



TENDER DOCUMENTS

Causley Street Bridge Rehabilitation

Bridge Rehabilitation and Roadworks

Town of Blind River

Contract No. 2018-01

April 2018



Tender / Contract Documents

1.	Instructions for Tenderers (White Pages)
2.	Form of Tender (Blue Pages)
3.	The Standard Form of Agreement Between Contractor and Owner (Pink Pages)
4.	The General Conditions of Contract (Green Pages)
5.	Special Provisions (Yellow Pages)
6.	Drawings



Instructions for Tenderers

1. Delivery and Opening of Tenders

Sealed Tenders, marked with the name of the project and contract number, will be received by the Clerk Administrator, Town of Blind River, 11 Hudson Street, Blind River, Ontario, P0R 1B0 up to 2:00 pm on Friday, May 18, 2018.

Tenders will be opened, in private, as soon after the Tender closing time as is practical. The Owner may accept any Tender received and is not obliged to accept the lowest or any other tender, and may, in his review of Tenders, consider the exclusion of any item or group of items. No bidder shall have any claim against the Owner or the Engineer, as a result of the acceptance, or otherwise, of any or no tender.

2. Form of Tender

All Tenders must be made and submitted on the "form of tender" included herein, enclosed in a sealed envelope, clearly noting on the envelope, the name and address of the Tenderer and the name of the project. The form of tender should not be separated nor removed from this volume. A tender submission in electronic form will be considered acceptable, provided a hard copy of the submission is submitted to the Engineer within 24 hours of the date for receipt of tenders. In the case of any discrepancy between the two submissions, the hard copy will govern. The onus lies with the bidder to ensure his electronic has been satisfactorily received.

The Tenderer shall give the total Tender price in both words and figures, and shall sign and affix the Company Seal on the pages indicated.

The submission of a tender in electronic form is deemed and agreed by the bidder to include submission of the complete tender document. If only the Form of Tender is submitted by the bidder, it is agreed and accepted by the bidder that the whole document has been deemed to have been submitted

3. Discrepancies

If the Tenderer finds discrepancies, errors within and/or omissions from the Contract Documents, or if he is in doubt as to their meaning, he shall, not later than five (5) working days before the closing date for Tender, notify the Engineer, who may issue an addendum to all who have taken out tender documents. Neither the Owner nor the Engineer will make any oral interpretations of the meaning of the contract documents, unless considered minor in nature at the discretion of the Engineer or Owner.

Tenders submitted shall reflect addenda issued during the tendering period and sign back and return with his bid a copy of each addendum.



4. Acceptance of Tenders

When a tender is accepted by the Owner, a Contract is thereby made between the Owner and the Tenderer.

Once a Contract is made, any bonds required herein, in a form satisfactory to the Owner, must be provided to the Owner or Engineer within five (5) working days after issuance of written notification of the acceptance of the Tender by the Owner (or the Engineer, on his behalf).

5. Examination of the Site

The Tenderer is instructed to make special note of the requirements with respect to the conditions to be encountered on the site. The tendered prices shall include all work required as a result of the site conditions existing at the close of tenders. The Contractor shall inspect the site prior to submitting his tender and shall satisfy himself as to the nature and extent of the work, the accuracy of the drawings, and all risks and hazards bearing upon the work. In submitting his tender, the contractor acknowledges that all such risks and hazards have been allowed for in the tender sum.

A geotechnical report may be included in the tender document. However, neither the Owner nor Engineer in any way guarantees the accuracy or completeness of such report.

Should the Tenderer wish to perform any test hole operations or excavation, he is instructed to coordinate this with, and seek approval from, the Engineer as only one set of tests will be allowed. Any tenderer wishing to participate in this test must make proper arrangements through the Engineer with the Tenderer wishing to perform the tests. The Owner or Engineer will not be responsible for any costs related to any such test hole excavations.

6. Construction Access

The construction access shall be as shown on the drawings through the proposed road allowances and with the appropriate mud mat installation. Should the Contractor wish to obtain access from any other location, he assumes sole responsibility for making such arrangements.

7. Taxes

Exclude Harmonized Sales Tax (HST) from all unit prices and total tendered price.

8. Agreement to Bond

The Tenderer shall provide with the tender a written "agreement to bond" from a surety company, stating that if his tender is accepted he will, if required by the Owner in his sole discretion, obtain a performance bond, and a labour and material bond, each for 100% of the estimated contract price, which shall include the contingency allowance stipulated.



Bonds shall remain in effect during the construction and until the end of any and all guarantee periods.

9. Performance Bond, Labour & Material Bonds and Insurance

A performance bond and labour & material bond, acceptable to the Owner, for the performance and subsequent maintenance of the works shall be deposited with the Owner within five (5) working days after acceptance of the Tender by the Owner, if so requested by the Owner.

The Contractor shall be required to provide and maintain Insurance in accordance with of the agreement between contractor and Owner and of the general conditions herein, and provide written proof of it to both the Owner and Engineer prior to commencement of the Work.

10. Contingency Items

The Tenderer must bid the items shown under provisional and contingency items, if any, and construct the work under these items at the prices bid, if and when directed to by the Engineer, or his representative.

11. Guaranteed Rates

The Tenderer is advised that the unit rates and subsequent tendered amounts provided are to be guaranteed for a period of one hundred twenty (120) calendar days from the closing date of the Tender.

12. Agreement

The Tenderer agrees, that if requested to do so by the Owner or Engineer, he will execute and return to the Engineer the Agreement in the form bound herein within ten (10) working days after being so requested, in triplicate or other such quantity as specified within the agreement between Contractor and Owner.

13. Schedule

The Agreement provides that the Contractor submit a construction schedule on award of the contract.

Tenderers may also be requested to provide a proposed construction schedule clearly showing, in detail, how the Contractor intends to satisfy the schedule set out in the tender document. The schedule submission shall include all major tasks and assigned equipment, to the satisfaction of the



engineer. Such a satisfactory schedule submission and its acceptance by the owner may be a condition of the award of the contract.

14. Inquiries During Tendering

The Tenderer is advised that inquiries regarding the interpretation of the plans or specifications shall be directed to the Engineer, GHD, and the people noted below:

GHD

Dennis Baxter, P. Eng.

Senior Manager, Bridges

T + 1 905 429 5010

F + 1 905 432 7877

E dennis.baxter@ghd.com

Town of Blind River

Kathryn Scott

Clerk Administrator

T + 1 705 356 2251 ext 213

F + 1 705 356 7343

E katie.scott@blindriver.ca



**FORM OF TENDER
Causley Street Bridge
Rehabilitation**

**Town of Blind River
Contract No. 2018-01**

This Tender is submitted by:

Contractor Name
Street Address
City, Prov PC

WE, the undersigned Contractor, HEREBY DECLARE that no person, firm or corporation other than the one whose signature or the signature of whose proper officers and the seal is or are attached below, has any interest in this Tender or in the Contract proposed to be taken.

WE FURTHER DECLARE that this Tender is made without any connection, knowledge, comparison of figures or arrangement with any other company, firm or person making a Tender for the same work and is in all respects fair and without collusion or fraud.

WE FURTHER DECLARE that we have carefully examined the locality and site of the proposed works, the agreement and all documents of the Contracts.

WE hereby tender and agree to provide all labour, materials, equipment and services, and to perform in a substantial and workmanlike manner all of the work required by and in strict accordance with the contract documents for the prices indicated in the Form of Tender, subject to additions, deductions, adjustments and reductions as provided in the Contract. We further agree that the provisional item unit rates and schedule item rates indicated in the Form of Tender shall be used as a basis for computing the value of work performed, be it more than or less than the estimated quantities shown herein.



FORM OF TENDER
Causley Street Bridge
Rehabilitation

Town of Blind River
Contract No. 2018-01

Section	Description	Tendered Amount
I	Traffic Control	\$
II	Roadworks	\$
III	Structural	\$
	General Items	\$
		Sub-Total
		\$
	10% Contingency Allowance	\$
		Sub-Total
		\$
		Add: 13% HST
		\$
		Grand Total
		\$

Total Tendered in Words (Incl. HST)

(HST Registration No.)

(Contractor)

(Date)

(Signature and Seal)

E:\2017\2017 Projects\Blind River - Causley St Bridge 11131610\Tender Documents\2018 Tender\04 Form of Tender.xlsx]Form of Tender

Section I - Traffic Control

Item	Spec No.	Description	Est. Qty.	Unit	Unit Rate	Tendered Amount
1.01	OPSS 706, SP	Temporary Traffic Control Signs	1.0	ls	\$	\$
1.02	OPSS 710, SP	Pavement Marking Obliterating - By Abrasive Blasting	7,265.0	m	\$	\$
1.03	OPSS 710, SP	Pavement Marking, Temporary, Paint - Fluorescent Orange	4,475.0	m	\$	\$
1.04	OPSS 723	Energy Attenuator - Temporary, Narrow	1.0	ea	\$	\$
1.05	OPSS 723	Energy Attenuator - Relocation, Narrow	1.0	ea	\$	\$
1.06	OPSS 741	Temporary Concrete Barrier	124.0	m	\$	\$
1.07	OPSS 741	Temporary Concrete Barrier, Relocation	124.0	m	\$	\$
1.08	OPSS 741	Temporary Concrete Barrier Restraint System - Pinned	64.0	m	\$	\$
1.09	OPSS 741	Temporary Concrete Barrier Restraint System - Bolted	90.0	m	\$	\$
Sub-Total						
Section I - Traffic Control						\$

Section II - Roadworks

Item	Spec No.	Description	Est. Qty.	Unit	Unit Rate	Tendered Amount
2.01	OPSS 206	Earth Excavation, Grading	300.0	m ³	\$	\$
2.02	OPSS 308	Tack Coat	1,618.0	m ²	\$	\$
2.03	OPSS 313, SP	Hot Mix Asphalt Miscellaneous	273.0	m ²	\$	\$
2.04	OPSS 313	Superpave 12.5	263.0	tonne	\$	\$
2.05	OPSS 313, SP	Temporary Hot Mix Pavement	375.0	tonne	\$	\$
2.06	OPSS 314	Granular A	180.0	tonne	\$	\$
2.07	OPSS 405, SP	Pipe Subdrain	34.0	m	\$	\$
2.08	OPSS 353	Concrete Curb and Gutter	184.0	m	\$	\$
2.09	OPSS 400	Frames and Grates - Supply and Install	2.0	ea	\$	\$

Section II - Roadworks

Item	Spec No.	Description	Est. Qty.	Unit	Unit Rate	Tendered Amount
2.10	OPSS 405	Catch Basin	1.0	ea	\$	\$
2.11	OPSS 410	300 mm PVC Pipe Sewer	4.0	m	\$	\$
2.12	OPSS 510	Removal of Asphalt Pavement, Full Depth	1,467.0	m ²	\$	\$
2.13	OPSS 510	Removal of Asphalt Pavement from Concrete Surfaces	576.0	m ²	\$	\$
2.14	OPSS 510	Removal of Asphalt Pavement, Partial Depth	739.0	m ²	\$	\$
2.15	OPSS 510	Removal of Concrete Curb and Gutter	184.0	m	\$	\$
2.16	OPSS 510, SP	Removal of Catch Basin	2.0	ea	\$	\$
2.17	OPSS 510	Removal of Pipes and Culverts	2.0	m	\$	\$
2.18	OPSS 510	Removal of Steel Beam Guide Rail	162.0	m	\$	\$
2.19	OPSS 704, SP	Adjusting and/or Rebuilding Catch Basins	2.0	ea	\$	\$
2.20	OPSS 710, SP	Pavement Marking, Durable	1.0	ls	\$	\$
2.21	OPSS 721	Single Rail Steel Beam Guide Rail (Type M30)	160.0	m	\$	\$
2.22	OPSS 732	Steel Beam Energy Attenuating Terminal System (TYPE M)	1.0	ea	\$	\$
2.23	OPSS 802, SP	Topsoil (Imported)	151.0	m ²	\$	\$
2.24	OPSS 803	Sod	151.0	m ²	\$	\$
Sub-Total						
Section II - Roadworks						\$

Section III - Structural

Item	Spec No.	Description	Est. Qty.	Unit	Unit Rate	Tendered Amount
3.01	539	Protection System	1.0	ls	\$	\$
3.02	902 SP	Earth Excavation for Structure	42.0	m ³	\$	\$
3.03	902 SP	Dewatering Structure Excavations	1.0	ls	\$	\$
3.04	904 SP	Concrete in Substructure	1.0	ls	\$	\$
3.05	904 SP	Concrete in Deck	1.0	ls	\$	\$
3.06	904 SP	Concrete in Barrier Walls	1.0	ls	\$	\$
3.07	904 SP	Concrete in Approach Slabs and Sleeper Slabs	1.0	ls	\$	\$
3.08	904 SP	Dowels into Concrete	410.0	ea	\$	\$
3.09	905	Reinforcing Steel	1.0	ls	\$	\$
3.10	905 SP	Glass Fibre Reinforced Polymer Reinforcing Bar	1.0	ls	\$	\$
3.11	905	Stainless Steel Reinforcing Bar	1.0	ls	\$	\$
3.12	905	Mechanical Connectors	300.0	ea	\$	\$
3.13	905	Stainless Steel Mechanical Connectors	12.0	ea	\$	\$
3.14	908	Barrier Wall Railing	1.0	ls	\$	\$
3.15	911	Coating Existing Structural Steel	1.0	ls	\$	\$
3.16	911	Environmental Protection During Coating of Structural Steel	1.0	ls	\$	\$
3.17	914	Bridge Deck Waterproofing	1.0	ls	\$	\$
3.18	914	Form and Fill Grooves	60.0	m	\$	\$
3.19	914	Membrane Reinforcement	34.0	m	\$	\$
3.20	920	Deck Joint Assemblies, Installation	1.0	ls	\$	\$
3.21	922 SP	Bearings	1.0	ls	\$	\$

Section III - Structural

Item	Spec No.	Description	Est. Qty.	Unit	Unit Rate	Tendered Amount
3.22	922 SP	Jacking of Superstructure	1.0	ls	\$	\$
3.23	928 SP	Access to Work Area, Work Platform and Scaffolding	1.0	ls	\$	\$
3.24	928	Concrete Removal - Partial Depth - Type B	6.0	m ³	\$	\$
3.25	928	Concrete Removal - Partial Depth - Type C	6.0	m ³	\$	\$
3.26	928 SP	Concrete Removal - Full Depth	1.0	ls	\$	\$
3.27	928	Concrete Removal - Deck Joint Assemblies	1.0	ls	\$	\$
3.28	929	Abrasive Blast Cleaing of Reinforcing Steel	40.0	m ²	\$	\$
3.29	928 SP	Concrete Refacing, Form and Pump	4.0	m ³	\$	\$
3.30	930	Concrete Patches, Form and Pump	6.0	m ³	\$	\$
3.31	932	Crack Injection	30.0	m	\$	\$
3.32	SP	Union Gas Temporary Support Structure	1.0	ls	\$	\$
3.33	SP	Remove and Dispose of Existing Bell Canada Conduit Support Structure	1.0	ls	\$	\$
3.34	SP	Supply, Install and Remove Bell Canada Temporary Conduit Support Structure - Equipment and Labour	1.0	ls	\$	\$
3.35	SP	Supply, Install and Remove Bell Canada Temporary Conduit Support Structure - Materials	1.0	ls	\$	\$
3.36	SP	Supply and Install Bell Canada Conduit Support Structure - Labour and Equipment	1.0	ls	\$	\$
3.37	SP	Supply and Install Bell Canada Conduit Support Structure - Materials	1.0	ls	\$	\$
3.38	920 SP	Install Expansion Joint Seals at Pedestrian Bridge	1.0	ls	\$	\$
3.39	908 SP	Repair of Aluminum Handrail	1.0	ls	\$	\$
Sub-Total						
Section III - Structural						\$

General Items

Item	Spec No.	Description	Est. Qty.	Unit	Unit Rate	Tendered Amount
G.1	SP	One Hundred Percent (100%) Performance Bond	1.0	ls	\$	\$
G.2	SP	One Hundred Percent (100%) Labour & Material Bond	1.0	ls	\$	\$
G.3	805 SP	Silt Fence	250.0	m	\$	\$
G.4	SP	Hydrovac Truck	Allowance			\$10,000.00
G.5		Layout				
	a)	Roadworks	1.0	ls	\$	\$
	b)	Structure	1.0	ls	\$	\$
G.6		Post-Construction Record Survey, Marked up Drawings and Autocad ^(R) (Disc) File for:				
	a)	Roadworks	1.0	ls	\$	\$
	b)	Structure	1.0	ls	\$	\$
Sub-Total						
General Items						\$

Section C: Contingency Items

Item	Description	Est. Qty.	Unit	Unit Rate	Tendered Amount
C.1	Dust Control where not Contractors Responsibility				
	a) Water Truck	100.0	hr	\$	\$
	b) Calcium Chloride	10.0	tonne	\$	\$



Agreement Between Owner and Contractor

THIS AGREEMENT made in triplicate on the _____ day of _____ in the year Two Thousand and Eighteen (2018) by and between:

herein (and in the General Conditions) called the "Contractor" and

The Corporation of the Town of Blind River

herein (and in the General Conditions) called the "Owner".

