Ontario

MINISTRY OF TRANSPORTATION

TENDER CLOSING DATE IS 11:00:00 A.M. LOCAL (TORONTO) TIME May 01, 2019

TENDER

FOR **Grading, Drainage, Granular Base, Hot Mix Paving, and Electrical**

(A) NECESSARY AVAILABLE FINANCIAL RATING IS $2,500,000 IN (GR)
NECESSARY AVAILABLE MAXIMUM WORKLOAD RATING IS $2,500,000

AT HWY. 3

Intersection at Haldimand Road 56

0.58 km West Region

UNDER CONTRACT NO. 2019-3006

(B) THIS CONTRACT IS APPLICABLE TO QUALIFIED CONTRACTORS ONLY

BY

NAME OF FIRM OR INDIVIDUAL (HEREAFTER REFERRED TO AS "CONTRACT CONTRACTOR")

ADDRESS

NAME OF PERSON SIGNING FOR FIRM

OFFICE OF PERSON SIGNING FOR FIRM

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TENDER ITEM LIST

Grading

Item	Spec. Code	Item Description	Unit	Quantity	Unit Price	Total
1	0201-0075	Grubbing	m2 (P)	375		
2	0201-0080	Grubbing	each (P)	16		
3	0206-0010	Earth Excavation, Grading	m3 (P)	6,869		
4	9999-0025 SP	Non-Hazardous Earth Excavation	t	538		
5	0308-0010 SP	Tack Coat	m2 (P)	22,746		
6	0312-0030	Asphalt Spillways	m (P)	14		
7	0313-1374	Superpave 12.5FC 1	t	243		
8	0313-1376	Superpave 19.0	t	3,101		
9	0313-1540 SP	Superpave 12.5FC 1 - 40 mm Lift Thickness	m2 (P)	8,637		
10	0314-0071	Granular A	t	7,695		
11	0314-0390	Granular B, Type III	t	7,208		
12	0399-3415 SP	Clear Stone	t	150		
13	0353-0011 SP	Concrete Curb and Gutter	m (P)	814		
14	0353-0020	Concrete Gutter Outlets	each (P)	9		
15	0405-0010	Pipe Subdrains	m (P)	1,151		
16	0405-0015	Closed-Circuit Television (CCTV) Inspection	m	129		
17	0407-0040 SP	1200 mm Manholes Catch Basins and Ditch Inlets	each (P)	1		
18	0410-0400	400 mm Pipe Sewer	m (P)	64		
19	0421-0405	400 mm Pipe Culvert	m (P)	7		
20	0421-0505	500 mm Pipe Culvert	m (P)	100		
21	0421-0605	600 mm Pipe Culvert	m (P)	9		
22	0422-0100 SP	1800 mm x 900 mm Precast Concrete Box Culvert	m (P)	117.0		
23	0510-3133 SP	Removal of Asphalt Pavement	m2 (P)	5,547		
24	0510-3137 SP	Removal of Asphalt Pavement, Partial-Depth	m2 (P)	4,127		
25	0510-3532	Removal of Concrete Curb and Gutter	m (P)	237		
26	0510-4071	Removal of Maintenance Holes, Catch Basins, Ditch Inlets and Valve Chambers	each (P)	4		
27	0510-4210	Removal of Pipes and Culverts	m (P)	338		
28	0510-5401	Removal of Fence	m (P)	73		
29	0510-9030	Removal of Concrete	m3 (P)	16		
30	0511-0145	Rip-Rap	m2 (P)	219		
31	0511-0150	Geotextile	m2 (P)	312		
32	0517-0020 SP	Temporary Flow Passage System	lump sum	100 %		
33	0703-0020	Small Signs, Ground Mounted, New	each (P)	22		
34	0703-0021	Small Signs, Relocation	each (P)	1		

35	0703-0022 SP	Small Signs, Removal	each (P)	21		
36	0706-0015 SP	Temporary Traffic Control Signs	lump sum	100 %		
37	0706-0045 SP	Road Closing/Restriction Notice Signs (TC-64)	each (P)	4		
38	0710-0010 SP	Pavement Marking	m (P)	1,714		
39	0710-0030 SP	Pavement Marking, Durable	m (P)	1,517		
40	0710-0040	Pavement Marking Symbols, Durable	each (P)	8		
41	0771-0010	Highway Fence	m (P)	73		
42	0771-0020	Brace Panels	each (P)	2		
43	0771-0030	Gates	each (P)	1		
44	0801-0010	Barrier for Tree Protection	m (P)	108		
45	0802-0030	Topsoil, Imported	m3	1,083		
46	0804-0052	Seed and Erosion Control Blanket	m2 (P)	7,197		
47	0805-0065 SP	Heavy-Duty Wire-Backed Silt Fence Barriers	m (P)	231		
48	0805-0105 SP	Fibre Roll Flow Check Dams	each (P)	19		
49	0805-0120 SP	Rock Flow Check Dams	each (P)	2		
50	0902-0010	Earth Excavation for Structure	m3 (P)	786		
51	0902-0030	Dewatering Structure Excavations	lump sum	100 %		

Electrical

Item	Spec. Code	Item Description	Unit	Quantity	Unit Price	Total
52	0602-0045	Electrical Handholes	each (P)	9		
53	0603-0035 SP	Rigid Ducts, Concrete Encased	m (P)	119		
54	0603-0045 SP	Rigid Ducts, Direct Buried	m (P)	354		
55	0603-0046 SP	Rigid Ducts, Direct Buried (Temporary)	m (P)	12		
56	0604-0045	Low Voltage Cables, in Ducts	m (P)	367		
57	0604-0046	Low Voltage Cables, in Ducts (Temporary)	m (P)	60		
58	0604-0050	Extra Low Voltage Cables, in Ducts	m (P)	413		
59	0604-0055	Traffic Signal Cables, in Ducts	m (P)	266		
60	0604-0076	Low Voltage Cables, Aerial on Messenger Cable (Temporary)	m (P)	24		
61	0604-0086	Traffic Signal Cables, Aerial on Messenger Cable (Temporary)	m (P)	8		
62	0604-0096	Steel Messenger Cables, Aerial (Temporary)	m (P)	8		
63	0609-0020	Ground Wires	m (P)	235		
64	0609-0021	Ground Wires (Temporary)	m (P)	21		
65	0609-0030	Ground Electrodes	each (P)	9		
66	0609-0031	Ground Electrodes (Temporary)	each (P)	1		
67	0610-0010	Removal of Electrical Equipment	lump sum	100 %		
68	0614-0040 SP	Supply Control Cabinet Assemblies	each (P)	1		
69	0615-0041	Wood Poles, Direct Buried in Earth (Temporary)	each (P)	1		

70	0615-0100	Sectional Steel Poles, Base Mounted	each (P)	5		
71	0615-0109	Heavy Class Steel Poles, Base Mounted	each (P)	3		
72	0615-0141	Guy Anchors (Temporary)	each (P)	1		
73	0616-0020	Concrete Footings in Earth	each (P)	9		
74	0616-0040	Concrete Pads	each (P)	1		
75	0617-0022 SP	LED Roadway Lighting Luminaires and Bracket Assemblies	each (P)	2		
76	0620-0020	Single Member Arms and Signal Hangers	each (P)	8		
77	0620-0050	Highway Type Signal Heads	each (P)	8		
78	0622-0020 SP	Traffic Signal Controllers	each (P)	1		
79	0623-0020 SP	Loop Detectors	each (P)	6		

		Grand Total:				

INSTRUCTIONS TO BIDDERS

1.0 DEFINITIONS

Bidder means a person, sole proprietorship, firm, partnership, corporation, or any other business venture that submits a Bid to the Ministry.

Bonds means both the Contract Bonds and the Statutory Bonds prescribed in the Tender Documents.

Business Day means any Day which is not: a) A Saturday or a Sunday or b) A Day observed as a holiday under the laws of the Province of Ontario or the federal laws of Canada applicable to the Province of Ontario.

Contract Bonds means the surety bonds executed by the Contactor and its Surety prescribed in the Tender Documents, but does not include Statutory Bonds.

Contractor Registration Form or CRF means the Ministry approved form supplied by the Ministry and completed by the Bidder to submit information in support of a contractor's basic financial rating.

Contract Tender Form or CTF means the Ministry approved form detailing the contract tender information for an advertised contract.

Day means a calendar day.

Itemized Bid Form means the Ministry approved form that the Bidder is to use to price the items specified in the tender documents to perform the Work.

Late Bid means a Bid received by the Ministry's Service Provider after the Tender Closing.

Late Bid Notification is a statement sent by the Ministry's Service Provider to a Bidder notifying the Bidder that their Bid is a Late Bid and will not be considered and is rejected.

MERX means the company engaged by the Ministry to provide electronic tendering services in respect of this Bid, which is a subsidiary of Mediagrif Interactive Technologies Inc.

No Bid Statement means a 'No Bid' selection on a Summary Bid Submission Form submitted to the Ministry's Service Provider from a Bidder who has an approved Tender Registration Form, but who does not intend on submitting a Summary Bid Submission Form containing a summary Bid prior to the Tender Closing, or intends to withdraw a summary Bid submitted on a Summary Bid Submission Form submitted to the Ministry prior to Tender Opening.

Non-Rated Contractor means a Contractor who does not have a basic financial rating or maximum workload rating in accordance with the Ministry's Qualification Procedures for Contractors.

Non-Resident Contractor means any Contractor residing outside of the Province of Ontario and with respect to a corporate contractor, not being incorporated pursuant to the laws of Ontario and who has not maintained a permanent place of business in Ontario continuously for twelve months prior to Tender Closing.

Non-Qualified Tender Registration Form (NQ-TRF) means the Ministry approved form supplied by the Ministry completed by the Bidder to notify the Ministry of its intention to submit a Bid on a contract in accordance with the Instructions to Bidders.

Qualified Contract means a contract that is tendered in accordance with the Ministry's Qualification Procedures for Contractors.

Qualification Procedures for Contractors means the administrative routine established by the Ministry to determine that contractors have the financial, managerial, and technical capability to perform the work in accordance with the contract.

RAQS is an abbreviation for Registry Appraisal and Qualification System.

RAQS/MERX is an abbreviation for the Ministry's tendering system replacing RAQS.

Rated Contractor means a contractor who has been granted a basic financial rating or maximum workload rating in accordance with the Ministry's Qualification Procedures for Contractors.

Service Provider means the person appointed by the Ministry to provide electronic tendering services on behalf of the Ministry.

Statutory Bonds means the surety bonds executed by the Contactor and its Surety and required to be furnished by Part XI.1 of the Construction Act, R.S.O. 1990, c.30, as amended.

Summary Bid Submission Form means the electronic form obtained from the Ministry's Service Provider prior to Tender Closing that the Bidder is to use to summarize the lump sum offer to perform the Work.

Tender or Bid can be used interchangeably and means the offer submitted by a Bidder to perform the work required of the Tender Documents at the prices set out in the offer, which offer shall be set out in the forms approved by the Ministry and in accordance with the procedures more particularly described in these Instructions to Bidders. More particularly, the forms shall include, among other things, the Summary Bid Submission Form and the Itemized Bid Form.

Tender Closing or **Tender Opening** can be used interchangeably and mean the last date and time that the Ministry will receive Bids.

Tender Documents means the Tender, MTO General Conditions of Contract, Standard Specifications and Drawings, Special Provisions, Contract Drawings, Addenda incorporated into any aforementioned document, and documents referenced in the aforementioned documents, but excludes the Qualification Procedures for Contractors.

Tender Registration Form (TRF) means the Ministry approved form supplied by the Ministry completed by Bidders to pre-qualify for Qualified Contracts in accordance with the procedures set out in the Qualification Procedures for Contractors.

Unbalanced Bid means a Bid containing a lump sum or unit prices, which does not reflect reasonable actual costs to do the work as described in the Tender Documents, plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs which are anticipated for the performance of the work.

2.0 COMPLIANCE WITH INSTRUCTIONS

2.1 Bidders must comply with these Instructions to Bidders and those failing to do so may have their Bid rejected, unless otherwise stated.

3.0 ENQUIRIES DURING TENDERING PERIOD

3.1 Enquiries are to be submitted electronically through the RAQS/MERX website. All public enquiries and responses to enquiries will be posted through the RAQS/MERX website.

3.2 Unless addressed through an addendum to the Tender Documents issued by the Ministry, all responses to Bid enquiries shall not be incorporated as part of the Contract or in any way change the Contract.

4.0 JOINT VENTURES

4.1 Rated Contractors are permitted to Bid on tenders as a joint venture. Joint ventures are defined as persons or corporations not associated or related by common ownership. All joint ventures must, on a joint and several bases, absolutely, unconditionally and irrevocably be responsible for all obligations described in the Tender Documents. If the joint venture does not form a corporation, all the joint venture entities must sign the contract upon award of the Tender.

4.2 Rated Contractors shall in accordance with the Ministry's Qualification Procedures for Contractors notify the Ministry of their intent to form a joint venture. Upon approval by the ministry, the lead contractor must submit the TRF on behalf of the joint venture.

5.0 TENDER REGISTRATION

5.1 An approved Non-Qualified Tender Registration Form (NQ-TRF) or Tender Registration Form (TRF) is required for the submission of a Bid in respect of the work anticipated by the Tender Documents.

5.2 A Non-Rated Contractor must have a Ministry approved NQ-TRF for the submission of a Bid.

5.3 A Rated Contractor must have either a Ministry approved NQ-TRF or a TRF in the case of a Qualified Contract for the submission of a Bid.

5.4 Qualified Contracts are applicable to Rated Contractors only and require an approved TRF for the submission of a Bid.

6.0 STATUTORY BONDS

6.1 If the Total Bid Price is **$500,000.00 or more** the Contractor shall furnish the Ministry with the Statutory Bonds in the prescribed form that satisfies the requirements of the Construction Act, R.S.O. 1990, c.C.30, as amended. In this regard, the Contractor shall deliver and maintain a labour and material payment bond using Form 31 and a performance bond using Form 32 prescribed by the Construction Act from a surety company that is an insurer licensed under the Insurance Act to write

surety and fidelity insurance. Such bonds shall name Her Majesty the Queen in right of the Province of Ontario as represented by the Minister of Transportation as an obligee. Each such bond shall have a coverage limit of at least 50 per cent of the tender price.

7.0 ELECTRONIC BID SUBMISSION PROCEDURES

7.1 All Bidders must have a valid user ID and password to access the RAQS/MERX website and must have a Ministry approved CRF and a Ministry approved TRF for Qualified Contracts or Ministry approved NQ-TRF for all other contracts for the submission of a Bid in respect of this Tender. Failure to obtain either an approved TRF or NQ-TRF will disallow the Bidder from submitting a Bid on the basis of failing to comply with the Instructions to Bidders without any consideration by the Ministry.

7.2 The Bidder's TRF or NQ-TRF must be completed as of the date specified on the contract tender form. The Ministry will not approve any TRF's or NQ-TRF's received after 12:00 noon of the last Business day of the preceding week prior to the Tender Closing (generally, the Friday before Tender Closing).

7.3 Bidders must complete an on-line Summary Bid Submission Form. Only a Bidder with an approved TRF or NQ-TRF for the advertised Tender is able to complete and submit a Summary Bid Submission Form to the Ministry.

7.4 All Bids must be received by the Ministry before the Tender Closing date and time specified in the Tender Documents.

7.5 Bidders may submit a revised on-line Summary Bid Submission Form up until Tender Closing. The Ministry will only consider the last Summary Bid Submission Form received by the Ministry prior to Tender Closing. A No Bid Statement may be received from any Bidder on-line up until Tender Closing.

7.6 Upon successfully submitting an on-line Summary Bid Submission Form, Bidders will receive an on-line notification for information purposes that the Ministry has received their Summary Bid Submission Form.

7.7 The Itemized Bid Form will be available to pre-qualified Bidders for on-line data entry 24 hours prior to Tender Closing.

7.8 After Tender Closing, Bidders will receive an electronic notification from the Ministry's Service Provider, advising them that Tender Opening has occurred.

7.9 The Ministry's Service Provider will notify all Bidders electronically and will publish a Bidders list showing tender results on the RAQS/MERX website.

7.10 The three lowest Bidders will be advised to submit the Itemized Bid Form within 24 hours after the Bids are published. Failure to submit the Itemized Bid Form within the specified time may result in rejection of the Bid and/or may be referred to the Qualification Committee. The Itemized Bid Form shall not be changed once submitted.

8.0 COMPUTER SYSTEM FAILURE

8.1 The Ministry will only accept Bids submitted electronically through RAQS/MERX. Any Bid received through any other format will not be considered and is deemed rejected without consideration.

8.2 The Ministry accepts no responsibility for any reason whatsoever, including computer system failures of either the Bidder or the Ministry Service Provider, if the Bidder is unable to submit its Bid before Tender Closing and the Bidder agrees that the Ministry shall have no liability for delays caused by internet/network traffic, degraded operation or failure of any computer system element, including, but not limited to: any computer system, power supply, telephone or data connection or system or software or browser of any type whatsoever.

8.3 It is the sole responsibility of the Bidder to ensure that it can access and exchange data with the Ministry Service Provider's computer systems electronically and that it allows sufficient time to successfully access and share data with the Ministry Service Provider's computer systems, having regard to the possibility of delays caused by internet/network traffic. Bidders are solely responsible to ensure that they plan their access to the Ministry Service Provider's computer/servers, so that the Bidders can reach the Ministry Service Provider's computers/servers before Tender Closing.

9.0 UNBALANCED TENDERS AND DISCREPANCIES

9.1 Bidders that submit Tenders that contain a lump sum or unit prices that appear to be an Unbalanced Bid may be referred to the Ministry's Qualification Committee and any Tenders that are so Unbalanced to the potential detriment of the Ministry, may be rejected.

9.2 The Ministry will not allow any Bidder to adjust the total Tender amount after Tender Closing.

9.3 In the event of a mathematical error or discrepancy in the Itemized Bid Form, the Ministry may request the Bidder to resubmit the Itemized Bid Form without changing the total Tender amount.

10.0 ACCEPTANCE OR REJECTIONS OF TENDERS

10.1 The Ministry reserves the right to reject any or all Tenders, and to waive formalities as the interests of the Ministry may require without stating reasons, therefore, the lowest or any Tender may not necessarily be accepted.

10.2 The Ministry shall not be liable for any costs, expenses, loss or damage incurred, sustained or suffered by any Bidder prior, or subsequent to, or by reason of the acceptance or the non-acceptance by the Ministry of any Tender, or by reason of any delay in the acceptance of a Tender, except as provided in the Tender Documents.

10.3 The Tender shall be irrevocable for a period of 30 days following the date of Tender Opening.

11.0 CONTRACT AWARD PROCEDURES

11.1 The Ministry will notify a Bidder that the Tender has been accepted within 30 days of the Tender Opening.

11.2 Immediately after the notification, the Ministry will send the standard form contract agreement and other such forms and documents as are necessary to the selected Bidder for execution by the Bidder.

11.3 The selected Bidder shall fully execute and return the contract agreement and other such forms and documents, including the required bonds, if applicable, required certificates and declarations as directed in the notification of acceptance of Tender within seven Business days of the date the documents are received.

11.4 Following receipt of all properly executed forms and documentation, the Bidder will receive written authority to proceed with the work.

12.0 FAILURE TO PROVIDE DOCUMENTS OR ENTER INTO CONTRACT

12.1 If the Bidder is a Rated Contractor and fails to return the applicable documents as directed in the notification of acceptance of Tender, within seven Business days of receipt of such notification, the Ministry may reject the Bid on written notice to the Bidder and refer the matter to the Ministry's Qualification Committee without prejudice to any right or remedy the Ministry may have in law.

12.2 If the Bidder is a Rated Contractor and fails for any reason to enter into the contract within the specified time, then it shall not be allowed to work on the contract as a subcontractor or be allowed to supply any material, equipment or labour to the contract and the matter shall be referred to the Ministry's Qualification Committee without prejudice to any right or remedy the Ministry may have in law.

12.3 If the Bidder is a Non-Rated Contractor and fails to return the applicable documents as directed in the notification of acceptance of Tender, within seven Business days of receipt, the Ministry may reject the Bid, on written notice to the Bidder without prejudice to any right or remedy the Ministry may have in law, and the Ministry may revoke the Bidder's bidding privileges with the Ministry on future Ministry contracts for a period of up to 2 years.

12.4 If the Bidder is a Non-Rated Contractor and fails for any reason to enter into the contract within the specified time, then it shall not be allowed to work on the contract as a subcontractor or be allowed to supply any material, equipment or labour to the contract and the Ministry may revoke the Bidder's bidding privileges on future Ministry contracts for a period of up to 2 years without prejudice to any right or remedy the Ministry may have in law.

13.0 NON-RESIDENT CONTRACTORS REQUIREMENTS

13.1 Non-resident Contractors must provide a retail sales tax "Letter of Compliance" from the Ministry of Finance, failing which the non-resident Contractor shall satisfy the Retail Sales Tax Act and its regulations (as amended from time to time) in lieu therefore.

13.2 Non-resident Contractors must provide a copy of their approved Workplace Safety and Insurance Board registration form titled "Registration of Constructors and Employers Engaged in Construction" with their executed documents.

CONFLICT OF INTEREST

1. Each bidder must include in its bid submissions confirmation of the following:

    1.1 That the bidder does not and will not have any conflict of interest (actual or potential) in submitting its bid or, if selected, with the contractual obligations of the bidder as supplier/consultant under the Contract. Where applicable, a Bidder must declare in its bid any situation that may be a conflict of interest in submitting its bid or, if selected, with the contractual obligations of the bidder as supplier/consultant under the Contract; and

    1.2 That the bidder neither has nor has had, access to any Confidential Information as defined below;

    "**Confidential Information"** refers to the confidential information of the Crown (other than confidential information which is disclosed to the bidders in the normal course of the Tender); the Confidential Information is relevant to the Services required by the Tender, or their pricing and the disclosure for which could result in prejudice to the Crown or an unfair advantage to the Bidder.

2. In addition, each Bid shall include the following information:

    2.1 A list of the names, addresses and telephone number of the persons who participated in the development of the bid; and

    2.2 A list of the names of any former employees of the Ontario Public Service, their job classifications and the particular ministries where these individuals were working immediately prior to their leaving the Crown that the bidder has either appointed to its Board of Directors or employed since April 23, 1997.

The submission of any bidder may be disqualified where the bidder fails to provide confirmation of the foregoing or makes misrepresentations regarding any of the above. Further, the Minister shall have the right to rescind any contract with the selected bidder in the event that the Minister at his/her sole discretion determines that the selected bidder has made a misrepresentation regarding any of the above, in addition to or in lieu of any other remedies that the Minister has in law or in equity.

PART 1(a)

CERTIFICATION - CONFLICT OF INTEREST
(Complete Part 1(a) or 1(b) - Do Not Complete Both)

I/we hereby certify that there is not nor was there any actual or potential conflict of interest or unfair advantage in our submitting the Bid or performing the Work/Services required by the Contract.

In submitting the Bid, our company has no knowledge of or the ability to avail ourselves of confidential information of the Crown (other than confidential information which may be been disclosed by the Minister to the Bidders in the normal course of the Tender) where the confidential information would be relevant to the Work/Services, their pricing or the Tender evaluation process.

Name	**Signature**
Position	**Date**

The person who signs this declaration must be an authorised representative of the Tenderer and must have authority to bind the Tenderer.

PART 1(b)

CERTIFICATION - CONFLICT OF INTEREST
(Complete Part 1(a) or 1(b) - Do Not Complete Both)

In submitting our Bid, the Bidder declares that the attached is a list of situations, each of which may be a conflict of interest, or appears as potentially a conflict of interest in our company submitting the Bid or performing the contractual obligations of the Supplier/Consultant under the Contract. **(Strike out Paragraph if not Applicable)**

In submitting the Bid, our company has/has no **(Strike out the inapplicable portion)** knowledge of or the ability to avail ourselves of confidential information of the Crown (other than confidential information which may have been disclosed by the Minister to the Bidders in the normal course of the Tender) where the confidential information would be relevant to the Work/Services, their pricing, or the Tender evaluation process and where access to such additional information may prejudice the Crown or be an unfair advantage to the Bidder.

(If declaring that the Bidder <u>has</u> access to additional information that may be confidential, other than confidential information which may be disclosed by the Minister to the Bidders in the normal course of the Tender, please attach an explanation describing the additional information and how you access to it.)

With the exception of those situations and/or access to additional information disclosed on the list attached, I/we hereby certify that there is not nor was there any other actual or potential conflict of interest or unfair advantage in our submitting the Bid or performing the Work/Services required by the Contract.

I/We hereby acknowledge that the Minister at his/her sole discretion shall have the right to determine whether or not the declared situations do constitute an actual or potential conflict of interest or whether access to additional confidential information does constitute an unfair advantage over other bidders.

I/We acknowledge that in the event that the Minister finds the situations to be a conflict of interest or access to the additional confidential information to be an unfair advantage that our Bid may be rejected.

Name	**Signature**
Position	**Date**

The person who signs this declaration must be an authorised representative of the Tenderer and must have authority to bind the Tenderer.

PART 2

DISCLOSURE - CONFLICT OF INTEREST

PERSONS WHO PARTICIPATED IN THE PREPARATION OF THE TENDER			
NAME:	ADDRESS:	TELEPHONE NUMBER:	CONTRIBUTION OR % OF WORK:

The work specified in the Contract shall be performed in strict accordance with the following Provisions, Contract Plans, Specifications and Conditions for **CONTRACT NO. 2019-3006**

SCHEDULE OF PROVISIONS, CONTRACT PLANS, STANDARD DRAWINGS, SPECIFICATIONS AND GENERAL CONDITIONS

A. SPECIAL PROVISIONS

a) SPECIAL PROVISIONS FOR CONTRACT NO. 2019-3006 ATTACHED
b) SPECIAL PROVISIONS FOR LABOUR CONDITIONS ATTACHED
c) LIQUIDATED DAMAGES FOR CONTRACT NO. 2019-3006 ATTACHED

B. PLANS

Contract Drawing Book(s).

