

Tender for:

City of Kawartha Lakes

**Rehabilitation of the Wellington Street
Bridge (Site No. 17017)**

Book Two

City of Kawartha Lakes

Contract 2019-11-CQ

February 2019

D.M. Wills Associates Limited

PARTNERS IN ENGINEERING

Peterborough

City of Kawartha Lakes
Rehabilitation of the Wellington Street Bridge (Site No. 17017)
Contract No. 2019-11-CQ

Special Provisions – General

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1. Scope of Work

The Contractor shall provide all labour, equipment, materials and supervision necessary to complete the work as described in the Agreement, Addenda, Special Provisions, Contract Drawings, Information to Bidders, Supplemental Specifications, Standard Specifications, Tender Form, Supplemental General Conditions, and General Conditions.

The following is a brief description of the work:

- Remove expansion joint assemblies including steel armoring, steel bars, and concrete deck ends, and replace with new expansion joint assemblies.
- Conduct the required removal and replacement of the original west abutment bearing pads, and repairs to deteriorated concrete in the bearing seats and girder ends, via temporary jacking of the bridge to allow access to these areas.
- Remove existing asphalt surface, remove areas of deteriorated and delaminated concrete from deck, and patch with unformed surface concrete.
- Waterproof deck surface and pave new asphalt wearing surface on deck and approaches.
- Remove areas of loose and deteriorated concrete on the ballast walls, diaphragms, abutment walls, and wingwalls and patch with form and pump concrete.
- Remove areas of loose and deteriorated concrete on the sidewalks, curbs, and parapet walls, and patch with form and pump concrete.
- Construct new cantilever steel framed pedestrian walkway along east abutment to link the south and north waterfront trails on the east bank of the river.

2. Definitions in Special Provisions

Wherever the word "City" appears in the Special Provisions of the Contract, it shall be interpreted as meaning the "Corporation of the City of Kawartha Lakes."

Wherever the word "Engineer" or "Contract Administrator" appears in the Contract, it shall be deemed to mean the Consulting Engineer, D.M. Wills Associates Limited.

3. Commencement and Completion of Contract

Time

Time shall be the essence of this Contract.

Progress of the Work and Contract Time

The Contractor, having carefully examined the site of the proposed work, and having read, understood and accepted the provisions, plans, specifications and conditions attached hereto, each and all of which forms part of the Tender, agrees to complete the work on this contract on or before **November 8, 2019**.

It is further noted that the earliest construction start date for work that requires lane closures on Wellington Street is June 3, 2019 due to other planned work by the City

in the downtown area. Work may proceed earlier on the bridge sub-structure and/or the new walkway installation.

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 insure 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.

4. Liquidated Damages

It is agreed by the Parties to the Contract that in case all the work called for under the Contract is not finished or completed by the final completion date as specified above, damage will be sustained by the Owner and the parties hereto agree that the Contractor will pay to the Owner the sum of one thousand dollars (\$1,000.00) plus site inspection and survey crew costs and the staffing and administration costs incurred by the Owner for each and every calendar day beyond the final completion date specified above that the work remains uncompleted. It is agreed that this amount is an estimate of the actual damage to the Owner which will accrue during the period in excess of the prescribed completion date.

The Owner may deduct any amount due under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other alternative that may be available to the Owner.

The Contractor shall not be assessed with Liquidated Damages for any delay caused by Acts of God or of the Public Enemy, Acts of the Province or of a Foreign State, Fire, Flood, Earthquake, Epidemic, Quarantine Restriction, Embargo or delays of Subcontractors due to such causes.

If the time required for the performance of the work is increased or decreased by reason of alterations or changes in the work required to be performed under this Contract the Substantial Performance Date or Completion Date shall be increased or decreased as determined by the Owner.

5. Labour Conditions

The Contractor's attention is drawn to the fact that this Contract falls under the jurisdiction of the Ministry of Labour and therefore the Roads and Structures Fair Wage Schedule, Labour Conditions and Interpretations for the Provincial Zone are to be applied. Any increase in costs incurred by a change in the wage rate shall be borne by the Contractor.

6. Contract Schedule and Meetings

A detailed critical path schedule shall be prepared by the Contractor and submitted with the Tender. Tenders submitted without the schedule may be deemed incomplete

and subsequently may be rejected at the discretion of the City. The schedule shall include all controlling operations, major milestone dates and requirements of others. Any deviations of the schedule shall be communicated to all the merchants that are to be affected.

7. Dust Control

The Contractor shall take such steps as may be required to prevent dust nuisance resulting from his operations either within the right-of-way or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a roadway through the work.

Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust, wherever dust would affect traffic or wherever dust would be a nuisance to residents of the area where the work is being carried out.

The cost of all such preventative measures shall be borne by the Contractor including water or calcium chloride required to reduce the dust caused by traffic on a roadway which it is the Contractor's responsibility to maintain for public traffic.

8. Traffic Control, Flagging

Flagging for traffic control on this Contract shall be in conformance with the procedure outlined in OTM Book 7 (Ontario Traffic Manual).

Each flagman shall, while controlling traffic, wear the following:

- (i) an approved fluorescent blaze orange or fluorescent red safety vest, and
- (ii) an approved fluorescent blaze orange or fluorescent red armband on each arm, and
- (iii) an approved fluorescent blaze orange or fluorescent red hat.

Flagging shall not affect or interfere with the existing adjacent signalized intersection operations. Paid-Duty police services will be required whenever traffic signal operations are affected and shall be paid for directly by the Contractor.

9. Traffic Control & Detour

No claims for delays due to traffic will be considered for compensation.

The Contractor shall at all times maintain the roadway surface within the contract limits in a condition satisfactory to the Contract Administrator and such that any emergency vehicles may have immediate access to any building located within the limits of the road.