WITNESSETH

That the Contractor and the Owner, for the consideration hereinafter, undertake and agree as follows:

Article 1 – The Work

Terms used in the Contract Documents, which are defined in Article II - "Definitions" of this Agreement, shall have the meanings designated in those Definitions.

The Contractor undertakes and agrees to:

- a. Do and fulfil everything indicated by this Agreement and all other Contract Documents listed in Article III of this Agreement.
- b. Provide all the materials and to perform all the work shown on the Drawings and described in the Contract Documents for underground servicing and roadworks which have been signed for identification by all the parties and which were and are being prepared by GHD Limited acting as and is hereinafter called the "Engineer" or "GHD", with the authority and responsibilities outlined in the General Conditions.
- c. Maintain an insurance policy which shall include bodily injury, property and automobile damage, names as additional insured the Owner, the Ministry of Natural Resources and Forestry, and the Engineer and shall have an inclusive limit of no less than five million dollars (\$5,000,000.00), until final completion of the Contract including the making good of faulty work or material pursuant to the operations. Liability shall in any event be maintained until termination of all applicable maintenance periods on constructed services, as certified by the Owner and Engineer, whichever is the later. Such policy shall also provide that thirty (30) days written notice be given to the Owner prior to any change in status of the policy, including termination or reduction in amounts of coverage. The Contractor is also responsible to ensure that sub-Contractors involved in providing shoring, underpinning or blasting acquire an insurance policy in the amount stipulated above covering all parties for their works on site, and shall provide written proof of same to the Owner.



- d. Maintain all required bonds in good standing until the fulfilment of this Contract. Written notice must be given to the Owner by the Contractor thirty (30) days prior to any change in status of the bonds, such as termination or reduction in amounts.
- e. Complete the Contract, upon receiving notice to commence, in accordance with the Construction Timetable under Article IV of this Agreement between Contractor and Owner, ready for acceptance by the Owner and assumption by the Municipality, or Municipalities, after completion of all maintenance periods and inspections.

Article II – Definitions

Words, abbreviations and descriptions of work and materials, which have well known technical or trade meanings, shall be read and understood in accordance with such recognized meanings. References in the Contract Documents to the singular shall be considered to include the plural, as the context requires.

The following Definitions shall apply to all Contract Documents.

a. The Contract

The Contract Documents form the 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. The Contract supersedes all prior negotiations, representations or agreements, either written or oral, including the bidding documents. The Contract may be amended only as provided in the General Conditions of the Contract, and shall be deemed to remain in effect until the end of any and all maintenance periods which shall not be before the works are assumed by the Municipality or accepted by the Owner, at the end of the maintenance periods, subject to adjustments provided for in the Contract Documents.

b. Contract Documents

The Contract Documents consist of the executed Agreement Between Contractor and Owner and all other documents as are listed in Article III of this Agreement including amendments thereto incorporated before the execution of the Contract and subsequent amendments thereto made pursuant to the provisions of the Contract and agreed upon between the parties.

c. Owner

The Owner is the person, firm or corporation identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Owner means the Owner or his authorized agent or representative as designated to the Contractor in writing but does not include the Engineer.

d. Engineer

The Engineer is the person, firm or corporation identified as such in the Agreement, and is an Engineer licensed to practice in the province of the Place of the Work, and is referred to throughout the Contract Documents as if singular in number and masculine in gender.

e. Contractor



The Contractor is the person, firm or corporation identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative as designated to the Owner in writing.

f. Sub-Contractor

A sub-Contractor is a person, firm or corporation having a direct Contract with the Contractor to perform a part or parts of the Work, or to supply products, and services, worked to special designs and requirements, according to the Contract Documents, but does not include one who merely supplies products not so worked. The term sub-Contractor is referred to throughout the Contract Documents as if singular in number and masculine in gender.

g. The Project

The Project means the total construction contemplated of which the Work may be the whole or a part.

h. The Work

The Work means the total construction and related services and maintenance required by the Contract Documents.

i. Other Contractor

Other Contractor means a person, firm or corporation employed by or having a separate contract directly or indirectly with the Owner for work other than that required by the Contract Documents.

j. Place of the Work

The Place of the Work is the designated site or location of the Project of which the Work may be the whole or a part, as shown on the Contract drawings.

k. Substantial Performance of the Work

Substantial Performance of the Work is as defined in the Construction Lien Act, as amended.

l. Basic Statutory Holdback

Basic Statutory Holdback means the sum retained by the Owner in accordance with the Construction Lien Act, equal to ten percent (10%) of the value, proportionate to the amount of the Contract, of the Work performed under the Contract before the date of Substantial Performance as specified by the Engineer in the Certificate of Substantial Performance. Such sum shall be released only in accordance with the terms set out in the Agreement.

m. Maintenance Guarantee Sum

Maintenance Guarantee Sum means a specified sum retained by the Owner for a Maintenance Guarantee. Such a sum is to be released only in accordance with the terms set out in this Agreement between Contractor and Owner. The Maintenance Guarantee Sum shall be calculated as FIVE PERCENT (5%) of the value of the works, unless otherwise agreed to by the Owner.



n. Changes in the Work

Changes in the Work means the deletion, extension, increase, decrease or alteration of lines, grades, dimensions, methods, drawings or materials of the Work of part thereof, within the scope of the Work contemplated by the Contract Documents.

o. Extra Work

Extra Work means any work or service, the performance of which is beyond the scope of the Work contemplated by the Contract Documents.

p. Working Day

Working Day means any day the Contractor is working on the site for a period of five (5) hours or more or any day the Contractor could work for a period of five (5) hours or more, as decided by the Engineer. Saturdays, Sundays and Statutory Holidays shall not count as working days.

q. Contract Time

The Contract Time is the duration within which the Contractor is required to complete the Work, being the number of Working Day(s), or the period of time as otherwise stated herein, following the notification to commence as provided by the Engineer or Owner, or the date by which the works are to be completed as stated in Article IV herein, all of which is subject to adjustment in accordance with the General Conditions.

r. Laws of the Contract

The Law of the place of the Work shall govern the interpretation of the Contract.

s. Contract Price

Contract Price means the final sum of the products of the actual quantities that are incorporated in or made necessary by the Work, as confirmed by count and measurement, and the appropriate Contract Unit Prices specified in the Form of Tender, or if a lump sum price, the total agreed price for the works, together with any adjustments that are made in accordance with the provisions of the Contract Documents.

t. Estimated Contract Price

Estimated Contract Price means the sum of the products of the estimated quantities and the appropriate Contract Unit Prices specified in the Form of Tender, and shall include any contingency allowance stipulated.

u. Municipality

The Municipality is deemed to refer to all Municipal authorities (Local and or Regional) in which the works are located and shall also be deemed to include other governmental bodies having jurisdiction over all or part of the works (including but not limited to Federal, Provincial authorities and conservation authorities)

Article II – Contract Documents

The Owner and Contractor shall sign the Contract documents in triplicate. The Contract documents are complementary and what is called for by any one shall be binding as if called for by all. The intention of the



documents is to include all labour, equipment and materials reasonably necessary for the proper execution of the work. It is not intended, however, that materials or work not covered by or properly inferable from any heading, section or trade in the specifications shall be supplied, unless distinctly so noted on the drawings.

The following is an exact list of the Contract Documents referred to in Article I of this Agreement Between Contractor and Owner and as defined in Item B of Article II - "Definitions". This list is subject to subsequent amendments in accordance with the provisions of the Contract and agreed upon between the parties.

List of Contract Documents:

Instructions for Tenderers – Pages IT-1 to IT-4 inclusive.

Form of Tender – Pages FT-1 to FT-7 inclusive.

Agreement Between Contractor and Owner – Pages A-1 to A-10 inclusive.

General Conditions of Contract – Pages GC-1 to GC-22 inclusive; Articles 1 to 51 inclusive.

Special Provisions – Pages SP-1 to SP-30 inclusive; Items 1 to 38 inclusive.

Municipal Specifications

Ontario Provincial Standard Specifications

Drawings:

No.	Description
STG1	Stage 1
STG2	Stage 2
NC1	New Construction
S1	General Arrangement
S2	Traffic Staging
S3	Removals I
S4	Removals II
S5	Deck Details I
S6	Deck Details II
S7	Bearing Details
S8	Miscellaneous Details
S9	Barrier Wall
S10	Barrier Rail
S11	Approach Slab



No.	Description
S12	Strip Seal Expansion Joint
S13	Type 'C' Expansion Joint and Sleeper Slab
S14	Environmental Site Plan
S15	Standard Drawings

The applicable standard Drawings of the Municipalities and the Ontario Provincial Standard Drawings (OPSD).

End of List of Contract Documents

In case of any inconsistency or conflict within this Contract, Plans or Specifications, the Documents shall take precedence and govern in the following order, from highest priority to lowest:

1. Addenda, if any
2. The Agreement Between Contractor and Owner
3. The Special Provisions
4. The Drawings
5. The Form of Tender
6. The General Conditions of the Contract
7. The Specifications
8. Instructions to Tenderers

Article IV – Construction Schedule

Time is of the essence in this Contract. Upon receiving notice to commence from the Engineer or Owner, the Contractor shall complete the Work in accordance with the Contract Documents to the satisfaction of the Engineer within the required completion date specified in Article 51 of the General Conditions, subject to adjustments in accordance with Article 21 of the General Conditions.



Article V – Payment

The Owner undertakes and agrees:

- A. To pay the Contractor in current Canadian Funds, (Amount Written Out) (\$) (excluding H.S.T.) for the performance of the Contracts, subject to additions and deductions as provided in the General Conditions of the Contracts.
- B. To make payments on account thereof (when the Engineer is satisfied that payments due to sub-Contractors have been made) as follows:
 - a. Within Thirty (30) days after the period ending date of the Progress Estimate issued by the Engineer for each month, ninety percent (90%) of the total value of labour and materials incorporated into the work up to the period ending date, as estimated by the Contractor and approved by the Engineer, less the aggregate of previous payments.
 - b. For each Contract, forty-six (46) days after publication of the Substantial Performance Certificate following Substantial Completion of the Contract, upon receipt of the Engineer's Progress Estimate, pay a further ten percent (10%) of the value of the work performed under the Contract prior to the date of Substantial Performance less the Maintenance Guarantee Sum for the Contract, equal to five percent (5%) of the value of the completed works, excluding Rough Grading works and General Items, (unless otherwise agreed to by the Owner), less estimated costs of correcting any deficiencies in the Work, and subject to no liens having been placed against the Project property, and the Engineer's receipt and approval of:
 - i. The Contractor's written request to the Engineer (addressed to the Contracts Administrator) for issuance of the Certificate of Substantial Performance and subsequent release of the Statutory Holdback monies for specified Contracts.
 - ii. Proof of publication of the Substantial Performance Certificate.
 - iii. Statutory Declaration that all liabilities incurred by the Contractor and sub-Contractors in carrying out the Contracts have been paid in full and there are no liens, garnishees, attachments or claims relating to the Work.
 - iv. A Clearance Certificate from the Workplace Safety and Insurance Board.
 - v. The Contractor's itemized estimate of work remaining to be performed under the Contract up to and including the latest Progress Estimate.
 - vi. A declaration by the Contractor releasing the Owner from all further claims relating to work performed under the Contract on or before the date of Substantial Performance.
 - vii. One set of marked-up posted-constructed record engineering drawings marked verified and accepted by the Engineer. Holdback will not be released until the Engineer is satisfied that the as constructed record as submitted by the Contractor is complete, correct and adequate.
 - c. Upon completion of additional work within a Contract that has been substantially performed and published as such, and forty-six (46) days after the work has been completed and upon receipt of the Engineer's Progress Estimate, pay a further ten percent (10%) of the value of the work performed less the Maintenance Guarantee Sum, subject to receipt of:



- i. The Contractor's written request to the Engineer (addressed to the Contracts Administrator) for release of the Statutory Holdback monies for specified Contracts.
 - ii. Statutory Declaration that all liabilities incurred by the Contractor and sub-Contractors in carrying out the Contracts have been paid **in full** and there are no liens, garnishes, attachments or claims relating to the Work.
 - iii. A Clearance Certificate from the Workplace Safety and Insurance Board.
 - d. Upon termination of the Maintenance Guarantee Period and Issuance of Certificates of Final Acceptance or Assumption, or other written documentation confirming the end of the maintenance period(s), respectively by the Municipalities and/or the Engineer or Owner, for each of the defined Contracts of the work, pay the balance owing under the Agreement, subject to receipt of:
 - i. The Contractor's written request to the Engineer (addressed to the Contracts Administrator) for release of the Maintenance Guarantee Sum for specified Contracts.
 - ii. A declaration by the Contractor releasing the Owner from all further claims relating to this Agreement.
 - iii. Statutory Declaration that all liabilities incurred by the Contractor and sub-Contractors in carrying out the Contracts have been paid in full and there are no liens, garnishes, attachments or claims relating to the Work.
 - iv. A Clearance Certificate from the Workplace Safety and Insurance Board.
- C) Where the improvement or a substantial part thereof is ready for use or is being used for the purposes intended and the remainder of the improvement cannot be completed expeditiously for reasons beyond the control of the Contractor or, where the Owner and the Contractor agree not to complete the improvement expeditiously, the price of the services or materials remaining to be supplied and required to complete the improvement shall be deducted from the Contract Price in determining Substantial Performance.
- D) Notwithstanding the provisions contained in A), B) and C) above, the Contractor may, for the duration of the Maintenance Period, post a Letter of Credit in favour of the Owner, for the full amount of the Maintenance Guarantee Sum in lieu of a cash holdback, at the sole discretion of, and in a form acceptable to, the Owner, in which the irrevocable Letter of Credit is automatically renewed by the Contractor upon its expiration until final acceptance of the work by the Municipalities.

Notwithstanding the provisions contained in A), B) and C) above, should the Owner and Contractor mutually agree that there should be no deduction of any maintenance sum or provision of any maintenance bond, the references contained herein to the deduction of maintenance sums and bonds shall be considered null and void.
- E) The Maintenance Period shall be deemed to remain in effect until the works are assumed by the Municipalities and a Certificate of Final Acceptance or Assumption or other written documentation confirming the end of the maintenance period(s) is issued and the works are accepted by the Owner whichever is the later, irrespective of whether any maintenance sums or bonds are provided.
- F) In the absence of any maintenance or warranty period on the part of the municipality which shall take precedence over all other warranty / maintenance periods, the warranty/ maintenance period shall be two years following Substantial Performance of the complete works.



Article VI – Time & Liquidated Damages

Time is of the essence in this Contract.

Should the Contractor fail to complete the works to the satisfaction of the Engineer and in accordance with the Contract within the Contract Time specified in the Contract Documents, the Contractor agrees to pay to the Owner as predetermined liquidated damages (in addition to amounts payable by the Owner in respect of site inspection and supervision of the work), the sum of \$2,500.00 for each calendar day that the Works remain uncompleted after the time so specified or allowed.

Article VII - Succession

The Contractor and the Owner for themselves, their successors, executors, administrators and assigns, hereby undertake and agree to the full performance of the covenants contained herein and other aforesaid Contract Documents.

Article VIII – Notices

Communications in writing between the Contractor and Owner or between them and the Engineer shall be considered to have been received by the addressee on the date of delivery if sent by facsimile or electronic transmission (where no indication of failure of transmission is received by the sender) or delivered by hand to the individual or to a member of the firm or to an officer of the corporation for whom they are intended or if sent by mail, to have been delivered within three (3) working days of the date of mailing when addressed as follows:

To the Owner at: Town of Blind River
 11 Hudson Street
 Blind River, ON P0R 1B0

To the Contractor at:

To the Engineer at: GHD
 65 Sunray Street
 Whitby, ON L1N 8Y3

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

SIGNED, SEALED AND DELIVERED

((SEAL) NAME OF CONTRACTOR
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((SEAL) TOWN OF BLIND RIVER

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General Conditions of Contract

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Article 1 – Additional Instructions

The Engineer shall furnish, as necessary for the execution of the work, additional instructions by means of drawings or otherwise. All such drawings and instructions shall be consistent with the Contract documents. The work shall be executed in conformity therewith and the Contractor shall do no work without such drawings and instruction. In giving such additional instructions, the Engineer shall have authority to make minor changes in the work, not inconsistent with the Contract.

The Contractor and the Engineer, if either so requires, shall jointly prepare a schedule, subject to change from time to time, in accordance with the progress for the work, fixing the dates at which the various detail drawings will be required, and the Engineer shall furnish them in accordance with this schedule. Under like conditions, a schedule shall be prepared fixing the dates for the submission of shop drawings, for the beginning of manufacture and installation of materials and for the completion of the various parts of the work.