C. STANDARD DRAWINGS

OPSD

Dwg No.	Issue Date	Dwg No.	Issue Date	Dwg No.	Issue Date	Dwg No.	Issue Date
0100.0100	Nov 2009	0100.0110	Nov 2006	0100.0120	Nov 2009	0100.0130	Nov 2009
0100.0140	Nov 2002	0100.0500	Nov 2006	0100.0600	Nov 2006	0101.0100	Nov 2006
0101.0110	Nov 2006	0101.0120	Nov 2006	0101.0130	Nov 2006	0101.0140	Nov 2006
0101.0150	Nov 2006	0101.0160	Nov 2006	0101.0170	Nov 2007	0102.0100	Nov 2006
0103.0100	Nov 2006	0103.0110	Nov 2006	0104.0100	Nov 2007	0200.0100	Nov 2009
0205.0100	Nov 2009	0205.0600	Nov 2009	0206.0100	Nov 2009	0206.0500	Nov 2008
0210.0100	Nov 2010	0210.0200	Nov 2010	0216.0100	Nov 2006	0219.1310	Nov 2015
0219.1910	Nov 2015	0219.2100	Nov 2015	0219.2110	Nov 2015	0220.0100	Nov 2007
0300.0100	Nov 2011	0301.0100	Nov 2010	0301.0200	Nov 2010	0304.0100	Nov 2009
0400.0100	Nov 2007	0600.0100	Nov 2012	0604.0100	Nov 2012	0605.0300	Nov 2012
0605.0400	Nov 2013	0608.0100	Nov 2012	0610.0100	Nov 2009	0701.0100	Nov 2009
0701.0210	Nov 2009	0701.1000	Nov 2005	0704.0100	Nov 2009	0704.0110	Nov 2008
0704.0120	Apr 2013	0708.0100	Nov 2006	0708.0200	Nov 2006	0708.0300	Nov 2006
0801.0100	Nov 2012	0801.0300	Nov 2012	0802.0100	Nov 2010	0802.0140	Nov 2010
0802.0300	Nov 2010	0802.0310	Nov 2010	0802.0320	Nov 2010	0802.0340	Nov 2010
0803.0100	Nov 2010	0803.0300	Nov 2010	0803.0310	Nov 2010	0805.0100	Nov 2009
0805.0200	Nov 2009	0805.0300	Nov 2009	0806.0200	Nov 2011	0806.0220	Apr 2011
0806.0300	Nov 2013	0806.0400	Nov 2010	0806.0600	Nov 2007	0807.0100	Nov 2010
0807.0300	Nov 2010	0807.0400	Nov 2010	0810.0100	Nov 2013	0985.1100	Nov 2013
0985.2100	Nov 2013	0985.2200	Nov 2013	0989.1100	Nov 2013	0989.2100	Nov 2013
0990.1100	Nov 2014	2000.0010	Nov 2018	2011.1010	Nov 2018	2011.2010	Nov 2018
2011.4010	Nov 2018	2011.5010	Nov 2018	2011.6010	Nov 2018	2012.1010	Nov 2018
2013.1010	Nov 2018	2013.2010	Nov 2018	2014.1010	Nov 2018	2014.1020	Nov 2018
2100.0100	Nov 2013	2100.0500	Nov 2013	2100.0600	Nov 2015	2101.0100	Nov 2013
2103.0600	Nov 2015	2113.0100	Nov 2004	2117.0200	Nov 2013	2118.0200	Nov 2009

2123.0100	Nov 2013	2123.0200	Nov 2013	2123.0300	Nov 2013	2130.0110	Nov 2016
2200.0100	Nov 2012	2200.0300	Nov 2012	2210.0100	Nov 2013	2215.0200	Nov 2015
2215.0250	Nov 2015	2215.0300	Nov 2014	2220.0100	Nov 2010	2232.0100	Nov 2016
2235.0100	Nov 2012	2238.0100	Nov 2010	2240.0100	Nov 2004	2242.0200	Nov 2013
2245.0100	Nov 2004	2245.0200	Nov 2011	2250.0100	Nov 2016	2255.0100	Nov 2013
2420.0100	Apr 2007	2421.0100	Nov 2016	2440.0100	Nov 2014	2440.0400	Nov 2014
2501.0100	Nov 2011	2502.0100	Nov 2007	2514.0100	Nov 2012	2514.0200	Nov 2012
2520.0100	Nov 2012	2520.0200	Nov 2012	2529.0700	Nov 2012	2530.0100	Nov 2013
2540.0200	Nov 2013	2540.0300	Nov 2013	2547.0100	Nov 2014	2552.0100	Nov 2011

MTOD

Dwg No.	Issue Date	Dwg No.	Issue Date	Dwg No.	Issue Date	Dwg No.	Issue Date
0101.0700	Apr 1994	0803.0210	May 1994	0805.0600	Jul 2013	0806.0210	Jul 2013
0806.0230	May 2014	0971.1010	Mar 2013	0971.1030	Jun 2012	0986.1010	Jan 2014
0986.1050	Jan 2014	0986.2010	Jan 2014	0987.1010	Jul 2018	0987.1100	Jul 2018
0987.2100	Jul 2018	2200.0500	Sep 2015	2433.0110	Sep 2015	2435.0200	Jan 2007
2514.0110	Mar 2016	2514.0210	Mar 2016	2528.0210	Mar 2016		

SSD

N / A

The following notes refer to Standard Drawing numbers in Section C above.

1. OPSDs are available for viewing and download from the Technical Publications website at www.raqs.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage.

   OPSDs that do not coincide with the most recent version published by OPS can be found in the archives section by selecting the “Go to Archives” tab.

2. MTODs are available for viewing and download from the Technical Publications website at www.raqs.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage under the applicable tabs located to the left of the screen.

   MTODs that do not coincide with the most recent version published by MTO can be found in the archives section of the above noted locations by selecting the “Go to Archives” tab.

3. Copies of all applicable Structural Standard Drawings (SSDs) are contained within the Contract Documents.

D. GENERAL SPECIAL PROVISIONS

Special No.	Issue Date	Special No.	Issue Date	Special No.	Issue Date
100S02	Mar 2018	100F08M	Jun 2017	100S15	May 2017
100S17	Mar 2018	100S59	Nov 2016	101S04	Jan 2017
101S06	Mar 2018	101S18	Apr 1994	101F21	Nov 2014
101F23	Apr 2017	102S05	May 2017	103F03	Oct 2018

103S05	Oct 2018	104S06	Dec 2017	105S22	Jun 2016
106S09	Mar 2018	106S16	Mar 2018	106S17	Mar 2018
106S18	Mar 2018	106S19	Mar 2018	107S02	Feb 2017
109S12	Aug 2018	110S05	Feb 2019	110F10	Sep 2001
110S16	May 2017	110S17	Aug 2018	111F06	Oct 2018
111F09	Aug 2018	113S03	Dec 2004	113S11	Feb 2019
114S06	Jun 2017	118S03	Feb 2017	118S08	May 2018
199F03	May 2016	199F12	Nov 2014	199F14	Aug 2018
199F33	Jun 2013	199S37	Aug 2018	199S38	Mar 2017
199F43	Mar 2018	199S44	Jan 2001	199S54	Feb 2018
199F57	Dec 2017	199F59	Dec 2017	199S60	Oct 2009
199S64	Jul 2016	199S65	Dec 2016	199S66	Mar 2018

E. ITEM SPECIFIC SPECIAL PROVISIONS

Special No.	Date	Item No.
308F02	Feb 2017	5
353S02	Jul 2007	13
407S06	Apr 2014	17
422S01	Jul 2011	22
517F01	Jul 2017	32
614F01	Apr 2017	68
617F03	Feb 2014	75
622F03	May 2017	78
703S01	Jul 2018	35
710S01	Sep 2011	38, 39
710S02	Sep 2011	38
805F01	Dec 2018	47, 48, 49

The following notes refer to Standard Special Provision (SSP) numbers in Sections D and E above.

1. Special Provisions with an "S" identifier are available for viewing and download from the Technical Publications website at www.raqs.mto.gov.on.ca/techpubs/cdedsp.nsf under the applicable tabs located to the left of the screen.

   Special Provisions with an "S" identifier, that do not coincide with the most recent version published by MTO can be found in the archives section of the above noted locations by selecting the "Go to Archives" tab.

2. Special Provisions with an "F" identifier signifies that additional fill-in information has been added to the standard published version of the Special Provision. The entire text of fill-in Special Provisions shall be obtained directly from Section "A" of the Contract Documents.

3. Special Provisions with an "M" identifier signifies that the standard published version of the Special Provision has been modified. The entire text of modified Special Provisions shall be obtained directly from Section "A" of the Contract Documents.

F. STANDARD SPECIFICATIONS

OPSS

No.	Date	No.	Date	No.	Date	No.	Date
0102	Oct 1992	0201	Nov 2011	0353	Sep 1996	0422	Apr 2004
0609	Nov 2012	0614	Nov 2012	0617	Nov 2013	0703	Nov 2014
0710	Nov 2010	0801	Nov 2010	0802	Nov 2010	0902	Nov 2010

OPSS - MTC

No.	Date	No.	Date	No.	Date	No.	Date
0407	Mar 1984						

OPSS - Provincial

No.	Date	No.	Date	No.	Date	No.	Date
0100	Nov 2016	0106	Apr 2017	0127	Apr 2018	0180	Nov 2016
0182	Apr 2017	0206	Nov 2014	0308	Apr 2012	0312	Apr 2018
0313	Nov 2016	0314	Nov 2015	0405	Nov 2017	0410	Nov 2015
0421	Nov 2015	0501	Nov 2014	0510	Nov 2014	0511	Nov 2018
0517	Nov 2016	0602	Nov 2017	0603	Nov 2017	0604	Nov 2017
0610	Nov 2016	0615	Apr 2017	0616	Apr 2018	0620	Apr 2017
0622	Apr 2017	0623	Nov 2018	0706	Nov 2016	0771	Nov 2017
0804	Nov 2014	0805	Nov 2018				

G. REFERENCED STANDARD SPECIFICATIONS

The standard OPS specifications in the following list are applicable to the Contract when referenced by the Contract Documents.

No.	Type	Date	No.	Type	Date	No.	Type	Date
0100	Prov	Nov 2016	0102	Comm	Oct 1992	0106	Prov	Apr 2017
0120	Prov	Nov 2014	0127	Prov	Apr 2018	0180	Prov	Nov 2016
0182	Prov	Apr 2017	0201	Comm	Nov 2011	0202	Prov	Nov 2013
0203	Prov	Nov 2014	0206	Prov	Nov 2014	0209	Prov	Nov 2014
0212	Prov	Nov 2013	0220	Prov	Nov 2014	0301	Prov	Nov 2018
0304	Comm	Nov 2006	0305	Prov	Nov 2016	0307	Prov	Nov 2017
0308	Prov	Apr 2012	0311	Comm	Sep 1988	0312	Prov	Apr 2018
0313	Prov	Nov 2016	0314	Prov	Nov 2015	0316	Prov	Nov 2018
0320	Prov	Nov 2018	0330	Prov	Nov 2014	0331	Prov	Nov 2015
0332	Prov	Nov 2016	0333	Prov	Nov 2015	0335	Prov	Nov 2015
0336	Prov	Nov 2018	0337	Prov	Nov 2017	0341	Prov	Apr 2018
0342	Prov	Nov 2015	0350	Comm	Mar 1998	0351	Comm	Nov 2015
0353	Comm	Sep 1996	0355	Prov	Nov 2014	0363	Prov	Nov 2014
0365	Prov	Nov 2014	0366	Prov	Apr 2017	0369	Comm	Nov 2008
0401	Prov	Nov 2015	0402	Prov	Apr 2017	0403	Prov	Apr 2017

0404	Prov	Nov 2017	0405	Prov	Nov 2017	0407	MTC	Mar 1984
0409	Prov	Nov 2017	0410	Prov	Nov 2015	0415	Comm	Feb 1990
0416	Comm	Feb 1990	0421	Prov	Nov 2015	0422	Comm	Apr 2004
0441	Prov	Apr 2017	0490	Prov	Nov 2018	0491	Prov	Nov 2017
0492	Prov	Nov 2018	0493	Comm	Nov 2009	0501	Prov	Nov 2014
0510	Prov	Nov 2014	0511	Prov	Nov 2018	0512	Prov	Nov 2014
0517	Prov	Nov 2016	0539	Prov	Nov 2014	0578	Prov	Apr 2017
0602	Prov	Nov 2017	0603	Prov	Nov 2017	0604	Prov	Nov 2017
0609	Comm	Nov 2012	0610	Prov	Nov 2016	0611	Comm	Nov 2013
0614	Comm	Nov 2012	0615	Prov	Apr 2017	0616	Prov	Apr 2018
0617	Comm	Nov 2013	0620	Prov	Apr 2017	0621	Prov	Nov 2018
0622	Prov	Apr 2017	0623	Prov	Nov 2018	0630	Prov	Nov 2016
0631	Comm	Nov 2015	0703	Comm	Nov 2014	0704	Comm	Nov 2014
0705	Comm	Nov 2014	0706	Prov	Nov 2016	0707	Comm	Nov 2015
0708	Prov	Nov 2016	0709	Prov	Nov 2018	0710	Comm	Nov 2010
0721	Prov	Nov 2015	0723	Prov	Nov 2015	0732	Prov	Apr 2016
0733	Prov	Nov 2017	0740	Comm	Nov 2010	0741	Comm	Nov 2014
0753	Comm	Nov 2013	0760	Comm	Nov 2014	0771	Prov	Nov 2017
0772	Prov	Nov 2017	0791	Comm	Nov 2014	0801	Comm	Nov 2010
0802	Comm	Nov 2010	0803	Prov	Apr 2018	0804	Prov	Nov 2014
0805	Prov	Nov 2018	0810	Prov	Apr 2017	0811	Prov	Apr 2017
0812	Prov	Apr 2017	0820	Prov	Apr 2017	0821	Prov	Apr 2017
0822	Prov	Apr 2017	0823	Prov	Apr 2017	0824	Prov	Apr 2017
0830	Prov	Apr 2017	0902	Comm	Nov 2010	0903	Prov	Apr 2016
0904	Prov	Nov 2014	0905	Prov	Nov 2014	0906	Comm	Nov 2012
0907	Comm	Apr 2011	0908	Prov	Nov 2014	0909	Prov	Nov 2016
0910	Prov	Apr 2008	0911	Prov	Nov 2014	0913	Prov	Nov 2017
0914	Prov	Nov 2014	0915	Prov	Nov 2014	0918	Prov	Apr 2017
0919	Comm	Nov 2011	0920	Prov	Nov 2016	0922	Prov	Nov 2016
0928	Prov	Apr 2012	0929	Prov	Nov 2017	0930	Prov	Nov 2014
0931	Comm	May 1994	0932	Comm	Nov 2009	0935	Prov	Nov 2014
0942	Comm	Nov 2009	1001	Prov	Nov 2018	1002	Prov	Apr 2018
1003	Prov	Nov 2017	1004	Prov	Nov 2012	1005	Prov	Apr 2017
1006	Prov	Apr 2017	1010	Prov	Apr 2013	1101	Prov	Nov 2014
1102	Prov	Apr 2017	1103	Prov	Nov 2016	1151	Prov	Nov 2016
1152	Prov	Nov 2016	1153	Prov	Nov 2016	1202	Prov	Nov 2016
1203	Prov	Nov 2016	1204	Comm	Nov 2003	1205	Prov	Apr 2015
1210	Prov	Nov 2016	1212	Comm	Nov 2003	1213	Comm	Mar 1998
1215	Comm	Mar 1998	1301	Comm	Sep 1996	1302	Comm	Sep 1996
1303	Prov	Nov 2014	1305	Comm	Nov 2008	1306	Comm	Nov 2011
1308	Comm	Nov 2003	1315	Comm	Sep 1996	1350	Prov	Nov 2016
1351	Comm	Nov 2004	1352	Comm	Nov 1989	1430	Prov	Nov 2017

1440	Prov	Nov 2014	1441	Prov	Nov 2017	1442	Comm	May 1994
1443	Comm	May 1994	1503	Comm	Nov 2010	1504	Prov	Apr 2017
1505	Prov	Apr 2017	1540	Prov	Nov 2017	1541	Prov	Nov 2017
1601	Prov	Nov 2014	1605	Prov	Nov 2018	1704	Prov	Nov 2014
1712	Comm	Feb 1991	1713	Comm	Feb 1991	1714	Comm	Feb 1991
1715	Comm	Feb 1991	1716	Comm	Feb 1991	1750	Comm	Dec 1983
1801	Prov	Apr 2018	1802	Prov	Apr 2018	1820	Prov	Nov 2014
1821	Comm	May 1993	1840	Prov	Nov 2018	1841	Prov	Nov 2018
1842	Prov	Nov 2018	1843	Prov	Apr 2018	1850	Prov	Apr 2018
1854	Prov	Apr 2018	1860	Prov	Apr 2018	2001	Comm	Nov 2014
2301	Prov	Nov 2014	2401	Prov	Nov 2018	2409	Prov	Nov 2018
2410	Prov	Nov 2017	2414	Comm	Nov 2014	2420	Prov	Nov 2018
2421	Prov	Nov 2017	2422	Prov	Nov 2016	2423	Prov	Apr 2017
2426	Prov	Nov 2017	2428	Prov	Nov 2017	2432	Prov	Nov 2017
2434	Prov	Nov 2016	2452	Prov	Nov 2018	2453	Prov	Nov 2016
2460	Prov	Nov 2018	2461	Prov	Apr 2017	2471	Prov	Nov 2016
2474	Prov	Nov 2016	2475	Prov	Apr 2017	2476	Comm	Nov 2010
2479	Prov	Nov 2017	2485	Prov	Nov 2017	2502	Prov	Apr 2017
2510	Prov	Nov 2017						

The following notes refer to Ontario Provincial Standard Specification (OPSS) numbers in Sections F and G above.

1. OPSSs are available for viewing and download from the Technical Publications website at www.raqs.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage.

   OPSSs that do not coincide with the most recent version published by OPS can be found in the archives section by selecting the “Go to Archives” tab.

H. GENERAL CONDITIONS

OPSS.PROV 100, MTO General Conditions of Contract, November 2016

This document is available for viewing and download from the Technical Publications website at www.raqs.mto.gov.on.ca/techpubs/ops.nsf/OPSHomepage under the heading OPS Volume 5 – MTO General Conditions of Contract and General & Construction Specifications.

SIGNED STATEMENT BY BIDDER THAT THE BID IS PREPARED AND SUBMITTED WITHOUT COLLUSION OR DECEIT

The Bidder expressly warrants that the prices contained in his tender whether as unit prices or lump sums, and whether for transportation or supply of materials or for services, are quoted in utmost good faith on his part, without any collusive arrangement or agreement with any other person or partnership or corporation.

The Bidder expressly represents that he is not party or privy to any deceit tending to mislead the Ministry into accepting his tender as a truly competitive tender whether to the prejudice, injury or benefit of the Ministry.

THE CONTRACTOR BY THIS TENDER OFFERS TO COMPLETE THIS CONTRACT IN ACCORDANCE WITH THE PRICES QUOTED AND TERMS CONTAINED HERE IN.

Tax Compliance Declaration

The Ontario Government expects all suppliers to pay their provincial taxes on a timely basis. In this regard, bidders are advised that any contract with the Ontario Government will require a declaration from the successful bidder that his/her company's provincial taxes are in good standing.

In order for a company to be considered for a contract award, the bidder must submit the following statement of the company's tax compliance status:

I/we hereby certify that _____ at the time of
(legal name of company)
submitting this bid, is in full compliance with all tax status administered by the Ministry of Finance for Ontario and that, in particular, all returns required to be filed under all provincial tax statutes have been filed and all taxes due and payable under those statutes have been paid or satisfactory arrangements for their payment have been made and maintained.

Dated at _____ this _____ day of _____ 20__

_____
(An authorized signing officer)

_____
(Title)

_____
(Phone Number)

SECTION A
SPECIAL PROVISIONS
FOR

CONTRACT NO. 2019-3006

NOTICE TO CONTRACTOR - Fairness in Procurement

Special Provision

Contractors shall adhere to the Fairness in Procurement Act, 2018 and Suppliers from New York Regulation which set out specific mandatory requirements related to the Fairness in Procurement regulation.

Any structural iron used or supplied in the performance of this Contract and permanently incorporated in the surface road or bridge shall be fabricated in a jurisdiction other than New York.

Structural Iron means a product that is made of either wrought iron or cast iron or both and that is designed to carry a load, but does not include a product that contains any form of steel.

NOTICE TO CONTRACTOR - Emergency Contractor Contact Person

Special Provision

The Contractor shall provide at least one emergency contact person (ECP) who shall be available for the duration of the Contract, excluding winter shutdown periods, to receive direction from the Contract Administrator (CA) for any emergency situations that may occur within the limits of the Contract.

The ECP shall be the Contractor's main point of contact for the CA or MTO West Region Communication Centre or both to report emergency situations.

The ECP provided by the Contractor shall have the following minimum qualifications:

a) Be accessible 24/7 for the duration of the Contract to receive and record emergency calls.
b) Return all calls within 60 minutes.
c) Have the required level of authority within the Contractor's organization to immediately respond to the emergency response direction received from the CA. This includes having the authority to immediately organize and approve all required resources to carry out the specified emergency response direction.
d) Be knowledgeable of the contract scope of work, timing and traffic control.

Immediately after receiving emergency response direction from the CA, the ECP shall implement the necessary actions to resolve the emergency situation.

The ECP shall record details of all emergency calls received in a hard bound journal addressing the time of the call, name, address and phone number of the caller, description of the emergency, direction received from the CA and the action taken by the Contractor to resolve the emergency situation.

The Contractor shall provide a hard copy of this information to the CA within 24 hours from the time that each emergency call is received.

NOTICE TO CONTRACTOR - Notification for Reduced Widths

Special Provision

The Contractor shall notify the Contract Administrator, in writing, a minimum of 14 Days prior to placing any temporary concrete barriers across any structure within the Contract limits.

NOTICE TO CONTRACTOR - Areas of Archaeological Concern and Archaeological Material

Special Provision

AREAS OF ARCHAEOLOGICAL CONCERN

Certain lands within 200 m of the right-of-way within the contract limits have been identified as areas of archaeological concern by the Ministry of Tourism, Culture and Sport. These areas are sensitive to any land disturbance, including construction related activities such as the establishment of Contractor's yards, crushing plants, mobile asphalt plants and the storage and placement of surplus and unsuitable materials, and should be avoided. In the event that these areas cannot be avoided, the Ministry of Tourism, Culture and Sport requires an assessment of these areas by a licensed archaeologist in advance of any disturbance. Depending on the findings of the assessment:

a) any sites identified as significant will be prohibited from any land disturbance or excavated and documented to the satisfaction of the Ministry of Tourism, Culture and Sport; or

b) lands with no archaeological potential will be cleared of further archaeological concerns by Ministry of Tourism, Culture and Sport.

The Ministry of Tourism, Culture and Sport, Regional Archaeology Office (Telephone: 519-675-7742, Fax: 519-675-7777) should be contacted for further information on how to meet the Ministry's requirements in areas of archaeological concern.

ARCHAEOLOGICAL MATERIAL

During construction there is always the chance of encountering deeply buried archaeological material. If this occurs, the Ministry of Tourism, Culture and Sport should be informed and work in the area shall stop. In addition, if unmarked human remains are encountered, the provisions of the Ontario Cemeteries Act apply. Construction activities in the area should cease and contact should be made with the Regional Archaeology Review Officer of the Ministry of Tourism, Culture and Sport (Shari Prowse, 519-675-6898) and the Cemeteries Regulation Unit of the Ministry of Consumer Services (416-326-8393).

NOTICE TO CONTRACTOR – Non-hazardous Earth

Special Provision

The Contractor is hereby notified that Macadam Asphalt could be present at the locations indicated below. All Macadam Asphalt and material to be excavated directly below the Macadam Asphalt shall be removed and managed as per the Contract Documents. The Macadam Asphalt is classified as Non-hazardous Earth.

Macadam Asphalt could be present for the following operations on Highway 3:
- the full depth asphalt removal at Station 26+906 – 27+057
- the culvert installation at Station 27+016 – 27+032
- the culvert removal at Station 27+045 – 27+055
- the culvert replacement at Station 27+130

OPERATIONAL CONSTRAINT - Illumination for Night Work

Special Provision

Floodlighting used for night work operations shall be adjusted so as to not interfere with the vision of drivers on the affected or opposing lane and also so as to not be directed towards residences adjacent to the highway.

OPERATIONAL CONSTRAINT – Entrances and Mailboxes

Special Provision

All entrance access within the contract limits for the duration of construction are to be maintained at all times. Any existing mailboxes that require relocation in order to maintain mail service shall be carefully removed and salvaged by the Contractor prior to any construction activities in the immediate area. The Contractor shall co-ordinate any temporary entrance closures with the occupant requiring access to the property. The Contractor shall advise the Contract Administrator of all arrangements made with the occupant.

The Contractor shall permit access to maintain existing mail service within the contract limits and will be required to remove and reinstall existing mailboxes as the work progresses.

In order to ensure mail delivery is maintained the salvaged items shall be re-set in a temporary location to suit the work. The location shall be convenient to the owner and the mail delivery person, such that the mailbox can be safely reached. Any such items that are damaged as a result of the Contractor's handling shall be replaced by the Contractor at no expense to the Ministry or the owner of the item.

Once construction activities in the area are completed, the mailboxes shall be installed to the satisfaction of the Contract Administrator.

OPERATIONAL CONSTRAINT - Maintenance of Traffic

Special Provision

Construction operations shall be carried out in such a manner as to maximize safety and minimize disruption to highway traffic.

Lane widths of no less than 3.50 metres and offsets between traffic and temporary concrete barrier of no less than 0.50 metres must be maintained at all times during construction staging.

OPERATIONAL CONSTRAINT - Protection of Hazards

Special Provision

The Contractor shall arrange his schedule of Work such that work under all removal of guide rail items shall not be carried out until the new, permanent guide rail can be placed to maintain shielding of the hazards.

Alternatively, with the Contract Administrator's approval, and at the Contractor's expense, temporary concrete barriers may be used to shield the hazards until the new, permanent guide rail can be placed. Under no circumstances shall hazards be left exposed without shielding during the seasonal shut-down.

OPERATIONAL CONSTRAINT – Scheduling of Work

Special Provision

The Contractor shall complete the removal and installation of all culverts and sewers prior to the surface course paving.

The culvert at Station 27+045 – 27+055 shall not be removed until the culvert at Station 27+016 – 27+032 is installed and culvert is functioning.

The culvert at Station 10+020 – 10+033 shall not be installed at the same time as the culvert at Station 27+016 – 27+032

The Contractor shall complete the placement of lower course binder asphalt at a minimum throughout the contract limits prior to Thursday September 12, 2019.

OPERATIONAL CONSTRAINT - Seasonal Shutdown

Special Provision

Prior to the Contractor's "seasonal shutdown", all permanent highway lanes, shoulders, structures and interchange ramps which were in place prior to the start of construction, or their reconstructed counterparts, shall be paved, reinstated as defined elsewhere in the contract and opened to traffic. They shall remain unrestricted at all times to public traffic from the last Friday in November to the first Monday in April (referred to as "seasonal shutdown" for the purposes of this Special Provision). This Special Provision shall be read in conjunction with other components of this contract package.

Prior to "seasonal shutdown", the Contractor shall complete all partial depth pavement removal and paving operations on all lanes, shoulders, structures and ramps.

The Contractor shall schedule his operations such that the minimum acceptable pavement structure for "seasonal shutdown" will be either the existing full depth pavement structure or the new proposed pavement structure up to and including the upper binder course. No pavement drop-offs will be permitted.

All pavement markings, pavement marking obliteration and guide rail systems shall be in place to the satisfaction of the Contract Administrator and as follows:

a) Any pavement markings that will be in place during "seasonal shutdown" shall be painted markings only and shall have had a second application of paint in accordance with the requirements specified elsewhere in the contract.
b) All pavement marking obliteration that is required to remove painted temporary line markings shall be obliterated using "grinding or soft abrasive system" if the markings are on a binder course or a "soft abrasive system", if the temporary line markings are on the final surface course.
c) All guide rail systems that are to remain in place during "seasonal shutdown" shall be installed to the elevation requirements for the pavement surface that will be in place during "seasonal shutdown". The shoulders shall be graded to reflect the required guide rail height. Sufficient room on the posts shall be left to allow for adjustment to final guide rail height.

The Contractor shall schedule and carry out his operations in accordance with these requirements, using any required acceleration including the construction and/or removal of any temporary transitions between the existing pavement structure and the new pavement structure. Compensation for all such work shall be deemed to be included in the Contract price for the appropriate tender items and no additional payment shall be made.

"Seasonal shutdown" requirements, as contained in this Special Provision, shall not relieve the Contractor of any other requirements contained in the contract, without the express written approval of the Contract Administrator. All hot mix paving work performed by the Contractor to meet seasonal shutdown requirements, that do not meet the full requirements of OPSS 313, shall be considered temporary paving and all costs associated with the placement and subsequent removal of the temporary pavement shall be at the Contractor's expense.

The Contractor's Critical Path Schedule shall at all times reflect the "Seasonal Shutdown" contract requirements as defined in this Special Provision.

