Transport Canada
Atlantic Region
For the Minister of Transport



PROJECT LOCATION
 Easting: 455780.76
 Northing: 4935276.85
 *Coordinates provided in NAD83 UTM Zone 20N
 50k Topographic Map Number = O11D12

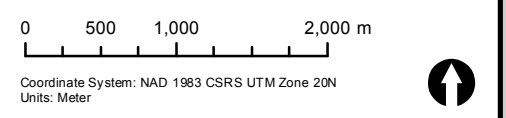


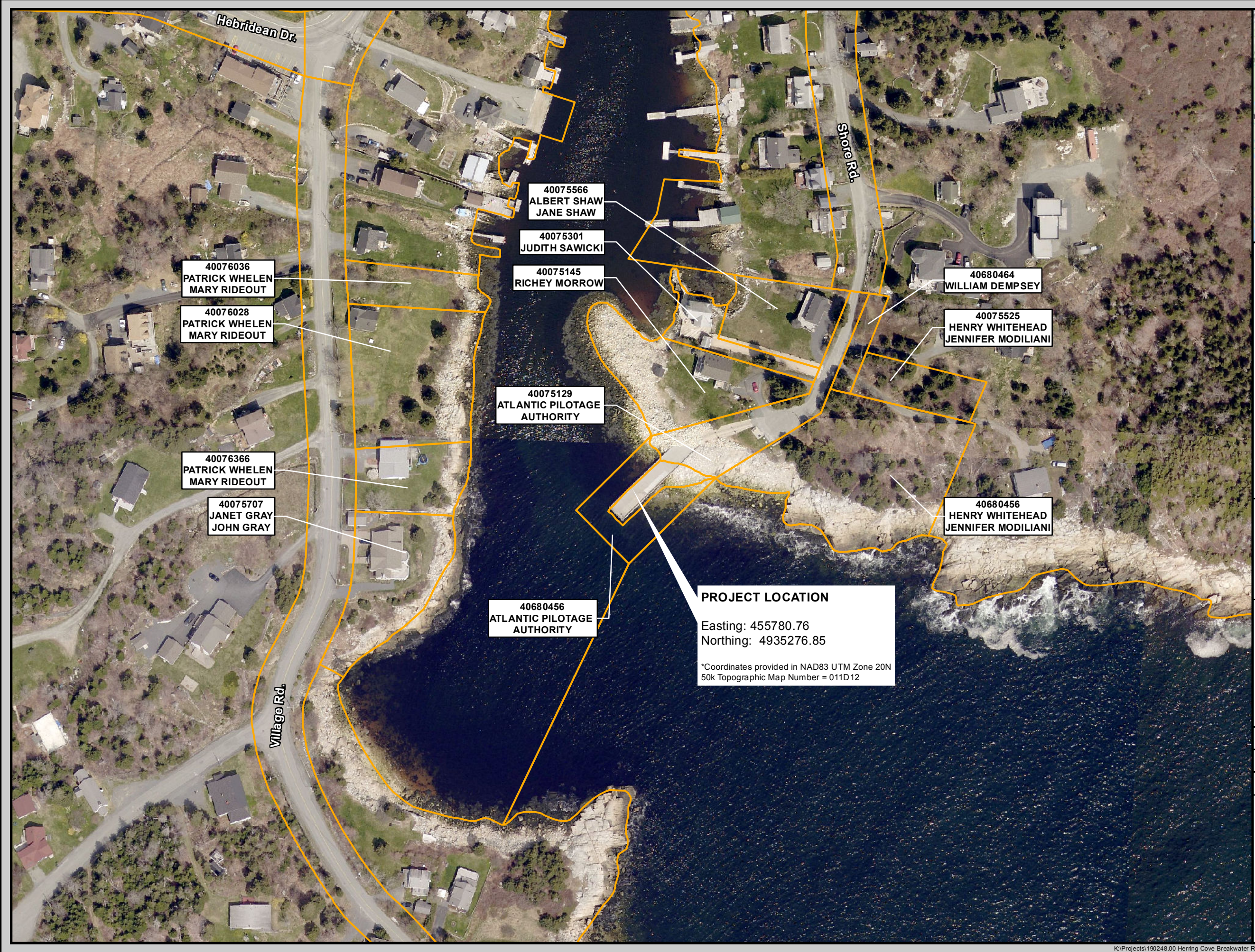
- | | |
|------------------------------|---|
| Bridge Location | Landcover Classification (NSDNR) Forestry |
| Roads | Coniferous Forest |
| Divide Highway | Mixedwood Forest |
| Arterial | Deciduous Forest |
| Collector | Agriculture |
| Paved Road | Alders > 75% cover; Brush |
| TCH | Clearcut |
| Unpaved Road | Dead; Dead - 1; Dead - 2 |
| Railroad | Inland Water |
| Lanes / Driveways | Lake wetland; Open Bogs; Treed Bogs; Wetlands General |
| ROAD ruin/inactive/abandoned | Urban |
| Cart Track / Footpath | NSGC Waterbodies |
| Misc | |
| NSGC Watercourses | |



Herring Cove Breakwater
 Figure 1: Topographic Map of the Project Area

Drawn: RM	Date: 19/11/2019
Checked: LM	Project #: 190248.00
Approved: IB	Scale @ 11"x17" 1:50,000





