



July 25, 2013

CONTRACT SERVICES

PO Box 4000
1350 Regent Street
Fredericton NB
E3B 5P7

**Re: Invitation to Tender F5211-130077
Harbour Improvement Rondeau (Eireau), ON**

Sealed, signed tenders will be received up to 2:00 p.m. Atlantic Time, Monday 12 August 2013,
for the said service in accordance with the documents enclosed.

Bids shall be submitted and addressed as per sample below. It must include:

two (2) signed copies of the Form of Tender;
bid security.

Do not address the bid to any individual, it may delay the receipt of the tender submission and could be considered late and therefore non-compliant. Make sure any outside envelope (i.e. courier envelopes) are addressed as per the sample below.

The onus is on the bidder to ensure that the bid is delivered on time to the location designated

Upon acceptance the successful bidder will be required to supply:

proof of insurance;
proof of WCB coverage;
contract security

Any tender received after the above noted time will be considered late and will be returned to the sender unopened. Any tender submitted by telegram, email, or facsimile will not be considered. Tenders may be revised by letter or fax (506) 452-3676, provided the tender and revision(s) are both received prior to Tender Closing Time.

For further project or contract information, please contact Julia O'Brien by email at Julia.Obrien@dfo-mpo.gc.ca

Canada



Fisheries
and Oceans

Pêches
et Océans

Regards,

Julia O'Brien
Contracts Officer
Enclosures

Canada



Fisheries
and Oceans

Pêches
et Océans

SAMPLE ENVELOPE

Your company name and address

Fisheries and Oceans Canada
TENDER SUBMISSION
Fisheries and Oceans
PO Box 4000
1350 Regent Street
Fredericton NB E3B 5P7

Tender **F5211-130077**
Harbour Improvements, Rondeau
(Eireau) ON

Date Due: **Monday 12 August 2013**
2:00 PM Atlantic Time

Do not address this to any individual, it may delay the receipt of the tender submission and could be considered late and non-compliant. Make sure any outside envelope (i.e. Courier envelopes) are addressed the same.

Canada

Project No.	F5211-130077
Project Location	Rondeau (Eireau) ON



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CONSTRUCTION TENDER FORM

Closing Date/Time	2:00 p.m. Atlantic Time, 12 August 2013	Solicitation No. F5211-130077
Closing Location	PO Box 4000 1350 Regent Street Fredericton NB E3B 5P7	
Fax No.	506-452-3676	
Project Title	Harbour Improvement Rondeau (Eireau) Ontario	
Project Location	Rondeau (Eireau) ON	

1. TENDER DOCUMENTS

- 1.1. Construction Tender Form - FP-5155E
- 1.2. DFO Instructions to Bidders - Construction at <http://www.dfo-mpo.gc.ca/contract-contrat/instructions-instructions-eng.htm>
- 1.3. DFO General Conditions - Construction at <http://www.dfo-mpo.gc.ca/contract-contrat/general-generale-eng.htm>
- 1.4. Labour Conditions at 1.1. http://www.hrsdc.gc.ca/en/labour/employment_standards/contracts/conditions.shtml
- 1.5. Schedules of Wages Rates for Federal Construction Contracts.
The appropriate Schedule of Wage rates for the contract are the ones for the location where the work will be performed.
Please refer to: http://www.hrsdc.gc.ca/en/labour/employment_standards/contracts/schedule/index.shtml
- 1.6. Insurance Conditions at <http://www.dfo-mpo.gc.ca/contract-contrat/insurance-assurances-eng.htm>
- 1.7. Insurer's Certificate of Insurance - FP-5140E at http://www.dfo-mpo.gc.ca/forms-formulaires/FP_5140_E.pdf
- 1.8. Plans and Specifications

2. We, having informed ourselves fully of the conditions relating to the work to be performed, having full knowledge of site conditions and having carefully examined the plans and specifications and all the terms and covenants of the Tender Documents, including any amendments (IT BEING UNDERSTOOD AND AGREED THAT FAILURE TO HAVE DONE SO WILL NOT RELIEVE US OF OUR OBLIGATION TO ENTER INTO A CONTRACT AND CARRY OUT THE WORK FOR THE CONSIDERATION SET OUT HEREAFTER) do tender and offer to perform the said work in strict accordance with the said documents and such further details, plans and instructions as may be supplied from time to time and to furnish to Her Majesty the Queen in Right of Canada, all materials, plant, machinery, tools, labour and things necessary for the construction or carrying out and proper completion of the said work for the sums stated in the Combined Price Schedule of this tender form.
3. We understand and agree that all applicable taxes, duties, permits and fees are our responsibility and are included in our Tendered Price. The exceptions to the foregoing are the Goods and Services Tax (GST) / the Harmonized Sales Tax (HST). GST / HST will be paid to the contractor by Fisheries and Oceans Canada in addition to any amounts due under the contract.
4. We certify that Bid Security, if required, in one of the forms outlined in GI09 of the "DFO Instruction to Bidders - Construction", accompanies this Tender.
5. It is understood and agreed that in the event of this Tender being accepted within 30 (thirty) calendar days of the date and time stated for closing of tenders and our failing or refusing to carry out the contract in accordance with the terms of our Tender, our bid security, if required by the tender, (i) if in the form of a certified cheque, bank draft, or bonds of, or bonds unconditionally guaranteed as to principal and interest by, the Government of Canada, or (ii) if in the form of a Bid Bond, shall be forfeited to Her Majesty the Queen in Right of Canada and the Bonding Company shall be liable in accordance with the terms of the Bond.

Project No.	F5211-130077
Project Location	Rondeau (Eireau) ON



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6. It is further understood and agreed that notwithstanding (i) the forfeiture of the certified cheque or bonds of (ii) the liability of the Bonding Company, Her Majesty shall be entitled to the payment of any additional amounts that may be required to meet the cost of all loss and damage suffered by Her Majesty by reason of our default in carrying out the contract.
7. We understand this project must be completed by 30 Sept 2013 . If our Tender is accepted, we agree to start work immediately upon notification of contract award and once all required insurances, permits, Letter of Good Standing and Clearance from applicable provincial compensation authority, etc., are in place. We will attend start-up meeting and will work vigorously and continuously to complete the project within this prescribed time.
8. Bidders shall take note that the performance of the Contractor during and upon completion of the work shall be evaluated by Her Majesty. The evaluation shall be based on the quality of workmanship; timeliness of completion of the work; project management, contract management and management of health and safety.

Should the Contractor's performance be considered unsatisfactory, the Contractor's bidding privileges for future work may be suspended.

The form Contractor Performance Evaluation Report Form (FP 5135E) at http://www.dfo-mpo.gc.ca/forms-formulaires/FP_5135_E.pdf will be used to record the performance.

9. By signing below we certify that we are authorized to sign this tender on behalf of the Corporation, Partnership, Joint Venture or Sole Proprietorship and bind the company to it.
10. We certify that we are in possession of all the tender documents listed in this tender form.
11. Special tender form inserts/additional instructions (For DFO use only)

Project No. F5211-130077
Project Location Rondeau (Eireau) ON



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12. We certify that our tender is inclusive of all obligations as required by the preceding pages of this tender form, without change.

Our Goods and Services Tax/Harmonized Sales Tax (GST/HST) Registration number is: _____

Please indicate type of business and check one of the following :

Corporation

Partnership

Sole Proprietorship

Joint Venture

_____	_____	_____
Tenderer Name (Print)	Title	Company Name
_____	_____	Address: _____
Tenderer Signature	Date	Fax: _____
Duly Authorized Representative*		Phone: _____
*As per Paragraph 10 of this Tender Form		Email: _____

IF APPLICABLE

Witness Name (Print)

Witness Signature

CORPORATE SEAL

Project No.	F5211-130077
Project Location	Rondeau (Eireau) ON



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13. **COMBINED PRICE SCHEDULE**

- The prices per unit shall govern in establishing the Total Extended Amount. Any arithmetical errors in this Appendix will be corrected by Her Majesty
- Her Majesty may reject the bid if any of the prices submitted do not reasonably reflect the cost of performing the part of the work to which that price applies.

Tenderer Name _____

LUMP SUM

The Lump Sum Amount designates Work to which a Lump Sum Arrangement applies.

(a) Work included in the Lump Sum Amount represents all work not included in the unit price table.

LUMP SUM AMOUNT (LSA) Excluding GST/HST	
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Tenderer Name _____

UNIT PRICE TABLE

The Unit Price Table designates Work to which a Unit Price Arrangement applies.

- (a) Work included in each item is as described in the referenced specification section.
- (b) The Price per Unit shall not include any amounts for Work that is not included in that unit price item.