OPERATIONAL CONSTRAINT – Pre and Post Construction Building Survey

Special Provision

The Contractor will be required to arrange for a pre-construction and post-construction survey the building at Station 27+065 Rt. The inspection will be performed by an Engineer with a minimum of five (5) years experience in this type of work.

The Contractor shall provide the property owner a minimum of seventy-two (72) hours advance written notice advising them that a preconstruction survey will be completed and obtain permission to enter to carry out the inspection.

The pre and post construction survey reports shall include, as a minimum, the following information:

a) Type of structure and foundation
b) Date when built (if possible)
c) Identify any differential settlements
d) Identify visible cracks in walls, floors and ceilings
e) Identify apparent structural or cosmetic damage or defects
f) Clear quality photographs, as deemed necessary for proper recording of significant concerns

The report shall include diagrams and dimensions, if applicable, room by room to detail the deficiencies identified. Positive dimensions shall be used whenever practical to do so, instead of general terms (e.g. sagging 1 to 2 inches as opposed to sagging badly).

A copy of the preconstruction survey shall be filed with the Contract Administrator two (2) days prior to commencement of construction.

A copy of the post construction survey shall be submitted to the Contract Administrator a maximum of four (4) weeks after completion of the work.

OPERATIONAL CONSTRAINT (ELECTRICAL) – Coordination with Others

Special Provision

Coordination with MTO

The Contractor shall notify MTO Electrical Services Coordinator two weeks prior to commencing any electrical work.

Contact:
West Region Electrical Services
Ministry of Transportation
659 Exeter Road
London, Ontario N6E 1L3
Tel: (519) 873-4147
Fax: (519) 873-4734

Coordination with Hydro One

The Contractor shall contact Hydro One immediately upon award of contract to discuss all coordination required between the Contractor and the utility for work related to power supply energization.

Contact:
Roger Buris
Hydro One – Simcoe Area
519-426-1447 ext. 3256

The Contractor is responsible for contacting the utility and making all necessary arrangements for completing the layout, installation and electrical connections at all supply locations. The Contractor is responsible for supplying and/or ensuring the supply of all necessary labour, materials and equipment to effect the installation and connection as indicated in the Contract to the utility's system.

The Contractor shall pay directly to Hydro One all charges for the work performed by Hydro One related to the energization of the new power supply and de-energization of the existing power supply. The Contractor shall submit the original invoice from Hydro One to the Contract Administrator for reimbursement.

Prior to contacting Hydro One, The Contractor shall contact the MTO Electrical Coordinator to obtain billing account details. MTO Electrical Coordinator shall be notified in advance (minimum 72 hours) of all service layout meetings with Hydro One. The Contractor shall provide copies of all service layouts to MTO Electrical Coordinators.

OPERATIONAL CONSTRAINT (ENVIRONMENTAL) - Erosion and Sedimentation Control

Special Provision

Unless otherwise specified in Table M, the time interval between commencement and completion of any work that disturbs earth surfaces shall be a maximum of 45 Days. Commencement of such work shall be considered to have occurred when the original stabilizing ground cover has been removed, including grubbing, or has been covered with fill material. Completion of such work shall be considered to have occurred when the specified cover material (seed and mulch, seed and erosion control blanket, sod, riprap, etc.) has been applied.

Unless otherwise specified in Table M, the period in which the time interval is permitted shall be determined by the Contractor. In addition, this period shall be in compliance with any timing constraints specified elsewhere in the Contract for the application of the specified cover.

Table M

AREA #	AREA BOUNDED BY			TIMING CONSTRAINTS	
	STATION	OFFSET LEFT	OFFSET RIGHT	TIME INTERVAL IN CALENDAR DAYS FROM COMMENCEMENT TO COMPLETION	PERMITTED PERIOD FOR TIME INTERVAL BETWEEN COMMENCEMENT & COMPLETION
N/A					

These timing constraints apply regardless of timing of Contract award.

Where interceptor ditches or subsurface drains are specified in the Contract, they shall be constructed before commencement of any related cut or fill.

Run-off from construction materials and any stockpiles shall be contained and discharged so as to prevent entry of sediment to watercourses.

Where dewatering is required, and where culverts are cleaned by hydraulic means, effluent shall be discharged so as to prevent entry of sediment to watercourses.

Erosion and sedimentation control measures shall not be placed in watercourses unless otherwise specified in the Contract, or directed by the Contract Administrator.

A 200 m stand-by supply of prefabricated silt fence barrier, in addition to silt fence barrier which may be specified elsewhere in the Contract, shall be maintained at the Contract site prior to commencement of grading operations and throughout the duration of the Contract.

OPERATIONAL CONSTRAINT (ENVIRONMENTAL) - Migratory Bird Protection

Special Provision

The Contractor shall not destroy the active nests (nests with eggs or young birds), or wound or kill birds, of species protected under the Migratory Birds Convention Act, 1994 and/or Regulations under that Act. When active nests are encountered, the ministry's Contract Administrator must be contacted.

OPERATIONAL CONSTRAINT (ENVIRONMENTAL) – Timing Constraint for Clearing

Special Provision

Clearing and removal of trees and shrubs shall not occur between April 1st and August 31st of any calendar year to avoid the usual nesting period for birds.

The Contract Administrator shall be notified if active nests (nests with eggs or young birds) are encountered.

OPERATIONAL CONSTRAINT (ENVIRONMENTAL) - Management of Excess Earth with Salt Impacts

Special Provision

The Contractor shall note that excess earth from highway construction projects may contain elevated concentrations of chloride and sodium and may have elevated values for Electrical Conductivity and Sodium Adsorption Ratio. For the purpose of this Contract, excess earth with salt impacts is not considered to be "contaminated" within the meaning of Table 1 in OPSS 180.

Where the Contractor manages excess earth as disposable fill, the Contractor shall take into account the possibility of salt impacts and ensure that the material is managed responsibly and in an environmentally appropriate manner. Where the Contractor intends to manage the excess earth that may be salt impacted on

private property, the Contractor shall make the Property Owner aware that it may be salt impacted by using the attached Property Owner's Release in place of MTO form PH-CC-183.

The Contractor is responsible for conducting such sampling and testing as may be necessary to comply with any requirements imposed by the Property Owner as a condition of accepting the excess earth.

PROPERTY OWNER'S RELEASE

Contract No: _____

Work Description: _____

_____

I/We being the owner(s) of Lot _____, Concession _____, Township of _____, and County/Region/District of _____, verify that the Contractor for the above noted work has placed excess material from the above noted Contract on my/our property with my/our permission. I/We have signed together with the Contractor MTO forms PH-CC-181, Site Selection Notification for Stockpiling Materials Managed Through Re-Use, or PH-CC-182, Site Selection Notification for Material Managed as Disposable Fill, or both, that describe Conditions on Management, and have been assured by the Contractor that these conditions have been met.

Where materials are managed as disposable fill, I/we understand that excess earth from a highway project may contain elevated concentrations of chloride and sodium and may have elevated values for Electrical Conductivity and Sodium Adsorption Ratio and I/we agree to be responsible for any subsequent relocation and management of the material so placed.

Where materials are to be stockpiled, I/we agree that the stockpile(s) will be removed by the date(s) herein noted.

I/We hereby release the Owner and the Contractor in respect of the activities of the Contractor carried out in accordance with this release.

Dated this _____ day of _____ 20____

_____
Property Owner's Signature

_____
Print Contractor's Name & Field Representative's Name

_____
Contractor's Field Representative Signature

cc: Contract Administrator, Property Owner(s), Contractor

AMENDMENT TO MTO GENERAL CONDITIONS OF CONTRACT, NOVEMBER 2016 - Use of WBCMS for Administering the Contract

Special Provision

GC 1.07 Definitions

Subsection GC 1.07 of the MTO General Conditions of Contract is amended by the addition of the following definition:

Web-Based Contract Management Services (WBCMS) means a browser based solution that provides an electronic means to record, collect, transmit and store Contract data.

GC 1.09 Interpretation of Certain Words

Subsection GC 1.09 of the MTO General Conditions of Contract is amended by the addition of the following:

03. Any reference in the Contract Documents to "Owner Standard Form" or "PH-CC" shall be deemed to mean the electronic equivalent of that form within WBCMS.

.04 The words "write", "notify", "submit", "issue", "provide", "execute", "report", "give", "furnish", "return", "apply" and their variations, and other words referring to a communication from the Contractor to the Contract Administrator, or from the Contract Administrator to the Contractor, shall mean the word "electronically using WBCMS" (e.g., "writing electronically using WBCMS", "notify electronically using WBCMS").

.05 When administering Contract data, references to the term "Service Provider" in WBCMS shall mean the "Contractor".

GC 3.0 ADMINISTRATION OF THE CONTRACT

Section GC 3.0 of the MTO General Conditions of Contract, is amended by the addition of the following subsection:

GC 3.15 Use of WBCMS

.01 WBCMS shall be used to administer Contract data. After Contract award, submissions shall only be accepted by the Ministry through WBCMS.

.02 WBCMS is replacing paper copies therefore it is mandatory to fill the electronic records with all necessary data and attaching a scanned paper version is not acceptable.

.03 The Owner shall provide subscription information to the Contractor, including purchasing instructions, at the time of Contract award. The following requirements shall apply:

a) The Work shall not commence until WBCMS subscriptions have been purchased.

b) The Contractor shall ensure that a subscription is in place for each role within 5 Business Days of notification and maintained until issuance of the Contract Completion Certificate.

c) The Contractor shall agree to the WBCMS terms of service at the time of purchasing subscriptions, and abide by the terms and conditions for the duration of the Contract.

d) The Contractor shall purchase an annual subscription for each user in a role for each awarded Contract.

e) The Contractor shall maintain 1 Approval Role subscription until receipt of the Release from Warranty Certificate.

f) Subscriptions cost $1350 plus HST per user, per role, per year, and are valid for one year from the date of purchase. There shall be no additional costs to the Owner for using or accessing WBCMS.

g) It is the sole responsibility of the Contractor to ensure that internet access is continuously available to all their users at the work location during construction operations. There shall be no additional costs to the Owner for ensuring internet services are available at the work location.

h) The Contractor shall use Microsoft Internet Explorer 11 (IE11) as this is the Ministry supported browser.

i) The Contractor shall record all activities using WBCMS and the information must be entered on a daily basis. There shall be no additional costs to the Owner for using or accessing WBCMS.

.04 The roles and responsibilities within WBCMS are defined as;

a) Company User Administrator - Administers subscriptions, user profiles and assigns staff roles. This role does not require an annual subscription and cannot enter or review Contract data.

b) Field Role - Enters Contract data at the work location.

c) Office Role - Enters and reviews Contract data.

d) Approval Role - Reviews and approves field and office data. Any user in this role has the ability to bind the Contractor.

.05 When the Contract Documents require the submission of multiple copies of a document, and the document is to be submitted using WBCMS, then only the electronic submission is required.

.06 A document signed and sealed by one or more Engineer, Ontario Land Surveyor, Professional Geoscientist, or other professional licenced according to federal or provincial legislation shall be submitted electronically using WBCMS. In addition to the electronic submission, within 5 Business Days of the electronic submission using WBCMS, an original signed and sealed copy of the document shall be submitted by hand or by mail to the Contract Administrator.

.07 Submission of records using WBCMS shall be the legal equivalent of a delivery of original signed documents or information by hand by an authorized representative of the Contractor or the Contract Administrator.

AMENDMENT TO MTO GENERAL CONDITIONS OF CONTRACT, NOVEMBER 2016

Special Provision

GC 1.07 Definitions

Subsection GC 1.07 of the MTO General Conditions of Contract is amended by the addition of the following definitions:

Basic Holdback means the statutory holdback, equal to 10% of the services or materials as they are supplied under the Contract, required to be retained pursuant to the *Construction Act*.

Bonds means both the Contract Bonds and the Statutory Bonds prescribed in the Tender Documents.

Construction Act means the *Construction Act*, R.S.O. 1990, c.C.30, as amended.

Contract Bonds means the surety bonds executed by the Contractor and its Surety prescribed in the Tender Documents, but does not include Statutory Bonds.

Finishing Holdback means the statutory holdback, equal to 10% of the Finishing Work, required to be retained pursuant to the *Construction Act*.

Finishing Work means the Work to be completed after certification of Substantial Performance and prior to and necessary to be supplied or performed to complete the Contract.

Finishing Work Deficiency List means a list of deficiencies and Work yet to be completed identified, independently, by the Contractor and the Contract Administrator.

Statutory Bonds means the surety bonds executed by the Contactor and its Surety and required to be furnished by Part XI.1 of the *Construction Act*.

Total Bid Price means the price submitted by the Contractor at tender closing.

Written Notice of Lien means a written notice of lien in the prescribed form pursuant to the *Construction Act*, R.S.O. 1990, c.C.30, as amended, given by a person with a lien that identifies the payer and identifies the premises, and states the amount that the person has not been paid and is owed to the person by the payer.

GC 1.08 Substantial Performance

Paragraph GC 1.08.01 of the MTO General Conditions of Contract is amended by deleting point b) in its entirety and replacing it with the following:

b) When the Work to be performed under the Contract is capable of completion or, where there is a known defect, correction, at a cost of not more than:

   i. 3% of the first $1,000,000 of the Contract price,
   ii. 2% of the next $1,000,000 of the Contract price, and
   iii. 1% of the balance of the Contract price

Paragraph GC 1.08.02 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.02 For the purposes of this Contract, when the Work or a substantial part thereof is ready for use or is being used for the purposes intended and the Owner and the Contractor agree not to complete the Work expeditiously, the price of the services or Materials remaining to be supplied and required to complete the Work shall be deducted from the Contract price in determining substantial performance.

GC 1.10 Liens

Subsection GC 1.10 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.01 A lien is preserved when the claimant has given the Owner a copy of the claim for lien before the lien has expired pursuant to the *Construction Act*.

.02 A preserved lien is perfected when the claimant commences an action in the courts to enforce the lien prior to the end of the period specified in Section 36 of the *Construction Act*.

.03 A preserved lien becomes a perfected lien by sheltering under a perfected lien in accordance with the rules of sheltering specified in Subsection 36(4) of the *Construction Act*.

.04 The Owner shall retain an amount sufficient to satisfy the amount of a lien set out in a written notice of lien Form 1 of Ontario Regulation 303/18 of the *Construction Act* in accordance with Subsection 24(2) of the *Construction Act*.

GC 4.10 Termination of the Contract

Subsection GC 4.10 of the MTO General Conditions of Contract is amended by the addition of the following paragraph:

.03 If the Contract is terminated, the Owner shall publish the statutory notice of termination prescribed by Form 8 of Ontario Regulation 303/18 of the *Construction Act*, in a construction trade newspaper, and the date of the termination of the Contract shall be the date specified in the statutory notice of termination for the Contract.

GC 4.12 Use of Performance Bond

Subsection GC 4.12 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

GC 4.12 Use of Performance Bonds

.01 If the Contractor is in default of the Contract and the Contractor has provided a performance bond, the Owner may rely upon the performance bond and its conditions along with the Contract Documents.

GC 6.02 Indemnification

Paragraph GC 6.02.01 of the MTO General Conditions of Contract is amended by deleting point c) in its entirety and replacing it with the following:

c) Made in writing within a period of 6 years from the date of Substantial Performance of the Work as set out in Certificate of Substantial Performance or, where so specified in the Contract, from the date of the Contract Completion Certificate.

GC 6.04 Bonding

Subsection GC 6.04 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

GC 6.04.01 General

.01 If the Total Bid Price is $500,000 or more, the Contractor shall furnish the Owner with Statutory Bonds, being a performance bond and labour and material payment bond in accordance with the *Construction Act*.

.02 Such Statutory Bonds shall be obtained from a surety company or companies that is an insurer licenced under the *Insurance Act* to write surety and fidelity insurance.

.03 The Contractor shall furnish the Owner with Contract Bonds as prescribed in the Tender Documents and satisfactory to the Owner.

.04 Such Contract Bonds shall be obtained from a surety company or companies that is an insurer licenced under the *Insurance Act* to write surety and fidelity insurance.

GC 6.04.02 Performance Bond

.01 With respect to the Statutory Bond for a performance bond, the Contractor shall furnish a Performance Bond using Form 32 of Ontario Regulation 303/18 of the *Construction Act* that is conditioned on the due performance of the terms of the Contract for the amount of 50% of the Total Bid Price.

GC 6.04.03 Labour and Material Payment Bond

.01 With respect to the Statutory Bond, the Contractor shall furnish a Labour and Material Payment Bond using Form 31 of Ontario Regulation 303/18 of the *Construction Act* that extends or guarantees payment protections to the Subcontractor and persons supplying labour and Material to the Contract for the amount of 50% of the Total Bid Price.

GC 8.02.04.03 Certification of Subcontract Completion

Paragraph GC 8.02.04.03.02 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.02 The Contract Administrator shall determine if the subcontract has been satisfactorily completed with all required inspections and testing required for the subcontract work and, if the Contract Administrator so determines, shall certify completion using Owner standard form PH-CC-797, Certificate of Completion of Subcontract.

GC 8.02.04.04 Subcontract Statutory Holdback Release Certificate and Payment

Clause GC 8.02.04.04 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.01 At the time of issuance of the Certificate of Completion of Subcontract, the Contract Administrator shall:

a) Prepare a subcontract completion payment certificate showing:

i. The final prices for items;
ii. The amount of holdback monies;
iii. The amount due the Contractor.

b) Provide to the Contractor, the subcontract completion payment certificate within 10 Days of the date the subcontract was certified complete, for the Contractor to sign and return within 5 further Days. The Contract Administrator shall release to the Subcontractor through the Contractor the 10% holdback retained by the Owner in respect of the work covered by the said subcontract after being certified completed and providing that all lien claims that may be claimed against the holdback for the subcontract work have been expired or been satisfied or discharged, or otherwise provided for under the *Construction Act*, and providing that the Contractor has furnished to the Contract Administrator a statutory declaration in a form supplied by the Owner that the said Subcontractor has discharged all liabilities incurred by the Subcontractor in carrying out the said subcontract.

.02 The Contractor shall make payment of the said subcontract to the Subcontractor concerned pursuant to the *Construction Act*.

.03 Release of holdback monies by the Owner in respect of a subcontract according to the foregoing shall not relieve the Contractor or the Contractor's Surety of any of their responsibilities.

.04 Payment for subcontracts certified complete pursuant to the Contract and the *Construction Act*, including the payment of the statutory holdback, shall be made no later than 120 Days of the date on which the Work was certified complete, when all the liens have been satisfied in accordance with Section 25 of the *Construction Act*.

GC 8.02.04.05 Certificate of Substantial Performance

Paragraph GC 8.02.04.05.02 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.02 Upon written application by the Contractor for Substantial Performance, the Contract Administrator shall conduct an inspection of the Work to determine if the Work is substantially performed and the date for Substantial Performance. The Contractor's application shall detail non-conformances, defects to be rectified, and Work yet to be completed. After inspection, the Contract Administrator shall provide a list of deficiencies and Work yet to be completed in addition to the Contractor's list. The Contractor's list of non-conformances, defects, and Work yet to be completed together with the Contract Administrator's list of same shall be combined and referred to as Finishing Work. All deficiencies and Work to be completed from the Finishing Work Deficiency List shall be completed prior to Contract Completion. Any additional defects and deficiencies for Work previously accepted as substantially performed shall be completed within 60 Days of Contract Completion, unless prevented by winter weather conditions; in such case, the defects and deficiencies shall be corrected by June 15th of the following year. Defects and deficiencies on Work completed after Substantial Performance shall be completed prior to Contract Completion.

Paragraph GC 8.02.04.05.04 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.04 Upon receipt of a copy of the Certificate of Substantial Performance, the Contractor shall arrange to have the certificate published in a construction trade newspaper and the Contractor shall provide to the Contract Administrator proof that the certificate was published. Where the Contractor fails to publish a Certificate of Substantial Performance within 7 Days of receiving the certificate, the Owner shall publish the certificate in a construction trade newspaper and charge the Contractor $1,000 for the costs of advertising and administration. Subject to the *Construction Act*, the 60-Day lien period shall start on the date the Certificate of Substantial Performance is published in a construction trade newspaper.

Paragraph GC 8.02.04.05.05 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.05 Except as otherwise provided for in Section 31 of the *Construction Act*, the 60-Day lien period prior to the payment of statutory holdback shall commence from the date of publication of the Certificate of Substantial Performance as provided for in paragraph GC 8.02.04.05.04.

GC 8.02.04.06 Substantial Performance Payment and Statutory Holdback Release Payment

Clause GC 8.02.04.06 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.01 Upon receipt of the application for payment at Substantial Performance, the Contract Administrator shall check the invoice and advise the Contractor of any discrepancies. Any of these discrepancies that are unresolved prior to the expiry of the lien period shall be treated as set-offs.

.02 Subject to any outstanding liens and permissible set-offs, the Owner shall issue payment, including the release of the Basic Holdback on the Work done, within 30 Days after the expiration of the 60-Day lien period.

.03 In addition to any permissible set-offs, Finishing Holdback shall be retained at the rate of 10%, on all Work performed after the date of the Certificate of Substantial Performance.

.04 If the Contract provides for a completion schedule that is longer than one year, Total Bid Price is greater than $10,000,000 and there are no outstanding liens, the Contractor may request payment of the retained Basic Holdback on an annual basis. When a request is received, the Owner shall issue payment to reduce the holdback on work done from 10% to 2½%, plus the amount of the Owner's set-offs, provided that the Contract had not been substantially performed and the estimated value of the work performed is greater than 60% of the original tender value for a contract having an expected duration of two construction seasons or less, or 40% for a Contract having an expected duration of more than two construction seasons.

.05 The holdback may not be released to the Contractor within the timeline under GC 8.02.04.06 when Form 6 of Ontario Regulation 303/18 of the *Construction Act* is provided to the Contractor to indicate notice of non-payment of holdback and published by the Owner in a construction trade newspaper as provided in Section 27.1 of the *Construction Act*. The Contract Administrator shall notify the Contractor, in writing, of its publication no later than 3 days after the publication of the notice of non-payment.

.06 Within 3 days after receiving Form 6 of Ontario Regulation 303/18 of the *Construction Act* from the Contract Administrator, the Contractor shall notify the affected Subcontractor(s) providing a copy of the notice.

.07 Payments for Work certified as substantially performed, including release of holdback, shall be made no later than 135 Days of the date of publication of substantial performance. The Owner shall release the holdback at the end of the 60-Day lien period providing all liens are expired or been satisfied, discharged or otherwise provided under the *Construction Act*. This payment shall be made within 30 Days of the expiry of the 60-Day lien period and subject to Subsection 26.1 of the *Construction Act*.

GC 8.02.04.07 Certificate of Contract Completion

Paragraph GC 8.02.04.07.03 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.03 If the Contractor has not applied for or received a Certificate of Substantial Performance, upon receipt of a copy of the Certificate of Contract Completion and the Certificate of Substantial Performance, the Contractor shall arrange to have the Certificate of Substantial Performance published in a construction trade newspaper and the Contractor shall provide to the Contract Administrator proof that the certificate was published. Where the Contractor fails to publish a Certificate of Substantial Performance within 7 Days of receiving the certificate, the Owner shall publish the certificate in a construction trade newspaper and charge the Contractor $1,000 for the costs of advertising and administration. Subject to the *Construction Act*, the 60-Day lien period shall start on the date the certificate is published in the construction trade newspaper.

Paragraph GC 8.02.04.07.05 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.05 Upon receipt of the application for payment at Contract Completion, the Contract Administrator shall check the invoice and advise the Contractor of any discrepancies. Any of these discrepancies that are unresolved prior to the expiry of the 60-Day lien period shall be treated as a set-off.

Paragraph GC 8.02.04.07.06 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.06 Upon conclusion of the 60-Day lien period, and provided no liens have been received, all remaining holdback, exclusive of set-offs, shall be paid by the Owner, within 30 Days.

GC 8.02.04.11 Owner's Set-Off

Clause GC 8.02.04.11 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.01 Subject to Section 26 and Subsection 27.1 of the *Construction Act* and pursuant to Section 12 of the *Construction Act*, the Owner shall retain from monies owing to the Contractor under the Contract an amount sufficient to cover all debts, claims or damages related to the Contract, any outstanding or disputed liabilities the cost to remedy deficiencies, the reduction in value of substandard portions of the Work, claims for damages by third parties that have not been determined in writing by the Contractor's insurer, undetermined claims by the Owner under paragraph GC 8.01.02, a), and any assessment due the Workplace Safety and Insurance Board.

.02 Under these circumstances the Owner shall give the Contractor notice.

GC 8.02.04.12 Contract Completion, Statutory Holdback Release and Final Payment

Clause GC 8.02.04.12 of the MTO General Conditions of Contract is deleted in its entirety and replaced with the following:

.01 The Owner shall release the statutory holdback so as to discharge all claims in respect of the statutory holdback where all liens that may be claimed against the Finishing Holdback have expired or been satisfied, discharged or otherwise provided under the *Construction Act*.

.02 Final payment including payment of statutory holdback shall be made no later than 120 Days from the date of Contract Completion upon the expiry of all liens or upon the liens being satisfied, discharged or otherwise provided for pursuant to the *Construction Act*.

GC 8.02.04.13 Liens Filed Late

Clause GC 8.02.04.13 of the MTO General Conditions of Contract is deleted in its entirety.

AMENDMENT TO OPSS 1350, NOVEMBER 2016 - Greenhouse Gas Reduction Initiative

Special Provision No. 113S11 February 2019

1350.02 REFERENCES

Section 1350.02 of OPSS 1350 is amended by the addition of the following to **CSA Standards**:

A23.1 Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete

1350.03 DEFINITIONS

Section 1350.03 is amended by the addition of the following definitions:

Limestone Filler means divided limestone powder that may be used in concrete, as an aggregate, for the purpose of reducing the total amount of Portland cement used. Its use is limited to appropriate applications and exposure conditions after its suitability is determined through physical, chemical and mineralogical testing.

Portland Limestone Cement means cement obtained by intergrinding limestone with Portland cement clinker, as defined in CAN/CSA A3001.

1350.05 MATERIALS

1350.05.01 Cementing Materials

Subsection 1350.05.01 of OPSS 1350 is amended by the addition of the following to the first paragraph:

c) Portland limestone cement may be used in place of Portland cement only when the supplier of the Portland limestone cement is included in the Designated Sources for Material listing for Hydraulic Cements and Supplementary Materials. Concrete made with Portland cement and Portland limestone cement shall not be used in the same component. Portland limestone cement shall not be used in combination with limestone filler.

1350.05.02 Aggregates

Subsection 1350.05.02 of OPSS 1350 is amended by the addition of the following clause:

1350.05.02.01 Limestone Filler

Limestone filler shall comply with the following:

a) The requirements of OPSS 1002 for mineral filler with the exception that use of limestone filler is not confined to self-consolidating concrete.

b) The requirements of CSA A23.1, Annex L, L2 Organic Impurities.

c) The requirements of CSA A 3001, Clause 4.4.3 a) for calcium carbonate content.

Limestone filler shall be restricted to a maximum of 15% of the cement by mass.

1350.05.05 Concrete

Subsection 1350.05.05 of OPSS 1350 is amended by the addition of the following:

The selection of materials and design of the concrete mix shall be optimized to achieve GHG reduction of a minimum of 10% while maintaining the concrete performance requirements for the application and environment.

The 10% GHG reduction shall be obtained through the use of one or a combination of the following options:

1) Use of Portland-limestone cement.

2) Use of ground granulated blast furnace slag or fly ash to replace at least 10% of the cement content of the mix.

3) Use of limestone filler to reduce the cement content of the mix by at least 10% through enhanced particle packing, optimized aggregate gradation or other means.