The Contractor shall be responsible for all signing of the work site and the temporary detour. The Contractor shall ensure the signing is properly maintained while in use. **It shall be the Contractor's responsibility to directly notify Police, Fire, Hospital and Ambulance services of road closures at least 24 hours in advance of such closures and to notify these same authorities when such closures are no longer in effect.**

It is the Contractor's responsibility to advertise all road closures in local newspapers a minimum of one week in advance of such closure. The newspaper advertisement shall indicate the date of closing of the roadway and the length of time for which the road will be closed. This advertising is in addition to the notification required for Police, Fire, Hospital and Ambulance as indicated above.

10. Emergency and Maintenance Measures

Whenever the construction site is unattended by the general superintendent, the name, address and telephone number of a responsible official of the contracting firm, shall be given to the Contract Administrator. This official shall be available at all times and have the necessary City contact to mobilize workmen and machinery and to take any action as directed by the Contract Administrator in case emergency or maintenance measures are required regardless whether the emergency or requirement for maintenance was caused by the Contractor's negligence, act of God, or any cause whatsoever.

It shall be the responsibility of the Contractor to ensure that erosion and sedimentation control measures within the limits of the Contract are in place and fully operational to the satisfaction of the Contract Administrator, should the onset of severe inclement weather be forecast.

Should the Contractor be unable to carry out immediate remedial measures required, the City will carry out the necessary repairs, the costs for which shall be charged to the Contractor.

11. Engineering Field Office

A separate field office for the Contract Administrator will not be required on this Contract. The Contractor shall, however, permit the Contract Administrator to make use of his office accommodation and other facilities as required, and at no extra cost to the City.

12. Management and Disposal of Excess Material

The requirements of OPSS 180 shall apply to this Contract, revised as follows:

- (i) Section 180.03, Definitions, shall be amended by the addition of the following:

Work area: means the road allowance, right-of-way, and property with a boundary common to the road allowance or right-of-way within the Contract limits.

- (ii) Subsection 180.07.02, Conditions on Management by Re-Use, shall be amended by the addition of the following:

Recycled hot mix asphalt or excess bituminous pavement shall not be used as backfill or bedding.

The Contractor shall be responsible for obtaining a copy of applicable Form Nos. OPSF 1800, OPSF 180-1, OPSF 180-2, OPSF 180-3, OPSF 180-4 and OPSF 180-5 for use where appropriate with respect to disposal of excess material.

13. Occupational Health and Safety Act 1991 – Designated Substances

In accordance with the requirements of Section 18a(1) of the Occupational Health and Safety Act, the City has determined that the designated substances as listed hereunder are present on the site and within the limits of this Contract.

Designated Substance	Identified on this Site	Location
Acrylonitrile	Not Identified	
Arsenic	Not Identified	
Asbestos	Not Identified	
Benzene	Not Identified	
Coke Oven Emissions	Not Identified	
Ethylene Oxide	Not Identified	
Isocyanates	Not Identified	
Lead	Not Identified	
Mercury	Not Identified	
Silica	Not Identified	
Vinyl Chloride	Not Identified	

It is the responsibility of the Contractor to ensure that all sub-contractors performing work under this Contract have received a copy of this specification, where Designated Substances are identified as being present at the site of the work.

The Contractor shall comply with the governing Ministry of Labour Regulations respecting protection of workers, removal, handling and disposition of the Designated Substances encountered on this Contract.

Prior to commencement of this work, the Contractor shall provide written notification to the Ministry of the Environment of the location(s) proposed for disposal of Designated Substances. A copy of the notification shall be provided to the Contract Administrator a minimum of two weeks in advance of work starting.

In the event that the Ministry of the Environment has concerns with any proposed disposal location, further notification shall be provided until the Ministry of the Environment's concerns have been addressed.

All costs associated with the removal and disposition of Designated Substances herein identified, shall be deemed to be included in the appropriate tender items.

Should a Designated Substance not herein identified be encountered in the work, then management of such substance shall be treated as Extra Work.

The requirements of Section GC4.03 of the General Conditions of the Contract shall apply.

14. Spills Reporting

Spills or discharges 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 Contract Administrator. 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 liquid, other than accumulated rain water, from luminaires, 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 Contract Administrator.

This reporting will not relieve the Contractor of his legislated responsibilities regarding such spills or discharges.

15. Protection of Water Quality

At all times, the Contractor shall maintain existing stream flows and shall control all construction work so as not to allow sediment or other deleterious materials to enter streams.

No waste or surplus organic material including topsoil is to be stored or disposed of within 30 metres of any watercourses. Run-off from excavation piles will not be permitted to drain directly into watercourses but shall be diffused onto vegetative areas a minimum of 30 metres from the watercourse. Where this measure is not sufficient or feasible to control sediment entering the watercourses, sedimentation traps or geotextile coverage will be required.

If dewatering is required, the water shall be pumped into a sedimentation pond or diffused onto vegetated areas a minimum of 30 metres from the watercourses and not pumped directly into the watercourses.

No machinery shall enter the stream bed of any watercourse. Movement of construction equipment in the vicinity of any streams shall be limited to the minimum required for construction.

The Contractor shall not carry out equipment maintenance or refuelling or store fuel containers within 100 metres of any watercourse. The Contractor shall not stockpile construction debris or empty fuel/pesticide containers within the Contract limits.

16. Environmental Protection Plan

The Contractor's attention is drawn to the following environmental protection requirements, which will impact construction activities within or in close proximity to the watercourse. These measures are in addition or complimentary to the works included for erosion and sediment control under other items in the Tender.