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit (PU) (GST/HST extra)	Extended Amount (EQ x PU) (GST/HST extra)
1	02 41 15	Concrete Coring	lump sum	1		
2	02 41 15	Asphalt Pavement Removal and Disposal	m2	1,640		
3	03 30 00	Crack Repairs	m	102		
4	05 50 00	Repair at Station 0+106±	lump sum	1		
5	05 50 00	Steel Sheet Pile (SSP) Patch Repairs	lump sum	1		
6	05 50 00	Outfall Repair at Station 0+114.3	lump sum	1		
7	05 50 00	Outfall Repair at Station 0+129.3	lump sum	1		
8	05 50 00	Outfall Repair at Station 0+134.1	lump sum	1		
9	31 00 99	Granular A	tonne	400		
10	31 00 99	Stone Fill	tonne	280		
11	31 00 99	Outfall Excavation	lump sum	1		
12	32 12 16	Asphalt Base Course	tonne	150		
13	32 12 16	Asphalt Surface Course	tonne	150		

Project No. F5211-130077
 Project Location Rondeau (Eireau) ON



Fisheries and Oceans Canada / Pêches et Océans Canada

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit (PU) (GST/HST extra)	Extended Amount (EQ x PU) (GST/HST extra)
			TOTAL ESTIMATED AMOUNT (TEA) Excluding GST/HST			
	OPTIONAL ITEMS					
14	02 41 15	Optional Asphalt Pavment Removal and Disposal	m2	1,000		
15	03 30 00	Optional Concrete Pedestals	pedestal	2		
16	05 50 00	Optional Light Standard Braces	pedestal	6		
17	31 00 99	Optional Granular A	tonne	230		
18	32 12 16	Optional Asphalt Base Course	tonne	90		
19	32 12 16	Optional Asphalt Surface Course	tonne	90		
			TOTAL ESTIMATED AMOUNT OPTIONAL ITEMS Excluding GST/HST			
				TOTAL EXTENDED AMOUNT (TEA) Excluding GST/HST		

TOTAL BID AMOUNT

TOTAL BID AMOUNT (LSA + TEA) Excluding GST/HST	
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Labour and Material Payment Bond

Bond No.: _____ Amount: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____
 as Principal, hereinafter called the Principal, and _____
 as Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and
 firmly bound unto Her Majesty in right of Canada, hereinafter called the Crown, in the amount of _____
 dollars (\$ _____), lawful money of Canada, for the
 payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their
 heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
 SIGNED AND SEALED this _____ day of _____, 20_____.
 WHEREAS, the Principal has entered into a Contract with the Crown, dated the _____
 day of _____, 20_____ for _____

which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if payment is promptly made to all
 Claimants who have performed labour or services or supplied material in connection with the Contract and any and all
 duly authorized modifications and extensions of the Contract that may hereafter be made, notice of which modifications
 and extensions to the Surety being hereby waived, then this obligation shall be void, otherwise it shall remain in full
 force and effect, subject, however, to the following conditions:

- (1) For the purpose of this Bond, a Claimant is defined as one having a direct contract with the Principal or any
 Subcontractor of the Principal for labour, material or both, used or reasonably required for use in the
 performance of the Contract, labour and material being construed to include that part of water, gas, power, light,
 heat, oil, gasoline, telephone services or rental of equipment (but excluding rental of equipment where the rent
 pursuant to an agreement is to be applied towards the purchase price thereof) directly applicable to the Contract.
- (2) For the purpose of this Bond, no payment is required to be made in respect of a claim for payment for labour or
 services performed or material supplied in connection with the Contract that represents a capital expenditure,
 overhead or general administration costs incurred by the Principal during the currency or in respect of the
 Contract.
- (3) The Principal and Surety hereby jointly and severally agree with the Crown that if any Claimant has not been
 paid as provided for under the terms of his contract with the Principal or a Subcontractor of the Principal before
 the expiration of a period of ninety (90) days after the date on which the last of such Claimant's labour or service
 was done or performed or materials were supplied by such Claimant, the Crown may sue on this Bond, have the
 right to prosecute the suit to final judgement for such sum or sums as may be due and have execution thereon;
 and such right of the Crown is assigned by virtue of Part VIII of the Financial Administration Act to such Claimant.
- (4) For the purpose of this Bond the liability of the Surety and the Principal to make payment to any claimant not
 having a contract directly with the Principal shall be limited to that amount which the Principal would have been
 obliged to pay to such claimant had the provisions of the applicable provincial or territorial legislation on lien or
 privileges been applicable to the work. A claimant need not comply with provisions of such legislation setting out
 steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim
 for lien or privilege which the claimant might have had. Any such claimant shall be entitled to pursue a claim and
 to recover judgement hereunder subject to the terms and notification provisions of the Bond.
- (5) Any material change in the Contract between the Principal and the Crown shall not prejudice the rights or interest
 of any claimant under this Bond who is not instrumental in bringing about or has not caused such change.



- (6) No suit or action shall be commenced hereunder by any Claimant:
- (a) Unless such Claimant shall have given written notice within the time limits hereinafter set forth to the Principal and the Surety above named, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal and the Surety at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the Contract is located. Such notice shall be given
 - (i) in respect of any claim for the amount or any portion thereof required to be held back from the Claimant by the Principal or by the Subcontractor of the Principal under either the terms of the Claimant's Contract with the Principal or the Claimant's Contract with the Subcontractor of the Principal within one hundred and twenty (120) days after such Claimant should have been paid in full under this Contract;
 - (ii) in respect of any claim other than for the holdback or portion thereof referred to above within one hundred and twenty (120) days after the date upon which such Claimant did or performed the last of the service, work or labour or furnished the last of the materials for which such claim is made under the Claimant's Contract with the Principal or a Subcontractor of the Principal;
 - (b) After the expiration of one (1) year following the date on which the Principal ceased work on the said Contract, including work performed under the guarantees provided in the Contract;
 - (c) Other than in a court of competent jurisdiction in the province or district of Canada in which the subject matter of the Contract or any part thereof is situated and not elsewhere, and the parties hereto hereby agree to submit to the jurisdiction of such court.
- (7) The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.
- (8) The Surety shall not be entitled to claim any moneys relating to the Contract and the liability of the Surety under this Bond shall remain unchanged and, without restricting the generality of the foregoing, the Surety shall pay all valid claims of Claimants under this Bond before any moneys relating to the Contract held by the Crown are paid to the Surety by the Crown.
- (9) The Surety shall not be liable for a greater sum than the amount specified in this Bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

Principal

Witness

Surety

Note: Affix Corporate seal if applicable.





Performance Bond

Bond No.: _____ Amount: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____
as Principal, hereinafter called the Principal, and _____
as Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and
firmly bound unto Her Majesty the Queen in right of Canada as Obligee, hereinafter called the Crown, in
the amount of _____ dollars (\$ _____),
lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the
Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and
severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20 _____.

WHEREAS, the Principal has entered into a Contract with the Crown, dated the _____
day of _____, 20 _____, for _____

_____ which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that if the Principal shall well and faithfully observe and perform all the obligations on the part of the Principal to be observed and performed in connection with the Contract, then this obligation shall be void, otherwise it shall remain in full force and effect, subject, however, to the following conditions:

- (1) Whenever the Principal shall be, and declared by the Crown to be, in default under the Contract, the Surety shall
 - (a) If the work is not taken out of the Principal's hands, remedy the default of the Principal,
 - (b) if the work is taken out of the Principal's hands, and the Crown directs the Surety to undertake the completion of the work, complete the work in accordance with the Contract provided that if a contract is entered into for the completion of the work,
 - (i) it shall be between the Surety and the completing contractor, and
 - (ii) the selection of such completing contractor shall be subject to the approval of the Crown,
 - (c) if the work is taken out of the Principal's hands and the Crown, after reasonable notice to the Surety, does not direct the Surety to undertake the completion of the work, assume the financial responsibility for the cost of completion in excess of the moneys available to the Crown under the Contract,
 - (d) be liable for and pay all excess costs of completion of the Contract, and
 - (e) not be entitled to any Contract moneys earned by the Principal, up to the date of his default on the Contract and any holdbacks relating to such earned Contract moneys held by the Crown, and the liability of the Surety under this Bond shall remain unchanged provided, however, and without restricting the generality of the foregoing, upon the completion of the Contract to the satisfaction of the Crown, any Contract moneys earned by the Principal or holdbacks related thereto held by the Crown may be paid to the Surety by the Crown.
- (2) The Surety shall not be liable for a greater sum than the amount specified in this Bond.
- (3) No suit or action shall be instituted by the Crown herein against the Surety pursuant to these presents after the expiration of two (2) years from the date on which final payment under the Contract is payable.



IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

Principal

Witness

Surety

Note: Affix Corporate seal if applicable.

Harbour Improvements	SPECIFICATION	Section 00 00 00
Rondeau(Erieau), Ontario	TITLE SHEET	Page 1
Project No. 720172		2013-05-27

PROJECT TITLE Harbour Improvements
Rondeau(Erieau), Ontario

PROJECT NUMBER 720172

PROJECT DATE 2013-05-27

END

Harbour Improvements
Rondeau(Erieau), Ontario
Project No. 720172

PROFESSIONAL SEAL PAGE 1 Section 00 01

2013-05-27

DESIGN ENGINEER: Philip Lampkin P.Eng, Riggs Engineering Ltd.



END

<u>Section</u>	<u>Title</u>	<u>Pages</u>
<u>Division 00 - Procurement and Contracting Requirements</u>		
00 00 00	SPECIFICATION TITLE SHEET	1
00 01	PROFESSIONAL SEAL PAGE	1
<u>Division 01 - General Requirements</u>		
01 11 02	GENERAL INSTRUCTIONS	5
01 33 00	SUBMITTAL PROCEDURES	6
01 35 29	HEALTH AND SAFETY REQUIREMENTS	6
01 35 43	ENVIRONMENTAL PROCEDURES	5
01 52 00	CONSTRUCTION FACILITIES	3
01 74 20	CONSTRUCTION/DEMOLITION WASTE MANAGEMENT AND DISPOSAL	2
<u>Division 02 - Existing Conditions</u>		
02 41 15	DEMOLITION AND REMOVALS	3
<u>Division 03 - Concrete</u>		
03 30 00	CAST-IN-PLACE CONCRETE	7
<u>Division 05 - Metals</u>		
05 50 00	METAL FABRICATIONS	5
<u>Division 31 - Earthwork</u>		
31 00 99	EXCAVATION AND BACKFILLING	6
<u>Division 32 - Exterior Improvements</u>		
32 12 16	ASPHALT PAVING	5

PART 1 - GENERAL

1.1 MINIMUM
STANDARDS

- .1 Execute work to meet or exceed:
.1 National Building Code of Canada 2005, National Fire Code of Canada 2005, Ontario Building Code 2006 and any other code of provincial or local application, including all amendments up to project date, provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
.2 Rules and regulations of authorities having jurisdiction.
.3 Fire Commissioner of Canada, No. 301, Standard for Construction Operations, and No. 302, Standard for Welding and Cutting, June 1982 and Fire Protection Standard for Correctional Institutions - Treasury Board Personnel Management Manual, Occupational Safety and Health, Chapter 3-6, Feb. 1992.
.4 Occupational Health and Safety Act and Regulations for Construction Projects, Revised Statutes of Ontario 1990, Chapter O.1 as amended, O. Reg. 213/91 as amended by O. Reg. 631/94, R.R.O. 1990, Reg. 834.
.5 Environmental Protection Act, O. Reg. 102/94 and O. Reg. 103/94.