40076036
PATRICK WHELEN
MARY RIDEOUT

40076028
PATRICK WHELEN
MARY RIDEOUT

40076366
PATRICK WHELEN
MARY RIDEOUT

40075707
JANET GRAY
JOHN GRAY

40075566
ALBERT SHAW
JANE SHAW

40075301
JUDITH SAWICKI

40075145
RICHEY MORROW

40075129
ATLANTIC PILOTAGE
AUTHORITY

40680456
ATLANTIC PILOTAGE
AUTHORITY

PROJECT LOCATION

Easting: 455780.76
Northing: 4935276.85

*Coordinates provided in NAD83 UTM Zone 20N
50k Topographic Map Number = 011D12

40680464
WILLIAM DEMPSEY

40075525
HENRY WHITEHEAD
JENNIFER MODILIANI

40680456
HENRY WHITEHEAD
JENNIFER MODILIANI



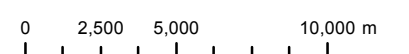
Property Boundaries



**Herring Cove
Breakwater Replacement**

Figure 2: Property Ownership Within Proximity to the Project Site

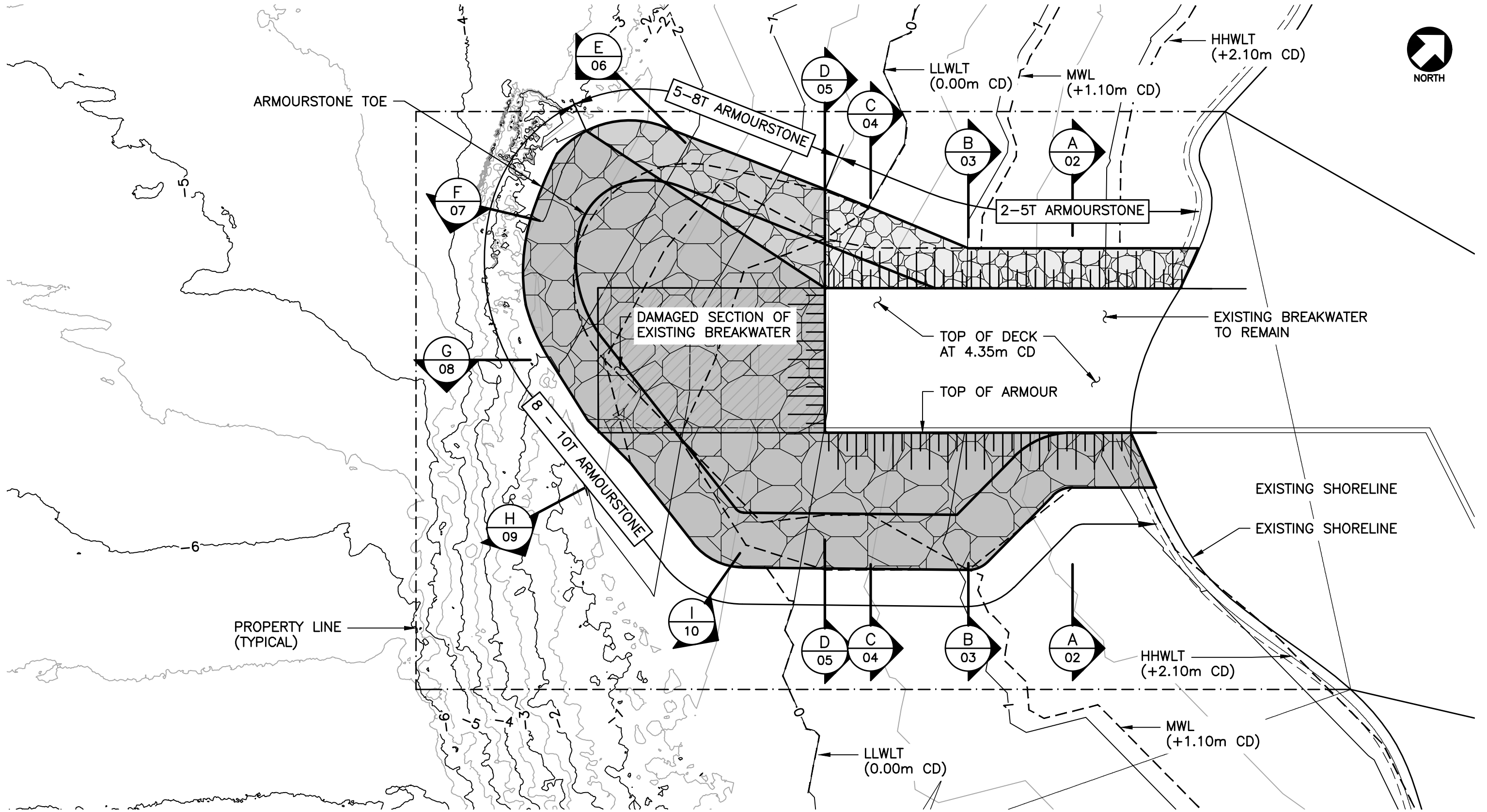
Drawn: RM	Date: 19/11/2019
Checked: LM	Project #: 190248.00
Approved: IB	Scale @ 11"x17" 1:1,500




