

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2017-46

**By-law to enter into a contract with Front Construction Industries Inc.
for the Second Concession Bridge over Long Marsh Drain Replacement**

WHEREAS under Section 9 of the Municipal Act 2001, S.O., 2001, c. 25, as amended, a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under this or any other Act.

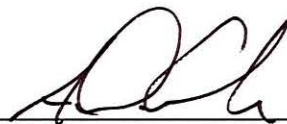
AND WHEREAS under Section 8(1) of the Municipal Act 2001, S.O., 2001, c. 25, as amended, shall be interpreted broadly so as to confer broad authority on municipalities to enable them to govern their affairs as they consider appropriate and to enhance their ability to respond to municipal issues;

AND WHEREAS the Council of The Corporation of the Town of Amherstburg deems it expedient to enter into a contract with Front Construction Industries Inc. for the Second Concession Bridge over Long Marsh Drain Replacement

NOW THEREFORE the Council of The Corporation of the Town of Amherstburg enacts as follows:

1. That the Council of The Corporation of the Town of Amherstburg agrees to enter into the contract as attached hereto as Schedule "A" to this By-law.
2. That the Mayor and Clerk are hereby authorized to sign and seal said agreement on behalf of The Corporation of Town of Amherstburg.
3. This By-law shall come into force and take effect immediately upon the final passing thereof.

Read a first, second and third time and finally passed this 25th day of September, 2017.



MAYOR – ALDO DICARLO



MUNICIPAL CLERK – PAULA PARKER

AGREEMENT

THIS AGREEMENT made in quadruplicate this 25rd day of September, 2017.

BETWEEN THE CORPORATION OF THE TOWN OF AMHERSTBURG

(hereinafter called the Corporation) of the first part.

AND

Front Construction Industries Inc.

(hereinafter called the Proponent) of the second part.

WHEREAS the Corporation is desirous that certain services should be provided for the implementation of:

Second Concession Bridge over Long Marsh Drain Replacement

In the Town of Amherstburg and has accepted a Design-Build Proposal by the Proponent for this purpose.

NOW THIS AGREEMENT WITNESSES AS FOLLOWS:

The Proponent hereby covenants and agrees to provide all and every kind of labour and materials for, and to undertake and complete in strict accordance with his Proposal dated the:

27th day of April, 2017

And the Proponent Documents (consisting of the contents of the Design-Build proposal and requirements for this Request for Proposal prepared by the Town of Amherstburg, including all modifications thereof and incorporated in the said documents before their execution), together with the terms and conditions of the CCDC Design Build Stipulated Price Contract, all of which said documents are annexed hereto and form part of this Agreement to the same extent as fully embodied herein, the provision of the above noted works for the sum of:

One million, one hundred and sixty two thousand, six hundred dollars (\$1,162,600) excluding H.S.T.

Monthly Progress invoices will be billed based on the value, proportionate to the amount of the contract, of the design services and of the work performed and products delivered to the location of the works as of the last day of the billing period. The total amount of said contract is not to exceed the stipulated price without the Town's prior approval of a budget increase due to a change in the scope of work.

The Proponent further covenants and agrees to undertake and complete the said work in a customarily accepted professional standard under the supervision and direction and to the reasonable satisfaction of the Town of Amherstburg Engineering and Public Works Department acting reasonably within the specified time in his Quotation.

The Proponent further covenants and agrees that he will at all times, indemnify and save harmless, the Corporation of the Town of Amherstburg along with their respective officers and servants, from and against all loss and damages whatsoever which may be made or brought against the above listed to the proportionate extent caused by the negligent acts, omissions or willful misconduct of the Proponent, its servants, agents or employees.

In the event that the Proponent fails to commence correction of any non-performance or negligent performance of this Agreement within five (5) days of receiving written notice thereof, the Corporation of the Town of Amherstburg may terminate this Agreement forthwith.

Either party may terminate this Agreement without cause on sixty (60) days written notice to the other.

The liability of the Corporation of the Town of Amherstburg shall be limited to payment for all authorized work performed to the termination date, less the reasonable costs of correcting or performing the said work. The Corporation of the Town of Amherstburg shall not in any event, be liable to the proponent for any consequential damages or other costs related to the termination of this Agreement.

The Proponent is not responsible for damages or delays in performance caused by acts of God, strikes, lockouts, accidents or other events beyond the control of the Proponent. In any such event, the Proponent's contract price and schedule shall be equitably adjusted.

The Corporation hereby covenants and agrees that if the said Work is duly and properly executed and materials are provided as aforesaid, and if the said Proponent carries out, performs and observes all of the requirements and conditions of this Agreement, the Corporation will pay to the Proponent, the price set forth in his Quotation, such payment or payments to be made in accordance with the provisions of the General Conditions of the Contract to above.

This Agreement and everything herein contained shall enure to the benefit of and be binding upon the parties hereto, their heirs, executors, administrators, successors and assigns, respectively.

(this space left intentionally blank)

IN WITNESS WHEREOF the parties hereto have hereunto affixed their Corporate Seals, if any, duly attested by the signature of their proper officers in that behalf, respectively.



WITNESS AS TO SIGNATURE OF
PROONENT



Proponent's Signature and Seal

FRONT CONSTRUCTION INDUSTRIES INC

Proponent's Name

740 MORTON DR. WINDSOR ON.

Proponent's address

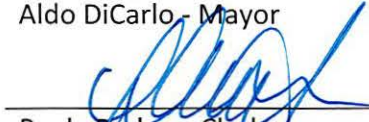
CORPORATION OF THE TOWN OF AMHERSTBURG



WITNESS AS TO SIGNATURE OF
CORPORATION



Aldo DiCarlo - Mayor



Paula Parker - Clerk

CCDC 14

**Design-Build
Stipulated Price Contract**

2 0 1 3

Second Concession Bridge
over Long Marsh Drain

Apply a CCDC 14 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of CCDC 14 – 2013 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

The Canadian Construction Documents Committee (CCDC) is a national joint committee responsible for the development, production and review of standard Canadian construction contracts, forms and guides. Formed in 1974 the CCDC is made up of volunteer representatives from:

Public-Sector Owners

Private-Sector Owners

*The Association of Consulting Engineering Companies-Canada

*The Canadian Construction Association

*Construction Specifications Canada

*The Royal Architectural Institute of Canada

*Committee policy and procedures are directed and approved by the four constituent national organizations.

This document has also been endorsed by the Canadian Design-Build Institute.



Comments and inquiries should be directed to:
Canadian Construction Documents Committee
1900-275 Slater Street
Ottawa, ON
K1P 5H9
613 236-9455
info@ccdc.org
ccdc.org

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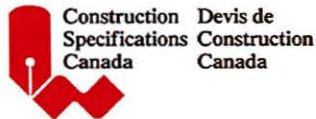


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CCDC 14 is the product of a consensus-building process aimed at balancing the interests of all parties on the construction project. It reflects recommended industry practices. CCDC 14 can have important consequences. The CCDC and its constituent member organizations do not accept any responsibility or liability for loss or damage which may be suffered as a result of the use or interpretation of CCDC 14.

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AGREEMENT BETWEEN OWNER AND DESIGN-BUILDER

For use when a stipulated price is the basis of payment.

This Agreement made on the 25th day of September in the year 2017 .

by and between the parties:

The Corporation of the Town of Amherstburg

hereinafter called the "Owner"
and

Front Construction Industries Inc.

hereinafter called the "Design-Builder"

The Owner and the Design-Builder agree as follows:

ARTICLE A-1 DESIGN SERVICES AND THE WORK

The Design-Builder shall:

- 1.1 provide the Design Services, and
- 1.2 perform the Work for
Second Concession Bridge
over Long Marsh Drain

insert above the name of the Work

located at
Amherstburg On.

insert above the Place of the Work

for which the Agreement has been signed by the parties, and for which
N/A

insert above the name of the Consultant

is acting as, and is hereinafter called, the "Consultant", and for which
Mr. Todd Hewitt, Town of Amherstburg

insert above the name of the Payment Certifier

is acting as, and is hereinafter called the Payment Certifier, and for which
N/A

insert above the name of the Owner's Advisor

is acting as, and is hereinafter called the Owner's Advisor*,
(*Strike out if none appointed)

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CCDC 14 – 2013

1.3 subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Substantial Performance* of the Work by the 15th day of December in the year 2018.

ARTICLE A-2 AGREEMENTS AND AMENDMENTS

- 2.1 This *Contract* supersedes all prior negotiations, representations or agreements, either written or oral, including bidding documents that are not expressly listed in Article A-3 of the Agreement – CONTRACT DOCUMENTS.
- 2.2 This *Contract* may be amended only as provided for 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 – DESIGN SERVICES AND THE WORK:

- Agreement Between *Owner* and *Design-Builder*
- Definitions in this *Contract*
- General Conditions of this *Contract*
- *Owner's Statement of Requirements*, consisting of the following (list those written requirements and information constituting those documents intended to comprise the *Owner's Statement of Requirements*):

Design - Build Second Concession Bridge Over Long Marsh Drain Request for Proposal T11-2017-001 dated March 31, 2018 as issued by the Town of Amherstburg

Design - Build Proposal for Second Concession Bridge over Long Marsh Drain dated April 27, 2017 as submitted by Front Construction Industries Inc. to the Corporation of the Town of Amherstburg

- *Construction Documents*
- * Preliminary Design Drawings dated April 27, 2017
Cover, S1, S2, S3 slab G1, S3 slab G2, S5, S6, S7, S8, S9, S10, S11, T1

* (Insert here, attaching additional pages if required, a list identifying all other *Contract Documents*, e.g. *Supplementary Conditions*; *Proposals*; *Specifications* (giving a list of contents with section numbers and titles, number of pages, date and revision date(s), if any); *Drawings* (giving drawing number, title, date, revision date or mark); *Addenda* (giving title, number, date).

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ARTICLE A-4 CONTRACT PRICE

4.1 The *Contract Price*, which excludes *Value Added Taxes*, is:

One Million, One Hundred & Sixty-Two Thousand, Six Hundred /100 dollars \$ 1,162,600.00

4.2 *Value Added Taxes* (of 13 %) payable by the *Owner* to the *Design-Builder* are:

One Hundred & Fifty-One Thousand, Three Hundred & Thirty-Eight /100 dollars \$ 151,138.00

4.3 Total amount payable by the *Owner* to the *Design-Builder* is:

One Million, One Hundred & Thirty Seven Thousand, Seven Hundred Thirty Eight /100 dollars \$ 1,313,738.00

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

4.5 Amounts are in Canadian funds.

ARTICLE A-5 PAYMENT

5.1 Subject to 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 Ten percent (10 %), the *Owner* shall:

- .1 make progress payments to the *Design-Builder* on account of the *Contract Price* when due in the amount certified by the *Payment Certifier*, together with such *Value Added Taxes* as may be applicable to such payment, and
- .2 upon *Substantial Performance of the Work*, pay to the *Design-Builder* 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 *Design-Builder* 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 and machinery insurance policies, payments shall be made to the *Design-Builder* 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 the following rates on such unpaid amounts shall also become due and payable until payment:
 - (1) 2% per annum above the prime rate for the first 60 days.
 - (2) 4% per annum above the prime rate after the first 60 days.

Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by

The Royal Bank of Canada

(Insert name of chartered lending institution whose prime rate is to be used)
for prime business loans as it may change from time to time.

- .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 claims in dispute that are resolved either pursuant to Part 8 of the General Conditions – DISPUTE RESOLUTION or otherwise, from the date on which the amount would have been due and payable under the *Contract*, had it not been in dispute, until the date it is paid.

ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

6.1 *Notices in Writing* will be addressed to the recipient at the address set out below.

6.2 The delivery of a *Notice in Writing* will be by hand, by courier, by prepaid first class mail, by facsimile or other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender.

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- 6.3 A *Notice in Writing* delivered by one party in accordance with this *Contract* will be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it shall be deemed to have been received five calendar days after the date on which it was mailed, provided that if either such day is not a *Working Day*, then the *Notice in Writing* shall be deemed to have been received on the *Working Day* next following such day.
- 6.4 A *Notice in Writing* sent by facsimile or other form of electronic communication shall be deemed to have been received on the date of its transmission provided that if such day is not a *Working Day* or if it is received after the end of normal business hours on the date of its transmission at the place of receipt, then it shall be deemed to have been received at the opening of business at the place of receipt on the first *Working Day* next following the transmission.
- 6.5 An address for a party may be changed by *Notice in Writing* to the other party setting out the new address in accordance with this Article.

Owner

The Corporation of the Town of Amherstburg

name of Owner*

512 Sandwich Street South

Address

facsimile number

thewitt@amherstburg.ca

email address

Design-Builder

Front Construction Industries Inc.

name of Design-Builder*

740 Morton Dr. Windsor On.

Address

(519) 250-8507

facsimile number

pmerritt@frontconstruction.com

email address

Owner's Advisor^{}**

N/A

name of Owner's Advisor*

Address

facsimile number

email address

* If it is intended that the notice must be received by a specific individual, indicate that individual's name.

** Strike out this entry if no Owner's Advisor is designated as per GC 2.3 – OWNER'S ADVISOR.

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~~^{French}*** language shall prevail.

*** Complete this statement by striking out the inapplicable term.

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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 This *Contract* shall enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and permitted 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:


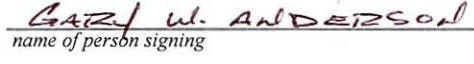
WITNESS


signature

name of person signing

signature

name of person signing

WITNESS

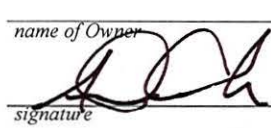




signature

name of person signing

signature

name of person signing

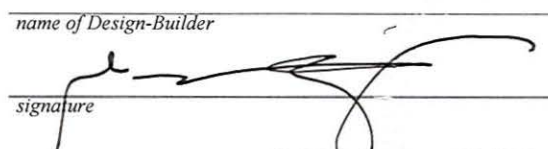

OWNER

The Corporation of the Town of Amherstburg

name of Owner

signature

name and title of person signing

signature

name and title of person signing

DESIGN-BUILDER

Front Construction Industries Inc.

name of Design-Builder

signature

name and title of person signing

N.B. Where legal jurisdiction, local practice, or Owner or Design-Builder 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.

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DEFINITIONS

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

Change Directive

A *Change Directive* is a written instruction signed by the *Owner* directing a change in the *Work* or in the *Design Services* within the general scope of the *Contract Documents*.

Change Order

A *Change Order* is a written amendment to the *Contract* signed by the *Owner* and the *Design-Builder* stating their agreement upon:

- a change in the *Work* or in the *Design Services*;
- an amendment to the *Owner's Statement of Requirements*, if any;
- 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.

Construction Documents

The *Construction Documents* consist of *Drawings, Specifications*, and other documents prepared by or on behalf of the *Design-Builder*, based on the *Contract Documents*, and accepted in writing by the *Owner* and the *Design-Builder* as meeting the *Owner's Statement of Requirements* and the general intent of the *Contract Documents*.

Construction Equipment

Construction Equipment means 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*.

Consultant

The *Consultant* is the person or entity identified as such in the Agreement. The *Consultant* is the architect, the engineer, or entity licensed to practise in the province or territory of the *Place of the Work* and engaged by the *Design-Builder* to provide all or part of the *Design Services*.

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.

Contract Documents

The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement – CONTRACT DOCUMENTS and amendments thereto agreed upon between the parties.

Contract Price

The *Contract Price* is the amount stipulated in Article A-4 of the Agreement – CONTRACT PRICE.

Contract Time

The *Contract Time* is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement – DESIGN SERVICES AND THE WORK from the date of the Agreement to the date of *Substantial Performance of the Work*.

Design-Builder

The *Design-Builder* is the person or entity identified as such in the Agreement.

Design Services

Design Services are the professional design and related services required by the *Contract Documents*.

Drawings

The *Drawings* are the graphic and pictorial portions of the *Construction Documents*, wherever located and whenever issued, showing the design, location and dimensions of the *Work*, generally including plans, elevations, sections, details, and diagrams.

Notice in Writing

A *Notice in Writing* is a written communication between the parties that is transmitted in accordance with the provisions of Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

Other Consultant

Other Consultant is a person or entity, other than the *Consultant*, that may be engaged by the *Design-Builder* to perform part of the *Design Services*.

Owner

The *Owner* is the person or entity identified as such in the Agreement.

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Owner's Advisor

The *Owner's Advisor*, if any, is the person or entity appointed by the *Owner* and identified as such in the Agreement.

Owner's Statement of Requirements

The *Owner's Statement of Requirements* consists of written requirements and information provided by the *Owner* and as listed in Article A-3 of the Agreement – CONTRACT DOCUMENTS and amendments thereto agreed upon between the parties.

Payment Certifier

The *Payment Certifier* is the person or entity identified as such in the Agreement responsible for the issuance of certificates for payment.

Place of the Work

The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

Product

Product or Products means material, machinery, equipment, and fixtures incorporated into the *Work*, but does not include *Construction Equipment*.

Project

The *Project* means the *Owner's* entire undertaking of which the *Work* may be the whole or a part thereof.

Shop Drawings

Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Design-Builder* provides to illustrate details of portions of the *Work*.

Specifications

The *Specifications* are that portion of the *Construction Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, quality, and the necessary services for the *Work*.

Subcontractor

A *Subcontractor* is a person or entity having a direct contract with the *Design-Builder* to perform a part or parts of the *Work* at the *Place of the Work*.

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 *Payment Certifier*.

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 *Owner* to supplement the *Contract Documents* as required for the performance of the *Work*.

Supplier

A *Supplier* is a person or entity having a direct contract with the *Design-Builder* to supply *Products*.

Temporary Work

Temporary Work means temporary supports, structures, facilities, services, and other temporary items, excluding *Construction Equipment*, required for the *Work* but not incorporated into the *Work*.

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 includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which have been imposed on the *Design-Builder* by tax legislation.

Work

The *Work* means the total construction and related services required by the *Contract Documents*, but does not include *Design Services*.

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*.

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GENERAL CONDITIONS OF THE DESIGN-BUILD STIPULATED PRICE CONTRACT

PART 1 GENERAL PROVISIONS

GC 1.1 CONTRACT DOCUMENTS

- 1.1.1 The intent of the *Contract Documents* is to include the design, the labour, the *Products* and other services necessary for the design and performance of the *Work* by the *Design-Builder* in accordance with these documents. It is not intended, however, that the *Design-Builder* shall supply products or perform services or work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.
- 1.1.2 Nothing contained in the *Contract Documents* shall create any contractual relationship between the *Owner* and the *Consultant*, an *Other Consultant*, a *Subcontractor*, a *Supplier*, or their agent, employee, or any other person performing any portion of the *Design Services* or 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 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 *Design-Builder*,
 - the Definitions,
 - Supplementary Conditions,
 - the General Conditions,
 - the *Owner's Statement of Requirements*,
 - the *Construction Documents*,
 - .2 later dated documents shall govern over earlier documents of the same type, and
 - .3 amendments to documents shall govern over documents so amended.
- 1.1.7 Copyright for the design and *Drawings* and electronic media, prepared on behalf of the *Design-Builder* belongs to the *Consultant* or *Other Consultants* who prepared them. Plans, sketches, *Drawings*, graphic representations, and *Specifications*, including, but not limited to computer generated designs, are instruments of the *Consultant's* or *Other Consultant's* services and shall remain their property, whether or not the *Work* for which they are made is executed and whether or not the *Design-Builder* has paid for the *Design Services*. Their alteration by the *Owner* is prohibited.
- 1.1.8 The *Owner* may retain copies, including reproducible copies, of plans, sketches, *Drawings*, graphic representations, and *Specifications* for information and reference in connection with the *Owner's* use and occupancy of the *Work*. Copies may only be used for the purpose intended and for a one time use, on the same site, and for the same *Project*. Except for reference purposes, the plans, sketches, *Drawings*, electronic files, graphic representations, and *Specifications* shall not be used for additions or alterations to the *Work* or on any other project without a written license from the *Consultant* or *Other Consultants* who prepared the documents, for their limited or repeat use.
- 1.1.9 The *Owner* shall be entitled to keep original models or renderings specifically commissioned and paid for.
- 1.1.10 Should the *Owner* alter a *Consultant's* or *Other Consultant's* instrument of service, or use or provide them to third parties other than in connection with the *Work* without informing the *Consultant* and without the *Consultant's* or *Other Consultant's* prior written consent, the *Owner* shall indemnify the *Design-Builder* against claims and costs (including legal costs) associated with such improper alteration or use.

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 hereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

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1.3.2 No action or failure to act by the *Owner, Design-Builder, Consultant, Other Consultant, Payment Certifier, or Owner's Advisor* shall constitute a waiver of any right or duty afforded to either the *Owner* or the *Design-Builder* 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 to in writing.

GC 1.4 ASSIGNMENT

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

GC 1.5 CONFIDENTIALITY

1.5.1 Where a confidentiality agreement exists or as the *Owner* otherwise expressly identifies and requires, the *Owner* and the *Design-Builder* shall keep confidential all matters respecting technical and commercial issues relating to or arising from the performance of the *Contract* and shall not, without the prior written consent of the other party, disclose any such matters, except in strict confidence, to their respective professional advisors.

PART 2 OWNER'S RESPONSIBILITIES

GC 2.1 OWNER'S INFORMATION

2.1.1 The *Owner* shall furnish the information required to complete the *Contract* promptly to avoid delay in the performance of the *Contract*.

2.1.2 Unless the *Contract Documents* specifically state otherwise, the *Design-Builder* is entitled to rely on the accuracy of all information provided by or on behalf of the *Owner* without regard for the source of such information.

2.1.3 Notwithstanding any other provision of the *Contract*, the *Design-Builder* is not responsible for any design errors or omissions in any designs or *Specifications* provided by or on behalf of the *Owner* unless the *Design-Builder* has been specifically requested to review and has accepted in writing those designs and *Specifications* under the *Contract*.

GC 2.2 ROLE OF THE OWNER

2.2.1 The *Owner* will render any necessary decisions or provide instructions promptly to avoid delay in the performance of the *Contract*.

2.2.2 All communications between the *Owner* and the *Consultant, an Other Consultant, a Subcontractor, or a Supplier* shall be forwarded through the *Design-Builder*.

2.2.3 The *Owner* will be, in the first instance, the interpreter of the requirements of the *Owner's Statement of Requirements*.

2.2.4 The *Owner* will have authority to reject by *Notice in Writing* design or work which in the *Owner's* opinion does not conform to the requirements of the *Owner's Statement of Requirements*.

2.2.5 Whenever the *Owner* considers it necessary or advisable, the *Owner* will have authority to require a review of the *Design Services* and inspection or testing of the *Work*, whether or not such work is fabricated, installed or completed, in accordance with paragraph 2.5.5 of GC 2.5 – OWNER'S REVIEW OF THE DESIGN AND THE WORK.

2.2.6 During the progress of the *Design Services* or of the *Work* the *Owner* will furnish *Supplemental Instructions* related to the *Owner's Statement of Requirements* to the *Design-Builder* with reasonable promptness or in accordance with a schedule for such instructions agreed to by the *Owner* and the *Design-Builder*.

GC 2.3 OWNER'S ADVISOR

2.3.1 When the *Owner* appoints an *Owner's Advisor*, the duties, responsibilities and limitations of authority of the *Owner's Advisor* shall be as set forth in the *Contract Documents*.

2.3.2 The duties, responsibilities and limitations of authority of the *Owner's Advisor* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner* and the *Design-Builder*.

2.3.3 Subject to any notified limitations in authority, the *Design-Builder* may rely upon any written instructions or directions provided by the *Owner's Advisor*. Neither the authority of the *Owner's Advisor* to act, nor any decision to exercise or not exercise such authority, shall give rise to any duty or responsibility of the *Owner's Advisor* to the *Design-Builder, the Consultant, Other Consultants, Subcontractors, Suppliers, or their agents, employees or other persons performing any portion of the Design Services or the Work*.

- 2.3.4 If the employment of the *Owner's Advisor* is terminated, the *Owner* may appoint or reappoint an *Owner's Advisor* against whom the *Design-Builder* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Owner's Advisor*.

GC 2.4 ROLE OF THE PAYMENT CERTIFIER

- 2.4.1 The *Owner* shall designate a *Payment Certifier* who will review the *Design-Builder's* applications for payment and certify the value of the *Design Services* and of *Work* performed and *Products* delivered to the *Place of the Work*.
- 2.4.2 The duties, responsibilities and limitations of authority of the *Payment Certifier* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner* and the *Design-Builder*.
- 2.4.3 Neither the authority of the *Payment Certifier* to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the *Payment Certifier* to the *Design-Builder*, the *Consultant*, *Other Consultants*, *Subcontractors*, *Suppliers*, or their agents, employees or other persons performing any of the *Design Services* or the *Work*.
- 2.4.4 The *Payment Certifier* will take all reasonable steps to be accessible to the *Design-Builder* during performance of the *Contract* and shall render any necessary decisions or instructions promptly as provided in GC 5.3 – PROGRESS PAYMENT to avoid delay in the processing of payment claims.
- 2.4.5 Based on the *Payment Certifier's* observations and evaluation of the *Design-Builder's* applications for payment, the *Payment Certifier* will determine the amounts owing to the *Design-Builder* under the *Contract* and will issue certificates for payment as provided in Article A-5 of the Agreement – PAYMENT, GC 5.3 – PROGRESS PAYMENT and GC 5.7 – FINAL PAYMENT.
- 2.4.6 All communications between the *Payment Certifier* and the *Consultant*, an *Other Consultant*, a *Subcontractor*, or a *Supplier* shall be forwarded through the *Design-Builder*.
- 2.4.7 The *Payment Certifier* will promptly inform the *Owner* of the date of receipt of the *Design-Builder's* applications for payment as provided in paragraph 5.3.1.1 of GC 5.3 – PROGRESS PAYMENT.
- 2.4.8 If the *Payment Certifier's* services are terminated, the *Owner* shall immediately designate a new *Payment Certifier* against whom the *Design-Builder* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Payment Certifier*.
- 2.4.9 The *Owner* may provide to the *Consultant*, *Other Consultants*, *Subcontractors* or *Suppliers*, through the *Payment Certifier*, information as to the percentage of the *Design Services* and *Work* that has been certified for payment.

GC 2.5 OWNER'S REVIEW OF THE DESIGN AND THE WORK

- 2.5.1 The *Owner* shall review the design as set out in the design development documents and proposed *Construction Documents* as the *Design Services* proceed, to confirm that the design is in compliance with the *Owner's Statement of Requirements* and the *Contract Documents*.
- 2.5.2 The *Owner* shall complete the reviews in accordance with the schedule agreed upon, or in the absence of an agreed schedule, with reasonable promptness so as to cause no delay.
- 2.5.3 The *Owner's* review shall not relieve the *Design-Builder* of responsibility for errors or omissions in the *Construction Documents* or for meeting all requirements of the *Contract Documents* unless the *Owner* accepts in writing a deviation from the *Contract Documents*.
- 2.5.4 No later than 10 days after completing the review, the *Owner* shall advise the *Design-Builder* in writing that the *Owner* has accepted or rejected the proposed *Construction Documents*. If rejected, the *Owner* shall inform the *Design-Builder* of the reasons of non-conformance and the *Design-Builder* shall revise the proposed *Construction Documents* to address such non-conformance. The *Design-Builder* shall inform the *Owner* in writing of any revisions other than those requested by the *Owner*.
- 2.5.5 The *Owner* may order any portion or portions of the *Work* to be examined to confirm that the *Work* performed 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 *Design-Builder* 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 all costs incurred by the *Design-Builder* as a result of such examination and restoration.

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GC 2.6 WORK BY OWNER OR OTHER CONTRACTORS

- 2.6.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to other contractors and to perform other design or other work with its own forces.
- 2.6.2 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 *Design Services* and the *Work*;
 - .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 *Design-Builder* as it affects the *Design Services* and 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.
- 2.6.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Design-Builder* shall:
- .1 afford the *Owner* and other contractors reasonable opportunity to store their products and execute their work;
 - .2 cooperate with other contractors and the *Owner* in reviewing their construction schedules; and
 - .3 promptly report to the *Owner* in writing any apparent deficiencies in the work of other contractors or of the *Owner's* own forces, where such work affects the proper execution of any portion of the *Design Services* or of the *Work*, prior to proceeding with that portion of the *Design Services* or of the *Work*.
- 2.6.4 Where the *Contract Documents* identify work to be performed by other contractors or the *Owner's* own forces, the *Design-Builder* shall co-ordinate and schedule the *Design Services* and the *Work* with the work of other contractors and the *Owner's* own forces as specified in the *Contract Documents*.
- 2.6.5 Where a change in the *Design Services* or in the *Work* is required as a result of the co-ordination and integration of the work of other contractors or *Owner's* own forces with the *Design Services* or with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.
- 2.6.6 Disputes and other matters in question between the *Design-Builder* and the *Owner's* 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 *Design-Builder* shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the *Owners* contains a similar agreement to arbitrate.

PART 3 DESIGN-BUILDER'S RESPONSIBILITIES

GC 3.1 CONTROL OF THE DESIGN SERVICES AND THE WORK

- 3.1.1 The *Design-Builder* shall have total control of the *Design Services* and of the *Work* and shall direct and supervise the *Design Services* and the *Work* so as to ensure conformity with the *Contract Documents*.
- 3.1.2 The *Design-Builder* shall be solely responsible for the *Design Services* and construction means, methods, techniques, sequences, and procedures with respect to the *Work*.
- 3.1.3 The *Design-Builder* shall preserve and protect the rights of the parties under the *Contract* with respect to the *Design Services* to be performed by the *Consultant* and *Other Consultants*, and shall enter into a contract with the *Consultant* and *Other Consultants* to perform *Design Services* as provided in the *Contract*, in accordance with laws applicable at the *Place of the Work*.
- 3.1.4 The *Design-Builder's* contract with the *Consultant* shall:
- .1 be based on the version of CCDC 15 – Design Services Contract between Design-Builder and Consultant in effect as at the date of this *Contract* or incorporate terms and conditions consistent with this version of CCDC 15, and
 - .2 incorporate terms and conditions of the *Contract Documents*, insofar as they are applicable.
- 3.1.5 Upon the *Owner's* request, the *Design-Builder* shall promptly provide the *Owner* with proof of compliance with paragraph 3.1.4.

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- 3.1.6 The *Design-Builder* shall be as fully responsible to the *Owner* for acts and omissions of the *Consultant* and *Other Consultants*, and of persons directly or indirectly employed by the *Consultant* and *Other Consultants*, as for acts and omissions of persons directly employed by the *Design-Builder*.
- 3.1.7 The *Design-Builder's* responsibility for *Design Services* performed by the *Consultant* and *Other Consultants* shall be limited to the degree of care, skill and diligence normally provided by consultants in the performance of comparable services in respect of projects of a similar nature to that contemplated by this *Contract*. The *Design-Builder* shall ensure that the *Consultant* and *Other Consultants* perform the *Design Services* to this standard.
- 3.1.8 The *Design-Builder* shall ensure that the *Consultant* and *Other Consultants* provide documentation required by authorities having jurisdiction in accordance with regulations and by-laws in effect at the *Place of the Work*.
- 3.1.9 The *Design-Builder* is solely responsible for the quality of the *Design Services* and of the *Work* and shall undertake any quality control activities specified in the *Contract Documents* or, if none are specified, as may be reasonably required to ensure such quality.
- 3.1.10 The *Design Builder* shall provide access to the *Work*, including parts being performed at locations other than the *Place of the Work* and to the location where the *Design Services* are performed, that the *Owner*, or the *Payment Certifier* may reasonably require to verify the progress of the *Work* or *Design Services* and their conformity to the requirements of the *Contract Documents*. The *Design-Builder* shall also provide sufficient, safe, and proper facilities at all times for such reviews of the *Design Services* or the *Work* and for inspection of the *Work* by authorized agencies.
- 3.1.11 If work is designated for tests, inspections, or approvals in the *Contract Documents*, or by the instructions of the *Owner*, the *Consultant*, or *Other Consultants*, or the laws or ordinances of the *Place of the Work*, the *Design-Builder* shall give the *Owner* reasonable notice of when the work will be ready for review and inspection.
- 3.1.12 The *Design-Builder* shall arrange for and shall give the *Owner* reasonable notice of the date and time of inspections by other authorities.
- 3.1.13 If the *Design-Builder* 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 *Design-Builder* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and restore the covering work at the *Design-Builder's* expense.
- 3.1.14 The *Design-Builder* shall furnish promptly to the *Owner*, on request, a copy of certificates, test reports and inspection reports relating to the *Work*.

GC 3.2 DESIGN-BUILDER'S REVIEW OF OWNER'S STATEMENT OF REQUIREMENTS OR OTHER INFORMATION

- 3.2.1 The *Design-Builder* shall promptly notify the *Owner* of any significant error, inconsistency, or omission discovered in the *Owner's Statement of Requirements* or other information provided by or on behalf of the *Owner*. The *Design-Builder* shall not proceed with the *Design Services* or *Work* affected until the *Design-Builder* and the *Owner* have agreed in writing how the information should be corrected or supplied.
- 3.2.2 The *Design-Builder* shall not be liable for damages or costs resulting from such errors, inconsistencies, or omissions in the *Owner's Statement of Requirements* or other information provided by or on behalf of the *Owner*.

GC 3.3 ROLE OF THE CONSULTANT

- 3.3.1 The *Consultant* or *Other Consultants* will be, in the first instance, the interpreter of the requirements of the *Construction Documents* that they have prepared.
- 3.3.2 The duties, responsibilities and limitations of authority of the *Consultant* shall be in accordance with paragraph 3.1.4 of GC 3.1 – CONTROL OF THE DESIGN SERVICES AND THE WORK and shall be modified only with the written consent of the *Owner*, which consent shall not be unreasonably withheld.
- 3.3.3 If the *Consultant's* engagement is terminated, the *Design-Builder* shall immediately appoint or reappoint a *Consultant* against whom the *Owner* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Consultant*.