1.2 TAXES

- .1 Pay applicable Federal, Provincial and Municipal taxes.

1.3 FEES, PERMITS
AND CERTIFICATES

- .1 Provide authorities having jurisdiction with information requested.
.2 Pay fees and obtain certificates and permits required.
.3 Furnish certificates and permits when requested.

1.4 EXAMINATION

- .1 Before submitting tender, examine existing conditions and determine conditions affecting work.
.2 Obtain all information which may be necessary for proper execution of Contract.

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- 1.5 SITE .1 Confine work, including temporary structures, plant, equipment and materials to established limits of site.
- .2 Locate temporary buildings, roads, walks, drainage facilities, services as directed and maintain in clean and orderly manner.
- 1.6 CONSTRUCTION & STORAGE AREA .1 The limits of the Construction and Storage Area will be designated by the Departmental Representative prior to commencement of work unless otherwise shown on the Drawings.
- 1.7 DOCUMENTS .1 Keep on site one copy of contract documents and reviewed shop drawings.
- .2 Specifications shall govern over Drawings.
- 1.8 MEASUREMENT PROCEDURES .1 Items measured for payment are in metric (SI) units.
- .2 Submit requests for payment in metric units corresponding with items on the Unit Price Table.
- .3 Submit supporting documents in metric units. Perform all necessary conversions required.
- 1.9 AS-BUILT RECORD DRAWINGS .1 As work progresses, neatly record significant deviations from the Contract drawings using fine, red marker on full size white prints.
- .2 Neatly print lettering and numbers in size to match original. Lines may be drawn free-hand but shall be neat and accurate. Add at each title block note: "AS BUILT RECORD".
- .3 Record following significant deviations:
.1 Depths of various elements and foundations.
.2 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvement.
.3 Location of internal utilities and appurtenances concealed in construction,
-

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- 1.9 AS-BUILT RECORD DRAWINGS (Cont'd)
- .3 (Cont'd)
 - .3 (Cont'd) referenced to visible and accessible features of structure.
 - .4 Field changes of dimension.
 - .5 Other significant deviations which are concealed in construction and can not be identified by visual inspection.
 - .4 Turn one set of As-Built Record Drawings over to Departmental Representative on completion of work.
 - .5 If project is completed without significant deviations from contract drawings declare this in writing and submit to Departmental Representative in lieu of As-Built Record Drawings.
- 1.10 ADDITIONAL DRAWINGS
- .1 Departmental Representative may furnish additional drawings to clarify work.
 - .2 Such drawings become part of Contract Documents.
- 1.11 LAYOUT OF WORK
- .1 Immediately upon entering site for purpose of beginning work on this project, locate all general reference points and take proper action necessary to prevent their disturbance.
 - .2 Supply stakes and other survey markers required for this work. Employ competent personnel to lay out work in accordance with lines and grades provided.
 - .3 Maintain all reference points and markers for duration of contract.
- 1.12 CO-OPERATION & PROTECTION
- .1 Execute work with minimum disturbance to normal use of site. Make arrangements with Departmental Representative to facilitate execution of work.
 - .2 Maintain access and exits.
 - .3 Provide necessary barriers, warning lights and signs. Protect work from damage. Replace damaged
-

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- 1.12 CO-OPERATION & PROTECTION (Cont'd) .3 (Cont'd)
existing work with material and finish to match original.
- 1.13 EXISTING UTILITIES .1 Establish location, protect and maintain existing utility lines.
.2 Connect to existing utilities with minimum disturbance to pedestrian and vehicular traffic.
- 1.14 MATERIAL AND EQUIPMENT .1 Use new products unless otherwise specified.
.2 Deliver and store material and equipment to manufacturer's instructions with manufacturer's labels and seals intact.
.3 When material or equipment is specified by standard or performance specifications, upon request of Departmental Representative, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.
- 1.15 INSPECTION AND TESTING .1 The Departmental Representative may employ an Inspection and Testing company to ensure work conforms with Contract Documents.
.2 When initial tests and inspections reveal work not to contract requirements, pay for tests and inspections required by Departmental Representative on corrected work.
- 1.16 SCHEDULING OF WORK .1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion.
.2 When schedule has been reviewed by the Departmental Representative take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
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1.17 FIRES AND
TEMPORARY HEATERS

- .1 Burning of rubbish on site not permitted.
- .2 Only fires for heating bitumen and temporary heaters are permitted on site.
- .3 Maintain temperature required to prevent frost damage to work.

1.18 PROGRESS
PHOTOGRAPHS

- .1 As soon as work commences, take weekly digital progress photographs.
- .2 Digital progress photographs are to be sent to the Departmental Representative on a weekly basis.
- .3 View points, which will best illustrate progress of work, will be selected by Departmental Representative.

1.19 DATUM

- .1 Chart datum for Lake Erie is 173.5 metres I.G.L.D (1985).
- .2 Water Level chart for Lake Erie may be found located on Drawing MA-01.

PART 1 - GENERAL

- 1.1 ADMINISTRATIVE
- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
 - .2 Do not proceed with Work affected by submittal until review is complete.
 - .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
 - .4 Where items or information is not produced in SI Metric units converted values are acceptable.
 - .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
 - .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
 - .7 Verify field measurements and affected adjacent Work are co-ordinated.
 - .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
 - .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
 - .10 Keep one reviewed copy of each submission on site.
-

1.1 ADMINISTRATIVE (Cont'd)

- .11 Submit number of hard copies specified for each type and format of submittal and also submit in electronic format as pdf files. Forward pdf files on CD or through email.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario of Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 3 working days for Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in duplicate, containing:
- .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
-

1.2 SHOP DRAWINGS .8
AND PRODUCT DATA
(Cont'd)

Submissions shall include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit three hard copies and one electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit three hard copies and one electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit three hard copies and one electronic copy of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.

1.2 SHOP DRAWINGS .13
AND PRODUCT DATA
(Cont'd)

- .13 Submit three hard copies and one electronic copy of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
.2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit three hard copies and one electronic copy of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.
.1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit three hard copies and one electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit three hard copies and one electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.2 SHOP DRAWINGS AND PRODUCT DATA (Cont'd) .21 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept.
.1 This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
.2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.3 CERTIFICATES AND TRANSCRIPTS .1 Immediately after award of Contract, submit Workers' Safety and Insurance Board Experience Report.

1.4 FEES, PERMITS AND CERTIFICATES .1 Provide authorities having jurisdiction with information requested.
.2 Pay fees and obtain certificates and permits required.
.3 Furnish certificates and permits.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

Harbour Improvements
Rondeau(Erieau), Ontario
Project No. 720172

SUBMITTAL PROCEDURES

Section 01 33 00
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PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

END

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canadian Standards Association (CSA): Canada
 - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
 - .2 National Building Code 2010 (NBC):
 - .1 NBC 2010, Division B, Part 8 Safety Measures at Construction and Demolition Sites.
 - .3 National Fire Code 2010 (NFC):
 - .1 NFC 2010, Division B, Part 5 Hazardous Processes and Operations, subsection 5.6.1.3 Fire Safety Plan.
 - .4 Province of Ontario:
 - .1 Occupational Health and Safety Act Revised Statutes of Ontario 1990, Chapter O.1 as amended, and Regulations for Construction Projects, O. Reg. 213/91 as amended.
 - .2 O. Reg. 490/09, Designated Substances.
 - .3 Workplace Safety and Insurance Act, 1997.
 - .4 Municipal statutes and authorities.
 - .5 Treasury Board of Canada Secretariate (TBS):
 - .1 Treasury Board, Fire Protection Standard April 1, 2010 www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316§ion=text.
 - .6 Fire Commissioner of Canada (FCC):
 - .1 FC-301 Standard for Construction Operations, June 1982.
 - .2 FC-302 Standard for Welding and Cutting, June 1982.