- i) Sediment and erosion control items included in this contract shall be implemented prior to any other construction in the vicinity of the river, in order to prevent any sediment from entering the watercourse (including soil from exposed banks) and to prevent any downstream transport of suspended sediment. All disturbed areas shall be stabilized upon completion of works or attainment of final grades.
- ii) Temporary erosion and sedimentation works should be maintained until vegetation has been re-established to a sufficient degree so as to provide adequate protection to disturbed work areas.
- iii) All sediment traps, check dams and silt fence will be cleaned, as a minimum, when they are 50% filled. Maintenance of these devices is essential. Lack of cooperation on the part of the Contractor will be considered as a major violation to the Plan and the Contract and will result in a shutdown of the project operations until maintenance is performed to the Contract Administrator's satisfaction.
- iv) All disturbed areas shall be topsoiled (if necessary) and revegetated immediately after final grading is completed.
- v) Construction procedures and handling/storage of toxic materials shall conform to Ontario Ministry of the Environment regulations.
- vi) Stockpile or spoil materials necessary for road construction and the construction of the proposed culvert shall be prevented from entering the stream. No grading or concrete pours shall occur over or close to the water without adequate barrier measures in place beforehand. The Contractor shall advise the Contract Administrator in advance of placement of any stockpiled material so that the Contract Administrator can determine what protective measure, if any, are necessary.
- vii) All activities, including maintenance procedures, must be controlled to prevent the entry of petroleum product, silt, debris, rubble, concrete or other deleterious substances into the watercourse. Vehicular refuelling and maintenance, including the storage of fuel containers, must be conducted 30 m away from the watercourse banks.
- viii) Maintenance of all proposed vegetation, once established, will be a critical component of the contract during the guarantee period. All temporary erosion and sediment control structures constructed (except the dewatering trap) will remain in place during this period unless the Contract Administrator requests their removal. Prior to the end of the guarantee period, if all vegetation has established successfully, these measures shall be removed (upon notification by the Contract Administrator) as noted under their particular items in the Special Provisions - Tender Items.
- ix) All dewatering discharges must be directed to the dewatering trap. Materials from the excavation of the trap shall be removed from the site or controlled as the Contract Administrator directs. The Contractor shall be wholly responsible for the adequate design and maintenance of the dewatering system related to the installation of the precast culvert (i.e., pumps, sheeting, etc.) The design will be subject to the review and approval of the Contract Administrator before any work on these culvert components proceeds.

- x) Maintain continuous and uninterrupted flow downstream of the construction site. Extreme reduction in stream discharge and water level above and below the site must be avoided.
- xi) No machinery shall enter the stream bed of any watercourse. Movement of construction equipment in the vicinity of the stream shall be limited to the minimum required for construction.
- xii) All construction work in areas which in the Contract Administrator's opinion may have adverse effects on the watercourse shall be monitored by a designated representative of the Contractor to ensure compliance with the Plan.
- xiii) All clauses pertaining to the construction/placement of erosion and sediment controls in the Special Provisions-General and the Contract Items, will form an integral part of the project Environmental Protection Plan.

17. Review of Shop/Working Drawings

For the portions of the work to be done under this Contract where detail drawings are to be supplied by the Contractor, one (1) copy in electronic PDF format, together with specifications, shall be submitted to the Contract Administrator for review.

The Contractor or his Subcontractor shall check and initial all shop drawings before submission to the Contract Administrator so as to intercept and correct any major errors or omissions. Shop drawings will not be reviewed by the Contract Administrator unless they have been previously checked by the Contractor.

The review by the Contract Administrator is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that the Contract Administrator approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents.

The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of the work of all subtrades.

Work which relates to the shop drawings shall not be carried out before the Contract Administrator's review of the shop drawings is complete.

18. Asphalt Mix Designs

The Contractor shall be responsible for the provision of current mix designs for all hot mix asphalt required for the work, or for having the necessary mix designs prepared by a certified laboratory. The mix designs proposed for use by the Contractor shall be submitted in writing to the Contract Administrator for his approval and no work shall commence until the design mixes are approved.

All costs associated with the provision of approved mix designs shall be borne by the Contractor.

Steel slag and blast furnace slag coarse and fine aggregates shall not be used in any hot mix required by this Contract.

Asphalt work shall not be carried out prior to the Contract Administrator's approval of the mix design.

19. Entry onto Private Property

The Contractor shall not enter private property or property which is to be acquired to construct the works without the prior consent of the Contract Administrator. This requirement will be strictly enforced.

20. Property Owner's Release of Privately Owned Land Used by the Contractor

Upon completion of the Contract, the Contractor shall provide the City with two (2) copies of a form of release signed by each property owner, upon whose land he has entered for purposes associated with the Contractor's operations but not for the purpose of undertaking works stipulated in the Contract:

Final payment will not be released to the Contractor until all the applicable forms of release have been signed by the property owners and received by the City.

Date: _____

To: Director of Development Services
The City of Kawartha Lakes
12 Peel Street, P.O. Box 9000
Lindsay, ON K9V 5R8

Re: Contract No. Tender 2019-11-CQ

Dear Sir:

I hereby certify that

(Name of Contractor)

have fulfilled the terms of our agreement and have left my property in a satisfactory condition.

I have accepted their final payment and release

(Name of Contractor)

and the Corporation of the City of Kawartha Lakes from further obligations.

(Name of Municipality/Owner)

Yours very truly,

Signature

Property Owner's

Name _____ Lot _____ Concession _____

Municipality of _____

(Please complete above in printing)

City of Kawartha Lakes
Replacement of the Wellington Street Bridge (Site No. 17017)
Contract No. 2019-11-CQ

Special Provisions – Tender Items

Environmental / Watercourse Protection**Item 1****182.01 SCOPE**

Section 182.01 of OPSS MUNI.182 is amended by the addition of the following:

Under this Item, the Contractor is required to supply and install all labour, equipment, and materials for the protection of the watercourse, its water quality and fish habitat during the project. Installation, maintenance and removal of mitigation measures listed below, as necessary to achieve this protection, are required:

- Heavy Duty Silt Fence Barriers as per OPSD 219.130;
- Straw Bale Flow Checks as per OPSD 219.180;
- Temporary Rock Flow Checks as per OPSD 219.210; and
- Turbidity Curtain as per OPSD 219.260.