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GC 3.4 OTHER CONSULTANTS, SUBCONTRACTORS AND SUPPLIERS

- 3.4.1 The *Design-Builder* 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 *Other Consultants* to require them to perform *Design Services* as provided in the *Contract Documents*;
 2. enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform *Work* as required by the *Contract Documents*;
 3. incorporate the terms and conditions of the *Contract Documents* into all contracts or written agreements with *Other Consultants*, *Subcontractors* and *Suppliers* insofar as they are applicable; and
 4. be as fully responsible to the *Owner* for acts and omissions of *Other Consultants*, *Subcontractors*, *Suppliers* and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Design-Builder*.
- 3.4.2 The *Design-Builder* shall indicate in writing, at the request of the *Owner*, the names of *Other Consultants*, *Subcontractors*, or *Suppliers* whose proposals or bids have been received by the *Design-Builder* which the *Design-Builder* would be prepared to accept for the performance of a portion of the *Design Services* or of the *Work*. Should the *Owner* not object before signing the subcontract, the *Design-Builder* shall employ *Other Consultants*, *Subcontractors* or *Suppliers* so identified by the *Design-Builder* in writing for the performance of that portion of the *Design Services* or of the *Work* to which their proposal or bid applies.
- 3.4.3 The *Owner* may, for reasonable cause, at any time before the *Design-Builder* has signed the subcontract, object to the use of a proposed *Other Consultant*, *Subcontractor* or *Supplier* and require the *Design-Builder* to employ another proposed *Other Consultant*, *Subcontractor* or *Supplier* bidder.
- 3.4.4 If the *Owner* requires the *Design-Builder* to change a proposed *Other Consultant*, *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the differences resulting from such required change.
- 3.4.5 The *Design-Builder* shall not be required to employ any *Subcontractor*, *Supplier*, *Other Consultant*, person or firm to whom the *Design-Builder* may reasonably object.

GC 3.5 CONSTRUCTION DOCUMENTS

- 3.5.1 The *Design-Builder* shall submit the proposed *Construction Documents* to the *Owner* to review in orderly sequence and sufficiently in advance so as to cause no delay. The *Owner* and the *Design-Builder* shall jointly prepare a schedule of the dates for submission and return of proposed *Construction Documents*.
- 3.5.2 During the progress of the *Design Services*, the *Design-Builder* shall furnish to the *Owner* documents that describe details of the design required by the *Contract Documents*.
- 3.5.3 At the time of submission the *Design-Builder* shall advise the *Owner* in writing of any significant deviations in the proposed *Construction Documents* from the requirements of the *Contract Documents*. The *Owner* may or may not accept such deviations. Accepted deviations from the *Owner's Statement of Requirements* will be recorded in a *Change Order*.
- 3.5.4 When a change is required to the *Construction Documents* it shall be made in accordance with GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER, or GC 6.3 – CHANGE DIRECTIVE.

GC 3.6 DESIGN SERVICES AND WORK SCHEDULE

- 3.6.1 The *Design-Builder* shall:
- .1 promptly after signing the Agreement, prepare and submit to the *Owner* a *Design Services* and *Work* schedule that indicates the timing of the major activities of the *Design Services* and of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate that the *Design Services* and the *Work* will be performed in conformity with the schedule;
 - .2 monitor the progress of the *Design Services* and of the *Work* relative to the schedule and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and
 - .3 advise the *Owner* of any revisions required to the schedule as a result of extensions to the *Contract Time* as provided in Part 6 of the General Conditions – CHANGES IN THE CONTRACT.

GC 3.7 SUPERVISION

- 3.7.1 The *Design-Builder* shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the *Place of the Work* while work is being performed. The appointed representative shall not be changed except for valid reason.
- 3.7.2 The appointed representative shall represent the *Design-Builder* at the *Place of the Work*. Information and instructions provided by the *Owner* to the *Design-Builder's* appointed representative shall be deemed to have been received by the *Design-Builder* except that *Notices in Writing* otherwise required under the *Contract* shall be given as indicated in Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

GC 3.8 LABOUR AND PRODUCTS

- 3.8.1 The *Design-Builder* 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*.
- 3.8.2 Unless otherwise specified in the *Contract Documents*, *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with the *Contract Documents* and their use acceptable to the *Owner*.
- 3.8.3 The *Design-Builder* shall maintain good order and discipline among the *Design-Builder's* employees involved in the performance of the *Work* and shall not employ anyone not skilled in the tasks assigned.

GC 3.9 DOCUMENTS AT THE SITE

- 3.9.1 The *Design-Builder* shall keep one copy of current *Owner's Statement of Requirements*, *Construction Documents*, *Shop Drawings*, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner*.

GC 3.10 SHOP DRAWINGS

- 3.10.1 The *Design-Builder* shall provide *Shop Drawings* as described in the *Contract Documents* or as the *Owner* may reasonably request.
- 3.10.2 *Shop Drawings* which require approval of any legally constituted authority having jurisdiction shall be provided to such authority by the *Design-Builder* for approval.
- 3.10.3 The *Design-Builder* shall review all *Shop Drawings* before providing them to the *Owner*. The *Design-Builder* represents by this review that the *Design-Builder* has:
- .1 determined and verified all applicable field measurements, field construction conditions, *Product* requirements, catalogue numbers and similar data, or will do so, and
 - .2 checked and co-ordinated each *Shop Drawing* with the requirements of the *Contract Documents*.
- 3.10.4 If the *Owner* requests to review shop drawings, the *Design-Builder* shall submit them in an orderly sequence and sufficiently in advance so as to cause no delay in the *Design Services* or the *Work* or in the work of other contractors. The *Owner* and the *Design-Builder* shall jointly prepare a schedule of the dates for submission and return of *Shop Drawings*.
- 3.10.5 The *Owner's* review under paragraph 3.10.4 is for conformity to the intent of the *Contract Documents* and for general arrangement only. The *Owner's* review shall not relieve the *Design-Builder* of the responsibility for errors or omissions in the *Shop Drawings* or for meeting all requirements of the *Contract Documents* unless the *Owner* expressly accepts a deviation from the *Contract Documents* by *Change Order*.

GC 3.11 NON-CONFORMING DESIGN AND DEFECTIVE WORK

- 3.11.1 Where the *Owner* has advised the *Design-Builder*, by *Notice in Writing*, that designs or *Specifications* fail to comply with the *Owner's Statement of Requirements*, the *Design-Builder* shall ensure that the design documents or proposed *Construction Documents* are promptly corrected or altered.
- 3.11.2 The *Design-Builder* shall promptly correct defective work that has been rejected by *Notice in Writing* by the *Owner* 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, design, use of defective products, or damage through carelessness or other act or omission of the *Design-Builder*.
- 3.11.3 The *Design-Builder* shall promptly make good other contractors' work destroyed or damaged by such removals or replacements at the *Design-Builder's* expense.

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- 3.11.4 If, in the opinion of the *Owner*, 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 *Design-Builder* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Design-Builder* does not agree on the difference in value, the *Design-Builder* shall refer the dispute to Part 8 of the General Conditions – DISPUTE RESOLUTION.

PART 4 ALLOWANCES

GC 4.1 CASH ALLOWANCES

- 4.1.1 The *Contract Price* includes the cash allowances, if any, stated in the *Owner's Statement of Requirements*. The scope of work or costs included in such cash allowances shall be as described in the *Owner's Statement of Requirements*.
- 4.1.2 The *Contract Price*, and not the cash allowances, includes the *Design-Builder's* overhead and profit in connection with such cash allowances.
- 4.1.3 Expenditures under cash allowances shall be authorized by the *Owner*.
- 4.1.4 Where the actual cost of the work performed under any cash allowance exceeds the amount of the allowance, the *Design-Builder* 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 the actual cost of the work performed under any cash allowance is less than the amount of the allowance, the *Owner* shall be credited for the unexpended portion of the cash allowance, but not for the *Design-Builder'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 each cash allowance and the actual cost of the work performed under that 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 *Design-Builder* and the *Owner* shall jointly prepare a schedule that shows when the *Owner* must authorize ordering of items called for under cash allowances to avoid delaying the progress of the *Design Services* or of the *Work*.

GC 4.2 CONTINGENCY ALLOWANCE

- 4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Owner's Statement of Requirements*.
- 4.2.2 The contingency allowance includes the *Design-Builder's* overhead and profit in connection with such contingency allowance.
- 4.2.3 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.
- 4.2.4 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.3 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 *Design-Builder*, before signing the *Contract*, and promptly from time to time thereafter, furnish to the *Design-Builder* reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*.
- 5.1.2 The *Owner* shall give the *Design-Builder Notice in Writing* of any material change in the *Owner's* financial arrangements to fulfill the *Owner's* obligations under the *Contract* during the performance of the *Contract*.

GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

- 5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement – PAYMENT may be made monthly as the *Design Services* and the *Work* progress.
- 5.2.2 Applications for payment shall be dated the last day of each payment period, which is the last day of the month or an alternative day of the month agreed to in writing by the parties.
- 5.2.3 The amount claimed shall be for the value, proportionate to the amount of the *Contract*, of the *Design Services* and of the *Work* performed and *Products* delivered to the *Place of the Work* as of the last day of the payment period.

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- 5.2.4 The *Design-Builder* shall submit to the *Payment Certifier*, at least 15 calendar days before the first application for payment, a schedule of values for the parts of the *Design Services* and of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment.
- 5.2.5 The schedule of values shall be made out in such form and supported by such evidence as the *Payment Certifier* may reasonably direct, and when accepted by the *Payment Certifier*, shall be used as the basis for applications for payment unless it is found to be in error.
- 5.2.6 The *Design-Builder* shall include a statement based on the schedule of values with each application for payment.
- 5.2.7 A declaration by the *Design-Builder* as to the distribution made of the amounts received using document CCDC 9A – Statutory Declaration of Progress Payment Distribution by Contractor shall be joined to each application for progress payment except the first one.
- 5.2.8 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 *Payment Certifier* may reasonably require to establish the value and delivery of the *Products*.

GC 5.3 PROGRESS PAYMENT

- 5.3.1 After receipt by the *Payment Certifier* of an application for payment submitted by the *Design-Builder* in accordance with GC 5.2 – APPLICATIONS FOR PROGRESS PAYMENT:
 - .1 the *Payment Certifier* will promptly inform the *Owner* of the date of receipt and value of the *Design-Builder's* application for payment,
 - .2 the *Payment Certifier* will issue to the *Owner* and copy to the *Design-Builder*, no later than 10 calendar days after the receipt of the application for payment, a certificate for payment in the amount applied for, or in such other amount as the *Payment Certifier* determines to be properly due. If the *Payment Certifier* amends the application, the *Payment Certifier* will promptly advise the *Design-Builder* in writing giving reasons for the amendment,
 - .3 the *Owner* shall make payment to the *Design-Builder* on account as provided in Article A-5 of the Agreement – PAYMENT on or before 20 calendar days after the later of:
 - receipt by the *Payment Certifier* of the application for payment, or
 - the last day of the monthly payment period for which the application for payment is made.

GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

- 5.4.1 When the *Design-Builder* considers that the *Work* is substantially performed or, if permitted by the lien legislation applicable at the *Place of the Work*, a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Design-Builder* shall prepare and submit to the *Payment Certifier* appropriate documents as required by the *Contract Documents* together with a written application for a review by the *Payment Certifier* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include this information does not alter the responsibility of the *Design-Builder* to complete the *Contract*.
- 5.4.2 The *Design-Builder's* application for *Substantial Performance of the Work* shall include a statement from the *Consultant*, and *Other Consultants* in support of the submitted information and the date of *Substantial Performance of the Work* or designated portion of the *Work*.
- 5.4.3 The *Payment Certifier* shall, within 7 calendar days after receipt of the *Design-Builder's* application for *Substantial Performance of the Work*, issue a certificate of the *Substantial Performance of the Work* which shall state the date of *Substantial Performance of the Work* or designated portion thereof or advise the *Design-Builder* in writing of the reasons for which such a certificate is not issued.
- 5.4.4 If the applicable lien legislation requires the *Consultant* to determine whether the *Work* has been substantially performed, the *Consultant* shall issue a certificate of the *Substantial Performance of the Work* which shall state the date of *Substantial Performance of the Work* or designated portion of the *Work* or advise the *Design-Builder* in writing of the reasons for which such a certificate is not issued.
- 5.4.5 Immediately following the issuance of the certificate of *Substantial Performance of the Work*, the *Design-Builder*, in consultation with the *Owner* will establish a reasonable date for completing the *Work*.

GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- 5.5.1 After the issuance of the certificate of *Substantial Performance of the Work*, the *Design-Builder* shall:
 - .1 submit an application for payment of the holdback amount,
 - .2 submits a CCDC 9A Statutory Declaration of Progress Payment Distribution by Contractor.

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- 5.5.2 After the receipt of an application for payment from the *Design-Builder* and the statement as provided in paragraph 5.5.1, the *Payment Certifier* will issue a certificate for payment of the holdback amount.
- 5.5.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate holdback account, the *Owner* shall, 10 calendar 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 *Design-Builder*.
- 5.5.4 In the common law jurisdictions, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the calendar 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 *Design-Builder* which are enforceable against the *Owner*.
- 5.5.5 In the Province of Quebec, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable 30 calendar 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 *Design-Builder* which are enforceable against the *Owner*.

GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

- 5.6.1 In the common law jurisdictions, where legislation permits and where, upon application by the *Design-Builder*, the *Payment Certifier* 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 *Design-Builder* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the first calendar day following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the *Place of the Work*. 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 *Design-Builder* which are enforceable against the *Owner*.
- 5.6.2 In the Province of Quebec, where, upon application by the *Design-Builder*, the *Payment Certifier* 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 *Design-Builder* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, no later than 30 calendar days after such certification by the *Payment Certifier*. 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 *Design-Builder* which are enforceable against the *Owner*.
- 5.6.3 Notwithstanding the provisions of the preceding paragraphs, and notwithstanding the wording of such certificates, the *Design-Builder* shall ensure that such subcontract work or *Products* are protected pending the issuance of a *Substantial Performance of the Work* certificate 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 5.7 FINAL PAYMENT

- 5.7.1 When the *Design-Builder* considers that the *Design Services* and the *Work* are completed, the *Design-Builder* shall submit an application for final payment.
- 5.7.2 The *Payment Certifier* will, no later than 10 calendar days after the receipt of an application from the *Design-Builder* for final payment, verify the validity of the application and advise the *Design-Builder* in writing that the application is valid or give reasons why it is not valid.
- 5.7.3 When the *Payment Certifier* finds the *Design-Builder's* application for final payment valid, the *Payment Certifier* will promptly issue a final certificate for payment.
- 5.7.4 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 calendar days after the issuance of a final certificate for payment, pay the *Design-Builder* as provided in Article A-5 of the Agreement – PAYMENT.

GC 5.8 DEFERRED WORK

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

GC 5.9 NON-CONFORMING DESIGN SERVICES AND WORK

- 5.9.1 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 *Design Services* and the *Work* which are not in accordance with the requirements of the *Contract Documents*.

PART 6 CHANGES IN THE CONTRACT

GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

- 6.1.1 The *Owner* without invalidating the *Contract*, may make:
- .1 changes to the *Work* or to the *Owner's Statement of Requirements* consisting of additions, deletions or revisions to the *Design Services* or to the *Work*, by *Change Order* or *Change Directive*, and
 - .2 changes to the *Contract Time* by *Change Order*.
- 6.1.2 The *Design-Builder* shall not perform a change in the *Design Services*, *Construction Documents* or to the *Work* without a *Change Order* or a *Change Directive*.

GC 6.2 CHANGE ORDER

- 6.2.1 When a change is proposed or required, the *Owner* or the *Design-Builder* shall provide a written description of the proposed change to the other party. The *Design-Builder* shall present, in a form acceptable to the *Owner*, a method of adjustment or an amount of adjustment for the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change.
- 6.2.2 When the *Owner* and *Design-Builder* 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*. The value of the *Design Services* or the *Work* performed as the result of a *Change Order* shall be included in applications for progress payment.
- 6.2.3 If the *Owner* requests the *Design-Builder* to submit a proposal for a change and then elects not to proceed with the change, a *Change Order* shall be issued by the *Owner* to reimburse the *Design-Builder* for all costs incurred by the *Design-Builder* in developing the proposal, including the cost of the related *Design Services*.

GC 6.3 CHANGE DIRECTIVE

- 6.3.1 If the *Owner* requires the *Design-Builder* to proceed with a change prior to the *Owner* and the *Design-Builder* agreeing upon the corresponding adjustment in *Contract Price* and *Contract Time*, the *Owner* shall issue a *Change Directive*.
- 6.3.2 A *Change Directive* shall only be used to direct a change which is within the general scope of the *Contract Documents*.
- 6.3.3 A *Change Directive* shall not be used to direct a change in the *Contract Time* only.
- 6.3.4 Upon receipt of a *Change Directive*, the *Design-Builder* shall proceed promptly with the change.
- 6.3.5 For the purpose of valuing *Change Directives*, changes that are not substitutions or otherwise related to each other shall not be grouped together in the same *Change Directive*.
- 6.3.6 The adjustment in the *Contract Price* for a change carried out by way of a *Change Directive* shall be determined on the basis of the cost of the *Design-Builder's* actual expenditures and savings attributable to the *Change Directive*, valued in accordance with paragraph 6.3.7 and as follows:
- .1 If the change results in a net increase in the *Design-Builder's* cost, the *Contract Price* shall be increased by the amount of the net increase in the *Design-Builder's* cost, plus the *Design-Builder's* percentage fee on the net increase.

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- .2 If the change results in a net decrease in the *Design-Builder's* cost, the *Contract Price* shall be decreased by the amount of the net decrease in the *Design-Builder's* cost, without adjustment for the *Design-Builder's* percentage fee.
- 6.3.7 The cost of performing the work attributable to the *Change Directive* shall be limited to the actual cost of the following:
- .1 salaries, wages and benefits paid to personnel in the direct employ of the *Design-Builder* under a salary or wage schedule agreed upon by the *Owner* and the *Design-Builder*, or in the absence of such a schedule, actual salaries, wages and benefits paid under applicable bargaining agreement, and in the absence of a salary or wage schedule and bargaining agreement, actual salaries, wages and benefits paid by the *Design-Builder*, for personnel:
 - (1) stationed at the *Design-Builder's* field office, in whatever capacity employed;
 - (2) engaged in expediting the production or transportation of material or equipment, at shops or on the road;
 - (3) engaged in the preparation or review of *Shop Drawings*, fabrication drawings, coordination drawings, and project record drawings; or
 - (4) engaged in the processing of changes in the *Design Services* or in the *Work*;
 - .2 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 *Design-Builder* and included in the cost of the work as provided in paragraphs 6.3.7.1;
 - .3 travel and subsistence expenses of the *Design-Builder's* personnel described in paragraphs 6.3.7.1;
 - .4 all *Products* including cost of transportation thereof;
 - .5 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 *Design-Builder*;
 - .6 all tools and *Construction Equipment*, exclusive of hand tools used in the performance of the *Work* whether rented from or provided by the *Design-Builder* or others, including installation, minor repairs and replacements, dismantling, removal, transportation, and delivery cost thereof;
 - .7 all equipment and services required for the *Design-Builder's* field office;
 - .8 deposits lost;
 - .9 the cost of *Design Services* including all fees and disbursements of the *Consultant* and *Other Consultants* engaged to perform such services;
 - .10 the amounts of all subcontracts;
 - .11 quality assurance such as independent inspection and testing services;
 - .12 charges levied by authorities having jurisdiction at the *Place of the Work*;
 - .13 royalties, patent license fees, and damages for infringement of patents and cost of defending suits therefore subject always to the *Design-Builder's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 – PATENT FEES;
 - .14 any adjustment in premiums for all bonds and insurance which the *Design-Builder* is required, by the *Contract Documents*, to purchase and maintain;
 - .15 any adjustment in taxes, other than *Value Added Taxes*, and duties for which the *Design-Builder* is liable;
 - .16 charges for long distance telephone and facsimile communications, courier services, expressage, and petty cash items incurred in relation to the performance of the *Work*;
 - .17 removal and disposal of waste products and debris; and
 - .18 safety measures and requirements.
- 6.3.8 Notwithstanding other provisions contained in the General Conditions of the *Contract*, it is the intention of the parties that the cost of any item under any cost element referred to in paragraph 6.3.7 shall cover and include any and all costs or liabilities attributable to the *Change Directive* other than those which are the result of or occasioned by any failure on the part of the *Design-Builder* to exercise reasonable care and diligence in the *Design-Builder's* attention to the *Design Services* or to the *Work*. Any cost due to failure on the part of the *Design-Builder* to exercise reasonable care and diligence in the *Design-Builder's* attention to the *Design Services* or to the *Work* shall be borne by the *Design-Builder*.
- 6.3.9 The *Design-Builder* shall keep full and detailed accounts and records necessary for the documentation of the cost of performing the work attributable to the *Change Directive* and shall provide the *Owner* with copies thereof when requested.
- 6.3.10 For the purpose of valuing *Change Directives*, the *Owner* shall be afforded reasonable access to all of the *Design-Builder's* pertinent documents related to the cost of performing the work attributable to the *Change Directive*.

- 6.3.11 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 to be included in progress payments.
- 6.3.12 If the *Owner* and *Design-Builder* do not agree on the proposed adjustment in the *Contract Time* attributable to the change, or the method of determining it, the adjustment shall be referred to the provisions of PART 8 – DISPUTE RESOLUTION, for determination.
- 6.3.13 When the *Owner* and the *Design-Builder* reach agreement on the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order*.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

- 6.4.1 If the *Owner* or the *Design-Builder* discovers conditions at the *Place of the Work* which are:
 - .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Contract* and 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 give *Notice in Writing* to the other party of such conditions before they are disturbed and in no event later than 5 *Working Days* after first observance of the conditions.
- 6.4.2 The *Owner* will promptly investigate such conditions. If the conditions differ materially from the *Contract Documents* and this would cause an increase or decrease in the *Design-Builder's* cost or time to perform the *Design Services* or the *Work*, the *Owner* will issue appropriate instructions for a change in the *Contract* as provided in GC 6.2 – CHANGE ORDER or GC 6.3 – CHANGE DIRECTIVE.
- 6.4.3 If the *Owner* is of the opinion 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 *Owner* will advise the *Design-Builder* in writing of the grounds on which this opinion is based.
- 6.4.4 The *Design-Builder* shall not be entitled to an adjustment in the *Contract Price* or the *Contract Time* if such conditions were reasonably apparent during the request for proposal period or bidding period and prior to proposal closing or bid closing.
- 6.4.5 If such concealed or unknown conditions relate to toxic and hazardous substances and materials, artifacts and fossils, or mould, the parties will be governed by the provisions of GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS, GC 9.3 – ARTIFACTS AND FOSSILS and GC 9.5 – MOULD.

GC 6.5 DELAYS

- 6.5.1 If the *Design-Builder* is delayed in the performance of the *Design Services* or the *Work* by an action or omission of the *Owner* or anyone employed or engaged by the *Owner* directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as agreed between the *Owner* and the *Design-Builder*. The *Design-Builder* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Design-Builder* as the result of such delay.
- 6.5.2 If the *Design-Builder* is delayed in the performance of the *Design Services* or 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 *Design-Builder* or any person employed or engaged by the *Design Builder* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as agreed between the *Owner* and the *Design-Builder*. The *Design-Builder* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Design-Builder* as the result of such delay.
- 6.5.3 If the *Design-Builder* is delayed in the performance of the *Design Services* or 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 *Design-Builder* is a member or to which the *Design-Builder* is otherwise bound), or
 - .2 fire, unusual delay by common carriers or unavoidable casualties, or
 - .3 abnormally adverse weather conditions, or
 - .4 any cause beyond the *Design-Builder's* control other than one resulting from a default or breach of *Contract* by the *Design-Builder*,
 then the *Contract Time* shall be extended for such reasonable time as agreed between the *Owner* and the *Design-Builder*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Design-Builder* agrees to a shorter extension. The *Design-Builder* shall not be entitled to payment for costs

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incurred by such delays unless such delays result from actions of the *Owner*, or anyone employed or engaged by the *Owner* directly or indirectly.

- 6.5.4 No extension shall be made for delay unless *Notice in Writing* of the cause of delay is given to the *Owner* no later than 10 *Working Days* after the commencement of the delay. In the case of a continuing cause of delay only one *Notice in Writing* shall be necessary.
- 6.5.5 Any adjustment to *Contract Price* and *Contract Time* required as a result of GC 6.5 – DELAYS shall be made as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER, and GC 6.3 – CHANGE DIRECTIVE.

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

- 6.6.1 If the *Design-Builder* intends to make a claim for an increase to the *Contract Price*, or if the *Owner* intends to make a claim for a credit to the *Contract Price*, the party that intends to make the claim shall give timely *Notice in Writing* of intent to claim to the other party, to give the other party the opportunity to take actions to mitigate the claim.
- 6.6.2 Upon commencement of the event or series of events giving rise to a claim, the party intending to make the claim shall:
- .1 take all reasonable measures to mitigate any loss or expense 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 The party making the claim shall submit within a reasonable time to the other party 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 regular intervals as agreed between the parties, 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 after the end of the effects resulting from the event or series of events.
- 6.6.5 If the *Owner* and *Design-Builder* are in disagreement regarding the basis for the claim or its valuation, the matter shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION.

PART 7 RIGHT TO SUSPEND OR TERMINATE

GC 7.1 OWNER’S RIGHT TO SUSPEND THE DESIGN SERVICES OR TERMINATE THE CONTRACT BEFORE THE WORK COMMENCES

- 7.1.1 The *Owner* may, at any time before the *Work* commences at the *Place of the Work*, suspend performance of the *Design Services* by giving *Notice in Writing* to the *Design-Builder* indicating the expected length of the suspension. Such suspension shall be effective in the manner as stated in the *Notice in Writing* and shall be without prejudice to any claims which either party may have against the other.
- 7.1.2 Upon receiving a notice of suspension, the *Design-Builder* shall, subject to any directions in the notice of suspension, suspend performance of the *Design Services*.
- 7.1.3 If the *Design Services* are suspended for a period of 20 *Working Days* or less, the *Design-Builder*, upon the expiration of the period of suspension, shall resume the performance of the *Design Services* in accordance with the *Contract Documents*. The *Contract Price* and *Contract Time* shall be adjusted as provided in paragraph 6.5.1 of GC 6.5 – DELAYS.
- 7.1.4 If, after 20 *Working Days* from the date of delivery of the *Notice in Writing* regarding the suspension of the *Design Services*, the *Owner* and the *Design-Builder* agree to continue with and complete the *Design Services* and the *Work*, the *Design-Builder* shall resume the *Design Services* in accordance with any terms and conditions agreed upon by the *Owner* and the *Design-Builder*. Failing such an agreement, the *Owner* shall be deemed to have terminated the *Contract* and the *Design-Builder* shall be entitled to be paid for all *Design Services* performed and for such other damages as the *Design-Builder* may have sustained, including reasonable profit, as a result of the termination of the *Contract*.

GC 7.2 OWNER'S RIGHT TO TERMINATE THE DESIGN-BUILDER'S RIGHT TO CONTINUE WITH THE DESIGN SERVICES OR WORK, OR TERMINATE THE CONTRACT

- 7.2.1 If the *Design-Builder* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Design-Builder's* insolvency, or if a receiver is appointed because of the *Design-Builder's* insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, terminate the *Design-Builder's* right to continue with the *Design Services* or *Work*, by giving the *Design-Builder* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.
- 7.2.2 If the *Design-Builder* neglects to properly perform the *Design Services* or *Work*, or otherwise fails to comply with the requirements of the *Contract* to a substantial degree, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Design-Builder* *Notice in Writing* that the *Design-Builder* is in default of the *Design-Builder's* contractual obligations and instruct the *Design-Builder* to correct the default in the 5 *Working Days* immediately following the receipt of such *Notice in Writing*.
- 7.2.3 If the default cannot be corrected in the 5 *Working Days* specified or in such other time period as may be subsequently agreed in writing by the parties, the *Design-Builder* shall be in compliance with the *Owner's* instructions if the *Design-Builder*:
- .1 commences the correction of the default within the specified or agreed time, as the case may be, and
 - .2 provides the *Owner* with an acceptable schedule for such correction, and
 - .3 corrects the default in accordance with the *Contract* terms and with such schedule.
- 7.2.4 If the *Design-Builder* fails to correct the default in the time specified or in such other time period as may be subsequently agreed in writing by the parties, 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 *Design-Builder* provided the *Payment Certifier* has certified such cost to the *Owner* and the *Design-Builder*, or
 - .2 terminate the *Design-Builder's* right to continue with the *Design Services* or *Work* in whole or in part, or
 - .3 terminate the *Contract*.
- 7.2.5 If the *Owner* terminates the *Design-Builder's* right to continue with the *Design Services* or *Work* as provided in paragraphs 7.2.1 and 7.2.4, or if the *Owner* terminates the *Contract*, the *Owner* shall be entitled to:
- .1 use the plans, sketches, *Drawings*, graphic representations and *Specifications* pursuant to paragraph 1.1.8 of GC 1.1 – CONTRACT DOCUMENTS, as reasonably required for the completion of design and construction of the *Project*, but unless otherwise agreed, the *Consultant* and *Other Consultants* shall not assume any responsibility or liability resulting from use of such documents which may be incomplete;
 - .2 take possession of the *Work* and *Products* at the *Place of the Work*, and subject to the rights of third parties, utilize the *Construction Equipment* at the *Place of the Work*, and finish the *Design Services* and *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense;
 - .3 withhold further payment to the *Design-Builder* until final payment is determined in accordance with paragraphs 7.2.5.4 and 7.2.5.5;
 - .4 charge the *Design-Builder* the amount by which:
 - (1) the full cost of finishing the *Design Services* and the *Work*, as certified by the *Payment Certifier*, including compensation to the *Payment Certifier* for the *Payment Certifier's* additional services, plus
 - (2) a reasonable allowance as determined by the *Payment Certifier* to cover the cost of corrections to work performed by the *Design-Builder* that may be required under GC 12.5 – WARRANTY, together exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Design Services* and the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Design-Builder* the difference; and
 - .5 on expiry of the warranty period, charge the *Design-Builder* the amount by which the cost of corrections to the *Design-Builder's* work under GC 12.5 – WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the *Design-Builder* the difference.
- 7.2.6 The *Design-Builder's* obligation under the *Contract* as to quality, correction and warranty of the *Work* performed by the *Design-Builder* up to the time of termination shall continue after such termination of the *Contract*.

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GC 7.3 DESIGN-BUILDER'S RIGHT TO SUSPEND THE DESIGN SERVICES OR WORK, OR TERMINATE THE CONTRACT

- 7.3.1 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 *Design-Builder* may, without prejudice to any other right or remedy the *Design-Builder* may have, terminate the *Contract* by giving the *Owner* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.
- 7.3.2 If the *Design Services* or *Work* are suspended or otherwise delayed for a period of more than 20 *Working Days* 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 *Design-Builder* or of anyone directly or indirectly employed or engaged by the *Design-Builder*, the *Design-Builder* may, without prejudice to any other right or remedy the *Design-Builder* may have, terminate the *Contract* by giving the *Owner* *Notice in Writing* to that effect.
- 7.3.3 The *Design-Builder* may give *Notice in Writing* to the *Owner* that the *Owner* is in default of the *Owner's* contractual obligations if:
- .1 the *Owner* fails to furnish, when so requested by the *Design-Builder*, reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*, or
 - .2 the *Payment Certifier* fails to issue a certificate as provided in GC 5.3 – PROGRESS PAYMENT, or
 - .3 the *Owner* fails to pay the *Design-Builder* when due the amounts certified by the *Payment Certifier* or awarded by arbitration or court, or
 - .4 the *Owner* violates the requirements of the *Contract* to a substantial degree.
- 7.3.4 The *Design-Builder's* *Notice in Writing* to the *Owner* provided under paragraph 7.3.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the *Notice in Writing*, the *Design-Builder* may, without prejudice to any other right or remedy the *Design-Builder* may have, suspend the *Design Services* or the *Work*, or terminate the *Contract*.
- 7.3.5 If the *Design-Builder* suspends the *Work* pursuant to paragraph 7.3.4, the *Design-Builder* shall:
- .1 at the cost of the *Owner* maintain operations necessary for safety reasons and for care and preservation of the *Work*,
 - .2 make reasonable efforts to delay *Product* deliveries, and
 - .3 not remove from the *Place of the Work* any part of the *Work* or any *Products* not yet incorporated into the *Work*.
- 7.3.6 If the *Design-Builder* terminates the *Contract* under the conditions set out above, the *Design-Builder* shall be entitled to be paid for all *Design Services* and *Work* performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and for such other damages as the *Design-Builder* may have sustained as a result of the termination of the *Contract*.

PART 8 DISPUTE RESOLUTION

GC 8.1 NEGOTIATION, MEDIATION AND ARBITRATION

- 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, shall be settled in accordance with the requirements of Part 8 of the General Conditions – DISPUTE RESOLUTION.
- 8.1.2 If a dispute does arise, 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.
- 8.1.3 If the parties do not reach an agreement, either party shall send a *Notice in Writing* of dispute to the other party which contains the particulars of the matter in dispute, the relevant provisions of the *Contract Documents* and, if a Project Mediator has not already been appointed, a request that a Project Mediator be appointed. The responding party shall send a *Notice in Writing* of reply to the dispute within 10 *Working Days* after receipt of such *Notice in Writing*, setting out particulars of the response and any relevant provisions of the *Contract Documents*.
- 8.1.4 If a dispute is not resolved promptly, the *Owner* will issue such instructions as necessary 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 *Design-Builder* costs incurred by the *Design-Builder* in carrying out such instructions which the *Design-Builder* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Design Services* or the *Work*.

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- 8.1.5 The parties shall, in accordance with the Rules for Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of proposal closing or bid closing, 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 Days*, within 10 *Working Days* after either party by *Notice in Writing* requests that the Project Mediator be appointed.
- 8.1.6 After a period of 10 *Working Days* following receipt of a responding party's *Notice in Writing* of reply under paragraph 8.1.3, 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 Rules for Mediation and Arbitration of Construction Disputes as provided in CCDC 40 Rules for Mediation and Arbitration of Construction Disputes in effect at the time of proposal closing or bid closing.
- 8.1.7 If the dispute has not been resolved within 10 *Working Days* after the Project Mediator was requested under paragraph 8.1.6 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving *Notice in Writing* to the *Owner* and the *Design-Builder*.
- 8.1.8 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 8.1.7, either party may refer the dispute to be finally resolved by arbitration conducted in accordance with the Rules for Mediation and Arbitration of Construction Disputes as provided in CCDC 40 in effect at the time of proposal closing or bid closing. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.
- 8.1.9 On expiration of the 10 *Working Days* stipulated in paragraph 8.1.8, the arbitration agreement under paragraph 8.1.8 is not binding on the parties and, if a *Notice in Writing* is not given under paragraph 8.1.8 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.
- 8.1.10 If neither party, by *Notice in Writing*, given within 10 *Working Days* of the date of *Notice in Writing* requesting arbitration in paragraph 8.1.8, requires that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.1.8 shall be
- .1 held in abeyance until
 - (1) *Substantial Performance of the Work*,
 - (2) the *Contract* has been terminated, or
 - (3) the *Design-Builder* has abandoned the *Design Services* or the *Work*, whichever is earlier; and
 - .2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.1.8.