1350.07 PRODUCTION

1350.07.05 Material Sampling and Testing

1350.07.05.02 Sampling of Water, Admixtures and Cementing Materials

Clause 1350.07.05.02 of OPSS 1350 is deleted in its entirety and replaced with the following:

1350.07.05.02 Sampling of Water, Admixtures, Limestone Filler and Cementing Materials

Samples of all cementing materials, admixtures, limestone filler and water (when other than municipal drinking water is used) shall be obtained according to the frequencies shown in Table 8, in the presence of the Contract Administrator, for testing by the Owner.

Samples of admixtures and water shall be protected from freezing and high temperatures. Cementing materials samples shall be protected from moisture.

Table 8 of OPSS 1350 is amended by the addition of:

a) The words "Portland Limestone Cement" to the list of Cementing Materials in the column "Material", and

b) Note 3. Minimum sampling and testing frequencies for limestone filler shall be the same as those shown for Cementing Materials.

PROTECTION OF PUBLIC TRAFFIC

Special Provision No. 100F08M June 2017

Open Excavations

The Contractor shall schedule the Work so that there will be no open excavation adjacent to a lane carrying traffic overnight and on non Working Days except where a traffic barrier designed to restrain errant vehicles is located between the traffic and the excavation. Excavations within 4 m of lanes carrying traffic shall be backfilled with the specified material up to profile grade and compacted prior to closing down operations each day.

Location and Storage of Materials and Equipment

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

Notwithstanding the foregoing, the Contractor shall, at the Contractor's expense, remove any vehicle, equipment or material which, in the opinion of the Contract Administrator, constitutes a traffic hazard or obstruction to maintenance operations.

Delivery and Trucking

The Contractor shall plan and schedule the routes of vehicles transporting all materials to, from or within the job, so that vehicular movements are accomplished with minimum interference and interruptions to traffic according to the sections entitled "Restrictions on Construction Operations" and "Permitted Times for Lane and Ramp Closures". This will necessitate vehicles to "slip-off" or "slip-on" in the direction of traffic, in order to merge with and thereby avoid crossing traffic lanes.

Access to and from the highway right-of-way will be restricted to ramps at the interchanges unless otherwise provided for in the Contract.

Median cross-overs shall not be used except where single axle vehicles are entering a passing lane that is closed to traffic.

The Contractor shall obtain the Contract Administrator's prior approval for the location of any "slip-off" or "slip-ons". The Contract Administrator reserves the right to alter, reject or close same as considered necessary. The Contractor shall notify suppliers of materials and equipment of the above requirements.

Restrictions on Construction Operations

The use of construction accesses, shoulder closures and the loading and unloading of materials and construction equipment onto and from the traveled portion of the highway shall not be carried out on days identified under the section entitled “Holiday Restrictions”, or during the following periods:

Location	Monday or a Day Following a Holiday	Tuesday to Thursday Except on Days Following and Preceding Holidays	Friday or a Day Preceding a Holiday	Saturday	Sunday
Highway 3	No Restrictions	No Restrictions	No Restrictions	No Restrictions	Not Permitted
Haldimand Road 56	No Restrictions	No Restrictions	No Restrictions	No Restrictions	Not Permitted
Haldimand Road 32	No Restrictions	No Restrictions	No Restrictions	No Restrictions	Not Permitted

Holiday Restrictions

The use of construction accesses, shoulder closures, lane closures, ramp closures, and the loading and unloading of materials and construction equipment onto and from the traveled portion of the highway shall not be carried out on the following Canadian or U.S. Statutory/Civic Holidays; or when applicable, after noon on days immediately preceding a Holiday, as shown in the following table:

Name of Holiday	Date	After Noon on the Following Date Preceding the Holiday
Victoria Day	Monday May 20, 2019	Friday May 17, 2019
Canada Day	Monday July 1, 2019	Friday June 28, 2019
Civic Holiday	Monday August 5, 2019	Friday August 2, 2019
Labour Day	Monday September 2, 2019	Friday August 30, 2019
Thanksgiving Day	Monday October 14, 2019	Friday October 11, 2019

Permitted Times for Lane and Ramp Closures

Lane closures and ramp closures for construction will only be allowed during the following times, subject to the additional restrictions covered under the section entitled “Holiday Restrictions”:

Lane Closures

Section Description: Highway 3

Closure	Monday or a Day Following a Holiday	Tuesday to Thursday Except on Days Following and Preceding Holidays	Friday or a Day Preceding a Holiday	Saturday	Sunday
One Lane Closure	00:00 – 24:00	00:00 – 24:00*	00:00 – 24:00*	00:00 – 24:00	Not Permitted
Two Lane or Full Closure	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted

*Lane closures are not permitted on Friday September 13, 2019 and Friday December 13, 2019 or the afternoon of Thursday September 12, 2019 and Thursday December 12, 2019.

Section Description: Haldimand Road 56

Closure	Monday or a Day Following a Holiday	Tuesday to Thursday Except on Days Following and Preceding Holidays	Friday or a Day Preceding a Holiday	Saturday	Sunday
One Lane Closure	00:00 – 24:00	00:00 – 24:00*	00:00 – 24:00*	00:00 – 24:00	Not Permitted
Two Lane or Full Closure	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted

*Lane closures are not permitted on Friday September 13, 2019 and Friday December 13, 2019 or the afternoon of Thursday September 12, 2019 and Thursday December 12, 2019.

Section Description: Haldimand Road 32

Closure	Monday or a Day Following a Holiday	Tuesday to Thursday Except on Days Following and Preceding Holidays	Friday or a Day Preceding a Holiday	Saturday	Sunday
One Lane Closure	00:00 – 24:00	00:00 – 24:00*	00:00 – 24:00*	00:00 – 24:00	Not Permitted
Two Lane or Full Closure	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted

*Lane closures are not permitted on Friday September 13, 2019 and Friday December 13, 2019 or the afternoon of Thursday September 12, 2019 and Thursday December 12, 2019.

Note: Long duration lane closures with temporary concrete barrier will be permitted as specified elsewhere in the Contract Documents.

Full mainline closures will be permitted for installation of overhead sign structures, bridge girders, hydro wire installations/modifications and removal of concrete panels during bridge demolition by saw cutting methods only. The installation over the traveled portion of the highway will require the stoppage of traffic across the full width of the affected set of traffic lanes as well as the closure of the adjacent lane on the other side of the median where applicable.

Closure of a full set of lanes shall only be carried out as follows:

- Ontario Provincial Police must be employed to perform the full closures;
- The closure shall take place between the hours of N/A and N/A;
- The duration of nightly closures is restricted to fifteen (15) minutes per any 1-hour period or until the end of the traffic queue passes.

Ramp Closures – N/A

Penalty for Early Closing

On each occasion when the Contractor closes lanes to traffic earlier than the specified times, the Contract Administrator will assess the Contractor an initial penalty of $500.00.

Thereafter, a further penalty of $50.00 per minute will be assessed against the Contractor for every minute outside the permitted closure window that the traffic lanes are not open to traffic. The Contract Administrator will be the sole judge of the length of time of the delay.

Penalty for Late Opening

On each occasion when the Contractor fails to reopen the traffic lanes by the specified time, the Contract Administrator will assess the Contractor an initial penalty of $500.00.

If traffic lanes are not open within 15 minutes of the specified time, a further penalty of $500.00 will be assessed against the Contractor.

Thereafter, a further penalty of $50.00 per minute will be assessed against the Contractor for every minute that the traffic lanes are not open to traffic. The Contract Administrator will be the sole judge of the length of time of the delay.

Closure Notification

Prior to the Contractor closing lanes and/or shoulders, the Contractor shall:

1. Inform the Contract Administrator of any closure, 1 week prior to the start date of the closure.

2. Inform the Contract Administrator of any closure lasting more than one week, at least 2 weeks prior to the start date of the closure.

3. Inform the Contract Administrator of emergency closures as soon as any details are known.

4. Obtain a Closure Notification Number from the Contract Administrator for each closure.

5. Inform the Contract Administrator of any closure that is being canceled subsequent to 1. and 2. above.

6. Field Work Notification Form must be filled out and sent in at least 24 hours prior to the work commencing. This may be faxed to 519-873-4443 or e-mail to WestRegion.TOC@ontario.ca

7. Notify the West Region Traffic Operations Centre by phone (519-873-4223) immediately prior to the set-up of lane closure.

8. Notify the West Region Traffic Operations Centre immediately of any changes to the closure or anticipated problems that may delay the opening time, stating details of the changes and or problems with the closure.

9. Notify the West Region Traffic Operations Centre immediately upon removing the closure.

Lane Closures by OPP Officers (Paid Duty)

In addition to the requirements listed in the Ontario Traffic Manual (OTM), Book 7, Temporary Conditions, the Contractor has the option to use O.P.P. assisted lane closures in order to execute the work.

Basis of Payment

Section 706.10 of OPSS 706 is amended in that payment for all costs associated with O.P.P assisted lane closures as described above is deemed to be included in the Temporary Traffic Control Signs item and no additional payment will be made.

Any additional OPP-assisted lane closures that result from the Contractor's chosen sequence and/or method of operation are deemed to be included in the Temporary Traffic Control Signs item and no additional payment will be made.

If an authorized third party stipulates that additional OPP-assisted lane closures are required, the Owner will compensate the Contractor for the cost of the OPP services as a Change in the Work.

OCCUPATIONAL HEALTH AND SAFETY ACT COMPLIANCE

Special Provision No. 101F21 November 201

List of Designated Substances

In accordance with the *Occupational Health and Safety Act, R.S.O. 1990, c. 0.1*, the Contractor is advised of the presence of the following Designated Substance(s):

Substance	Location
Arsenic	Present throughout the working area including, but not limited to pressure treated lumber, sign posts, guiderail posts and some steel structure coatings (e.g. paints, creosote, etc.).
Asbestos on Construction Projects and in Buildings and Repair Operations (O. Reg. 278/05)	Asbestos Containing Materials (ACMs) are commonly found in pipe-coverings, insulating cement, insulating block, transite board, mastics, as well as in coatings found on structures and culverts (i.e. asphalt coated asbestos protected corrugated steel). In addition asbestos fibers can be found in some old concrete products and precast materials including flat and corrugated sheets. None identified.

Substance	Location
Lead	Lead can be present in paint and/or other coatings on steel elements (guiderails, conduits, bracing, girders, diaphragms, beams, bearing plates and steel/rebar). Lead was identified to a depth of 0.61 m along Highway 3. The location of the contaminated soils are shown in the Contract Package, and shall be managed as per the Contract Document.
Silica	Present throughout the working area including, but not limited to, asphalt, concrete and granular materials.
Benzene	Benzene may be present in soils encountered during construction. Penetration macadam has been identified along sections of Highway 3, and a retail fuel outlet has been identified adjacent to the work zone.
Vinyl Chloride, Coke Oven Emissions, Ethylene Oxide, Acrylonitrile and Isocyanates	None identified.
Mercury	None identified.

AMENDMENT TO OPSS 182, APRIL 2017

Special Provision No. 101F23 April 2017

Timing of In-Water Works, Oversight Requirements, and Measures to Avoid Harm to Fish

182.07.08.01 Timing of In-Water Works

Clause 182.07.08.01 of OPSS 182 is amended by deleting the first paragraph in its entirety and replacing it with the following:

In-water work where fish and/or fish habitat are present is permitted during times specified in Table A for each waterbody and station listed.

Table A
Timing of In-Water Work

Waterbody	Station	Timing Window For When In-Water Work Can Occur
Oswego Creek and Oswego Creek Tributaries	Culvert #6: Sta. 27+016 Rt – 27+032 Lt (Highway 3)	July 1 to March 31
	Culvert #7: Sta. 27+084 – 27-092 Lt (Highway 3)	
	Culvert #8: Sta. 27+128 (Highway 3)	
	Culvert #10: Sta. 9+934 (Haldimand Road 56)	
	Culvert #11: Sta. 9+947 – 9+972 Rt (Haldimand Road 56)	
	Culvert #12: Sta. 10+020 Rt - 10+033 Lt (Haldimand Road 32)	

182.07.08 Fish Protection

Subsection 182.07.08 of OPSS 182 is amended by the addition of the following clause:

182.07.08.06 Additional Measures to Avoid Harm to Fish

Measures listed in Table C shall be implemented at the specified locations.

Replacement of culverts, culvert extensions, and channel realignment

Table C
Additional Measures to Avoid Harm to Fish

Waterbody	Type of Work	Additional Measures to Avoid Harm
Oswego Creek and Oswego Creek Tributaries (Culvert #6: Sta. 27+016 Rt – 27+032 Lt (Highway 3))	Culvert replacement and extension, and channel realignment	- Inspect new culverts prior to release of flow to ensure there are no potential barriers to fish movement, the substrates and low flow channels have been properly installed and transition smoothly with the upstream and downstream channel sections, and are stable. - The substrates and low flow channels shall be inspected again following the release of flow and following at least one storm event, to ensure they remain stable, and the transitions remains smooth with no development of erosion points. - Any identified instabilities observed from inspections shall be addressed, re-inspected and documented. - All instream work will be completed in the dry by isolating the work area. - The duration of soil exposure will be limited to the minimum required to complete the work. - The size of disturbed areas will be limited by minimizing nonessential clearing and grading. - Reinstate and re-establish any portion of watercourse disturbed during construction to pre-construction (or better) condition. - The Contract Administrator shall monitor the installation, maintenance, and removal of temporary erosion and sediment measures. - Sediment and erosion controls will remain in place and maintained until vegetation has taken sufficiently to provide adequate protection for the watercourse.
Oswego Creek and Oswego Creek Tributaries (Culvert #7: Sta. 27+084 – 27-092 Lt (Highway 3))	Culvert replacement and channel realignment	
Oswego Creek and Oswego Creek Tributaries (Culvert #8: Sta. 27+128 (Highway 3))	Culvert replacement and extension	
Oswego Creek and Oswego Creek Tributaries (Culvert #10: Sta. 9+934 (Haldimand Road 56))	Culvert replacement and extension	
Oswego Creek and Oswego Creek Tributaries (Culvert #11: Sta. 9+947 – 9+972 Rt)	Culvert replacement and extension, and channel realignment	
Oswego Creek and Oswego Creek Tributaries (Culvert #12: Sta. 10+020 Rt - 10+033 Lt (Haldimand Road 32))	Culvert replacement and extension	

AMENDMENT TO OPSS 313, NOVEMBER 2016

Special Provision No. 103F03 October 2018

OPSS 313, November 2016, Construction Specification for Hot Mix Asphalt - End Result, is deleted in its entirety and replaced with the following:

313.01 SCOPE

This specification covers the requirements for the placement, compaction, and acceptance of hot mix asphalt (HMA).

This specification also covers the requirements for the placement, compaction, and acceptance of HMA produced using warm mix asphalt (WMA) technology when the item title includes “Warm Mix”.

313.02 REFERENCES

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

Ontario Provincial Standard Specifications, Construction

OPSS 308 Tack Coat

Ontario Provincial Standard Specifications, Material

OPSS 1101 Performance Graded Asphalt Cement
OPSS 1151 Superpave and Stone Mastic Asphalt Mixtures

Ontario Ministry of Transportation Publications

MTO Laboratory Testing Manual
LS-100 Rounding-Off of Test Data and Other Numbers
LS-101 Calculation of Per Cent within Limits
LS-262 Bulk Relative Density of Compacted Bituminous Mixtures
LS-264 Theoretical Maximum Relative Density of Bituminous Paving Mixtures
LS-265 Determination of Percent Air Voids in Compacted Dense Bituminous Pavement Mixtures
LS-266 Determination of VMA in Compacted Bituminous Mixtures
LS-282 Quantitative Extraction of Asphalt Cement and Analysis of Extracted Aggregate from Bituminous Paving Mixtures
LS-291 Quantitative Extraction of Asphalt Cement and Mechanical Analysis of Extracted Aggregate from Bituminous Paving Mixtures - Ontario Procedure
LS-292 Quantitative Determination of Asphalt Cement Content by Ignition and Analysis of Remaining Aggregate from Bituminous Paving Mixtures
LS-294 Measuring Pavement Lift Thickness
LS-306 Bulk Relative Density of Compacted Bituminous Mixtures Using Paraffin Coated Specimens
LS-317 Determination of the Severity of a Segregated Asphalt Pavement Surface
LS-604 Relative Density and Absorption of Coarse Aggregate
LS-605 Relative Density and Absorption of Fine Aggregate

ASTM International

D 6752-11 Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Automatic Vacuum Sealing Method
E 178-16 Standard Practice for Dealing with Outlying Observations

American Association of State Highway and Transportation Officials (AASHTO)

M 320-17 Standard Specification for Performance Graded Asphalt Binder
R 35-17 Superpave Volumetric Design for Hot - Mix Asphalt
T 166-16 Bulk Specific Gravity of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens
T 283-14 Standard Method of Test for Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage
T 305-14 Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures
T 312-15 Standard Method of Test for Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor

313.03 DEFINITIONS

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

Ambient Air Temperature means the air temperature measured in the shade and away from the paving operations.

Anti-Stripping Treatment (AST) means a treatment used to minimize stripping of asphalt cement from HMA aggregates as defined in OPSS 1151.

Asphalt Cement (AC) means asphalt binder as defined in OPSS 1101.

Attribute means one of the following properties: designated large sieve (DLS), 4.75 mm sieve, 75 µm sieve, AC content, air voids, lift thickness, VMA, draindown, or compaction.

Binder Course means a HMA course between a surface course and either a granular base course or stabilized base course, an existing pavement, or another HMA binder course.

Crack means a break in the pavement surface, a separation of the pavement or aggregates at the surface of the pavement, and separation of pavement joints, and includes breaks and separations previously repaired by sealing.

Design Lift Thickness (T_D) means the thickness in millimetres as specified in the Contract Documents of:
a) A specified lift of asphalt mix measured by square metres, or
b) For multiple binder course lifts of the same mix type, it means the combined specified thicknesses in millimetres of the successive binder course lifts of the same mix type, at the same location measured by square metres.

Designated Large Sieve (DLS) means a sieve size specifically designated for each mix type for gradation testing. The designated sieve for the following mix types is:
a) 25.0 mm for Superpave 37.5;
b) 19.0 mm for Superpave 25.0;
c) 12.5 mm for SMA 19.0 and Superpave 19.0;
d) 9.5 mm for SMA 12.5 and Superpave 12.5, 12.5FC 1 and 12.5FC 2; and
e) 4.75 mm for SMA 9.5 and Superpave 9.5.

Draindown means that portion of SMA mixture, fines and AC, that separates and flows downwards through the mixture.

Fat Spot means an area of pavement where asphalt mastic has migrated to the surface creating a substantially blacker area than the surrounding pavement.

Field Adjustment to the JMF means a change in the target gradation, AC content, or both of a mix, within limits as specified in the Contract Documents without a redesign of the HMA, resulting in an adjusted JMF.

Hot Mix Asphalt (HMA) means hot mixed, hot laid asphaltic concrete and includes mix produced using WMA technologies. HMA may include recycled or specialty mixes.

Hot Mix Asphalt Miscellaneous means HMA that is placed in areas other than the roadway as specified in the Contract Documents.

Job Mix Formula (JMF) means the percentage passing on each designated sieve of the total mass of aggregate and the amount of AC as a percentage by mass of the mixture that are based on mix design procedures as specified in the Contract Documents.

Joint means a vertical contact between a HMA pavement course and any HMA pavement or any rigid object that exists at the time the HMA is laid.

Levelling Course means a HMA course of variable thickness used for correcting crossfall and profile deficiencies in the existing pavement prior to placing an HMA binder or surface course. Levelling course may also be referred to as a padding course.

Lift Thickness means the thickness in millimetres of: a) A single lift of asphalt mix measured by square metres, or b) For multiple binder course lifts of the same mix type, it means the combined thickness of all placed and compacted successive binder course lifts of the same mix type, at the same location measured by square metres.

Loose Mix means a representative sample of uncompacted HMA for testing mix properties.

Lot means a specific quantity of Material or a specific amount of construction.

Mean means the arithmetic average of the test results within a lot.

Mid-Lane Segregation means a continuous or discontinuous longitudinal "streak" of segregation, typically no greater than 300 mm in width located anywhere across the width of the lane.

Mix Properties means the AC content, gradation, air voids, and VMA.

Other Segregation means discrete areas or patches of regular, irregular, or chevron shape segregation.

Outlier means a test result that for a specific significance level is determined by statistical analysis not to be part of the test result population.

Padding means a HMA layer used to eliminate transverse and longitudinal irregularities on an existing surface before placing the binder or surface course.

Paving in Echelon means two or more pavers are used to pave multiple adjacent lanes simultaneously.

Payment Adjustment Sieves means the DLS, 4.75 mm, and 75 µm gradation sieves.

Per Cent within Limits (PWL) means an estimate of the percentage of the lot that is within specification limits, determined by using the mean and standard deviation of the lot.

Performance Graded Asphalt Cement (PGAC) means an asphalt binder that is produced from petroleum residue, either with or without the addition of non-particulate modifiers, according to AASHTO M 320.

Quality Assurance (QA) means a system or series of activities carried out by the Owner to ensure that Materials received from the Contractor meet the requirements as specified in the Contract Documents.

Quality Control (QC) means a system or series of activities carried out by the Contractor to ensure that Materials supplied to the Owner meet the requirements as specified in the Contract Documents.

Random Sample means a sample from a location chosen by the Contract Administrator based on random numbers such that any portion of a lot or sublot has an equal probability of being selected.

Reclaimed Asphalt Pavement (RAP) means the processed HMA material that is recovered by partial or full depth removal.

Roof Shingle Tabs (RST) means ground roof shingle scrap generated when new shingles are trimmed during production.

Segregation means a condition of the pavement characterized by areas with comparatively coarser or finer texture than that of the surrounding pavement, with severity levels:

a) Slight Segregation - a pavement matrix is in place between the coarse aggregate particles; however, there are slightly more, coarse aggregate particles in comparison with the surrounding acceptable mix.
b) Medium Segregation - the pavement has significantly more, coarse aggregate particles than the surrounding acceptable mat and usually exhibits some lack of surface matrix.
c) Severe Segregation - the pavement appears very coarse, with coarse aggregate particle against coarse aggregate particle and the pavement has little or no matrix.

Standard Deviation means the square root of the value determined by summing the squares of the difference between each test result and the mean of the test results divided by the number of test results minus one.

Stone Mastic Asphalt (SMA) means HMA consisting of a gap graded, stone-on-stone coarse aggregate skeleton with an asphalt cement-rich mortar.

SMA Mixes means SMA 9.5, SMA 12.5, and SMA 19.0.

Straight Edge means a straight edge made of metal with a level recessed in its upper surface parallel to the lower edge.

Superpave means a system for specifying material components and asphalt mix design using the Superpave gyratory compactor. It is an acronym for Superior Performing Asphalt Pavements.

Surface Course means the HMA wearing course of any flexible or composite pavement.

Through Lane means a traffic lane not intended for entering or exiting the roadway and does not include shoulders. Where there is more than one roadway, through lane refers to the traffic lane for the higher-class roadway.

Vertical Surface means all edges of concrete curbs, catch basins, appurtenances, longitudinal joints, and transverse joints for application of joint painting material.

Voids means air voids and voids in mineral aggregate (VMA).

Warm Mix Asphalt (WMA) means warm mixed, warm laid asphaltic concrete produced using technologies that allow for the mixing, handling and compaction of the asphaltic concrete mixture at a temperature typically 20 to 50 °C lower than conventional HMA.

313.04 DESIGN AND SUBMISSION REQUIREMENTS

313.04.01 Submission Requirements

Prior to the start of paving, the purchase price of the AC, in the form of a purchase order or other document signed by the Contractor's senior financial officer, shall be submitted to the Contract Administrator.

If the Contractor intends to store hot mix production in a silo, the planned times of hot mix production shall be provided to the Contract Administrator with 1 Business Day advance notice.

Prior to the start of paving on bridge decks, the mass of the rollers, except for Class V rollers, to be used on bridge decks, shall be submitted to the Contract Administrator in writing. The minimum compaction temperature for HMA or WMA recommended by the AC supplier shall also be submitted to the Contract Administrator in writing.

A copy of the Technical Data Sheet and Safety Data Sheet of the release agent(s) shall be submitted to the Contract Administrator.

313.05 MATERIALS

313.05.01 Hot Mix Asphalt

HMA shall be according to OPSS 1151. Asphalt cement, tack coat, anti-stripping treatments, release agents, and other additives shall be compatible with the other components of the hot mix asphalt.

313.05.02 Tack Coat

Tack coat shall be according to OPSS 308.

313.05.03 Release Agents

No release agents shall be used that may adversely affect the quality or performance of the HMA. Release agents shall be used according to the proprietary requirements.

Petroleum based release agents, excess water, or excess release agents shall not be used.

313.05.04 Warm Mix Asphalt

WMA shall be according to OPSS 1151 and the following:

The mix shall be produced at a facility capable of producing the mix according to the WMA technology supplier's instructions for the use of their WMA technology. All information required for the proper preparation, handling, storage, and use of the WMA materials shall be obtained from the WMA technology supplier.

313.05.05 Grit for Stone Mastic Asphalt

Grit for SMA shall be as specified in the Contract Documents.

313.06 EQUIPMENT

313.06.01 Rollers

A Class R Roller is a self-propelled pneumatic-tired roller.

A Class S Roller is self-propelled steel-drum, tandem, or three-wheel roller.

A Class V Roller is a self-propelled vibratory roller specifically designed for HMA compaction having either dual vibratory rolls or a combination of vibratory roll and pneumatic tires with a contact area equal to or greater than 70% of the roll width.

313.06.01.01 Rollers for Granular Grade Preparation

Finish rolling for granular grade shall be accomplished using, as a minimum:

a) A Class S roller with a minimum mass of 7 tonnes and minimum mass of 3.5 kg per mm total roll width, or
b) A Class V roller with a drum width of at least 1.2 m.

313.06.01.02 Rollers on Bridge Decks

Compaction shall be accomplished using, as a minimum:

a) A Class S roller with a minimum mass of 9 tonnes and minimum mass of 4.5 kg per mm total roll width, and
b) A Class R roller with a minimum mass of 18 tonnes and minimum mass of 2,500 kg per tire.

If Class V rollers are used, they shall be used in static mode.

At the Contract Administrator's request, rollers shall be weighed in the presence of the Contract Administrator or a representative.

313.06.02 Diamond Grinding

A diamond grinder shall be power-driven, self-propelled, and designed for grinding HMA. It shall be equipped with a grinding head with at least 50 diamond blades per 300 mm of shaft. The grinding head shall be at least 0.9 m wide. The grinder shall be equipped with the capability to adjust the depth, slope, and crossfall to remove HMA to the required profile and shall also include a slurry pick-up system.

313.07 CONSTRUCTION

313.07.01 Quality Control

QC procedures shall be conducted to ensure HMA meets the requirements of the Contract Documents. Interpretation of QC inspections, test results, and measurements and the determination of any action to be taken shall be carried out to ensure that the work is according to the requirements of the Contract Documents.

A single sample for QC purposes may be obtained at the same time and location as QA acceptance samples. No additional loose mix samples shall be taken from the placed mix.

If the Contractor wishes to obtain additional samples for QC purposes, up to three cores may be taken in each surface lot. For binder courses, the Contractor shall be permitted to obtain one thickness core for their use from each sublot for each binder lift, prior to placement of the surface course. Cores shall not be spaced closer than 1 m from any other core. If further additional samples are required, a written request shall be made to the Contract Administrator, and samples shall only be taken upon written approval of the Contract Administrator. All sample locations shall be restored as specified in the Contract Documents.