Article 2 – Specifications, Drawings and Standards

It is the intention that all works be completed in accordance with the Municipal or Ontario Provincial specifications, drawings and standards, except where modified elsewhere in these Contract Documents.

Measurement and Payment provisions contained in the Special Provisions or General Conditions of this Contract take precedence over the provisions of the OPSS, Municipal Standards, Specifications, and Drawings.

All Municipal Standard Detailed Drawings or Specifications, Ontario Provincial Standard (OPSS) Drawings or Specifications, pertinent to the scope of work are deemed to be included in, and form part of, this Contract and, where not included in the Standard Drawing Section or bound documents pertaining to this Contract, can be found in the current Municipal Standards, and OPSS published documents.

Copies are available to the Contractor at the offices of the Municipalities or through agents for the OPSS, as appropriate or for viewing from the Engineer. The Contractor shall familiarize himself with these standard drawings and ensure that the work is carried out in accordance with them.

In the case of conflict, discrepancy, or omission, the Municipal specification or drawing shall take precedence over the OPSS specification or drawing, unless specified otherwise in the Contract Documents.

Where any discrepancy, conflict or omission is discovered the Contractor shall obtain direction from the Engineer before proceeding with the work.

The Contractor shall keep on site one copy of all drawings and specifications of the work, in good order, available to the Engineer and to his representative. In addition to the approved Contract Documents, the Engineer shall furnish to the Contractor, free of charge, at least three (3) copies of each full-sized detail drawing and as many copies of other drawings and specifications as are reasonably necessary for the proper execution of the work.



Article 3 – Shop Drawings

The Contractor shall furnish to the Engineer, at proper times, all shop and setting drawings or diagrams, which the Engineer may deem necessary in order to make clear the work intended or to show its relations to adjacent work of other trades. The Contractor shall make any changes in such drawings or diagrams, which the Engineer may require, consistent with the Contract, and shall submit four (4) copies of the revised prints to the Engineer for his review, one of which shall be returned to the Contractor and the others retained by the Engineer. When submitting such shop and setting drawings, the Contractor shall notify the Engineer in writing of changes made therein from the Engineer's drawings or specifications.

The Engineer's review of such drawings or of the revised drawings shall not relieve the Contractor from responsibility for errors made by the Contractor therein or for changes made from the Engineer's drawings or specifications not covered by the Contractor's written notification to the Engineer. All models and templates submitted shall conform to the spirit and intent of the Contract Documents.

The Contractor shall furnish at no cost to the Owner or Engineer, for the Engineer's examination, such shop drawings, calculations and samples as he may reasonably require. The work shall be carried out in accordance with the reviewed submissions.

Article 4 – Ownership of Drawings and Models

All drawings, specifications and copies thereof and all models furnished by the Engineer are his property. They are not to be used on other work, and, with the exception of the signed Contract set of the drawings and specifications, are to be returned to him on request on the completion of the work. Any models furnished by the Contractor or the Owner are property of the Owner.

Article 5 – Engineer and Contractor

The Engineer shall have general inspection of the work but the Contractor shall have complete control of his organization subject to the schedule as set out in Article IV of the Agreement between the Contractor and Owner. The Contractor may be required to carry out the work to a program determined by the Engineer.

The Engineer is, in the first instance, the interpreter of the Contract and the sole judge of its performance and he shall use his powers under the Contract to enforce its faithful performance by both parties hereto. The Engineer's decisions are final and binding on all parties to the contract.

The Owner and Contractor agree to save harmless and indemnify from all damages, claims and liabilities arising out of, or resulting from, the performance of his duties and obligations under this Contract.

In case of the termination of the employment of the Engineer, the Owner shall appoint a capable and reputable Engineer whose status under the Contract shall be that of the former Engineer.



Article 6 – Errors and Omissions

It being the intention in connection with the construction of any structure, performance of any work, or supply of any material be carried out according to specifications, then the plans and specifications shall therefore be read and interpreted together, and any material for, or portion of, the said work contracted for, which has been described in the specifications and omitted from the plans, or vice versa, shall be and be deemed to have been described and included in both the plans and specifications, and in the event of discrepancy the decision of the Engineer as to which shall apply shall be final.

Where a Contractor has contracted for work or material, and any work and material is required by the Engineer, which has not been described in the plans and specifications, but which is obviously necessary for the due and satisfactory completion of the whole work for the purpose intended, the same shall be supplied or performed as though it has been described and provided for in both the plans and specifications for the said work.

Article 7 - Engineer's Decisions, Disputes, Arbitration and Delays

The Engineer shall decide on questions arising under the Contract Documents whether as to the performance of the work or the interpretation of the specifications and drawings; but should the Contractor hold such decisions to be at variance with the Contract Documents, or to involve changes in work already built, fixed, ordered or in hand in excess of the Contract, or to be given in error, he shall notify the Engineer before proceeding to carry them out. In the event of the Engineer and the Contractor failing to agree as to such excess or error and the Engineer deciding to carry out such disputed work, the Contractor shall act according to such decision, perform the work and make application for payment according to Articles 21 and 22 of the General Conditions.

Should the Contractor be delayed in the completion of the work by any act or neglect of the Owner or Engineer or of any employee of either, or by any other Contractor employed by the Owner or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay by common carriers, or unavoidable casualties or by any other cause of any kind whatsoever beyond the Contractor's control or by any cause within the Contractor's control which the Engineer shall decide as justifying the delay, then the time of completion shall be extended for such reasonable time as the Engineer may decide.

No such extension shall be made for delay occurring more than seven days before a claim therefore is made in writing to the Engineer, provided, however, that in the case of a continuing cause of delay, only one claim shall be necessary.

If no schedule is indicated in the Agreement Between Contractor and Owner, no claim for delay shall be allowed on account of failure to furnish drawings until two (2) weeks after demand for such drawings and not then unless such claim is reasonable.

The Engineer shall, only by written notice to the Contractor, stop or delay any part of the main Contract work pending decisions or proposed changes either by himself or by the Owner.



Article 8 – Owner’s Right to do Work or Terminate Work

The Owner shall have the right at any time to delete any and all items, or part of any item from the Contract without any extra charges, or compensation, being paid to the Contractor

The Owner shall have the right to delete any or all of the Provisional or Contingency Items from the Contract without any extra charges or compensation being paid to the Contractor

If the Contractor should neglect to execute the work properly or fail to perform any provision of this Contract, including staying on schedule, the Owner, after three (3) days' notice to the Contractor, may without prejudice to any other remedy he may have, make good such deficiencies or complete such works and may deduct the costs thereof (including administrative costs and any premium or additional costs incurred by having others complete the works) from the payments then or thereafter due the Contractor; and may delete any portion of the works from the Contract, provided, however, that the Engineer shall approve both such actions and the amount charged to the Contractor.

Should the Contractor fail to commence construction of the work, in whole or in part, within seven days of being given notice to commence by the Engineer, or by a later date if so noted in instructions by the Engineer, then, at the discretion of the Engineer, the Contractor may be deemed to be failing to stay on schedule and the Engineer or Owner may act in accordance with the provisions noted in the first paragraph of this Article.

If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors or if a receiver should be appointed on account of his insolvency or if he should, except in cases recited in Article 10 of the General Conditions, refuse or fail to supply enough properly skilled workman or proper materials after having received three (3) days' notice in writing from the Engineer to supply additional workmen or materials, or if he should fail to make prompt payment to sub-Contractors for material or labour, or persistently disregard laws, ordinances or the instructions of the Engineer, or otherwise be guilty of a substantial violation of the provisions of the Contract, then the Owner, upon certification of the Engineer that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy, by giving the Contractor written notice, terminate the employment of the Contractor and take possession of the premises of all materials, tools and appliances therein and finish the work by whatever method he may deem expedient, but without undue delay or expense or may employ such additional men and equipment to complete all or part of the works in such a manner as the Owner may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Price shall exceed the expense of finishing the work, including compensation to the Engineer for his additional services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The Engineer shall certify the expense incurred by the Owner as herein provided.

The Contractor shall note that authorization / permission to proceed with Surface Works or deficiencies, other uncompleted works or deferred works is likely to be given for part of the works, rather than for the whole, and will generally be given in segments, spread throughout the project, of 100m for curb and sidewalk, and 1000m² for asphalt works, total length, for each mobilization and his tender shall reflect this.

Notification from the Engineer to proceed with top works, or other works as defined above, shall be provided to the Contractor a minimum of fourteen (14) calendar days prior to the scheduled commencement date. The Contractor shall, within fourteen (14) calendar days of the date of such notification or the date specified in such notification if different from the date of the notification, commence and proceed expeditiously and continuously



with the authorized works, until completion. Should the Contractor consider the site not ready for the works authorized, he shall not leave the site but advise the Engineer of the nature of the impediment to his work and the costs involved in rectification of such impediments.

Should the Contractor fail to commence within the seven (7) days of the required commencement date determined from the previous paragraph, or to work expeditiously and continuously with the authorized works, until their completion, the Owner may, by providing three (3) days written notice to the Contractor, delete any or all of the works authorized above, and any other works the Owner may, in his sole discretion, see fit, from the Contract without penalty or compensation and may deduct any costs incurred by the Owner, as result of such deletion, from money which may become due to the Contractor.

Article 9 – Owner’s Right to Supply Material

When materials supplied by the Owner have been received by the Contractor, their storage prior to use shall be the Contractor's responsibility and the Contractor shall be liable for any loss, theft or damage that might occur. The Contractor shall provide proof of insurance in the joint names of the Owner and the Contractor to fully cover his liability under this Clause.

Article 10 – Contractor's Right to Stop or Terminate Work

If the work should be stopped under an order of any court, or other public authority, through no act or fault of the Contractor or of anyone employed by him, or if the Owner should fail to pay to the Contractor, within thirty (30) days of its maturing and presentation, any sum certified by the Engineer or awarded by arbitrators, then the Contractor may, upon seven (7) calendar days written notice to the Owner and the Engineer, stop work or terminate this Contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or material with reasonable profit and damages.

Article 11 – Contractor’s Responsibilities and Control of Work

The Contractor shall keep on the place of the work, during its progress, a competent English speaking foreman / site superintendent and any necessary assistants, all satisfactory to the Engineer. The foreman / site superintendent shall not be changed except with the consent of the Engineer, unless the foreman/ site superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The foreman /site superintendent shall represent the Contractor in his absence and directions on minor matters given to him shall be considered given to the Contractor.

Important directions shall be given in writing to the Contractor. The Contractor shall give efficient supervision to the work using his best skill and attention. The Contractor shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.



Article 12 – Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other.

Article 13 – Contractor to Inspect Site

The Contractor shall inspect the site prior to submitting his Tender and shall satisfy himself as to the nature and extent of the work, the accuracy of the drawings, and all risks and hazards bearing upon the work. In submitting his Tender, the Contractor acknowledges that all such risks and hazards have been allowed for in the Tender Sum.

Article 14 – Contractor to Comply with Laws

The Contractor shall comply with all Federal, Provincial and Municipal laws, bylaws, regulations and permits of those having jurisdiction, related to the work.

Article 15 – Contractor Not to Work During Hours of Darkness, Sundays and Inclement Weather

No work, unless so authorized by the Engineer, shall be carried out between sunset and sunrise, on Saturdays or Sundays, or during periods of inclement weather, which might prove injurious to the work. During freezing weather the Contractor shall provide heating appliances where the Engineer shall consider necessary. In addition to the above, the Contractor shall comply with any local municipal by-laws related to hours of work and noise.

Article 16 – Contract to be Carried Out to the Satisfaction of Municipalities and Other Authorities Having Jurisdiction Over the Site

Without altering the intent of the Contract Documents, the Contract shall be carried out and completed to the satisfaction of the Municipalities, and other authorities having jurisdiction over the site, and their accredited representatives shall have access to the work at all times.

It is the intention of the Contract Documents to comply with the requirements of the Municipal and other Authorities. Should a discrepancy exist in this connection, the Contractor shall advise the Engineer before making changes. Acceptance of the Work will be subject to receipt of approval by the aforementioned Municipalities and the Engineer.



Article 17 – Contractor to Give Notices as Required

The Contractor shall give such notice as may be required to the appropriate authorities including, but not limited to, Fire, Ambulance and Police Departments, Public Transport, School Boards, the Municipalities before commencing work on public roads and shall give notice as may be required before commencing work in the vicinity of telephone and hydro cables, gas and water mains and other utilities. In addition the Contractor shall arrange for and deliver notices to authorities, residences, businesses and others who may be affected by the works. Such notices shall be submitted to the Engineer for approval prior to delivery.

In addition to notifying the Municipalities, Ministry of Labour and any other authorities having jurisdiction over the work, the Contractor shall give the Engineer three (3) working days' notice of his intention to start work so that inspection may be arranged.

Article 18 –Sub-Contractors

The Contractor shall, upon the signing of the Contract, notify the Engineer in writing of the names of sub-Contractors proposed for the principal parts of the work and for such others as the Engineer may direct and shall not employ any to whom the Engineer may reasonably object. If the Engineer or Owner requires the change of any sub-Contractor on such list, and the work has to be awarded to a higher bidder, the Contract price shall be increased by the difference between the two (2) bids.

The Engineer, shall, on request, furnish to any sub-Contractor, wherever practicable, evidence of the amounts certified on his account.

The Contractor shall be held as fully responsible to the Owner for the acts and omissions of his sub-Contractors and of persons directly or indirectly employed by them, as for the acts and omissions of persons directly employed by him and shall provide adequate supervision of all subcontractors' activities, as if it were his own.

In view of this responsibility for the acts and omissions of his sub-Contractors, the Contractor shall not be obliged to employ as a sub-Contractor any person or firm to whom he reasonably objects.

Nothing contained in the Contract Documents shall create any contractual relation between any sub-Contractor and the Owner.

The Contractor agrees to bind every sub-Contractor by the terms of the Special Provisions, General Conditions, Drawings and Specifications, as far as applicable to his work.

Article 19 – Other Contractors

Deleted

Article 20 – Changes in the Work and Extra Work

The Owner and the Engineer, without invalidating the Contract, may make changes by altering, adding to or deducting from the work, the Contract Price being adjusted accordingly. All such work shall be executed under



the conditions of the original Contract except that any approved claim for extension or reduction of time, caused thereby shall be adjusted at the time of ordering such change.

When a change in the Work is proposed or required, the Engineer shall provide a notice describing the proposed change in the Work to the Contractor. The Contractor shall present, in a form acceptable to the Engineer, 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 in the Work.

When the Owner and the Contractor agree to the adjustments in the Contract Price and Contract Time or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a Change Order. Such Change Order shall be prepared by the Engineer, accepted by the Contractor and approved by the Owner before any work pertinent to the Change Order shall be done. The value of the work performed as the result of a Change Order shall be included in applications for progress payment.

Except as provided in Article 16 of these General Conditions, no change shall be made unless in pursuance of a written order from the Owner or the Engineer and no claim for an addition to or deduction from the Contract Price shall be valid unless so ordered and at the same time valued or agreed to be valued as provided in Article 21 of these General Conditions.

Where additional or extra work is to be valued on a cost plus basis in accordance with Article 21 below, the Contractor shall ensure that appropriate daily records of such works are submitted to the Engineer or his site representative for verification of the labour material and equipment within seventy-two (72) hours of the relevant days work, and that the complete costs are submitted within a further fourteen (14) days. The Owner is not obliged to make payment if the Contractor does not satisfy the above submission requirements.

Should the Contractor believe that there have been changes to the works or additional works or the provisions of the Contract for which he believe he is entitled to compensation, he must advise the Engineer as soon as he becomes aware of the changed situation. Details of any claim resulting from the above must be submitted to the Engineer with in thirty (30) days of the work being completed, failing which the Owner is under no obligation to consider the claim.

Article 21 – Valuation of Changes and Extras

The value of any changes shall be determined in one or more of the following ways:

- a. By estimate and acceptance of a lump sum,
- b. By unit prices agreed upon,
- c. By cost, plus the percentage fees as bid in the Form of Tender:
 1. A Percentage fee on the base cost of labour, to cover all labour costs including but not limited to approved payroll burden and overhead, which includes, but is also not limited to : Employment Insurance, Workplace Safety & Insurance, Vacation Pay, Canada Pension Plan, Liability Insurance, etc., along with general and administrative overhead and profit.
 2. A Percentage fee on the cost of material to cover overhead and profit.



3. A Percentage fee on the cost of sub-Contractors provided the sub-Contractor's charges do not exceed the rates above to cover overhead and profit.
4. The prices for any equipment supplied to perform extra work shall be lower than the rates set out in the OPSS 127 schedule of rental rates of construction equipment, current at the time the work is performed, by a percentage as submitted in the tender. Rental rates for equipment not Listed in OPSS 127 shall be negotiated before work commences.