GC 8.2 RETENTION OF RIGHTS

- 8.2.1 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 *Notice in Writing* required under Part 8 of the General Conditions – DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.4.
- 8.2.2 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 8.1.9 of GC 8.1 – NEGOTIATION, MEDIATION AND ARBITRATION to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.
- 8.2.3 Part 8 of the General Conditions – DISPUTE RESOLUTION shall survive suspension or termination of the *Contract*.

PART 9 PROTECTION OF PERSONS AND PROPERTY

GC 9.1 PROTECTION OF WORK AND PROPERTY

- 9.1.1 The *Design-Builder* 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 *Design-Builder's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:
- .1 errors in the *Owner's Statement of Requirements*, or
 - .2 acts or omissions by the *Owner*, the *Owner's* agents and employees.
- 9.1.2 Before commencing any work, the *Design-Builder* shall determine the location of all underground utilities and structures that are reasonably apparent in an inspection of the *Place of the Work*.

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- 9.1.3 Should the *Design-Builder* in the performance of the *Contract* damage the *Work*, the *Owner's* property, or property adjacent to the *Place of the Work*, the *Design-Builder* shall be responsible for making good such damage at the *Design-Builder's* expense.
- 9.1.4 Should damage occur to the *Work* or *Owner's* property for which the *Design-Builder* is not responsible, as provided in paragraph 9.1.1, the *Design-Builder* 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 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS

- 9.2.1 For the purposes of applicable legislation related to toxic and hazardous substances, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.
- 9.2.2 Prior to the *Design-Builder* commencing the *Design Services* or *Work*, the *Owner* shall, subject to legislation applicable to the *Place of the Work*:
- .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 *Design-Builder* with a written list of any such substances that are known to exist and their locations.
- 9.2.3 The *Owner* shall take all reasonable steps to ensure that no person's exposure to any toxic or hazardous substance exceeds the time weighted levels prescribed by applicable legislation at the *Place of the Work* 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 *Design-Builder* commencing the *Work*.
- 9.2.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to dispose of, store or otherwise render harmless toxic or hazardous substances which were present at the *Place of the Work* prior to the *Design-Builder* commencing the *Work*.
- 9.2.5 If the *Design-Builder* encounters toxic or hazardous substances at the *Place of the Work* or has reasonable grounds to believe that toxic or hazardous substances are present at the *Place of the Work*, which were not brought to the *Place of the Work* by the *Design-Builder* or anyone for whom the *Design-Builder* is responsible and which were not disclosed by the *Owner* or which were disclosed but have not been dealt with as required under paragraph 9.2.4, the *Design-Builder* shall:
- .1 take all reasonable steps, including stopping the *Work*, to ensure that no person's exposure to any toxic or hazardous substances exceeds any applicable time weighted levels prescribed by legislation applicable to the *Place of the Work*, and
 - .2 immediately report the circumstances to the *Owner* in writing.
- 9.2.6 If the *Owner* and *Design-Builder* do not agree on the existence or significance of the toxic or hazardous substances, or whether the toxic or hazardous substances were brought onto the *Place of the Work* by the *Design-Builder* or anyone for whom the *Design-Builder* is responsible, the *Owner* shall retain and pay for an independent qualified expert to investigate and make a determination on such matters. The expert's report shall be delivered to the *Owner* and the *Design-Builder*.
- 9.2.7 If the *Owner* and *Design-Builder* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were not brought onto the *Place of the Work* by the *Design-Builder* or anyone for whom the *Design-Builder* is responsible, the *Owner* shall promptly at the *Owner's* own expense:
- .1 take all steps as required under paragraph 9.2.4;
 - .2 reimburse the *Design-Builder* for the costs of all steps taken pursuant to paragraph 9.2.5;
 - .3 extend the *Contract Time* for such reasonable time as agreed between the *Design-Builder* and the *Owner* in consultation with the expert referred to in 9.2.6 and reimburse the *Design-Builder* for reasonable costs incurred as a result of the delay; and
 - .4 indemnify the *Design-Builder* as required by GC 12.2 – INDEMNIFICATION.
- 9.2.8 If the *Owner* and *Design-Builder* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substance was brought onto the *Place of the Work* by the *Design-Builder* or anyone for whom the *Design-Builder* is responsible, the *Design-Builder* shall promptly at the *Design-Builder's* own expense:
- .1 take all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to safely remove and dispose the toxic or hazardous substances;
 - .2 make good any damage to the *Work*, the *Owner's* property or property adjacent to the *Place of the Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY;

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- .3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.2.6; and
- .4 indemnify the *Owner* as required by GC 12.2 – INDEMNIFICATION.

9.2.9 If either party does not accept the expert's findings under paragraph 9.2.6, the disagreement shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraph 9.2.7 or 9.2.8 it being understood that by so doing, neither party will jeopardize any claim that party may have to be reimbursed as provided in paragraphs 9.2.7 or 9.2.8.

GC 9.3 ARTIFACTS AND FOSSILS

- 9.3.1 Fossils, coins, articles of value or antiquity, structures and other remains or things of scientific or historic interest discovered at the *Place of the Work* shall, as between the *Owner* and the *Design-Builder*, be deemed to be the absolute property of the *Owner*.
- 9.3.2 The *Design-Builder* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.3.1, and shall advise the *Owner* upon discovery of such items.
- 9.3.3 The *Owner* will investigate the impact on the *Design Services* or the *Work* of the discoveries identified in paragraph 9.3.1. If conditions are found that would cause an increase or decrease in the *Design-Builder's* cost or time to perform the *Design Services* or the *Work*, the *Owner* will issue appropriate instructions for a change in the *Contract* as provided in GC 6.2 – CHANGE ORDER or GC 6.3 – CHANGE DIRECTIVE.

GC 9.4 CONSTRUCTION SAFETY

- 9.4.1 Except as provided for in paragraph 2.6.2.2 of GC 2.6 – WORK BY OWNER OR OTHER CONTRACTORS, the *Design-Builder* shall assume overall responsibility for:
 - .1 construction health and safety at the *Place of the Work* in compliance with the rules, regulations and practices required by the applicable construction health and safety legislation, and
 - .2 establishing, initiating, maintaining, and supervising all health and safety precautions and programs in connection with the performance of the *Work*.

GC 9.5 MOULD

- 9.5.1 If the *Design-Builder* or *Owner* observes or reasonably suspects the presence of mould at the *Place of the Work*, the remediation of which is not expressly part of the *Work*,
 - .1 the observing party shall promptly report the circumstances to the other party in writing, and
 - .2 the *Design-Builder* shall promptly take all reasonable steps, including stopping the *Work* if necessary, to ensure that no person suffers injury, sickness or death and that no property is damaged as a result of exposure to or the presence of the mould.
- 9.5.2 If the *Owner* and *Design-Builder* do not agree on the existence, significance or cause of the mould or as to what steps need be taken to deal with it, the *Owner* shall retain and pay for an independent qualified expert to investigate and make a determination on such matters. The expert's report shall be delivered to the *Owner* and *Design-Builder*.
- 9.5.3 If the *Owner* and *Design-Builder* agree, or if the expert referred to in paragraph 9.5.2 determines that the presence of mould was caused by the *Design-Builder's* operations under the *Contract*, the *Design-Builder* shall promptly, at the *Design-Builder's* own expense:
 - .1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and
 - .2 make good any damage to the *Work*, the *Owner's* property or property adjacent to the *Place of the Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY, and
 - .3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.5.2, and
 - .4 indemnify the *Owner* as required by GC 12.2 – INDEMNIFICATION.
- 9.5.4 If the *Owner* and *Design-Builder* agree, or if the expert referred to in paragraph 9.5.2 determines that the presence of mould was not caused by the *Design-Builder's* operations under the *Contract*, the *Owner* shall promptly, at the *Owner's* own expense:
 - .1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and
 - .2 reimburse the *Design-Builder* for the cost of taking the steps under paragraph 9.5.1.2 and making good any damage to the *Work* as provided in paragraph 9.1.4 of GC 9.1 – PROTECTION OF WORK AND PROPERTY, and
 - .3 extend the *Contract Time* for such reasonable time as agreed between the *Design-Builder* and the *Owner* in consultation with the expert referred to in paragraph 9.5.2 and reimburse the *Design-Builder* for reasonable costs incurred as a result of the delay, and

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.4 indemnify the *Design-Builder* as required by GC 12.2 – INDEMNIFICATION.

9.5.5 If either party does not accept the expert's finding under paragraph 9.5.2, the disagreement shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraphs 9.5.3 or 9.5.4, it being understood that by so doing neither party will jeopardize any claim the party may have to be reimbursed as provided in paragraphs 9.5.3 or 9.5.4.

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 proposal closing or bid closing except for *Value Added Taxes* payable by the *Owner* to the *Design-Builder* as stipulated in Article A-4 of the Agreement – CONTRACT PRICE.

10.1.2 Any increase or decrease in costs to the *Design-Builder* due to changes in such included taxes and duties after the time of the proposal closing or bid closing shall increase or decrease the *Contract Price* accordingly, and either party may submit a claim in accordance with the requirements of GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

10.2.1 The laws of the *Place of the Work* shall govern the *Design Services* and the *Work*.

10.2.2 The *Owner* shall obtain and pay for the permanent easements and rights of servitude.

10.2.3 Unless otherwise stated, the *Design-Builder* shall obtain and pay for the building permit and other permits, licences, or certificates necessary for the performance of the *Work* at the time of the proposal closing or bid closing. The *Contract Price* includes the cost of these permits, licences, inspections, and certificates, and their procurement.

10.2.4 The *Design-Builder* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the *Design Services* or the performance of the *Work* and which relate to the *Design Services* or the *Work*, to the preservation of the public health, and to construction safety.

10.2.5 The *Design-Builder* shall not be responsible for verifying that the *Owner's Statement of Requirements* is in substantial compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Design Services* or the *Work*. If after the time of the proposal closing or bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Design-Builder* shall advise the *Owner* in writing requesting direction immediately upon such variance or change becoming known. Changes shall be made as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

10.2.6 If the *Design-Builder* fails to advise the *Owner* 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 *Design-Builder* 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 proposal closing or bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the *Design Services* or the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.

GC 10.3 PATENT FEES

10.3.1 The *Design-Builder* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Design-Builder* shall hold the *Owner* harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Design-Builder's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention by the *Design-Builder* or anyone for whose acts the *Design-Builder* may be liable.

10.3.2 The *Owner* shall hold the *Design-Builder* harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Design-Builder'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 by the *Owner* to the *Design-Builder* as part of the *Contract Documents*.

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GC 10.4 WORKERS' COMPENSATION

- 10.4.1 Prior to commencing the *Design Services* or the *Work*, again with the *Design-Builder's* application for payment of the holdback amount following *Substantial Performance of the Work* and again with the *Design-Builder's* application for final payment, the *Design-Builder* 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 *Design-Builder* shall provide such evidence of compliance by the *Design-Builder* and *Subcontractors*.

PART 11 INSURANCE AND CONTRACT SECURITY

GC 11.1 INSURANCE

- 11.1.1 Without restricting the generality of GC 12.2 – INDEMNIFICATION, the *Design-Builder* shall provide, maintain and pay for the following insurance coverages, the minimum requirements of which are specified in CCDC 41 – CCDC INSURANCE REQUIREMENTS in effect at the time of proposal closing or bid closing except as hereinafter provided:
- .1 Everywhere used in CCDC 41 – CCDC INSURANCE REQUIREMENTS, the term “*Contractor*” shall be replaced with the term “*Design-Builder*”.
 - .2 General liability insurance in the name of the *Design-Builder* and include, or in the case of a single, blanket policy, be endorsed to name, the *Owner*, the *Consultant*, *Other Consultants*, the *Owner's Advisor*, and the *Payment Certifier* as insured but only with respect to liability arising out of the operations of the *Design-Builder* with regard to the *Design Services* or *Work*. All liability coverage shall be provided 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.
 - .3 Automobile Liability Insurance from the date of commencement of the *Design Services* or the *Work* until one year after the date of *Substantial Performance of the Work*.
 - .4 If owned or non-owned aircraft and watercraft are used directly or indirectly in the performance of the *Design Services* or *Work*, Aircraft and Watercraft Liability Insurance from the date of commencement of the *Design Services* or *Work* until one year after the date of *Substantial Performance of the Work*.
 - .5 "All risks" property insurance in the joint names of the *Design-Builder*, the *Owner*, the *Consultant*, the *Owner's Advisor*, and the *Payment Certifier*. The policy shall include as Additional Insureds all *Subcontractors*. 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 insurance requirement. The “all risks” property insurance shall be provided from the date of commencement of the *Work* until the earliest of:
 - (1) 10 calendar days after the date of *Substantial Performance of the Work*;
 - (2) on the commencement of use or occupancy of any part or section of *Work* unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the *Work*; or
 - (3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.
 - .6 Boiler and machinery insurance in the joint names of the *Design-Builder* and the *Owner*. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of *Substantial Performance of the Work*.
 - .7 The “all risks” property and boiler and machinery policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Design-Builder* as their respective interests may appear. In the event of loss or damage:
 - (1) the *Design-Builder* 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 *Design-Builder* 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 *Design-Builder* shall be entitled to such reasonable extension of *Contract Time* as agreed by the *Owner* and *Design-Builder*;
 - (2) the *Design-Builder* 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 in accordance with the progress payment provisions of the *Contract*. In addition the *Design-Builder* shall be entitled to receive from the payments made by the insurer the amount of the *Design-Builder's* interest in the restoration of the *Work*; and

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- (3) to the *Work* arising from the work of the *Owner*, the *Owner's* own forces, or another contractor, in accordance with the *Owner's* obligations under the provisions relating to construction by *Owner* or other contractors, the *Owner* shall pay the *Design-Builder* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as in accordance with the progress payment provisions of the *Contract*.
- .8 *Design-Builders' Equipment Insurance* from the date of commencement of the *Work* until one year after the date of *Substantial Performance of the Work*.
- .9 In addition to the insurance requirements specified in CCDC 41 – CCDC INSURANCE REQUIREMENTS, the *Design-Builder* shall carry professional liability insurance with limits of not less than \$1,000,000 per claim and with an aggregate limit of not less than \$2,000,000 within any policy year, unless specified otherwise in the *Contract Documents*. The policy shall be maintained continuously from the commencement of the *Contract* until 2 years after *Substantial Performance of the Work*.
- 11.1.2 Prior to commencement of the *Design Services* or *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Design-Builder* shall promptly provide the *Owner* with confirmation of coverage and, if required, a true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements applicable to the *Design Services* or *Work*.
- 11.1.3 The *Design-Builder* shall be responsible for deductible amounts under the policies except where such amounts may be excluded from the *Design-Builder's* responsibility by the terms of GC 9.1 – PROTECTION OF WORK AND PROPERTY and GC 12.2 – INDEMNIFICATION.
- 11.1.4 If the *Design-Builder* 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 of same to the *Design-Builder* and the *Consultant*. The *Design-Builder* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the cost from any amount which is due or may become due to the *Design-Builder*.
- 11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.
- 11.1.6 If a revised version of CCDC 41 – CCDC INSURANCE REQUIREMENTS is published, which specifies reduced insurance requirements, the parties shall address such reduction, prior to the *Design-Builder's* insurance policy becoming due for renewal, and record any agreement in a *Change Order*.
- 11.1.7 If a revised version of CCDC 41 – CCDC INSURANCE REQUIREMENTS is published, which specifies increased insurance requirements, the *Owner* may require the increased coverage from the *Design-Builder* by way of a *Change Order*.
- 11.1.8 A *Change Directive* shall not be used to direct a change in the insurance requirements in response to any revision of CCDC 41 – CCDC INSURANCE REQUIREMENTS.

GC 11.2 CONTRACT SECURITY

- 11.2.1 The *Design-Builder* shall, prior to commencement of the *Design Services* or *Work* or within such other time as may be specified in the *Contract Documents*, 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, LIMITATION OF LIABILITY, WAIVER OF CLAIMS, AND WARRANTY

GC 12.1 DEFINITION AND SURVIVAL

- 12.1.1 For the purposes of Part 12 – INDEMNIFICATION, LIMITATION OF LIABILITY, WAIVER OF CLAIMS, AND WARRANTY, “claim” or “claims” shall mean claims, demands, losses, costs, damages, actions, suits or proceedings, whether in contract or tort.
- 12.1.2 Part 12 of the General Conditions – INDEMNIFICATION, LIMITATION OF LIABILITY, WAIVER OF CLAIMS, AND WARRANTY shall survive suspension or termination of the *Contract*.

GC 12.2 INDEMNIFICATION

- 12.2.1 Without restricting the parties' obligations to indemnify one another as described in paragraph 12.2.4 and the Owner's obligation to indemnify as described in paragraph 12.2.5, the *Owner* and the *Design-Builder* shall each indemnify and hold harmless the other from and against all claims, whether in respect to losses suffered by them or in respect to claims by third parties that arise out of, or are attributable in any respect to their involvement as parties to this *Contract*, provided such claims are:
- .1 caused by:
 - (1) errors, omissions, or negligence of the party from whom indemnification is sought or anyone for whom that party is responsible, or
 - (2) a breach of this *Contract* by the party from whom indemnification is sought; and
 - .2 made by *Notice 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* issued pursuant to paragraph 5.4.3 of GC 5.4 – 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 parties expressly waive the right to indemnity for claims other than those provided for in this *Contract*.
- 12.2.2 The obligation of either party to indemnify as set forth in paragraph 12.2.1 shall be limited as follows:
- .1 In respect to losses suffered by the *Owner* and the *Design-Builder* for which insurance is to be provided by either party pursuant to GC 11.1 – INSURANCE, the general liability insurance limit for one occurrence as referred to in CCDC 41 – CCDC INSURANCE REQUIREMENTS in effect at the time of proposal or bid closing.
 - .2 In respect to losses suffered by the *Owner* and the *Design-Builder* for which insurance is not required to be provided by either party in accordance with GC 11.1 – INSURANCE, the greater of the *Contract Price* as recorded in Article A-4 of the Agreement – CONTRACT PRICE or \$2,000,000, but in no event shall the sum be greater than \$20,000,000.
 - .3 In respect to claims by third parties for direct loss resulting from bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, the obligation to indemnify is without limit. In respect to all other claims for indemnity as a result of claims advanced by third parties, the limits of indemnity set forth in paragraphs 12.2.2.1 and 12.2.2.2 shall apply.
- 12.2.3 The obligation of either party to indemnify the other as set forth in paragraphs 12.2.1 and 12.2.2 shall be inclusive of interest and all legal costs.
- 12.2.4 The *Owner* and the *Design-Builder* shall indemnify and hold harmless the other from and against all claims arising out of their obligations described in GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS.
- 12.2.5 The *Owner* shall indemnify and hold harmless the *Design-Builder* from and against all claims:
- .1 as described in paragraph 10.3.2 of GC 10.3 – PATENT FEES, and
 - .2 arising out of the *Design-Builder'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*.
- 12.2.6 In respect to any claim for indemnity or to be held harmless by the *Owner* or the *Design-Builder*:
- .1 *Notice in Writing* of such claim shall be given within a reasonable time after the facts upon which such claim is based became known; and
 - .2 should any party be required as a result of its obligation to indemnify another to pay or satisfy a final order, judgment or award made against the party entitled by this *Contract* to be indemnified, then the indemnifying party upon assuming all liability for any costs that might result shall have the right to appeal in the name of the party against whom such final order or judgment has been made until such rights of appeal have been exhausted.

GC 12.3 LIMITATION OF LIABILITY FOR DESIGN SERVICES

- 12.3.1 Notwithstanding any other provisions of this *Contract*, the *Design-Builder's* liability for claims which the *Owner* may have against the *Design-Builder*, including the *Design-Builder's* officers, directors, employees and representatives, that arise out of, or are related to, the *Design Services*, shall be limited:
- .1 to claims arising from errors, omissions, or negligent performance of the *Design Services* by the *Consultant* or *Other Consultant* and
 - .2 where claims are covered by insurance the *Design-Builder* is obligated to carry pursuant to GC 11.1 – INSURANCE, to the amount of such insurance.

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GC 12.4 WAIVER OF CLAIMS

- 12.4.1 Subject to any lien legislation applicable at the *Place of the Work*, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the *Design-Builder* waives and releases the *Owner* from all claims which the *Design-Builder* has or reasonably ought to have knowledge of that could be advanced by the *Design-Builder* against the *Owner* arising from the *Design-Builder's* involvement in the *Design Services* or *Work*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of *Substantial Performance of the Work*, except as follows:
- .1 claims arising prior to or on the date of *Substantial Performance of the Work* for which *Notice in Writing* of claim has been received by the *Owner* from the *Design-Builder* no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*;
 - .2 indemnification for claims advanced against the *Design-Builder* by third parties for which a right of indemnification may be asserted by the *Design-Builder* against the *Owner* pursuant to the provisions of this *Contract*;
 - .3 claims for which a right of indemnity could be asserted by the *Design-Builder* pursuant to the provisions of paragraphs 12.2.4 or 12.2.5 of GC 12.2 – INDEMNIFICATION; and
 - .4 claims resulting from acts or omissions which occur after the date of *Substantial Performance of the Work*.
- 12.4.2 The *Design-Builder* waives and releases the *Owner* from all claims referenced in paragraph 12.4.1.4 except for those referred in paragraphs 12.4.1.2 and 12.4.1.3 and claims for which *Notice in Writing* of claim has been received by the *Owner* from the *Design-Builder* within 395 calendar days following the date of *Substantial Performance of the Work*.
- 12.4.3 Subject to any lien legislation applicable at the *Place of the Work*, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the *Owner* waives and releases the *Design-Builder* from all claims which the *Owner* has or reasonably ought to have knowledge of that could be advanced by the *Owner* against the *Design-Builder* arising from the *Owner's* involvement in the *Design Services* or *Work*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of *Substantial Performance of the Work*, except as follows:
- .1 claims arising prior to or on the date of *Substantial Performance of the Work* for which *Notice in Writing* of claim has been received by the *Design-Builder* from the *Owner* no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*;
 - .2 indemnification for claims advanced against the *Owner* by third parties for which a right of indemnification may be asserted by the *Owner* against the *Design-Builder* pursuant to the provisions of this *Contract*;
 - .3 claims for which a right of indemnity could be asserted by the *Owner* against the *Design-Builder* pursuant to the provisions of paragraph 12.2.4 of GC 12.2 – INDEMNIFICATION;
 - .4 damages arising from the *Design-Builder's* actions which result in substantial defects or deficiencies in the *Work*. “Substantial defects or deficiencies” mean 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*;
 - .5 claims arising pursuant to GC 12.5 – WARRANTY; and
 - .6 claims arising from acts or omissions which occur after the date of *Substantial Performance of the Work*.
- 12.4.4 The *Owner* waives and releases the *Design-Builder* from all claims referred to in paragraph 12.4.3.4 except claims for which *Notice in Writing* of claim has been received by the *Design-Builder* from the *Owner* within a period of six years from the date of *Substantial Performance of the Work* should any limitation statute of the Province or Territory of the *Place of the Work* permit such agreement. If the applicable limitation statute does not permit such agreement, within such shorter period as may be prescribed by:
- .1 any limitation statute of the Province or Territory of the *Place of the Work*; or
 - .2 if the *Place of the Work* is the Province of Quebec, then Article 2118 of the Civil Code of Quebec.
- 12.4.5 The *Owner* waives and releases the *Design-Builder* from all claims referenced in paragraph 12.4.3.6 except for those referred in paragraph 12.4.3.2, 12.4.3.3 and those arising under GC 12.5 – WARRANTY and claims for which *Notice in Writing* has been received by the *Design-Builder* from the *Owner* within 395 calendar days following the date of *Substantial Performance of the Work*.
- 12.4.6 “*Notice in Writing* of claim” as provided for in GC 12.4 – WAIVER OF CLAIMS to preserve a claim or right of action which would otherwise, by the provisions of GC 12.4 – WAIVER OF CLAIMS, be deemed to be waived, must include the following:
- .1 a clear and unequivocal statement of the intention to claim;

- .2 a statement as to the nature of the claim and the grounds upon which the claim is based; and
 - .3 a statement of the estimated quantum of the claim.
- 12.4.7 The party giving “*Notice in Writing* of claim” as provided for in GC 12.4 – WAIVER OF CLAIMS shall submit within a reasonable time a detailed account of the amount claimed.
- 12.4.8 Where the event or series of events giving rise to a claim made under paragraphs 12.4.1 or 12.4.3 has a continuing effect, the detailed account submitted under paragraph 12.4.7 shall be considered to be an interim account and the party making the claim shall submit further interim accounts, at reasonable intervals, 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 after the end of the effects resulting from the event or series of events.
- 12.4.9 If a *Notice in Writing* of claim pursuant to paragraph 12.4.1.1 is received on the seventh or sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the period within which *Notice in Writing* of claim is received pursuant to paragraph 12.4.3.1 shall be extended to two calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*.
- 12.4.10 If a *Notice in Writing* of claim pursuant to paragraph 12.4.3.1 is received on the seventh or sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the period within which *Notice in Writing* of claim is received pursuant to paragraph 12.4.1.1 shall be extended to two calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*.

GC 12.5 WARRANTY

- 12.5.1 Except for extended warranties as described in paragraph 12.5.6, the warranty period under the *Contract* is one year from the date of *Substantial Performance of the Work*.
- 12.5.2 The *Design-Builder* warrants that the *Work* is in accordance with the *Contract Documents*.
- 12.5.3 The *Owner* shall promptly give the *Design-Builder Notice in Writing* of observed defects and deficiencies which occur during the one year warranty period.
- 12.5.4 The *Design-Builder* shall promptly correct, at the *Design-Builder's* expense, any work which is not in accordance with the *Contract Documents* or defects or deficiencies in the *Work* which appear at any time until the end of the warranty periods specified in the *Contract Documents*.
- 12.5.5 The *Design-Builder* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.5.4.
- 12.5.6 Any extended warranties required beyond the one year warranty period as described in paragraph 12.5.1, shall be as specified in the *Contract Documents*. Extended warranties shall be issued by the warrantor for the benefit of the *Owner*. The *Design-Builder'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 responsibilities of the warrantor.
- 12.5.7 The *Design-Builder* does not warrant against the effects of corrosion, erosion or wear and tear of any *Product* or failure of any *Product* due to faulty operations or maintenance by the *Owner* or conditions of operation more severe than those specified for the *Product*.
- 12.5.8 The warranties specified in GC 12.5 – WARRANTY or elsewhere in the *Contract Documents* are the only warranties of the *Design-Builder* applicable to the *Work* and no other warranties, statutory or otherwise, are implied.

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Windsor, ON N9J 3V2
Tel: 519-250-8229 Fax: 519-250-8507

**“Design Build Proposal”
for
The Corporation of the Town of Amherstburg, Ontario
(T11-2017-001)**

Second Concession Bridge over Long Marsh Drain





740 Morton Dr., Unit #1
Windsor, ON N9J 3V2
Tel: 519-250-8229 Fax: 519-250-8507

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4	QC/QA Processes Golder Associates Foundation Engineering, QA Partner
5	Project Schedule/Methodology
6	Appendix 'E' Schedule of Pricing Pro-Forma Invoice

Executive Summary

The enclosed submission has been designed to provide the Town of Amherstburg an understanding of the Design Build Teams qualifications by illustrating a clearly articulated process addressing the key elements of the Town's Request for Proposals:

PROJECT TEAM

FRONT has completed over 60 bridge projects in the last twelve years. During that time we have had the opportunity to work with a wide range of both Consulting Engineers and Geotechnical Engineers. We have chosen Haddad Morgan Associates as Structural and Civil Engineer because because of their record of smart design and clear focus on positive outcomes for all stakeholders. Golder Associates is a multi discipline international engineering concern with access to a global team of experts and proven track record as the Geotechnical and Quality Assurance choice for many of the largest infrastructure projects in the world.

DESIGN

Our team has paid close attention to the needs of the Town of Amherstburg and this is reflected in both our design proposal and the insistence of adherence to best practices which at minimum align with OPSS and or MTO benchmarks. We recognize that the Town is looking for a structure with a long lifecycle a minimized requirement for future maintenance structure and we have ensured that those considerations are paramount in our design.

QUALITY ASSURANCE/QUALITY CONTROL

Strict adherence to a QA/QC program ensures that we are able to deliver on the promise of a strong design. In addition to submittal review, Engineering site reviews conducted by the Engineer of Record will be also be built into the schedule. We have partnered with Golder Associates because of their rigorous professionalism and focus on thorough testing protocols.

PROJECT SCHEDULE/METHODLOGY

Our proposal has been built from the ground up; we have started with the right design and then laid out a clear path involving all stakeholders, that ultimately concludes with a strong project delivered in a reasonable, practical and cost efficient manner. We have identified 35 key elements to the design build process. These are highlighted in both our enclosed proforma pricing breakout and in the schedules provided. For clarity, we have provided a two part schedule. The first lays out the process and timing that ensures all pre-construction milestones are reached in a reasonable manner. The second schedule details the building of the bridge and the tasks required from traffic control through to providing project closeout documents.

PRICING

Once again flowing from design, each step in the construction process has been reviewed and run through our costing model. We believe that there is a "not so fine line" between what may be an inexpensive project today and a significantly more expensive proposition over its lifecycle. With this in mind we believe that we are able to deliver a high value solution to the Town of Amherstburg. Following APPENDIX "E" Schedule of Pricing we have also provided a pro-forma price breakdown which ultimately reflects both the design build process, the project price and the process for billing based upon monthly progress achieved.

We also felt it prudent to allow for three Allowance items; A Species at Risk allowance, an Asphalt Cement Escalation allowance and a Contingency allowance intended to address the relocation of existing hydro lines should that be deemed necessary. Should any of these values not be expended they would ultimately be credited to the Contract.

PROJECT TEAM


Design Build Team...

Proponent and Constructor: **FRONT** Construction Industries Inc.
Gary Anderson Project Lead/Project Manager


Geotechnical Engineer: **Golder Associates**
Storer J. Boone, Ph.D., P.Eng.

Design Engineer &
Engineer of Record: **Haddad Morgan Associates**
Will Tape, Ph.D., P.Eng.

Key Subcontractors and Suppliers...

Precast Design and Supply:  **PSI** PRESTRESSED
SYSTEMS
INC.

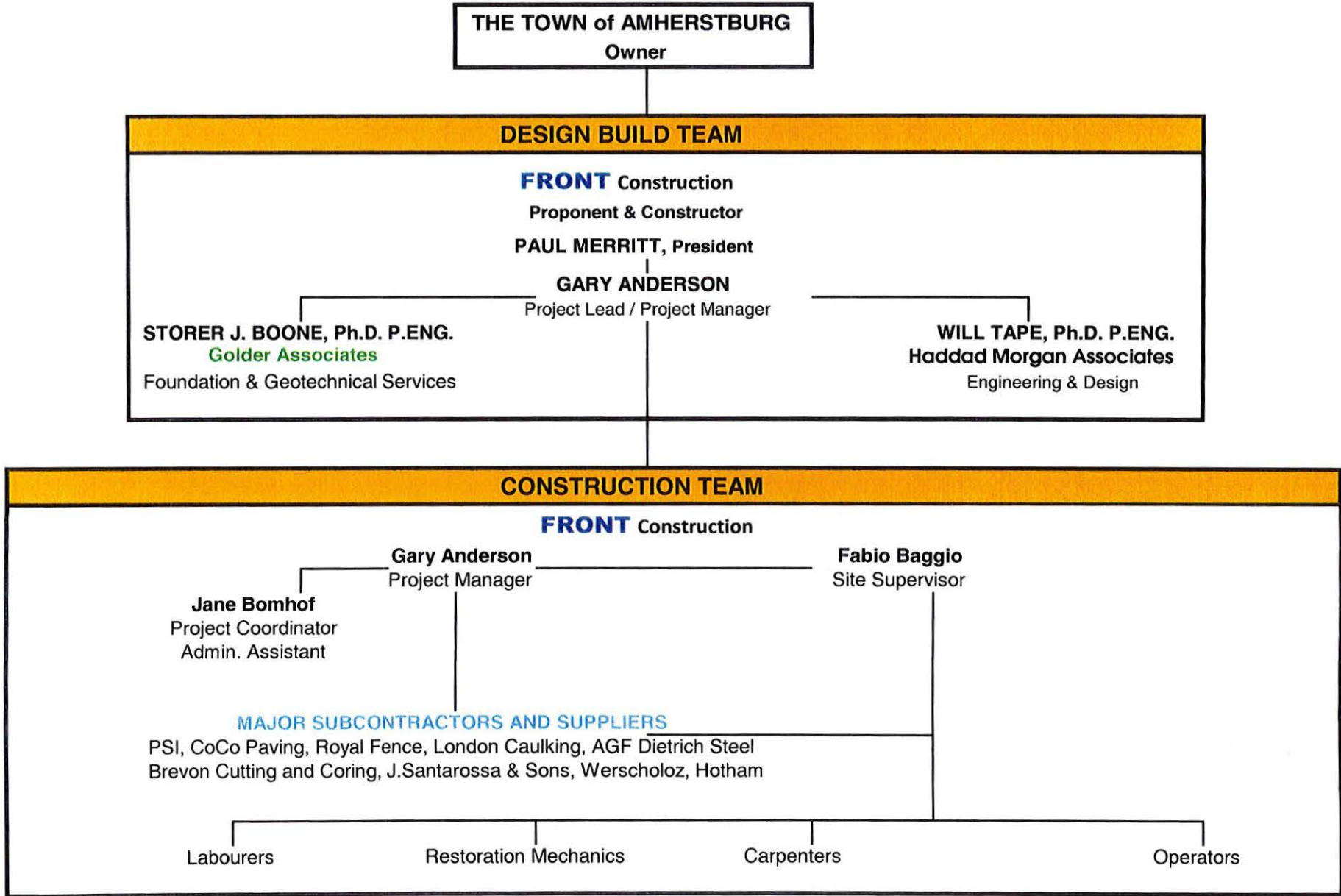
Concrete Supply: 
J. Santarossa & Sons Ltd.

Reinforcing Steel:  **AGF**
Dietrich

Steel Beam Guide Rails:  **Royal Fence Ltd.**

Asphalt Paving  **Coco Paving Inc.**

Project Team & Organization Chart



Who we are... **FRONT**Construction

Established in 1996, **FRONT**Construction is a Windsor based general contractor working in the Heavy, Commercial and Institutional Construction sectors.

Over the past 12 years Front Construction has successfully completed over 60 bridge projects ranging from simple concrete restorations to the ground up construction of a new multi lane steel arch bridges such as that completed for the City of Windsor in 2005.