Coordinate System: NAD 1983 CSRS UTM Zone 20N
Units: Meter



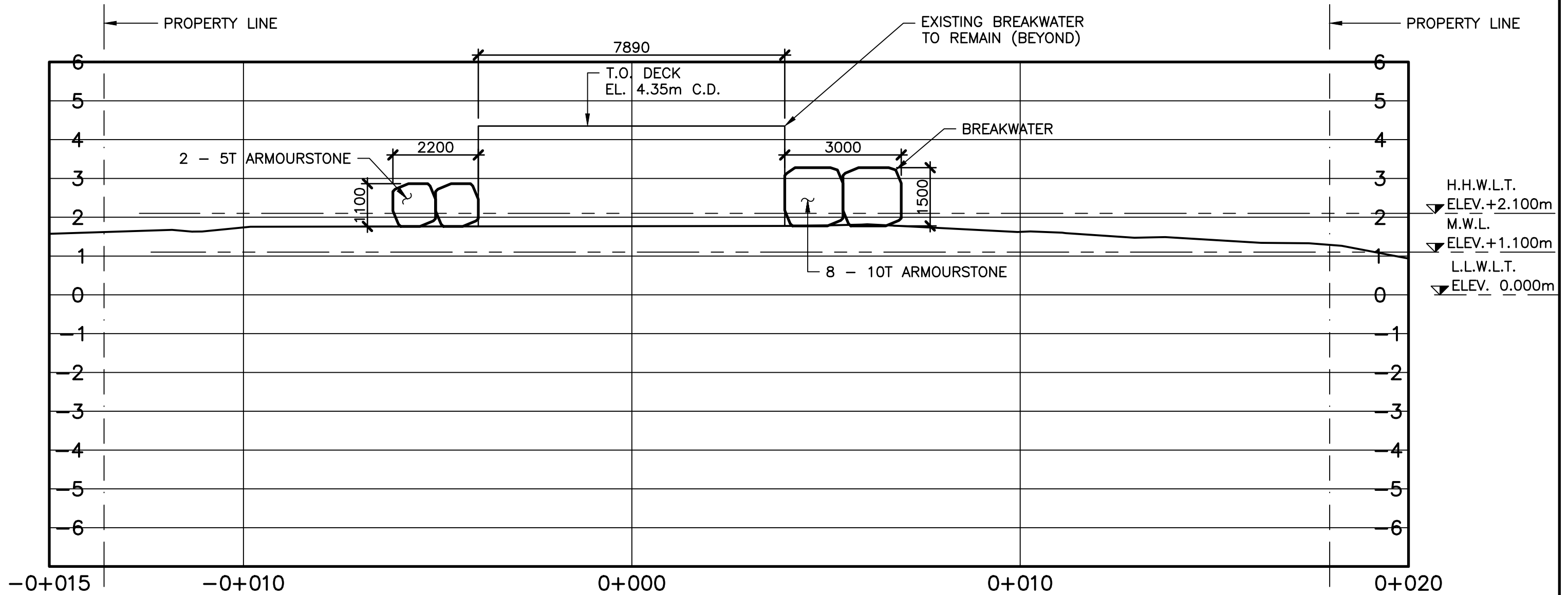
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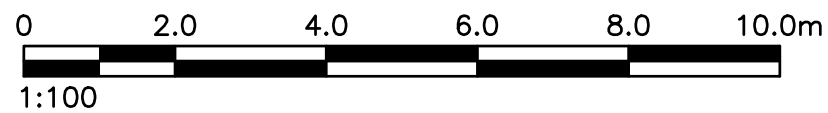
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 CBCL LIMITED Consulting Engineers						HERRING COVE BREAKWATER REPLACEMENT	
						CONCEPT BREAKWATER PLAN	