In case of additional work to be paid for under method (c), the Contractor shall keep and present in such form as the Engineer may direct, a correct account of the net cost of labour, equipment and materials together with vouchers. In any case, the amount of materials, labour and equipment time shall be subject to verification by the Engineer.

Requests for payment under this Article must be submitted to the Engineer within thirty (30) days of the works being completed, failing which the Owner is under no obligation to consider the request.

The Contractor shall submit to the Engineer, on Award of the Contract, the hourly labour rates applicable to the works, that may become payable under this Article.

Article 22 – Application for Payment

The Contractor shall submit to the Engineer an application for each payment and, if required, receipts or other vouchers showing his payments for labour and for materials and including also payments to sub-Contractors. The Contractor shall submit a Statutory Declaration that all liabilities incurred by the Contractor and Sub-Contractors in carrying out the Contracts have been paid and there are no liens, garnishees, attachments or claims relating to the Work, and a Certificate of good standing from the Workplace Safety Insurance Board.

Applications shall be submitted at least thirty (30) days before each payment falls due and, if required, the Contractor shall before the first application, submit to the Engineer a schedule of values of the various parts of the work, aggregating the total sum of the Contract, divided so as to facilitate payments to sub-Contractors made out in such form and, if required supported by such evidence as to its correctness, as the Engineer requires. In applying for payments, the Contractor shall submit a statement based upon this schedule and, if required, itemized in such form and supported by such evidence as the Engineer may direct, showing his right to the payment claimed.

Article 23 – Payment and Estimates

If the Contractor has made application as per Article 22 of these General Conditions, the Engineer shall, not later than ten (10) days before the date when each payment falls due, issue to the Contractor and the Owner an estimate in accordance with Article VI of the Agreement Between Contractor and Owner.

The unit prices and lump sum prices shall include compensation in full for the supply of all materials, labour and equipment, as required for the complete construction / installation of work items, for which they have been tendered, unless otherwise indicated, and shall provide for the removal of excess materials and the general tidying and cleanliness of the site on completion.



No payments shall be made for the site office, insurances, traffic control, safety requirements, and removal and relocation to a temporary or final location street signs, mailboxes, waste containers and miscellaneous signs and obstructions which interfere with construction, unless specifically allowed for in the Form of Tender.

No separate or additional payment shall be made for complying with the provisions of the General Conditions, and other Contract requirements unless a specific item is so included in the Form of Tender.

The Contractor shall not be entitled to any mark up or administration fee in relation to payments made by him to the Municipalities, or to sub-Contractors or suppliers for any fee or work done or materials supplied to the Municipalities for any payment related to pay duty police officers required for traffic control purposes.

No estimate, other than the final estimate issued, nor payment made to the Contractor shall be considered final, and corrections to previously issued Payment Estimates may be made where appropriate. Partial or entire use or occupancy of the work by the Owner, shall not be construed as an acceptance of any work or material not in accordance with this Contract. The issuance of a letter of completion or final estimate and the acceptance thereof by the Owner shall constitute a waiver of all claims by the Owner, otherwise than under the provisions of these General Conditions and the acceptance of such final letter or estimate by the Contractor shall constitute a waiver by him of all claims, except those previously made and still unsettled, if any.

If, in the opinion of the Engineer, it is not expedient to correct defective work or work not done in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the work as done and that called for by the Contract, the amount of which shall be determined in the first instance by the Engineer.

Failure to comply with the submission of the construction schedule, bonds, signed Contract Documents or other required documentation may result in the delay of the first progress payment.

Neither the final estimate nor payment thereunder, nor any provision in the Contract Documents shall relieve the Contractor from responsibility for faulty materials or workmanship, which shall appear before such time as the work has been assumed by the Municipalities and he shall remedy any defects due thereto and pay for any damage to other work resulting therefrom which shall appear before such time. The Owner will give notice of observed defects promptly.

Article 24 – Laws, Notices, Permits and Fees

The Contractor shall obtain all necessary permits or licenses required for the execution of the work typically obtained by the Contractor (but this shall not include the obtaining of permanent easements, MOE certificates of approval, MOE dewatering permits or conservation authority's approvals).

The Contractor shall give all necessary notices and pay all fees (where these fees are typically obtained by Contractors) required by law and comply with all laws, ordinances, rules and regulations, relating to the work and to the preservation of the public health and safety, and if the specifications and drawings are at variance therewith, any resulting additional expense incurred by the Contractor shall constitute an addition to the Contract Price.



Article 25 – Patent Fees

The Contractor shall pay all royalties and license fees and shall save the Owner harmless from loss on account of suits or claims which may arise by reason of the work for infringement of patents in force at the time of the signing of the Contract Documents.

Article 26 - Indemnification

Neither the final Payment nor any part thereof shall become due until the Contractor, if required by the Owner, obtains and delivers to the Owner a complete release of all liens and claims arising out of this Contract (other than his own) which may have been registered against the work; but the Contractor may, if any sub-Contractor refuses to furnish a release of such a lien, furnish a bond satisfactory to the Owner to indemnify him and the Engineer against any claim under such lien or claim.

Article 27 - Insurance

The Contractor shall maintain such insurance as will protect him, the Owner, the Engineer, and, as applicable, the Geotechnical Engineer, the Municipalities and other Authorities, as noted either in the Contract or so advised at time of Contract award, from claims under Workplace Safety & Insurance Acts, and from any other claims for damages or personal injury, including death and property damage, which may arise from his operations under this Contract. Certificates of such insurance and written proof that they are in effect shall be filed with the Owner and the Engineer, on his behalf, and shall be subject to his approval as to adequacy of protection. No changes may be made to the insurance without the Owner's approval

Article 28 – Protection of Work and Property

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from all injury arising in connection with this Contract. He shall make good any such damage or injury. He shall protect adequately adjacent property as required by law and the Contract Documents.

Article 29 – Emergencies / Maintenance

The Engineer has authority to stop the progress of the work whenever in his opinion such stoppage may be necessary to ensure its proper execution. In an emergency affecting or threatening the safety of life, or of the work or of property, he has authority to make such changes and to order such work extra to the Contract or otherwise as may in his opinion be necessary.

Whenever the construction site is unattended by the general superintendent or foreman, the name, address and telephone number of a responsible official of the Contractor shall be given to the Engineer. This official shall be available at all times and have the necessary authority to mobilize workers and machinery and to take any action as directed by the Engineer in case emergency or maintenance measures are required, regardless whether the emergency or requirements for maintenance was caused by the Contractor's negligence, act of God or any other



cause whatsoever. Should the Contractor be unable to carry out immediate remedial measures required the Owner may carry out the necessary repairs, the costs for which shall be charged to the Contractor.

Article 30 – Damages and Mutual Responsibility

If either party to this Contract should suffer damage in any manner because of any wrongful act, or neglect of the other party, or of anyone employed by him, then the other party responsible for such damage shall reimburse him. Claims under this paragraph shall be made in writing to the party liable within a reasonable time after the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement, and the party reimbursing the other party as aforesaid shall thereupon be subrogated to the rights of the other party in respect of such wrongful act of neglect if it be that of their party. Should the Contractor cause damage to any other Contractor's work, the Contractor agrees upon due notice to settle with such other Contractor by agreement, if he will settle. If such other Contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor who shall defend such proceedings at the Owner's expense and if any final order or judgement against the Owner arises therefrom, the Contractor shall pay, or satisfy it, and pay all costs incurred by the Owner. Provided that if the Contractor becomes liable to pay, or satisfy, any final order or judgement against the Owner, then the Contractor shall have the right, upon undertaking to indemnify the Owner against any and all liability for costs, to appeal in the name of the Owner such final order or judgement to any and all courts of competent jurisdiction.

Article 31 – Utilities and Buried Hazards

The Contractor shall satisfy himself as to the existence of buried cables, pipes, sewers, drains and other buried hazards and, during the progress of the work, shall avoid injuring or damaging same. The Contractor shall save harmless the Engineer and Owner from any costs associated with damages to any buried facilities which are damaged by the Contractor's equipment, forces or agents.

The Contractor shall, in an approved manner and at his expense, protect from injury any public or private services in the highway, or right-of-way, or easement in the vicinity of his work, assuming all costs and expense for direct or indirect damage, which may be occasioned by injury to the same. Any locations of utilities shown on the drawings are approximate only and the Contractor shall be responsible for their accurate location, and protection, at the time of construction.

All of the standard iron bars indicated on the survey may be placed prior to the Contractor commencing the work. The Contractor shall protect all such bars and shall be responsible for the cost of replacing those, which are destroyed due to his negligence. In areas where the bars may fall within excavation, the Engineer will arrange for those bars to be replaced when it is reasonable to do so, at no cost to the Contractor. However, the Contractor shall, at his own cost, provide assistance to the Engineer or to the surveyor, including labour and machines, as required to prepare the areas prior to replacement of the standard iron bars.



Article 32 – Use of Work, Including Public Access

The Contractor shall confine his equipment; the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the Engineer and shall not unreasonably encumber the premises with his materials.

The Contractor shall not load or permit any part of a structure to be loaded with a weight that will endanger its safety.

The Contractor shall enforce the Engineer's instructions regarding signs, advertisements, fires and smoking.

Where residences etc. are occupied, full access to existing residences / businesses must be maintained where possible. Two (2) days' notice of any restriction must be provided to any affected residence. Pedestrian mobility (e.g., sidewalks, temporary gravel surface) must be maintained at all times. Provision must be made for garbage collection.

Article 33 – Cleaning Up

The Contractor shall at all times keep the premises free from accumulations of waste materials or rubbish caused by his employees or work, and at the completion of the work, he shall remove all his surplus materials and rubbish and leave his work "broom clean" or its equivalent unless more exactly specified. In case of dispute the Owner may remove the rubbish and charge the cost in whole or in part to the Contractor as the Engineer shall determine to be just.

Article 34 – Cutting and Remedial Work

The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other Contractors shown upon, or reasonably implied by, the Contract Documents and he shall make good after them, as the Engineer may direct.

The Contractor shall not endanger any existing work by cutting, digging or otherwise and shall not cut or alter the work of any other Contractor, save with the consent of the Engineer.

Article 35 – Inspection of Work

The Contractor shall request the Engineer to inspect and give his approval to the work upon its completion and upon completion of substantial sections of the work. The Contractor shall ensure that the work to be inspected is in accordance with the Contract, and he shall be responsible for the cost of further inspections should it be determined by the Engineer that the request is premature.

The Contractor shall be responsible for paying all permits and fees for the work within the Contract and for arranging for the appropriate building and permit inspections.



The Owner or the Engineer on his behalf and their representative shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection.

If the specifications, the Engineer's instructions, laws, ordinances or any Municipal authority require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection, and if the inspection is by an authority other than the Engineer, of the date and time fixed for such inspection. Inspections by the Engineer shall be promptly made. If any such work should be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination and made good at the Contractor's expense.

The Contractor shall provide at reasonable times experienced workers, equipped with the required safety equipment, in order to assist the Engineer, the Municipalities' inspector and staff of other authorities having jurisdiction to carry out inspections during the progress of the work and at the time of completion of the work. This shall include, but not be limited to, any assistance required during inspection to ensure compliance with the requirements of the Occupational Health and Safety Act.

The Engineer may order re-examination of questioned work. If such work is found in accordance with the Contract, the Owner shall pay the cost of re-examination and replacement. If such work is found to be not in accordance with the Contract, through the fault of the Contractor, the Contractor shall pay such cost.

Article 36 – Rejected Work and Materials

The Contractor shall promptly remove from the premises all materials condemned by the Engineer as failing to conform to the Contract, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned materials or work within the time fixed by written notice, the Owner may remove them and may store such materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within five (5) days thereafter, the Owner may, upon ten (10) days written notice, dispose of such material in manner of the Owner's choosing and may retain the net proceeds thereof. Further, should the cost incurred by the Owner exceed the proceeds of the sale of condemned materials, the Owner may deduct any such costs from any amounts owing to the Contractor.

Article 37 – Erosion and Sediment Control

Prior to the initiating of any grading, cut, fill or other works, all specified sediment control measures must be installed as per the Contract Drawings, including, but not limited to, sediment control fences, rock check dams, swales, ditches, straw bales, and temporary sediment control ponds and appurtenances.

Prior to any grading, cut fill or other works, any existing roadside ditches are to be protected with sandbags, staked straw bales or rock check dams, as required to trap sediment and prevent its entry into watercourses. Sediment protection shall also be provided upstream of all ditch inlet catchbasins to prevent entry of sediment



into the storm sewer system. These barriers are to be cleaned of sediment on a regular basis and maintained and replaced to the satisfaction of the Engineer until completion of sodding operations.

While working on site, the Contractor is responsible for the repair of erosion damage and for the clean-up of siltation, which can be directly attributed to his works. Specific attention should be paid to the provisions of OPSS 805. The contractor shall inspect all erosion control measures routinely but also prior to all anticipated rain events, and immediately after all rain events, and immediately carry out all remedial work needed to return the measures to the original condition.

All repair and maintenance work related to erosion and sediment siltation control measures shall be carried out immediately upon discovery and treated with utmost speed and urgency.

Sediment built up behind all erosion and siltation control measures shall be removed and disposed of on site, in a location agreed with the Engineer, as noted on the drawings and /or as specified in the Contract Documents in order to maintain the effectiveness of the erosion and siltation control measures.

All filled / graded areas, where applicable as noted on the Drawings and / or in the Contract, are to be consolidated and revegetated as soon as these activities are completed, to prevent erosion.

All of the above are deemed to be included in the contractor's overall contract prices.

Payment will be made at rates included in the contract where repair, maintenance or upgrades of measures are deemed by the Engineer to be caused by events beyond what the Contractor could reasonably have foreseen.

If the Engineer or Owner deem a situation urgent, and in their opinion, conditions warrant and require immediate action, the Engineer or Owner may, in their sole discretion, arrange for and have carried out, any repairs or maintenance to erosion control measures, without prior or advance notice to the Contractor. The Contractor will be advised of such actions as soon as is practical. The costs related to these activities may be deducted from payments to the Contractor, if in the opinion of the Engineer they are deemed to be the contractor's responsibility, based on the provisions described herein.

Article 38 - Blasting

Blasting shall not be permitted unless specifically approved in writing by the Engineer.

Article 39 – Dust Control

The Contractor shall be fully responsible for dust control in all areas on and off the site affected by his operations with a regular maintenance schedule in place satisfactory to the Municipalities and the Engineer, and shall make provision for such measures in his Contract Prices. The cost of dust control measures is deemed to be included in the Contract Price.

Payment for dust control measures will only made where the Contractor is directed to control dust resulting from the activities of others.



Article 40 – Control of Mud Tracking

The Contractor shall, at his own cost, prevent the tracking of mud from his work areas onto the existing streets and shall, at no additional cost, supply all necessary labour, material and equipment to clean the existing streets when so instructed by the Engineer.

Where the Contractor fails to carry out the cleaning to the satisfaction of the Owner, Engineer, or Municipality, the Owner or Municipality may, without notice, carry out such cleaning as it deems necessary and the costs thereof shall be billed to the Contractor or deducted from payments due to him.

Payment for the control of mud tracking will only be made where the Contractor is directed to clean streets and other areas of mud resulting from the activities of others.

Article 41 – Construction Schedule

The Construction Schedule shall be in accordance with that set out in Article IV of the Agreement Between Contractor and Owner.

The Contractor shall, within one (1) week after notification of the award of the Contract, submit his proposed detailed schedule to the Engineer for approval. The schedule of construction shall show clearly, in weekly stages, the proposed progress on the main items, structures and sub-trades of the Contract and shall indicate, where applicable, the labour, construction crews, plant and equipment to be employed.

Article 42 – Management and Disposal of Excess Material and Environmental Protection

42.1. General

Surplus excavated material from excavations shall be disposed of within the confines of the development. The material shall be placed, compacted and levelled as directed by the Engineer. Excavated material shall not be removed from the site without permission of the Engineer, unless otherwise noted, except that surplus excavated material resulting from works external to a subdivision or other private site, on a municipal right of way or easement, shall be removed and disposed off site and the tender prices shall allow for such disposal.

42.2. Notification of Site Selection and Property Owner Release

Written permission shall be obtained from the Owner of property, not designated for use in this Contract, prior to its use for any of the following:

- a. Stockpiling for re-use
- b. Stockpiling for disposable fill
- c. Management as disposable fill



A copy of this permission shall be provided to the Engineer a minimum of one (1) week prior to commencement of such work and a letter of acceptance of the material on completion of the work, all in a form satisfactory to the Owner and Engineer.

42.3. Notification of Ministry of the Environment

Prior to commencement, written notification of the location(s) of the following shall be provided to the appropriate office of the Ministry of the Environment (MOE):

- a. Management of bituminous pavement and Portland cement concrete as disposable fill outside the road allowance, right-of-way, or other Owner property, and
- b. Open burning.