Labour Program
Fire Protection Engineering Services
4900 Yonge Street 8th Floor
North York, Ontario M2N 6A8

and copies may be obtained from:

Human Resources and Social Development Canada
Labour Program
Fire Protection Engineering Services
Ottawa, Ontario K1A 0J2

- 1.2 SUBMITTALS
- .1 Make submittals in accordance with Section 01 33 00.
 - .2 Submit site-specific Health and Safety Plan: Within 5 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operations found in work plan.
 - .3 Measures and controls to be implemented.
 - .4 Contractor's and Sub-contractors' Safety Communication Plan.
 - .5 Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations.
 - .3 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 days after receipt of comments from Departmental Representative.
 - .4 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
 - .5 Submit names of personnel and alternates responsible for site safety and health.
 - .6 Submit records of Contractor's Health and Safety meetings when requested.
 - .7 Submit copies of orders, directions or reports issued by health and safety inspectors of the authorities having jurisdiction.
 - .8 Submit copies of incident and accident reports.
 - .9 Submit Material Safety Data Sheets (MSDS).
 - .10 Submit Workplace Safety and Insurance Board (WSIB)- Experience Rating Report.
-

- 1.3 FILING OF NOTICE .1 File Notice of Project with Provincial authorities prior to commencement of Work.
- 1.4 WORK PERMIT .1 Obtain building permits related to project prior to commencement of Work.
- 1.5 SAFETY ASSESSMENT .1 Perform site specific safety hazard assessment related to project.
- 1.6 MEETINGS .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.
- 1.7 REGULATORY REQUIREMENTS .1 Comply with the Acts and regulations of the Province of Ontario.
.2 Comply with specified standards and regulations to ensure safe operations at site.
- 1.8 PROJECT/SITE .1 Work at site will involve contact with:
.1 Silica in concrete.
.2 Bird guano.
- 1.9 GENERAL REQUIREMENTS .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
.2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns either accepting or requesting improvements.
.3 Relief from or substitution for any portion or provision of minimum Health and Safety standards specified herein or reviewed site-specific Health and Safety Plan shall be submitted to Departmental Representative in writing.
-

- 1.10 COMPLIANCE REQUIREMENTS .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990 Chapter 0.1, as amended.
- 1.11 RESPONSIBILITY .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .3 Where applicable the Contractor shall be designated "Constructor", as defined by Occupational Health and Safety Act for the Province of Ontario.
- 1.12 UNFORSEEN HAZARDS .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Departmental Representative verbally and in writing.
- .2 Follow procedures in place for Employees Right to Refuse Work as specified in the Occupational Health and Safety Act for the Province of Ontario.
- 1.13 HEALTH AND SAFETY CO-ORDINATOR .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
- .1 Have working knowledge of occupational safety and health regulations.
- .2 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .3 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .4 Be on site during execution of Work and report directly to site supervisor.
-

- 1.14 POSTING OF DOCUMENTS .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Ontario, and in consultation with Departmental Representative.
- .1 Contractor's Safety Policy.
 - .2 Constructor's Name.
 - .3 Notice of Project.
 - .4 Name, trade, and employer of Health and Safety Representative or Joint Health and Safety Committee members (if applicable).
 - .5 Ministry of Labour Orders and reports.
 - .6 Occupational Health and Safety Act and Regulations for Construction Projects for Province of Ontario.
 - .7 Address and phone number of nearest Ministry of Labour office.
 - .8 Material Safety Data Sheets.
 - .9 Written Emergency Response Plan.
 - .10 Site Specific Safety Plan.
 - .11 Valid certificate of first aider on duty.
 - .12 WSIB "In Case of Injury At Work" poster.
 - .13 Location of toilet and cleanup facilities.
- 1.15 CORRECTION OF NON-COMPLIANCE .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.
- 1.16 BLASTING .1 Blasting or other use of explosives is not permitted.
- 1.17 POWDER ACTUATED DEVICES .1 Use powder actuated devices only after receipt of written permission from Departmental Representative.
-

- 1.18 WORK STOPPAGE .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- .2 Assign responsibility and obligation to Health and Safety Coordinator's to stop or start Work when, at Health and Safety Coordinator's it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

PART 2 - PRODUCTS

- 2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

- 3.1 NOT USED .1 Not used.

PART 1 - GENERAL

- 1.1 DEFINITIONS .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
- 1.2 SUBMITTALS .1 Submittals: in accordance with Section 01 33 00.
- .2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan: include:
.1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
.2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
.3 Names and qualifications of persons responsible for training site personnel.
.4 Descriptions of environmental protection personnel training program. provisions to assure
-

- 1.3 FIRES .1 Fires and burning of rubbish on site not permitted.
- .2 Where fires or burning permitted, prevent staining or smoke damage to structures, materials or vegetation which is to be preserved. Restore, clean and return to new condition stained or damaged work.
- .3 Provide supervision, attendance and fire protection measures as directed.
- 1.4 DISPOSAL OF WASTES .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- 1.5 DRAINAGE .1 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .2 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- 1.6 ENVIRONMENTAL PROTECTION .1 No in water work is permitted from March 31 to July 1 to protect local fish populations during their spawning and nursery.
- 1.7 WORK ADJACENT TO WATERWAYS .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Waterways to be kept free of excavated fill, waste material or debris in waterways.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid logs or construction materials across waterways.
-

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- 1.7 WORK ADJACENT TO WATERWAYS
(Cont'd)
- .6 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- 1.8 POLLUTION CONTROL
- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.
- .3 Prevent extraneous materials from contaminating air and waterways beyond application area
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .5 Spills of deleterious substances:
.1 Immediately contain, limit spread and clean up in accordance with provincial regulatory requirements.
.2 Report immediately to Ontario Spills Action Centre: 1-800-268-6060.
.3 Further information on dangerous goods emergency cleanup and precautions including a list of companies performing this work can be obtained from the Transport Canada 24-hour number (613) 996-6666 collect.
- 1.9 CONCRETE OPERATIONS
- .1 The following clauses are applicable to all work under Section 03 30 00
- .2 Employ measures to prevent entry of concrete wash water or leachate from uncured concrete into the water.
- .3 Containment facilities shall be provided at the site for the wash-down water from concrete delivery trucks, concrete equipment, and other tools and equipment as required. Water used to wash concrete should not be allowed to enter directly into water bodies. The sediment should be allowed to settle out and reach neutral pH before the clarified water is released to the drain system or allowed to percolate into the ground.
-

1.9 CONCRETE
OPERATIONS
(Cont'd)

- .4 Concrete trucks and concrete equipment should be washed out in a designated area where runoff to the marine environment, adjacent waterways and storm drains can be prevented.
- .5 Prior to placement of concrete, all forms shall be thoroughly inspected to ensure that formwork is fully secured and sealed to prevent the release of concrete or concrete contaminated water into the waterway.
- .6 If escape of concrete is observed or detected, pumping should be stopped and appropriate action taken to immediately rectify the situation.
- .7 Contractor will measure and record baseline pH levels in the project area prior to commencement of work.
- .8 Prior to the commencement of operations the Contractor is to demonstrate satisfactory knowledge and use of pH monitoring equipment to Departmental Representative.
- .9 Monitor the pH levels frequently in the waterway immediately downstream of isolated work site until completion of work. Emergency measures shall be taken if pH change more than 1.0 pH unit, measured to an accuracy of 0.2 pH units from the background level or is recorded to be below 6.0 or above 9.0 pH units.
- .10 The pH levels are to be maintained within the range of 6.5-8.5 as per Provincial Water Quality Objectives (PWQO).
- .11 Keep a carbon dioxide (CO2) tank with regulator, hose and gas diffuser readily available during concrete work. Use it to release carbon dioxide gas into the affected area to neutralize pH levels should a spill occur. Train workers to use the tank.

1.10 NOTIFICATION

- .1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.

- 1.10 NOTIFICATION .2 Contractor: after receipt of such notice,
(Cont'd) inform Departmental Representative of proposed
corrective action and take such action for
approval by Departmental Representative.
- .3 Departmental Representative will issue stop
order of work until satisfactory corrective
action has been taken.
- .4 No time extensions granted or equitable
adjustments allowed to Contractor for such
suspensions.

PART 2 - PRODUCTS

- 2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

- 3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

- 1.1 SUBMITTALS .1 Provide submittals in accordance with Section 01 33 00.
- 1.2 INSTALLATION AND REMOVAL .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Indicate use of supplemental or other staging area.
- .3 Provide construction facilities in order to execute work expeditiously.
- .4 Remove from site all such work after use.
- 1.3 PROVISIONS .1 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .2 Provide private washroom facilities complete with flush or chemical type toilet, lavatory and mirror and maintain supply of paper towels and toilet tissue.
- 1.4 EQUIPMENT, TOOL AND MATERIALS STORAGE .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.
- 1.5 SANITARY FACILITIES .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
-

1.6 PROTECTION AND
MAINTENANCE OF
TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Provide snow removal as required during period of Work.