Each bridge project is in many ways unique, and equipped with our extensive experience building to MTO and OPSS standards we have found great success in delivering unique and inventive bridge building solutions for our valued customers.

In addition to the City of Windsor we are proud to name the The County of Essex, the Town of Tecumseh and the Municipality of Chatham Kent as customers for whom we have completed this broad range of bridge restoration and replacement projects.

At our core is a group of dedicated bridge restoration specialists with the proven skill set and expertise required for the job. We pride ourselves on our abilities as effective Project Managers, who in working together with Owners and Consultants are able to deliver high value infrastructure solutions.

Leading this project for Front Construction is Project Manager/Estimator Gary Anderson. Mr. Anderson has over 30 years experience in estimating and project management and his exceptional communication and organization skills are equally well matched by the proven technical knowledge and experience he brings to each bridge project.

Front Site Supervisor Fabio Baggio has lead our crews on the ground for over 20 years. Mr. Baggio's experience building to OPSS and MTO standards has given him a strong foundation in quality management while his sensitivity to scheduling needs has made him ideally suited to the task of leading our dedicated crews and subcontractors.

A sampling of the Projects successfully managed by Mr. Anderson and Mr. Baggio can be found on the following pages.



Wyandotte St. Bridge, Completed by FRONT Construction for the City of Windsor, September 2005.

Team Experience: **FRONT**Construction

Project Manager

Name: **Mr. Gary Anderson**

Experience: **33 Years**

Sample of Bridge Projects Successfully Completed

2016	EC Row WB Bridges over Walker & CN Tracks The City of Windsor Aecom Consulting	\$1,684,648
2016	River Canard Bridge Repairs 2016 The County of Essex Stantec Consulting	\$505,753
2015	Merlin Bridge Replacement The Municipality of Chatham Kent GM BluePlan	\$1,425,060
2015	Drake Rd. Bridge The Municipality of Chatham Kent McIntosh Perry Consulting Engineers	\$588,000.00
2015	Big Creek Bridge at County Rd. 2 The County of Essex Dillon Consulting	\$641,000.00
2014	English Line Bridge The Municipality of Chatham Kent Ameresco Consulting	\$902,600.00
2014	EC Row Caso Bridge over CN Tracks The City of Windsor Dillon Consulting	\$1,510,200.00
2013	Tecumseh Bridges 1003 & 1005 The Town of Tecumseh Dillon Consulting	\$1,055,700.00
2013	County Rd 2 Bridge over the Ruscom River The County of Essex Haddad Morgan	\$462,500.00
2013	Snobelen Bridge The Municipality of Chatham Kent Amersesco Consulting	\$513,900.00
2011	EC Row Bridge over Dougall Ave. The City of Windsor Dillon Consulting	\$1,172,600.00
2010	Langstaff Bridge The Municipality of Chatham Kent Dillon Consulting	\$1,055,700.00

continued....

Site Supervisor

Name: **Fabio Baggio**

Experience: **22 Years**

Sample of Bridge Projects Successfully Completed

2016	EC Row WB Bridges over Walker & CN Tracks The City of Windsor Aecom Consulting	\$1,684,648
2016	12th concession Bridge Rehabilitation The Town of Tecumseh Dillon Consulting	\$443,246
2015	Drake Rd. Bridge The Municipality of Chatham Kent McIntosh Perry Consulting Engineers	\$588,000.00
2015	Drake Rd. Bridge The Municipality of Chatham Kent McIntosh Perry Consulting Engineers	\$588,000.00
2015	Big Creek Bridge at County Rd. 2 The County of Essex Dillon Consulting	\$641,000.00
2015	Sucker Creek Bridge The County of Essex Stantec Consulting	\$347,600.00
2014	EC Row Caso Bridge over CN Tracks The City of Windsor Dillon Consulting	\$1,510,200.00
2013	Tecumseh Bridges 1003 & 1005 The Town of Tecumseh Dillon Consulting	\$1,055,700.00
2013	County Rd 2 Bridge over the Ruscom River The County of Essex Haddad Morgan	\$462,500.00
2013	Snobelen Bridge The Municipality of Chatham Kent Amersesco Consulting	\$513,900.00
2011	EC Row Bridge over Dougall Ave. The City of Windsor Dillon Consulting	\$1,172,600.00
2010	Langstaff Bridge The Municipality of Chatham Kent Dillon Consulting	\$1,055,700.00

Building Bridges - Serving Communities



Drake Rd. Bridge, Chatham Kent, 2015



EC Row Expressway, 2013



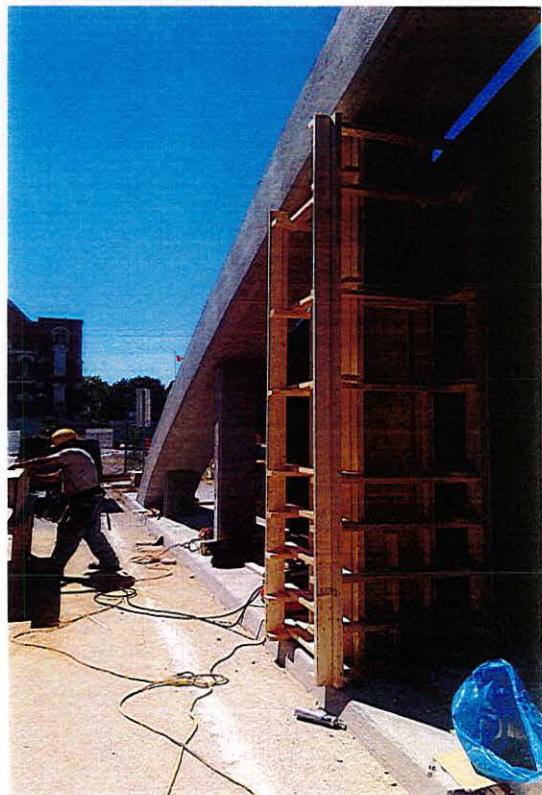
Merlin Rd. Bridge, November 2014

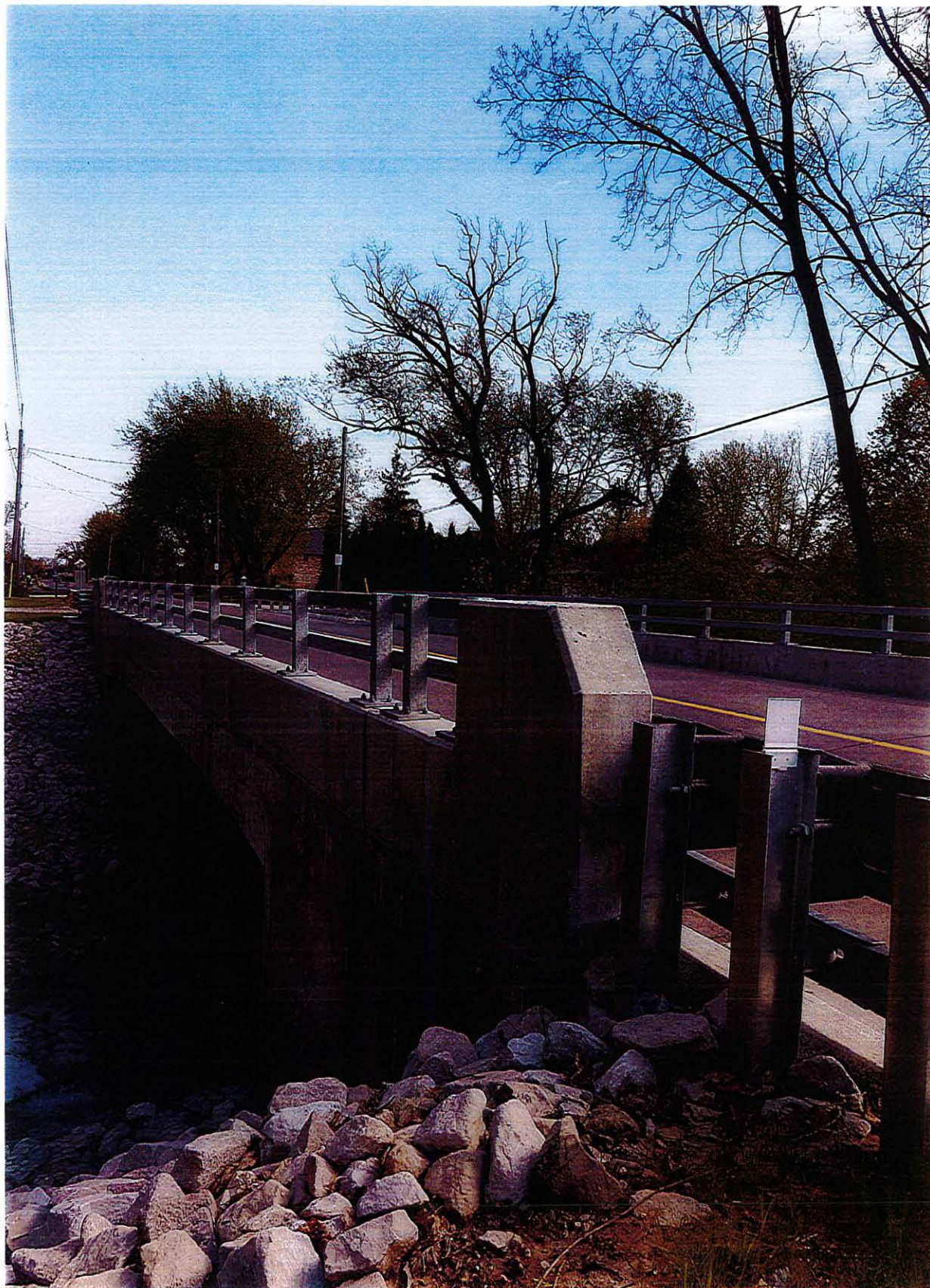


Wyandotte St. Bridge 2005



River Canard Bridge Repairs, 2016





Bridge #1002, 12th Concession Tecumseh 2016

RE: OFFER OF SERVICE FOR HIGHWAY STRUCTURE ENGINEERING

1. INTRODUCTION

1.1 ABOUT HADDAD, MORGAN AND ASSOCIATES LTD.

Haddad, Morgan and Associates Ltd was established in 1986 and has been proudly providing civil and structural consulting engineering services for over 25 years. During its rich history, our office has efficiently and professionally undertaken thousands of projects. These projects are for a vast spectrum of clientele including but not limited to government and public agencies, institutional, commercial, residential, and industrial groups.

Our office prides itself on customer service and excellence in our work. We focus on ensuring that each and every client is treated with a sense of fairness and importance. The client's project, irrespective of value or size, must always be given due consideration and review to ensure that all communication from our office is accurate, in the best interest of the client, and provides the client with the best possible knowledge or solution to their queries.

Haddad, Morgan and Associates Ltd., limits their services to Structural and Civil Engineering and offers these two specific fields of expertise through their diverse work force. Working in tandem, the four Partners work closely with each other to ensure that the needs of each project and the client are met in a timely and efficient manner.

1.1.1 CORPORATE CERTIFICATIONS OR ACCREDITATIONS

We have staff members enrolled in the following Associations:

Professional Engineers Ontario (PEO);
Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA);
Association of Professional Engineers & Geoscientists of Saskatchewan (APEGS);
Canadian Institute of Steel Construction (CISC);
American Institute of Steel Construction (AISC);
Michigan Board of Professional Engineers;
State of Tennessee, Professional Engineer;
Consulting Engineers Ontario (CEO);
Association of Consulting Engineering Companies|Canada;
Canadian Welding Bureau, Recognized Welding Engineer

1.2 MISSION STATEMENT

To provide engineering services through a staff of highly skilled and focused professionals each with a wealth of information and experience to best service our clients. To meet our goals we are focused on:

- treating each client with respect and gain their full confidence,
- maintaining qualified staff that are able to meet the needs of each and every project,
- maintaining long term relationships, working with all parties to develop a successful project.

1.3 OVERVIEW OF COMPANY OPERATIONS

All work undertaken by our office is coordinated and carried out under managing Partner, who is supported by qualified staff to ensure the project moves forward on time and on budget. With the support of our staff, we are able to quickly respond to all our client's needs. Given the management of projects by Partner's in the firm, decisions can be made quickly to ensure high quality service without delay.

2. QUALIFICATION AND EXPERIENCE OF CONSULTING TEAM

It is with great pleasure that we offer to you the services of our highly qualified and professional staff. The following section will outline our team's structure, and the qualifications of the team members and offices as a whole. The Curriculum Vitale of the key design team members is provided in Appendix A for your reference.

2.1 PROJECT LEADERS

All work will be managed by **Dr. William Tape, P.E., P.Eng.** Dr. Tape will act as the primary contact for your office and its representatives. His contact information is as follows:

Title: Senior Engineer / Principal
Address: 24 Shepherd Street East, Windsor, Ontario N8X 2J8
Telephone: 519-973-1177, Ext. 16
Cell: 519-816-5574
Fax: 519-253-2740
E-mail: will@haddadmorgan.com

Will has extensive experience with project management and acting as a client liaison. He has successfully carried out several projects of varying sizes since joining Haddad, Morgan and Associates Ltd. Will has also worked on several government projects of varying sizes. His background as both a qualified Civil and Structural Engineer allows him to effectively merge site work requires with building structures. Further to his credit Will has been involved in highway structure engineering in many ways during his career. He has personally worked on countless bridges for various municipalities and for the Province of Ontario; including but not limited to the bridge at Highway 77 over the 401; the recent rehabilitation of the double span bridge on County Road 2 over the Ruscom River, and the Nipigon River Bridge in Northern Ontario.

2.2 TEAM STRUCTURE

To support our team leaders, our office will utilize the various talents that exist within our office. As each project has its own challenges and requirements the project leader will personally select the best possible person for each task.

Our team is rounded out by a series of highly qualified and experienced individuals. Give the expertise held by all team members our office is able to effectively identify, and utilize our various strengths for each task we undertake.

3. EXPERIENCE

As outlined previously our office has been involved in many highway structures over its decades of experience. Our highway structures group, led by Dr. Tape has offered these services to various municipalities, the County of Essex, private owners, and Contractors.

Our service includes, but are not limited to:

- Bridge rehabilitation
- Bridge reconstruction
- False work and form work design
- Shoring and scaffolding design
- Roadway rework
- Structural review
- Bridge jacking design and procedure development
- Contract Administration

Refer to Appendix B for a portfolio of some of our compliable projects



WILLIAM TAPE, Ph.D., P.E., P.Eng.

structural and civil engineering
project engineer/senior engineer

- Project and client focused
- Budget conscious and schedule focused
- Experience in highway structures
- Focused on team work to produce a great product

Experience

Potash Storage Facility, Rocanville, Saskatchewan

Bridge Rehabilitation County Road 31, Lakeshore, Ontario

Culvert Replacement, County Road 43, Tecumseh, Ontario

Bridge Replacement County Road 8, Lakeshore, Ontario

Culvert Replacement County Road 50, Amherstburg, Ontario,

Bridge Rehabilitation County Road 2, Lakeshore, Ontario

Culvert 29 Replacement on Alma Street, Amherstburg, Ontario

Culvert 66 Replacement on County Road 20, Amherstburg, Ontario

Bridge Rehabilitation, County Road 10, Amherstburg, Ontario

Bridge Rehabilitation County Road 31, Lakeshore, Ontario

E.C. Row Expressway Overpass near Howard Shoring, Windsor, Ontario

Nipigon Bridge Post Tensioning Cable Design, Thunder Bay, Ontario

Concession 12 Bridge Rehabilitation Platform, Lakeshore, Ontario

Bear Creek Bridge Shoring System, Chatham Kent, Ontario

Qualifications

- Professional Engineers Ontario, Professional Engineer
- Professional Engineers and Geoscientists of Alberta, Professional Engineer
- Professional Engineers and Geoscientists of British Columbia, Professional Engineer
- Professional Engineers Ontario, Consulting Engineer
- State of Michigan, Professional Engineer
- State of Tennessee, Professional Engineer
- Canadian Society of Steel Construction, Professional Member
- American Institute of Steel Construction, Professional Member
- Canadian Welding Bureau, Designated Welding Engineer

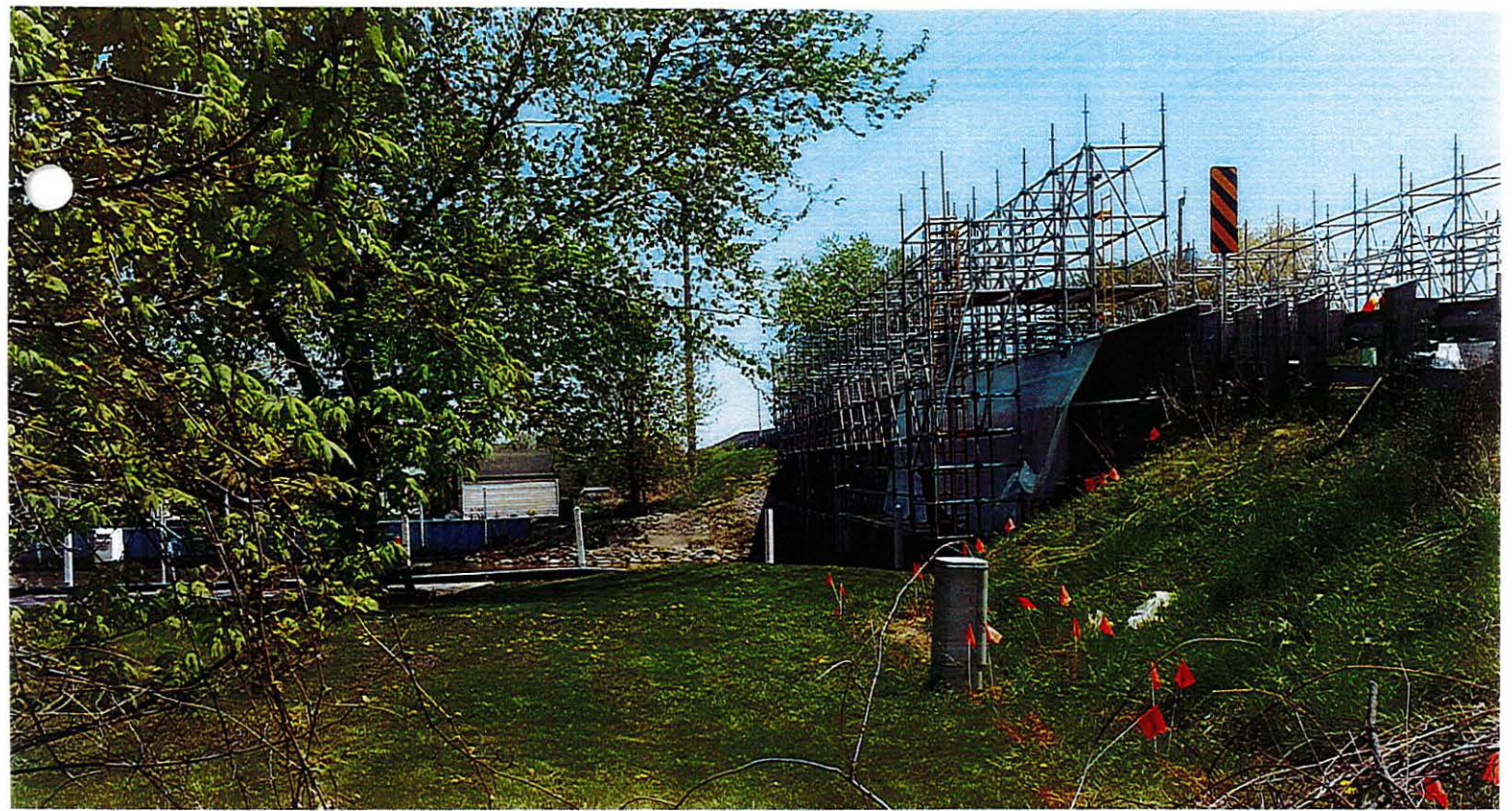
About Will

Since joining Haddad Morgan and Associates Ltd., Dr. Tape has moved to the position of Principal and he continually works to expand the company's capacity and cliental. His leadership and client focus has led to the expansion of the firm's cliental as well as increased capabilities. Will is responsible for project management within the office for every project he works on.

Dr. Tape will work in the position of Project Engineer and Lead Designer for all components of any project which we are assigned. His duties will include overall management of the engineering design group as well as overseeing construction activities. He personally oversees the construction operations to ensure the end product that the client receives is the best possible product.

Further to his credit, Will has extensive highway structure experience. During his years as a practicing engineer he has worked on such projects as the Highway 77 overpass at Highway 77, the Nipigon River Bridge project, the pedestrian overpass at Assumption High School on Huron Church and several other municipal bridges.

His involvement in the project will ensure that all scopes under his control will be completed on time and on budget to the Owner's satisfaction.



County Road 2 Bridge B-02-19 Rehabilitation

Owner: The Corporation of the County of Essex

Bridge Type: Double Span Steel Girder

Road Speed Limit: 80 km/Hr

Road Type: Arterial

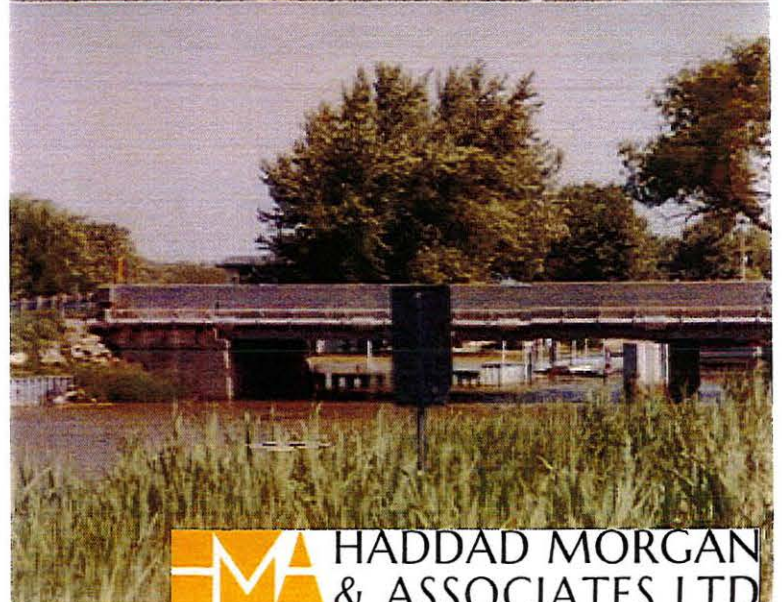
Rehabilitation Required:

- Abutment wall repair
- Girder cleaning and painting
- Replacement of bearing assembly
- Introduction of bearing pad assembly
- Expansion Joint Repair
- Girder Reinforcement
- Repair of barrier walls
- Replacement/Enhancement of guiderail
- Deck waterproofing and Resurfacing

Services Provided:

- Design, Drawings and Specifications
- Field Review of Structure
- Contract Administration and Inspection
- Traffic Detour Planning

Budget Value: \$650,000.00 (approx..)





County Road 31 Bridge B-31-13 Rehabilitation

Owner: The Corporation of the County of Essex

Bridge Type: Single Span Steel Girder

Road Speed Limit: 80 km/Hr

Road Type: Arterial

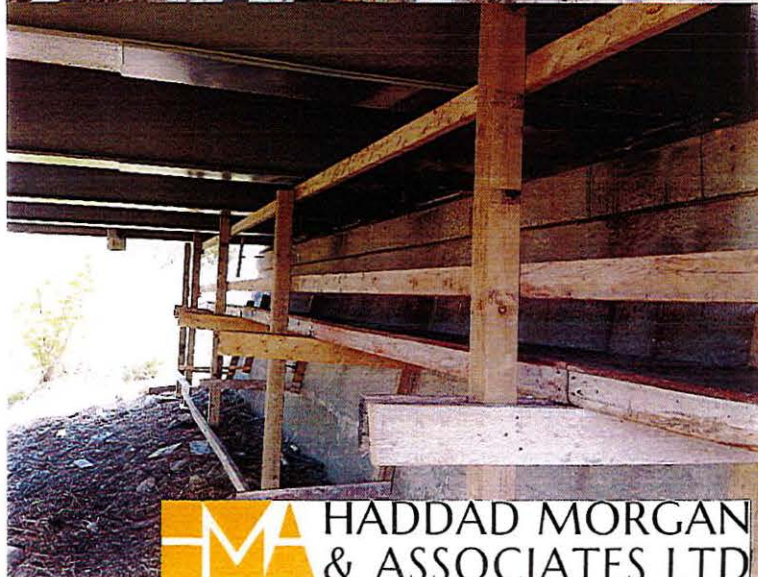
Rehabilitation Required:

- Abutment wall repair
- Girder cleaning and painting
- Replacement of bearing assembly
- Introduction of bearing pad assembly
- Replacement of Expansion Joint
- Introduction of barrier system on the bridge
- Introduction of guiderail
- Deck waterproofing and Resurfacing

Services Provided:

- Design, Drawings and Specifications
- Field Review of Structure
- Contract Administration and Inspection
- Traffic Detour Planning

Budget Value: \$326,000.00 (approx..)





County Road 14 Bridge B-14-01 Rehabilitation

Owner: The Corporation of the County of Essex

Bridge Type: Single Span Steel Girder

Road Speed Limit: 80 km/Hr

Road Type: Local

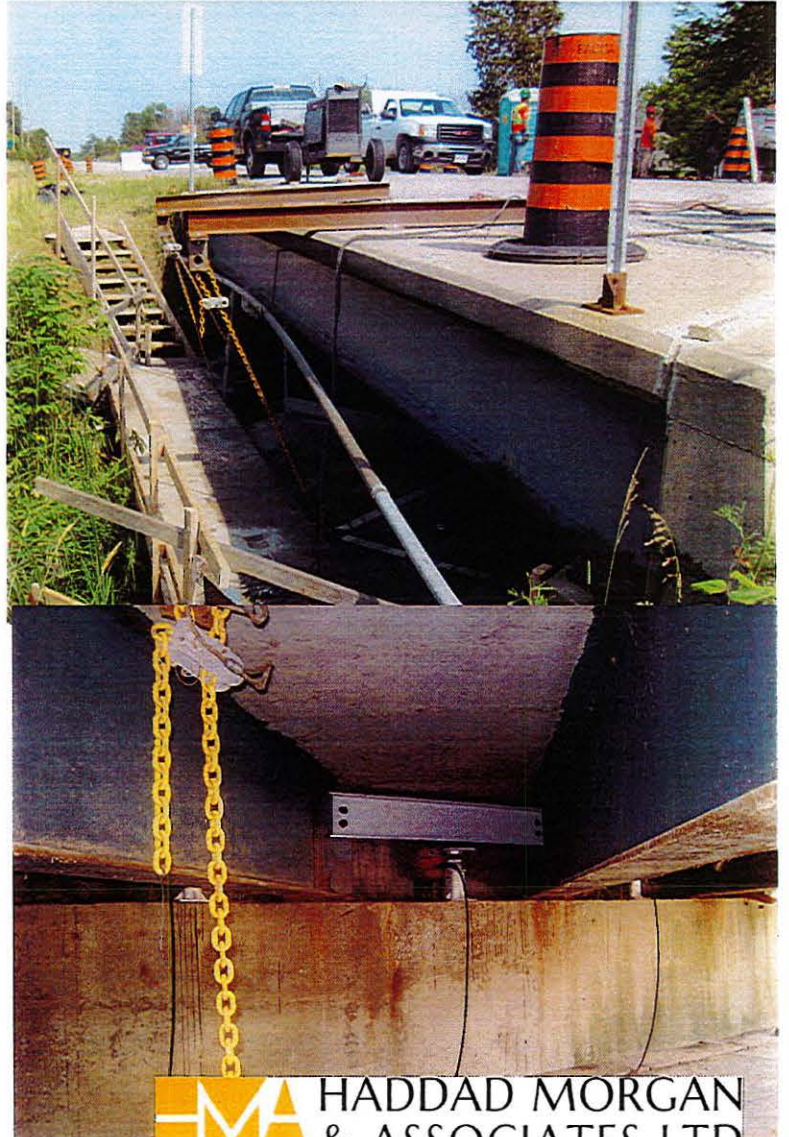
Rehabilitation Required:

- Abutment wall repair
- Girder cleaning and painting
- Replacement of bearing assembly
- Introduction of bearing pad assembly
- Girder reinforcement
- Introduction of barrier system on the bridge
- Introduction of guiderail
- Remediation of expansion joint at both approaches

Services Provided:

- Design, Drawings and Specifications
- Field Review of Structure
- Contract Administration and Inspection
- Traffic Detour Planning

Budget Value: \$275,000.00 (approx..)





County Road 10 Bridge B-10-04 Rehabilitation

Owner: The Corporation of the County of Essex

Bridge Type: Single Span Steel Girder

Road Speed Limit: 60 km/Hr

Road Type: Arterial

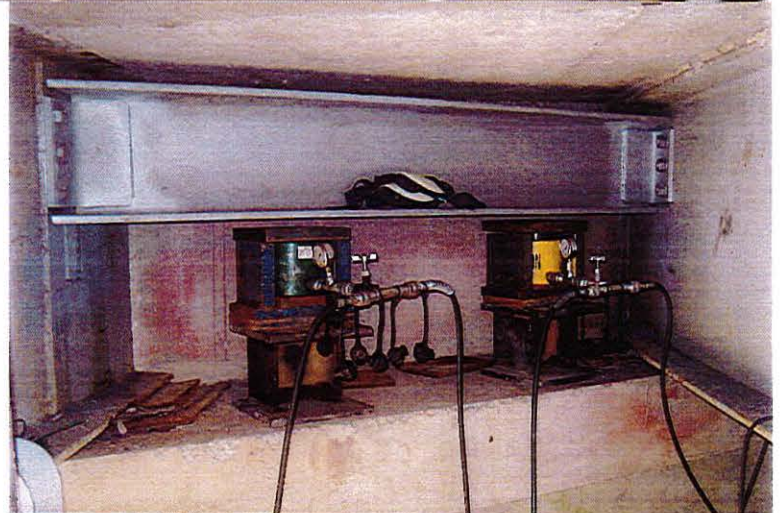
Rehabilitation Required:

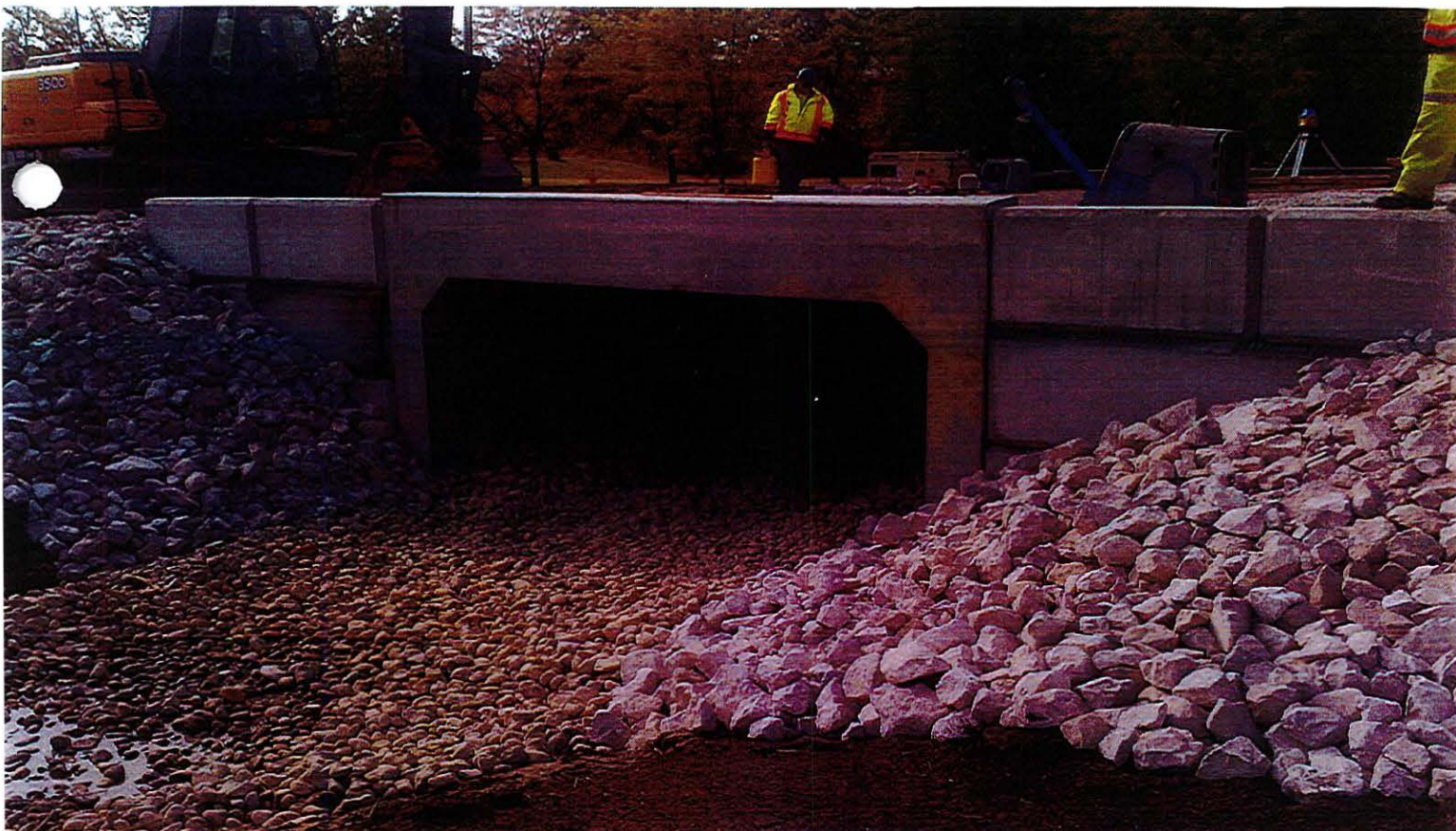
- Abutment wall repair
- Girder cleaning and painting
- Replacement of bearing assembly
- Introduction of bearing pad assembly
- Various barrier wall repair
- Introduction of guiderail

Services Provided:

- Design, Drawings and Specifications
- Field Review of Structure
- Contract Administration and Inspection
- Design jacking beams to support emergency vehicle traffic during construction
- Traffic Detour Planning

Budget Value: \$345,000.00 (approx..)