313.07.02 Laboratory Correlations

On request, the Contract Administrator shall provide the opportunity to conduct a correlation of mix properties or compaction or both between the QA and QC laboratories prior to placement of HMA. The correlation may occur once for each mix type and shall be a maximum of 3 samples per mix type.

The Contract Administrator shall be provided with the samples and all information required to conduct the correlation testing. The Contract Administrator shall provide the QA test results on completion of the correlation testing.

313.07.03 Preparation of Foundation and Existing Pavement

Prior to placing any course of HMA on:

a) A granular grade, a Class S roller or an equivalent Class V roller shall be used to finish roll the grade ahead of the paver. The granular grade after rolling shall be a compacted, smooth, float-free surface, free from contamination of foreign materials. Any distortion that will impact the specified thickness of the pavement to be placed shall be repaired.

b) HMA or concrete surfaces, the HMA and concrete surfaces shall be clean and free of all loose, broken, and foreign materials.

c) Milled surfaces, the milled surface shall be clean of all loose, broken, and foreign materials and shall be swept with a power broom.

The Contractor shall be responsible for preparing the existing surface to be paved by milling or padding or a combination, as the Contractor deems necessary, to place and compact each lift to the thickness as specified in the Contract Documents, provided such corrections do not reduce the thickness of existing pavement materials or underlying materials by more than 5 mm below the general profile of the surrounding existing unground or unmilled pavement surface.

313.07.04 Correction of Pavement Beneath Surface Courses

Unless otherwise specified in the Contract Documents, the Contractor may correct any pavement course underlying the surface course by padding, milling, grinding or a combination, in order to meet the surface smoothness requirements. Padding shall be completed using a mix type acceptable to the Owner. The thickness of those pavements after milling or grinding shall not be reduced by more than 5 mm below the general profile of the surrounding unground or unmilled pavement surface. The milled surface shall not exceed 25 mm from ridge to ridge, and the ridge to valley depth of the milled surface shall not exceed 10 mm.

313.07.05 Tack Coat

Tack coat shall be applied to surfaces according to OPSS 308 prior to placing HMA.

313.07.06 Transportation of Hot Mix Asphalt

Truck boxes used to transport HMA shall be clean and, if required, lightly coated with a uniform application of a release agent. Truck boxes shall be drained after each application and before loading.

313.07.07 Placing Hot Mix Asphalt

313.07.07.01 Operational Constraints

Paving shall not be carried out if the roadbed is frozen. When placing the mixture on a granular grade, the granular grade shall not be saturated and shall be free of standing water. The surface of a pavement upon which HMA is to be placed shall be clean and dry at the time of HMA placement.

For paving on bridge decks, an HMA course shall not be placed over the waterproofing membrane and protection board until a minimum 4 hours has elapsed following completion of the waterproofing system or, until the waterproofing system has set sufficiently that the integrity of the waterproofing system is not jeopardized.

An HMA course shall not be placed upon a previously laid course until the temperature of the previous course is 50 °C or less. For a HMA lift thickness of 60 mm or less, this temperature shall be measured at the surface. For a HMA lift thickness greater than 60 mm, this temperature shall be measured internally.

HMA binder courses shall be not placed unless the ambient air temperature is at least 2 °C. HMA surface courses shall not be placed unless the ambient air temperature is at least 7 °C.

Public traffic shall not be permitted on freshly laid HMA until the temperature of the mat is 50 °C or less.

When WMA is used, the WMA technology supplier's recommendations for placing the WMA mix shall be followed. Placement and compaction temperatures of WMA shall be according to the WMA technology supplier's recommendations but shall also meet the operational constraints listed in this clause.

313.07.07.02 Paving

313.07.07.02.01 General

Levelling, binder, and surface courses shall be laid by means of mechanical self-propelled pavers. Prior to roller compaction, obvious defects in the HMA placed shall be corrected. Irregularities in the alignment and grade along the outside edges shall be corrected. Excess HMA shall not be cast onto the surface of the freshly laid mat. After final compaction of each course the surface shall be smooth and true to the established crown and grade, uniform in texture and shall be free of any defects including segregation, fat spots, oil spills, chatter, and roller marks.

If the Contractor's actions fail to prevent continued medium or severe segregation regardless of cause, the Contract Administrator may instruct the Contractor to cease paving until the problem has been corrected.

All through lane paving courses shall be completed prior to the placement of adjacent sideroads, speed change lanes, and other paved areas.

HMA shall be placed and compacted to the thickness as specified in the Contract Documents for each lift.

At the end of each completed portion of the lanes and prior to opening them to traffic, the ends of completed sections of HMA course shall be temporarily ramped down to the existing pavement according to the Temporary

If paving is being carried out under lane closures, paving shall be completed to the same station for the full pavement width, including paved shoulders, prior to the roadway being reopened to traffic except as noted in the Partial Paving of Full Pavement Width clause.

313.07.07.02.02 Paving in Echelon

For the purpose of laying levelling, binder and surface courses as required under this Contract, paving in echelon shall not be used for the whole Contract.

When paving in echelon, the pavers shall be operated at the same time within 60 m of the next paver so that a hot joint is obtained between the lanes of HMA being placed. Should one paver break down while placing levelling, binder, or surface course, the Contract Administrator may permit the day's work to be completed with the remaining paver only.

313.07.07.02.03 Paving on Bridge Decks

The temperature of the HMA immediately after spreading shall be equal to or greater than the minimum temperature recommended by the AC supplier. When the HMA is produced using WMA technology, the temperature of the WMA immediately after spreading shall be equal to or greater than the minimum temperature recommended by the WMA technology supplier. Breakdown rolling shall commence immediately after spreading.

313.07.07.02.04 Paving Widenings and Irregular Sections

The HMA shall be placed in widenings such that the top of the compacted HMA is placed to the top of the existing pavement. When stepped joints are specified in the Contract Documents, the layers placed in the widening shall be placed to the top of each step in separate operations. HMA shall be placed in the widening using equipment specially designed for this purpose.

In turnouts, driveways, and other irregular sections, other methods may be used to spread and finish the HMA.

313.07.07.02.05 Partial Paving of Full Pavement Width

Partial paving of the full pavement width is permitted except with the conditions listed below.

Partial paving of the full pavement width is not permitted when one or more of the following conditions exist:

a) When the ramping height would be greater than 50 mm,

b) At the longitudinal edges that will form the hot joint of lanes to be paved in echelon when specified under the Paving in Echelon clause, or

c) The pavement slope would cause water to accumulate at the edge of the ramping and extend onto an adjacent lane or shoulder that will be open to traffic.

When partial paving of the full pavement width is permitted, temporary longitudinal and transverse ramp downs shall be placed regardless of the difference in height elevations between adjacent pavement surfaces.

313.07.07.02.06 Temporary Ramp Downs

HMA courses shall be temporarily ramped down to the existing pavement at a slope of 120H:1V transversely. Transverse ramps downs shall not form part of the permanent pavement and shall be removed prior to paving of the adjacent section.

Where longitudinal ramp downs are permitted or if, due to unforeseen circumstances such as equipment breakdown occurring during paving, paving cannot be completed to the same station across the full pavement width, the HMA course shall be temporarily ramped down to the existing pavement at a slope of 10H:1V. Only one temporary longitudinal ramp down shall be in place across the width of the pavement at any time. The temporary longitudinal ramp down shall not form part of the permanent pavement and shall be removed prior to paving the adjacent section. The adjacent paving shall be completed such that the ramping is not in place more than 5 Days.

Loose particles generated during construction of the longitudinal or transverse ramp downs or both shall be removed from the roadway surface prior to re-opening the roadway to traffic. Temporary ramp downs shall remain intact and in place until they are removed prior to paving the adjacent section.

Temporary ramp downs shall be removed to produce a straight clean vertical surface for the full depth of the course prior to paving the adjacent lane or shoulder. After removal of the temporary longitudinal ramp down, traffic shall not be permitted to cross over the vertical surface at the longitudinal edge before the adjacent paving is completed.

313.07.07.03 Longitudinal and Transverse Joints

313.07.07.03.01 General

All joints shall be made to obtain a complete bond between the two pavement edges and a smooth riding surface. The existing or previously placed pavement edge shall be a straight clean vertical surface for the full depth of the course. Where ramping or damage has occurred, trimming shall be required. All dirt or other foreign material and all loose material shall be removed from all vertical surfaces.

313.07.07.03.02 Longitudinal Joints

The longitudinal joints shall be parallel to the lane and visually uniform longitudinally. The width of subsequent courses shall be staggered to an offset of 150 to 300 mm so that longitudinal joints do not coincide. The longitudinal joints in the surface course shall be offset 50 mm from the edge of the demarcation between the lanes as specified in the Contract Documents.

313.07.07.03.03 Transverse Joints at Limits of Paving

Joints between HMA pavement laid under this Contract and existing HMA courses not laid under the Contract shall be constructed as follows:

a) Where a binder course is placed flush against an existing HMA pavement and a butt joint is to be made, the existing pavement shall be trimmed back to form a straight vertical surface.

b) Where a surface course is placed flush against an existing HMA pavement, a butt joint shall be prepared by removing the existing pavement to the full depth of the existing surface course, to form a straight vertical surface, and for a longitudinal distance not less than 5 m so that the surface course placed has a thickness equal to the full depth of the existing surface course over the 5 m section.

c) Where a binder course and surface course are not placed flush against an existing HMA pavement, the binder course shall be feathered out removing the existing surface course to a minimum depth of not less than 40 mm, to form a straight vertical surface, and for a longitudinal distance not less than 5 m so that the surface course placed has a minimum thickness of 40 mm over the 5 m section.

d) Where multiple courses are placed flush against an existing HMA pavement, the joint for each course shall be offset at least 150 mm from the joint on the course below.

313.07.07.04 Compaction

Compaction of the HMA shall be conducted using appropriate methods and equipment to provide a uniformly compacted mat according to the requirements of this Contract. Class R rollers shall not be used to compact SMA.

At all places not accessible to rollers, the HMA shall be compacted by mechanical self-powered gas-, electric-, or air-powered equipment.

313.07.07.05 Gritting of Stone Mastic Asphalt

Hot grit shall be embedded in the SMA surface as specified in the Contract Documents.

313.07.08 Field Adjustments to the Job Mix Formula

The Contractor shall be permitted to adjust the JMF to more closely reflect the mix being produced. The number of field adjustments to the JMF shall be limited to three for each mix design submitted, one prior to the start of production and a maximum of two during production. Field adjustments to the JMF shall be limited in scope such that the net impact of all field adjustments to the JMF does not exceed any of the maximum field adjustments to the JMF in Table 1 in comparison to the original JMF submitted under the current mix design.

JMF adjustments shall not be accepted once placement of the specific mix type has been completed. The adjusted JMF shall be submitted in writing on a form supplied by the Contract Administrator. Upon receipt of the JMF adjustment submission, the Contract Administrator shall give a written confirmation of receipt of the adjusted JMF. Within 1 Business Day of receipt of the JMF adjustment, the Contract Administrator shall give written notice confirming conformance to the Contract requirements or advising of any non-conformance. The revised JMF may be applied to the lot being placed at the time the confirmation of receipt of the revised JMF is issued and the previous lot, if requested by the Contractor as part of the written submission for a JMF change. If this request is not made, the revised JMF shall only apply to mix placed subsequent to the receipt of the revised JMF.

313.07.09 Sampling

313.07.09.01 Asphalt Cement

Samples of the AC shall be taken according to OPSS 1101.

When the selected WMA technology requires that additives be added to the AC, the samples for acceptance of the AC shall be taken after the additive has been added to the AC.

313.07.09.02 Hot Mix Asphalt Aggregates for Density Testing

The Contractor shall procure samples for RAP and the aggregates identified in the mix design for each mix type using methods as specified in the Contract Documents. The first set of samples shall be taken no later than 10 Days prior to the start of production of the first lot of HMA. Subsequent samples shall be taken immediately following the completion of 15,000 tonnes ± 1,000 tonnes of mix production, and thereafter at further intervals of 20,000 tonnes as required. The aggregate and RAP sampling program shall be established in consultation with the Contract Administrator prior to paving. If the Contractor determines that a sampling interval needs to be reduced to reflect changes in the aggregate properties, the Contract Administrator shall be notified, and samples shall be taken as warranted.

A set of two samples shall be taken. One of these samples shall be for QA testing and the other shall be for referee testing. Samples for QA and referee testing shall be obtained concurrently.

Each sample shall be clearly identified as to the date of sampling, the lot number, and the item hot mix tonnage being produced when the sample was taken.

313.07.09.03 Hot Mix Asphalt Mix Properties

Samples shall be appropriately labelled with the Contract number, highway number, Region, lot number, sublot number, mix type, lift number, station, and date and time of sampling.

The Contract Administrator shall advise the Contractor of each random sample location or the tonnage from which the sample is to be taken. A set of two samples shall be taken as per Table 2. One of these samples shall be for QA testing and the other shall be for referee testing. Samples for QA and referee testing shall be obtained concurrently.

When the mass of the sample does not meet the requirements of Table 2, the sample shall be discarded and a new one taken immediately.

The SMA sample for draindown testing shall coincide with one of the other sublot samples as designated by the Contract Administrator. The samples shall be transferred to a clean stainless steel bowl or pan of suitable size, immediately after splitting, for delivery to the QA laboratory.

If the Owner's QA laboratory chooses LS-292, the Contractor shall provide, for each mix design, two sets of samples consisting of:

a) 2 one-litre cans of AC,
b) 25 kilograms of each aggregate type, and
c) 1 kilogram of baghouse fines, if used in the mix design.

One sample is for Owner's QA testing and the other for referee testing for the purpose of ignition oven calibration, including aggregate correction factors. The samples shall be submitted to the Owner's QA laboratory at least 5 Business Days prior to the start of paving with the applicable HMA type. If materials have changed from the mix design, an additional two sets of samples, as detailed above shall be provided.

313.07.09.04 Compaction

Upon completion of each sublot, the Contract Administrator shall provide notification of each random sample location in writing. Pavement core samples shall be obtained in duplicate, from each sublot no later than the next Business Day after the completion of the sublot. Each core shall have a minimum nominal diameter of 150 mm and a maximum nominal diameter of 200 mm, and shall consist of the full layer being sampled and at least one underlying layer, if one is present. Cores shall not be taken within 250 mm of a longitudinal or transverse joint or the edge of pavement. Cores for compaction shall not be taken on bridge decks.

Each set of samples shall be taken from the same lane, same transverse offset, and at a spacing of 1.0 m ± 0.1 m between each individual core edge.

Care shall be taken to ensure that cores are not damaged during coring operations or in transit. If a core is damaged, a replacement core shall be extracted at a location adjacent to the original core.

Core samples shall also include design lift thickness on the label. The lot and sublot numbers shall be clearly marked with a permanent marker on all compaction cores.

HMA and compaction requirements for filling the sample holes shall be the same as the adjacent undisturbed pavement. Sample holes shall be cleaned, dried, and filled and then compacted using a mechanical self-powered gas-, electric-, or air-powered compactor immediately after sampling.

A 1 litre sample of the release agent(s) shall be delivered to the Contract Administrator upon request.

313.07.09.05 Warm Mix Asphalt

Samples of WMA shall be obtained at the paver from sublots according to Table 2 for moisture sensitivity testing. The sublots are to be selected randomly from the sublots identified for mix properties by the Contract Administrator. These samples shall be designated for QA testing for moisture sensitivity as per AASHTO T 283. A complete sample data sheet shall accompany the samples. The data sheet shall also identify corresponding mix properties lot/sublot number and that the samples are for moisture sensitivity testing. Moisture sensitivity testing is required for information only.

313.07.09.06 Lift Thickness

For HMA items measured by square metres, single cores consisting of all lifts placed shall be used to evaluate the lift thickness of all lifts. Sample locations shall be determined based on the surface area of the upper most lift placed on the Contract.

All areas of hot mix paving within the Contract limits, including paved shoulders, shall be sampled for lift thickness with the following exceptions:

a) Detours and other temporary pavement.
b) Miscellaneous hot mix.
c) Bridge decks.

Upon completion of each sublot, the Contract Administrator shall provide notification in writing of the location to be used for sampling. One pavement core sample shall be obtained from each sublot not later than the next Day after the completion of the sublot. This one core shall be used for both QA and referee testing.

Each core shall have a nominal diameter of 50 mm and shall consist of all the hot mix lifts placed in the sublot and at least one underlying hot mix layer if one exists. Each core shall have its vertical side cored perpendicular to the upper surface of the core. Each sample shall be placed in a suitable container to protect the sample integrity during transport and until testing. The sublot number shall be clearly marked with a permanent marker on each core. In addition, the sample documentation as specified elsewhere in the Contract Documents shall also note the number of lifts for which the thickness measurements are required and mix type for each.

No replacement thickness cores shall be obtained for QA or referee testing. When a core thickness is reported as "indeterminate", a new 150 mm core shall be taken centred over the sublot's previously taken 50 mm core.

Holes resulting from the removal of thickness core samples shall be cleaned, dried and filled with a material acceptable to the Contract Administrator immediately after sampling.

313.07.10 Identification of Warm Mix Asphalt Paving Limits

When WMA is used, GPS coordinates for the WMA paving limits shall be submitted to the Contract Administrator no later than 7 Days after completion of WMA paving.

313.07.11 Management of Excess Material

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

313.08 QUALITY ASSURANCE

313.08.01 Acceptance Criteria

Acceptance of HMA shall be based on the following criteria:

a) AC Physical Requirements
b) Mix Properties and Compaction
c) Surface Tolerance
d) Surface Appearance
e) Surface Smoothness
f) Lift Thickness
g) Geometrics and Longitudinal Joint Location

313.08.01.01 Asphalt Cement Physical Requirements

The Contract Administrator shall determine the acceptability of the AC according to OPSS 1101 and requirements specified elsewhere in the Contract Documents.

When the selected WMA technology requires that additives be added to the AC, acceptance of the AC shall be based on the samples that contain the WMA additive subject to the conditions as specified in the Contract Documents. The Contractor may request that an allowance be made for the impact of the WMA and AST on a PGAC grade for QA or referee purposes provided that when production begins the Contractor submits to the Contract Administrator complete AASHTO M 320 test results for the following:

a) AC with WMA and AST at the percentage identified in the mix design.
b) AC without the additives.

The combined allowance shall be limited to maximum 2 °C colder than the high temperature grade or maximum 2 °C warmer than the low temperature grade.

313.08.01.02 Mix Properties and Compaction

313.08.01.02.01 Lot Size

313.08.01.02.01.01 General

The Contract Administrator shall determine the size and location of the lots and sublots, after discussion with the Contractor and before HMA production for the tender item starts. Guidelines for the breakdown of the tender item quantity into lots are as listed in Table 3.

When only one or two sublots are completed at the end of paving for the tender item due to a change in the JMF or when a delay of more than 20 Business Days occurs in placing the complete lot, the test results obtained shall be considered as part of the previous lot and the previous lot shall then have 11 or 12 sublots. When only 3 to 9 sublots are completed due to the above circumstances, then the 3 to 9 sublots shall be considered as a lot.

When a delay of more than 20 Business Days occurs in placing the complete lot and this lot shall be completed during the same calendar year, the Contractor may, prior to the end of the 20 Business Days, request in writing to the Contract Administrator that the lot be continued upon the resumption of paving for that tender item. If the request is not made or is not accepted by the Contract Administrator, the lot shall be terminated and evaluated for acceptance.

313.08.01.02.01.02 Optional Surface Trial

When the surface hot mix tender item is 5,000 tonnes or more, an optional trial of one lot, not exceeding 500 tonnes, with one sublot shall be permitted. The trial shall be placed in a binder course, and the lift thickness shall not be greater than 60 mm. If the Contractor elects to place this optional trial, the Contract Administrator shall be advised in writing prior to placing the trial lot. The optional trial shall not be placed in a critical location such as bridge decks. The optional trial lot will be treated as a small quantity lot for basis of acceptance and payment.

313.08.01.02.01.03 Lot Size for Bridge Decks

Hot mix placed on a bridge deck should be treated as a separate lot. Where hot mix is placed in multiple stages, each stage shall be treated as a separate lot.

The lot shall be either a single sublot or divided into 3 approximately equal sublots as determined by the Contract Administrator, in consultation with the Contractor.

313.08.01.02.01.04 Lot Size for Tonnage Items

Lot size is generally 5,000 tonnes. Sublots are generally 500 tonnes, however, sublot sizes may be adjusted to ensure a minimum of 3 sublots per lot.

When the tendered item quantity is less than 1,000 tonnes, the sublots shall be determined by the Contract Administrator based upon such testing as is deemed necessary by the Contract Administrator to determine substantial conformance with the Contract.

313.08.01.02.01.05 Lot Size for Square Metre Items

For lift thicknesses in the order of 40 to 50 mm, lot size is generally 40,000 m² with sublots of 4,000 m², however, sublot sizes may be adjusted to ensure a minimum of 3 sublots per lot. For lift thicknesses in the order of 60 to 80 mm, the lot size would generally be adjusted to 25,000 m² with sublots of 2,500 m².

When the tendered item quantity is less than 4,000 m², the sublots shall be determined by the Contract Administrator based upon such testing as is deemed necessary by the Contract Administrator to determine substantial conformance with the Contract.

313.08.01.02.02 Acceptance Testing

The Owner shall conduct tests, carry out calculations and provide values according to Table 4. The Contractor shall be provided with results from the completed tests.

The QA laboratory shall conduct density tests for RAP and aggregates identified in the mix design for each mix type using methods as specified in the Contract Documents.

When new aggregate samples are received, QA testing on the new aggregate samples shall be conducted and the calculation of VMA for the subsequent lot(s) shall be based on the most recent samples submitted. When the Contractor notes a change in aggregate density and requests that new samples be obtained between routine random samples, the Contractor shall state in the sample request if the current lot will be closed, or if the lot will be completed and the new density tests results will not be used for calculation of VMA until the next lot.

313.08.01.02.03 Basis of Acceptance

Acceptance for all mixes for mix properties and compaction is based on the lot PWL for each attribute, excluding VMA. PWL shall be determined using lot test results, LS-101, and lower and upper limits as specified in Table 5. The PWL of the lot for each criterion shall be used to determine the payment adjustment factor from Table 6. If the PWL is less than 50% for AC content, air voids or compaction, or less than 25% for any payment adjustment sieve, the lot is rejectable and shall be subject to repair or payment adjustment. VMA shall meet the minimum mix design requirements according to OPSS 1151 for each lot and payment shall be based on the lot mean as specified in the Payment Factor for Voids clause. If the VMA payment factor is less than 0.500, the lot shall be considered rejectable. SMA lots shall be considered rejectable if the draindown is more than 0.3%.

When the tendered item quantity is less than 1,000 tonnes, the HMA may be accepted by the Contract Administrator based upon such testing as is deemed necessary by the Contract Administrator to determine substantial conformance with the Contract. When 3 or more tests have been completed for a lot the Material shall be accepted at the full Contract price, subjected to a payment adjustment or rejected as specified in Contract Documents.

Any lot comprised of one or two sublots, shall not be subject to payment adjustment unless the mix is rejectable. Acceptance for these lots shall be on a sublot by sublot basis. The sublot shall be considered acceptable if the AC content, gradation, air voids, and compaction of each sublot comply with the limits specified in Table 5, and the VMA shall be no more than 0.50% below the design minimum. Mix that does not comply with the requirements shall be considered rejectable.

The Contract Administrator shall determine if a rejectable lot may remain in the work without repairs. When the Contract Administrator has determined that a rejectable lot may remain in the work without repair, the lot shall be subjected to an additional payment adjustment reflecting the extent of the non-conformance as

determined by the Contract Administrator. If the Contractor elects to repair the lot in lieu of a payment adjustment, or if the Contract Administrator determines that a rejectable lot requires repair, the lot shall be repaired and re-evaluated as specified in the Repairs for Mix Properties and Compaction clause.

313.08.01.02.04 Referee Testing

A single request for referee testing for a given lot can only be invoked by the Contractor within 5 Business Days of the Contractor receiving the Contract Administrator's calculated QA payment factors for that lot. Referee testing for aggregate density can only be invoked by the Contractor within 5 Business Days of the Contractor receiving the test results for aggregate density.

For mix properties and compaction, the Contractor may request testing by a referee laboratory for the entire lot, or a maximum of two sublots from that lot. Referee testing shall fall into one of three categories:

a) Mix properties only,
b) Compaction only, or
c) Mix properties and compaction.

The Contractor may request referee testing for determining the draindown of a SMA sample.

The referee laboratory shall use the same test method as the QA laboratory except that when the QA laboratory chooses LS-292, the referee laboratory shall use that method provided the calibration requirements are met. If they are not met, the referee laboratory shall use LS-282.

When referee testing of mix properties is invoked, the referee laboratory shall conduct all necessary testing, with the exception of the combined aggregate density which shall be supplied by the Contact Administrator.

When referee testing for compaction is invoked, the referee laboratory shall determine the MRD of the loose mix sample for the sublot, and this value shall be used in the calculation of compaction for the referee core.

The results generated by the referee laboratory shall be used to re-evaluate the lot to determine the payment factors for the acceptance of the disputed properties for the disputed lots of HMA. The referee test results are binding on both the Owner and the Contractor.

313.08.01.02.05 Outliers in Referee Results

Where an entire lot of 3 or more sublots has been referee tested, the Contractor may question an individual value for any attribute of a sublot's test result, excluding VMA. The request shall be made within 3 Business Days of the Contractor receiving all of the test results for the lot, and only when the payment factor for the attribute with an outlier is less than 1.0. The validity of the questioned attribute shall be ascertained in accordance with ASTM E 178 using a T test at a 10% significance level.

If the T test procedure shows that the questioned value of the attribute is not an outlier, then the test result shall be used in the calculations. If the T test procedure shows that the questioned value of the attribute is an outlier, then the test result for the sublot shall be checked for mathematical errors. If there are no mathematical errors, the sublot with the outlier is treated as a lot with one sublot and the remaining sublots shall form a separate lot with no further consideration for outliers.

If only two sublots remain, the two sublots shall be treated as two separate lots each with one sublot.

313.08.01.03 Surface Tolerance

The surface tolerances of any pavement surface shall be such that when tested with a 3 m straight edge placed anywhere, including the edge of the pavement, in any direction on the surface, except across the crown or drainage gutters, there shall not be a gap between the bottom of the straight edge and the surface of the pavement:

a) Greater than 6 mm for all binder courses, levelling courses and padding, or
b) Greater than 3 mm for all surface courses.

The Contractor shall provide all traffic control, as required, for the Owner to conduct surface tolerance measurements. All tolerance-related repairs shall be carried out according to the Repairs subsection.

Longitudinal joints shall be constructed such that the elevation difference across the longitudinal joints shall not exceed 5 mm, when measured with a straight edge placed on the asphalt surface with the higher elevation and overhanging the joint by not more than 50 mm. All joints which exceed the 5 mm tolerance shall be repaired such that the tolerance is met.

313.08.01.04 Surface Appearance

HMA deemed by visual appearance to have flushing, bleeding, segregation, fat spot, surface damage, cracking, chatter, or surface contamination but not limited to these, shall be considered deficient material or work. The Contractor shall provide traffic control, for all surface appearance assessments. Deficient material, mixture, and work shall be removed and replaced or repaired or assessed a payment reduction.

313.08.01.04.01 Segregation

HMA exhibiting medium or severe mid-lane segregation shall be assessed a payment reduction or shall be repaired at the discretion of the Contract Administrator.