In the event that MOE has concerns with the above location(s) further notification shall be provided until MOE concerns are addressed. A copy of all notifications shall be provided to the Engineer a minimum of one (1) week prior to the commencement of such work.

42.4. Transport of Dangerous Goods Act, Liquid, Industrial & Hazardous Waste

The Contractor covenants and agrees to comply with and to ensure compliance with Federal Regulation "Transport of Dangerous Goods Act" administered in the Province by the Ministry of Transportation and Ontario Regulation 809 'Liquid, Industrial and Hazardous Waste' under the jurisdiction of the Ministry of the Environment and to indemnify the Corporation and save them harmless with respect to any breach thereof.

42.5. Spills Reporting

Spills or discharge of pollutants or contaminants under the control of the Contractor, and spills or discharges of pollutants or contaminants that are a result of the Contractor's operations that cause or are likely to cause adverse effects, shall forthwith be reported to the MOE / Engineer. Such spills or discharges and their adverse effects shall be as defined in the Environmental Protection Act, R.S.O. 1980.

All spills or discharges of a non-aqueous form, from luminaries, internally illuminated signs, lamps, and liquid type transformers under the control of the Contractor, and all spills or discharges from this equipment that are a result of the Contractor's operations shall, unless otherwise indicated in the Contract, be assumed to contain PCB's and shall forthwith be reported to the MOE / Engineer and others as required by regulation.

The reporting of these events to the MOE / Engineer does not relieve the Contractor of his legislated responsibilities regarding such spills or discharge, for either reporting to the appropriate agencies, nor for responsibility for clean-up, nor for any other responsibility set out in the appropriate legislation, regulations or policies.

42.6. Payment

All costs associated with environmental protection shall be deemed included in the Tender unless items are specifically included in the Form of Tender.

All works shall be carried out in accordance with the legislation and regulations and OPSS Div. 1 and OPSS 565 and 577.



Article 43 – Occupational Health and Safety

For the purposes of the Occupational Health and Safety Act, the Contractor is considered to be the “Constructor” as defined in the Act.

It is specifically drawn to the attention of the Contractor that the Occupational Health and Safety Act provide, in addition to other things, that:

“A Constructor shall ensure, on a project undertaken by the constructor that,

- a. the measures and procedures prescribed by this Act and the regulations are carried out on the project.
- b. every employer and every worker performing work on the project complies with this Act and the regulations;
and
- c. the health and safety of workers on the project is protected.”

Article 44 – Workplace Safety and Insurance

The Contractor shall, at the time of entering into any Contract with the Owner, prior to construction and at any time during the performance or completion of the Contract as requested by the Owner, furnish a satisfactory clearance documentation from the Workplace Safety and Insurance Board, stating that all assessments or compensation payable to the Workplace Safety and Insurance Board have been paid.

The Contractor shall submit such documentation to the Owner together with the Agreement executed by the Contractor. One copy of the documentation shall be bound into each of the executed sets of the Contract Documents.

Article 45 – Site Management

45 .1 Site Meetings

The Contractor shall be required to attend regular site meetings, which will be held, typically, every two (2) weeks.

45.2. Site Trailer

The Contractor shall incorporate into his tender the cost of supplying and locating a site trailer for the exclusive use of the Engineer.

The Trailer shall meet the following requirements:

- Minimum floor space of 30 square metres furnished with office furniture, chairs, desks, filing cabinets, bottled water container, etc.
- Weatherproof with lockable doors; the Engineer shall be provided with a minimum of two (2) sets of keys.
- Provision of heating and cooling equipment with thermostat control.



- One Wi-Fi stick with all related fees paid for the duration of the construction period until one month after substantial Completion.
- All electrical system hook-up.
- Adequate parking area and access to existing roadways including any required periodic maintenance to this access.
- Adequate lighting to allow the Engineer to conduct his daily paper work (if power hook-up is not available prior to Contract commencement, a fuel generator supply is required).
- A completely stocked First Aid Kit.
- This trailer shall be installed and functional prior to the Contractor commencing work on the site and shall not be moved until two (2) weeks after the Contract has been completed and the work accepted by the Owner and any applicable acceptances by the Municipality, and other agencies.

The Engineer shall withhold from the Contractor's Progress Estimate up to a maximum of \$2,500.00 for each month, in the event the Contractor does not comply with the provisions of this article.

45.3. Traffic Control during Construction

General

The Contractor shall comply with Regional Police and Fire regulations regarding notification of all interested parties concerning the construction work and provisions for traffic movement.

Traffic control shall be carried out in accordance with the requirements of the Ontario Traffic Manual, and any Municipal procedures.

The Contractor shall submit a traffic control plan to the Engineer prior to commencement of works for submission to and approval by the Municipality.

All flagmen required to satisfy traffic management requirements and a safe working environment shall be provided by the Contractor at his cost.

Notification signs shall be supplied and erected by the Contractor a minimum of five (5) days prior to the closure and / or the commencement of construction or as indicated by the Municipality. Contractor is to remove the signs after the construction.

Should the Engineer so direct, the Contractor shall at his cost provide and arrange for the delivery of notices to residences, businesses and other parties affected, or likely to be affected, by the Works.

Signing and Barricading

The Contractor shall supply and erect all advance warning and project signs, barricades, delineators, flashing lights and such other protection as may be required by the Engineer to protect and advise the travelling public during the course of the Contract.

The Contractor is required to check this construction site daily to ensure that all necessary signing, barricading and flashing lights are in place, clearly visible and operating satisfactorily.

Traffic and Street Signs



Before commencing work on the Contract, the Contractor shall advise the Municipality of the date of commencement of the Contract work and request that the Municipality remove or cover street and traffic signs.

Upon completion of the Contract work, the Contractor shall notify the Municipality that street and traffic signs can be re-erected or reinstated.

Locations and Storage of Materials and Equipment

Materials shall not be stored within 4m of the travelled portion of any roadway except in the medians where the minimum clearance required is 2.5m. Equipment shall not be stored within 4m of the travelled portion of any roadway.

Deliveries and Trucking

The Contractor shall plan and schedule the routes of vehicles transporting all materials to, from or within the job site, so that vehicular movements are accomplished with minimum interference and interruptions to traffic.

The Engineer reserves the right to alter, reject or close same as considered necessary. The Contractor shall notify suppliers of materials and equipment of the above requirements.

Vehicular Access to Adjacent Properties

Vehicular access to all properties within and adjacent to the Contract limits shall be maintained at all times and shall be the responsibility of the Contractor. All traffic arrangements are subject to the approval of the Engineer, and the Municipality. All disruption shall be kept to the minimum required to perform the work.

Payment

The cost of complying with the above requirements and others as may be required by the Authorities, shall be deemed included in the Contract unless specifically otherwise provided and no additional or extra payment will be made.

Article 46 - Setting Out of the Work

The Contractor shall be responsible for the setting out of the work including all lines, grades, elevations, etc., required to construct the work in strict accordance with this Contract and all Contract Documents. The cost for this work is to be included in the Contract unit rates, unless a "Layout" item is present under the General Items section of the Form of Tender, in which case all such costs will be included under that item.

The Contractor shall deliver to the Engineer copies of all grade sheets, field notes, calculations and other layout records that are normally kept, including a list and description of benchmarks used during the construction.

The Contractor's layout shall be subject to periodic checking by the Engineer. The checking procedure is intended as a form of review and must not be construed as relieving the Contractor of his responsibilities for the accuracy of the work. In order to assist the Contractor in setting out of the work, the Engineer will provide a reasonable number of paper prints of pertinent drawings, such as Engineering drawings and detail drawings. The Engineer will also provide the Contractor with a benchmark, which shall be used, for setting out the work; however, the Contractor shall be responsible for checking the accuracy of this benchmark.

The Contractor is to make his own arrangements to obtain the survey plans from the legal surveyor.



Article 47 – Site Drainage

The Contractor shall be fully responsible to maintain adequate site drainage to prevent ponding water and protect his work at all times during the progress and completion of the Work. Any area subject to ponding water must be drained at the Contractor's expense in such a manner satisfactory to the Engineer.

Any and all ditches, drainage channels and storm sewer systems, which may be affected by construction, shall have their flows maintained at all times during construction, unless permission to the contrary has been obtained from the Engineer. The Contractor shall make allowance in his prices for any problems that may be encountered as a result of ditch flows or storm sewer flows. If necessary, the Contractor shall adequately divert or pump the storm water at his expense to avoid construction problems. Drainage shall not be impeded nor shall blockages or water backups be permitted. Any damage as a result of water or flooding and associated costs shall be the responsibility of the Contractor. The Owner shall incur no extra cost for this work.

Article 48 – Quality Assurance Testing

Asphalt

The Contractor shall provide daily asphalt production test results to the Engineer within a 24 hour period.

Granular

Prior to acceptance of the material the Contractor must provide the Owner with test results indicating that the material to be supplied meets current OPS Specifications. The testing must be performed by an Independent Certified Laboratory.

Concrete

The Contractor must provide the Owner with the test results indicating that the material supplied meets current OPS Specifications, including field tests for slump and air content during placing of the concrete. The testing must be performed by an Independent Certified Laboratory.

The Contractor shall bear all costs associated with the testing.

Article 49 – Delivery of Test Samples

The Contractor shall include in his tender prices for the cost of delivery of concrete test cylinders and asphalt samples to a designated testing laboratory. The testing laboratory shall be approved by the Owner.

Article 50 – Guaranteed Maintenance

Section GC7.16 of the General Conditions is revised in that the Contractor shall guarantee and maintain the entire work called for under this Contract for a period of twenty-four (24) months.

The Contractor shall make good in a permanent manner, satisfactory to the Authority, any and all defects or deficiencies in the work, both during the construction and during the period of maintenance as aforesaid. The



Contractor shall commence repairs on any work identified as defective under this clause within 48 hours of receipt of notice from the Authority or the Contract Administrator.

The decision of the Authority and the Contract Administrator shall be final as to the necessity for repairs or for any work to be done under this Section.

Article 51 – Contract Time

Time

Time shall be of the essence for this Contract.

For purposes of this Contract, GC1.04 of the General Conditions is revised, in that Contract Time means the time stipulated herein for Completion of the Work as defined in Clause GC1.06.

Progress of the Work and Contract Time

The charging of working days shall commence on June 4, 2018 and the Contractor shall diligently prosecute the work on this contract to completion on or before the expiration of one hundred sixty (160) working days from the date of commencement.

If the Contract time above specified is not sufficient to permit completion of the work by the Contractor working a normal number of hours each day or week on a single daylight shift basis, it is expected that additional and/or augmented daylight shifts will be required throughout the life of the Contract to the extent deemed necessary by the Contractor to ensure that the work will be completed within the Contract time specified. Any additional costs occasioned by compliance with these provisions will be considered to be included in the prices bid for the various Items of work and no additional compensation will be allowed therefore.

Working days shall be charged until the date of completion of the work as set out in the Certificate of Completion issued in accordance with GC8.02.03.06. The winter shutdown period will be excluded from working days.

Article 52 – Winter Shutdown

The Contractor shall provide a useable facility following shut-down of operations in 2018 meeting the following minimum requirements:

- At a minimum, all works defined by Stage 1 construction shall be completed prior to winter shutdown.
- Construction shall be completed and all equipment removed from the site and access roads, including road closures.
- All vehicular and pedestrian traffic shall be redirected into their pre-construction lanes and temporary lane markings provided. All four (4) traffic lanes shall be open. Temporary pavement shall be removed to re-establish the existing sidewalk and pre-construction grades for all travelled lanes, as directed by the Contractor Administrator.
- The Contractor shall ensure that all platforms or other equipment remaining in place shall be securely locked to prevent unauthorized entry.



- The Contractor shall complete a site inspection at the beginning of the winter shutdown period. All existing site conditions shall be documented with supporting photographs. The beginning shutdown condition information shall be provided to the Contract Administrator within 5 calendar days of shutdown.
- Maintenance of the construction site will be the responsibility of the Town with the exception of work platforms left in place which shall remain the responsibility of the Contractor.
- The Contractor shall complete a site inspection at the end of the winter shutdown period. All existing site conditions shall be documented with supporting photographs. The final shutdown condition shall be provided to the Contract Administrator prior to restarting construction.

END



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1. Specifications

The works shall be constructed in accordance with the drawings and Contract Documents, the Ontario Provincial Standard Specification (OPSS), and Town standards and specifications. Provincial-Oriented OPSS (OPSS.PROV) specifications are applicable where Common OPSS volumes are not available, unless otherwise noted in the Contract Documents.

The work generally consists of the rehabilitation of the Causley Street Bridge over the Blind River on Highway 17 in the Town of Blind River. Work includes bridge rehabilitation, including concrete deck replacement, semi-integral abutment conversion, waterproofing and hot mix paving, cleaning and painting structural steel, miscellaneous patch repair and refacing the base of the east abutment. Work also includes the rehabilitation of the adjacent pedestrian bridge.

The prices and Items in the Form of Tender are considered inclusive and include all works reasonably inferred from the Contract Documents read in combination.

Payment and measurement provisions contained in these Special Provisions shall take precedence over payment and measurement provisions contained in OPSS and other specifications.

2. As Built Survey

Upon Substantial Completion of the work and prior to the release of any further payment the Contractor shall deliver to the Engineer one set of marked up post-construction record drawing paper prints along with an AutoCAD® digital file of the post-construction record drawings. This information, along with spot checks that the Engineer may make, will be used to prepare the post-construction record drawings. Any deficiencies in the “post-construction” records shall be back charged to the Contractor. The cost for this work shall be included in the Contract Unit Rates, unless a “Post-Construction Record Survey, Marked Up Drawings and AutoCAD® file” item is present under the General Items section of the Form of Tender, in which case all such costs will be included under this item.

The as built survey shall include, but not be limited to:

- -information and tie-ins of all works on easements and right of ways,
- -centre line of road way elevations to enable the elevations and locations to be verified, for both base and top asphalt levels,
- -inverts, top of cover and surface elevations at all manholes, service connections terminations, RYCBs , DICBs and CBs,
- -elevations of flanges of hydrants, top of Curb opposite to hydrants
- -RYCB locations shall be verified by a legal surveyor,
- -and all other dimensions and elevations and locations of all facilities shown on the Contract drawings.



In the case of Grading Contracts, post constructed surveys shall be provided as follows:

- - after completion of topsoil stripping,
- - on completion of engineered fill,
- - on completion of all grading,
- - with elevations and dimensions provided for all points shown on the Contract drawings.

The as built information shall be submitted to the Engineer for review no later than fourteen (14) calendar days after the issuance of the Certificate of Substantial Performance to allow sufficient time for review of the submitted information by the Engineer. No holdback will be released prior to receipt and review of as built, and the as built information is considered acceptable, by the Engineer.

The Engineer reserves the right to carry out the survey and deduct the cost thereof from payments to the Contractor in the event the submissions are not made as noted above.

3. Temporary Traffic Control Signs – Item 1.01

Under this Item and for the Contract price, the Contractor shall supply all labour, equipment and materials required to complete the works in accordance with the Contract documents and to the satisfaction of the Contract Administrator.

The Contractor shall be responsible for providing signage in accordance with the Ontario Traffic Manual (OTM) and the OTM Temporary Conditions - Field Edition for both the closure and barricading of the roadway for the detour.

The Contractor shall provide a watchman or other suitable employee to inspect and maintain the signs, barricades on a daily basis as well as weekends and other times when the Contractor is not working.

The Contractor shall provide an adequate number of traffic control persons to direct traffic at any time during construction as required by the Contract Administrator.

Causley Street

The Contractor shall maintain at least two (2) lanes of traffic, one (1) in each direction, at all times, as applicable.

The Contractor shall maintain pedestrian access at all times on the pedestrian bridge on the north side of the roadway bridge, and provide appropriate advanced signing as applicable. A total of three (3) one day closures of the pedestrian bridge will be permitted for specific rehabilitation operations on the pedestrian bridge.

Pedestrian traffic will be detoured around the site during said closures using local roads clearly marked by the Contractor by the use of adequate construction signs as required and placed in accordance with the latest edition of the Ontario Traffic Manual (OTM) and the OTM Temporary Conditions – Field Edition.



A minimum of two (2) "Sidewalk Closed" signs shall be provided on Causley Street at the intersections of Hawkins Street and Woodward Lane.

The pedestrian detour routes shall utilize:

- Hawkins Street, Fullerton Street, Chiblow Street, Hudson Street and Woodward Lane.

Following the closure to pedestrians the Contractor shall ensure that work progresses in a continuous and sequential manner. The scheduling of the Contractor's own operations as well as material delivery and the operations of Sub-contractors shall be coordinated in an effort to minimize the overall extent of the sidewalk closure.

Woodward Lane

The Contractor will be permitted to close Woodward Lane during Stage 1 works on Causley Street.