County Road 50 Culvert Replacement C-50-016

Owner: The Corporation of the County of Essex

Culvert Type: Reinforced Concrete Box Culvert

Road Speed Limit: 80 km/Hr

Road Type: Arterial

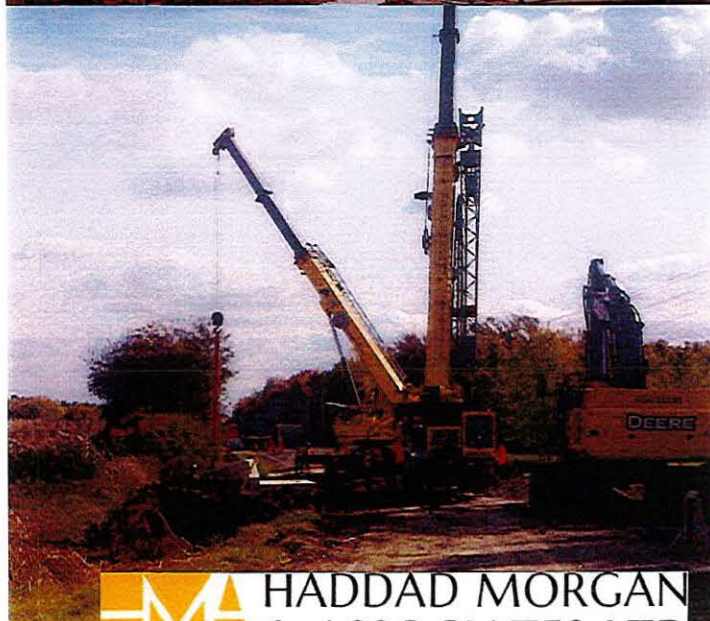
Rehabilitation Required:

- Replacement of culvert structure
- Introduction of retaining wall
- Road reconstruction
- Waterproofing and asphalt overlay

Services Provided To Date:

- Design, Drawings and Specifications
- Field Review of existing Structure
- Construction Administration and Inspection
- Traffic Detour Planning

Budget Value: Projected \$400,000.00 (approx..)





E.C. Row Expressway West Bound Reconstruction West of Howard

Owner: The Corporation of the City of Windsor

Bridge Type: Double Span Reinforced Concrete Slab

Road Speed Limit: 100 km/Hr

Road Type: Arterial

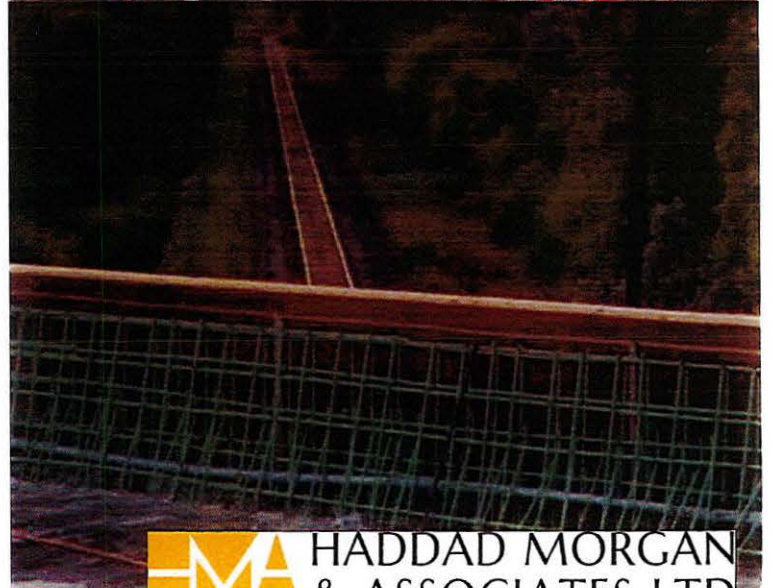
Scope of Work:

- Design of shoring system to support communication lines
- Design of shoring system to support false work for new concrete castings

Services Provided To Date:

- Design and drawings for various work conducted by General Contractor.

Budget Value: Unknown





Little Bear Creek Bridge Rehabilitation

Owner: The Corporation of Chatham Kent

Bridge Type: Single Span Steel Girder

Road Speed Limit: 80 km/Hr

Road Type: Local

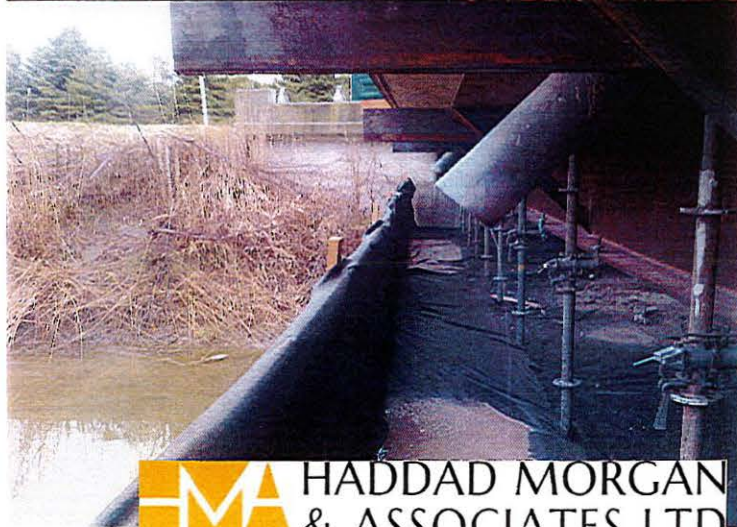
Services Required:

- Development of an innovative shoring system to allow for partial removal of the composite concrete deck while reducing construction costs.

Services Provided To Date:

- Design, procedure and drawings for shoring system
- Design of Working Platform

Budget Value: Unknown





County Road 8 Bridge B-08-39 Partial Replacement

Owner: The Corporation of the County of Essex

Bridge Type: Reinforced Concrete Slab

Road Speed Limit: 80 km/Hr

Road Type: Arterial (Truck Route)

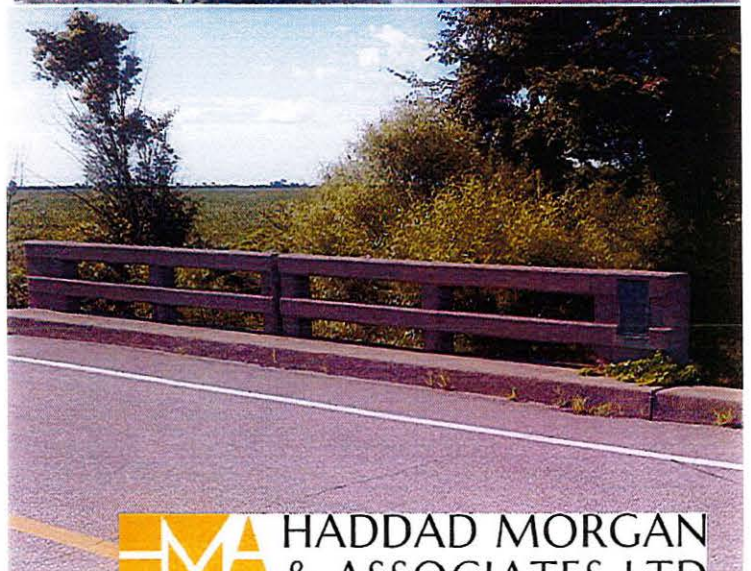
Rehabilitation Required:

- Abutment wall repair
- Deck removal and replacement
- New barrier wall construction
- New approach slab construction
- Wing wall constructions
- New guiderail installation
- Waterproofing and asphalt overlay

Services Provided To Date:

- Deign, Drawings and Specifications
- Field Review of existing Structure
- Traffic Detour Planning

Budget Value: Projected \$900,000.00 (approx..)



GOLDER ASSOCIATES

ENGINEERING EARTH'S DEVELOPMENT, PRESERVING EARTH'S INTEGRITY.



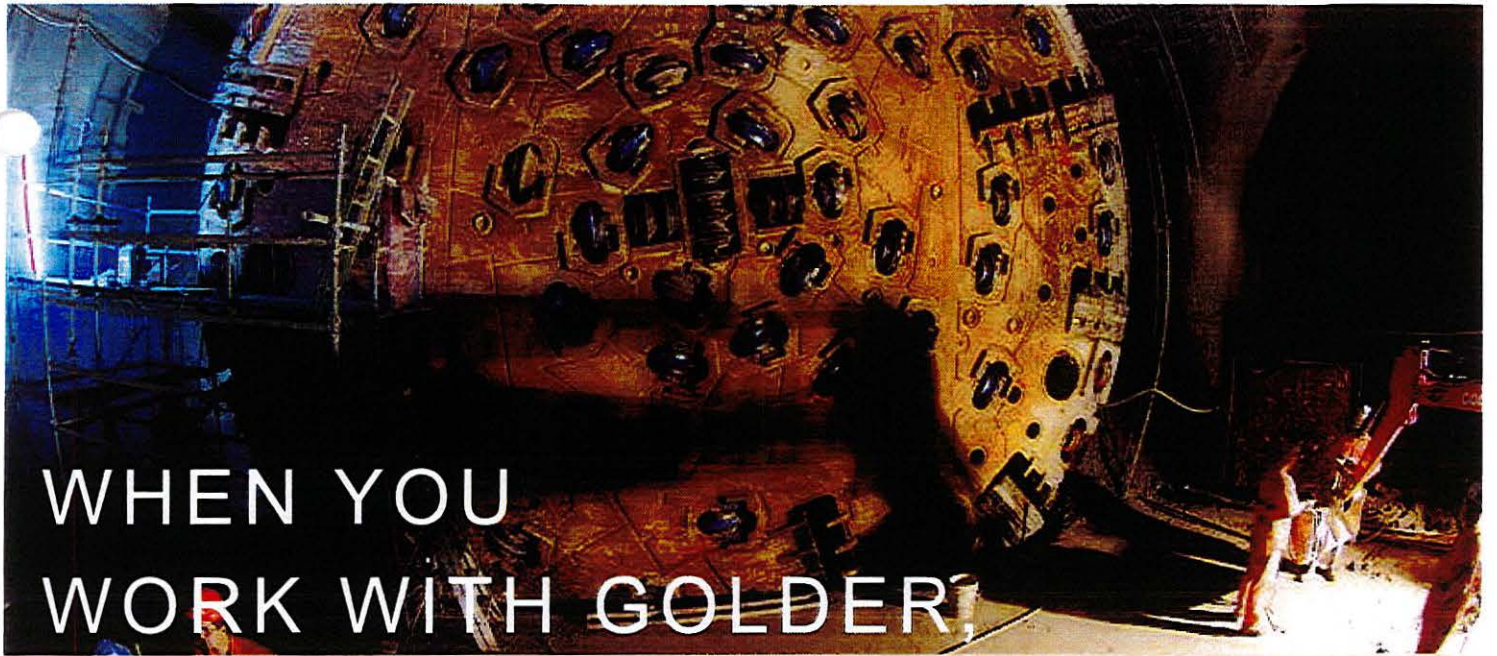
THE BEST BUSINESS DECISIONS ARE MADE ON A SOLID FOUNDATION.

MAKING BUSINESS DECISIONS KNOWING THE FACTS SUPPORTS SOLID PERFORMANCE. SINCE 1960 GOLDER HAS BEEN PROVIDING SOLUTIONS IN GROUND ENGINEERING AND ENVIRONMENTAL SERVICES TO CLIENTS AROUND THE WORLD. TODAY WE ARE EVOLVING NATURALLY TO PROVIDE SERVICES TO HELP ADDRESS THE ENERGY CHALLENGES OF THE FUTURE. WE UNDERSTAND YOUR BUSINESS, ARE COMMITTED TO SERVICE AND TECHNICAL EXCELLENCE, AND BRING GLOBAL EXPERIENCE TO ADDRESS YOUR LOCAL CONCERNS.

WHEN YOU NEED PROFESSIONALS WHO CAN HELP YOU MAKE
THE RIGHT DECISIONS...

JUST ASK GOLDER.





WHEN YOU WORK WITH GOLDER, YOU WILL BENEFIT FROM

THE QUALITIES THAT MAKE US UNIQUE, WHICH INCLUDE:

OUR LONG AND STABLE HISTORY

Established in Toronto, Canada in 1960, we have decades of experience behind us to draw from every time we help you.

OUR GLOBAL REACH

With employees worldwide in offices in Africa, Asia, Australasia, Europe, North America and South America and clients on six continents, we bring the global expertise and experience you need to solve your most complex problems.

OUR EXPERIENCE ACROSS MULTIPLE INDUSTRIES

To enhance the value we provide to clients and to better address the diverse and changing needs of various industries, we have formed specialised industry groups in Golder who share information and best practices from around the world. Through cross-industry knowledge sharing we can help you find the best solution – even if it has been used in a different industry.

We serve clients in the following industries:

Manufacturing Mining
Oil & Gas Power
Urban Development & Infrastructure

OUR COMMITMENT TO HEALTH & SAFETY

At Golder we care about the health and safety of our people, our business partners and contractors, and our clients. Caring is quite simply at the core of our culture. We make it a priority every hour of the day to ensure our people are working and living in a way that keeps them, their families and their communities safe and healthy. We extend this caring to our contractors, vendors and clients in every project we undertake.

OUR DEDICATED PEOPLE

We are 100% employee-owned. Our people are passionate about their work and committed to providing great service to our clients.

OUR COMMITMENT TO SUSTAINABILITY

Golder is committed to promoting sustainable communities and responsible development by embedding the principles of sustainability into project planning, design, execution, and operation, and by delivering products and services for sustainable development.

Moreover, we are committed to conducting our business and operations in a manner that has a positive impact on the communities in which we live and work. Our sustainability relies on using resources prudently, reducing our environmental footprint, and supporting a better quality of life for people around the world.





WHEN YOU WORK WITH GOLDER, YOU HAVE GLOBAL ACCESS TO

TECHNICAL PROFESSIONALS SKILLED AT DELIVERING SOLUTIONS IN:



CONSULTING, DESIGN AND CONSTRUCTION SERVICES FOR OUR CLIENTS





ENGINEERING

Ground Engineering

Construction Materials Engineering, Testing & Instrumentation

Tunnelling

Pipeline Systems

Dams & Hydropower

Waste Management

Projects are built from the ground up and need a solid foundation on which to withstand the tests of time.

You can benefit from our fully integrated geotechnical, civil and environmental engineering services for projects such as tunnelling, pipelines and solid waste management systems. In addition, our design and construction services include dams and reservoirs for water supply, containment, flood control and hydropower needs.

"GREAT WORK PRODUCT, UNDERSTANDING OF OUR CHALLENGES, ATTENTION TO DETAIL AND OVERSIGHT OF THE SUBCONTRACTOR."

– Dave Bruzek, Duke Energy



ESCALA CONDOMINIUM TOWER

CLIENT: LEXAS COMPANIES

LOCATION: SEATTLE, WASHINGTON, UNITED STATES

INDUSTRY: URBAN DEVELOPMENT & INFRASTRUCTURE

Golder provided geotechnical and shoring design engineering services during the construction of a 31-story, upscale condominium in downtown Seattle, WA, USA. The building's design included nine stories of underground parking. Golder designed a soldier pile and tieback shoring system with underpinning piles to provide the best support of a 1926 historic landmark next to the site. A custom-designed instrumentation system was used to monitor the performance of the shoring system in real-time, even from remote locations. The 94-foot excavation for the parking garage is the second deepest in Seattle history.



NORTH BROWN HILL WIND FARM

CLIENT: WARD GROUP

LOCATION: SOUTH AUSTRALIA, AUSTRALIA

INDUSTRY: POWER

Golder's geotechnical team was engaged to support Ward Group with construction of the 63 wind turbine generator at the North Brown Hill Wind Farm. Golder supported Ward Group during the design and construction phases with the provision of a range of geotechnical services. The full scope of work included geotechnical investigations; road, hardstand and earthworks specifications; foundation assessment and design; rock anchor testing; and materials testing and construction stage support. These services were often conducted within the tight timescales dictated by the construction activities. Leveraging off Golder's extensive wind farm experience, we were able to add further value to the project by assessing the strength of the foundation materials in-situ by undertaking down-hole high pressure pressuremeter testing. This in-situ strength information enabled us to reduce the drilling depth at the majority of the wind turbine generator locations to less than 10 m, rather than the anticipated 15 m. This resulted in investigation time and cost savings for Ward Group and enabled the footing and rock anchor dimensions to be reduced.



COLLAHUASI MINE CLOSURE PLAN

CLIENT: COMPAÑÍA MINERA DOÑA INÉS DE COLLAHUASI (CMDIC)

LOCATION: NORTHERN CHILE

INDUSTRY: MINING

CMDIC commissioned Golder to develop a closure plan for their copper and molybdenum mine at Collahuasi, 4,000 m above sea level in the Andean Altiplano. The mine produces 450 t of copper concentrate and 70 t of copper cathodes annually. Newly enacted mining regulations in Chile require all mines to submit a closure plan. The social impacts of closure, as well as the cost of closure, were considered. The plan covered closure of the mine, its 200 km pipeline to the processing plant and port facilities.



FAST-TRACK TUNNELLING FOR ONE OF THE WORLD'S LARGEST DESIGN-BUILD PROJECTS

CLIENT: THE WASHINGTON GROUP

LOCATION: CENTRAL LUZON, PHILIPPINES

INDUSTRY: URBAN DEVELOPMENT & INFRASTRUCTURE

One of the largest BOT design-build projects in the world, San Roque now provides hydroelectric power, irrigation water and flood control for Central Luzon in the Philippines. Golder was the tunnel design and rock-engineering consultant for the Washington Group, San Roque's design-build contractor. Underground excavations involved three diversion tunnels, a power tunnel, a low-level irrigation tunnel, a shaft-type semi-underground powerhouse and a complex of grouting galleries for the 200 m high dam. The Golder team provided fast-track engineering for the tunnels and rock slopes to meet the tight design-build schedule; designed the tunnel layout, rock support and tunnel lining for each tunnel; and provided on-site rock mechanics engineers to evaluate rock conditions as they were exposed, and to adapt the rock support to these conditions.



PENINSULA LINK

CLIENT: ABIGROUP CONTRACTORS, PTY. LTD.

LOCATION: CARRUM DOWNS TO MOUNT MARTHA, MORNINGTON PENINSULA, VICTORIA

INDUSTRY: URBAN DEVELOPMENT & INFRASTRUCTURE

The Peninsula Link project is a 27 km freeway linking existing freeways at Carrum Downs and Mount Martha and bypassing the city of Frankston. The freeway is the gateway to the popular Mornington Peninsula region to the south of Melbourne. Golder was sole sourced for all phases of the Peninsula Link project and delivered practical, cost-effective integrated geotechnical solutions that met tight project performance and construction timeframes. A section of the freeway passed through an existing wetland underlain by complex geological and hydrogeological conditions. Golder developed an innovative design incorporating a cement-bentonite cut off wall, modified cut batter slopes and a formation drainage blanket to deal with the prevailing ground conditions whilst still maintaining the pre-construction water levels in the sections of wetland outside the alignment.



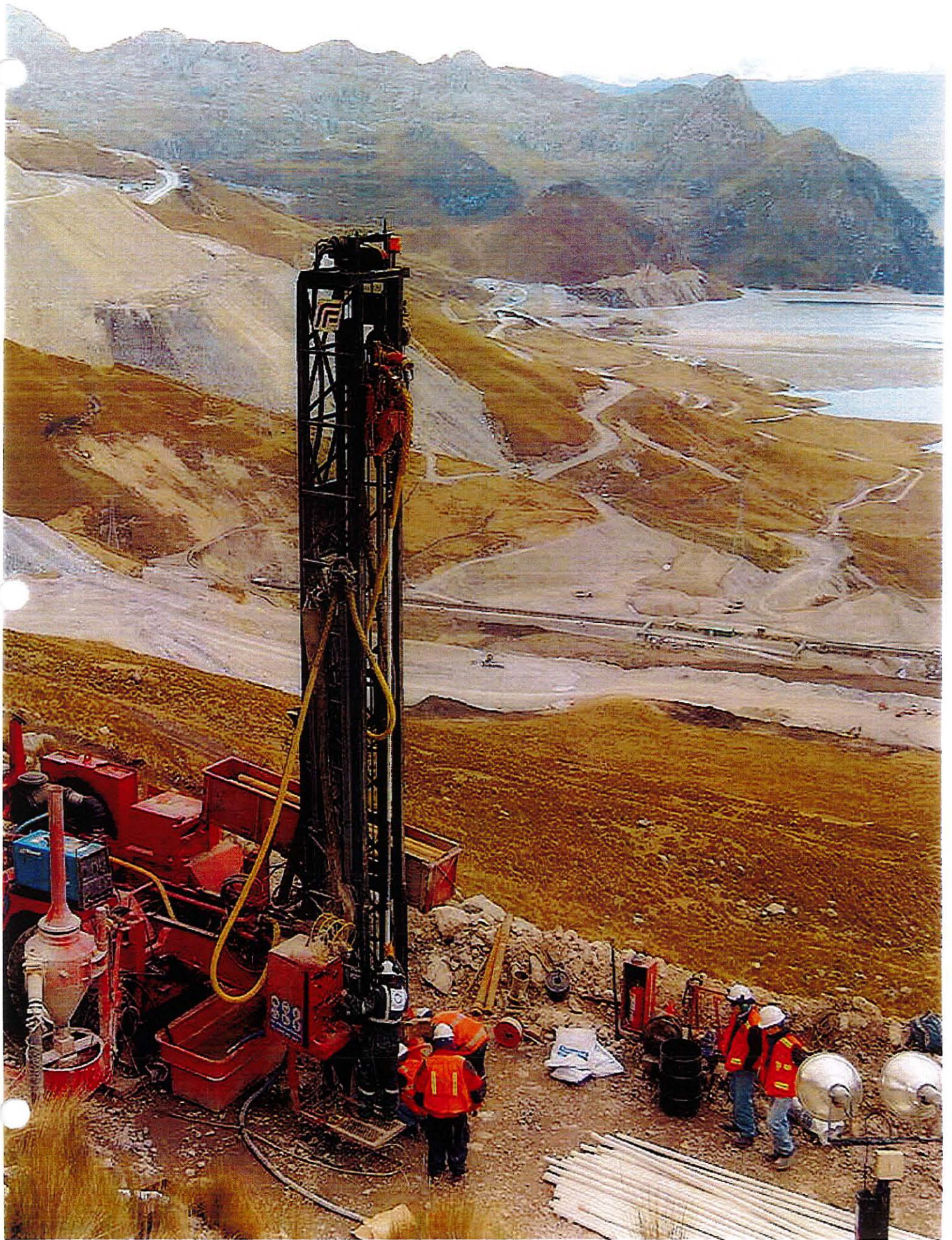
ROCK MECHANICS SERVICES AT "CAVA KRISTALLINA"

CLIENT: OMYA, S.p.A.

LOCATION: VIPITENO, PROVINCE OF BOLZANO, ITALY

INDUSTRY: MINING

The Omya S.p.A. marble extraction mining concession is comprised of two quarries at different altitudes: the lower quarry, "Pratone" (Pardaun) (1200 m) was previously used for mining purposes in the winter months, when the upper quarry, "Kristallina" (1745-1900 m) could not be reached safely due to the risk of avalanches. However, due to the increasing demand for purer and whiter material, the mining currently only regards the "Kristallina" quarry, where higher quality marble can be found. The Kristallina quarry has been mined underground since 2002 using two sub-horizontal crosscut accesses at an altitude of 1745 m above sea level. The mining method adopted in the two production areas is sublevel open stoping with large drillings. Golder performed periodic on-site surveys of underground voids in order to check the mining trend and the aspects inherent to the static stability of the chambers and tunnels; performed stability calculations with numerical methods; and installed instrumentation for monitoring deformations and interpreting the acquired measurements.



WATER

Water & Wastewater Treatment

Coastal & Marine

Groundwater Services

Surface Water & Hydrology

The most important natural resource on earth
- required for life on our planet - needs careful
management.

Golder's Water Services Group provides you with a specialised science and environmental engineering team dedicated to delivering sustainable solutions in water resource management. Our multidisciplinary teams navigate the technical, socio-economic and environmental factors inherent with the use of water by industry or government around the world. Together, they deliver complete water management services at the highest industry standards.

I HAVE WORKED WITH GOLDER ASSOCIATES FOR MORE THAN A DECADE ON A BROAD RANGE OF WATER RESOURCES MANAGEMENT ISSUES. THEY HAVE DISPLAYED GREAT DEPTH AND BREADTH OF CAPABILITIES."

— Dave Brown, City of Yakima, Washington, United States



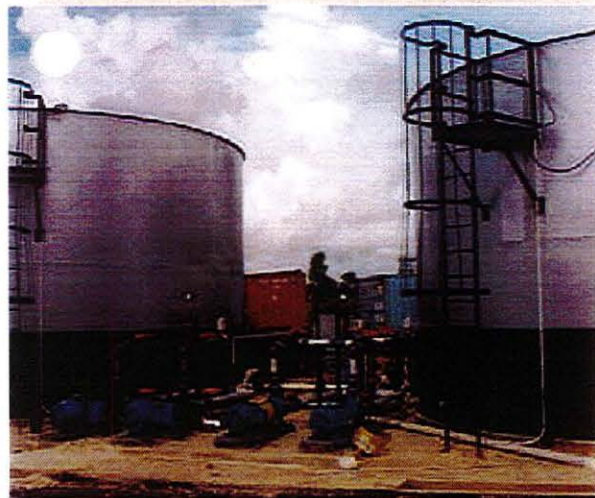
AIR AND SEAWATER QUALITY MONITORING SYSTEM

CLIENT: CONFIDENTIAL

LOCATION: NORTH CASPIAN SEA, KAZAKHSTAN

INDUSTRY: OIL & GAS

The goal of this project was for the design, deployment and management of an experimental pilot system to automatically monitor air and seawater quality operating in 'near real-time' mode. An innovative, state-of-the-science system and the first 'near real-time' sea water monitoring system was installed offshore in the North Caspian Sea in October 2011. The east side of the manmade island was equipped with a production and processing facility to monitor background air and water quality in the vicinity of the Kashagan oil and gas field. Golder was contracted to assist with development of a proof of concept monitoring system through three phases: (1) Develop the conceptual design and technical specification for a proof of concept monitoring system; (2) Procure, integrate, test, install, commission, and operate an experimental system at one location in the North Caspian Sea in the vicinity of the artificial island; and (3) Complete the experimental phase obtaining permits and certifications from authorities of the Republic of Kazakhstan and handing over the approved monitoring station to the operator. The project was developed by a multidisciplinary and international team based in Italy, USA, Canada, UK, and Kazakhstan.



PRODUCED WATER TREATMENT

CLIENT: PETRONIN

LOCATION: TRINIDAD AND TOBAGO

INDUSTRY: OIL & GAS

Golder teamed with general contractor T.N. Ramnauth & Company Ltd. in Trinidad and Tobago to design, build, own, and operate a produced water treatment plant, the first major oil and gas treatment facility for this Caribbean nation. Treated water is provided to the oil company in Trinidad and Tobago for beneficial industrial re-use to produce steam used for reinjection to enhance oil recovery. With this approach, freshwater consumption can be decreased by over 500,000 gallons (1.9 million litres) per day. Golder completed detailed characterisation of four sources of influent water. Contaminants of concern were identified, including oil and grease and soluble organic compounds. Bench testing of dissolved air flotation and biological treatment was performed to develop design parameters.



COASTAL ENGINEERING ANALYSIS

CLIENT: CITY OF WESTPORT

LOCATION: WESTPORT, WASHINGTON, UNITED STATES

INDUSTRY: URBAN DEVELOPMENT & INFRASTRUCTURE

Golder personnel assisted the City of Westport to address the effects of increased wave climate on navigation and coastal protection structures at Grays Harbor, Washington. The city has experienced substantial wave attack on the revetment at Point Chehalis in recent years, which has contributed to coastal flooding, debris, and structure damage along and adjacent to the revetment, including a parking lot, marina, and condominiums. Golder conducted an engineering analysis of run-up and overtopping of the Point Chehalis revetment at Westport. The information gathered during this analysis will assist the City in coordinating with the U.S. Army Corps of Engineers to evaluate the costs and benefits of alternatives to manage and mitigate wave run-up, overtopping, and flooding during episodes of severe wave attack on the revetment. Work included analysing survey data, collecting wave and water level data on the revetment, and calculating wave run-up and overtopping on the structure. Golder validated a phase-resolving wave model (BOUSS2D) with the field measurements and used it to transform ocean waves from offshore to the toe of the revetment for run-up and overtopping calculations of several known overtopping events.

MAKE YOUR BUSINESS DECISIONS ON A SOLID FOUNDATION.

CHOOSE AN ORGANIZATION WITH THE TECHNICAL EXPERIENCE AND COMMITMENT TO

SERVICE EXCELLENCE AND SUSTAINABILITY THAT YOU NEED TO BE SUCCESSFUL.

JUST ASK GOLDER.

WWW.GOLDER.COM

ENGINEERING EARTH'S DEVELOPMENT, PRESERVING EARTH'S INTEGRITY.



Africa	+ 27 11 254 4800	Europe	+ 44 1628 851851	solutions@golder.com
Asia	+ 86 21 6258 5522	North America	+ 1 800 275 3281	www.golder.com
Australasia	+ 61 3 8862 3500	South America	+ 56 2 2616 2000	

General Arrangement

The proposed arrangement fits within the criterion as defined in the RFP document. The proposed layout would see a widening of the right of way with a clear distance between barriers of 10m. The underside of the proposed structure will coincide with the existing bridge and will maintain the existing clear span distance over the waterway. By maintaining the same clear distance for the waterway our proposed design is able to ensure the hydraulics of the new bridge will match the existing and thus not create a negative condition on the upstream flow patterns.

Borehole Locations and Soil Strata

Soil samples will be taken at both abutment locations to determine the soil conditions necessary to define the foundations.

Roadway Protection

The roadway will be constructed with a gradual taper approaching the bridge from both the north and south faces. Once entering the bridge the barrier walls along the approach slabs and on the bridge itself will provide the necessary protection for the travelling public. Refer to the following sections for a discussion of the barrier.

Foundation Layout

The foundation, as noted in the documents will be a rectangular standard foundation (to be confirmed after soil testing) designed to resist overturning of the structure due to lateral loading.

Abutment

The abutment, as defined in the document, is a reinforced concrete wall system with a tapered top to promote positive drainage and ensure longevity of the abutment wall. At the top of the abutment wall a semi-integral abutment will be introduced. This will allow for water tight joints and reduce overall degradation of the abutment wall thus enhancing durability.

Wingwall

The wingwall system being proposed is a MTO standard detail. The final layout provides sufficient lateral resistance of the soil backfill and also provides a surface for the barrier wall extensions. The interface between the approach slab and the wingwall will be sealed to prevent water infiltration issues.

Bearing

The bearing for the bridge will be elastomeric in nature and will allow enhance the overall service life of the structure. The detailing of the structure will also allow for replacement of these components over

time if required. Similar constructions typically result in overall longer structural life spaces versus integral systems which cannot be maintained with replaceable components.

Precast Slabs

The precast slab provides a working surface and immediate complete deck surface. They also are a reliable long term bridge product. By using this product the existing bridge will be able to be replaced quickly without the need for in water access for forming of worker access.

Cast in Place slab

The cast in place slab provides a continuous concrete surface which further assists in the durability of the structure. This cast in place slab also affords the bridge with a continuous diaphragm system and a smooth surface for the introduction of a quality hot applied waterproofing system.

Barrier Wall

For the proposed design our team is offering a cast in place concrete barrier with railing affixed to the top. While not necessarily as cheap as a steel railing system the overall longevity of this product will prove to be a more cost effective solution. In contrast with the all metal equivalents a concrete barrier is able to better manage the impact of impacts (vehicle snow plow blades) and even road salt introduction. The concrete's strength and durability prevents the need for replacement of the barrier system after any impact. This option will reduce overall operating costs and down time due to the absence of the need for regular part replacement.

Approach Slab

An approach slab is offered with this design in conformance with S6. This approach slab will ensure a smooth transition onto the bridge and will tie into the wingwalls and semi-integral abutment being proposed. It will offer a smooth ride for the travelling public and reduce the overall operating costs which may be needed in the absence of an approach slab due to settlement of the soil causing rutting. Moreover, the approach slab further enhances the overall water tightness of the structure system and thus enhances the structures durability.

BRIDGE REPLACEMENT OVER LONG MARSH DRAIN

SECOND CONCESSION, AMHERSTBURG, ONTARIO

LATITUDE: 42° 10' 26.5" N
 LONGITUDE: 83° 05' 04" W



GENERAL NOTES

1. THE CANADIAN HIGHWAY BRIDGE DESIGN CODE CAN/CSA S6 LATEST EDITION SHALL BE THE BASIS FOR CONSTRUCTION AND DESIGN OF ALL WORK ON THIS PROJECT.
2. THE CONTRACTOR SHALL FIELD CHECK AND VERIFY ALL CONDITIONS AND MEASUREMENTS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.
3. THE CONTRACTOR SHALL CONFIRM THE LOCATION, SIZES AND DEPTHS OF ALL EXISTING UTILITIES, INCLUDING THOSE SUPPORTED BY OR A PART OF THE BRIDGE STRUCTURE, PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO THE OWNER FOR ANY DAMAGES TO ANY UTILITY.
4. THE CONTRACTOR SHALL ESTABLISH THE BEARING SEAT ELEVATION BY DEDUCTING THE ACTUAL BEARING THICKNESSES FROM THE TOP OF BEARING ELEVATIONS. IF THE ACTUAL BEARING THICKNESSES ARE DIFFERENT FROM THOSE GIVEN WITH THE BEARING DESIGN DATE, THE CONTRACTOR SHALL ADJUST THE REINFORCING STEEL TO SUIT. SEE CONSTRUCTION NOTES ON DRAWING S093852.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DETAILS AND ELEVATIONS OF THE EXISTING STRUCTURE THAT ARE RELEVANT TO THE WORK SHOWN ON THE DRAWINGS PRIOR TO THE COMMENCEMENT OF THE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE ADMINISTRATOR AND THE PROPOSED ADJUSTMENT(S) TO THE REQUIRED TO MATCH THE EXISTING STRUCTURE SHALL BE SUBMITTED FOR APPROVAL.
6. CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING AS REQUIRED FOR ALIGNMENT, WIND, DEAD LOAD AND ERECTION STRESSES.
7. THE CONTRACTOR SHALL DISPOSE OF REMOVED AND EXCESS MATERIALS OFF SITE IN A SUITABLE MANNER. EXCESS MATERIALS SHALL NOT BE STORED WITHIN THE R/F/AREA.
8. THE CONTRACTOR SHALL TAKE GREAT CARE TO AVOID DAMAGE TO VEGETATION AND IMPROVEMENTS OUTSIDE THE LIMITS OF CONSTRUCTION AND TO KEEP THE CONSTRUCTION AREA TO A MINIMUM.
9. THE CONTRACTOR SHALL ESTABLISH EFFECTIVE SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES. THE MEASURES SHALL BE INSPECTED DAILY AND BE REPAIRED OR REPLACED AS REQUIRED TO REMAIN EFFECTIVE.
10. NO "IN-WATER WORKS" ARE ANTICIPATED TO BE REQUIRED AS A PART OF THIS PROJECT. SHOULD THEY BE REQUIRED, THE CONTRACTOR SHALL SCHEDULE ANY "IN-WATER WORKS" TO BE PERFORMED BEFORE MARCH 15TH OR AFTER JUNE 30TH.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND PERFORMING HIS ACTIVITIES, SUCH THAT, ALL WORK WILL BE PERFORMED ON LAND OR ON THE WATER (I.E. FROM A BARGE) IN DRY WEATHER, WHEN RAIN IS NOT IMMINENT.
12. MATERIALS STORAGE AND REFUELING OPERATIONS SHALL TAKE PLACE AS FAR FROM WATER BODIES AS POSSIBLE TO PREVENT ENTRY OF DELETERIOUS SUBSTANCES TO THE WATER BODY.
13. SHOULD ANY PROTECTED SPECIES AND/OR HABITATS BE OBSERVED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND ALL WORK ACTIVITIES AND CONTACT THE MINISTRY OF NATURAL RESOURCES, ATYMER DISTRICT OFFICE (519-773-9241).
14. THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS, CONDITIONS, AND RESTRICTIONS THAT MAY BE IMPOSED BY APPROVAL AGENCIES.