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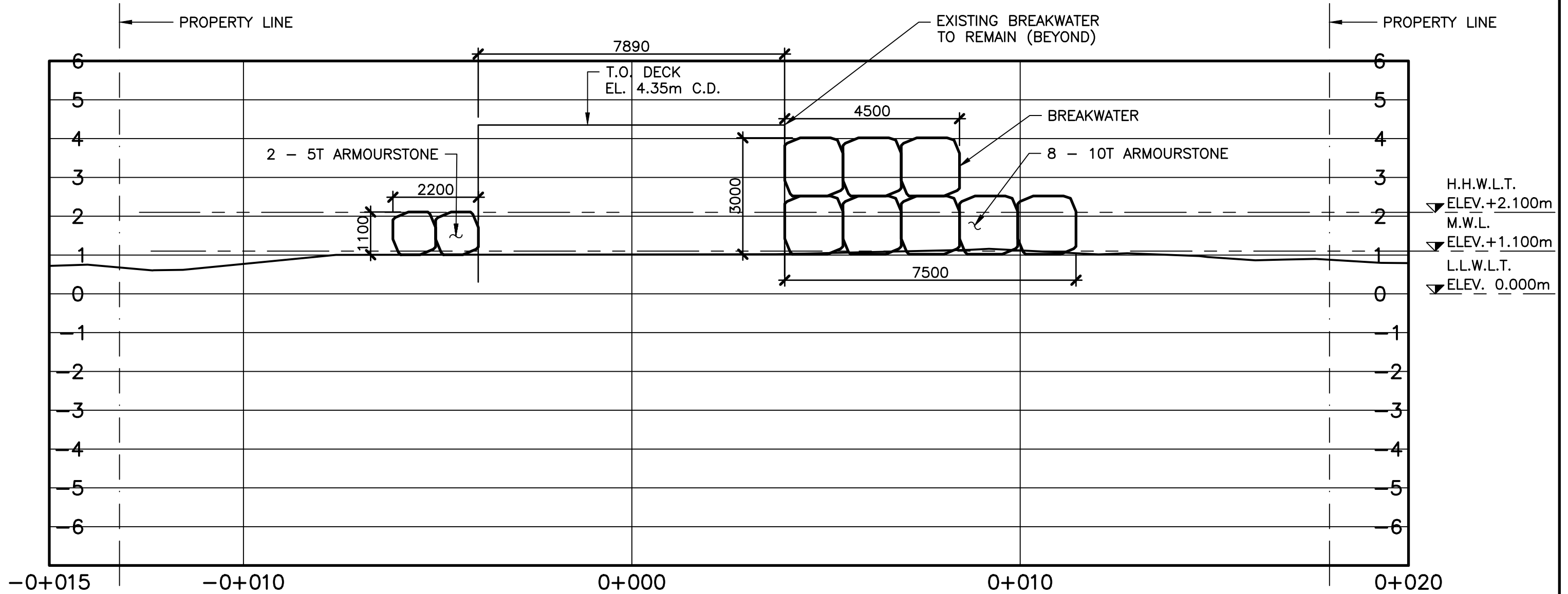
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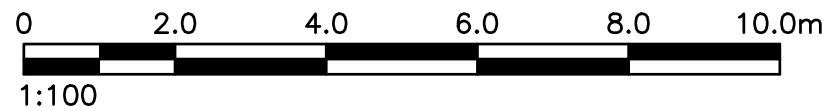
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CBCL LIMITED Consulting Engineers						HERRING COVE BREAKWATER REPLACEMENT CONCEPT BREAKWATER SECTION	
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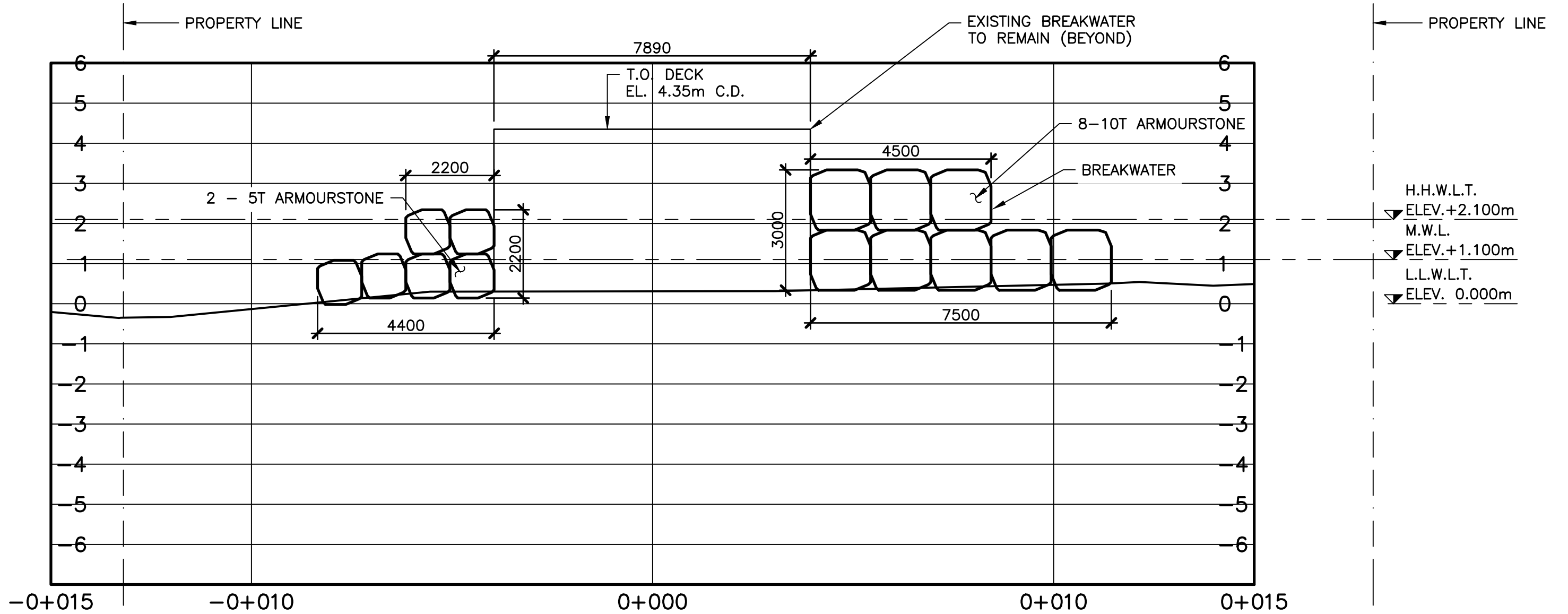
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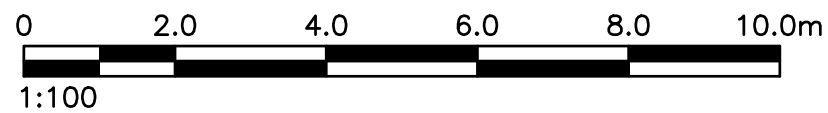
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CBCL CBCL LIMITED Consulting Engineers						HERRING COVE BREAKWATER REPLACEMENT	
CONCEPT BREAKWATER SECTION						Drawing SSK-03	