The Contractor shall place signs at the north end of Woodward Lane to advise traffic that Woodward Lane is closed at Causley Street. The Public Advisory Signs shall be erected as soon after the execution of the Contract Documents as possible and prior to moving onto the site, in order to alert the public of the impending closure.

Submission and Design

The Contractor shall provide the Contract Administrator with a detailed Construction Sign plan prior to moving onto the site. The plan shall include all necessary advisory signs, all detour signs including type, size and location as well as all signs and barricades required to limit vehicle and pedestrian traffic during construction.

The Contractor shall be responsible for acquiring the required road occupancy permit(s) from the Town of Blind River, as required.

Construction

The Contractor shall provide, erect, inspect, maintain, repair and replace as necessary, all necessary construction, detour, advisory and warning signs in accordance with the OTM Book 7 (Ontario Traffic Manual).

The Contractor shall keep all entrances (field or otherwise) open at all times, except at noted, and shall not stockpile materials in the vicinity of any entrances.

The Contractor shall supply and place all construction warning signs using direct buried posts as required by the 'Ontario Traffic Manual – Book 7, Temporary Conditions', prior to the start of construction. The Contractor shall remove all construction signs and posts upon the completion of the Contract.

The Contractor shall cover (bag) any road warning and regulatory signs as required to carry out the construction when advised by the Contract Administrator.

The Contractor will be responsible for providing, maintaining and relocating where necessary, sufficient signs, delineators, barricades, lights, flashers, etc., and providing such flagpersons and/or police officers as are required so that motorists and pedestrians are properly directed to ensure



safety. Flagging procedures shall conform to the recommendations of the Construction Safety Association of Ontario.

The Contractor shall give the Contract Administrator five (5) working days advance notice of any construction, change or removal of the temporary traffic protection and any such construction, change or removal shall only take place upon the approval of the Contract Administrator. During the time the temporary traffic control is being constructed, changed or removed, vehicular traffic shall be under the control and direction of flagmen.

The work of this Item shall also include the removal of mud that has been tracked onto roadways as directed by the Contract Administrator. Mud shall be removed within 24 hours notice by the Contract Administrator.

Payment for all work as shown on the Contract drawings and as outlined in this specification shall be included in the lump sum price bid. Payment shall be made of each payment certificate based on the value of work completed to date as a percentage of the total Contract amount. The total value of this Item shall not exceed 100 % of the Contract lump sum price.

4. Pavement Marking Obliterating – By Abrasive Blasting Item 1.02

Under this item and for the Contract unit price, the Contractor shall supply all labour, equipment and materials required to obliterate existing and temporary pavement marking by abrasive blast cleaning in accordance with the Contract Drawings and specifications and to the satisfaction of the Contract Administrator.

Under this item the Contractor shall also flush and sweep street to provide a clean surface for the installation of pavement markings.

5. Pavement Marking Temporary, Paint – Fluorescent Orange – Item 1.03

Amendment to OPSS 710, November 2010

710.07 CONSTRUCTION

710.07.08 Selection of Materials

Subsection 710.07.08 of OPSS 710 is amended by deleting the third paragraph and replacing it with the following:

The Contractor's choice of material for the item Pavement Marking, Temporary, Paint - Fluorescent Orange is restricted to organic solvent based traffic paint.

710.07.09.02 Organic Solvent Based Traffic Paint



Clause 710.07.09.02 of OPSS 710 is deleted and replaced with the following:

The application shall be fluorescent orange organic solvent based traffic paint and shall be applied at a rate which results in a uniform thickness of 230 ± 25 microns dry film. Reflectorizing glass beads, conforming to OPSS 1750, shall be applied uniformly at a rate as shown below, immediately after paint application, to ensure embedment of the glass beads.

Rate of Application for Overlay Glass Beads per litre of Traffic Paint	
% Volume Solids of Traffic Paint	Glass Beads Required in kg
40-56	0.7
57-70	0.8

Markings shall be applied as per manufacturer’s specification(s). Applicators will be certified by the material supplier/manufacturer and upon request; the applicator shall supply a certificate to the Contract Administrator.

710.09 MEASUREMENT FOR PAYMENT

Clause 710.09.02.01 of OPSS 710 is amended by the addition of the following:

Pavement Marking, Temporary, Paint - Fluorescent Orange

710.10 BASIS OF PAYMENT

Subsection 710.10.01 of OPSS 710 is amended by the addition of the following tender item:

Pavement Marking, Temporary, Paint - Fluorescent Orange – Item.

6. Hot Mix Asphalt Miscellaneous – Item 2.03

Under this Item and for the Contract price, the Contractor shall include the following work:

1. Hot mix asphalt for boulevards shall be placed to a depth of 50 mm.

7. Temporary Hot Mix Pavement – Item 2.05

Under this item, the Contractor shall supply all labour, equipment and material required to complete work associated with the maintenance of traffic on the structure and approach to the structure, utilizing Temporary Hot Mix Pavement and to facilitate ramping as illustrated in the Contract Drawings in Stage 1 configuration. The item shall be in accordance with OPSS 313, unless otherwise states below

1. The Contractor may utilize Superpave 12.5 or 19.0.
2. Removal of Temporary Hot Mix is paid until the respective asphalt removal, full depth item.
3. The Contractor shall repair all defects in the materials and workmanship of the temporary hot mix pavement to ensure a safe and smooth riding surface. Repairs shall be made with



the same HMA type as the original work unless the Owner accepts a proposal to do otherwise.

4. OPSS 313.08.01 & .02 and sub-sections are not required under this item.

8. Pipe Subdrain – Item 2.07

Under this item and for the Contract unit price, the Contractor shall supply all labour, equipment and materials required to complete the following works in accordance with the Contract Drawings and to the satisfaction of the Contract Administrator:

1. Supply and install 150 mm dia. perforated subdrain, including fittings, couplings, bends, caps, etc., behind the abutments, as shown on the Drawings and as directed by the Contract Administrator. Perforated subdrain shall be wrapped with filter cloth conforming to the requirements of OPSS 1860, Class 1.
2. Supply and install Armtec CSP-10012 or reviewed equivalent rodent grates at all subdrain outfalls.
3. Supply and installation of crushed stone around subdrain pipe with a minimum 50 mm bedding. Ensure subdrain pipe is not allowed to float out of position. Crushed stone aggregate shall consist of HL4 aggregate and shall be wrapped in geotextile.
4. The supply and placement of the steel pipe sleeves through the wingwalls and abutment cleats to accommodate the CSP subdrain pipes in accordance with OPSD 3515.00.
5. Basis of Payment - length, in metres, of subdrain installed.

9. Removal of Catch Basin – Item 2.16

In addition to requirements in OPSS 510, this item shall also include:

1. Salvage of existing frame & grate at catchbasin structure no. 1 for replacement

10. Adjusting and/or Rebuilding Catch Basins – Item 2.19

In addition to requirements in OPSS 704, this item shall also include:

2. Installation of existing salvages frame & grate at catchbasin structure no. 1.

11. Pavement Marking – Item 2.20

Under this item, the Contractor shall reinstate all existing pavement markings to existing conditions.

The Contractor is responsible to document all existing pavement markings (colour, skip and width) disturbed by the Work, prior to the commencement of work.



710.10 BASIS OF PAYMENT

Subsection 710.10.01 of OPSS 710 is amended. The payment for payment marking will be by lump sum.

12. Topsoil (Imported) – Item 2.23

Screened topsoil shall be placed to a minimum depth of 150 mm in disturbed grass areas. The grading and depth of topsoil shall be approved by the Contract Administrator prior to placing sod or seed. Any sod or seed placed prior to approval of the topsoil shall be deemed to be unacceptable.

Subsection 802.05.01 of OPSS 802, November 2010 is amended by the addition of the following:

The topsoil shall be tested to ensure there are no deficiencies with respect to fertility levels and/or screening levels. A copy of the topsoil testing report prepared by a certified agronomist shall be provided to the Contract Administrator. The report shall document soil fertility levels and identify any deficiencies and how they are to be rectified. Payment for this testing shall be included in payment under the respective topsoil Items.

The topsoil shall have a minimum of 4% organics.

If the topsoil does not meet fertility requirements the soils shall be treated with the required amendments as recommended by the topsoil analysis report at no additional cost.

13. Earth Excavation for Structure – Item 3.02

Payment at the contract unit price shall be full compensation for all labour, equipment and materials required for:

1. Removal and management of existing materials behind the concrete abutments and ballast walls for conversion of the structure to semi-integral construction and as shown on the drawings.
2. Removal and management of existing materials behind the concrete wingwalls for the conversion of the structure to semi-integral construction, as shown on the drawings.
3. Removal and management of existing materials to facilitate repairs and/or removals to the structure.
4. Excavation to permit the construction of the approach slabs, granular sub-base pad beneath each approach slab and sleeper slabs.

14. Dewater Structure Excavations – Item 3.03

Under this Item and for the Contract price, the Contractor shall carry out all work, as outlined in OPSS 902, and as shown on the Drawings, to ensure that:



1. Excavations and removals required for the structural works are performed in the dry, and that all concrete and granular materials required for the structure are placed in the dry.
2. Continuous flow is maintained in the watercourse downstream of the work areas at all times during construction.

To ensure work is completed in “dry” conditions, any water entering the excavations and isolated work areas shall be pumped into an approved sediment removal system (e.g. sediment filter bag, excavated sediment trap, dewatering trap) located at least 30 m from the watercourse in a stable, vegetated area. The water discharging from the approved sediment removal system shall be allowed to disperse over the vegetated surface and re-enter the watercourse. If conditions of the dewatering discharge location cannot be achieved, the Contractor shall consult with the Contract Administrator to determine an appropriate alternative.

The Contractor shall install, maintain and remove temporary cofferdams at the east abutment, as shown on the Drawings. The Contractor shall determine all dimensions and elevations of the temporary cofferdams. The Contractor shall be wholly responsible for the adequacy of his dewatering scheme. If an alternative method of dewatering is proposed by the Contractor, he shall be responsible for providing all additional information as required by the Ministry of Natural Resources and Forestry and shall meet any additional requests of the Natural Resources and Forestry. All costs associated with delays resulting from proposed change to the dewatering scheme shall be borne by the Contractor. The Contractor shall be prepared to present his dewatering scheme to Agency representatives at the pre-construction meeting.

Cofferdams shall be constructed using woven polypropylene or polyethylene fabric bags (minimum weight 135 g/m²) filled with clean pea gravel. Individual bag dimensions shall be either 650 mm x 350 mm (approximate) or cubic metre bags. The Contractor shall construct the cofferdam as shown on the Drawings and in OPSD 219.150, substituting pea gravel for sand. The cofferdam shall be wrapped with an anchored impermeable membrane to ensure water tightness. Cofferdams shall be constructed to the height shown on the reviewed shop drawings, and the ends shall be placed firmly against the abutment and creek embankments to prevent water from outflanking the cofferdams. On removal, the Contractor shall release about 20% of the pea gravel into the watercourse, and dispose of the remaining pea gravel as well as the bags, offsite.

The Contractor shall note that fish stranded in the isolated work areas following installation of the cofferdams must be safely captured and transported downstream of the works and released into the watercourse. Only a qualified biologist or technician with a valid fish collection permit from the Ministry of Natural Resources and Forestry is permitted to perform the fish rescue.

The Contractor is advised that all dewatering schemes shall be subject to review by the Natural Resources and Forestry and the Engineer. The Contractor shall submit six (6) copies of his detailed drawings and specifications for his proposed method of dewatering. The Contractor shall be wholly responsible for the adequacy of the method of dewatering.

Basis of Payment

Payment at the lump sum price for this Item shall include full compensation of all labour, equipment and materials required to supply, install and maintain the cofferdams, and supply, operate and



maintain the dewatering pumps and supply and maintain the sediment containment system, for the duration of construction, restore any areas impacted by erosion due to pumping activities, and remove the cofferdam materials and dewatering equipment offsite upon completion of the work.

Payment will be based on the pro-rated progress of the work.

15. Concrete in Substructure – Item 3.04

Under this Item and for the Contract price, the Contractor shall include the following, as shown on the Drawings and as directed by the Contract Administrator:

1. Supply and installation of all joint filler, expanded and extruded polystyrene, caulking, EVA foam, etc, and similar items as indicated on the drawings and as required to complete the structure.
2. Concrete in the new ballast walls.
3. Concrete in reconstructed wingwalls.
4. Concrete in abutment haunches.

16. Concrete in Deck – Item 3.05

Under this Item and for the Contract price, the Contractor shall include the following, as shown on the Drawings and as directed by the Contract Administrator:

1. Supply and installation of all joint filler, expanded and extruded polystyrene, caulking, EVA foam, etc, and similar items as indicated on the drawings and as required to complete the structure.
2. Concrete in the deck.
3. Supply and installation of the 15mm elastomeric seating pad on the ballast walls, as shown on the Drawings.
4. Elastomeric seating pads shall conform to the requirements of OPSS 1202, except that the hardness of the elastomer shall be a minimum of 50 Shore A, and the elastomer shall have a minimum tensile strength of 15 MPa.
5. Supply and installation of anchorage inserts for support of the gas main below the south deck cantilever.

17. Concrete in Barrier Walls – Item 3.06

Under this Item and for the Contract price, the Contractor shall include the following, as shown on the Drawings and as directed by the Contract Administrator:



1. Supply and installation of all joint filler, expanded and extruded polystyrene, caulking, EVA foam, etc, and similar items as indicated on the drawings and as required to complete the structure.
2. Concrete in barrier walls.
3. Supply and installation of anchorages for guide rail and channel, as shown on the Drawings.
4. Supply and installation of anchorages for barrier rails.

18. Concrete in Approach Slabs and Sleeper Labs – Item 3.07

Under this Item and for the Contract price, the Contractor shall include the following, as shown on the Drawings and as directed by the Contract Administrator:

1. Supply and installation of all elastomeric approach slab pads, polyethylene sheet, joint filler, expanded and extruded polystyrene, caulking, EVA foam, etc, and similar items as indicated on the drawings and as required to complete the structure.
2. Concrete in approach slabs.
3. Concrete in sleeper slabs.

19. Dowels Into Concrete – Item 3.08

Under this Item and for the Contract price, the Contractor shall include the following work:

1. Core drill into the existing concrete and grout in dowels as shown on the Drawings.
2. Supply and installation of all reinforcing steel bars.

Grout shall be the Hilti HIT HY-200 Adhesive System, or approved equal, and shall be used in accordance with the manufacturer's recommendations and as directed by the Contract Administrator. The holes shall be pre-dampened for a period of one hour and free water shall be removed prior to application of the grout.

The holes shall be free of dust and debris immediately prior to placement of the anchoring agent. When the anchoring agent fails to fill the hole after insertion of the dowel, additional anchoring agent shall be added to fill the hole. Holes that are started but not complete because reinforcing steel is encountered shall be cleaned and filled with an approved patching material.

All debris resulting from the operation shall be disposed of as specified elsewhere in the Contract.



20. Glass Fibre Reinforced Polymer Reinforcing Bar – Item 3.10

1.0 SCOPE

This specification covers the requirements for the supply, fabrication, and placing of glass fibre reinforced polymer (GFRP) reinforcing bar as internal reinforcement of concrete components.

2.0 REFERENCES

Ontario Provincial Standard Specifications, Construction:

OPSS 905 Steel Reinforcement for Concrete

Ministry of Transportation Publications

Structural Manual

Guidelines for Inspection and Acceptance of Glass Fibre Reinforced Polymer (GFRP) Reinforcing Bars

CSA Standards:

S806-02 (R2007) Design and Construction of Building Components with Fibre- Reinforced Polymers

S807-10 Specification for Fibre reinforced Polymers

S6-06 Canadian Highway Bridge Design Code

ASTM Standards:

D 570 Standard Test Method for Water Absorption of Plastics

D578 Standard Specification for Glass Fibre Strands

D 2584 Standard Test Method for Ignition Loss of Cured Reinforced Resins

D 2734 Void Content of Reinforced Plastics

D 3171 Standard Test Method for Constituent Content of Composite Materials

D 3418 Test Method for Transition Temperatures of Polymers by Thermal Analysis (DTA or DSC).

D 5028 Curing Properties of Pultrusion Resin by Thermal Analysis

D 7205 Standard Test Method for Tensile Properties of Fiber Reinforced Polymer Matrix Composite Bars

E 1131 Standard Test Method for Compositional Analysis by Thermogravimetry

E 1640 Standard Test Method for Assignment of the Glass Transition Temperature by Dynamic Mechanical Analysis



American Concrete Institute Publications:

ACI 440.3R-4 (2004)	Guide Test Methods for Fiber-Reinforced Polymers (FRPs) for Reinforcing or Strengthening Concrete Structures," American Concrete Institute, Farmington Hills, Michigan, USA.
ACI 440.3R-04 Bars	Test Method B.4, Test Method for Transverse Shear Strength of FRP
ACI 440.3R-04	Test Method B5, Test Method for Strength of FRP Bent Bars and Stirrups at Bend Locations
ACI 440.3R-04	Test Method B.12, Test Method for Determining the Effect of Corner Radius on Tensile Strength of FRP Bars

3.0 DEFINITIONS

For the purposes of this specification, the following definitions apply:

Glass Fibre Reinforced Polymer (GFRP) means a fibre-reinforced composite with a polymeric matrix and continuous fibre reinforcement of glass.