1.7 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
 - .2 Clean dirt or mud tracked onto paved or surfaced roadways.
 - .3 Store materials resulting from demolition activities that are salvageable or designated to be recycled.
 - .4 Stack stored new or salvaged material.
-

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 TEMPORARY
EROSION AND
SEDIMENTATION
CONTROL .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction sediment and erosion control drawings sediment and erosion control plan, specific to site, that complies with EPA 833-R-06-004 or requirements of authorities having jurisdiction, whichever is more stringent.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

PART 1 - GENERAL

- 1.1 CONSTRUCTION & DEMOLITION WASTE
- .1 Carefully deconstruct and source separate materials/equipment and divert, from D&C waste destined for landfill to maximum extent possible. Reuse, recycle, compost, anaerobic digest or sell material for reuse except where indicated otherwise. On site sales are not permitted.
 - .2 Source separate waste and maintain waste audits in accordance with the Environmental Protection Act, Ontario Regulation 102/94 and Ontario Regulation 103/94.
 - .1 Provide facilities for collection, handling and storage of source separated wastes.
 - .2 Source separate the following waste:
 - .1 Portland cement concrete.
 - .3 Steel.
 - .4 Asphalt pavement.
 - .3 Submit a waste reduction workplan indicating the materials and quantities of material that will be recycled and diverted from landfill.
 - .4 Submit proof that all waste is being disposed of at a licensed land fill site or waste transfer site. A copy of the disposal/waste transfer site's license and a letter verifying that said landfill site will accept the waste must be supplied to Departmental Representative prior to removal of waste from the demolition site.
- 1.2 WASTE PROCESSING SITES
- .1 Province of: Ontario.
 - .1 Ministry of Environment and Energy, 135 St. Clair Avenue West, Toronto, ON, M4V 1P5.
 - .2 Telephone: 800-565-4923 or 416-323-4321.
 - .3 Fax: 416-323-4682.
 - .2 Recycling Council of Ontario: 215 Spadina Avenue, #225, Toronto, ON, M5T 2C7.
 - .1 Telephone: 416-657-2797
 - .2 Fax: 416-960-8053
 - .3 Email: rco@rco.on.ca.
 - .4 Internet: <http://www.rco.on.ca/>.
-

Harbour Improvements Rondeau(Erieau), Ontario Project No. 720172	CONSTRUCTION/DEMOLITION WASTE MANAGEMENT AND DISPOSAL	Section 01 74 20 Page 2 2013-05-27
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PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 CANADIAN .1 Government Chief Responsibility for the
GOVERNMENTAL Environment.
DEPARTMENTS CHIEF
RESPONSIBILITY FOR
THE ENVIRONMENT

Province	Address	General Inquiries	Fax
Ontario	Ministry of Environment and Energy 135 St Clair Avenue West Toronto, ON M4V 1P5 Environment Canada Toronto, ON	(416) 323-4321 (800) 565-4923 (416) 734-4494	(416) 323-4682

PART 1 - GENERAL

- 1.1 ACTION AND INFORMATIONAL SUBMITTALS
- .1 Submit in accordance with Section 01 33 00.
 - .2 Sustainable Design Submittals:
 - .1 Construction Waste Management: Submit project Waste Management Plan highlighting recycling and salvage requirements
- 1.2 MEASUREMENT PROCEDURES
- .1 Concrete coring including removal and disposal of cored concrete shall be measured as a lump sum and shall include all labour, materials and equipment necessary to complete the work.
 - .2 Asphalt pavement removal and disposal will be measured by the square metre and shall include all labour, materials and equipment necessary to complete the work.
 - .3 Optional asphalt pavement removal and disposal will be measured by the square metre and shall include all labour, materials and equipment necessary to complete the work.
 - .4 Optional disconnect, removal, salvage, reinstallation and connection of the existing light standards will not be measured separately for payment but shall be considered included in the optional concrete pedestals under Section 03 30 00 for light standards LS#5 and LS#6 and included in optional pedestal braces under Section 05 50 00 for light standards LS#1, LS#2, LS#3 and LS#4.
 - .5 Optional demolition of existing light standard pedestals at LS#5 and LS#6 will not be measured separately for payment but shall be considered included in the optional concrete pedestals under Section 03 30 00
-

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

- 3.1 EXAMINATION .1 Inspect site with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.
- .4 Disconnect, cap, plug or divert, as required, existing utilities within the area of work where they interfere with the execution of the work. Complete work in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.
- .5 Immediately notify Departmental Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.
- .6 Immediately notify the Departmental Representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.
- 3.2 PROTECTION .1 Prevent movement, settlement, or damage to adjacent structures, asphalt pavement, utilities, fencing, distribution panels and light standard pedestals. Provide bracing and shoring as required.
-

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- 3.2 PROTECTION .2 Keep noise, dust, and inconvenience to normal
(Cont'd) use of the site to a minimum.
- .3 Provide temporary dust screens, covers,
railings, supports and other protection as
required.
- 3.3 PREPARATION .1 Keep noise, dust, and inconvenience to
occupants to minimum.
- .2 Provide temporary dust screens, covers,
railings, supports and other protection as
required.
- .3 Do work in accordance with Section 01 35 29.
- 3.4 OPTIONAL LIGHT .1 Disconnect power, remove and salvage for
STANDARD REMOVALS reinstallation existing light standards at
locations of optional concrete pedestals and
optional light standard braces.
- .2 Reinstall light standards upon completion of
optional work and reconnect lights. Obtain
Electrical Safety Authority inspection and
approval.
- 3.5 DEMOLITION AND .1 Remove and dispose items as indicated on
REMOVALS drawing and as specified.
- .2 Core concrete parapet at locations of
previous cores within repair limits on West
Pier parapet. Fill cored holes with concrete
upon completion of stone fill placement.
- .3 Demolish and dispose existing light standard
pedestals at location of optional concrete
pedestals and dispose legally offsite.
Complete excavation to Section 31 00 99.
- .4 Remove and dispose legally offsite existing
asphalt pavement indicated for removal.
-

- 3.6 CLEANING
- .1 Progress Cleaning: Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
 - .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 20.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

PART 1 - GENERAL

1.1 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 At least 2 weeks prior to beginning Work, submit to Departmental Representative samples of following materials proposed for use: curing compound and cold weather protection.
- .3 Provide testing results for mixes and reports of compressive strength during work for review by Departmental Representative and do not proceed without written approval when deviations from mix design or parameters are found.
- .4 Concrete hauling time: provide for review by Departmental Representative deviations exceeding maximum allowable time of 120 for concrete to be delivered to site of Work and discharged after batching.

1.2 REFERENCES

- .1 Definitions:
 - .1 Tremie concrete: concrete placed underwater through tube called tremie pipe.
 - .2 Tremie pipe: pipe has hopper at upper end and may be open ended or may have foot valve, plug or travelling plug to control flow of concrete. Pipe has diameter of 200 mm minimum, constructed from sections with flange couplings fitted with gaskets.
 - .1 Concrete is placed in hopper and sufficient head of concrete is maintained in tremie pipe to provide desired rate of flow.
 - .3 Pumped concrete method: method of placing concrete underwater uses concrete pump with discharge line used in similar manner to tremie pipe.
 - .4 Bagged concrete method: method of placing underwater concrete consists of diver placing bags partially filled with dry concrete mix.

1.3 MEASUREMENT
PROCEDURES

- .1 Cast-in-place concrete and bagged concrete related to the repair at Station 0+106± shall be considered incidental and will not be measured separately for payment. Include all labour, equipment and material costs in Section 05 50 00.
- .2 Cast-in-place concrete related to the outfall repairs at Station 0+129.3± and Station 0+134.1± shall be considered incidental and will not be measured separately for payment. Include all labour, equipment and material costs in Section 05 50 00.
- .3 Crack repairs shall be measured by the linear metre and shall include all labour, materials and equipment necessary to complete the work.
- .4 Optional concrete pedestals of light standards LS#5 and LS#6 shall be measured by the pedestal and shall include all labour, materials and equipment necessary to complete the work including work under Section 02 41 15 and Section 31 00 99.
- .5 Reinforcing steel, splices, wire ties, bar supports, chairs, spacers, dowels, anchor bolts, nuts, washers and epoxy adhesive shall be considered incidental and will not be measured separately for payment.
- .6 Heating water, aggregates and providing cold weather protection is considered included in the placing of concrete and will not be measured separately for payment.

1.4 QUALITY
ASSURANCE

- .1 Provide to Departmental Representative, 2 weeks minimum prior to starting concrete work, valid and recognized certificate from plant delivering concrete.
 - .1 Quality Control Plan: provide written report to Departmental Representative verifying compliance that concrete in place meets performance requirements.
 - .2 Sustain Standards Certification:
 - .1 Construction Waste Management: provide copy of plan.
 - .2 Recycled Content:
 - .1 Provide listing of recycled content products used.

1.4 QUALITY ASSURANCE (Cont'd) .1 (Cont'd)
.2 (Cont'd)
.2 Recycled Content: (Cont'd)
.2 When Supplementary Cementing Materials (Scans) are used, provide evidence to certify reduction in cement from Base Mix to Actual Scans Mix, as percentage.

1.5 DELIVERY, STORAGE AND HANDLING .1 Delivery and Acceptance Requirements:
.1 Concrete hauling time: deliver to site of Work and discharged within 120 minutes maximum after batching.
.1 Do not modify maximum time limit without receipt of prior written agreement from Departmental Representative and concrete producer as described in CSA A23.1/A23.2.
.2 Deviations to be submitted for review by the Departmental Representative.
.2 Concrete delivery: ensure continuous concrete delivery from plant meets CSA A23.1/A23.2.

PART 2 - PRODUCTS

2.1 DESIGN CRITERIA .1 Alternative 1 - Performance: to CSA A23.1/A23.2, and as described in MIXES of PART 2 - PRODUCTS.

2.2 PERFORMANCE CRITERIA .1 Quality Control Plan: ensure concrete supplier meets performance criteria of concrete as established by Departmental Representative and provide verification of compliance as described in PART 1 - QUALITY ASSURANCE.
.2 Verification compliance shall include test cylinders taken at discharge point taken at the start of each pour to determine 3, 7 and 28 day compressive strength of grout and concrete.

2.3 MATERIALS

- .1 Cement: to CSA A3001, Type GUs.
- .2 Supplementary cementing materials: with minimum 20% fly ash or slag replacement by mass of total cementitious materials to CSA A3001.
- .3 Water: to CSA A23.1/A23.2.
- .4 Sealer: proprietary poly-silica resin blend.
- .5 Other concrete materials: to CSA A23.1/A23.2.
- .6 Reinforcing bar steel: to CAN/CSA-G30.18-M92(R2002) grade 400R.
- .7 Antiwashout admixture shall be added to concrete placed in water. Dosage shall be in accordance with admixture manufactures recommendation.
- .8 Crack Repair Epoxy: two component, moisture insensitive, ultra low viscosity epoxy for penetrating cracks in concrete to ASTM C 881, Type 1, Grade 1, Class B and C:
 - .1 Viscosity: 100 cps maximum.
 - .2 Tensile Strength: 40 MPa minimum to ASTM D 638.
 - .3 Compressive Strength(mortar): 55 MPa minimum to ASTM C 109.
 - .4 Tensile Elongation: 1% minimum to ASTM D 638.