From the time the Contract Administrator provides notification of mid-lane segregation, a maximum of 500 tonnes of HMA may be placed, to demonstrate the effectiveness of any repairs or adjustments or both made to a defective paver. The repairs or adjustments or both shall be demonstrated to the Contract Administrator. If the repairs or adjustments or both to the paver do not eliminate midlane segregation to the satisfaction of the Contract Administrator within the allowable 500 tonnes of HMA, then the use of that paver shall be discontinued.

Other segregation shall be addressed in accordance with the following:

a) Slightly segregated mix shall be accepted into the work with no payment reduction.

b) Medium segregation in levelling courses or padding with a thickness greater than 40 mm, and binder courses shall normally be left in place with no payment reduction. However, any areas of medium segregation that deteriorates prior to being overlaid by another pavement course shall be repaired at no cost to the Owner.

c) Medium segregation in surface courses shall be assessed a payment reduction or repaired at the discretion of the Contract Administrator.

d) Severely segregated mix shall be repaired by removal and replacement.

Levelling courses and padding with a total thickness less than 40 mm, bullnoses, and tapers that were not machine-laid and any areas of handwork shall not be assessed on the basis of segregation but on the basis of other workmanship-related problems. However, if they deteriorate prior to being overlaid by another pavement course, the Contract Administrator shall assess the causes of the deterioration before determining responsibility for the cost of repairs.

313.08.01.04.02 Challenging Severity of Segregation

The Contractor may challenge, in writing, the severity of any segregated area assessed as either medium or severe, within 5 Business Days of receiving the Owner's first visual assessment. The written challenge shall list the dimensions and the Contractor's assessment of the severity of each disputed area.

For Contracts with up to 30,000 tonnes of HMA, the Contractor shall be allowed a maximum of two separate written challenges for each tender item. However, for Contracts with more than 30,000 tonnes of HMA, the Contractor shall be allowed a maximum of four separate written challenges for each tender item. Each written challenge may involve more than one disputed segregated area.

A representative of the Owner, who did not carry out the original assessment and who is not the Contract Administrator shall make a second visual assessment of the disputed areas. This second visual assessment shall be carried out within 5 Business Days after the Contract Administrator has received the Contractor's written challenge and the results of that second visual assessment shall be binding on both the Owner and Contractor.

The Contractor may further challenge the Owner's second visual assessment of the segregation severity, if the segregation has occurred in any one of the mixes listed in Table 7. Such a challenge shall be resolved by a representative of the Owner determining the Macrotexture Ratio, according to LS-317. Table 7 shall be used with the Macrotexture Ratio to determine the degree of severity and the disposition of the disputed area of segregation. The results of that testing shall be binding on both the Owner and the Contractor.

313.08.01.05 Acceptance Criteria for Surface Smoothness

The acceptability of surface smoothness shall be as specified in the Contract Documents.

313.08.01.06 Lift Thickness for Square Metre Items

313.08.01.06.01 Lot Size

The Contract Administrator shall determine the size and location of the lots and sublots before hot mix production for the item starts. Generally, there shall be one lot of the total pavement quantity. When the number of lifts is different or the tender item for any of the lifts is different, there shall generally be a separate lot for each of these areas. Each lot shall be divided into sublots, corresponding to the upper most lift of hot mix thickness sublots, which generally is the surface course. Sublots shall normally be 2,000 m^2 in size. A minimum of 3 sublots are required for each lot.

313.08.01.06.02 Acceptance Testing

The Owner shall conduct tests, carry out calculations, and provide values according to Table 4. The Contract Administrator shall provide the Contractor with a copy of each lift thickness measurement for each lift placed at each sample location upon completion of the sublot measurement.

313.08.01.06.03 Basis of Acceptance

The acceptance of lift thickness is based on lift thickness measurements. The Contract Administrator shall calculate the thickness payment adjustment for the lot once all measurements for the lot have been completed.

Sublot measurements shall be acceptable if they are equal to or greater than the minimum sublot lift thickness as specified in Table 8 for the item's T_D.

The sublot shall be deemed rejectable and shall be repaired if:

a) The lift thickness measurement is less than the minimum sublot lift thickness as specified in Table 8, or

b) For successive binder lifts of the same mix type, the combined lift thickness for these successive lifts is less than the minimum sublot lift thickness as specified in Table 8, or

c) Both a) and b) apply.

In addition, when a core taken for compaction testing does not meet the minimum lift thickness as specified in Table 8, the thickness sublot in which the compaction core was located shall be rejectable and shall be repaired.

When a lot contains any sublot that is deemed rejectable, the lot is rejectable until the sublot has been repaired and re-evaluated as acceptable. When the Contract Administrator allows a rejectable sublot to remain in place without repair, the Contractor shall receive a payment reduction for the sublot according to the Payment Adjustment for Lift Thickness clause. A sublot lift thickness measurement for a rejectable sublot that receives a payment reduction shall not be used to assess the lot mean.

The Contract Administrator shall calculate the lot mean to one decimal point and the lot thickness payment adjustment based on all the sublot lift thickness measurements in the lot, according to LS-101 and Table 9. If the lot mean is less than 85% of the T_D the lot is rejectable.

The Contract Administrator shall determine if a rejectable surface course lot may remain in the work without repairs. When the Contract Administrator has determined that a rejectable surface course lot may remain in the work without repair, the lot shall be subjected to a payment adjustment as determined by the Contract Administrator.

313.08.01.06.04 Referee Testing

The Contractor may only challenge an individual lift thickness measurement by requesting referee testing within 5 Business Days of the Contractor receiving the sublot lift thickness measurement and shall submit the request in writing to the Contract Administrator. The Contractor shall then have the opportunity to view the re-measurement of the QA designated pavement core for that sublot at an alternative Owner designated QA laboratory together with the Owner's representative. The re-measurement shall include the individual lift thickness that was challenged and shall also include any other lifts or combination of lifts in the core. The re-measured lift thickness measurements shall be considered binding and shall replace the original lift thickness measurements for assessment of all lifts measured for the core.

313.08.01.07 Geometrics and Longitudinal Joint Location

313.08.01.07.01 General

After final compaction, the HMA shall be smooth and true to the design profile and cross-section and constructed to the design width.

313.08.01.07.02 Pavement Width

The Contract Administrator shall conduct random spot checks of the width of each binder and surface course HMA lift for acceptance. The Contractor shall provide and maintain offset stakes on both sides of the roadway, or other identifiers acceptable to the Contract Administrator, for use in checking the pavement width at 25 m maximum intervals until the Contract Administrator advises the Contractor that the stakes or identifiers are no longer required.

The width of each lift shall be accepted provided:

a) The outside edges of the lanes and the paved shoulders are parallel to the centreline and visually uniform.

b) The width across all the adjacent lanes from the outside edge to outside edge is not less than the sum of the specified lane widths, and

c) The width of the paved shoulders is not less than the paved shoulder width as specified in the Contract Documents.

If the width is not acceptable at any location, the Contract Administrator shall notify the Contractor in writing that the pavement is rejectable, and the Contractor shall submit a written proposal for corrective action to the Contract Administrator within 3 Business Days of receiving the notification.

313.08.01.07.03 Longitudinal Joint Location

Longitudinal joints not meeting the Contract requirements shall be removed and replaced, or assessed a payment reduction.

313.08.02 Repairs

313.08.02.01 General

The Contractor shall perform all repairs at no cost to the Owner.

All transverse joints in surface course repairs shall butt up to a full depth vertical surface. Repairs shall consist of the removal and replacement of the full thickness of the hot mix lift or the placement of an overlay when permitted by the Contract Administrator. A paver shall be used in carrying out the repair.

Repairs shall be full lane or full shoulder width except where localized repairs are allowed as specified in the Contract Documents.

The materials and the construction of repairs shall meet the requirements as specified in the Contract Documents.

The limits and type of repairs shall be subject to the approval of the Contract Administrator and shall be approved prior to the repair being carried out.

Repairs of an urgent nature, including moderate to very severe aggregate loss, moderate to very severe flushing, and wheel track rutting 16 mm in depth or greater shall be repaired within 7 Days, unless extended by mutual agreement.

With the exception of urgent repairs, repairs shall be completed within 60 Days or prior to seasonal shutdown each year, whichever is the lesser, unless extended by mutual agreement.

313.08.02.02 Repairs for Mix Properties and Compaction

The Contractor may elect to carry out repairs in lieu of accepting a payment adjustment, if the lot is not rejectable and the total payment factor for the lot is less than 0.940. When the Contract Administrator requires a rejectable lot to be repaired or the Contractor elects to carry out repairs in lieu of accepting a payment adjustment, the Contractor shall determine what areas of HMA in a lot are to be repaired subject to the minimum lengths and widths as specified in the Contract Documents. Each repair area shall include at least one of the loose mix or core sample locations or both representing that sublot.

The minimum length of a single-repair to one lane shall be 250 m. The minimum length of a single-repair that extends over more than one lane shall be 250 lane-metres and no portion of the single-repair in a lane shall be less than 125 m in length.

The minimum limits of each repair shall be at least 125 lane-metres from the location of the loose mix or compaction core or both that represents the sublot; otherwise, a repair limit shall coincide with one end of the sublot when the sample location is less than 125 lane-metres from it. If the proposed limit of a single-repair falls within the proposed limit of another single-repair, the overlap shall count towards the 250 lane-metre minimum for both repairs. Repair areas within a single lane shall be separated by at least 100 m. If the delineation of repair areas results in patches less than 100 m apart, these repair areas shall be re-established to form a continuous repair.

The Contractor shall submit a list and sketch identifying the proposed locations of the repairs to the Contract Administrator for review at least 5 Business Days prior to the intended start of the repair work. Each sublot and single-repair shall be uniquely labelled. Overlapping repair areas and discontinuous portions of a single-repair shall be labelled so that they are readily identified with their single-repair.

Prior to the repair, the Contractor shall take slab samples or cores for testing of mix properties or compaction or both in the unrepaired area within 1 m of the limits of each end of the repair area. The Contractor shall not be permitted to take additional samples or cores beyond these locations until after QA or referee testing demonstrates that the remaining Material in the sublot proposed for repair is deemed to be rejectable. If the proposed repair limit coincides with the beginning of a sublot that is being left unrepaired, samples are not required at this location. Sufficient material shall be obtained for testing by the Owner's QA laboratory and for possible referee testing.

Testing shall demonstrate that the remaining Material in the sublot proposed for repair is not rejectable. To determine if the mix is rejectable, the mix properties and compaction shall comply with the basis of acceptance of lots with one or two sublots. If the Material is deemed to be rejectable, the proposed limit of the repair shall be extended by a minimum of 25 m, and the sampling and testing repeated. The repair area selected by the Contractor shall incorporate the location used for obtaining samples that shall be used to confirm that the remaining mix is not rejectable. If the contractor's repair proposal results in the removal of

at least half the sublot tonnage, the Contract Administrator may waive testing demonstrating the suitability of the remainder of that sublot.

The unrepaired sublots combined with the unrepaired areas of any repaired sublots shall comprise one lot and shall be assessed on the basis of the loose mix or core samples or both representing the unrepaired sublots. If there are only one or two sublots in a lot that are not repaired, the Contract Administrator shall include those sublots as part of the previous or next lot.

The mix used for the repair shall comprise a separate lot or the Contract Administrator in conjunction with the Contractor may decide to include it as part of the current lot being produced. The repaired area shall be tested for all criteria.

The two reconfigured lots shall be accepted at the full Contract price, subjected to a payment adjustment according to the Payment Adjustment for Mix Properties and Compaction clause, or rejected.

313.08.02.03 Repairs for Surface Tolerance

All areas not meeting the surface tolerance requirements shall be repaired by diamond grinding to a maximum of 5 mm or removed and replaced. Slurry produced from diamond grinding shall be removed from the site by the Contractor and managed as specified in the Contract Documents.

313.08.02.04 Repairs for Segregation

Repairs for segregation shall meet the requirements of the General Repairs clause. In binder courses, localized repairs for mid-lane segregation less than 300 mm in width are permitted.

313.08.02.05 Repairs for Thickness

The Contractor shall not be permitted to make any repairs solely to correct for excess lift thickness.

The minimum length of a repair is the entire length of the sublot being repaired.

Acceptance for lift thickness of the repaired sublot shall be based on the individual sublot lift thickness measurement and the lot thickness payment adjustment shall be calculated based on the re-evaluated sublot measurement.

313.09 MEASUREMENT FOR PAYMENT

313.09.01 Actual Measurement

313.09.01.01

SMA 9.5
SMA 9.5 - ... mm Lift Thickness
SMA 12.5
SMA 12.5 - ... mm Lift Thickness
SMA 19.0
SMA 19.0 - ... mm Lift Thickness
Superpave 4.75
Superpave 9.5
Superpave 9.5 - ... mm Lift Thickness
Superpave 12.5
Superpave 12.5 - ... mm Lift Thickness

Superpave 12.5 - Warm Mix
Superpave 12.5 - Warm Mix - ... mm Lift Thickness
Superpave 12.5FC 1
Superpave 12.5FC 1 - ... mm Lift Thickness
Superpave 12.5FC 1 - Warm Mix
Superpave 12.5FC 1 - Warm Mix - ... mm Lift Thickness
Superpave 12.5FC 2
Superpave 12.5FC 2 - ... mm Lift Thickness
Superpave 12.5FC 2 - Warm Mix
Superpave 12.5FC 2 - Warm Mix - ... mm Lift Thickness
Superpave 19.0
Superpave 19.0 - ... mm Lift Thickness
Superpave 19.0 - Warm Mix
Superpave 19.0 - Warm Mix - ... mm Lift Thickness
Superpave 25.0
Superpave 25.0 - ... mm Lift Thickness
Superpave 25.0 - Warm Mix
Superpave 25.0 - Warm Mix - ... mm Lift Thickness
Superpave 37.5
Hot Mix Asphalt Miscellaneous

313.09.01.01.01 By Area

Measurement of HMA by area shall be the horizontal area in square metres in place.

The quantities of HMA used for temporary ramping shall not be measured for payment. The removal of HMA used for temporary ramping shall not be measured for payment.

313.09.01.01.02 Tonne to Square Metre Conversion

When the unit of measure for a HMA tender item is square metres, and the Contract Documents refer to a quantity of mix for that tender item in tonnes and the Contract Documents do not already modify the quantity to relate to square metres, the Contract Administrator shall determine the theoretical HMA quantity in square metres (Q_A) that shall replace the non-payment tonnage quantity (Q_t) references as follows:

$$Q_A = Q_t / [0.975 \times BRD_{MD} \times (T_D/1000)] \quad \text{(Formula 1)}$$

Where:

BRD_{MD} = the bulk relative density in t/m^3, provided in the HMA design submitted for mix, the Q_A is calculated for
T_D = the design thickness, in millimetres, of the mix
Q_t = non-payment tonnage quantity referred to elsewhere in the Contract Documents for the mix under the measurement by square metre item

313.09.01.01.03 By Mass

Measurement of HMA by mass shall be in tonnes according to the requirements of the Contract Documents.

The quantities of HMA used for temporary ramping shall not be measured for payment. The removal of HMA used for temporary ramping shall not be measured for payment.

313.09.01.02 Hot Mix Asphalt Miscellaneous

Measurement of HMA Miscellaneous shall be by area in square metres, regardless of the number of lifts placed.

313.09.02 Plan Quantity Measurement

When measurement is by Plan Quantity, such measurement is based on the units shown in the clauses under Actual Measurement. The Plan Quantity shall not be adjusted due to any of the exceptions specified in the Lift Thickness clause under the Sampling clause.

313.10 BASIS OF PAYMENT

313.10.01 Hot Mix

313.10.01.01

SMA 9.5 - Item
SMA 9.5 - ... mm Lift Thickness - Item
SMA 12.5 - Item
SMA 12.5 - ... mm Lift Thickness - Item
SMA 19.0 - Item
SMA 19.0 - ... mm Lift Thickness - Item
Superpave 4.75 - Item
Superpave 9.5 - Item
Superpave 9.5 - ... mm Lift Thickness - Item
Superpave 12.5 - Item
Superpave 12.5 - ... mm Lift Thickness - Item
Superpave 12.5 - Warm Mix - Item
Superpave 12.5 - Warm Mix - ... mm Lift Thickness - Item
Superpave 12.5FC 1 - Item
Superpave 12.5FC 1 - ... mm Lift Thickness - Item
Superpave 12.5FC 1 - Warm Mix - Item
Superpave 12.5FC 1 - Warm Mix - ... mm Lift Thickness - Item
Superpave 12.5FC 2 - Item
Superpave 12.5FC 2 - ... mm Lift Thickness - Item
Superpave 12.5FC 2 - Warm Mix - Item
Superpave 12.5FC 2 - Warm Mix - ... mm Lift Thickness - Item
Superpave 19.0 - Item
Superpave 19.0 - ... mm Lift Thickness - Item
Superpave 19.0 - Warm Mix - Item
Superpave 19.0 - Warm Mix - ... mm Lift Thickness - Item
Superpave 25.0 - Item
Superpave 25.0 - ... mm Lift Thickness - Item
Superpave 25.0 - Warm Mix - Item
Superpave 25.0 - Warm Mix - ... mm Lift Thickness - Item
Superpave 37.5 - Item
Hot Mix Asphalt Miscellaneous - Item

Payment at the Contract price for the above tender items shall include full compensation for all labour, Equipment, and Materials required to do the work (including the HMA quantities used for temporary ramping), the removal of HMA used for temporary ramping, and the applicable payment adjustments.

When repairing HMA, the Contractor shall be responsible for and shall carry out all associated work and replace or restore all associated damage and removals at no cost to the Owner.

When the Contract Administrator instructs the Contractor to cease paving due to continued medium or severe segregation regardless of cause, the Owner shall not be held responsible for any additional costs that the Contractor may incur.

The preparation and correction of existing surfaces and pavement beneath surface courses carried out in order to meet the requirements of the Contract Documents, including milling, padding, and diamond grinding, shall be at no cost to the Owner.

313.10.01.02 Payment Adjustment for Mix Properties and Compaction

For all mixes, when the Contractor is not required to or does not elect to repair a lot, the payment adjustment for that lot due to mix properties and compaction requirements shall be:

PA_{MC} = lot quantity x price x [PF_{MC} - 1.000] (Formula 2)

Where:

PA_{MC} = payment adjustment for mix properties and compaction

lot quantity = the quantity of the mix in the lot. For SMA 19.0, SMA 12.5, SMA 9.5, Superpave 12.5FC 1, and Superpave 12.5FC 2 items measured by tonnage, the lot quantity is the quantity of the mix in the lot multiplied by the applicable mass multiplier factor (MF) in the Payment Adjustment for Aggregate Density clause.

price = the Contract price of the hot mix tender item

PF_{MC} = payment factor for mix properties and compaction

For all mixes, when the PF_{MC} is:

a) Less than 1.000, there shall be a reduction in payment, and
b) Equal to 1.000 there shall be no adjustment.

313.10.01.02.01 Calculations

313.10.01.02.01.01 General

The PF_{MC} shall be based on the individual payment factors obtained from Table 6, based on PWL, determined for gradation, AC content, voids, and compaction using LS-101, Table 5, and the formulae in the Payment Factor for Gradation clause, the Payment Factor for Combined Gradation and Asphalt Cement Content clause, the Payment Factor for Voids clause, the Payment Factor for Combined Mix Properties clause, and the Payment Factor for Combined Mix Properties and Compaction clause. Rounding-off procedures for all calculations shall follow LS-100.

When there is no sampling or testing specified in the Contract Documents for an attribute or when the requirement for sampling or testing for an attribute is waived by the Owner, the payment factor for that attribute shall be equal to the payment factor it is added to in Formulae 5, 10, 11 or 12.

313.10.01.02.01.02 Payment Factor for Gradation

The payment factor for gradation shall be calculated using the following formulae:

For Superpave 37.5, Superpave 25.0, Superpave 19.0, Superpave 12.5, Superpave 12.5FC 1, Superpave 12.5FC 2, SMA 19.0, and SMA12.5:

$PF_G = (PF_{DLS} + PF_{4.75} + PF_{75}) / 3$ (Formula 3)

For Superpave 9.5, Superpave 4.75, and SMA 9.5:

$PF_G = (PF_{4.75} + PF_{75}) / 2$ (Formula 4)

Where:
PF_G = payment factor for gradation
PF_{DLS} = payment factor for designated large sieve
$PF_{4.75}$ = payment factor for the 4.75 mm sieve
PF_{75} = payment factor for the 75 µm sieve

313.10.01.02.01.03 Payment Factor for Combined Gradation and Asphalt Cement Content

The payment factor for combined gradation and AC content shall be calculated using the following formula:

$PF_{GAC} = (PF_G + PF_{AC}) / 2$ (Formula 5)

Where:
PF_{AC} = payment factor for AC content
PF_{GAC} = payment factor for combined gradation and AC content

313.10.01.02.01.04 Payment Factor for Voids

For Superpave mixes, if the lot mean VMA is not more than 0.5 per cent below the minimum VMA as specified in the Contract Documents for mix design purposes, the payment factor for VMA is 1.000. For lot mean VMA results more than 0.5 per cent lower than the minimum specified for mix design purposes, a payment factor for the subject lot shall be calculated in accordance with the following:

If $(VMA_{min} - VMA_{mean}) \geq 2.5$, then $PF_{VMA} = 0.0$ (Formula 6)
If $(VMA_{min} - VMA_{mean}) < 2.5$ then, $PF_{VMA} = 0.8000 - 0.4 \times (VMA_{min} - 0.5 - VMA_{mean})$ (Formula 7)

Where:
PF_{VMA} = payment factor for VMA
VMA_{mean} = lot mean VMA
VMA_{min} = minimum VMA specified for mix design

For Superpave mixes, the payment factor for VMA shall be compared to the payment factor for air voids and the lesser of the two is the payment factor for voids (PF_{VOIDS}).

For SMA mixes, if the lot mean VMA is not more than 1.0 per cent below the minimum VMA as specified in the Contract Documents for mix design purposes, the payment factor for VMA is 1.000. For lot mean VMA results more than 1.0 per cent lower than the minimum specified for mix design purposes, a payment factor for the subject lot shall be calculated in accordance with the following:

If (VMA_{min} - VMA_{mean}) ≥ 3.0, then PF_{VMA} = 0.0 (Formula 8)
If (VMA_{min} - VMA_{mean}) < 3.0 then, PF_{VMA} = 0.8000 - 0.4 x (VMA_{min} - 1.0 - VMA_{mean}) (Formula 9)

Where:
PF_{VMA} = payment factor for VMA
VMA_{mean} = lot mean VMA
VMA_{min} = minimum VMA specified for mix design

For SMA mixes, the payment factor for VMA shall be compared to the payment factor for air voids and the lesser of the two is the payment factor for voids (PF_{VOIDS}).

313.10.01.02.01.05 Payment Factor for Combined Mix Properties

The payment factor for combined mix properties shall be calculated using the following formula:

$PF_M = (PF_{GAC} + PF_{VOIDS}) / 2$ (Formula 10)

Where:
PF_M = payment factor for combined mix properties

313.10.01.02.01.06 Payment Factor for Combined Mix Properties and Compaction

The payment factor for combined mix properties and compaction shall be calculated using Formula 11.

$PF_{MC} = (PF_C + PF_M) / 2$ (Formula 11)

Where:
PF_C = payment factor for compaction

The PF_{MC} shall be rounded and reported to four decimal places.

When the Contract Administrator decides that the unrepaired area of an original lot that has been partially repaired shall not be resampled, the PF_{MC} for the unrepaired area shall be 1.000.

313.10.01.02.01.07 Small Quantity Lots

For any lot comprised of one or two sublots, each sublot shall be assigned a PF_{MC} of 1.000 if the sublot is not rejectable. If the sublot is determined to be rejectable, it shall be administered as described in the Repairs for Mix Properties and Compaction clause. When the Contract Administrator has determined that a rejectable sublot may remain in the work without repair, the lot shall be subjected to a payment adjustment reflecting the extent of the non-conformance as determined by the Contract Administrator.

313.10.01.03 Payment Adjustment for Surface Smoothness

Payment adjustment for surface smoothness shall be as specified in the Contract Documents.

313.10.01.04 Payment Adjustment for Segregated HMA

For all surface courses, where payment reduction for segregation is allowed in lieu of repairs, the payment reduction shall be calculated as follows:

a) $2,000 once for each applicable surface course tender item,
b) An additional payment reduction of $2.50/m for mid-lane segregation, and
c) An additional payment reduction of $5.00/m² for other segregation. The area of repair shall be computed by multiplying the full lane width by the length of the repair and rounded to the next whole square metre.

313.10.01.05 Payment Adjustment for Aggregate Density

For Superpave 12.5FC 1, Superpave 12.5FC 2, SMA 19.0, SMA 12.5, and SMA 9.5 items measured in tonnes, the tender quantity is based on reference densities according to Table 10. A payment adjustment for aggregate density for each lot for these tender items shall be calculated by the following formulae:

$MF = D_R/(BRD_{mix})$ (Formula 12)
$PA_{AD} = M_{mix}$ x Contract Price x [MF - 1.000] (Formula 13)

Where:
D_R = the reference density in t/m³, as specified in Table 10
BRD_{mix} = the lot average bulk relative density in t/m³, calculated from values obtained in the testing of bulk samples obtained during production. The values shall be the same as those used in calculating the final air voids payment factor for the lot.
PA_{AD} = payment adjustment for aggregate density
M_{mix} = the weighed mass of the mix in the lot incorporated into the work
MF = the mass multiplier factor calculated to 3 decimal places
Contract Price = the Contract price of the tender item for the mix

For all mixes, when the mass multiplier factor is:

a) Less than 1.000 there shall be a reduction in payment,
b) Equal to 1.000 there shall be no adjustment, and
c) Greater than 1.000 there shall be an increase in payment for the lot.

There shall be no payment adjustment for aggregate density for HMA items measured by square metres.

313.10.01.06 Payment Adjustment for Asphalt Cement Content and Changes in the Price Index

313.10.01.06.01 Hot Mix Asphalt Quantity Calculation

The quantity of HMA for use in the calculations (T_{mix}) shall be the tonnage of HMA accepted into the work.

When the unit of measure is square metres, T_{mix} shall be determined using the theoretical tonnage. The theoretical tonnage shall be calculated by the Contract Administrator as follows and rounded to one decimal according to LS-100:

$T_{mix} = [0.975 \times BRD_{mix} \times (T_D/1000) \times A_{mix}]$ (Formula 14)

Where:
BRD_{mix} = the lot average bulk relative density in t/m³, calculated from values obtained in the testing of bulk samples obtained during production of the first complete lot of at least 3 sublots of HMA placed in the work. The values shall be the same as those used in calculating the final payment factor for air voids for the lot.
T_D = the design thickness, in millimetres, of the HMA

A_{mix} = area of hot mix placed in square metres

313.10.01.06.02 Payment Adjustment for Asphalt Cement Content

The payment adjustment for AC content shall be calculated using the following formula:

$PA_{AC} = T_{mix} \times [Price_{AC} \times (AC_{ERS} - AC_{BID})/100]$ (Formula 15)

Where:

PA_{AC} = payment adjustment for asphalt cement content

T_{mix} = the quantity of the HMA accepted into the lot according to the Hot Mix Asphalt Quantity Calculation clause

$Price_{AC}$ = the purchase price per tonne of the AC used in the mix according to the invoice submitted as per the Submission Requirements subsection

AC_{ERS} = the average percentage by mass of AC in the lot

AC_{BID} = the percentage by mass of AC specified for bidding purposes elsewhere in the Contract Documents

For progress payment purposes, payment adjustments are made on the monthly progress payment certificate for the months in which hot mix paving occurs.