Glass Transition Temperature means the midpoint of the temperature range over which an amorphous material changes from a brittle and vitreous state to a plastic state, or vice versa.

Lot means glass fibre reinforced polymer reinforcing bars made from the same batch of resin from the resin supplier and for straight bars shall consist of bars of the same grade and diameter. For bent bars and anchor headed bars a lot shall consist of no more than 1000 bars of the same shape and diameter.

Structural Component means a major portion of a bridge structure such as bridge deck, barrier wall, side walk, curb and pier shaft.

Wet Glass Transition Temperature means the glass transition temperature, determined when the sample is fully saturated.

4.0 DESIGN AND SUBMISSION REQUIREMENTS

4.01 Design Requirements

Design shall be according to CAN/CSA S6 and the Structural Manual.

4.02 Submissions

4.02.01 GRFP Quality Control Report

Two copies of GFRP Quality Control Report for all the materials delivered to site shall be submitted to the Contract Administrator prior to the placement of the GFRP reinforcement. The report shall contain the following information:

- a. Production information including:
 - i. Supplier



- ii. Lot number of GFRP bars
- iii. Batch number of resin
- iv. The start and end date of production for each production lot of material
- v. The total linear meters produced in each lot for straight bars or the total number of bars in each lot for bent bars and anchor headed bars
- b. Summary of all material test results listed in order as identified in Table 2 with the following information for each property.
 - i. The number of samples tested;
 - ii. The result of every test as specified in the Quality Control subsection
 - iii. The average and standard deviation of test results;
 - iv. For tensile strength tests; the minimum tensile strength obtained from testing of the required samples
- c. A letter from the Quality Verification Engineer (QVE) giving permission to proceed with placement of the GFRP reinforcement. The letter shall state that the QVE has reviewed the required QC testing and has verified that the QC test reports are complete and conform to the requirements of the Contract Documents.

4.01.02 Working Drawings

At least 7 days before the commencement of installation of GFRP bars three sets of the following Working Drawings shall be submitted to the Contractor Administrator for information purposes:

a. Bar Placing Drawings

Placing drawings shall include quantity, bar size, location and spacing for all GFRP bars. All submissions shall bear the seal and signature of an Engineer, verifying that the drawings are consistent with the Contract Documents.

b. Bar Schedule

GFRP bar schedule shall include quantity, bar size, type, length and bending dimensions. All submissions shall bear the seal and signature of an Engineer verifying that the drawings are consistent with the Contract Documents.

When the Contractor intends to substitute bars, a proposal shall be submitted to the Contract Administrator for approval. Submission of the proposal and the Working Drawings shall be at least 3 weeks before bar installation.

4.01.03 Certificate of Conformance

Upon completion of placing GFRP reinforcement for each component and prior to the placing of concrete, a Certificate of Conformance sealed, signed and dated by the Quality Verification Engineer (QVE) shall be submitted to the Contract Administrator. The Certificate shall state that the



Work has been carried out in general conformance with the sealed and signed working drawings, supporting documents, and Contract Documents.

5.0 MATERIALS

5.01 GFRP Bar Types and Suppliers

GFRP bars shall be according to the grade specified in the Contract Drawings and shall be supplied by one of the following prequalified manufacturers:

- a. Aslan 100 by Hughes Brothers Inc. for Grade I straight and bent bars only.
- b. V-Rod by Pultrall Inc., Division of ADS Composites Group for Grade I and III straight bars, Grade I bent bars, and bars with anchor head.
- c. ComBAR by Schoeck Bauteile GmbH for Grade III straight and bent bars, and bars with anchor head.

All GFRP bars in the same structural component shall be supplied by the same manufacturer; there shall be no mixing of products from different manufacturers in a component unless permitted in the Contract Drawings.

For a particular structural component where Grade I and III GFRP bars are specified to be used together, the Contractor may propose to substitute Grade I GFRP bars with Grade III bars having equivalent tensile modulus and strength, but the bar spacing shall not exceed those shown for the lower grade in the Contract Drawings. The minimum bar size shall be 16 mm for top mat of components subjected to construction foot traffic, except 12 mm diameter bar may be used for sidewalk.

Where the Contract Drawings specify a particular product, there shall be no substitution unless approved by the Owner.

5.02 Material Requirements of GFRP Bars

GFRP bars shall meet all the qualification requirements according to CSA-S807 and Table 1 and Table 2 of this specification.

Binding material for GFRP bars shall be composed of thermoset vinyl ester resin that is homogeneous throughout the cross-sectional of the bar. Fibre reinforcement in the GFRP bars shall be continuous E-glass or E- CR glass fibres according to ASTM D 578.

5.03 Bar Identification

All GFRP bars to be used in the construction shall be legibly stamped by the manufacturer with the following information at no more than 2.0 m spacing for straight bars, and at least once for bent bars and anchor headed bars:

- a. Manufacturer's name and symbol
- b. Type of fibre
- c. Designated bar diameter
- d. Grade designation



e. Designated modulus of elasticity

f. Production lot or batch number

5.04 Associated Hardware

Fastening of GFRP bars shall be with coated tie wire, stainless steel wire or nylon ties.

Bar chairs for supporting GFRP bars shall be plastic.

5.05 Workmanship and Finish

The GFRP bars shall be uniform in diameter/size and free of defects that would be detrimental to the mechanical properties and durability. The surface finish shall be uniform, free of voids and air pockets, and similar to the product tested for qualification. Defects include, but are not limited to, exposed fibres, cracks, kinks, surface pitting, and discoloration.

Fabrication tolerances shall be according to OPSS 905.

6.0 EQUIPMENT - Not Used

7.0 CONSTRUCTION

7.01 Handling, Storage and Protection of GFRP Bars

Delivery, storage and handling of GFRP bars shall be according to the manufacturer's instructions to prevent damage.

The bars shall be lifted using multiple pickup points to prevent sags. Nylon slings or padded wire rope slings shall be used to lift bars. Lifting of bundles of bars shall be with a strong back, spreader bar, multiple supports or a platform bridge. The bars shall not be dragged or dropped.

The bars shall be stored clear of the ground on suitable protective cribbing spaced to prevent sags in the bundles. Stacks of bundles of straight bars shall have adequate blocking to prevent contact between the layers of bundles.

The GFRP bars shall be covered with opaque white polythene during storage. When the exposure time is expected to exceed or exceeds 30 days, exposed GFRP bars installed in the structure, or formwork, including bars partially embedded in concrete, shall be protected from the elements by covering with opaque polyethylene sheeting or equivalent protective material. The protection shall be adequately supported and secured in place. This protection shall be maintained until its removal is required for preparation for subsequent concrete placement.

GFRP bars shall be stored separately from reinforcing steel bars with the bar tags maintained and clearly visible until ready for placing.

GFRP reinforcing bars shall be protected from any abrasive blasting operation in their immediate vicinity by adequate covering or wrapping with protective material.

GFRP at the top mat of a deck slab, after placing, shall be protected from construction traffic such that the finishing is not damaged.

7.02 Placing



The GFRP bars shall be placed in accordance with OPSS 905 unless otherwise specified.

GFRP bars shall be accurately placed in the positions shown in the Contract Documents and held in the correct location during the operations of placing and consolidating concrete.

Bars shall be tied at least at every third intersection. The maximum untied length of any bar shall be 900 mm.

Bar support chairs shall not exceed 900 mm average spacing in each direction.

GFRP bars within the formwork shall be secured to prevent movement during concrete placement. The bars shall be supported or tied to resist settlement, floating upward, or movement in any direction during concrete placement. For overlays and other horizontal placement where there is no bottom mat of steel reinforcement to tie down the GFRP, the GFRP mat shall be anchored down directly to the concrete or formwork to prevent it from floating upward.

Field bending shall not be permitted.

Bent bars shall not be field cut. Field cutting of straight bars will be permitted only with the approval of the Contract Administrator. The field cutting shall be with a high speed cutter, fine blade saw, diamond blade or masonry saw. The bars shall not be shear cut.

GFRP bars shall not be dragged against other GFRP or other steel reinforcement.

7.03 Surface Condition of Bars

GFRP bars at the time the concrete is placed shall be free of mud, oil, concrete or other contaminants, and surface finish defects that adversely affect bonding strength or other properties.

GFRP bars shall be protected from contamination of concrete during adjacent placements. Any concrete contamination shall be removed immediately while the concrete is still fresh without damaging the GFRP bars. Removal of other materials present on the bars shall be according to the materials and methods recommended by the bar manufacturer.

7.04 Quality Control

7.04.01 General

All GFRP materials shall meet the mechanical, physical and durability properties required by this specification.

7.04.02 Number of Samples

The minimum number of samples required shall be 5 from each lot of straight bars, anchor headed bars and bent bars.

7.04.03 Determination of Properties

Manufacturer's quality control test requirements for mechanical, physical and durability properties of GFRP bars for various tests and reporting shall be determined as specified in Table 2. The limits of the various properties shall be as specified in Table 2. A lot shall be rejected if any of the samples fails to meet one or more of the specified limits.



8.0 QUALITY ASSURANCE

8.01 Sampling

Prior to placing the GFRP, the Contract Administrator shall randomly select 5 samples from each lot. The straight bars shall be cut according to this specification to 1.5 m length by the Contractor. For bent bars and anchor headed bars, the Contract Administrator shall select at random 5 samples from each lot. Samples are not required for bent bars of a particular diameter and shape, or anchor headed bars, if the total number required in the contract for each respective bar type is less than 50.

8.02 Testing

At the discretion of the Owner, the following tests shall be performed by a laboratory designated by the Owner, according to the test methods and requirements listed in Table 2:

- i. Longitudinal tensile strength
- ii. Longitudinal tensile modulus and ultimate elongation
- iii. Fibre content
- iv. Water absorption- twenty-four hour immersion and long-term immersion
- v. Cure ratio
- vi. Transverse shear strength

8.03 Basis of Acceptance

A GFRP lot shall be rejected if any of the 5 samples fails to meet the specified minimum requirements for (i) longitudinal tensile strength or (ii) longitudinal tensile modulus and ultimate elongation given in Table 2.

A GFRP lot shall be rejected if the average value of the test results of the 5 samples fails to meet any of the requirements for (iii) fibre content, (iv) water absorption and (v) cure ratio, according to Table 2.

GFRP that does not meet the specified finishing and dimensional tolerance shall be rejected. The MTO guidelines will also be used as a basis for field inspection and acceptance of GFRP bars.

All rejected GFRP shall be replaced at no cost to the Owner and the replacement bars shall be subjected to the same Quality Control and Quality Assurance testing as specified.

If any of the test results for a lot fail to meet the specified requirements, any work incorporating that lot of GFRP will be rejected.

9.0 MEASUREMENT FOR PAYMENT - Not Used

10.0 BASIS OF PAYMENT

10.01 Glass Fibre Reinforced Polymer Reinforcing Bar

Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment and Material to do the work.



**Table 1
Tensile Strength and Modulus of GFRP Bars**

Grade	Straight Bars			Bent Bars*		
	Designated Bar Diameters	Minimum Specified Longitudinal Tensile Strength KN	Longitudinal Modulus of Elasticity GPa (Min)	Designated Bar Diameters	Minimum Specified Longitudinal Tensile Strength KN	Longitudinal Modulus of Elasticity GPa (Min)
I	13	84	40	13	84	40
	15	130		15	130	
	20	170		20	153	
	25	280		25	252	
II**	13	103	50	13	103	45
	15	159		15	159	
	20	227		20	204	
	25	408		25	367	
III	13	130	60	13	130	50
	15	200		15	200	
	20	280		20	252	
	25	490		25	441	

* Tensile strength and modulus are given for the straight portion of the bent bar

** There are currently no pre-qualified suppliers of Grade II GFRP bars

**Table 2
Quality Control Test Requirements**

Property	Standard for test	Specified limits
Cross-sectional area	CSA-S806, Annex A, Determination of Cross-Sectional Area of FRP Reinforcement.	Minimum not less than 95% of the nominal cross-sectional area. Maximum not more than 20% of the nominal cross sectional area for bar diameter up to 20 mm and 15% for bar diameter bigger than 20 mm. Nominal cross-sectional area shall be according to CSA-S807.



Property	Standard for test	Specified limits
Longitudinal tensile strength for straight bars and straight portion of the bent bars	ASTM D7205; or CSA-S806, Annex C, Test Method for Tensile Properties of FRP Reinforcements.	Minimum values defined in Table 1
Longitudinal tensile modulus and ultimate elongation (for straight bars and straight portion of the bent bars)	ASTM D7205; or CSA-S806, Annex C, Test Method for Tensile Properties of FRP Reinforcements.	Minimum values of tensile modulus defined in Table 1; the ultimate elongation shall not be less than 1.2%
Transverse shear strength	ACI 440.3R, Test Method B.4, Test Method for Transverse Shear Strength of FRP Bars; or CSA-S806, Annex N, Test Method for Shear Properties of FRP Rods.	≥ 180 MPa
Longitudinal tensile strength and modulus of FRP bent bars at bend locations	ACI 440.3R-04, Test Method B5, Test Method for Strength of FRP Bent Bars and Stirrups at Bend Locations (Note 1) or ACI 440.3R, Test Method B.12, Test Method for Determining the Effect of Corner Radius on Tensile Strength of FRP Bars	Minimum strength at the bend shall be at least 40% of the minimum strength of straight portion of GFRP bent bars.
Fibre content	The relevant of the following: ASTM D3171 (Method I of Procedure G), ASTM E1131, and ASTM D2584.	Glass fibre content ≥ 70% by weight
Void content	ASTM D2734 or ASTM D5117	≤ 1% (ASTM D2734); or If no voids or longitudinal cracks are observed after 15 min. of ASTM D5117 test, this criterion shall be deemed to have been met



Property	Standard for test	Specified limits
Water absorption at 50 °C for straight bars , straight portion and curved portion of bent bars and grids	ASTM D570 Water Absorption of Plastics: Procedures 7.1 & 7.4, except that both tests shall be conducted at 50 °C (Note 2)	< 0.35% for 24-hour immersion ≤ 0.45% after 1 week immersion (168 hours) for the long-term immersion test
Cure ratio for straight bars , straight portion and curved portion of bent bars and grids	Test Method according to Appendix A of CAN/CSA S807; Calibration of DSC by Indium according to ASTM D5028	≥ 95% of Cure Required for all straight bars and bent bars
Wet glass transition temperature	ASTM D3418 (Note 3) or ASTM E1640 (Samples to shall be saturated in accordance with ASTM D570 , except that the temperature of 50 °C shall be used for conditioning)	DSC = 100 °C DMA = 110 °C
Pullout Capacity of anchor headed bars	Embedded in concrete block (Note 1)	100 kN for 15 mm diameter bar with a maximum slip of 0.5 mm.

Note 1: Test may be conducted with high early strength concrete after the concrete reaches 10 MPa strength.

Note 2: Test is conducted at 50 °C for both twenty-four hour immersion and long -term immersion, in order to shorten the time required for the test

Note 3: Use hermetically sealed pan to prevent volatilization

21. Bearings – Item 3.21

Under this Item and for the Contract price, the Contractor shall include the following, as shown on the Drawings and as directed by the Contract Administrator:

1. The supply and installation of new elastomeric laminated bearing pads at each abutment.
2. The supply and installation of the grouted anchor bolts for the abutment bearings complete with nuts and washers.
3. The fabrication, delivery and installation of new bearing plates.
4. The removal and management of existing bearings and bearing plates.
5. Prepare shop drawings and submit six (6) sets to the Contract Administrator for review. Fabrication shall not commence until the shop drawings have been reviewed.



22. Jacking of Superstructure – Item 3.22

Scope

This special provision covers the requirements for jacking the bridge to facilitate the replacement of bearings; and for fabricating, delivering, erecting and removing temporary supports where required.

The Contractor shall review the contract drawings and provide an acceptable procedure and drawings, with consideration of the jacks and materials required to complete the work for review and approval. All Working Drawings shall be signed and sealed by design and checking Engineers.

The Contractor shall set measurement points on the abutments to accurately monitor the lift and lowering of the bridge within 1 mm at any time during the jacking and lowering operations. The measurement shall be independent of the jacking equipment so that the actual movement of the bridge deck is noted. Provide a record of the measurements and drawings indicating the location of the measurement locations to the Contract Administrator.