In addition, this item shall include, but is not limited to:

- i) Restoration of the water body and water body banks to conditions existing at commencement of construction or as otherwise specified on the drawings;
- ii) Placement of filter cloth over all catch basins, manhole covers and deck drains within the construction zone to contain all sediment run-off as a result of the culvert work;
- iii) Provide all protection measures to ensure that no deleterious material from any operation enters the stream with particular concern for demolition debris and sediment from runoff;
- iv) No refuelling of vehicles, equipment, etc. is to take place within 100m of a watercourse;
- v) Stationary equipment operating within 30m of the watercourse shall have hydrocarbon spill containment measures in place;
- vi) Disturbed areas at the construction site are to be stabilized and re-vegetated after completion of the project, using native plant species as much as possible, and the site is to be restored to a pre-construction state or better;
- vii) Machinery shall not operate directly in a watercourse.

An In-Water Timing Restriction of **October 1st through July 1st** is in place at Wellington Street Bridge; no in-water work may proceed during this timing window.

182.10 BASIS OF PAYMENT

Section 182.10 of OPSS MUNI.182 is amended by the addition of the following:

Partial payments will be made on the following basis:

- i) 60% of the tender amount will be paid upon installation of all appropriate measures to the satisfaction of the Contract Administrator.
- ii) The remaining 40% will be paid upon completion of construction to the satisfaction of the Contract Administrator.

Placement of Hot Mix Asphalt – HL-4**Item 3****Placement of Hot Mix Asphalt – HL-8****Item 4****Amendment to OPSS 310****310.01 SCOPE**

Section 310.01 of OPSS 310 is amended by the addition of the following:

Under this Item and for the contract unit price, the Contractor shall provide all labour, equipment and materials necessary to supply and place Hot Mix asphalt according to the appropriate Ontario Provincial Standard Specification(s), as shown on the Contract Drawings and as directed by the Contract Administrator.

Asphalt on deck slab and approach slabs shall be placed in two lifts.

Asphalt within roadway paving limits shall consist of: 90mm HL-8 base layer placed in two lifts, 40mm and 50mm, and a top layer of HL-4 placed in one lift of 40mm.

310.05 MATERIALS

OPSS 310.05 shall be amended to include the following:

In accordance with OPSS.MUNI 1101, Zone 3 requirements PGAC 58 - 28 shall be used for HL-4 and HL-8 mixes.

310.07 CONSTRUCTION

OPSS.MUNI 310.07 shall be amended to include the following:

No asphalt shall be placed without the Contract Administrator on site.

The Contractor shall be responsible for sampling and testing the asphalt for aggregate gradation and compaction.

Hot Mix Asphalt sampling and testing shall be in accordance with OPSS.MUNI 310 Table 6. Copies of all test results shall be provided to the Contract Administrator within two weeks of paving operations.

Transverse joints between new asphalt and existing asphalt shall be as follows:

Base course joints and surface course joints shall be staggered by 3.0 meters.

Vertical faces of existing base course and top course asphalt shall be cut square, cleaned and treated with a tack coat prior to new asphalt being placed.

Where existing asphalt depth is greater than the proposed base course, the top of the existing base course shall be milled, cleaned and treated with tack coat.

Joints shall be rolled immediately after placement and the surface checked and confirmed with a straight edge before the paving operations advance more than 15 meters. Defects in joints shall be corrected immediately.

Where the plans indicate that joints are to be formed and filled, this shall be completed as soon as possible and within 24 hours of paving operations.

Compaction adjacent to concrete curbs, barriers or other rigid features will have to be by hand tampers or vibrators. Every effort shall be made to ensure that compaction in these locations is equal to the rolled compaction results.

The Contractor shall be responsible for the performance of the asphalt sub-contractor and shall have a representative on site during all paving operations to ensure that all procedures and requirements are being followed. The paving sub-contractor shall not leave the site until all joints have been examined with a straight edge and a visual inspection of the asphalt is completed at joints and rigid structures.

The Contractor shall be held responsible for defects in the asphalt finish and profile smoothness. Where defects are observed the Contractor will be responsible to remedy the defects at their own costs. Alternately, the cost of corrective action will be deducted from the warranty holdback, or Contract amounts as required.

310.10 BASIS OF PAYMENT

310.10.01 Hot Mix HL-4, Hot Mix HL-8

Section 310.10.01 of OPSS 310 is amended by the addition of the following:

The unit price shall be complete and include but not be limited to:

- i) Any saw cutting in long straight lines of existing asphalt / surface treatment.
- ii) Removal and disposal of existing asphalt / surface treatment.
- vi) Cleaning base course asphalt with a power broom or other means capable of leaving a clean, dry surface prior to construction of the surface course asphalt.
- vii) Tack coat to be applied between lifts and at joints.

Granular 'A'

Item 5

Amendments to OPSS.MUNI 314

314.01 Scope

Section 314.01 of OPSS MUNI.314 is amended by the addition of the following:

Under this Item and for the Contract unit price, the Contractor shall supply, place and compact in accordance with OPSS 501, the Granular 'A' material required for subgrade, as shown on the Contract Drawings, and as directed by the Contract Administrator. Granular 'A' shall be placed in 150mm lifts and compacted to 100% SPMDD.

The extent of the Contract price item for placing granular bedding shall be as shown on the Drawings. Where, however, the Contractor has excavated beyond these limits, he shall supply, place and compact, to the satisfaction of the Contract Administrator, granular material as required to fill the resulting excess volume. All costs of supplying and placing such additional material shall be at the Contractor's expense.

The unit price shall be complete and include but not be limited to:

Granular 'A'

- i) Granular subgrade under new asphalt at approaches;
- ii) Temporary ramping as directed by the Contract Administrator and removal of ramping in advance of the placement of the surface course asphalt.

Water shall be applied to the material to assist compaction, as directed by the Contract Administrator, and shall also be included in the Contract prices.