2.4 MIXES

- .1 Alternative 1 - Performance Method for specifying concrete: to meet Departmental Representative performance criteria to CSA A23.1/A23.2.
 - .1 Ensure concrete supplier meets performance criteria as established below and provide verification of compliance as described in PART 3 - VERIFICATION.
 - .2 Provide concrete mix to meet following hard state requirements:
 - .1 Durability and class of exposure: C-1.
 - .2 Compressive strength at 28 day age: 35 MPa minimum.
 - .3 Intended application: Concrete pipe fill and parapet repair.
 - .4 Aggregate size 19 mm maximum.
 - .5 Pre-qualification: yes.
 - .3 Concrete supplier's certification.

2.4 MIXES
(Cont'd)

- .1 (Cont'd)
.4 Provide quality management plan to ensure verification of concrete quality to specified performance.

PART 3 - EXECUTION

3.1 PLACING
REINFORCEMENT

- .1 Accurately place reinforcing steel, plates and bars in the positions and to elevations indicated on the drawings and hold firmly during the placing, compacting and setting of concrete.
.2 Reinforcement and bars must be in place and inspected by the Departmental Representative before concrete is placed.

3.2 FORMWORK

- .1 Erect formwork to CAN/CSA-A23.1-04/A23.2-04.

3.3 PREPARATION

- .1 Provide Departmental Representative 24 hours notice before each concrete pour.
.2 During concreting operations:
.1 Development of cold joints not allowed.
.2 Ensure concrete delivery and handling facilitates placing with minimum of rekindling, and without damage to existing structure or Work.
.3 Protect previous Work from staining.
.4 Clean and remove stains prior to application of concrete finishes.

3.4 INSTALLATION/
APPLICATION

- .1 Do cast-in-place concrete work in accordance with CSA A23.1/A23.2.
.2 In no case deposit concrete against frozen water or material.
.3 Placement of concrete at repair at Station 0+106± shall be by bagged method where indicated and the remaining pumped in place. Carry out the placement of concrete by pumped method in one continuous lift.
-

- 3.4 INSTALLATION/
APPLICATION
(Cont'd)
- .4 Placement methods for concrete are to be approved by Departmental Representative. In no case shall concrete be dropped either through air or water during placement.
 - .5 Placement of concrete by pumping is permitted only after approval in writing of equipment and concrete mix design by Departmental Representative.
 - .6 Complete work to following tolerances:
 - .1 Straight to 1:500.
 - .2 Thickness to 6 mm.
 - .3 Plumb to 1:600.
- 3.5 FINISHES
- .1 Formed surfaces exposed to view: in accordance with CSA A23.1/A23.2.
 - .2 Non-formed surfaces exposed to view:
 - .1 Screed to plane surfaces and use magnesium floats.
 - .2 Trowel smooth to provide lightly brushed non-slip finish.
- 3.6 CURING
- .1 Provide cold weather protection in accordance with CSA A23.1/A23.2.
 - .2 Use curing compounds compatible with applied finish on concrete surfaces free of bonding agents and to CSA A23.1/A23.2.
- 3.7 SEALING
APPLICATION
- .1 After curing is complete, apply poly-silica resin blend sealer at 4 m² /L.
- 3.8 FIELD QUALITY
CONTROL
- .1 Concrete testing: Perform to CSA A23.1/A23.2 by testing laboratory approved by Departmental Representative and paid for by the Contractor.
- 3.9 CLEANING
- .1 Use trigger operated spray nozzles for water hoses.
 - .2 Designate cleaning area for tools to limit water use and runoff.
-

- 3.9 CLEANING .3 Cleaning of concrete equipment to be done in accordance with Section 01 35 43 Environmental Procedures.
(Cont'd)
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 20 - Construction/Demolition Waste Management and Disposal.
- 3.10 CRACK REPAIR .1 V-notch the crack making sure the bottom and sides are sealed. Pour mixed inject epoxy material evenly into the crack until full.
- .2 Broadcast dry silica sand over the crack at manufacture's recommended time after application of epoxy.

PART 1 - GENERAL

- 1.1 ACTION AND INFORMATIONAL SUBMITTALS .1 Submit in accordance with Section 01 33 00.
- .2 Product Data:
.1 Submit manufacturer's instructions, printed product literature and data sheets for sections plates pipe tubing bolts and include product characteristics, performance criteria, physical size, finish and limitations.
- 1.2 WASTE MANAGEMENT AND DISPOSAL .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 20 Construction/Demolition Waste Management and Disposal.
- 1.3 QUALITY ASSURANCE .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- 1.4 DELIVERY, STORAGE AND HANDLING .1 Storage and Handling Requirements:
.1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
.2 Replace defective or damaged materials with new.
- 1.5 MEASUREMENT PROCEDURES .1 Repair at Station 0+106± including bagged concrete and cast-in-place concrete shall be measured as a lump sum and shall include all labour, equipment and material necessary to complete the work.
- .2 SSP patch repairs shall be measured as a lump sum and shall included all labour, material and equipment necessary to complete the work.
-

1.5 MEASUREMENT
PROCEDURES
(Cont'd)

- .3 Outfall repair at Station 0+114.3 shall be measured as a lump sum and shall include all labour, material and equipment necessary to complete the work.
- .4 Outfall repair at Station 0+129.3 including concrete encasement shall be measured as a lump sum and shall include all labour, material and equipment necessary to complete the work.
- .5 Outfall repair at Station 0+134.1 including concrete encasement shall be measured as a lump sum and shall include all labour, material and equipment necessary to complete the work.
- .6 Optional light standard braces shall be measured by each brace and shall include all labour materials and equipment necessary to complete the work including related work under Section 31 00 99.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Steel sections, plates and bars: to CSA G40.20/G40.21, Grade 350W.
- .2 Steel pipe: to ASTM A53/A53M extra strong, black finish.
- .3 Welding materials: to CSA W59.
- .4 Welding electrodes: to CSA W48 Series.
- .5 Bolts and nuts: to ASTM A307-07b.
- .6 Epoxy: 2 component, solvent free, high modulus, moisture insensitive, high strength structural epoxy capable at a minimum depth of 170 mm to develop a minimum tensile bond of 50 kN for a 19 mm diameter anchor bolt in 28 MPa compressive strength concrete.
- .7 Concrete: to Section 03 30 00.

- 2.2 FABRICATION .1 Field confirm dimensions prior to commencement of fabrication.
- .2 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .3 Where possible, fit and shop assemble work, ready for installation.
- .4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

PART 3 - EXECUTION

- 3.1 REPAIR STATION 3+106±.2 .1 Fabricate and install steel plates to details indicated.
- .2 Do welding work in accordance with CSA W59 unless specified otherwise.
- .3 Burn holes in existing steel sheet pile and secure plates to existing steel sheet piling with J-bolts as indicated. Do not excessively oversize holes burned in steel sheet piling. Target size of holes shall be 25 mm x 19 mm.
- .4 Complete concrete work to Section 03 30 00.

- 3.2 SSP PATCH REPAIRS .1 Between Station 0+108 and Station 0+137, fabricate and install SSP patch plates to details indicated ensuring that all holes in the steel sheet piles are covered. Secure plates tight to the existing steel sheet pile by welding at above water locations and by J-bolts at the below water locations.

- 3.3 OUTFALL REPAIR STATION 0+114.3 .1 Fabricate and install outfall repair at Station 0+114.3± to details indicated. Ensure new face plate is secured tight on all edges to existing steel sheet piling.

-
- 3.4 OUTFALL REPAIR .1 Excavate to Section 31 00 99
STATION 0+129.3
- .2 Examine existing outfall for damage and advise Departmental Representative of findings.
- .3 Clean steel sheet pile face of marine growth.
- .4 Fabricate and install outfall repair to details indicated. Ensure face plate is secured tight on all edges to existing steel sheet pile.
- .5 Do concrete work to Section 03 30 00.
- .6 Backfill to Section 31 00 99. Do not commence excavation on the adjacent outfall until backfilling is complete at Station 0+129.3.
- 3.5 OUTFALL REPAIR .1 Excavate to Section 31 00 99.
STATION 0+134.1
- .2 Examine existing outfall for damage and advise Departmental Representative of findings.
- .3 Clean steel sheet pile face of marine growth.
- .4 Fabricate and install outfall repair to details indicated. Ensure face plate is secured tight on all edges against the existing steel sheet pile.
- .5 Do concrete work to Section 03 30 00.
- .6 Backfill to Section 31 00 99. Do not commence excavation on the adjacent outfall until backfilling is complete at Station 0+134.1.
- 3.6 OPTIONAL LIGHT .1 Complete removal and reinstallation light
STANDARD BRACES standards to Section 02 41 15.
- .2 Align existing pedestals to vertical position prior to installation of optional braces.
- .3 Measure the location of the steel sheet pile in pans and out pans relative to the centreline of each pedestal and lengthen the horizontal hollow structural section welded to the steel
-

3.6 OPTIONAL LIGHT .3
STANDARD BRACES
(Cont'd)

(Cont'd)
sheet piles, as required, to span over two
in pans.

.4 Fabricate and install light standard braces
to details indicated.