COATING AND PATCHING MATERIALS

1. PREPARATION OF SURFACE(S) FOR COATING SHALL BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. AT LOCATIONS WHERE ELASTIC COATING IS TO BE APPLIED, A REPRESENTATIVE OF THE PRODUCT(S) MANUFACTURER SHALL REVIEW THE BONDING SURFACE AND PROVIDE A LETTER OF ACCEPTANCE PRIOR TO COATING APPLICATION.
3. AT LOCATIONS WHERE REINFORCING STEEL IS EXPOSED AND IS TO RECEIVE COATING AND PATCHING MATERIALS A REPRESENTATIVE OF THE PRODUCT(S) MANUFACTURER SHALL REVIEW THE BONDING SURFACE(S) AND PROVIDE A LETTER OF ACCEPTANCE PRIOR TO COATING AND PATCHING APPLICATION.

CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO CSA/CAN A23.1-00 AND CSA A23.3 AND S6-06.
2. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 35 MPa.
3. CONCRETE REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO CSA G30.18-M92 HAVING A MINIMUM YIELD STRENGTH OF 400 MPa.
4. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS PER CSA S6-06.
5. LAP AND ANCHOR SPICES TO CONFORM TO CSA S6.
6. UNDERGROUND CONCRETE WORK USE SULPHATE RESISTANT CEMENT CSA 50 UNLESS PROVEN BY TEST THAT THE SULFATE CONTENT OF THE SOIL IS WITHIN THE ALLOWABLE.
7. ALL EXPOSED CORNERS OF CONCRETE ARE TO HAVE .75" CHAMFER.
8. SUBMIT SHOP DRAWINGS OF REBAR TO THE ENGINEER FOR APPROVAL.
9. CONCRETE IN BARRIER WALLS OR SIDEWALKS SHALL NOT BE PLACED UNTIL ALL CONCRETE IN DECK SLAB HAS REACHED A STRENGTH OF 20 MPa.
10. SEMI INTEGRAL ABUTMENT TO BE CAST WITH TOPPING.

PAVING

1. SAWCUT EDGE OF EXISTING ASPHALT PAVEMENT TO MEET NEW ASPHALT, WHERE NECESSARY.
2. APPLY TACK COAT PER OPSS 313 PRIOR TO PLACEMENT OF EACH COURSE.
3. SUPPLY ALL MATERIALS REQUIRED FOR THE PROPER PLACEMENT OF PAVEMENT'S.
4. INSTALL PAVEMENTS TO MATCH EXISTING LINES AND GRADES.
5. COUNTY OF ESSEX TO PAINT PAVEMENT MARKINGS.

PRELIMINARY
NOT FOR CONSTRUCTION



ABBREVIATIONS	
ASL	=ADDITIONAL SNOW LOAD
AF	=AXIAL FORCE, KIP
BL	=BOTTOM LOWER LAYER
BLDG	=BUILDING
BM	=BEAM
BOT	=BOTTOM
BUL	=BOTTOM UPPER LAYER
B/S	=BOTH SIDES
B/E	=BOTH ENDS
BPL	=BASE (BEARING) PLATE
C/C	=CENTRE TO CENTRE
CANT	=CANTILEVER
CF	=COMPRESSIVE FORCE, KIPS
COL	=COLUMN
CONC	=CONCRETE
CONSTR	=CONSTRUCTION
CONT.	=CONTINUOUS
C/W	=CONNECT WITH
C.J.	=CONTROL JOINT
DET	=DETAIL
DIAG	=DIAGONAL
DIA	=DIAMETER
DM	=DIMENSION
DL	=DEAD LOAD
DWG(S)	=DRAWING(S)
DWL(S)	=DOWEL(S)
EA	=EACH
E.E.	=EACH END
E.F.	=EACH FACE
EL	=ELEVATION
ELEV.	=ELEVATION
ED	=EQUAL
EQUIV	=EQUIVALENT
E.S.	=EACH SIDE
ETC.	=ETCETERA
E.W.	=EACH WAY
EXP JT	=EXPANSION JOINT
EXT	=EXTERIOR
FN	=FOUNDATION
GA	=GAUGE
GALV	=GALVANIZED
HH	=HOOKED EACH END
HORIZ	=HORIZONTAL
HT	=HORIZONTAL FORCE, KIPS
JT	=JOINT
LG	=LONG
LL	=LOWER LAYER
LLV	=LONG LEG VERTICAL
LLH	=LONG LEG HORIZONTAL
LSH	=LONG SIDE HORIZONTAL
MAX	=MAXIMUM
MC	=MOMENT CONNECTION
MIN	=MINIMUM
MISC	=MISCELLANEOUS
MPa	=MEGA PASCALS
NC	=NOT IN CONTRACT
NO.	=NUMBER
N/S	=NOT TO SCALE
N-S	=NORTH-SOUTH
O/C	=ON CENTRE
OPNG	=OPENING
CONT.	=CONTINUOUS
PL	=PLATE
PROJ	=PROJECTION
PI	=AXIAL FORCE
REF	=REFERENCE
REIN	=REINFORCE, REINFORCEMENT
REQ'D	=REQUIRED
REV	=REVISION, REVISED
SDF	=STEP DOWN FOOTING
STD	=STANDARD
STL	=STRUCTURAL STEEL
T	=TOP
TI	=TENSION FORCE, KIPS
T&B	=TOP AND BOTTOM
TLL	=TOP LOWER LAYER
T.O.C.	=TOP OF CONCRETE
T.O.F.	=TOP OF FOOTING
T.O.S.	=TOP OF STEEL
TUL	=TOP UPPER LAYER
TYP.	=TYPICAL
UL	=UPPER LAYER
U.O.N./U.O.	=UNLESS OTHERWISE NOTED
U/S	=UNDERSIDE
VERT.	=VERTICAL
W/F	=WELDED WIRE FABRIC
W/	=WITH
W/C	=WATER CONTENT RATIO
W/M	=WELDED WIRE MESH

APRIL 27, 2017	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT	DESIGN BUILD SECOND CONCESSION BRIDGE OVER LONG MARSH DRAIN
T11-2017-001	

DWG TITLE	COVER
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DATE	: APRIL 2017
SCALE	: AS SHOWN
DESIGNED BY:	W.T.
DRAWN BY:	J.B.
CHECKED BY:	W.T.
APPROVED BY:	---
PROJECT NO:	---

DWG NO	COVER
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DATE	ISSUED FOR

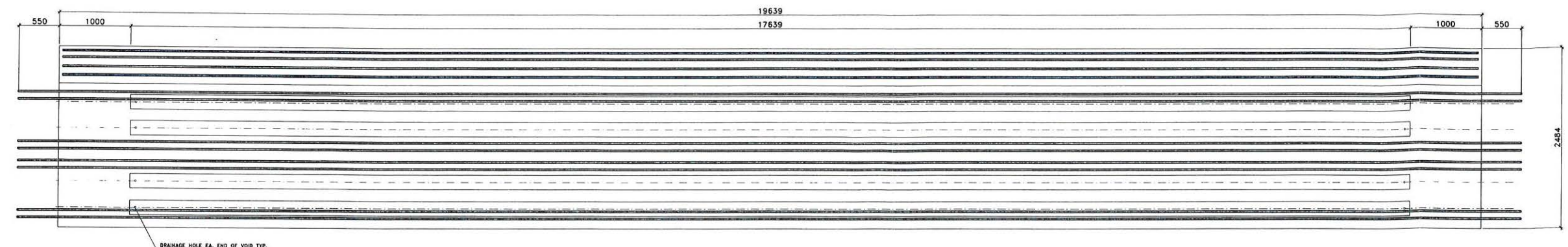
PROJECT	DESIGN BUILD SECOND CONCESSION BRIDGE OVER LONG MARSH DRAIN T11-2017-001
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DWG TITLE	SLAB G1
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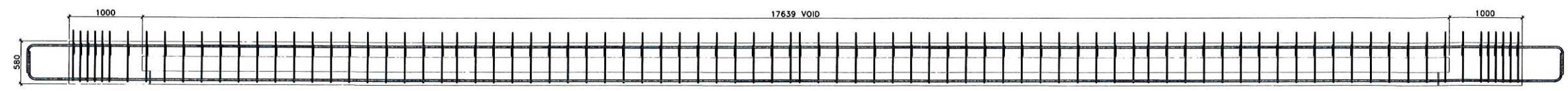
DATE	APRIL 2017
SCALE	AS SHOWN
DESIGNED BY	W.T.
DRAWN BY	J.B.
CHECKED BY	
APPROVED BY	W.T.
PROJECT NO.	---

DWG NO.	S3
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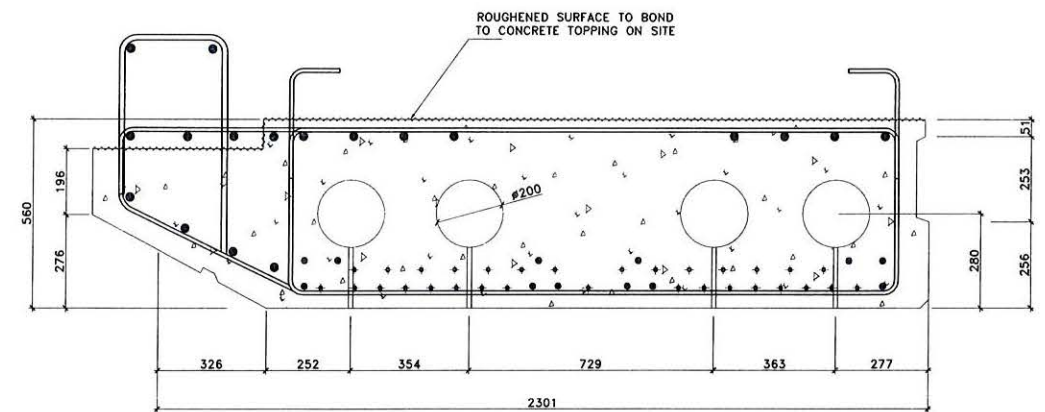
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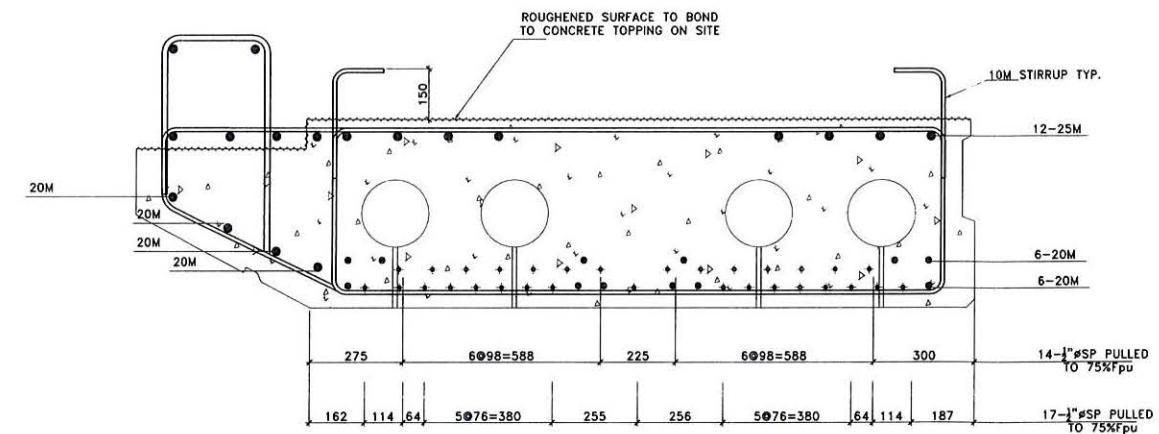
1 POURING PLAN VIEW
 S3 SCALE: 1:30



1 REINFORCING ELEVATION
 S3 SCALE: 1:30



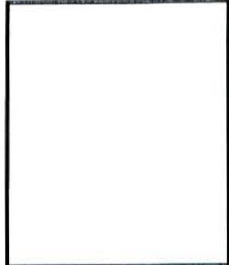
3 SECTION - DIMENSIONS
 S3 SCALE: 1:10



4 SECTION - REINFORCEMENT
 S3 SCALE: 1:10

GIRDER NOTES:

- PRESTRESSING STEEL SHALL BE LOW-RILAXATON SEVEN WIRE STRANDS, 1/2" GRADE 1860
- MINIMUM BREAKING STRENGTH OF STRAND 200 kN
- JACKING FORCE PER STRAND 150.3 kN
- FORCE PER STRAND AFTER ALL LOSSES 135.3 kN
- THE ELAPSED TIME INTERVAL BETWEEN JACKING OF STRANDS AND TRANSFER SHALL NOT BE LESS THAN 15 HOURS
-
- CLASS OF CONCRETE 45 MPa.
- CONCRETE STRENGTH AT TRANSFER 30 MPa.
- REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CAN/CSA STANDARD C30.18-M92
- CLEAR COVER TO REINFORCING STEEL 30 +10mm/-5mm.
- REINFORCING STEEL WITH A CLEAR COVER OF LESS THAN 125mm AND LOCATED WITHIN 3000mm FROM THE GIRDER ENDS AT EXPANSION JOINT SHALL BE EPOXY COATED.
- AT ENDS OF GIRDERS WHICH ARE NOT TO BE ENCASED IN CONCRETE, STRAND ENDS SHALL BE PAINTED WITH TWO COATS OF ASPHALTIC PAINT.
- DOWEL INSERTS SHALL BE ZINC PLATED OR GALVANIZED IN ACCORDANCE WITH CSA STANDARD G164-M92
- DOWEL INSERTS SHALL BE CAPABLE OF DEVELOPING A FORCE IN TENSION OF 20 kN AT A SERVICEABILITY LIMIT STATE LOADING.
- ALL CONCRETE WORK SHALL CONFORM TO CSA/CAN A23.1-00 AND CSA A23.3 AND S6-06
- CONCRETE REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO CSA C30.18-M92 HAVING A MINIMUM YIELD STRENGTH OF 400 MPa.
- MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS PER CSA S6-06
- LAP AND ANCHOR SPLICES TO CONFORM TO CSA S6
- ALL EXPOSED CORNERS OF CONCRETE ARE TO HAVE 75° CHAMFER.
- SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.



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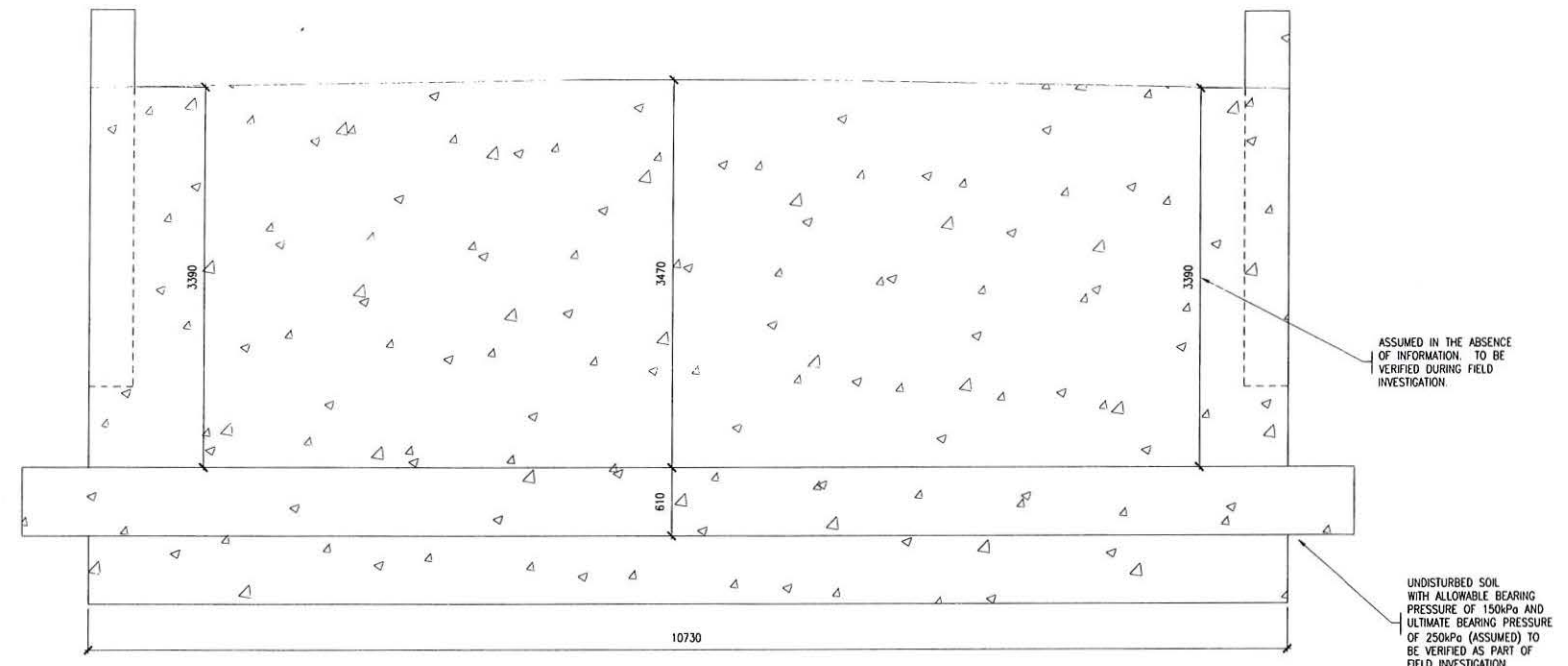
APRIL 27, 2017	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
DESIGN BUILD
SECOND CONCESSION
BRIDGE OVER LONG
MARSH DRAIN
T11-2017-001

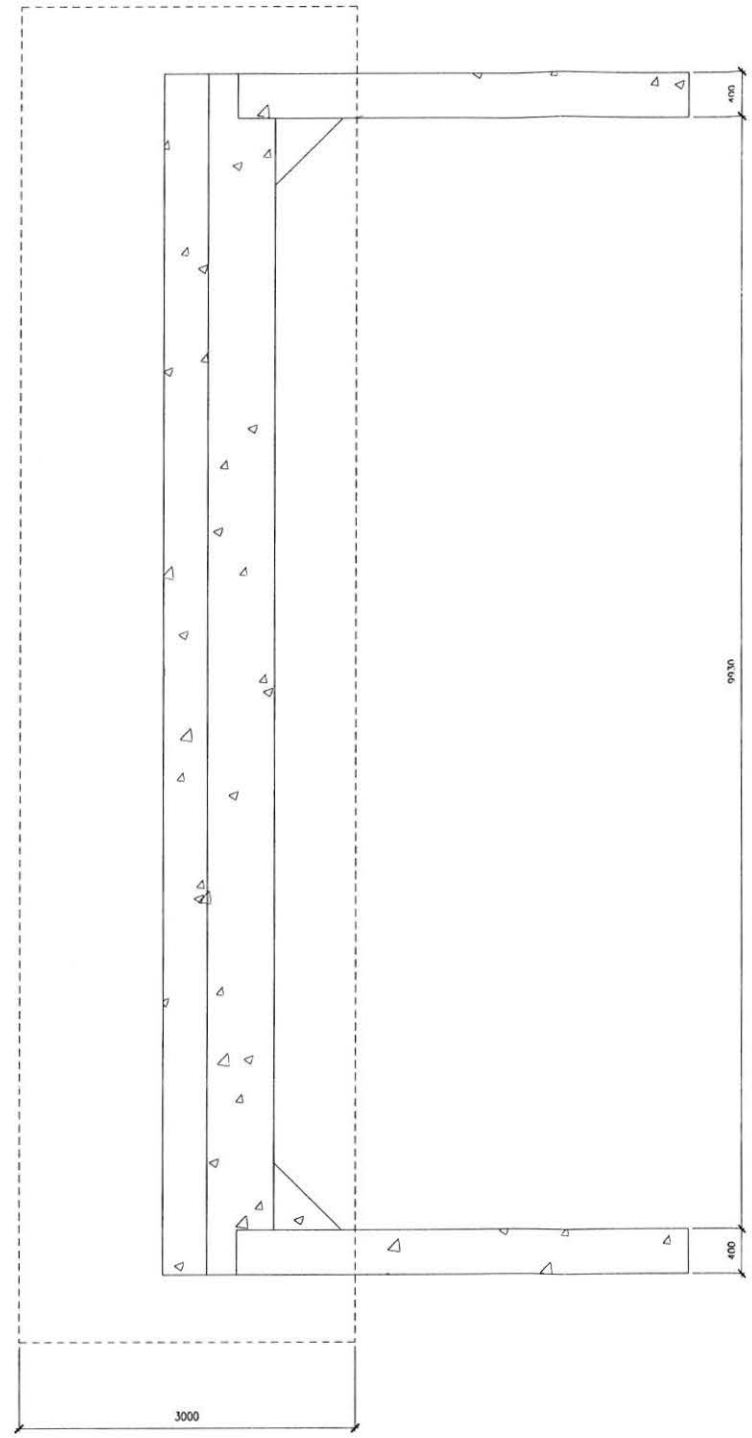
DWG TITLE
ABUTMENT

DATE	: APRIL 2017
SCALE	: AS SHOWN
DESIGNED BY:	W.T.
DRAWN BY:	J.B.
CHECKED BY:	
APPROVED BY:	W.T.
PROJECT NO:	---

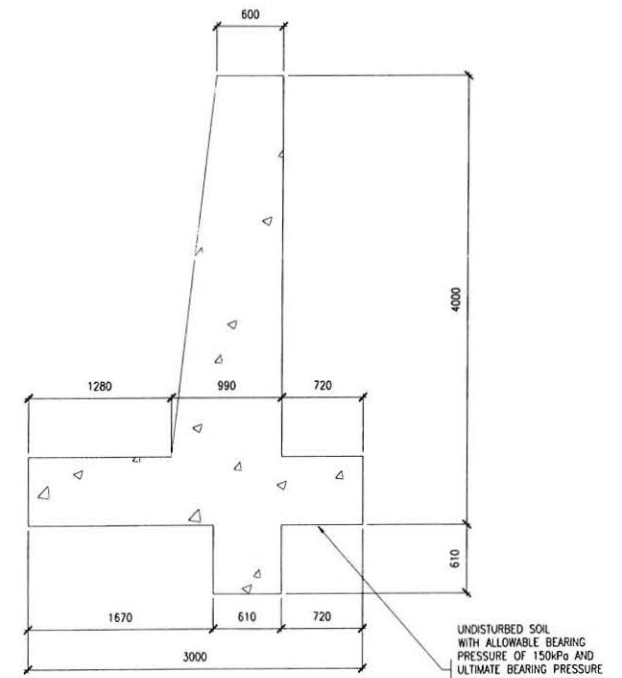
DWG NO
S5



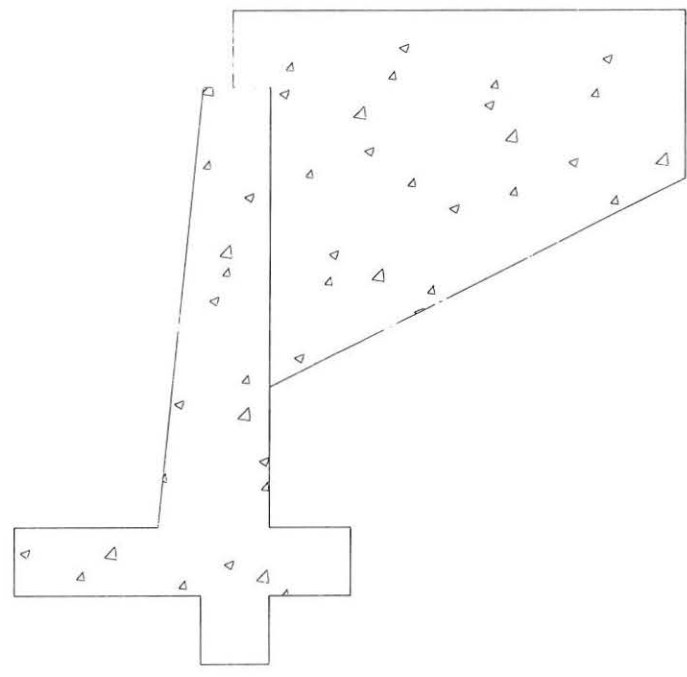
1 ABUTMENT ELEVATION
S5 SCALE: 1:30



4 ABUTMENT WALL PLAN VIEW
S5 SCALE: 1:30

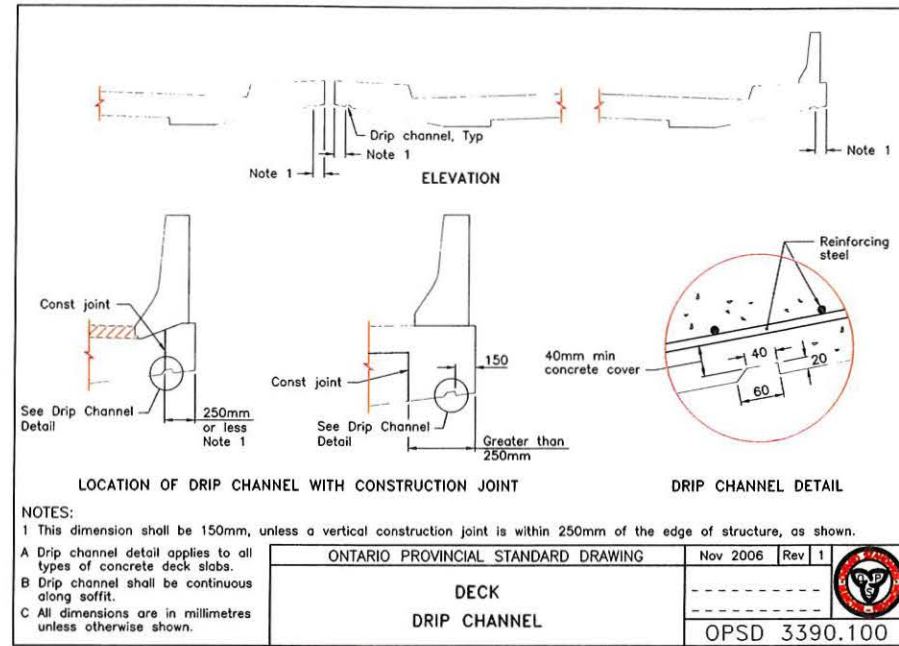


2 ABUTMENT SECTION
S5 SCALE: 1:30

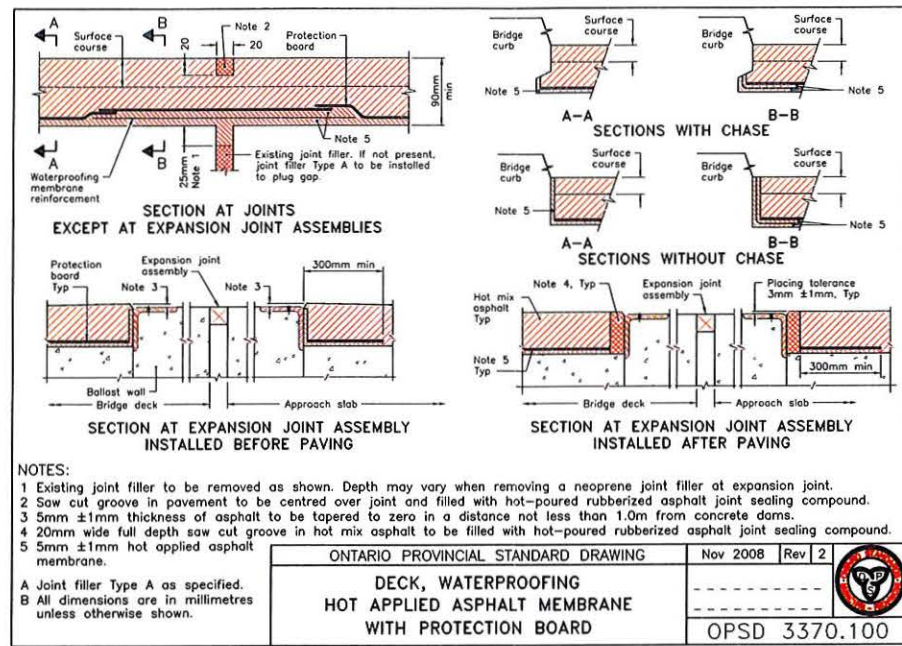


3 ABUTMENT SECTION
S5 SCALE: 1:30

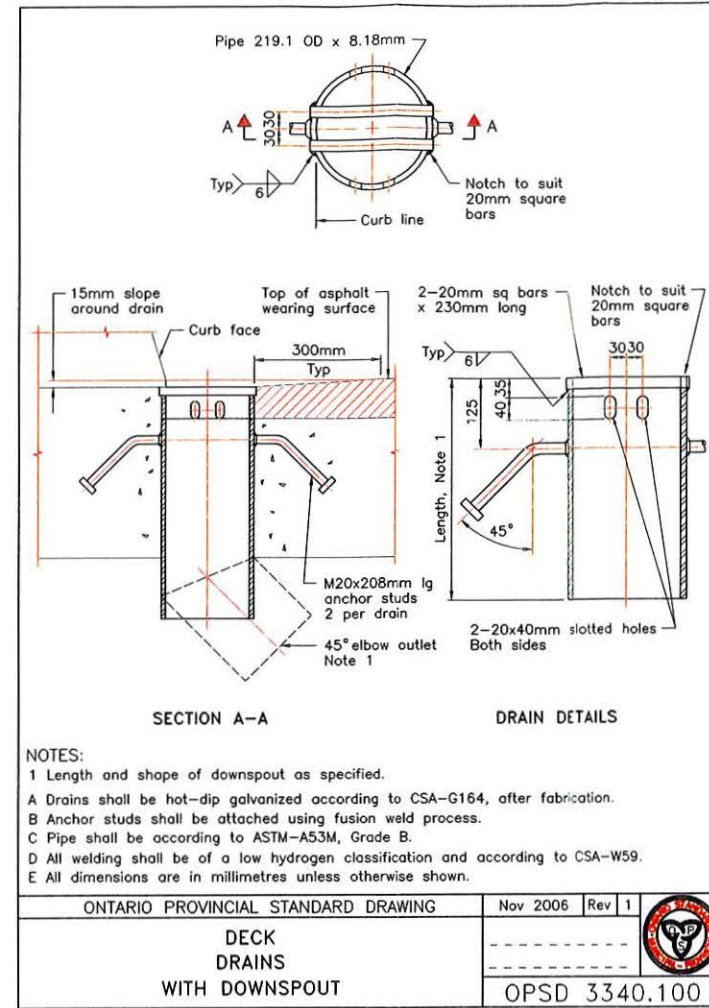
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ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2006	Rev 1	
DECK DRIP CHANNEL			
OPSD 3390.100			



ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2008	Rev 2	
DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD			
OPSD 3370.100			



ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2006	Rev 1	
DECK DRAINS WITH DOWNSPOUT			
OPSD 3340.100			

STANDARD 90° HOOK

STANDARD 180° HOOK

MINIMUM BENDING PIN DIAMETER, D, mm

BAR SIZE	STEEL GRADE	
	400R (1)	400W
10M	70	60
15M	100	90
20M	120	100
25M	150	150
30M	250	200
35M	300	250
45M	450 (1)	400
55M	600 (1)	550

(1) Special fabrication is required for bends exceeding 90° for bars of these sizes and grade.
 (2) For stainless steel, with Fy = 500, use the same D as for 400R.

STANDARD HOOK DIMENSIONS

BAR SIZE	90° HOOKS		180° HOOKS			
	A OR G (mm)		A OR G (mm)		J (mm)	
	400R	400W	400R	400W	400R	
10M	180	180	140	130	90	80
15M	260	250	180	170	130	120
20M	310	300	220	200	160	140
25M	400	400	280	280	200	200
30M	510	490	400	350	310	260
35M	610	590	480	430	370	320
45M	790	770	680	630	540	490
55M	1030	1010	900	850	710	660

NOTE: All Hook Dimensions are according to the CHBDC-2000.