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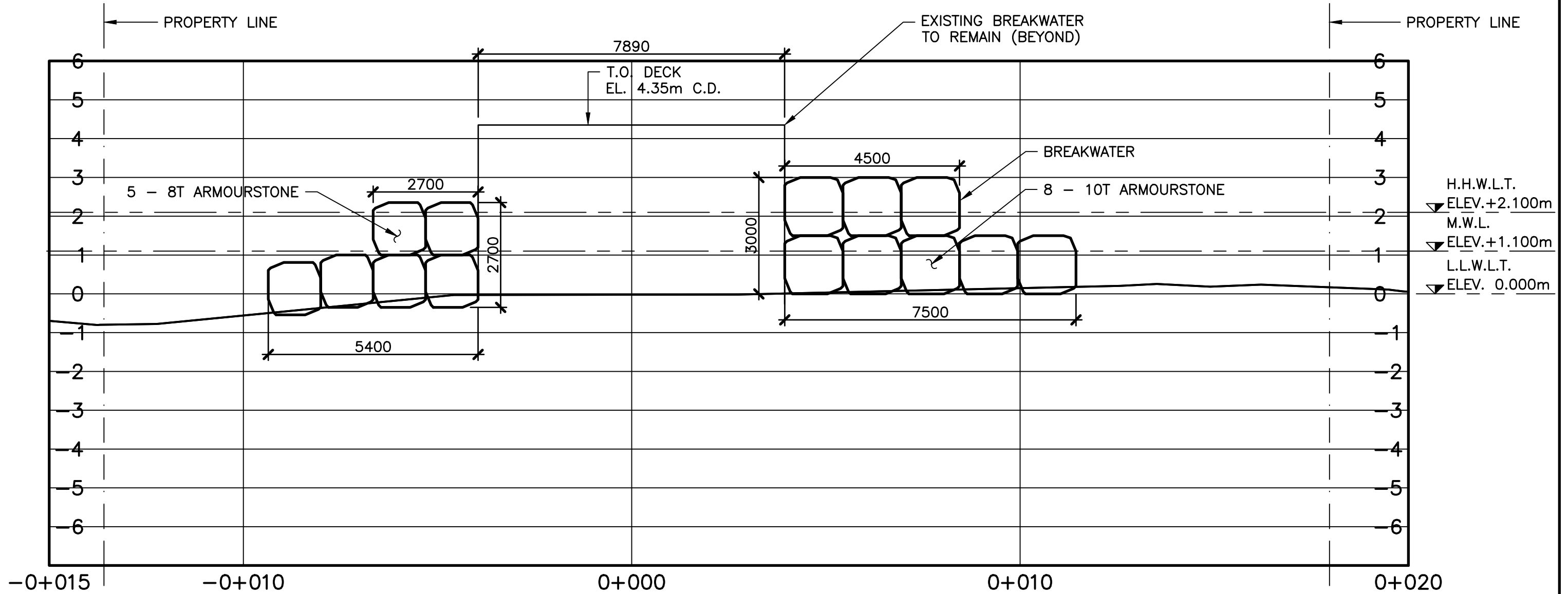
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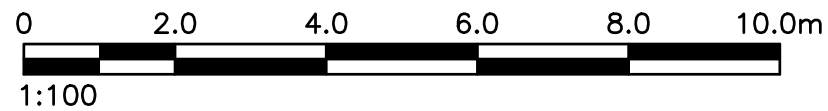
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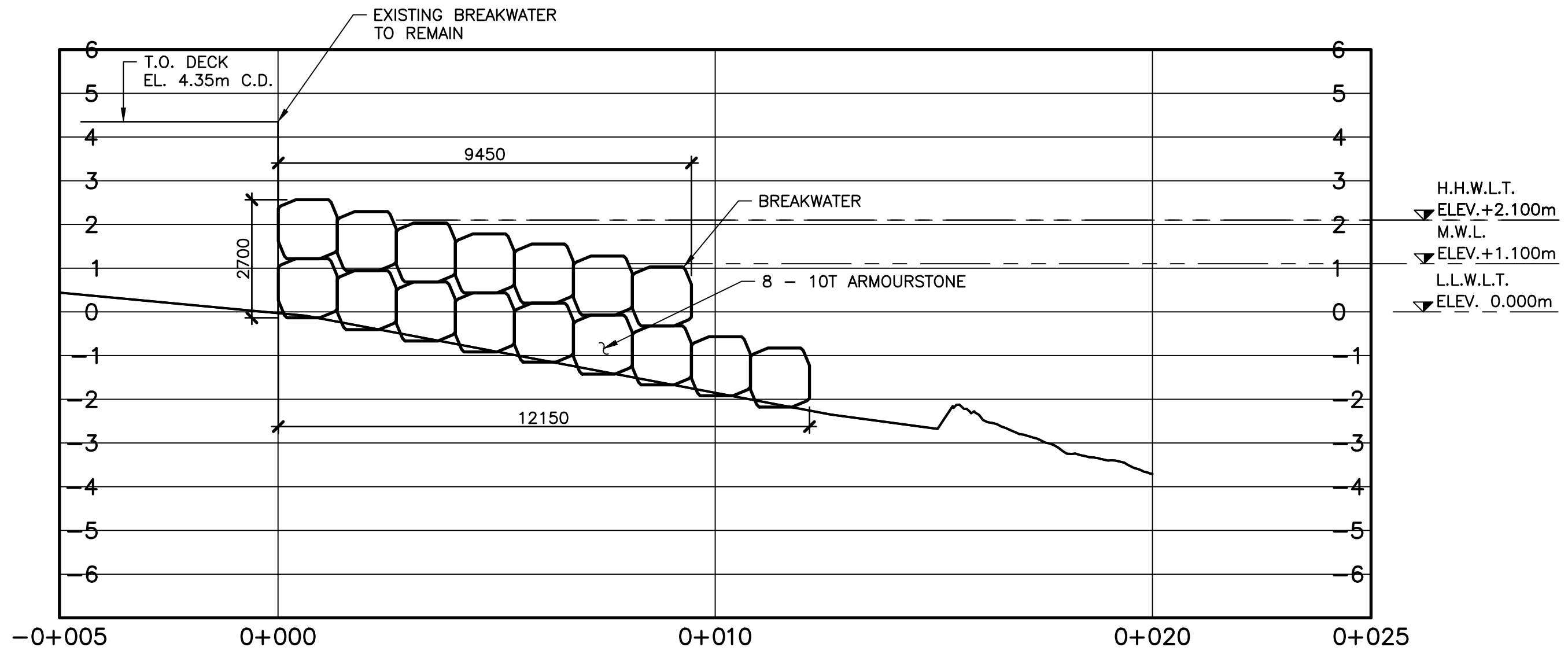
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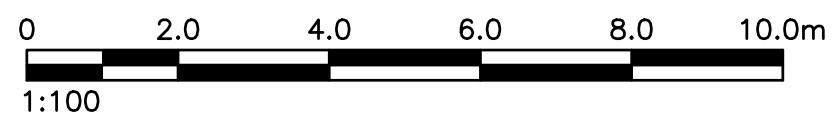