The Contractor shall not be permitted to use other than hand operated vibratory type compaction equipment for compaction of backfill material within the restricted zone adjacent to the culvert. The restricted zone is defined within OPSS 501.

Surface Mounted Duct System
Rigid Ducts – Direct Buried**Item 9**
Item 10

Under these items and for the Contract price the Contractor shall provide all labour, equipment, and materials necessary for the installation of the electrical components; including but not limited to the surface mounted conduit and junction boxes and direct buried ducts; required for the cantilevered walkway lighting system, as shown on the Contract Drawings and as directed by the Contract Administrator.

The work shall include:

- Supply and installation of all required equipment and material to surface mount the galvanized conduit and junction boxes (luminaires to be installed by others).
- Supply and installation of all required equipment and materials for direct buried conduit, including but not limited to excavation and all required fittings, elbows, and other hardware.
- Supply and installation of 'fish line' throughout new duct/conduit system.

All work as shown on the Contract Drawings and to the satisfaction of the Contract Administrator.

All work to be coordinated with the CKL landscaping project (TSW Permit No. 170286) to ensure no conflict with new walking path and armour stone retaining walls.

Temporary Traffic Control Signing**Item 11****Amendments to OPSS.MUNI 706, April 2018****706.01 Scope**

Section 706.01 of OPSS.MUNI 706 is amended by the addition of the following:

Under this item and for the Contract price the Contractor shall provide all labour, equipment, and materials necessary to meet the traffic management restrictions and requirements to complete the following:

The contractor shall **maintain a single lane eastbound lane of traffic on Wellington Street and full detour signing for westbound traffic** for the duration of construction, controlled by traffic signage as shown on the Contract Drawings and as directed by the Contract Administrator, all of which shall be completed in accordance with the Ontario Traffic Manual (Book 7), Temporary Conditions. The Contractor shall supply, locate, relocate, erect, operation, maintain, and remove all construction signs, delineators, precast concrete barriers, end treatments, pedestrian barricades, etc.

706.02 References

Section 706.02 of OPSS.MUNI 706 is amended by the addition of the following:

All Traffic Control and Signage shall be in accordance with OPSS 706, the "Ontario Traffic Manual – Book 7 – Temporary Conditions", "Ontario Traffic Manual – Book 5 – Regulatory Signs", and the Occupational Health and Safety Act, except as may be indicated otherwise in this section.

All references in OPSS 706 to "Traffic Control Manual for Roadway Work Operations", "Manual of Uniform Traffic Control Devices" or "M.U.T.C.D." shall be replaced by the "Ontario Traffic Manual – Book 7 – Temporary Conditions" (OTM – Book 7).

Traffic control on this Contract shall be in conformance with Ministry of Labour Policies, Occupational Health and Safety Act any safety the provisions of the City and the procedures outlined in the pamphlet entitled "Correct Methods for Traffic Control" issued by the Construction Safety Associations of Ontario.

706.03 Definitions

Section 706.03 of OPSS.MUNI 706 is amended by the addition of the following:

For the purposes of this Contract, the OPSS MUNI.706 definition of "Construction Signs" is amended to include all Contract Identification and Public Advisory Signs.

706.04 Design and Submission Requirements

Section 706.04 of OPSS.MUNI 706 is amended to include the following:

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 and contract identifications signs, and all detour warning signs including type, size and location as well as all signs and barricades required to limit vehicle and pedestrian traffic during construction.

Contract Identification and Public Advisory signs as described shall be placed at both ends of the work areas and should be identified on the Contractors detailed signing plan.

706.05 Materials

Section 706.05 of OPSS.MUNI 706 is amended by the addition of the following:

Public Advisory Signs shall be minimum 2400 mm x 1200 mm size.

Public Advisory Signs shall have an orange background with black lettering.

706.07 Construction

Section 706.07 of OPSS.MUNI 706 is amended by the addition of the following:

The Contractor is required to install TC-64 signage (one sign on each approach) at least two weeks prior to the start of construction, notifying the public of the upcoming bridge work, what closures are taking place, and the anticipated completion date.

Signs shall be in place before work-affecting traffic begins. They shall be well maintained to be effective at all times and remain operational throughout the duration of construction, all in accordance with Ontario Traffic Manual (Book 7).

The Contractor is required to provide two (2) weeks notice to the City with regard to construction start date.

The Contractor is responsible for the removal, salvage, storage and replacement (in their original locations) of all signs and signposts that interfere with the installation of the proposed facilities.

During construction, the Contractor shall either:

- a) store the signs and posts in a safe and secure manner;
- b) temporarily re-install the signs as necessary for the safety of the public, e.g. stop signs.

The Contractor will be responsible for any signs, and sign posts that are damaged or misplaced.

The Contractor shall be responsible for barricading and protecting the work site.

No additional payment shall be made for this work.

The Contractor shall inspect all traffic protection and traffic signage on a daily basis.

The Contractor shall ensure that no construction materials enter the watercourse and that at no time any construction operations will impede marine traffic.

706.10 Basis of Payment

Section 706.10 of OPSS.MUNI 706 is removed and replaced with the following:

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

For progress payment, twenty-five percent (25%) of the lump sum price will be paid upon supply and installation of all protection measures associated with each stage of the work. The remaining fifty percent (50%) shall be paid upon successful completion of the Contract.

Reinstallation of temporary traffic control signs after seasonal shutdown shall be at no additional cost to the Owner.

Fabrication of Structural Steel **Item 17**

Delivery of Structural Steel **Item 18**

Erection of Structural Steel **Item 19**

Amendments to OPSS 906, November 2012

906.01 Scope

Section 906.01 of OPSS.MUNI 906 is removed and replaced with the following:

Under these items and for the Contract price the Contractor shall provide all labour, equipment, and materials necessary to fabricate, deliver, and erect all galvanized structural steel members, anchors, fasteners, grating and railings required for the cantilever walkway as shown on the Contract Drawings, and as directed by the Contract Administrator.