MINIMUM STIRRUP AND TIE HOOK DIMENSIONS

BAR SIZE	BAR DIAM. d _b (mm)	PIN DIAM. D (mm)	90°		135°	
			A OR G (mm)	A OR G (mm)	H (approx.) (mm)	H (approx.) (mm)
10M	11.3	45	100	100	70	70
15M	16.0	65	140	140	100	100
20M	19.5	80	180	175	115	115
25M	25.2	100	230	230	140	140

HOOK DIMENSIONS FOR REINFORCING STEEL BARS

Date: OCT 2013 Rev: 1

SS12-1



APRIL 27, 2017	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
 DESIGN BUILD
 SECOND CONCESSION
 BRIDGE OVER LONG
 MARSH DRAIN
 T11-2017-001

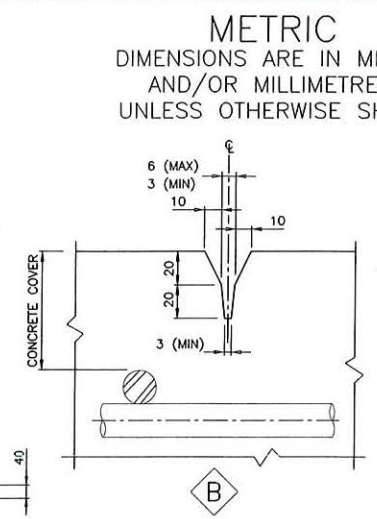
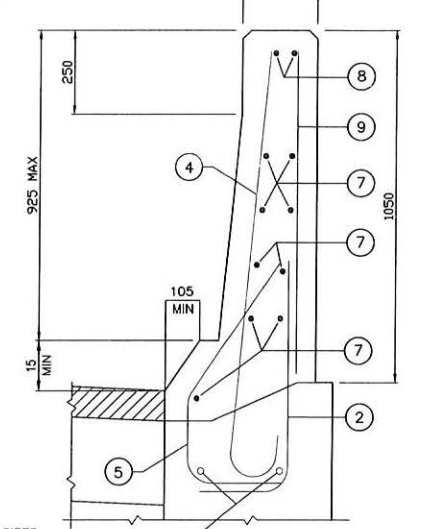
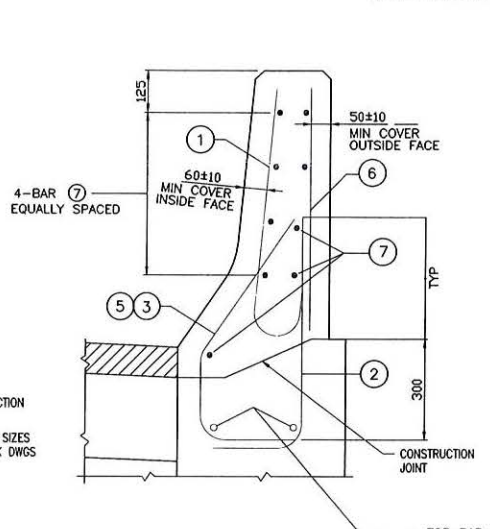
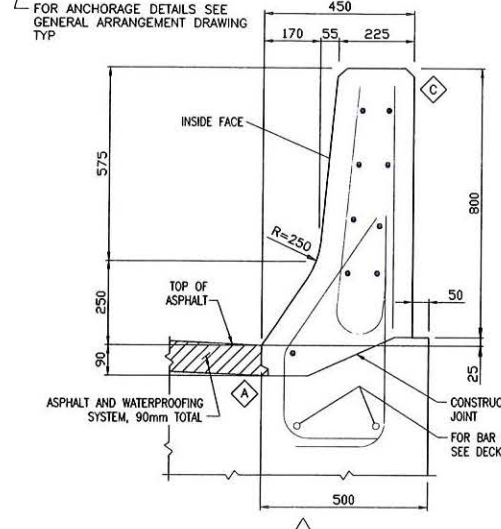
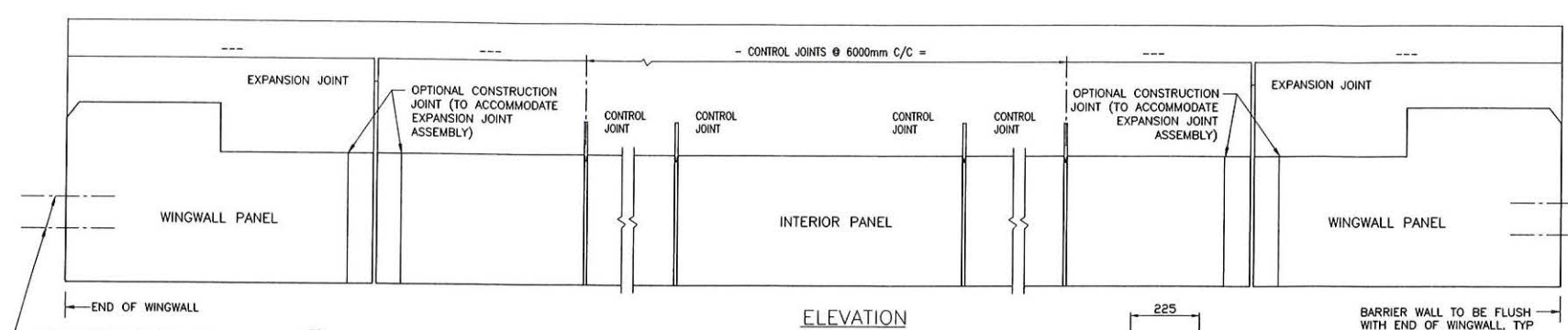
DRG TITLE
 STANDARD DETAILS

DATE	: APRIL 2017
SCALE	: AS SHOWN
DESIGNED BY:	W.T.
DRAWN BY:	J.B.
CHECKED BY:	
APPROVED BY:	W.T.
PROJECT NO:	---

DRG NO
 S7

PRELIMINARY NOT FOR CONSTRUCTION

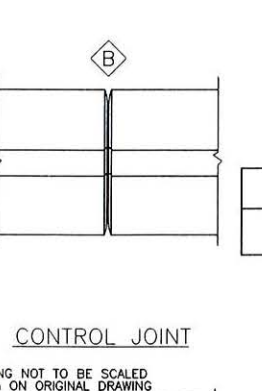
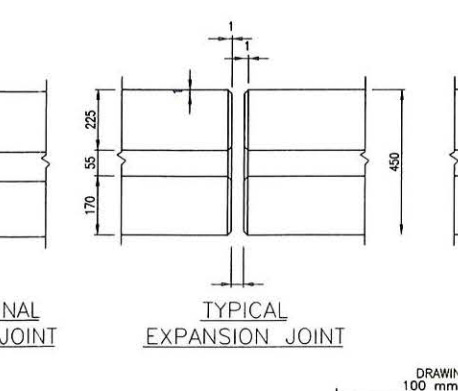
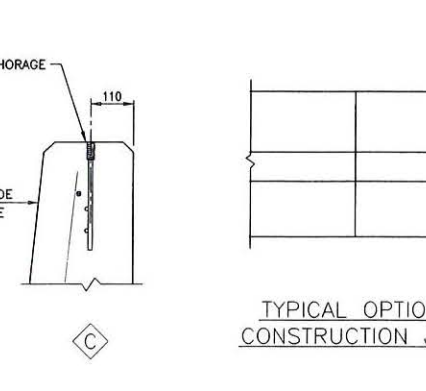
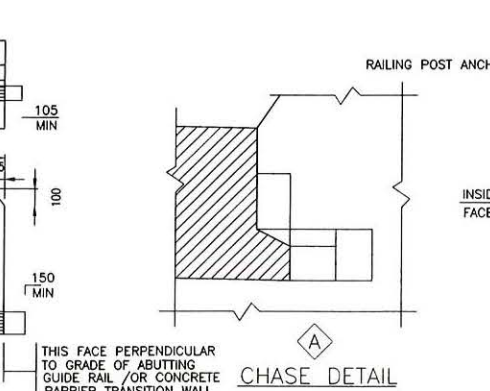
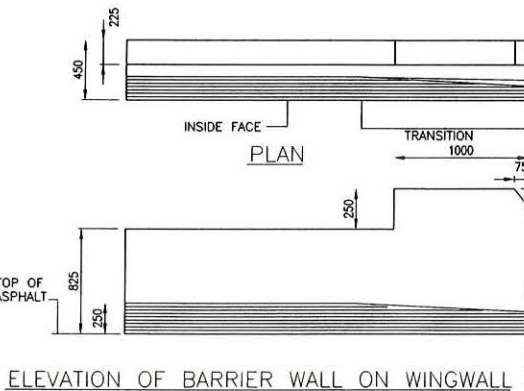
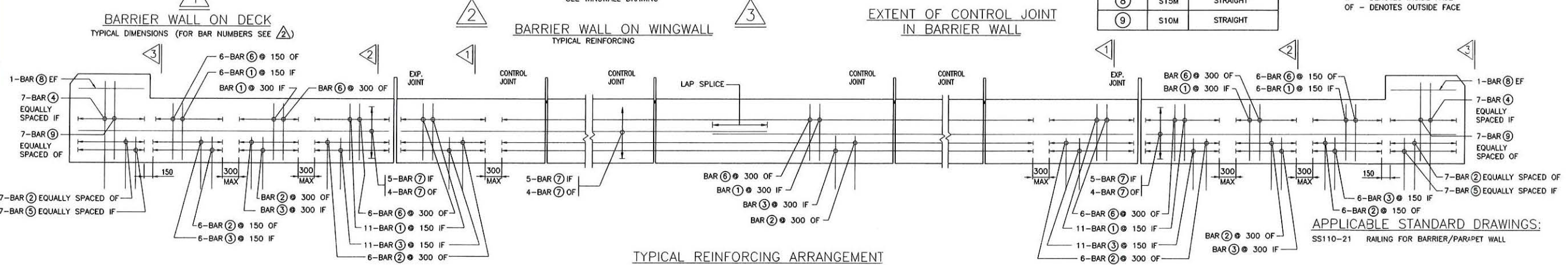
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CONTROL JOINT DETAIL

BAR MARK	SIZE	SHAPE
①	S15M	
②	S10M	
③	S15M	
④	S15M	
⑤	S15M	
⑥	S10M	STRAIGHT
⑦	S15M	STRAIGHT
⑧	S15M	STRAIGHT
⑨	S10M	STRAIGHT

- NOTES:**
- CHASE REQUIRED ON HIGH AND LOW SIDE OF CROSSFALL.
 - CONCRETE COVER TO REINFORCING STEEL 60±10mm EXCEPT AS NOTED.
 - REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 500MPa.
 - BAR LAP SPlice FOR HORIZONTAL REINFORCEMENT MUST NOT LAP THROUGH CONTROL JOINT.
 - MINIMUM BAR LAP SPlice TO BE 550mm, UNLESS OTHERWISE SHOWN.
 - LENGTH OF HORIZONTAL BAR TO SUIT CONTRACTOR'S OPERATIONS. BAR LENGTHS NEED NOT MATCH DISTANCE BETWEEN CONTROL JOINTS.
 - CONTROL JOINT TO BE FORMED.
 - SAWCUTS NOT PERMITTED.
 - CONTROL JOINT FORM HARDWARE NOT TO BE LEFT IN PLACE.
 - OPTIONAL CONSTRUCTION JOINTS TO BE LOCATED WITHIN LIMITS OF CONCRETE DAMS ON DECK OR BALLAST WALL.
- LEGEND:**
 EF - DENOTES EACH FACE
 IF - DENOTES INSIDE FACE
 OF - DENOTES OUTSIDE FACE



(MODIFIED FROM ORIGINAL)
 STANDARD DRAWING SS110-54
 JAN 2012
 BARRIER WALL WITH RAILING - PL2

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DATE	APRIL 27, 2017	CLIENT REVIEW
ISSUED FOR		

PROJECT
 DESIGN BUILD SECOND CONCESSION BRIDGE OVER LONG MARSH DRAIN
 T11-2017-001

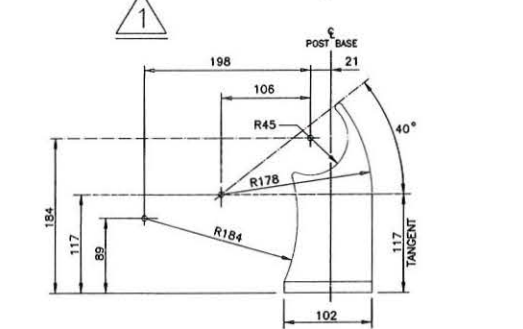
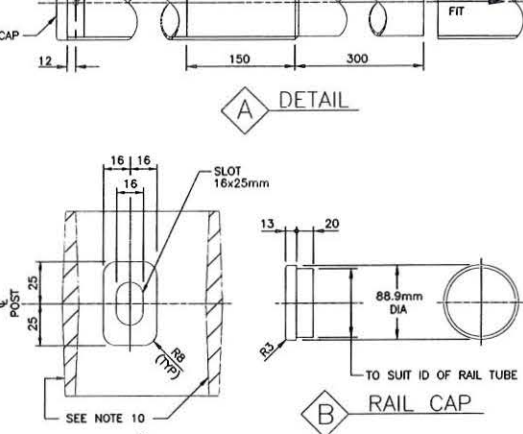
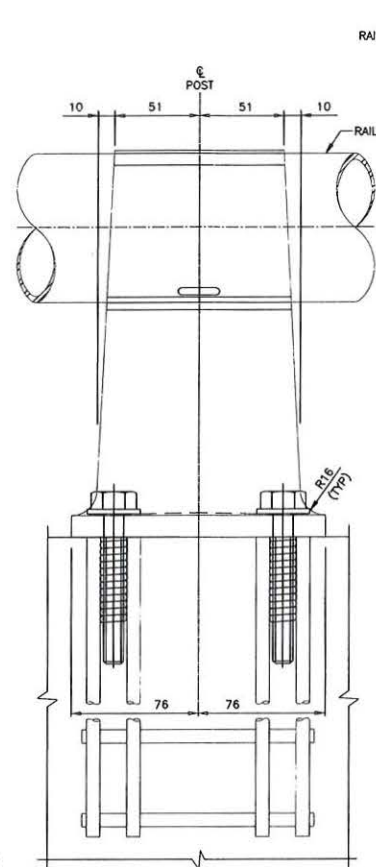
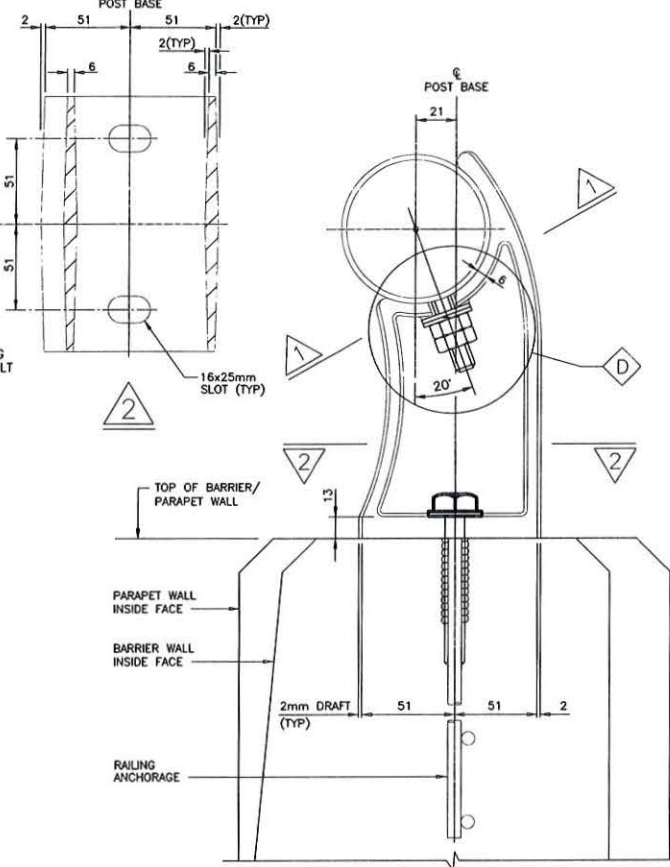
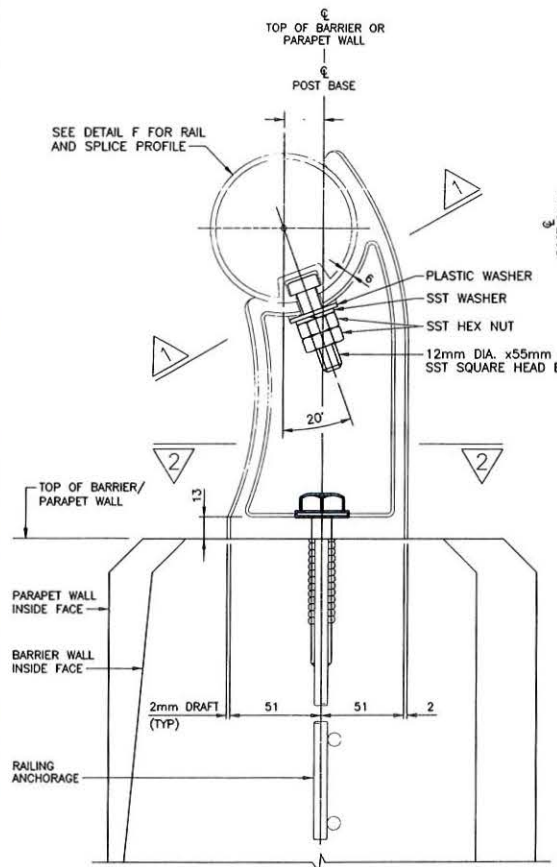
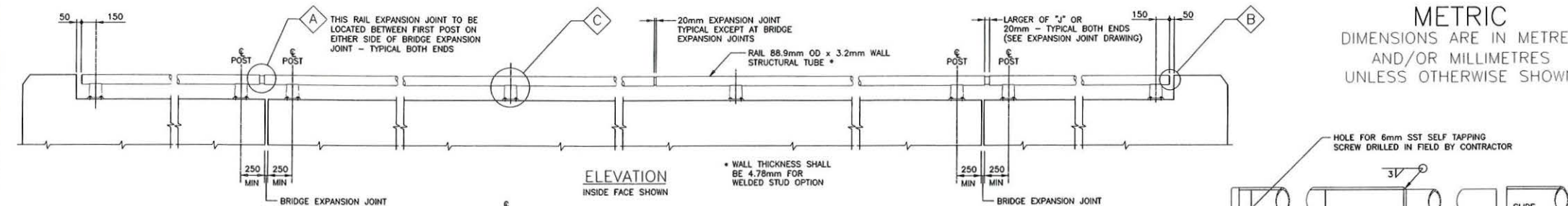
DWG TITLE
 BARRIER WALL

DATE	APRIL 2017
SCALE	AS SHOWN
DESIGNED BY	W.T.
DRAWN BY	J.B.
CHECKED BY	
APPROVED BY	W.T.
PROJECT NO.	

DWG NO
 S8

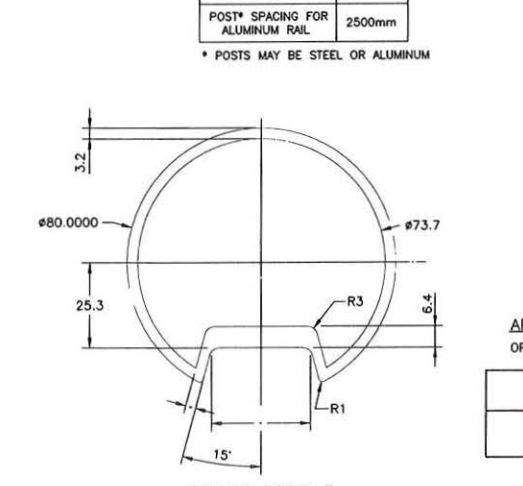
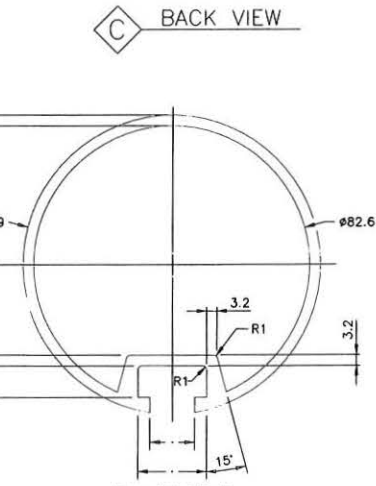
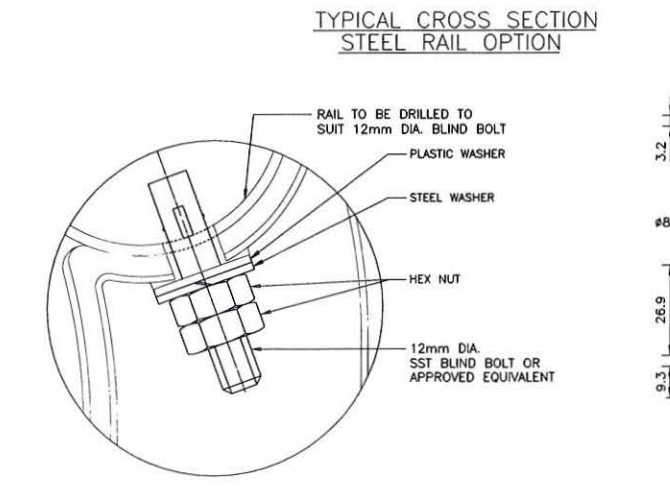
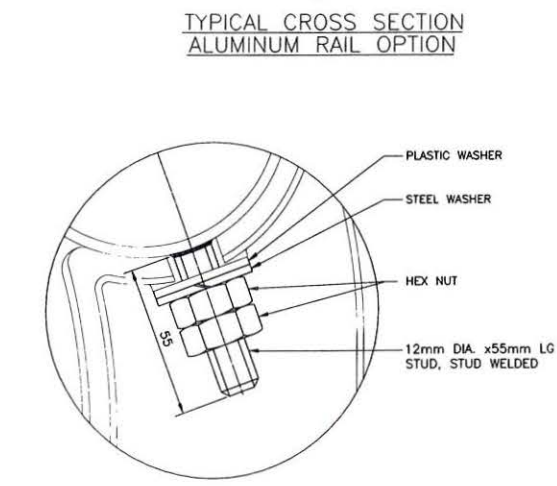
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METRIC
DIMENSIONS ARE IN METRES
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UNLESS OTHERWISE SHOWN



	MAXIMUM
POST* SPACING FOR STEEL RAIL	3500mm
POST* SPACING FOR ALUMINUM RAIL	2500mm

* POSTS MAY BE STEEL OR ALUMINUM



- NOTES:
- ALL NON-STAINLESS STEEL BOLT, NUT AND WASHER FOR FASTENING STEEL RAIL TO POSTS SHALL BE HOT-DIP GALVANIZED.
 - ALL WELDED STUDS OR BLIND BOLTS OR SQUARE HEAD BOLTS SHALL BE INSTALLED AT THE MIDDLE OF THE SLOT AND SHALL BE TIGHTENED TO A CONDITION THAT WILL ALLOW RAIL MOVEMENT.
 - RAILS SHALL BE SUPPLIED IN LENGTHS TO BE ATTACHED TO A MINIMUM OF THREE (3) POSTS EXCEPT WHEN THE WINGWALL LENGTH OF A BRIDGE WITH EXPANSION JOINTS DOES NOT PERMIT THIS. IN THIS CASE, THE RAIL LENGTH CAN BE ATTACHED TO TWO (2) POSTS ON THE WINGWALL.
 - POST AND ANCHORAGES TO INCLUDE ALL BOLTS AND WASHERS.
 - RAILING ANCHORAGE TO BE PLACED PRIOR TO CONCRETING.
 - RAIL SHALL BE PRESENT TO FOLLOW ROAD CURVATURE WHERE RADIUS IS LESS THAN 150m.
 - RAIL POSTS SHALL BE SET PERPENDICULAR TO GRADE
 - WHERE LAYOUT OF POSTS IS NOT SHOWN, POST LOCATION SHALL BE DETERMINED BY THE CONTRACTOR.
 - WHEN CONNECTING TO EXISTING RAILING, RAIL MUST BE MADE CONTINUOUS AND POST SPACING DETERMINED WITH REFERENCE TO EXISTING POSTS.
 - THE COMBINATION OF STEEL RAIL AND ALUMINUM POSTS IS PERMITTED.
-WHEN AN EXTRUDED POST IS USED, THE ALLOY SHALL BE 6061 ALLOY T-6 HEAT TREATED. THE POST DIMENSIONS SHALL NOT BE SMALLER THAN THE DETAILS SHOWN IN THE DRAWING. WALLS OF EXTRUDED POST ARE NOT TAPERED AND SHALL HAVE A UNIFORM THICKNESS OF 8mm MINIMUM.
-WHEN A CAST POST IS USED THE ALLOY SHALL BE A444.0-T4.
 - RAIL CAP MATERIAL SHALL BE STEEL OR ALUMINUM. RAIL CAP CAN BE SAND CAST 356 ALUMINUM ALLOY. RAIL CAP TO INCLUDE SST SELF TAPPING FASTENERS.

- NOTES FOR STEEL RAIL OPTION:
- RAIL SHALL BE STRUCTURAL TUBING GRADE 350W.
 - STEEL IN POST SHALL BE CAST STEEL SUPPLIED IN ACCORDANCE WITH ASTM A27/A27M-08 GRADE 65-35.
 - GALVANIZE RAIL TUBING MATING SURFACES TO HAVE A 2 ±0.5mm GAP ALL ROUND TO ENSURE A SLIDE FIT.
 - FULL THREAD STUDS, WASHERS AND NUTS FOR FASTENING RAIL TO POST SHALL CONFORM TO ASTM A108.
 - POSTS AND RAILS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
 - RAIL MAY BE CUT AS REQUIRED IN FIELD WITH PIPE CUTTERS, CUT TO BE REPAIRED AS SPECIFIED IN OPSS 908.

- NOTES FOR ALUMINUM RAIL OPTION:
- ALUMINUM RAIL SHALL BE 6061 ALLOY T-6 HEAT TREATED.
 - STAINLESS STEEL BOLTS, WASHERS AND LOCK NUTS SHALL BE TYPE 304 ACCORDING TO ASTM A314.

APPLICABLE STANDARD DRAWINGS
OPSD 3419.150 BARRIERS AND RAILINGS - STEEL SINGLE RAILING ANCHORAGE

STANDARD DRAWING MARCH 2015	SS110-21
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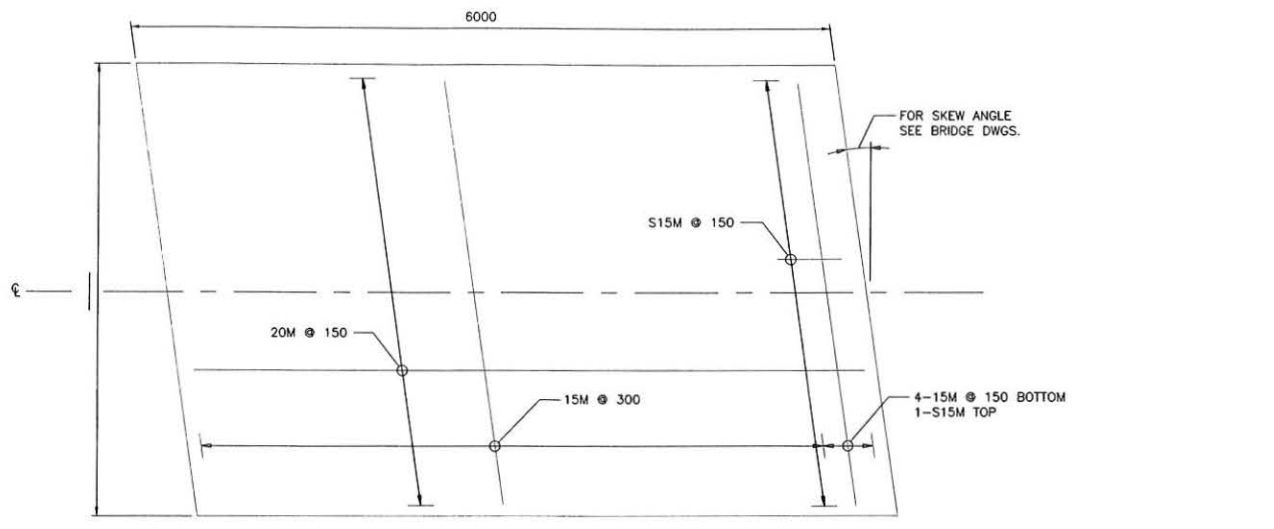
RAILING FOR BARRIER/PARAPET WALL

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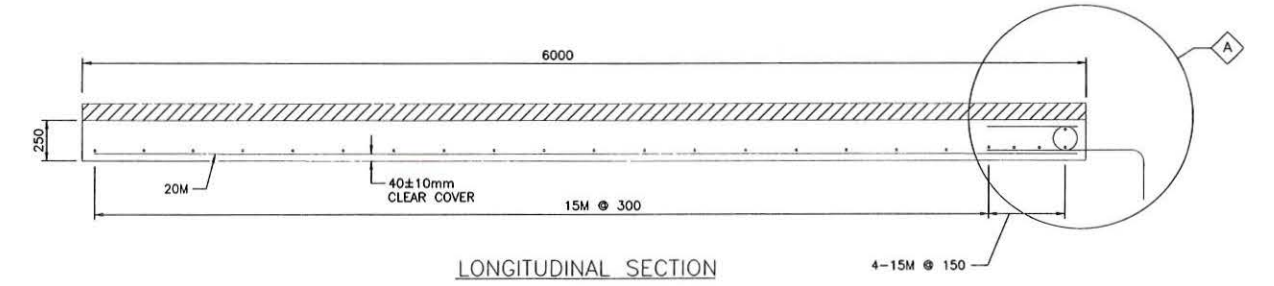
DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

METRIC
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UNLESS OTHERWISE SHOWN

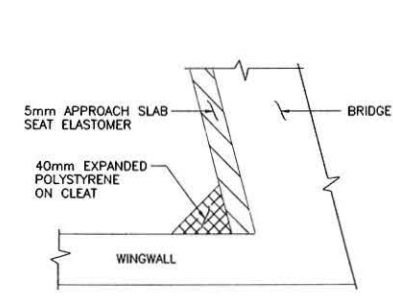
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NOT FOR CONSTRUCTION



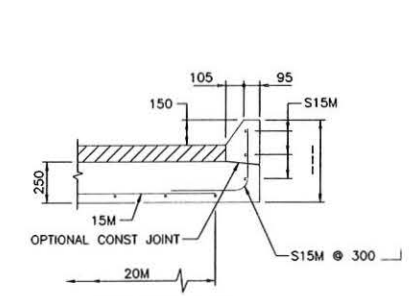
PLAN



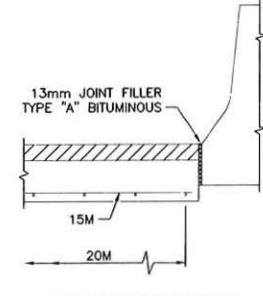
LONGITUDINAL SECTION



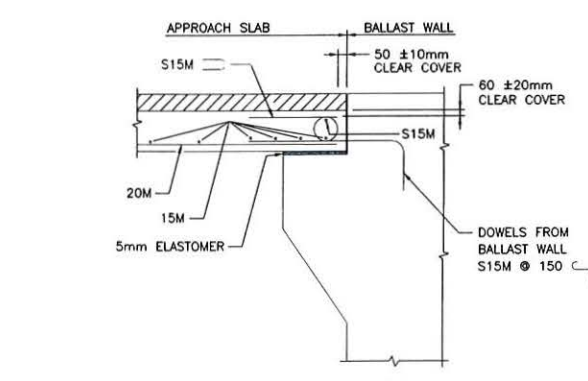
DETAIL AT CLEAT



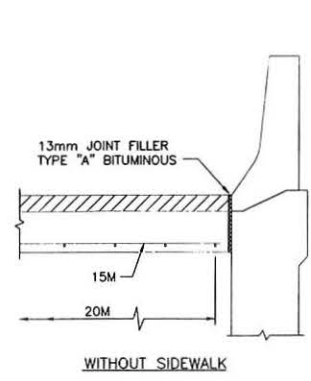
WITHOUT SIDEWALK



WITH ROADSIDE BARRIER



FOR BRIDGES WITH EXPANSION JOINTS



WITHOUT SIDEWALK

SECTION AT WINGWALL

NOTES:

- CLEAR COVER TO REINFORCING STEEL 70 ± 20 mm EXCEPT AS NOTED.
- LAYOUT OF REINFORCING STEEL WILL BE SIMILAR FOR LEFT HAND AND ZERO DEGREE SKEW.
- STAINLESS STEEL BARS SHALL BE TYPE 316 LW OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500MPa. REINFORCING STEEL SHALL BE GRADE 400W.
- WATERPROOFING AT JOINT BETWEEN BRIDGE AND APPROACH SLAB TO BE IN ACCORDANCE WITH OPSD 3370.100.
- WATERPROOFING FOR BRIDGES WITHOUT EXPANSION JOINTS (RIGID FRAMES AND INTEGRAL ABUTMENTS) TO BE IN ACCORDANCE WITH OPSD 3370.101.
- BARS MARKED WITH PREFIX S DENOTE STAINLESS STEEL BARS.

APPLICABLE STANDARD DRAWINGS

- OPSD 3370.100 DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE WITH PROTECTION BOARD
- OPSD 3370.101 DECK, WATERPROOFING HOT APPLIED ASPHALT MEMBRANE AT ACTIVE CRACKS GREATER THAN 2mm WIDE AND CONSTRUCTION JOINTS

STANDARD DRAWING MARCH 2016	SS116-1
6000 mm APPROACH SLAB	

DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

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APRIL 27, 2017	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
DESIGN BUILD
SECOND CONCESSION
BRIDGE OVER LONG
MARSH DRAIN
T11-2017-001

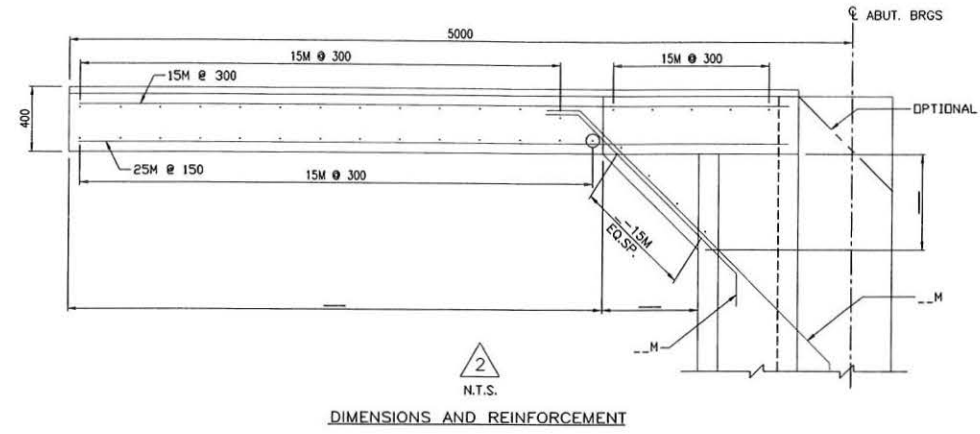
DWG TITLE
APPROACH SLAB

DATE	: APRIL 2017
SCALE	: AS SHOWN
DESIGNED BY:	W.T.
DRAWN BY:	J.B.
CHECKED BY:	
APPROVED BY:	W.T.
PROJECT NO:	---

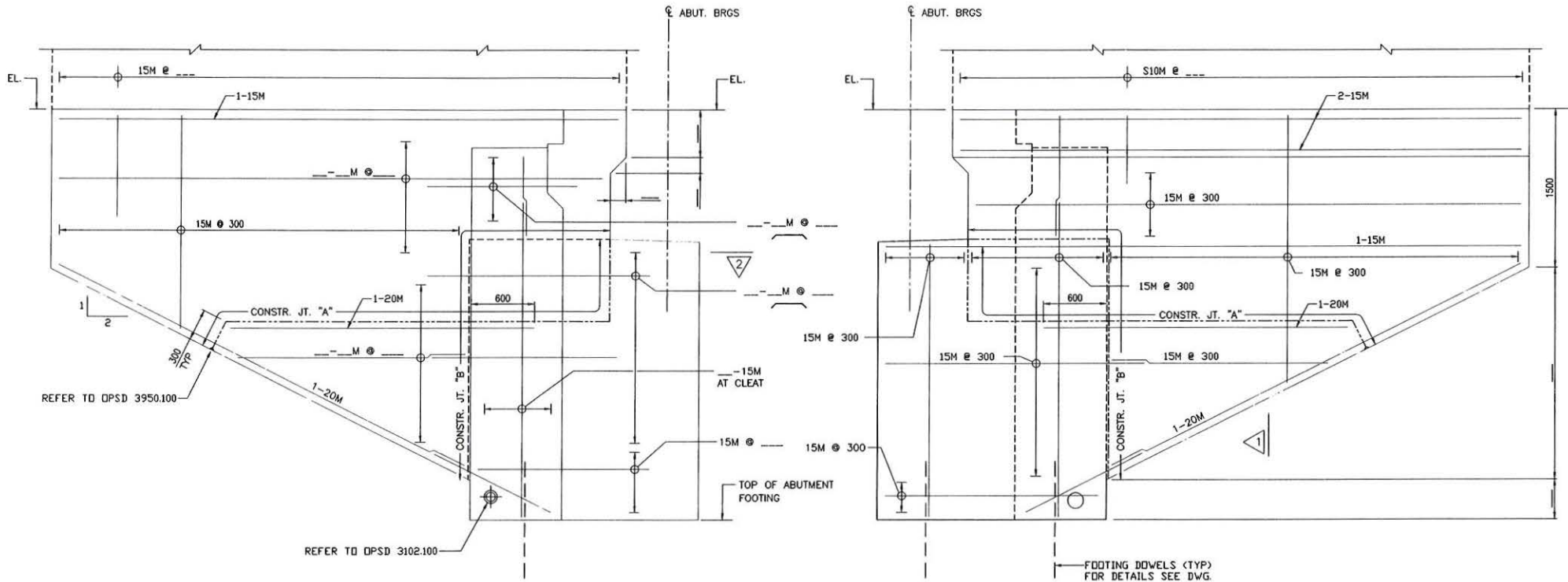
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DIMENSIONS AND REINFORCEMENT
N.T.S.