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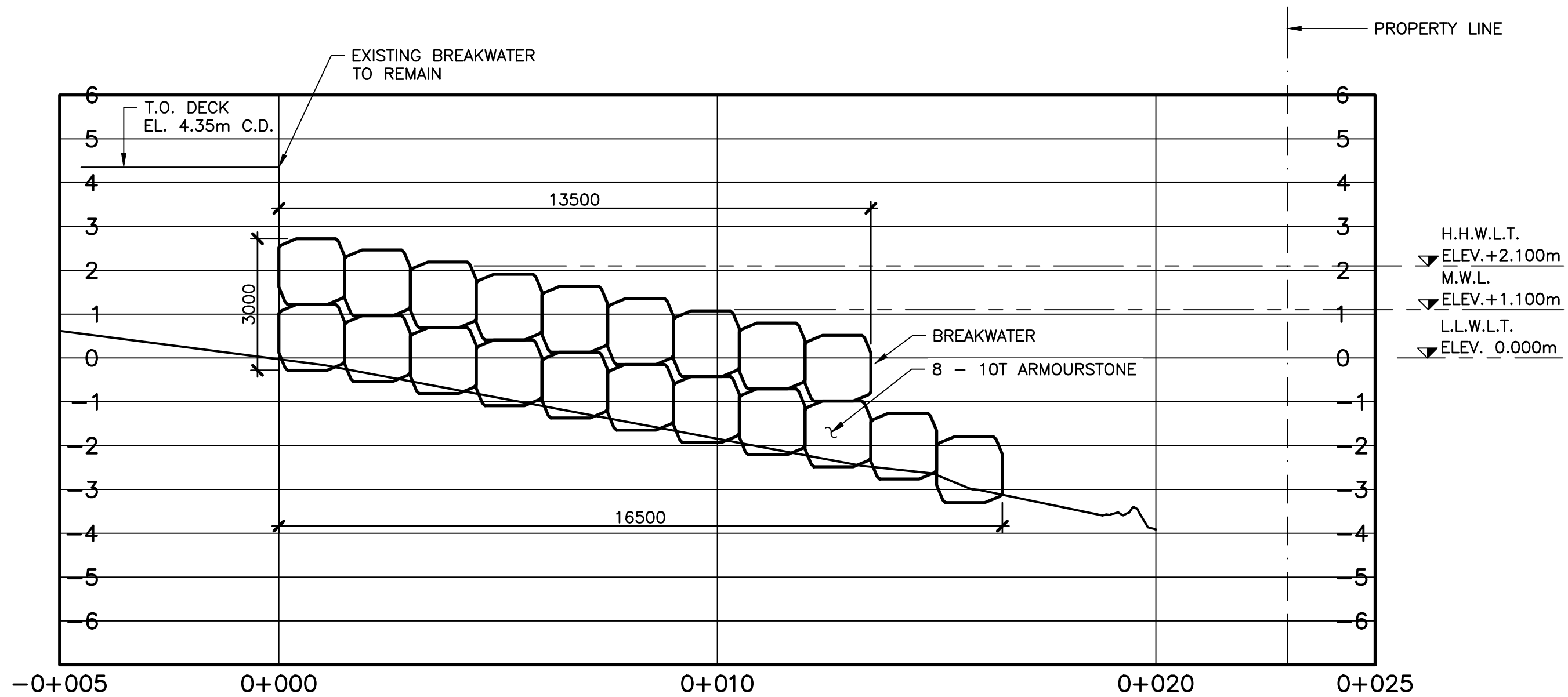
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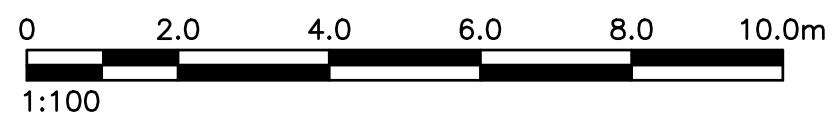
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CONCEPT BREAKWATER SECTION						Drawing SSK-06	