All work to be coordinated with the CKL landscaping project (TSW Permit No. 170286) to ensure no conflict with new walking path and armour stone retaining walls.

906.05 Materials

906.05.01 Steel

Section 906.05.01 of OPSS.MUNI 906 is removed and replaced with the following:

Materials for all components under this item shall be in accordance with the Contract Drawings and included Project Specifications.

All structural steel shall be supplied as 350W. It shall be hot-dipped galvanized in accordance with OPSS 911. The Contractor shall be responsible for all requirements associated with welding and repairs to the coatings.

906.01 Basis of Payment

906.10.01 Fabrication of Structural Steel – Item

906.10.02 Delivery of Structural Steel – Item

906.10.03 Erection of Structural Steel – Item

Section 906.10.01 – 03 of OPSS.MUNI 906 is removed and replaced with the following:

Payment at the Contract price of the above tender items shall be full compensation for all labour, equipment and materials required to supply, erect, and assemble all galvanized structural steel members, anchors, fasteners, grating and railings, including any required welding, cleaning, grinding, painting and/or coating systems.

Pedestrian Railing – Wellington Street**Item 20****Amendments to OPSS MUNI.908, November 2014****908.01 Scope**

Section 908.01 of OPSS.MUNI 908 is removed and replaced with the following:

Under these items and for the Contract price the Contractor shall provide all labour, equipment, and materials necessary to construct the steel Pedestrian Railings located adjacent to the Wellington Street Bridge, including concrete footings and anchorage, as shown on the Contract Documents and as directed by the Contract Administrator. Removals of existing ground/concrete incidental to the work must be restored to the satisfaction of the Contract Administrator.

908.10 Basis of Payment

Section 908.10 of OPSS.MUNI 908 is removed and replaced with the following:

Payment at the Contract price of the above tender items shall be full compensation for all labour, equipment and materials required to supply, erect, and assemble all steel Pedestrian Railing components, including concrete footings anchorage, and any required welding, cleaning, grinding, painting and/or coating systems. No extra payment will be paid for incidental work and/or reinstatements.

Bridge Deck Waterproofing**Item 21****Amendment to OPSS MUNI.914****914.07 CONSTRUCTION****914.07.05 Membrane Reinforcement**

Subsection 914.07.05 of OPSS 914 is amended by the addition of the following:

- a) Supply and install membrane reinforcement over the joints between approach slabs and deck ends.

All work is as shown in the Contract Drawings and/or as directed by the Contract Administrator.

914.07.07 Form and Fill Grooves

The first paragraph of Subsection 914.07.07 of OPSS 914 is deleted and replaced by the following:

Where hot mix asphaltic concrete is carried directly over expansion and fixed joints and where specified in the Contract Documents, a 20mm wide and 40 mm deep rectangular groove shall be formed. This groove shall be made either by dry sawing or routing, with vertical sides, and be located directly over the joint for the full length of the joint.

Subsection 914.07.07 of OPSS MUNI.914 is amended by the addition of the following:

As part of the work under this item, the Contractor shall:

- Sawcut and fill grooves at the approach ends of each approach slab.

Form and fill grooves shall be completed within five days of surface course asphalt paving.

All work is as shown in the Contract Drawings and/or as directed by the Contract Administrator.

Deck Joint Assemblies - Installation**Item 23****Amendments to OPSS.MUNI 920, November 2012****920.07 Construction****920.07.01.04 Placing**

920.07.01.04 of OPSS 920 is amended by the addition of the following:

Placing shall include the following, all as shown on the Contract Drawings:

- Supply, form, place and cure new concrete end dams at deck ends and on ballast walls for new deck joint assemblies.

All work is as shown in the Contract Drawings and/or as directed by the Contract Administrator.

Bearings**Item 24**

Appendix 922-B is invoked for use on this Contract.

Amendment to OPSS MUNI.922**906.07 CONSTRUCTION**

Section 906.07 of OPSS 906 is amended by the addition of the following:

As part of the work under this tender item, the Contractor shall:

- a) Supply and install new elastomeric bearing pads and steel bearing plates at the west abutments.
- b) Removal of existing bearings to facilitate the installation of all new material.

Repairs to the bottom flanges of the girders at the bearing seats, as required and as directed by the Contract Administrator, shall be completed prior to the bearing installation.

If any areas of the girders, bearing plates or elastomeric bearings are not completely bearing on the underlying surface after lowering the structure from the jacked position, the Contractor shall make repairs as directed by the Contract Administrator and at no additional cost to the owner.

Jacking of Superstructure

Item 25

1.0 SCOPE

This specification covers the requirements for raising and lowering a bridge superstructure by the use of jacks. If necessary, as part of the work the Contractor shall repair any damage to the existing bridge structure caused by jacking of the structure.

2.0 REFERENCES

This specification refers to the following standards, specifications or publications:

Ontario Provincial Standard Specifications, Construction

OPSS 906	Structural Steel for Bridges
OPSS 919	Formwork and Falsework
OPSS 922	Installation of Bearings

Ontario Ministry of Transportation Publications

Structural Manual
Designated Sources for Materials (DSM) Manual

CSA Standards

G40.20-04/G40.21-04 (R2009) General Requirements for rolled or welded structural quality steel/Structural quality steel.

ASTM International

A 325M-07	Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength [Metric]
A 563M-07	Standard Specification for Carbon and Alloy Steel Nuts
F 436M-11	Standard Specification for Hardened Steel Washers

3.0 DEFINITIONS

For the purpose of this specification the following definitions apply:

Certificate of Conformance means a document issued by the Quality Verification Engineer confirming that the specified components of the Work are in general conformance with the requirements of the Contract Documents.

Quality Verification Engineer (QVE) means an Engineer retained by the Contractor qualified to provide the services specified in the Contract Documents.