313.10.01.06.03 Payment Adjustment for Changes in the Asphalt Cement Price Index

A payment adjustment is applied based on changes to the Ministry's PGAC price index unless the Contractor opts out by notifying the Ministry in writing within 5 Business Days of receiving permission to start work. Once the Contractor has opted out of payment adjustments based on the price index, the Contractor shall not be permitted to opt back in. The price index is published monthly in the Contract Bulletin. The price index is used to calculate the amount of the payment adjustment per tonne of new AC accepted into the Work.

The price index is based on the price, excluding taxes, FOB the depots in the Toronto area, of AC grade PG 58-28 or equivalent. One index is used to establish and calculate the payment adjustment for all grades.

A payment adjustment per tonne of new AC is established for each month in which paving occurs when the price index for the month differs by more than 5% from the price index for the month prior to Tender Opening. When the price index differential is less than 5%, there is no payment adjustment established for that month. Payment adjustments due to changes in the price index are independent of any other payment adjustments made to the hot mix tender items.

The payment adjustment for the month is calculated from the formulae in Table 11.

The payment adjustment per tonne applies to the quantity of new AC in the HMA accepted into the Work during the month for which it is established. The quantity of new AC includes all grades of AC supplied by the Contractor with and without polymer modifiers.

For each month in which a payment adjustment has been established, the quantity is calculated using the HMA quantity accepted into the Work and its corresponding AC content as required by the JMF except for mixes which contain reclaimed asphalt pavement.

For mixes which contain reclaimed asphalt pavement the percentage of new AC is determined from the difference between the AC content required by the JMF and the AC content of the reclaimed asphalt pavement incorporated into the HMA, as calculated by the Contract Administrator.

For mixes containing an AST-AC, the percentage of AST-AC is deducted from the percentage of new AC. No other deductions are made for any other additives.

For progress payment purposes, payment adjustments are made on the monthly progress payment certificate for the months in which HMA paving occurs.

313.10.01.07 Payment Adjustment for Lift Thickness

The payment adjustment for lift thickness shall apply to all placed and compacted HMA measured by square metre items using the horizontal area of the surface course in the lot or overlying the lot. When the thickness payment adjustment is determined using a T_L calculated using a combination of tender items of the same mix type, the thickness payment adjustment shall apply to each binder course tender item included in T_L. The thickness payment adjustment shall be a reduction in payment. The formulae provided in Table 9 shall be used to calculate the thickness payment adjustment.

When a rejectable sublot remains in the work without repair, the sublot shall be subject to a payment adjustment. The payment adjustment shall be a reduction in payment. The sublot thickness payment adjustment shall be:

$PA_T = 0.5 \times (\text{sublot quantity} \times \text{Contract price})$ (Formula 16)

Where:

PA_T	=	payment adjustment for lift thickness
sublot quantity	=	the area of the sublot
Contract price	=	the Contract price of the tender item for the mix

313.10.02 Anti-Stripping Treatments

When aggregates have been processed from commercial sources for use in hot mix surface course paving, payment at the Contract price for the applicable HMA tender item shall be full compensation for all labour, Equipment, and Materials required to test, supply, and incorporate, the AST.

When aggregates have been processed from MTO/Crown, Wayside, and/or Letter of Approval quarries for use in hot mix surface course paving and the use of an AST was required, payment at the Contract price for the applicable HMA tender item shall be full compensation for all Labour, Equipment, and Materials required to test, supply, and incorporate the AST. When hydrated lime is used as the AST, payment includes full compensation for the amount up to 1.0% by mass of total dry aggregate. When an alternate AST-AGG is used as the AST, payment includes full compensation for the amount up to the listed minimum dosage from the DSM listing for Anti-Stripping Treatments by mass of aggregate. When an AST-AC is used as the AST, payment includes full compensation for the amount up to the listed minimum dosage from the DSM listing for Anti-Stripping Treatments by mass of AC. Payment for additional AST above the listed minimum dosages shall be administered as a Change in the Work.

313.10.03 Hot Mix Asphalt Miscellaneous

Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment, and Materials to do the work except that the HMA Material shall be paid for under the appropriate HMA tender item.

313.10.04 Tack Coat

Where there is no separate tender item for tack coat, payment at the Contract price for the applicable HMA tender item to be placed on the tack coat shall be full compensation for all labour, Equipment, and Materials for the tack coating.

313.10.05 Repair

No payment shall be made for the:

a) Quantity of HMA that is removed and replaced, overlaid, or otherwise repaired; or
b) For additional shouldering, traffic control, and other work such as zone painting or bridge deck waterproofing,

when:

a) In lieu of a reduction in payment, the Contractor repairs the lot, sublot, or visually defective HMA; or
b) The Contract Administrator has determined that a rejectable lot or sublot requires repair.

The Contractor shall be charged for all additional testing resulting from a repair to a lot at the rates established by the Owner for the year in which the testing was carried out.

313.10.06 Referee Testing and Segregation Challenge

313.10.06.01 Mix Properties and Compaction

If the referee test results show that the referee payment factor for compaction or mix properties is higher than the payment factor for compaction or mix properties based on the original QA test results by more than 0.025 and the referee results show that the lot is not rejectable, the Owner shall bear the cost of the referee testing for that attribute.

If the referee test results show that the lot is rejectable or the referee test results show that the referee payment factor for compaction or mix properties is not higher than the payment factor for compaction or mix properties based on the original QA test results by more than 0.025, the Contractor shall be charged the cost of the referee testing.

For density testing of aggregates, if referee testing is invoked, the cost of referee testing is assigned as follows:

a) If the combined aggregate density as determined by the referee laboratory is within 0.010 of the result determined by the QA laboratory, the cost of referee testing shall be borne by the Contractor.

b) If the referee result is between 0.011 and 0.020 of the QA result, the cost of referee testing shall be shared equally between the Contractor and Owner.

c) If the difference in results is equal to or in excess of 0.020, the cost of referee testing shall be borne by the Owner.

When there is an outlier in the referee test results, the Contractor shall be charged 50% of the total cost for referee testing of all sublots in the original lot.

The cost of the referee testing shall be based on the referee testing rates as specified elsewhere in the Contract Documents.

313.10.06.02 Lift Thickness

If the referee test result is at least 3 mm greater than the original QA test result, the Owner shall bear the cost of the thickness measurement referee testing. If the referee test result is not 3.0 mm or greater than the original QA test result for the sublot retested, the Contractor shall be charged the cost of the referee testing.

313.10.06.03 Segregation Challenge

If, under a challenge, as described in the Challenging Severity of Segregation clause, the Contractor is successful, the Owner shall pay for the cost of the traffic control, if the traffic control was not necessary for any other reason. The Owner shall not be responsible for any other costs associated with the second visual assessment, including the cost of delays.

If the Contractor is not successful, the Contractor shall be responsible for all costs associated with the second visual assessment, including the cost of traffic control and delays.

TABLE 1
Maximum Field Adjustments for JMF

JMF Properties	**Maximum Field Adjustment** **%** (Notes 1 and 2)
AC content (all mixes except SMA mixes)	± 0.2
AC content (SMA mixes only)	± 0.4
Per cent RAP	- 5.0
Per cent passing 26.5 mm, 25.0 mm, 19.0 mm, and 16.0 mm sieves	± 5.0
Per cent passing 13.2 mm, 12.5 mm, and 9.5 mm sieves	± 4.0
Per cent passing 4.75 mm, 2.36 mm, and 1.18 mm sieves	± 3.0
Per cent passing 300, and 150 µm sieves	No limits
Per cent passing 75 µm sieve (all mixes except SMA mixes)	± 1.0
Per cent passing 75 µm sieve (SMA mixes only)	± 2.0

Notes:
1. The maximum field adjustment is applied against the original JMF submitted with the mix design.
2. The adjusted JMF shall meet the requirements of the Contract, including AC content and gradation on all sieves.

TABLE 2
Sample Size and Frequency

Material	Sample Size	Frequency of Sampling
SMA mixes, Superpave 9.5, 12.5, 12.5FC 1, 12.5FC 2, and 19.0 (Note 1)	20 to 30 kg or 30 to 40 kg (Note 2)	Every sublot
Superpave 25.0 and 37.5 (Note 1)	25 to 35 kg or 35 to 45 kg (Note 2)	Every sublot
HMA Compaction Cores	150 to 200 mm diameter	Every mix properties sublot
HMA Thickness Cores	50 mm diameter	Every thickness sublot
HMA Aggregates for Density Testing	Coarse aggregate 10 kg Fine aggregate, RAP 5 kg	Every 20,000 tonnes or when new samples requested
SMA mixes for draindown testing	3 to 5 kg	Once per lot
WMA for moisture sensitivity testing (Note 1)	50 kg	3 sublots per mix type

Notes:
1. Each material sample receptacle shall have a maximum mass of 30 kg. For ease of handling, especially when the larger sample size is required, splitting of material at the paving site is permitted such that a sample is contained in a maximum of two receptacles whose total mass does not exceed the maximum specified above. Once delivered to testing laboratories, combining of the material from the two receptacles is only mandatory if a single receptacle contains insufficient material to carry out the full suite of tests required.
2. The larger sample size shall be applicable when samples are designated for testing to the maximum number of gyrations. The frequency of the larger samples shall be one per lot, as designated by the Contract Administrator.

TABLE 3
Breakdown of the Tender Item Quantity into Lots for Mix Properties and Compaction

Number of Tonnes	Quantity of Square Metres		Number of Lots
	40 to 50 mm Lift Thickness	60 to 80 mm Lift Thickness	
< 5,000	40,000	25,000	1
5,000 to 10,000	40,000 to 80,000	25,000 to 50,000	2
10,000 to 12,000	80,000 to 100,000	50,000 to 60,000	2 or 3 (Note 1)
> 12,000	> 100,000	> 60,000	3 +

Notes:
1. As determined by the Contract Administrator in consultation with the Contractor.

TABLE 4
Testing Requirements

Properties and Attributes	Testing Method	Calculations, Values, and Results Required
Mix Properties		
AC Content and Aggregate Gradation for mix samples	LS-291, LS-282, or LS-292	% AC, % passing DLS sieve, 4.75 mm sieve, 75 μm sieve
Volumetric Properties		
Laboratory Compaction to: i. Design number of gyrations (N_{des}) ii. Maximum number of gyrations (N_{max}) Maximum Theoretical Specific Gravity (G_{mm})	AASHTO T 166 using the same laboratory compaction protocol as was used in mix design. (Note 1) AASHTO T 312, LS-264 Superpave Mixes only: in addition to compacting all samples to the design number of gyrations, one sample from each lot of HMA shall be compacted to the maximum number of gyrations. Bulk Relative Density for mix samples, BRD_m	BRD_m BRD at N_{des} BRD at N_{ini} BRD at N_{max} G_{mm} $\%G_{mm}$ @ N_{ini} $\%G_{mm}$ @ N_{des} $\%G_{mm}$ @ N_{max}
Voids in Mineral Aggregate (VMA)	LS-604, LS-605, LS-266 (Note 2)	VMA
Voids Filled with Asphalt (VFA)	AASHTO R 35	VFA
Air voids for mix (V_a)	LS-265	V_a
Dust to Binder Ratio (D_P) for Superpave mixes	AASHTO R 35	D_P
Compaction		
Compaction and Thickness of Cores	BRD_c = Bulk Relative Density for core samples, LS-262 (Note 1) $MRD_m = G_{mm}$ (Maximum Relative Density for loose mix samples, LS-264) % Compaction = (100 x BRD_c/MRD_m)	Thickness of Core % Compaction
Lift Thickness		
Thickness of Cores	LS-294	Lift Thickness
SMA Mix Properties		
Draindown for mix	AASHTO T 305	% Draindown
WMA Mix Properties		
WMA Moisture Sensitivity	AASHTO T 283 including Table 1	TSR Visual Stripping Rating

Notes:
1. For all gyratory-compacted specimens and cores of SMA mixes and Superpave mixes, if the per cent water absorbed by the specimen is found to exceed 2% by volume, as described in AASHTO T 166, then the bulk relative density shall be determined using either LS-306 or ASTM D 6752
2. Calculate to two decimal places for each sublot using the BRD_m for the sublot, and the combined aggregate densities of the blended coarse and blended fine aggregate, as specified in the Contract Documents, to provide a lot mean VMA to one decimal place.
3. The rounding-off procedure, for all values, shall be according to LS-100.

TABLE 5
Specification Limits for HMA Acceptance Attributes

Attributes	HMA Type	Lower Limit (LL) %	Upper Limit (UL) %
AC Content	All HMA types	JMF - 0.40 (Note 1)	JMF + 0.50
Designated Large Sieve	All HMA types	JMF - 5.0	JMF + 5.0
4.75 mm Sieve	All HMA types	JMF - 5.0	JMF + 5.0
75 µm Sieve	All HMA types	JMF - 2.0	JMF + 2.0
Air Voids	All HMA types	2.5	5.5
Pavement Compaction	Superpave 37.5, 25.0, 19.0,12.5, 9.5 and 12.5FC 1	92.0	97.0
	Superpave 12.5FC 2	92.0	98.0
	SMA	93.0	98.0

Notes:
1. When a JMF change results in a decrease in the design AC content, the lower limit (LL) shall be set at the revised JMF minus 0.3% for all lots to which the JMF change applies.

TABLE 6
Payment Factors Based on Per Cent Within Limits

PWL	Designated Large Sieve	4.75 mm Sieve	75 µm Sieve	AC Content	Air Voids	Compaction
100	1.000	1.000	1.000	1.000	1.000	1.000
99	1.000	1.000	1.000	1.000	1.000	1.000
98	1.000	1.000	1.000	1.000	1.000	1.000
97	1.000	1.000	1.000	1.000	1.000	1.000
96	1.000	1.000	1.000	1.000	1.000	1.000
95	1.000	1.000	1.000	1.000	1.000	1.000
94	1.000	1.000	1.000	1.000	1.000	1.000
93	1.000	1.000	1.000	1.000	1.000	1.000
92	1.000	1.000	1.000	1.000	1.000	1.000
91	1.000	1.000	1.000	1.000	1.000	1.000
90	1.000	1.000	1.000	1.000	1.000	1.000
89	1.000	1.000	1.000	1.000	1.000	0.991
88	1.000	1.000	1.000	1.000	1.000	0.983
87	1.000	1.000	1.000	1.000	1.000	0.974
86	1.000	1.000	1.000	1.000	1.000	0.965
85	1.000	1.000	1.000	1.000	1.000	0.956
84	0.997	0.997	0.997	0.992	1.000	0.948
83	0.994	0.994	0.994	0.984	1.000	0.939
82	0.992	0.992	0.992	0.976	1.000	0.930
81	0.989	0.989	0.989	0.968	1.000	0.921

PWL	Designated Large Sieve	4.75 mm Sieve	75 µm Sieve	AC Content	Air Voids	Compaction
80	0.986	0.986	0.986	0.960	1.000	0.913
79	0.983	0.983	0.983	0.952	0.999	0.904
78	0.980	0.980	0.980	0.944	0.998	0.895
77	0.977	0.977	0.977	0.936	0.995	0.886
76	0.974	0.974	0.974	0.928	0.991	0.878
75	0.972	0.972	0.972	0.920	0.986	0.869
74	0.969	0.969	0.969	0.912	0.980	0.860
73	0.966	0.966	0.966	0.904	0.973	0.851
72	0.963	0.963	0.963	0.896	0.964	0.843
71	0.960	0.960	0.960	0.888	0.955	0.834
70	0.957	0.957	0.957	0.880	0.944	0.825
69	0.954	0.954	0.954	0.872	0.933	0.816
68	0.951	0.951	0.951	0.864	0.920	0.808
67	0.949	0.949	0.949	0.856	0.906	0.799
66	0.946	0.946	0.946	0.848	0.891	0.790
65	0.943	0.943	0.943	0.840	0.875	0.781
64	0.940	0.940	0.940	0.832	0.858	0.773
63	0.937	0.937	0.937	0.824	0.839	0.764
62	0.934	0.934	0.934	0.816	0.820	0.755
61	0.931	0.931	0.931	0.808	0.799	0.746
60	0.929	0.929	0.929	0.800	0.778	0.738
59	0.926	0.926	0.926	0.790	0.755	0.729
58	0.923	0.923	0.923	0.780	0.731	0.720
57	0.920	0.920	0.920	0.770	0.706	0.711
56	0.917	0.917	0.917	0.760	0.680	0.703
55	0.914	0.914	0.914	0.750	0.653	0.694
54	0.911	0.911	0.911	0.740	0.624	0.685
53	0.909	0.909	0.909	0.730	0.595	0.676
52	0.906	0.906	0.906	0.720	0.564	0.668
51	0.903	0.903	0.903	0.710	0.533	0.659
50	0.900	0.900	0.900	0.700	0.500	0.650
49	0.882	0.882	0.882	0.686	0.490	0.637
48	0.864	0.864	0.864	0.672	0.480	0.624
47	0.846	0.846	0.846	0.658	0.470	0.611
46	0.828	0.828	0.828	0.644	0.460	0.598
45	0.810	0.810	0.810	0.630	0.450	0.585
44	0.792	0.792	0.792	0.616	0.440	0.572
43	0.774	0.774	0.774	0.602	0.430	0.559
42	0.756	0.756	0.756	0.588	0.420	0.546
41	0.738	0.738	0.738	0.574	0.410	0.533
40	0.720	0.720	0.720	0.560	0.400	0.520

PWL	Designated Large Sieve	4.75 mm Sieve	75 µm Sieve	AC Content	Air Voids	Compaction
39	0.702	0.702	0.702	0.546	0.390	0.507
38	0.684	0.684	0.684	0.532	0.380	0.494
37	0.666	0.666	0.666	0.518	0.370	0.481
36	0.648	0.648	0.648	0.504	0.360	0.468
35	0.630	0.630	0.630	0.490	0.350	0.455
34	0.612	0.612	0.612	0.476	0.340	0.442
33	0.594	0.594	0.594	0.462	0.330	0.429
32	0.576	0.576	0.576	0.448	0.320	0.416
31	0.558	0.558	0.558	0.434	0.310	0.403
30	0.540	0.540	0.540	0.420	0.300	0.390
29	0.522	0.522	0.522	0.406	0.290	0.377
28	0.504	0.504	0.504	0.392	0.280	0.364
27	0.486	0.486	0.486	0.378	0.270	0.351
26	0.468	0.468	0.468	0.364	0.260	0.338
25	0.450	0.450	0.450	0.350	0.250	0.325
24	0.432	0.432	0.432	0.336	0.240	0.312
23	0.414	0.414	0.414	0.322	0.230	0.299
22	0.396	0.396	0.396	0.308	0.220	0.286
21	0.378	0.378	0.378	0.294	0.210	0.273
20	0.360	0.360	0.360	0.280	0.200	0.260
19	0.342	0.342	0.342	0.266	0.190	0.247
18	0.324	0.324	0.324	0.252	0.180	0.234
17	0.306	0.306	0.306	0.238	0.170	0.221
16	0.288	0.288	0.288	0.224	0.160	0.208
15	0.270	0.270	0.270	0.210	0.150	0.195
14	0.252	0.252	0.252	0.196	0.140	0.182
13	0.234	0.234	0.234	0.182	0.130	0.169
12	0.216	0.216	0.216	0.168	0.120	0.156
11	0.198	0.198	0.198	0.154	0.110	0.143
10	0.180	0.180	0.180	0.140	0.100	0.130
9	0.162	0.162	0.162	0.126	0.090	0.117
8	0.144	0.144	0.144	0.112	0.080	0.104
7	0.126	0.126	0.126	0.098	0.070	0.091
6	0.108	0.108	0.108	0.084	0.060	0.078
5	0.090	0.090	0.090	0.070	0.050	0.065
4	0.072	0.072	0.072	0.056	0.040	0.052
3	0.054	0.054	0.054	0.042	0.030	0.039
2	0.036	0.036	0.036	0.028	0.020	0.026
1	0.018	0.018	0.018	0.014	0.010	0.013
0	0.000	0.000	0.000	0.000	0.000	0.000

TABLE 7
Allowable Macrotexture Ratios for Various Mixes

Mix Type	Macrotexture Ratio (M_R)		
	Degree of Segregation		
	Slight	Medium	Severe
Superpave 12.5, 12.5FC 1, 12.5FC 2	< 1.6	1.6 to 2.2	> 2.2
Superpave 19.0	< 1.8	1.8 to 2.6	> 2.6
Superpave 25.0	< 2.0	2.0 to 3.5	> 3.5

TABLE 8
Minimum Sublot Lift Thickness

Mix Course	Design Lift Thickness (T_D) mm	Minimum Sublot Lift Thickness mm
All Courses	25 to 39	T_D - 7
	40 to 59	T_D - 10
Surface Course	60 and greater	T_D - 15
Binder Courses	60 and greater	0.70 x T_D

TABLE 9
Lot Thickness Payment Adjustment

Course	T_L	Thickness Payment Adjustment, PA_T
Surface Course (Note 1)	$T_L \geq [0.85 \times T_D]$	PA_T = lot quantity x price x {[1.000 - (T_L / T_D)] x 2.0}
Binder Course	$T_L \geq [0.95 \times T_D]$	PA_T = lot quantity x price x {[1.000 - (T_L /T_D)]}
	$[0.95 \times T_D] > T_L \geq [0.85 \times T_D]$	PA_T = lot quantity x price x {[1.000 - (T_L /T_D)] x 2.0}
	$T_L < [0.85 \times T_D]$	PA_T = lot quantity x price x {[1.000 - (T_L /T_D)] x 3.0}

Where:
T_L = lot mean, if lot mean is less than or equal to T_D (see definition), or
$T_L = T_D$, if lot mean is greater than T_D
lot quantity = the horizontal area of the upper most lift of hot mix in the lot (normally surface course)
price = the Contract price of the hot mix tender item

Notes:
1. A lot is rejectable when $T_L < [0.85 \times T_D]$. When the Contract Administrator has determined that a rejectable surface course lot may remain in the work without repair, the lot shall be subjected to a payment adjustment as determined by the Contract Administrator.

TABLE 10
Reference Densities, D_R

Region	Reference Densities, D_R tonnes/m³
West Region	2.530
Central Region Northeastern Region Northwestern Region	2.520
Eastern Region	2.390

TABLE 11
AC Price Adjustment

I_P	AC Price Adjustment, PA
$I_P > 1.05\ I_{TO}$	$PA = (I_P - 1.05\ I_{TO}) \times T_{AC}$
$I_P < 0.95\ I_{TO}$	$PA = (0.95\ I_{TO} - I_P) \times T_{AC}$

Note:
If $I_P > 1.05\ I_{TO}$ the Contractor receives compensation; however, if $I_P < 0.95\ I_{TO}$ the Owner receives a rebate.
Where:
PA = payment adjustment for new AC, in dollars
I_{TO} = PGAC price index for the month prior to Tender Opening
I_P = PGAC price index for the month in which paving occurs
T_{AC} = quantity of new AC in tonnes
T_{AC}, shall be calculated as follows:
$T_{AC} = [AC_{new} /100] \times T_{mix_mnth}$
Where:
AC_{new} = the percentage of new AC in the mix as required by the JMF.
T_{mix_mnth} = the tonnage of HMA, as calculated in the Hot Mix Quantity Calculation clause, accepted into the work during the month for which the payment adjustment was calculated.

USE OF AIR COOLED IRON BLAST FURNACE SLAG AS GRANULAR MATERIAL

Special Provision No. 110F10 September 2001

SCOPE

This special provision covers the requirements for the use of air cooled iron blast furnace slag as granular material in road construction.

DEFINITIONS

Slag: means air cooled iron blast furnace slag.

CONSTRUCTION

General Operational Constraints

For those applications permitted in this special provision, it is the Contractor's responsibility to notify the District Manager of the local District Office of the Ministry of the Environment (MOE), of the locations where slag will be utilized.

The Contractor shall prepare a contingency plan that specifically addresses management by the Contractor, during construction, of any odour and leachate which may be generated by the slag material. The plan shall include but not be limited to the following:

a. a strategy for containment, cleanup and disposal of leachate to ensure a quick and comprehensive response to any escape of leachate from the construction site;

b. a strategy for communicating with MOE and other regulatory authorities in the event of any escape of leachate;

c. a strategy to identify the project specific causes of leachate problems as well as a commitment to developing short and long term corrections; and

d. a strategy for dealing with public complaints about odour problems which may occur.

Restrictions On the Use of Slag

a. Slag is prohibited for any application below top of subgrade.

b. Slag may be applied above subgrade with the following exceptions:

Not Permitted

c. During construction, water shall not be directed, through means such as channelized flow or dewatering effluent, to areas where slag has been placed.

d. When placing slag, the Contractor shall ensure that the material is graded and placed in a manner which ensures free drainage and prevents ponding on, within or against the material.

SUBMISSION AND DESIGN REQUIREMENTS

Notification of Sites Intended to be Used for the Placement of Slag

Three weeks prior to receipt of the slag material at the job site, a completed Notification of Intended Placement of Slag Form, included in this special provision, shall be submitted to the attention of the District Manager of the appropriate local District Office of the Ministry of the Environment. The notification shall include a copy of this special provision and a copy of the contingency plan required by this special provision.

Three weeks prior to receipt of the slag material on the job site, copies of the completed Notification of Intended Placement of Slag Form and the Contractor's contingency plan for the use of slag material shall be supplied to the Contract Administrator, and to the Manager/Supervisor of the MTO Regional Environmental Office/Unit.

Notification of Intended Placement of Air Cooled Iron Blast Furnace Slag Form

Highway: _____ MTO Contract No. _____

Location of Contract: _____

Contractor: _____ Telephone: _____

Construction Administrator: _____

The following describes the Contractor's intended locations for placement of slag on the noted MTO Contract currently under construction. By signing this form the noted Contractor acknowledges to the Ministry of the Environment that all locations proposed to be used by the Contractor for the placement of slag meet the requirements of the special provision attached.

_____

1. Source of Slag

The material source is as follows:

Name and address of the commercial source;
_____
_____
_____
_____

2. Site Description

The site description includes the following:

An identification of the location of the work project including a map reference;
_____
_____
_____
_____
_____

3. Location for Placement of Slag

Attach descriptions (including station numbers) detailing the following:

a) use and location of the slag, including a detailed plan of the material placement site (and typical cross section if necessary); and

b) quantities/volume of material to be placed at the location specified.

Dated this _____ day of _____ 2___

_____
Contractor's Signature

_____
Name of Construction Company

AMENDMENT TO OPSS 1151, NOVEMBER 2016

Special Provision No. 111F06 October 2018

1151.03 DEFINITIONS

Section 1151.03 of OPSS 1151 is amended by deleting the definition of **RAP Content**.

Section 1151.03 of OPSS 1151 is further amended by the addition of the following definitions:

Binder Replacement means the asphalt cement from the RAP contributing to the total asphalt cement content in the mix, expressed as a percentage.

Roof Shingle Tabs (RST) means as defined in OPSS 313.

1151.04 DESIGN AND SUBMISSION REQUIREMENTS

1151.04.01 Design Requirements

1151.04.01.01 General

Clause 1151.04.01.01 of OPSS 1151 is deleted in its entirety and replaced with the following:

A laboratory that has current CCIL Type A certification, AMRL, or AMRL equivalent certification shall be used to conduct all mix designs and mix checks.

Superpave mixes shall be designed using the procedures specified in LS-309, with the exception of WMA mixes. WMA mixes shall be designed using the procedures specified in LS-318 at the anticipated WMA production temperature. In the mix design procedure, all references to RAP Content shall be deleted and replaced with % binder replacement.

Superpave materials, mix designs, and the JMF shall be according to the requirements specified in Tables 1, 2, 3 and 4 for the HMA mix type specified in the Contract Documents.

The use of RST is not permitted in the HMA.