3.7 PROTECTION .1

Protect installed products and components
from damage during construction.

.2 Repair damage to adjacent materials caused by
metal fabrications installation.

PART 1 - GENERAL

- 1.1 UTILITY LINES
- .1 Before commencing work, establish location and extent of underground utility lines in area of excavation. Notify Departmental representative of findings.
 - .2 Advise Departmental representative to remove/re-route existing lines in area of excavation. Pay costs of such work.
 - .3 Maintain existing lines in areas of excavation which must remain active as indicated. Pay costs for this work.
 - .4 Record locations of maintained, re-routed and abandoned underground utility lines.
 - .5 Make good damage to existing utility lines resulting from work.
- 1.2 MEASUREMENT PROCEDURES
- .1 Granular A shall be measured by the tonne of material supplied and placed as indicated. Compaction shall be considered included in the placement of Granular A and will not be measured separately for payment.
 - .2 Stone Fill shall be measured by the tonne and shall include all labour materials and equipment necessary to supply and place.
 - .3 Outfall excavation for outfall repairs at Station 0+129.3± and Station 0+134.1± shall be measured as a lump sum and shall include stockpiling and backfilling of native backfill. Compaction shall be considered included in the placement of Native Backfill and will not be measured separately for payment.
 - .4 Optional excavation and disposal off site of native material and supply and placement of unshrinkable backfill shall be considered included in the optional light standard braces measured under Section 05 50 00 and will not be measured separately for payment.
 - .5 Optional excavation and backfilling of native material shall be considered included in the

- 1.2 MEASUREMENT PROCEDURES (Cont'd)
- .5 (Cont'd)
optional concrete pedestals measured under Section 03 33 00 and will not be measured separately for payment.
 - .6 Optional Granular A shall be measured by the tonne of material supplied and placed as indicated. Compaction shall be considered included in the placement of Granular A and will not be measured separately for payment.
- 1.3 PROTECTION
- .1 Protect excavated earth from freezing by approved method.
 - .2 Grade around excavations to prevent surface water runoff into excavated area.
 - .3 Protect bottoms of excavations from weather. Should softening in bottoms occur due to water or other causes, remove softened soil and replace with structural concrete at no additional cost.
- 1.4 ACTION AND INFORMATIONAL SUBMITTALS
- .1 Submit in accordance with Section 01 33 00.
- PART 2 - PRODUCTS
- 2.1 MATERIALS
- .1 Granular A: to Ontario Provincial Standard Specification 1010, April 2004. Maximum size 19.0 mm.
 - .2 Native Backfill: excavated soil, free from roots and debris. Departmental Representative to approve excavated material before use as native backfill.
 - .3 Stone Fill: pea gravel, clean washed smooth stone with 100% passing 13.2 mm sieve and 100% retained on 2.35 mm sieve.
 - .4 Unshrinkable fill: to OPSS 1359, November 2006, 0.70 Mpa compressive strength at 28 days.
-

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Evaluation and Assessment:
- .1 Arrange with appropriate authority for relocation of buried services that interfere with execution of work. Pay costs of relocating services.
 - .2 Testing of materials and compaction of backfill and fill unshrinkable fill will be carried out by testing laboratory designated by Departmental Representative.
 - .3 Not later than 1 week before backfilling or filling, provide to designated testing agency, 23 kg sample of backfill fill materials proposed for use.
 - .4 Not later than 48 hours before backfilling or filling with approved material, notify Departmental Representative so that compaction tests can be carried out by designated testing agency.
 - .5 Before commencing work, conduct, with Departmental Representative, condition survey of existing structures, trees and plants, lawns, fencing, service poles, wires, rail tracks and paving, survey bench marks and monuments which may be affected by work.

3.2 PREPARATION

- .1 Protection of in-place conditions:
- .1 Protect excavations from freezing.
 - .2 Keep excavations clean, free of standing water, and loose soil.
 - .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Departmental Representative's approval.
 - .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
 - .5 Protect buried services that are to remain undisturbed.

3.3 EXCAVATION

- .1 Protect slopes and banks and perform work in accordance with Provincial and Municipal regulations.
-

3.3 EXCAVATION
(Cont'd)

- .2 Excavate as required to carry out work, in all materials met.
 - .1 Do not disturb soil or rock below bearing surfaces. Notify Departmental Representative when excavations are complete.
 - .2 If bearings are unsatisfactory, additional excavation will be authorized in writing and paid for as additional work.
- .3 Excavate trenches to provide uniform continuous bearing and support for 150 mm thickness of pipe bedding material on solid and undisturbed ground. Trench widths below point 150 mm above pipe not to exceed diameter of pipe plus 600 mm.
- .4 Do not commence excavation of outfall repair at Station 0+129.3 or Station 0+134.1 until the adjacent outfall repair at Station 0+134.1 or Station 0+129.1 respectively has been completely excavated and backfilled as specified.
- .5 Do not commence backfilling of the excavations at either Station 0+129.1 or Station 0+134.1 until the outfall pipes have been inspected for damage at either outfall location. Provide the Departmental Representative 48 hours advance notice for inspection of each outfall.
- .6 Excavate for paving to subgrade depth.

3.4 OPTIONAL
PEDESTALS AND
BRACES

- .1 Excavate around existing pedestals using a hydrovac.
- .2 Protect existing conduits and wiring from damage during excavation.
- .3 Backfill around optional pedestals and optional pedestal braces as indicated.

3.5 STONE FILL

- .1 Place stone fill through cored holes.
- .2 Compact in place stone fill with portable concrete vibrator.
- .3 Continue to place stone fill followed by vibratory compaction.

- 3.5 STONE FILL (Cont'd)
- .4 Leave cored holes open for three days and observe settlement of stone fill.
 - .5 Top up any settlement of stone fill. Complete final vibratory compaction and top up any settlement with stone fill and fill cored holes with cast in place concrete plug.
- 3.6 SITE QUALITY CONTROL
- .1 Fill material and spaces to be filled to be inspected and approved by Departmental Representative.
- 3.7 BACKFILLING
- .1 Start backfilling only after inspection and receipt of written approval of fill material and spaces to be filled from Departmental Representative.
 - .2 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
 - .3 Placing:
 - .1 Place backfill, native fill and base course material in maximum 150 mm lifts. Add water as required to achieve specified density.
 - .2 Place unshrinkable fill in areas as indicated. Consolidate and level unshrinkable fill with internal vibrators.
 - .4 Compaction: compact each layer of material to following densities for material to ASTM D698:
 - .1 To underside of granular A base course: 95%.
 - .2 Granular A base course: 100%
 - .3 Existing subgrade/native material/native backfill: 95%
 - .5 Under paving:
 - .1 Use native fill up to bottom of Granular A base course.
 - .2 Use granular A for base courses.
- 3.8 CLEANING
- .1 Progress Cleaning: clean in accordance with Section 01 74 11.
 - .1 Dispose of cleared and grubbed material off site daily.
-

- 3.8 CLEANING
(Cont'd)
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11.
 - .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 20.

PART 1 - GENERAL

- 1.1 RELATED SECTIONS
- .1 Section: 02 41 15 Demolition and Removals.
 - .2 Section 31 23 11 - Excavating and Backfilling
- 1.2 PROTECTION
- .1 Take necessary precautions to protect workmen and public from hazards of paving operations.
 - .2 Keep vehicular traffic off newly paved areas until paving surface temperature has cooled below 38 C. Do not permit stationary loads on pavement until 24 hours after placement.
 - .3 Provide access to jetties as required.
 - .4 Protect, roads, curbs and walks on site and adjacent property that may be damaged by paving machinery, equipment or personnel. Make good property damaged due to paving operations.
- 1.3 MEASUREMENT PROCEDURES
- .1 Asphalt base course will be measured by the tonnes used and accepted in the work and shall includes all labour, materials and equipments necessary to complete the work.
 - .2 Asphalt surface course will be measured by the tonnes used and accepted in the work and shall includes all labour, materials and equipments necessary to complete the work.
 - .3 Granular A shall be measured under Section 31 23 11 - Excavating and Backfilling.
 - .4 Optional asphalt base course will be measured by the tonnes used and accepted in the work and shall includes all labour, materials and equipments necessary to complete the work.
 - .5 Optional asphalt surface course will be measured by the tonnes used and accepted in the work and shall includes all labour, materials and equipments necessary to complete the work.
-

1.3 MEASUREMENT
PROCEDURES
(Cont'd)

- .6 Optional Granular A shall be measured under Section 31 23 11 - Excavating and Backfilling.
- .7 Cold mill (grinding) of concrete and asphalt pavement will be considered incidental and not measured seperately for payment.
- .8 Asphalt primer will be consider incidental to asphalt base and asphalt surface courses and not measured separately for payment.
- .9 All compaction testing and grading related to granular base, asphalt base and asphalt surface shall be consider incidental and not measured separately for payment.
- .10 Removal and reinstallation of existing precast concrete curbs shall be considered incidental to the placement of the asphalt surface coarse and optional surface coarse will not be measured seperately for payment.
- .11 Topograghical site survey shall be considered incidental to the placment of asphalt surface coarse and not measured seperately for payment.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Granular base: to Section 31 23 11
- .2 Asphalt base course: to Ontario Provincial Standard Specification OPSS 1150, November 2008 for type HL 8. Maximum size aggregate 19.0 mm.
- .3 Asphalt surface course: to Ontario Provincial Standard Specification OPSS 1150, November 2008 for type HL 4. Maximum size aggregate 9.5 mm.
- .4 Asphalt primer shall be polymer modified asphalt diluted 1 part emulsion to 3 parts water by volume. The emulsified asphalt shall meet the requirement for CSS-1H1 according to OPSS 1103 in addition to requirements of Table 2.