4.0 DESIGN AND SUBMISSION REQUIREMENTS

4.01 Design Requirements

4.01.01 General

The Contractor shall be responsible for the design of the jacking system.

Where the replacement of bearings is called for in the Contract Documents, the design shall take into account the possible difference in bearings size between the new and the original and insure that the placement of the temporary supports does not interfere with the proper placing of bearings.

Where necessary, the design of temporary supports shall account for articulation of the superstructure.

The design shall account for the condition of the structure at the time of jacking. It shall take into account any deterioration and/or removals prior to and during the duration of the jacking and remedial work.

4.02 Submission Requirements

4.02.01 Jacking Drawings and Calculations

The Contractor shall submit one (1) set of stamped jacking drawings and calculations in electronic PDF format to the Contract Administrator 7 Days prior to the commencement of the jacking operations, for information purposes only. Submissions shall bear the seals and signatures of a design Engineer and a design checking Engineer.

The jacking drawings and calculations shall include the following:

- a) Jacking methodology and sequence.
- b) Location, number, type and capacity of the jacks to be used.

- c) Description of the control system, complete with all design, schematics and equipment to be used.
- d) Location and material to be used for temporary blocking and shimming.
- e) Schematic showing the configuration of all jacks, stop valves, gauges, manifolds and hydraulic pumps.
- f) Current calibration certificates for all jacks and gauges.
- g) Full details of the temporary support system including forces to be transmitted and method of transferring the loads to the substructure or founding strata.
- h) Strengthening of the existing structure where necessary.
- i) Restrictions on traffic and construction traffic.

The Contractor shall have a copy of the signed and sealed jacking drawings at the site during jacking setup and operations.

4.02.02 Revised Submissions

When jacking design considerations or field conditions necessitate amendments to the jacking drawings, revised jacking drawings shall be submitted according to the Jacking Drawings clause.

5.0 MATERIALS

5.01 Structural Steel

All structural steel shall be according to CAN/CSA G40.20/G40.21.

5.02 High Strength Bolts, Nuts and Washers

High strength bolts shall be according to ASTM A 325M.

High strength nuts, and hardened washers shall be suitable for use with the types of bolts being specified and shall be according to ASTM A 563M, and ASTM F 436M.

The nuts, bolts, and washers shall be shipped together as an assembly from the manufacturer. The requirements outlined in the Test Reports for Fasteners clause found in OPSS 906 shall apply.

5.03 Mechanical and/or Adhesive Anchors

Mechanical and/or adhesive anchors shall be suitable for dynamic loads and shall be installed according to the manufacturer's recommendations.

5.04 Grout

Cement based non-shrink grout shall be supplied from sources named in the DSM manual.

7.0 CONSTRUCTION**7.01 Pre-Construction Survey**

Prior to the start of any work related to the jacking operation, the Contractor shall carry out field measurements of all components of the existing structure that might impact the installation of the temporary supports and ensure that the jacking drawings and calculations are adjusted accordingly. The design Engineer and the checking Engineer shall determine whether any adjustments based on field measurements will have an impact on the bridge structure. If it is determined that the adjustments will have an impact on the bridge structure, the jacking drawings and calculations shall be submitted to the Contract Administrator along with a request for approval.

The Contractor shall also carry out a survey to establish the elevations of the existing bridge deck along the existing bridge deck joints and the elevations of the underside of deck or girders at bearing locations prior to jacking the structure. The survey results shall be submitted to the Contract Administrator prior to jacking for information purposes only.

The Contractor shall ensure that the existing elevations of the bridge deck, measured before the jacking operation or the required elevations specified in the Contract Documents are matched after the bearings are replaced and the jacking operation is completed. If the elevations of the bridge deck after the completion of the jacking operation differ from the elevations obtained in the pre-construction survey or those specified on the Contract Documents, the Contractor shall reinstate the bridge deck and girders to the original elevations or to the new elevations specified in the Contract Documents, as required.

7.02 Structural Steel

All structural steel fabrication, delivery and erection shall be according to OPSS 906.

7.03 Formwork and Falsework

All formwork and falsework shall be according to OPSS 919.

7.04 Installation of Bearings

When jacking is required for the installation, replacement or adjustment of bearings, the requirements of OPSS 922 shall also be satisfied.

7.04 Jacking

Prior to jacking, the Contractor shall ensure that all existing expansion joints are free to move vertically. Bolts securing the handrail posts to the parapet walls, if present, shall be loosened to permit jacking without damaging the handrails.

Upon completion of the fabrication and installation of the components of the temporary works and prior to jacking, the Quality Verification Engineer shall conduct an interim inspection to verify that the fabrication and installation of the temporary works has been carried out according to the jacking drawings and calculations and issue the Contractor written permission to proceed with the jacking. A copy of the permission to proceed shall be submitted to the Contract Administrator for information purposes.

7.04.01 Jacking Points and Loads

Jacks shall only be placed at the jacking points indicated on the Contract Documents. The Contractor shall use jacks with a rated capacity of no less than 200% of the reaction loads specified on the Contract Drawings. Shims and blocking used to support the jacks shall also be designed for 200% of the reaction load specified on the Contract Drawings

7.04.02 Jacking Operations

The Contractor shall inform the Contract Administrator in writing at least 3 Days prior to the commencement of the jacking operations.

Jacking operations shall be carried out under the direct supervision of an Engineer. Prior to the commencement of jacking operations, the Contractor shall demonstrate the accuracy of all transducer read-outs, relative to manual measurements.

The lifting or lowering of the entire width of the structure shall be carried out in one uniform and synchronized operation. Jacks shall be interconnected through a manifold system to provide a uniform lift at all jacking locations.

At no time during the lifting or lowering of the structure shall the difference between any two jacking points be greater than 3 mm as measured at the center line of the bearings.

The lift at each jacking point shall be monitored continuously during the jacking operation. The maximum lift for all jacking points shall be 3 mm above final jacking elevation, unless otherwise specified in the Contract Documents.