Submission and Design Requirements

The submission for the jacking operation and the temporary supports shall conform to subsection 922.04.01 of OPSS 922 and shall bear the seal and signature of a Professional Engineer and checking Engineer who are licensed by the Association of Professional Engineers of Ontario.

Jacking shall be arranged in such a manner that the total lift and lifting force at each jack can be individually monitored and controlled.

Upon completion of final jacking at each substructure and lowering of the superstructure the Contractor shall submit to the Contract Administrator a Certificate of Conformance sealed and signed by the Quality Verification Engineer. The Certificate shall state that the jacking and lowering of the superstructure onto bearings has been carried out in general conformance with the stamped working drawings and contract drawings. This Engineer will not be permitted to carry out the work of the Quality Verification Engineer for this work.

Equipment and Materials

All equipment and materials required for temporary supports shall be in accordance with OPSS 919 and the contract. The temporary supports shall be designed to safely withstand the total loads shown on the drawings.

Jacks used shall be of sufficient capacity. Loads shall be distributed to the concrete surface so that local overloading is prevented. All jacks shall be connected to a common manifold and monitoring device. Current calibration certificates shall be provided to the Ministry for all gauges.

The Contractor is advised that the forces required to lift the girders may be greater than the theoretical load given on the drawings. The Contractor shall supply jack capacity of 200% of the theoretical loads shown. The Contractor is advised that the loads shown are with the existing deck in place. The Contractor shall provide calculations for theoretical jacking loads in the event that the conditions vary from that described.



Construction

The sequence of construction shall conform to the sequence given on the contract drawings.

Rehabilitation work related to bearings and girders at bearing locations shall be carried out immediately after the structure has been jacked and temporarily supported. After the rehabilitation work is completed, the superstructure shall be lowered onto the bearings. The bearings shall have uniform and full contact at the top and bottom. If any of the bearings are not properly seated, the bridge shall be jacked up again and remedial work performed until all bearings have full contact and the superstructure is uniformly supported. Such remedial work as is necessary shall be done at the Contractor's expense.

Jacking operations shall be carried out under the direct supervision of qualified personnel with previous jacking experience.

The structure may be jacked in any order and either simultaneously or separately.

The lifting and lowering shall be carried out in one uniform, synchronized jacking operation. At no time during jacking operations shall the difference between any jacking point be more than 3 mm. The total lift shall not exceed 10 mm.

Excess material resulting from the performance of the work required under this special provision shall be removed and managed as specified elsewhere in the Contract.

23. Access to Work Area, Work Platform and Scaffolding – Item 3.21

Under this Item and for the Contract price, the Contractor shall include the following, as shown on the Drawings and as directed by the Contract Administrator:

1. Provide safe and adequate access, scaffolding, work platforms, containment systems and staging, on and around the structure, in order to carry out all the required work in accordance with OPSS 928.
2. Provide safe and adequate access to the Contract Administrator for inspection and measurement of all areas of the structure.
3. Safely remove and dispose of all access, containment and protection systems, scaffolds and platforms outside of the right-of-way upon completion of the work.

Typical locations and areas of work are shown on the drawings. The Contractor shall provide protection to carry out work in these areas. The actual locations and extent of concrete repairs at deck and abutments will be determined on site by the Contract Administrator.

The Contractor shall submit to the Contract Administrator for review, a detailed proposal for carrying out demolition and repair for each location of an applicable work item. Those proposals shall outline removal and restoration techniques, sequence of operations and shall detail and dimension the Contractor's proposed staging, access, scaffolding, protection and containment systems.



The Contract Administrator's approval shall not release the Contractor from liability for any damage or any consequence as a result of inadequate protection design.

Removals shall be undertaken in a safe and controlled manner. Free falling of concrete debris or any material shall not be permitted. If, in the opinion of the Contract Administrator, the removal operations are unsafe and/or dangerous, appropriate measures shall be undertaken by the Contractor at no cost to the Contract Administrator.

The Contractor shall provide containment and protection systems of each work area to contain or collect 100% of material removed, abrasive blast cleaning medium, equipment and other construction debris, with the exception of dust. No material removed shall be dropped below any work location as a means of disposal. No material shall be deposited outside of the work location. No slurry nor effluent from concrete sawcutting operations shall be permitted to run beyond containment systems or discharged directly into the watercourse. Heavy construction grade polyethylene sheeting shall be used to collect such effluent and associated debris.

Six sets of working drawings and documents shall be submitted to the Contract Administrator for review of access and protection schemes. Work shall not proceed until the Contract Administrator has reviewed the drawings and provided authorization for the Contractor to proceed with the work.

All items submitted should bear the seal and signature of a Professional Engineer licensed in the Province of Ontario who shall be responsible for design and inspection of protection system on site and shall certify in writing its compliance with design requirements.

Payment will be made at the rate 80% of the lump sum price bid upon satisfactory erection of the protection and the remaining 20% of the lump sum price bid for removal of the protection system and restoration of the area. Payments will be made on a lump sum basis and such payment shall be full compensation of all design, labour, equipment and materials, including all access and protection of all repairs, necessary to complete the work.

24. Concrete Removal – Full Depth – Item 3.26

Under this Item and for the Contract price, the Contractor shall include the following, as shown on the Drawings and as directed by the Contract Administrator:

1. Remove and dispose of the concrete deck, sidewalks, barrier walls, barrier rails and approach slabs on the roadway structure.
2. Remove and dispose of a portion of the concrete ballast walls, wingwalls and haunches including all sawcutting at the limits of removal for the semi-integral conversion.
3. Remove and dispose of existing deck drains.
4. Perform all removals not provided for under other Items of this Contract.



25. Concrete Refacing Form and Pump – Item 3.29

Under this Item and for the Contract unit price, the Contractor shall supply all equipment, labour and materials to concrete reface the east abutment base, in accordance with OPSS 930, as shown on the Drawings, and as directed by the Contract Administrator.

Work under the above tender item shall also include the supply and installation of anchors and meshing, if required, to complete repairs, as shown in the Contract Drawings.

Payment at the Contract price shall include the following work as directed by the Contract Administrator:

1. The supply and installation of anchors and meshing.
2. Priming the concrete surfaces with a bonding agent prior to placing new concrete in accordance with OPSS 930.
3. Installation of new reinforcement steel bars, as shown on the details of the contract drawings.

26. Union Gas Temporary Support Structure – Item 3.32

Under this Item and for the Contract unit price, the Contractor shall supply all equipment, labour and materials to support the existing Union Gas main in place during the bridge rehabilitation, as shown on the Drawings, and as directed by the Contract Administrator.

This item shall include the design, fabrication, installation and removal of a new temporary support structure to adequately support and protect the gas main suspended from the south deck overhang. It will need to be carefully sequenced with the bridge rehabilitation activities.

The existing gas main weight to be supported and protected by the temporary support system is estimated to be 100kg/m.

The spacing of any temporary support system shall not be greater than 2 metres. The contractor is responsible for the protection of Union Gas facilities from damage for the duration of the contract.

The Contractor shall also implement the following procedures for all works associated with the Union Gas plant:

1. All work within the Union Gas Easement, or within the right-of-way within 5m of the pipeline, shall be under supervision of a Union Gas representative. Contact Dave Boogaart for scheduling.
2. No blasting will be permitted under this Contract.
3. Construction equipment crossing the pipeline must be approved by Union Gas through use of a crossing permit. Contact Dave Boogaart for details.



4. Excavation using mechanical equipment cannot be done within 1m of an exposed pipeline and never overtop of a pipeline. Excavation near gas lines must be done under supervision of a Union Gas representative.
5. Gas lines within the work zone must be spotted prior to any excavation work under supervision of a Union Gas representative.
6. Temporary support plan for the pipeline must be submitted to Union Gas for approval. Installation of approved support system must be done under supervision of a Union Gas representative.
7. Request for Union Gas supervision is to be done at minimum 1 week prior to expected start date.

The Contractor shall submit five (5) sets of shop drawings for their proposed temporary support system to the Contract Administrator for review a minimum of two (2) weeks prior to fabrication.

Payment for this item at the lump sum price bid shall be for all labour and equipment required to complete the work.

27. Bell Canada Conduit Support Structure – Item 3.33 to 3.37

Under these Items and for the Contract prices, the Contractor shall supply all equipment, labour and materials to support the existing Bell Canada conduits supported below the north bridge deck cantilever in place during the bridge rehabilitation, as shown on the Drawings, and as directed by the Contract Administrator.

General Information

Bell Canada has nine (9) existing ducts on an existing hanger system attached to the exterior girder and deck overhang on the north side of the roadway bridge and extending beyond the east and west bridge approach.

The contractor shall be responsible for informing themselves of the probable condition and location of all existing ducts. Any locates and test pits required prior to construction are to be included in the contract bid.

Bell Canada Inspection

Bell Canada shall be informed by the contractor (with a minimum of 48 hours notice) of all on site activities pertaining to the Bell Canada portion of the work. The Bell Canada contact is:

James Maville
Access Implementation Manager
690 Second Line East
Sault Ste, Marie, Ontario
P6B 4K3



Telephone: 705-759-9189
 Cell: 705-946-8917
 Email: james.maville@bell.ca

Unless advised otherwise by Bell Canada, a Bell Canada Representative must be present when work on or adjacent to Bell Canada ducts and cables is carried out.

Approved Bell Canada Sub-Contractors:

All work on or affecting the Bell Canada plant must be performed by a qualified subcontractor approved by Bell Canada. This work shall be carried out in accordance with the latest versions of the “Bell Canada Contract Work Manual”, and the “Bell Canada Master Specific Contract” (form BC3961), to which each of the approved subcontractors is a signatory. All conditions noted in the Bell Canada “Master Specific Contract” apply and must be conformed to, except as modified here in this Specification. In the case of conflict, the more stringent requirement as determined by Bell Canada, will govern.

Approved subcontractors for the Bell Canada work for this project are named as follows:

Aecon Utilities 20 Carlson Crt, Suite 800 Toronto, ON, M9W 7K6	Contact: Matt Kopp Tel: (416) 297-2600 Ext. 3666 mkopp@aecon.com
Avertex Utilities Solutions 19 Commerce Road Orangeville, ON, L9W 3X5	Contact: Andrew Van Spronsen Tel: (519) 942-3030 avanspronsen@avertex.ca
Black & McDonald 31 Pullman Court Scarborough, ON, M1X 1E4	Contact: Peter Calabrese Tel: (416) 298-9977 Ext. 2229 pcalabrese@blackandmcdonald.com
Grimsby Utility Construction 211 Roberts Road Grimsby, ON, L3M 4E8	Contact: Jeff Brown Tel: (905) 945-8878 jbrown@guci.ca
Robert B. Somerville 13176 Duffering Street King City, ON, L7B 1K5	Contact: Steve Fifield Tel: (905) 833-3100 Ext. 241 sfifield@rbsomerville.com

Coordination

It is the responsibility of the General Contractor and the Bell Canada Approved Subcontractor to coordinate and schedule the work for the duration of the Contract. References to “Contractor” in the Bell Canada portion of the specification refer to both the General Contractor and the Bell Canada Approved Subcontractor.



Insurance

All parties performing work on or in the vicinity of the Bell Canada plant, including but not limited to the General Contractor and the Bell Canada Approved Subcontractor, shall maintain insurance in accordance with the Bell Canada "Master Specific Contract". The Contractor shall provide insurance documentation naming Bell Canada and Planview Utility Services Ltd as additional insured, to Bell Canada before commencing any work for Bell Canada under this Contract.

Protection of Existing Bell Canada Plant

The Contractor shall be responsible for the protection of any existing Bell Canada ducts and cables encountered for the duration of the Contract. No extra payment will be made for the miscellaneous items required as part of the protection works. The Contractor shall obtain approval from the Bell Canada Site Representative for the proposed protection schemes of the existing plant prior to commencing work within the vicinity of the Bell Canada plant.

Any damage incurred to the existing cables during breakout will be repaired immediately by Bell Canada at the contractor's expense. Upon completion of all work the contractor at his expense and Bell Canada's discretion shall replace any cables that have been damaged /repaired.

Materials

The Contractor shall supply all materials required for the Bell Canada portion of the work. All Bell Canada conduit specified as 'PVC' is to be manufactured by IPEX Inc. and all Bell Canada conduit specified as 'FRE' is to be manufactured by FRE Composites.

Record Drawings

The Contractor shall provide record drawings for the Bell Canada portion of the work in the form of legibly marked-up copies of the Contract Drawings. The mark-ups shall include changes to the relative position of Bell conduit with respect to existing utilities.

No extra payment will be made for the provision of record drawings.

28. Remove and Dispose of Existing Bell Canada Conduit Support Structure – Item 3.33

Under this Item and for the Contract price, the Contractor shall supply all equipment, labour and materials to remove the existing Bell Canada conduit support structure as required to accommodate the bridge rehabilitation, as shown on the Drawings, and as directed by the Contract Administrator.



29. Remove and Dispose of Existing Bell Canada Conduit Support Structure – Equipment and Labour – Item 3.34

This item shall include the design, fabrication, installation and removal of a new temporary cable support structure(s) to adequately support and protect the cables on the north side of the roadway bridge. It will need to be carefully sequenced with the bridge rehabilitation activities. The Contractor should anticipate that multiple temporary support methods might be necessary, and that cable slack is limited.

The existing cable weight to be supported and protected by the temporary support system is estimated using 10.5kg/m per duct or by calculating the actual weights of cables encountered in the ducts (contractor to verify after exposing ducts/cables).

The spacing of any temporary support system shall not be greater than 2 metres. The contractor is responsible for the protection of Bell facilities from damage for the duration of the contract.

The Contractor shall submit five (5) sets of shop drawings for their proposed temporary support system to the Bell Canada Site Representative for review a minimum of two (2) weeks prior to fabrication.

The Contractor shall measure the site as required to ensure the installation, alignment and fit of the new temporary support structure to actual field conditions. The Contractor is to report any discrepancies to the Bell Canada Site Representative prior to proceeding with the work.

All of the work under this item shall be completed by a qualified Subcontractor approved by Bell Canada as listed in the General Information.

Payment for this item at the lump sum price bid shall be for all labour and equipment required to complete the work.

30. Remove and Dispose of Existing Bell Canada Conduit Support Structure – Materials – Item 3.35

The work under this item shall be the same as that described in Item 3.34 above, except payment for this item at the price bid shall be for all materials to complete the work.

31. Supply and Install Bell Canada Conduit Support Structure – Equipment and Labour – Item 3.36

This item shall include the installation of new hanger system as shown on the drawings.



The Contractor shall measure the existing bridge as required to ensure the installation, alignment and fit of the new components to actual field conditions. The Contractor is to report any discrepancies to the Bell Canada Site Representative prior to proceeding with the work.

All of the work under this item shall be completed by a qualified Subcontractor approved by Bell Canada as listed in the General Information.

Payment for this item at the lump sum price bid shall be for all labour and equipment required to complete the work.

32. Supply and Install Bell Canada Conduit Support Structure – Materials Item 3.37

The work under this item shall be the same as that described in Item 3.36 above, except payment for this item at the price bid shall be for all materials to complete the work.

33. Install Expansion Joint Seals at Pedestrian Bridge – Item 3.38

Under this Item and for the Contract price, the Contractor shall supply all equipment, labour and materials to replace the expansion joint seals at the pedestrian bridge, as shown on the Drawings, and as directed by the Contract Administrator.

Payment at the Contract price shall include the following work as directed by the Contract Administrator:

1. The supply and installation of evazote foam expansion joints.
2. Removal of existing expansion joint materials from the expansion gaps.
3. Cleaning the concrete surfaces as required to accommodate the new expansion joint seal and to permit full bonding of the seal to the concrete.

34. Repair of Aluminum Handrail – Item 3.39

Under this Item and for the Contract price, the Contractor shall supply all equipment, labour and materials to replace missing handrail connection bolts on the pedestrian bridge, as shown on the Drawings, and as directed by the Contract Administrator. New connection bolts shall match existing bolts.



35. Performance Bond – Item G.1

36. Labour and Material Bond – Item G.2

100% payment of these Items shall be made on the first Payment Certificate.

37. Silt Fence – Item G.3

Payment under this Item for the unit price bid shall be for installation of sediment control fencing at locations as shown on the Contract Drawings and as directed by the Contract Administrator, and shall include all maintenance necessary to keep the fence fully operative until its final removal. Silt fencing shall be installed prior to the commencement of any earth excavation or grading. The unit price bid shall include for the removal of all fence once vegetation has established.

- Light duty silt fence shall be constructed in accordance with OPSD 219.110.

38. Hydrovac Truck – Item G.4

Under this Item and for the Contract price, the Contractor shall supply all labour, equipment and materials required to facilitate the guide rail post installation, as required due to utility conflicts and as directed by the Contract Administrator.

Payment under this item will be on a time and materials basis as approved by the Contract Administrator. Travel time to and from the site will not be considered for payment. The Contractor shall provide copies of invoices for dumping fees to the Contract Administrator.

END