PART 3 - EXECUTION

- 3.1 TOPOGRAPHICAL SITE SURVEY .1 Prior to pavement removal, carry out a topographical site survey over the existing paved area at Fishermans basin location. The survey shall consist of section lines taken at 10 metre intervals with elevations taken every 5 metre along each line. The first elevation shall be taken on top of the steel sheet piling followed by an elevation on top of the pavement or grass adjacent to the steel sheet piling then continuing on a 5 metre spacing and terminate with elevations on the edge of pavement to the west and the existing adjacent ground. Submit plan to Departmental Representative for review. Maintain these grades or modified grades as required to ensure positive drainage toward the water.
- 3.2 REMOVALS .1 Remove existing asphalt pavement identified for removal to Section 02 41 00
- .2 Remove existing precast concrete curb blocks and salvage for reinstallation upon completion of asphaltic concrete surface coarse and optional asphaltic concrete surface coarse.
- 3.3 GRANULAR BASE .1 Place granular base in uniform layers not exceeding 200 mm compacted thicknesses to achieve indicated grades and elevations. Compact each layer before placing succeeding layer.
- .2 Grade site to grades as surveyed or as modified by Departmental Representative.
- .3 Compact Granular A and graded site to 100% Standard Proctor Density.
- 3.4 COLD MILLING .1 Cold mill (grind) to a depth of 40 mm existing asphalt surfaces as indicated.
-

3.5 COMPACTION
TESTING

- .1 Contractor is responsible for compaction testing and shall employ an independent Testing company.
- .2 Compaction testing shall be conducted at every 50 m² for Granular A, asphalt base and asphalt surface course.

3.6 ASPHALT COURSE

- .1 Obtain approval of granular base and primer from Departmental Representative before placing asphalt.
 - .2 Place asphalt mix only when granular base is dry and air temperature is above 7°C.
 - .3 Place 50 mm of compacted asphaltic concrete base course, HL 8 as per OPSS 1150.
 - .4 Place 50 mm lifts of compacted asphaltic concrete surface course, HL 4 as per OPSS 1150 to indicated overall surface coarse thickness.
 - .5 Minimum 120°C mix temperature required when spreading.
 - .6 Maximum 149°C mix temperature permitted at any time.
 - .7 Compact base course with roller as soon as it can support roller weight without undue cracking or displacement.
 - .8 Roller, power driven, minimum mass of 9 tonnes, minimum wheel width 600 mm.
 - .9 Roll until roller marks are eliminated. Compact to density not less than 96% laboratory density.
 - .10 Keep roller speed slow enough to avoid mix displacement and do not stop roller on fresh pavement.
 - .11 Moisten roller wheels with water to prevent mixture adhesion.
 - .12 Compact mix with hot tampers or other approved equipment in areas inaccessible to roller.
-

- 3.6 ASPHALT COURSE (Cont'd)
- .13 Finish surface smooth, true to grade and free from deviations exceeding 1:1000 when measured in any direction with a 3 m straight edge.
 - .14 Carefully place and compact hot asphaltic material against joints, water main valves and catchbasin frames.
 - .15 Place base course flush to existing pavement surface. Place around catchbasin covers such to permit placement of full thickness asphalt paving overlay.
 - .16 Reinstall salvaged precast concrete curb blocks at original locations. Secure in place with 600 long steel drift pins. Diameter of pin to match hole size in existing curb blocks.
- 3.7 JOINTS
- .1 Cut back bituminous course to full depth in straight or curved lines as required to expose fresh vertical surfaces. Remove any broken or loose material.
 - .2 Paint exposed edges of asphaltic joints, concrete edges of concrete parapet and similar items with asphalt primer prior to placing asphalt courses.
 - .3 Where paving comprises two or more courses overlap longitudinal joints not less than 600 mm.
 - .4 Carefully place and compact hot asphaltic material against joints.



Labour Conditions Fair Wages and Hours of Labour

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- 01 Interpretation
- 02 General Fair Wage Clause
- 03 Hours of Work
- 04 Labour Conditions to be Posted
- 05 The Contractor to Keep Records which are to be Kept Open for Inspection
- 06 Departmental Requirements before Payment made to Contractor
- 07 Authority to pay Wages in the Event of Default by the Contractor
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01 Interpretation

In these Conditions

- (a) "Act" means the Fair Wages and Hours of Labour Act;
- (b) "Regulations" means the Fair Wages and Hours of Labour Regulations made pursuant to the Act;
- (c) "contract" means the contract of which these Labour Conditions are part;
- (d) "contracting authority" means the department of Government or a crown corporation with whom the contract is made;
- (e) "contractor" means the person who has entered into the contract with the contracting authority;
- (f) "regional director" means the director of a regional office of the Department of Human Resources Development or the director's designated representative;
- (g) "inspector" has the meaning assigned to the term by Part III of the Canada Labour Code.
- (h) "Minister" means the Minister of Labour of Canada;
- (i) "persons" means those workers employed by the contractor, subcontractor or any other person doing or contracting to do the whole or any part of the work contemplated by the contract;

02 General Fair Wage Clause

- (a) All persons in the employ of the contractor, subcontractor, or any other person doing or contracting to do the whole or any part of the work contemplated by the contract, shall during the continuance of the work:
 - i) be paid fair wages that is, such wages as are generally accepted as current for competent workers in the district in which the work is being performed for the character or class of work in which such workers are respectively engaged; and

- ii) in all cases, be paid no less than the minimum hourly rate of pay established by the Labour Program of the Department of Human Resources Development in the Fair Wage Schedules which form a part of this contract as Appendix A to these Labour Conditions; and
 - iii) for contracts covering work performed in the province of Quebec, be paid at least the wage rates established by that province for the purposes of the Quebec "Construction Decree".
- (b) Where there is no wage rate in the schedules referred to in (a) for a particular character or class of work, the contractor shall pay wages for that character or class of work at a rate not less than the rate for an equivalent character or class of work.
 - (c) Where during the term of the contract, the contractor receives notice from the contracting authority of any change in wage rates, the contractor shall pay not less than the changed wage rate beginning on the first day after receipt, by the contractor, of the notice of the change in wage rates.

03 Hours of Work

- (a) The hours of work in a day and in a week of persons employed in the execution of the contract, including the hours of work in excess of which a person shall be paid overtime at a rate at least equal to one and one half times the fair wage, are the hours of work for the province in which the work is being performed as set out from time to time in an Act of that province.
- (b) The daily or weekly hours of work referred to in paragraph (a) may be exceeded in accordance with the applicable provincial law.

04 Labour Conditions to be Posted

For the information and the protection of all persons, the contractor agrees to post and keep posted, in a conspicuous place on the premises where work contemplated by the contract is being carried out or on premises occupied or used by persons engaged in carrying out such work, a copy of these Labour Conditions, and a copy of the applicable Fair Wage Schedules along with any subsequent changes.

05 The Contractor to Keep Records which are to be Kept Open for Inspection

- (a) The contractor agrees to keep books and records showing the names, addresses, classifications of employment and work of all workers employed under the contract, the rate of wages to be paid, the wages paid and the daily hours worked by the workers.
- (b) The contractor also agrees that the contractor's books, records and premises will be open at all reasonable times for inspection by an inspector.
- (c) The contractor also agrees to furnish the inspector and the contracting authority, on request, with such further information as is required to ascertain that the requirements of the Act, the Regulations and the contract with respect to wages, hours of work and other labour conditions have been complied with.

06 Departmental Requirements before Payment made to Contractor

- (a) The contractor agrees that the contractor will not be entitled to payment of any money otherwise payable under the contract until the contractor has filed with the contracting authority in support of a claim for payment a sworn statement:
 - (i) that the contractor has kept the books and records required by these Regulations,

- (ii) that there are no wages in arrears in respect of work performed under the contract, and
 - (iii) that to the contractor's knowledge, all the conditions in the contract required by the Act and the Regulations have been complied with.
- (b) The contractor also agrees that, where fair wages have not been paid by the contractor to persons employed under the contract, the contracting authority shall withhold from any money otherwise payable under the contract to the contractor the amount necessary to ensure that fair wages are paid to all employees until fair wages are paid.

07 Authority to pay Wages in the Event of Default by the Contractor

- (a) The contractor agrees that where the contractor is in default of payment of fair wages to an employee, the contractor will pay to the Minister the amount the contractor is in default.
- (b) The contractor agrees that where the contractor fails to comply with paragraph (a), the contracting authority will pay to the Receiver General, out of any money otherwise payable to the contractor, the amount for which the contractor is in default.

08 Conditions of Subcontracting

The contractor and the subcontractor agree that in subcontracting any part of the work contemplated by the contract, they will place in the subcontract the conditions respecting fair wages, hours of work and other labour conditions set out in the contract and the requirements set out in Section 4. The contractor further agrees that the contractor will be responsible for carrying out these conditions in the event the subcontractor fails to carry them out.

09 Non-discrimination in Hiring and Employment of Labour

The contractor agrees that in the hiring and employment of workers to perform any work under the contract, the contractor will not refuse to employ and will not discriminate in any manner against any person because

- (a) of that person's race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status;
- (b) of the race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status of any person having a relationship or association with that person, or
- (c) a complaint has been made or information has been given in respect of that person relating to an alleged failure by the contractor to comply with subparagraph (a) or (b).

The logo for the Government of Canada, featuring the word "Canada" in a stylized serif font with a small flag icon above the letter 'a'.