7.04.03 Temporary Supports

Unless specified elsewhere in the Contract Documents, traffic shall not be permitted on or below a bridge undergoing jacking. Temporary road closures will be permitted

during jacking operations. Road closures will be permitted for 15 minute intervals only; between the hours of 9:00 – 11:00 a.m. and 1:00 – 3:00 p.m.

The bridge superstructure shall not be supported on hydraulic jacks for a period longer than permitted on the jacking drawings and in no case longer than 12 hours.

When the required lift for all jacking points has been achieved and the bearings have been released, temporary supports such as blocking and shimming shall be placed to support the bridge. The jacks shall then be lowered in one synchronized operation while maintaining the maximum allowable difference between any two jacking points of 3 mm.

The jacks loads shall be transferred to structural blocks and then the jacks released prior to the commencement of bearing seat reconstruction or bearing replacement work.

The superstructure shall not be left on the blocks and shims for more than 15 Days or as specified elsewhere in the Contract Documents.

7.04.04 Post-Jacking Survey

Immediately after the structure has been jacked and prior to the bearing seats being reconstructed, the underside of the superstructure that will be in contact with the new bearings shall be surveyed. The survey shall include the four corners in contact with the bearings and at least one point in the middle. Data from the survey shall be forwarded to the Contract Administrator to determine if adjustments to the design are required.

7.04.05 Lowering of the Superstructure

Where jacking of the superstructure is accompanied by rehabilitation of bearing seats, the superstructure may be jacked again for the removal of the structural blocks only after the concrete in the bearing seats has reached 75% of its design strength. The jacks shall then be lowered in one synchronized operation, while maintaining the maximum allowable difference between any two jacking points of 3 mm, and the superstructure shall be released onto the bearings

7.04.06 Bearing Contact

The bearings shall have uniform and full contact at top and bottom. If any of the bearings are not properly seated, the bridge shall be jacked up again and remedial work performed as directed by an Engineer until all the bearings have full contact and the superstructure is uniformly supported. Details of proposed methodology, equipment/materials for the remedial work shall be submitted to the Contract Administrator for approval prior to carrying out the remedial work.

7.04.07 Reinstatement of Structure and Components

Anchor holes shall be filled with non-shrink grout finished flush with the surrounding concrete with matching color; no metal components of the jacking system shall be embedded permanently in concrete with less than 40 mm of cover.

All expansion joint and handrail components removed or loosened to facilitate jacking shall be reinstated.

7.05 Certificate of Conformance upon Completion of the Work

A completed Certificate of Conformance as specified in the Contract Documents shall be submitted to the Contract Administrator upon completion of the Work.

7.06 Management of Excess Material

Management of excess material shall be according to the Contract Documents.

9.0 MEASUREMENT FOR PAYMENT

There will be no measurement for the excavation and reinstatement of the native backfill, including large rock and boulders piled in front of the abutments.

10.0 BASIS OF PAYMENT**10.01 Jacking of Superstructure- Item**

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

Concrete Removal – Partial Depth, Type A

Item 26

Concrete Removal – Partial Depth, Type B

Item 27

Concrete Removal – Partial Depth, Type C

Item 28

Amendments to OPSS 928, April 2012**928.01 Scope**

Section 928.01 of OPSS.MUNI 928 is amended by the addition of the following:

Under these items and for the contract unit price, the Contractor shall provide all labour, equipment and materials required to complete the removal of loose and deteriorated concrete as shown on the Contract Drawings and as directed by the Contract Administrator.

The work shall include:

- Type 'A' - Locally sawcut limits of removal and remove deteriorated and/or unsound concrete from the top of deck and top of sidewalks as shown on the Contract Drawings and as directed by the Contract Administrator.
- Type 'B' - Locally sawcut limits of removal and remove deteriorated and/or unsound concrete from the soffit and deck fascia and outside face of parapet walls as shown on the Contract Drawings and as directed by the Contract Administrator.
- Type 'C' - Locally sawcut limits of removal and remove deteriorated and/or unsound concrete from the vertical face of parapets, abutments, wingwalls, pier columns and caps, diaphragms, ballast walls, and girder ends as shown on the Contract Drawings and as directed by the Contract Administrator.

In addition to removal of deteriorated and unsound concrete, sound concrete removals may also be required to achieve minimum removal requirements. The Contract Administrator shall identify areas where new reinforcing steel bars are required.

The Contractor shall provide adequate platforms and containment measures to ensure that no materials fall into the watercourse.

The disposal of the excess materials off-site is to be included in the applicable unit price.

Concrete Patches, Unformed Surface

Item 32

Amendments to OPSS.MUNI 930, November 2014

930.07 Construction

930.07 of OPSS.MUNI 904 is amended by the addition of the following:

Concrete Patches – Unformed Surface shall include the following work, all as shown on the Drawings and as directed by the Contract Administrator:

- Placement of concrete for patching of concrete removals on the deck top and sidewalks.

Concrete Patches, Form and Pump

Item 33

Amendments to OPSS.MUNI 930, November 2014

930.07 Construction

930.07 of OPSS.MUNI 904 is amended by the addition of the following:

Concrete Patches – Form and Pump shall include the following work, all as shown on the Drawings and as directed by the Contract Administrator:

- Placement of concrete for patching of concrete removals on abutments, wingwalls, diaphragms, ballast walls, girder ends, parapet walls and soffit.

Cover to reinforcing steel shall match existing, except where shown on the Contract Drawings and/or as directed by Contract Administrator. All work is as shown in the Contract Drawings and/or as directed by the Contract Administrator.

GENERAL CONDITIONS

OPS GENERAL CONDITIONS

NOVEMBER, 2018

The General Conditions
have not been reproduced
as part of these Contract Documents.
It will be the Contractor's responsibility
to obtain current copies of
OPS General Conditions, November, 2018.