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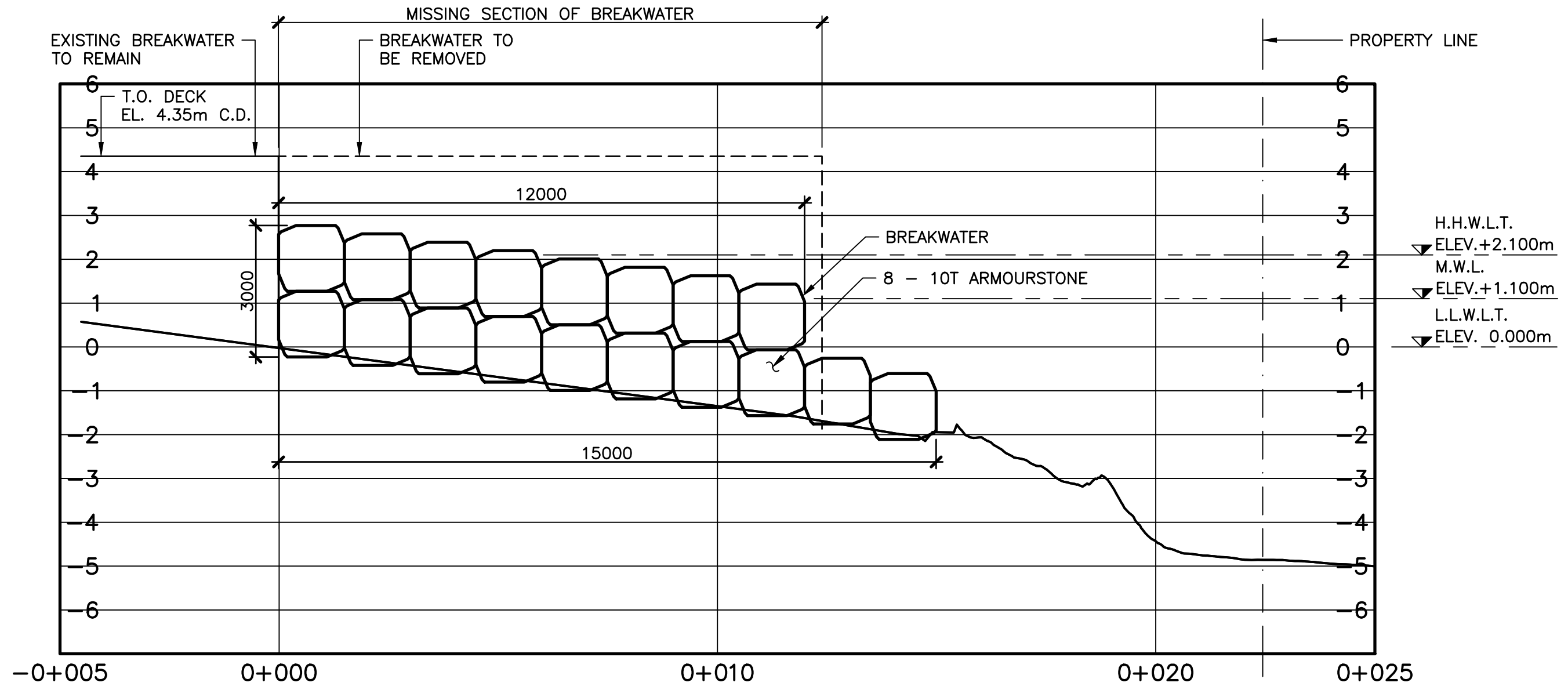
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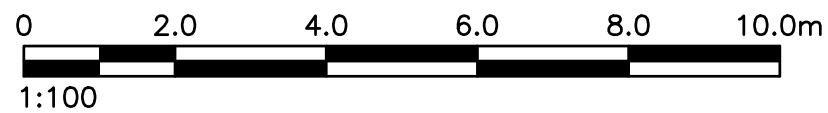
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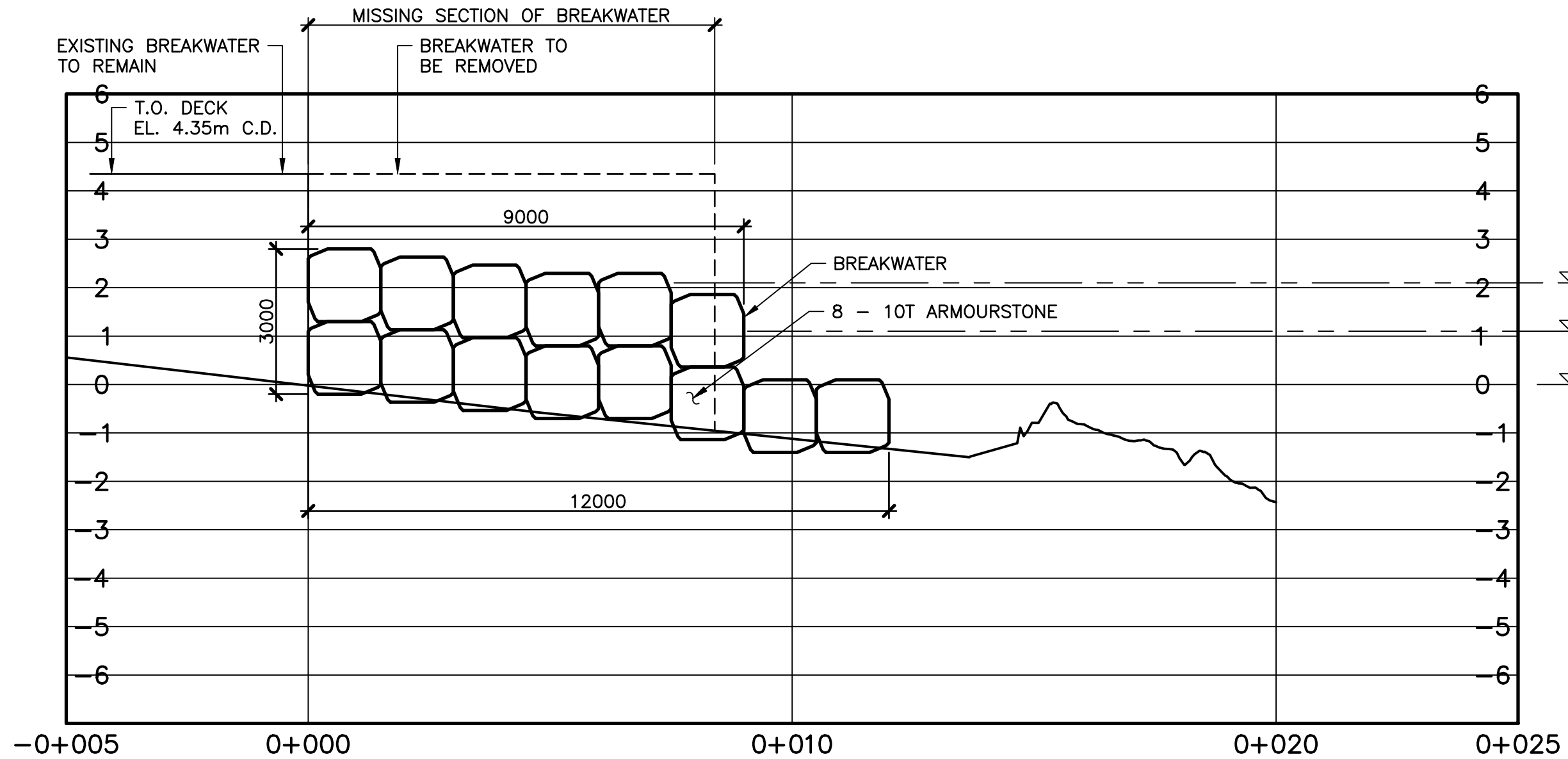