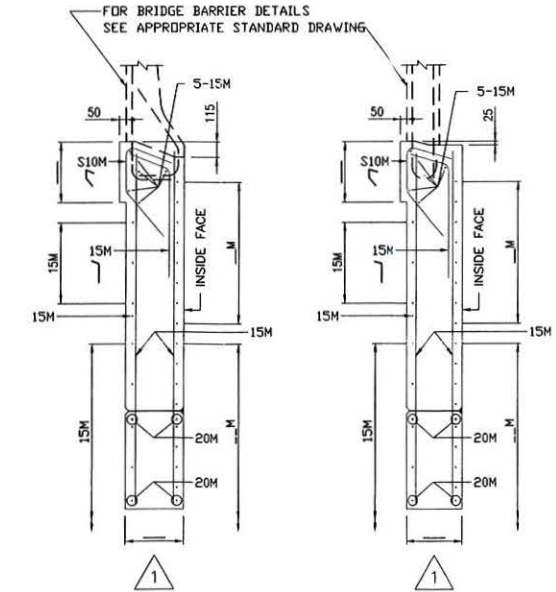
INSIDE FACE
N.T.S.

WINGWALL ELEVATIONS
DIMENSIONS AND REINFORCEMENT

OUTSIDE FACE
N.T.S.

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ABUTMENT AND BARRIER/PARAPET WALL DRAWINGS.
2. TOP OF CLEAT TO BE CAST 35mm BELOW APPROACH SLAB LEDGE.
3. REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE SPECIFIED.
4. STAINLESS STEEL SHALL BE TYPE 316 LN OR DUPLEX 2205 WITH A MINIMUM YIELD STRENGTH OF 500MPA. BARS MARKED WITH PREFIX 'S' DENOTE STAINLESS STEEL.



APPLICABLE STANDARD DRAWINGS
OPSD 3102.100 WALLS ABUTMENT BACKFILL DRAIN
OPSD 3950.100 JOINTS CONCRETE EXPANSION AND CONSTRUCTION ON STRUCTURE

STANDARD DRAWING JAN 2013	SS105-2 WINGWALL DETAILS FOR BRIDGES
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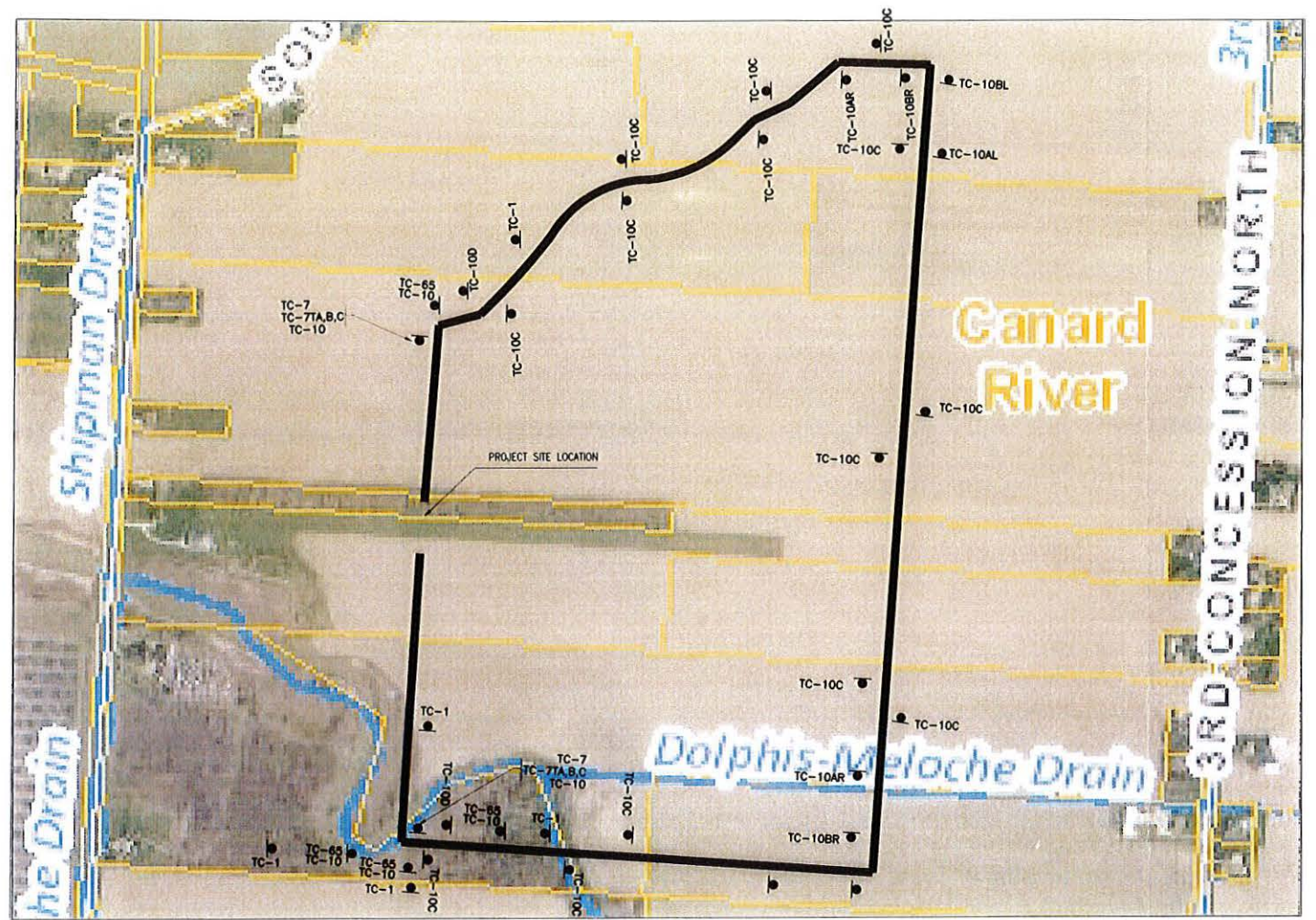
APRIL 27, 2017	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
DESIGN BUILD
SECOND CONCESSION
BRIDGE OVER LONG
MARSH DRAIN
T11-2017-001

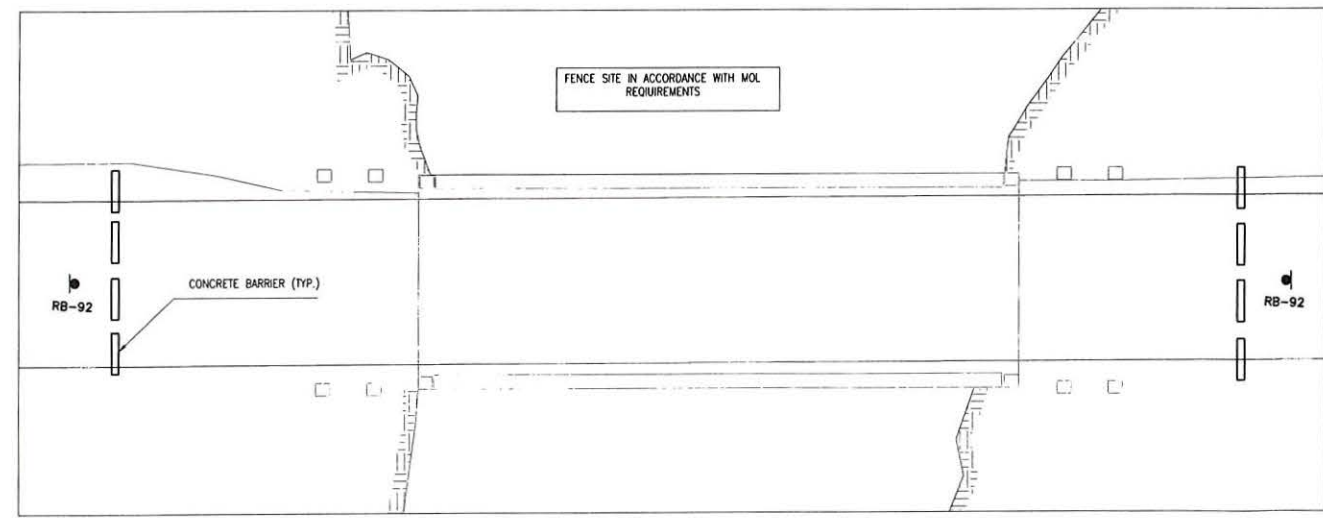
DWG FILE
WING WALL

DATE	: APRIL 2017
SCALE	: AS SHOWN
DESIGNED BY:	W.T.
DRAWN BY:	J.B.
CHECKED BY:	
APPROVED BY:	W.T.
PROJECT NO:	---

DWG NO
S11

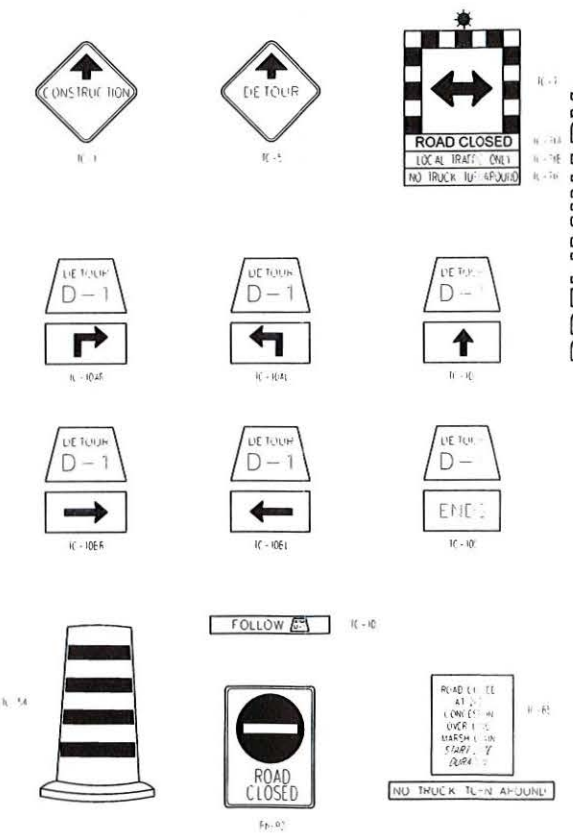


1 MINIMUM SUGGESTED TRAFFIC SIGNAGE
T1 N.T.S.



2 SITE SPECIFIC SIGNAGE (MINIMUM)
T1 N.T.S.

- NOTES:
1. THIS DRAWING IS ONLY INTENDED TO SERVE AS A GUIDE TO THE CONTRACTOR AND IN NO WAY RELIEVES THE CONTRACTOR OF HIS OBLIGATIONS SO SPECIFIED IN THE CONTRACT DOCUMENTS.
 2. ALL SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE ONTARIO MINISTRY OF TRANSPORTATION - ONTARIO TRAFFIC MANUAL - BOOK 7 - TEMPORARY CONDITIONS.
 3. THE CONTRACTOR SHALL PROVIDE ADEQUATE LIGHTING TO ENSURE SAFETY OF THE PUBLIC AND THE SMOOTH FLOW OF TRAFFIC.
 4. ALL SIGNS, BARRICADES AND LIGHTS SHALL BE INSPECTED REGULARLY AND MAINTAINED BY THE CONTRACTOR.
 5. DURING DIFFERENT STAGES OF CONSTRUCTION, MINOR MODIFICATIONS TO DETOUR SIGNING MAY BE NECESSARY.
 6. REFLECTORIZED MATERIALS ARE TO BE USED IN THE MANUFACTURE OF THESE SIGNS IN ACCORDANCE WITH THE MINISTRY OF TRANSPORTATION GUIDELINES.
 7. TRAFFIC CONTROL PERSONS TO BE USED AS NECESSARY.
 8. RB-92 TO BE USED WHEN LOCAL TRAFFIC IS NOT PERMITTED WITHIN THE CURRENT WORK ZONE.



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APRIL 27, 2017	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
DESIGN BUILD
SECOND CONCESSION
BRIDGE OVER LONG
MARSH DRAIN
T11-2017-001

DWG TITLE
MINIMUM SUGGESTED
TRAFFIC SIGNAGE

DATE	: APRIL 2017
SCALE	: AS SHOWN
DESIGNED BY:	W.T.
DRAWN BY:	J.B.
CHECKED BY:	
APPROVED BY:	W.T.
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DWG NO
T1

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Quality Control + Quality Assurance

FRONT will provide systematic QC/QA procedures that are designed to ensure the consistent delivery of demonstrably high quality through-out the construction process.

Clear Roles and Responsibilities

The QC/QA plan provides clear roles to ensure that all stakeholders are engaged in the delivery of a project that meets or exceeds the performance criteria established by the Owner and Engineers. Key Personnel include Geotechnical and Structural Engineers of record, the Project Manager, the Site Supervisor, the Owner and or their agents or delegates.

Objective Quantitative Measurement of Quality

Based on objective and quantitative measures an effective QC/QA program provides a schedule of proven thresholds established through well established engineering best practices and as proven through the application of MTO and or OPSS standards.

Quality Program Documentation

Scheduled measurement of key performance elements are documented and shared with the project team. Where necessary, exceptions and corrective actions required are completed and similiary documented and circulated to the project team.

Programmed Points of Review

QA/QC begins with the site assessment and design drawings which are refined through the pre-construction process.

Programmed points of review include related submittals that may include shop drawings, product specific technical data sheets, and formwork/falsework drawings where required. Programmed material and performance tests are plotted against the construction schedule and include such items as founding soil stability, concrete composition and compressive strength testing, compaction testing etc as determined by each projects specific QC/QA plan.

Field Quality Control Procedures

Field reviews will typically include both independent verification of conditions at key points in the construction process together with daily journals and progress photographs documenting as built elements.



April 2017

**PROPOSAL FOR FOUNDATIONS AND
PAVEMENT ENGINEERING SERVICES**

**Replacement of Second Concession North Bridge
Over Long Marsh Drain
Amherstburg, Ontario**

Submitted to:
Mr. Gary Anderson
Front Construction Industries Inc.
740 Morton Drive, Unit 1
Windsor, Ontario N9J 3V2

PROPOSAL



Proposal Number: P1778759





**SECOND CONCESSION NORTH BRIDGE
OVER LONG MARSH DRAIN
AMHERSTBURG, ONTARIO**

Table of Contents

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1.0 INTRODUCTION

This revised proposal is provided at the request of Mr. Gary Anderson of Front Construction Industries Inc. (Front).

Within this proposal are the assumptions, scope of work, work plans and fees for the requested services to be provided by Golder Associates Ltd. (Golder) as part of the Front design-build team in response to the Corporation of the Town of Amherstburg (Town of Amherstburg) request for proposal "Design-Build Second Concession Bridge over Long Marsh Drain, T11-2017-001", issued March 31, 2017, hereafter referred to as the RFP. The new bridge construction is to achieve two 3.5 metre (m) driving lanes, two 1.5 m shoulder/bike lanes and required side clearances. The clearance under the bridge will not be reduced.

The work described in this proposal will be associated with two phases of this project:

- Phase I: tender period engineering; and
- Phase II: final design and construction services after award.

Foundation design services are required for the replacement of the existing bridge on Concession 2 North over the Long Marsh Drain. The approach road design and construction, driveway entrances, and roadside safety of the bridge structures and approach road are part of the work scope. Geotechnical design criteria requirements specifically mentioned in the RFP include cut and fill slopes, permanent retaining structures, temporary slopes and retaining structures, earthwork, groundwater control and dewatering. Pavement design is a required component of the contract.

Golder has extensive project experience in the near vicinity of the bridge site. This past project experience and associated geotechnical exploration data will be used during the bid-phase of the assignment and to supplement the proposed geotechnical exploration programme detailed in the following section for this specific site.

Following discussion with Front, it is understood that at this time Front is interested only in costing for a geotechnical exploration to evaluate the feasibility of shallow bridge abutment foundations. As such, we have prepared the following scope of work to explore the subsurface soil conditions within the anticipated depth of shallow footings. Should it be determined that deep foundations are required, additional investigation work will be required.

2.0 FOUNDATIONS ENGINEERING

2.1 Work Plan/Scope Summary

The plan and scope of work that is proposed for foundations engineering will consist of the items listed below during Phase I and Phase II of the work.

The Phase I activities will consist of:

- Review of information provided by the Town of Amherstburg, including clarifications to the RFP as may be issued by the Town of Amherstburg.

**SECOND CONCESSION NORTH BRIDGE
OVER LONG MARSH DRAIN
AMHERSTBURG, ONTARIO**

- Provision to Front of foundation design consultation during Front's preparation and pricing of tender designs. This work will be provided on the basis of available subsurface information and our previous experience in the project area.

During the Phase II part of the work, Golder will provide the following services:

- A geotechnical exploration of the bridge replacement site consisting of two sampled boreholes. Given that the existing bridge and roadway approach will be widened, the related influences of the existing bridge and embankment and new foundation and approach widenings will need to be evaluated to minimize adverse influences of settlement associated with the soft soils in the area.

In accordance with this request, a total of two boreholes have been proposed. Based on our knowledge of the subsurface conditions in the area of the site and the overall project requirements, we propose to advance the boreholes on either side of the existing bridge off of the road pavement areas to depths of about 15 m. The actual locations of the boreholes will be dependent on the available access at the time of the investigation and the presence of underground utilities in the immediate vicinity. We will use reasonable care to ensure that the testing activities do not damage any underground services at the subject site. We will also take reasonable care not to damage the grassed area, however, in the course of accessing the boreholes locations for drilling work, some minor rutting may occur.

The field work will be supervised throughout by an experienced geotechnical field technician from our staff under the direction of the geotechnical engineer. Standard penetration testing and soil sampling will be carried out at appropriate intervals of depth in each of the boreholes. In addition, field vane shear testing will be carried out in the boreholes to measure the undrained shear strength of the softer cohesive soils, should they be encountered. The samples will be examined in the field, placed in individual air tight containers and brought to our Windsor office for further examination and routine laboratory testing. Groundwater seepage conditions will be observed and recorded for each borehole. Following completion of drilling, logging and sampling, the boreholes will be backfilled in accordance with current regulations. Following the field work activities, the ground surface will be restored as close to the original condition as practicable. Excess soil cuttings will be generated from the drilling of the boreholes. It has been assumed that excess soil cuttings will remain on the site.

Borehole elevations will be surveyed to a geodetic benchmark to be provided by others; alternatively a local site benchmark will be used to reference the borehole elevations. Horizontal positions of the boreholes will be recorded based on measurements referenced to existing and mapped site features. We have assumed that appropriately-scaled engineering drawings or surveys of the site will be provided for our use in preparing borehole location plans.

- A final foundation exploration and design report will be prepared to document geotechnical recommendations provided for final design and construction as required and in accordance with the terms of reference for RFP T11-2017-001. The report will be prepared in accordance with Golder's practices applied to MTO "high complexity" foundation design reports prepared for this purpose and will be based on the subsurface information investigated by Golder as referenced above in addition to existing information we have in the project area. Golder is approved under the MTO Registry, Appraisal and Qualifications System (RAQS) for providing services under Geotechnical (Structures and Embankments) – High Complexity. This report will

**SECOND CONCESSION NORTH BRIDGE
OVER LONG MARSH DRAIN
AMHERSTBURG, ONTARIO**

also be reviewed by one of Golder's Designated MTO Contacts, as typically required for foundations engineering assignments for MTO. The report will include recommendations related to:

- Summary of site surface and subsurface conditions gathered from the geotechnical exploration;
 - Feasibility of foundation design options for shallow foundations;
 - Geotechnical/foundation engineering parameters for lateral pressure for temporary and permanent structures;
 - Sloping of temporary excavations, embankment stability and roadway protection requirements;
 - Temporary groundwater control and dewatering; and
 - Fill and backfill requirements.
- A total of two days of design-phase foundation design consultation (16 hours) will be provided based on the rates of a senior geotechnical engineer. This level of effort includes consultation with Front and addressing comments or questions of the Town of Amherstburg. Any additional effort required will be billed on a time and materials basis.

Additional services related to construction challenges, change orders or claims will be in addition to the services described and priced in this proposal.

2.2 Foundations Engineering Staff

Technical and project direction for the foundation design aspects of this project will be provided by Dr. Storer Boone, P.Eng. Technical reviews will be conducted by the Designated MTO Contact, Fintan Heffernan, P.Eng. The proposed staff members have provided similar services on multiple design-build engineering projects. Additional field, administrative and laboratory staff will be selected as deemed appropriate by Golder to carry out the work detailed in this proposal. Routine laboratory testing will be carried out at selected Golder laboratories approved by MTO for such testing.

3.0 PAVEMENT ENGINEERING

3.1 Work Plan/Scope Summary

The plan and scope of work that is proposed for pavement engineering will consist of the items listed below during Phase I of the work. Additional details related to the subsurface conditions basis of this report, the subsurface investigations, tender-period conceptual pavement design recommendations and construction monitoring are provided following the summarized work plan below.

The Phase I activities will consist of:

- Review of traffic data provided by the Town of Amherstburg, including clarifications to the RFP as may be issued by the Town of Amherstburg.

**SECOND CONCESSION NORTH BRIDGE
OVER LONG MARSH DRAIN
AMHERSTBURG, ONTARIO**

- Provision to Front of conceptual pavement design recommendations for preparing and pricing tender designs on the basis of the traffic data and clarifications provided by the Town of Amherstburg.
- Telephone consultation related to the above issues during the tender period.

During the Phase II part of the work, Golder will provide the following services:

- Review soils and pavement design reports, contract and as-built drawings (if available), pavement performance records and maintenance history.
- Undertake pavement designs in accordance with the requirements of the RFP.
- Issue Draft Pavement Design Report (PDR), review comments received, incorporate comments in Final PDR and issue Final PDR.

3.2 Pavement Engineering Staff

The project engineer for this assignment will be Mr. Michael E. Beadle, P.Eng. Technical reviews, quality control and audits will be conducted by Dr. Storer J. Boone, P.Eng. The proposed staff members have provided similar services on multiple MTO pavement engineering projects. Additional field, administrative and laboratory staff will be selected, as deemed appropriate by Golder, to carry out the work detailed in this proposal. Routine laboratory testing will be carried out at selected Golder laboratories approved by MTO for such testing.

4.0 GEOTECHNICAL INSPECTIONS AND MATERIALS TESTING

4.1 Scope of Work Summary

A staff member from our Windsor office Construction Inspection and Materials Testing group should be present on site to carry out quality control testing of plastic concrete. During construction, the following inspection and testing tasks have been assumed:

- A total of 2 days of on-site geotechnical technician services, mobilized out of Golder's Windsor office, is planned for this work to address coordinating on-site consulting with engineering staff, foundation excavation inspection, pavement quality assurance testing and in-place density testing of compacted granular fill materials. In addition, approximately 10 per cent of this time has been included for senior review of field reports and telephone consultation during construction. One site visit by a senior geotechnical engineer has also been included for this phase of work.
- Standard Proctor compaction tests and grain size distribution analyses (6 each) have been included in the work plan to characterize granular fill materials that will be used on site, based on the conceptual design.
- Testing of plastic concrete by a CCIL Certified Concrete Testing Technician for the new bridge foundations/abutments, concrete approach slabs, new barrier walls, deck, and wing walls. Testing will include slump, air content and temperature according to OPSS 1350 and testing of each load shall be performed. It is assumed that two sets of cylinders (including referee samples) will be cast during construction

SECOND CONCESSION NORTH BRIDGE OVER LONG MARSH DRAIN AMHERSTBURG, ONTARIO

of the new bridge deck, four sets of cylinders will be cast for construction of the new barrier walls and wingwalls, four sets of cylinders (including referee samples) will be cast for concrete foundations and abutments. A total of four days of field work has been included within this proposal for concrete testing.

- During construction, it will be essential to monitor the placement and compaction of the fill and all pavement layers (HMA, Granular A and Granular B). A geotechnical staff member from our Windsor office should be present on site full time to carry out quality assurance testing and to inspect the subgrade, subbase, base and asphalt layers. It is assumed that two asphalt samples will be obtained for full Marshall Compliance testing. A total of five days of field work has been included within this proposal for the monitoring of fill and asphalt placement and asphalt quality assurance testing.
- Additional visits to the site and additional laboratory testing will be charged on a time-and-materials basis.

4.2 Materials Engineering Staff

Technical reviews, quality control and audits will be conducted by Michael E. Beadle, P.Eng. Additional field, administrative and laboratory staff will be selected, as deemed appropriate by Golder, to carry out the work detailed in this proposal. Golder's laboratory in Whitby, Ontario, has been approved by MTO for "high complexity" and "low complexity" testing on MTO projects.

5.0 SCHEDULE

Golder is prepared to begin work upon receipt of Authorization to Proceed and negotiation of a mutually agreeable contract. All schedules described below are described from the date of the contract agreement between Front and Golder and after permission to enter (obtained by others) is provided. Field exploration activities are expected to commence approximately two weeks after receipt of the authorization to proceed or as otherwise agreed to meet Front's planned schedule. We anticipate that a draft Foundation Design Report will be provided for review within three weeks after completion of field exploration activities.

As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

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Methodology

A thorough schedule forms the framework for an effective methodology. It enumerates tasks in a logical and progressive manner culminating in a quality project delivered in a timely fashion to the satisfaction of all stakeholders.

We typically employ a milestone methodology to the construction process. This same process is employed in the Design Phase. Packed around milestones are the many tasks that need to be completed as precedents to the next series of tasks contributing to the next milestone.

This Projects milestones are as follows:

1. Design Approval
2. Removals Complete
3. Abutments/Foundations Complete
4. Deck Installed
5. Cast in Place Elements Complete
6. Roadway Elements Complete
7. Road Open

Tasks supporting the milestones are as follows:

Geotechnical Investigation	bearing strips
Engineering and Design	granular 'B' infill of abutments
Permits and Approvals	supply install precast deck
Bonds and Insurance	new cast in place parapet walls
Site Mobilization	parapet wall rails
traffic control	coatings to parapet walls
temporary silt barriers	ballast wall/deck ends
protection of utilities	establish roadway/shoulders
temporary shoring and dewatering	deck waterproofing
remove structure & asphalt	HL3 & HL4 Asphalt
working platforms/access	150 mm perforated subdrains
excavation	200mm deck drains (4)
construct approaches	line painting
construct footings	granular 'A' at approaches & shoulders
construct abutments & wingwalls	curbs and curb outlets
Testing / Inspections / QC-QA	rip rap on geotex
reinforcing steel	topsoil, seed restoration

ID	Task Name	Duration	Start	Finish	Jul 16, '17	Jul 23, '17	Jul 30, '17	Aug 6, '17	Aug 13, '17	Aug 20, '17	Aug 27, '17	Sep 3, '17	Sep 10, '17	Sep 17, '17	Sep 24, '17	Oct 1, '17	Oct 8, '17	Oct 15, '17	Oct 22, '17	Oct 29, '17	Nov 5, '17	Nov 12, '17	Nov 19, '17
1																							
2																							
3																							
4																							
5																							
6	Schedule 1	0 days	Thu 7/27/17	Thu 7/27/17																			
7	Administrative & Design Schedule	71 days	Thu 7/27/17	Thu 11/2/17																			
8																							
9	Award / Letter of Intent	1 day	Thu 7/27/17	Thu 7/27/17																			
10																							
11	Contract Documentation (Bonds & Insurances)	2 wks	Thu 7/27/17	Wed 8/9/17																			
12																							
13	Project Initiation Meeting (QC/QA Plan & Schedule)	1 day	Mon 7/31/17	Mon 7/31/17																			
14																							
15	Preliminary Applications (MOE, ERCA, DOF, Transport)	5 wks	Tue 8/1/17	Mon 9/4/17																			
16																							
17	Geotechnical Investigations and Reporting	4 wks	Tue 8/1/17	Mon 8/28/17																			
18																							
19	Structure Removal & Submittals (Reference Schedule 2)	1 wk	Mon 8/21/17	Fri 8/25/17																			
20																							
21	60% Design Completion Review with Submittals	1 wk	Mon 8/28/17	Fri 9/1/17																			
22																							
23	90 % Design Completion Review with Submittals	1 wk	Mon 9/4/17	Fri 9/8/17																			
24																							
25	Topographical Survey	4 days	Mon 8/14/17	Thu 8/17/17																			
26																							
27	Utilities Locates, coordination & Review	2 wks	Mon 8/14/17	Fri 8/25/17																			
28																							
29	Preliminary Design - Construction Drawings	4 wks	Mon 9/11/17	Fri 10/6/17																			
30																							
31	Design Review Meeting	1 day	Mon 10/9/17	Mon 10/9/17																			
32																							
33	Final Design Approvals with (MOE, ERCA, DOF, Transp)	2 wks	Tue 10/10/17	Mon 10/23/17																			
34																							
35	Issuance of "For Construction Drawings"	2 wks	Mon 10/16/17	Fri 10/27/17																			
36																							
37	Develop Construction Schedule	3 days	Mon 10/30/17	Wed 11/1/17																			
38																							
39	Pre-Construction Meeting Readiness	1 day	Thu 11/2/17	Thu 11/2/17																			

Project: Long Marsh Drain Bridge
Date: Wed 4/26/17

Task Progress Summary External Tasks Deadline
 Split Milestone Project Summary External Milestone

APPENDIX E

SCHEDULE OF PRICING

**DESIGN – BUILD
SECOND CONCESSION BRIDGE
OVER LONG MARSH DRAIN**

The price(s) quoted include all duty, taxes (other than HST), customs, clearances, cartage, freight and all other charges now or hereafter imposed or in force and is a **Total Firm Price**. Harmonized Sales Tax (HST) to be extra. Harmonized Sales Tax (HST) must be shown separately on invoicing.

Basis of award of this RFP is subject to budget availability. The Town is seeking pricing as follows:

<u>DESIGN – BUILD SECOND CONCESSION BRIDGE OVER LONG MARSH DRAIN</u>	
All relevant costs for a total complete price.	\$ <u>1,162,600.00</u> Total

Proponents are to incorporate this page into their proposal, provided in Envelope 2.



**Second Concession Bridge over
Long Marsh Drain**
The Corporation of the Town of Amherstburg
Haddad Morgan Associates

Invoice # 1801-1
HST no. 89551 8082 RT

Contractor: **FRONT construction industries inc.**

Date: March 31, 2018

Contract Date: June 26, 2017

Progress Billing for Work Completed Through March 2018

	units	estimated Quantity	unit price	total price	actual units or % to date	total amount to date	Less amount prev.period	Amount this period	Less 10% Holdback	Current Amount Due
Section 'A' - Pre-construction Activities										
1	Geotechnical Investigation	LS	--	--	\$24,000.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
2	Engineering and Design	LS	--	--	\$39,000.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
3	Permits and Approvals	LS	--	--	\$12,000.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
4	Bonds and Insurance	LS	--	--	\$21,000.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
Section "B" - Bridge Construction										
5	Mobilization/Demobilization	LS	--	--	\$18,930.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
6	traffic control	LS	--	--	\$15,300.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
7	temporary silt barriers	LS	--	--	\$5,300.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
8	protection of utilities	LS	--	--	\$3,400.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
9	temporary shoring and dewatering	LS	--	--	\$96,755.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
10	remove structure & asphalt	LS	--	--	\$88,600.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
11	working platforms/access	LS	--	--	\$3,000.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
12	excavation	LS	--	--	\$46,900.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
13	construct approaches	LS	--	--	\$34,800.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
14	construct footings	LS	--	--	\$47,900.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
15	construct abutments & wingwalls	LS	--	--	\$63,700.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
16	reinforcing steel	LS	--	--	\$31,800.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
17	bearing strips	LS	--	--	\$4,800.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
18	supply install precast deck	LS	--	--	\$340,500.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
19	ballast wall/deck ends	LS	--	--	\$17,378.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
20	establish roadway/shoulders	LS	--	--	\$17,060.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
21	deck waterproofing	LS	--	--	\$9,967.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
22	HL3 & HL4 Asphalt	LS	--	--	\$49,840.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
23	150 mm perforated subdrains	LS	--	--	\$4,421.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
24	200mm deck drains (4)	LS	--	--	\$3,140.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
25	granular 'A' at approaches & shoulders	LS	--	--	\$12,200.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
26	granular 'B' infill of abutments	LS	--	--	\$14,323.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
27	new cast in place parapet walls	LS	--	--	\$32,087.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
28	parapet wall rails	LS	--	--	\$9,633.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
29	coatings to parapet walls	LS	--	--	\$5,426.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00
30	steel beam guiderails	LS	--	--	\$22,000.00	0.00%	\$0.00	\$0.00	\$0.00	\$0.00

continued...