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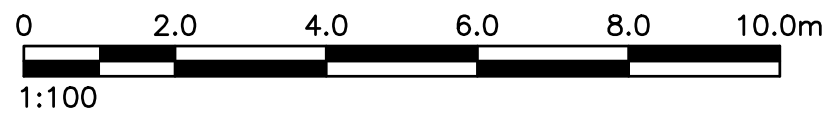
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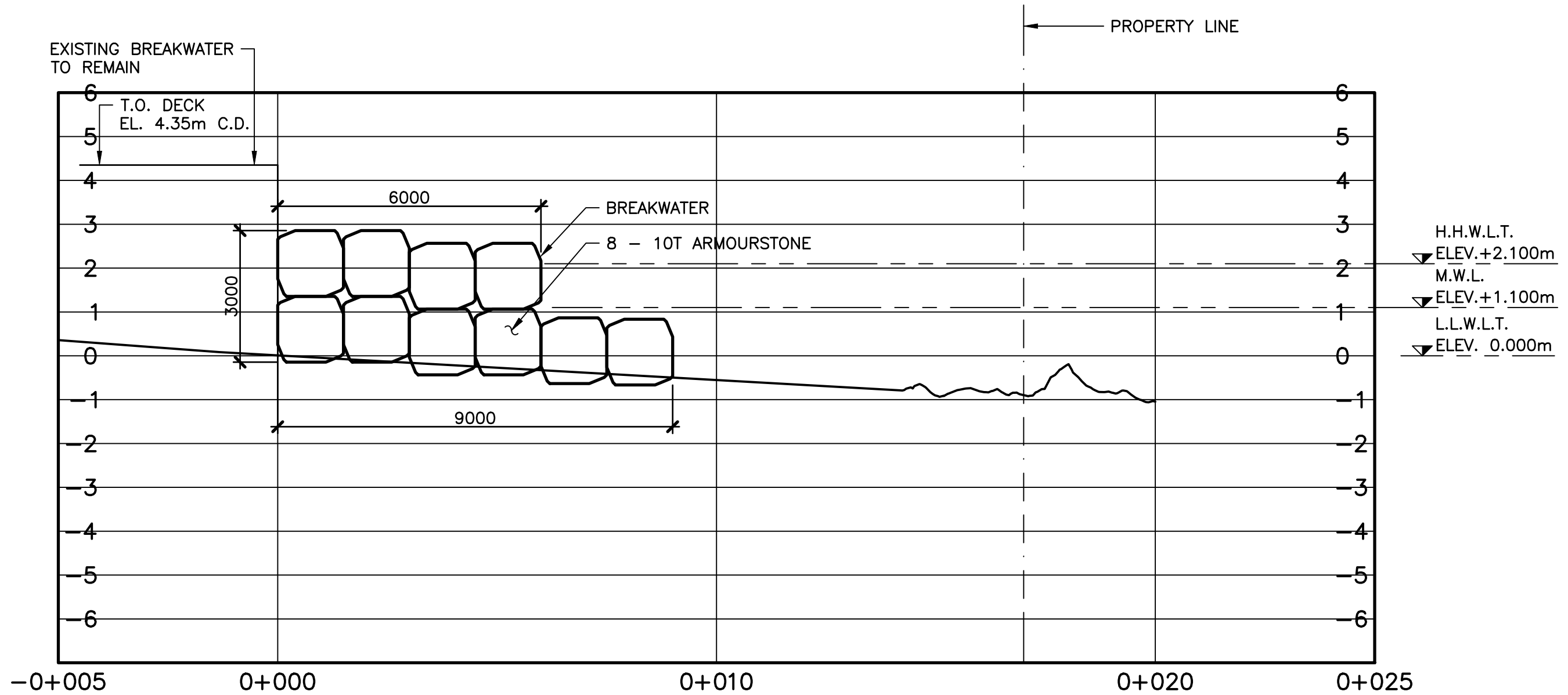
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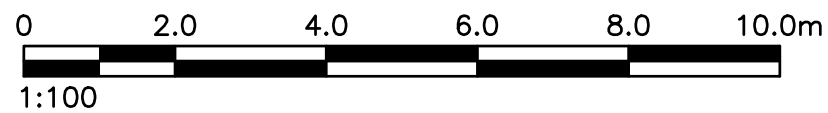
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