SMA mixes shall be designed using the procedures specified in LS-311. SMA materials, mix designs, and the JMF shall be according to the requirements specified in Tables 1, 4, and 5 for the SMA mix type specified in the Contract Documents. Cellulose or mineral fibres shall be used as a stabilizing additive in dosage rates of 0.3% or 0.4%, respectively, by mass of the total mixture. Regardless of the type of fibre used, the manufacturer's recommendations for any product used shall be followed.

The composition of the HMA may be modified as permitted in Table 6.

The amount of RAP allowable by mass in a mix will be calculated by the Asphalt Binder Replacement method according to the following formula:

% Binder Replacement = [(% asphalt cement content of RAP x % RAP by mass of mix) / (% total asphalt cement content of mix)] x 100%

RAP as processed and ready for use in a HMA shall be tested using LS-282 or LS-292 to determine the average percentage asphalt cement and the average gradation for the extracted RAP aggregates.

Density testing of aggregates and RAP shall be conducted for the purpose of developing the mix design for each mix type in the Contract. Such testing shall be performed during production of each aggregate, RAP, or during stockpiling of the materials at the HMA plant.

In addition, if the composition of the mix is modified by including RAP, the high and low grade of PGAC required shall be lowered by 6 °C when:

% Binder Replacement > 20 %

The JMF selected for use shall produce HMA that meets all the requirements specified in the Contract Documents.

For HMA in this Contract, the mix properties, the compaction effort, and the aggregate properties specified in the Contract Documents, shall conform to the requirements for the traffic category specified in Table A. The use of a mix designed with a traffic category different than specified in Table A is not permitted.

The asphalt cement (AC) added to the hot mix types shall be performance graded asphalt cement, PGAC as specified in Table A. For bidding purposes only, the percentage by mass of asphalt cement, AC_{BID} contained in the various HMA mix types shall be as specified in Table A.

TABLE A
HMA Mix Design Criteria

HMA Type	**Location in Contract**	**Traffic Category**	**PGAC Grade**	**AC_{BID} %** (Note 1)
Superpave 12.5FC 1	Throughout	C	64-28	5.0
Superpave 19.0	Throughout	C	64-28	4.8
Note 1: For SMA Mix Types a minimum AC Content is specified in Table 5 based on combined aggregate bulk relative density.				

1151.04.02 Submission Requirements

1151.04.02.01 Mix Design

Clause 1151.04.02.01 of OPSS 1151 is amended by the addition of the following:

The % Binder Replacement shall be calculated and submitted with the mix design.

The asphalt film thickness (T_F) shall be calculated according to the procedure given in Appendix A enclosed with this specification and submitted with the mix design.

1151.05 MATERIALS

1151.05.02 Aggregates

1151.05.02.01 Reclaimed Asphalt Pavement and Roof Shingle Tabs

Clause 1151.05.02.01 of OPSS 1151 is deleted in its entirety and replaced with the following:

1151.05.02.01 Reclaimed Asphalt Pavement

The aggregate contained in the RAP, where permitted in a HMA, shall be according to the aggregate requirements of OPSS 1003 for the mix type specified in the Contract Documents.

RAP that is contaminated with deleterious material shall not be used and shall be removed from the work. RAP shall be stockpiled conforming to the stockpiling requirements for coarse aggregates according to OPSS 1001, except that when the material is stockpiled on a compacted granular pad, the top 75 mm of the pad shall be the coarse aggregate that is required for a new (virgin) mixture of the tendered hot mix item.

The use of RAP that is obtained from existing stockpiles that do not have a foundation conforming to the above paragraph shall be permitted provided that the bottom 0.3 m of the stockpile is not incorporated into the work.

Process control sampling and testing of the RAP shall be as specified in the Contract Documents.

Table 6 of OPSS 1151 is deleted in its entirety and replaced with the following:

TABLE 6
Maximum % Binder Replacement

Traffic Category (Note 1)	**Binder Course 150 mm or More Below Pavement Surface**	**Binder Course Within 150 mm of Pavement Surface**	**Surface Course**
A, B	40%	40%	0%
C, D	40%	20%	0%
E	40%	20%	0%
Note 1: Traffic category as specified in the Contract Documents.			

Table 8 of OPSS 1151 is deleted in its entirety and replaced with the following:

TABLE 8
Sample Quantities for Mix Design Monitoring

Material	**Quantity** (Note 1)
Asphalt Cement	4 litres evenly split between 2 containers
Aggregate	75 to 100 kg of each type
RAP	75 to 100 kg required when RAP contained in the mix
Fines material passing 75 μm sieve	5 to 10 kg when the mix is to be produced with a plant that returns fines to the mix
Mineral Filler	5 to 10 kg sample for SMA mixes
Any other material samples including anti-stripping agents and fibres to be used in HMA	Quantity large enough to allow for a complete mix design
Note 1: Each material sample receptacle shall have a maximum mass of 30 kg.	

Table 9 of OPSS 1151 is deleted in its entirety.

APPENDIX A
METHOD OF TEST FOR DETERMINING ASPHALT FILM THICKNESS (T_f)

The procedure for determining asphalt film thickness (T_F) was referenced from NCHRP Report 673, pages 57 to 60.

- The asphalt film thickness, T_F, is calculated using the following equation:

  $T_F = (1{,}000 \times VBE) / (S_s \times P_s \times G_{mb})$

  Where,
  T_F = Asphalt Film Thickness, µm;
  VBE = Effective asphalt cement content, % by total mix volume
  S_s = Aggregate specific surface, m^2/kg
  P_s = Total aggregate content, % by mix mass, $(100-P_b)$
  G_{mb} = Bulk specific gravity of the asphalt mix

- The aggregate specific surface, S_s, is calculated using the following equation:

  $S_s = [1 / (1{,}000 \times G_{sb})] \times [2.0 \times (P_{37.5} - P_{25}) + 2.8 \times (P_{25} - P_{19.5}) + 3.9 \times (P_{19.5} - P_{12.5}) + 5.5 \times (P_{12.5} - P_{9.5}) + 8.9 \times (P_{9.5} - P_{4.75}) + 17.9 \times (P_{4.75} - P_{2.36}) + 36.0 \times (P_{2.36} - P_{1.18}) + 71.3 \times (P_{1.18} - P_{0.60}) + 141 \times (P_{0.60} - P_{0.30}) + 283 \times (P_{0.30} - P_{0.15}) + 566 \times (P_{0.15} - P_{0.075}) + 1{,}600 \times (P_{0.075})]$

  Where,
  The P values represent the % of aggregate passing the designated sieve sizes in mm.

  For example,
  P_{25} = % of aggregate passing 25-mm sieve
  $P_{0.15}$ = % of aggregate passing 0.15-mm sieve
  Each successive pair of sieves are multiplied by a factor (2.0, 2.8, 3.9, etc.)

  G_{sb} = Average bulk specific gravity for the blended aggregate

  G_{sb} can be calculated using the following equation:

  $G_{sb} = [P_{S1/A} + P_{S2/A} + P_{S3/A} + ...] / [(P_{S1/A}/G_{sb1}) + (P_{S2/A}/G_{sb2}) + (P_{S3/A}/G_{sb3}) + \ldots]$

  Where,
  $P_{S1/A}$ = volume % of Aggregate 1 in aggregate blend
  $P_{S2/A}$ = volume % of Aggregate 2 in aggregate blend
  $P_{S3/A}$ = volume % of Aggregate 3 in aggregate blend
  G_{sb1} = bulk specific gravity for Aggregate 1
  G_{sb2} = bulk specific gravity for Aggregate 2
  G_{sb3} = bulk specific gravity for Aggregate 3

- The total aggregate content, P_s, is calculated using the following equation:

  $P_s = 100 - P_b$

Where,
P_b = Total asphalt cement content, % by mix mass

P_b can be calculated using the following equation:

$$P_b = 100 \times [M_b / (M_s + M_b)]$$

Where,
M_b = Mass of asphalt cement in specimen
M_s = Mass of aggregate in specimen

- Sequential steps to calculate the effective asphalt cement content, VBE, are detailed below:

1. Determine the total asphalt cement content by mass, P_b, using the equation outlined above.

2. Determine the total asphalt cement content by volume, VB, using the following equation:

$$VB = (P_b \times G_{mb}) / G_b$$

Where,
VB = Total asphalt cement content, % by total mix volume
P_b = Total asphalt cement content, % by mix mass
G_{mb} = Bulk specific gravity of the asphalt mix
G_b = Specific gravity of asphalt cement

3. Determine the absorbed asphalt cement content, VBA, using the following equation:

$$VBA = G_{mb} \times [(P_b / G_b) + (P_s / G_{sb}) - (100 / G_{mm})]$$

Where,
VBA = Absorbed asphalt cement content, % by total mix volume
G_{mb} = Bulk specific gravity of the asphalt mix
P_b = Total asphalt cement content, % by mix mass
G_b = Specific gravity of asphalt cement
P_s = Total aggregate content, % by mix mass, $(100-P_b)$
G_{sb} = Average bulk specific gravity for the blended aggregate
G_{mm} = Maximum specific gravity of the asphalt mix

4. Determine the effective asphalt cement content, VBE, using the following equation:

$$VBE = VB - VBA$$

Where,
VBE = Effective asphalt cement content, % by total mix volume
VB = Total asphalt cement content, % by total mix volume
VBA = Absorbed asphalt cement content, % by total mix volume

AMENDMENT TO OPSS 1101, NOVEMBER 2014 - Additional Test Results and Samples for Performance Graded Asphalt Cement (PGAC)

Special Provision No. 111F09 August 2018

1101.02 REFERENCES

Section 1101.02 of OPSS 1101 is amended by the addition of the following under **Ontario Ministry of Transportation Publications**:

LS-100 Method for Rounding-Off of Test Data and Other Numbers

Section 1101.02 of OPSS 1101 is amended by the deletion of the following under **American Association of State Highway and Transportation Officials (AASHTO)**:

TP 70 Multiple Stress Creep and Recovery (MSCR) of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)

Section 1101.02 of OPSS 1101 is further amended by the addition of the following under **American Association of State Highway and Transportation Officials (AASHTO)**:

T 350-14 Standard Method of Test for Multiple Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)

1101.04 DESIGN AND SUBMISSION REQUIREMENTS

1101.04.01 Submission Requirements

Subsection 1101.04.01 of OPSS 1101 is amended by the addition of the following clause:

1101.04.01.02 PGAC Documentation

For each grade of PGAC specified in the Contract Documents, the Contractor shall supply the following items to the Contract Administrator prior to the commencement of HMA production:

a) PGAC documentation from the asphalt cement supplier in the form of bill of lading and certificate of analysis, confirming the grade of PGAC. The bill of lading and certificate of analysis shall also be supplied for each subsequent delivery of PGAC that will be used for the HMA production.

b) Documentation identifying the PGAC storage tank that the PGAC will be supplied from for the HMA production. The Contractor shall notify the Contract Administrator and provide updated documentation prior to changing the storage tank that is being used to supply PGAC for the HMA production.

1101.08 QUALITY ASSURANCE

1101.08.02 Anti-Stripping Additive

Subsection 1101.08.02 of OPSS 1101 is deleted in its entirety and replaced with the following:

1101.08.02 Asphalt Cement Anti-Stripping Treatment

The Contractor may request that an allowance be made for the impact of the asphalt cement anti-stripping treatment on a PGAC grade for QA or referee purposes provided that when production begins the Contractor submits to the Contract Administrator complete AASHTO M 320 test results for the following:

a) Asphalt cement with anti-stripping treatment at the percentage identified in the mix design.

b) Asphalt cement without the anti-stripping treatment.

1101.08.03 Sampling

Subsection 1101.08.03 of OPSS 1101 is amended by deleting the last paragraph in its entirety and replacing it with the following:

Sampling frequency, minimum quantities and additional labelling shall be as shown in Table 2.

1101.08.06 Referee Testing

Subsection 1101.08.06 of OPSS 1101 is amended by deleting the first paragraph in its entirety and replacing it with the following:

Referee testing by an independent laboratory may be invoked by the Contractor for any lot of PGAC within 5 Days of receiving all the QA test results for the lot.

Table 1 is deleted in its entirety and replaced with the following:

Table 1
Additional Testing Requirements and Acceptance Criteria for All PGAC Grades (Notes 1 and 2)

PGAC Grade	Property and Attributes (Unit)	Test Method	Results Reported Rounded to Nearest	Acceptance Criteria	Major Borderline	Rejectable
All PGAC Grades except PG58-28	Ash Content, % by mass of residue (%)	LS-227	0.01	≤ 0.60	> 0.60 and ≤ 0.80	> 0.80
PG58-28				≤ 0.40	> 0.40 and ≤ 0.60	> 0.60
All PGAC Grades Except PG58-28 and PG52-34	Non-recoverable creep compliance at 3.2 kPa ($J_{nr-3.2}$) (kPa^{-1})	AASHTO T 350 testing conducted at 58 °C	0.01	< 4.50	N/A	≥ 4.50
	Average percent recovery at 3.2 kPa ($R_{3.2}$) (%)		0.1	> the lesser of 55.0 or [(29.371) $(J_{nr-3.2})^{-0.2633}$]	N/A	≤ the lesser of 45.0 or [(29.371) $(J_{nr-3.2})^{-0.2633}$-10]
	Percent difference in non-recoverable creep compliance between 0.1 kPa and 3.2 kPa, J_{nrdiff} (%)		0.1	Testing carried out for information purposes only		
PG70-28, PG64-28	CTOD, δ_t (mm)	LS-299	0.1	≥ 10.0	< 6.0 and ≥ 4.0	< 4.0
	Low temperature limiting grade (LTLG) (°C)	LS-308	0.1	≤ -28.0	> -25.0 and ≤ -22.0	> -22.0
	Grade Loss (°C)	LS-308	0.1	≤ 6.0	> 6.0 and ≤ 8.0	> 8.0
PG58-28	CTOD, δ_t (mm)	LS-299	0.1	≥ 6.0	N/A	< 4.0
	Low temperature limiting grade (LTLG) (°C)	LS-308	0.1	≤ -25	> -25 and ≤ -22.0	> -22.0
	Grade Loss (°C)	LS-308	0.1	≤ 4	N/A	> 6.0
PG70-34, PG64-34, PG58-34, PG52-34	CTOD, δ_t (mm)	LS-299	0.1	≥ 14.0	< 10.0 and ≥ 8.0	< 8.0
	Low temperature limiting grade (LTLG) (°C)	LS-308	0.1	≤ -34.0	> -31.0 and ≤ -28.0	> -28.0
	Grade Loss (°C)	LS-308	0.1	≤ 6.0	> 6.0 and ≤ 8.0	> 8.0
PG58-40, PG52-40	CTOD, δ_t (mm)	LS-299 (Note 3)	0.1	≥ 18.0	< 14.0 and ≥ 12.0	< 12.0
	Low temperature limiting grade (LTLG) (°C)	LS-308	0.1	≤ -37.0	> -37.0 and ≤ -34.0	> -34.0
	Grade Loss (°C)	LS-308	0.1	≤ 6.0	> 6.0 and ≤ 8.0	> 8.0

PGAC Grade	Property and Attributes (Unit)	Test Method	Results Reported Rounded to Nearest	Acceptance Criteria	Major Borderline	Rejectable
Notes: 1. PGAC grades are as specified in the Contract Documents. 2. The rounding-off procedure, for all values, shall be according to LS-100. 3. Sections 6.1 and 6.3 of LS-299 (Rev 31 dated 2017 09 01) are deleted and replaced with the following: 6.1 After trimming, condition the samples on their base plates at 15 ± 0.5°C for 3 h ± 5 min in their molds in a temperature-controlled bath under a minimum of 25 mm of water. 6.3 Run the test according to AASHTO T 300 at a displacement rate of 50 ± 2.5 mm/min in a bath maintained at 15 ± 0.5°C, until ductile failure is reached, or a stroke length of 1000 mm is reached.						

Table 2 is deleted in its entirety and replaced with the following:

Table 2
Sampling Requirements

Samples	Frequency	Minimum Sample Quantity	Labelling
QA	Each Lot	2 litres (Note 1)	Label shall include: - Grade - Supplier
Referee	Each Lot	2 litres (Note 1)	
Samples for possible Owner testing (Note 2)	First Lot for each grade and source of asphalt cement used on the Contract and for any subsequent Lot requested by the Contract Administrator.	2 litres (Note 1)	Label shall include: - Grade - Supplier - MERO Sample
Notes: 1. Two litres shall be provided in 2 suitable one litre containers or a container able to hold a minimum of 2 litres. 2. Samples for possible Owner testing shall be delivered to: Materials Engineering and Research Office (MERO) Bituminous Laboratory, Room 15 145 Sir William Hearst Avenue Downsview, Ontario M3M 0B6			

PLACING HOT MIX ASPHALT BEFORE SEASONAL SHUTDOWN

Special Provision 199F03 May 2016

This Special Provision shall apply to the entire contract limits.

Before seasonal shutdown or by November 29, whichever is earlier, the following work shall be completed on the above roadways on which construction operations have commenced and which are to remain open to public traffic:

a) The roadbed shall be completed to the specified grade and cross section of the granular base;

b) The roadbed shall be paved with upper binder course; and

c) The shoulders shall be completed to the corresponding elevation of the top of the hot mix.

When, in order to comply with a) above, the Contractor does not comply with the restrictions on placing earth, rock or granular materials over frozen ground, ice or snow, the Contractor shall be responsible for the costs of removal and replacement of the pavement, granular and subgrade materials, subdrains, pavement markings, temporary traffic barriers, signs and other associated work and the provision of traffic control where removal and replacement is deemed necessary by the Contract Administrator.

When, in order to comply with b) above, the Contractor paves over a frozen roadbed or in violation of the temperature restrictions for paving, the Contractor shall be responsible for the costs of removal and replacement of the hot mix pavement, granular base and shouldering materials, pavement markings, temporary traffic barriers and the provision of traffic control.

The removal and replacement work shall conform to the Contract requirements and the Contractor shall comply with any other terms and conditions for carrying out the work as the Contract Administrator may declare in writing at that time.

When the Contractor has performed work which did not comply with the restrictions on placing earth, rock or granular materials over frozen ground, ice or snow, or paves over a frozen roadbed or in violation of the temperature restrictions for paving:

a) The Contractor shall be responsible for the costs incurred by the Owner in maintaining the roadway in a condition satisfactory for the travelling public during seasonal shutdown, excluding the costs of applying de-icing salts, abrasives and snow-plowing operations; and

b) Payment at the contract prices for the work will be withheld until any necessary removal and replacement of the roadway has been completed after it has thawed in the spring.

ENVIRONMENTALLY SENSITIVE AREAS

Special Provision No. 199F12 November 2014

The areas formed by a line joining the points in the table below are environmentally sensitive. Entry onto or use of these areas for any purpose is prohibited, except for the specific, limited purposes specified below.

Area No.	Highway	Points				Description	Exceptions
		No.	Township	Station	Offset		
1	3	1	Haldimand	27+020	15 m Lt (north side)	ESA – forested wetland and shallow marsh communities	Entry onto or use of ESAs beyond the identified grading limits is prohibited
		2	Haldimand	27+170	15 m Lt (north side)		
2	Haldiman d Road 56	1	Haldimand	9+891	15 m Rt (east side)	ESA – forested wetland and	Entry onto or use of ESAs beyond

		2	Haldimand	9+973	15 m Rt (east side)	shallow marsh communities	the identified grading limits is prohibited

Areas may extend and other areas may be present beyond the Highway right-of-way, and may be subject to regulation.

INFORMATION TO BIDDERS REGARDING AGGREGATE SOURCES

Special Provision No. 199F14 August 2018

General

The Contractor must demonstrate the ability of aggregate sources to produce aggregate that satisfies the requirements of the Contract Documents.

During tendering, a request for approval for use of an MTO/Crown source not listed on an Aggregate Sources List (ASL) shall be made through the bid enquiry process. Any MTO/Crown sources not listed on an ASL may be used, subject to the approval of the Head, Regional Geotechnical Section. If approval is granted, the ministry's ASL Conditions of Information shall apply.

For enquiries related to Crown sources or sources under permit to MTO, Contractors may contact the appropriate Regional Geotechnical Section to request available Mineral Aggregate Inventory Data Bank (MAIDB) information.

For enquiries related to a specific commercial and/or private source, the Contractor may contact the Aggregate Unit of the appropriate Regional Geotechnical Section to access available Mineral Aggregate Inventory Data Bank (MAIDB) information provided they have written consent from the source owner.

Regional Geotechnical Section offices are located in:

Location/Office	Region	Telephone #	Fax #
Kingston	East	(613) 545-4794	(613) 540-5106
North Bay	Northeast	(705) 497-5478	(705) 497-5499
Thunder Bay	Northwest	(807) 473-2090	(807) 473-2022

For aggregate related enquiries for sources located in Central Region or West Region, please contact:

Location/Office	Region	Telephone #	Fax #
Materials Engineering and Research Office, Soils and Aggregates Section	Central	(416) 235-3736	(416) 235-4101
	West		

Access to the information in MAIDB is provided for the convenience of the Contractor only. Since MAIDB information is dated and subject to interpretation, the information is not guaranteed.

For Contracts that include concrete items, Structural Concrete Aggregate Source Lists and Concrete Base/Pavement Aggregate Source Lists, as applicable, are available on the RAQS/MERX website: www.raqs.merx.com/public/bulletin/bulletin.jsf

Earth Borrow, Rock Supply, Granular Base, and Conventional Hot Mix Aggregates

This contract does not include an Aggregate Sources List (ASL) for earth borrow, rock supply, granular base, and conventional hot mix aggregates. For information regarding commercial sources, Contractors may refer to the following sources of information:

a) Commercial Aggregate and Membership Directory, available through Ontario Stone, Sand & Gravel Association (OSSGA);

b) Aggregate License/Permit List, available through the Ministry of Natural Resources and Forestry (MNRF); www.ontario.ca/environment-and-energy/find-pits-and-quarries, and

c) Aggregate Resources Inventory Papers (ARIPs), available through the Ministry of Northern Development and Mines (MNDM). www.geologyontario.mndm.gov.on.ca/index.html

CONSTRUCTION NOISE CONSTRAINTS

Special Provision No. 199F33 June 2013

Noise Sensitive Areas

This Special Provision covers the requirements for control of construction noise produced by the Contractor's operations. With the exception of any exemptions from municipal noise control bylaws that may be specified in the Contract Documents, these requirements do not relieve the Contractor of other obligations imposed by statute or by municipal bylaw.

Noise constraints in noise sensitive areas are as follows:

Noise Sensitive Area # Entire Contract Area

Noise Sensitive Area Limits	
Entire Contract Area	
Constraint	**Constraint Details**
Equipment Maintenance	Equipment shall be maintained in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffler systems, properly secured components, and the lubrication of moving parts.
Equipment Operation	Idling of equipment shall be restricted to the minimum necessary to perform the specified work.

OTHER CONTRACTORS WITHIN OR ADJACENT TO THE LIMITS OF THE CONTRACT

Special Provision No. 199F43 March 2018

Other work may be in progress within or adjacent to the limits of this contract.

The Contractor shall coordinate the work with other Contractors within and/or adjacent to the project limits to ensure that they do not perform work in the same area at the same time, or adversely affect each other's work.

The Contractor shall ensure that a minimum separation of 1000 m is maintained between the operation included in this contract and the work within and/or adjacent to this project, done by others.

The Contractor shall provide a written submission to the Contract Administrator explaining how the work with other Contractors will be coordinated.

The following work is ongoing:

Union Gas Relocations – March 11, 2019 to May 1, 2019

Enzo Greco
Enbridge Gas In. (Operating as Union Gas)
918 South Service Road
Stoney Creek, Ontario
L8E 5M4
289-649-2061
egreco@uniongas.com

GENERAL REQUIREMENTS OF SAMPLES FOR QUALITY ASSURANCE, REFEREE AND OTHER TESTING BY THE OWNER OR THE OWNER'S AGENT

Special Provision No. 199F57 December 2017

Scope

This Special Provision covers the minimum requirements for the handling, identification, and delivery of samples to a laboratory for quality assurance, referee and other testing by the Owner or the Owner's agent.

Sampling and Identification

All samples shall be obtained and packaged by the Contractor, in the presence of the Contract Administrator or a designated representative. All samples shall be provided with a unique number by the Contract Administrator for identification purposes.

Sampling, handling, and storage of samples shall be as specified in the Contract Documents. Notwithstanding, the Owner may take samples for its own purposes at any time from any location. The Contractor shall furnish all reasonable assistance to the Owner and shall require its Subcontractors and suppliers to do the same.

The Contractor shall supply sample containers and all relevant Material Safety Data Sheets or Safety Data Sheets. All containers used for samples of materials controlled under the Workplace Hazardous Materials Information System shall be appropriate for the materials and shall be labelled and accompanied with the relevant Material Safety Data Sheets or Safety Data Sheets.

The Contractor shall package all samples to minimize risk of damage or contamination during transport. Once packaging is complete, the Contractor shall inspect all samples and confirm each sample and packaging is acceptable to the Contract Administrator for delivery.

After inspecting and determining that each sample is acceptable for delivery, the Contractor shall enter the sample data information. Upon the Contractor submitting the sample data information, the Contractor accepts responsibility that the information entered is accurate.

The Contractor shall place bags or containers of samples into clear polyethylene security bags supplied by the Owner when instructed by the Contract Administrator. At this point, the Contract Administrator shall take possession of, and assume responsibility for the samples. The Contract Administrator or his representative may apply security seals.

The Contractor shall be responsible for all costs associated with obtaining new samples if the original samples did not conform to the sampling requirements (e.g. weight and size) and were deemed unsuitable for testing by the laboratory or the Owner.

Sample Delivery by the Contractor

The Contractor shall be responsible for the delivery of concrete cylinders for strength and grout cubes for strength determination, and bridge bearing pads, to the laboratory designated by the Owner. All other samples shall be delivered by the Contract Administrator.

Samples delivered by the Contractor shall be within the time limits and locations specified in the Contract Documents. The Contractor shall normally deliver samples during normal business hours. Normal business hours are deemed to be from 8:00 a.m. to 5:00 p.m., each Business Day. Where a sample has to be delivered outside these hours, the Contractor shall give the laboratory one full Business Day notice. If the time limits or locations or both for delivering samples are not specified in the Contract Documents, then the sample shall be delivered by the Contractor no later than 2 Business Day(s) from the date of sampling to the regional quality assurance laboratory located within a 150 km radius of the Contract limits.

For all samples delivered by the Contractor, the Contractor shall maintain a record of the date and time of delivery, and the printed name and signature of the authorized individual receiving the sample. The Contractor shall sign the laboratory's records to confirm the date and time of delivery.

The Contractor shall be responsible for all costs associated with obtaining new samples if the original samples delivered by the Contractor are lost or deemed unsuitable for testing by the laboratory or the Owner.

The regional quality assurance laboratory shall be designated by the Owner.

NATIONAL ENERGY BOARD (NEB) REGULATED PIPELINES

Special Provision No. 199F59 December 2017

1.0 SCOPE

The Contractor shall comply with regulations pursuant to Section 112 of the National Energy Board Act when using power-operated equipment or explosives within the prescribed area.

The NEB Act and Regulations referenced below must be read in conjunction with and are intended to supplement the general requirements of the Ontario Occupational Health and Safety Act and Regulations for Construction Projects, specifically Section 228, Precautions Concerning Services.

2.0 REFERENCES

This Special Provision refers to the following publications:

National Energy Board Act 112(1) and 112(2)
NEB Pipeline Damage Prevention Regulations - Authorizations
NEB Pipeline Damage Prevention Regulations - Obligations of Pipeline Companies
NEB Pipeline Damage Prevention - Ground Disturbance, Construction and Vehicle Crossings

3.0 DEFINITIONS

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

Prescribed Area means a strip of land measured 30 metres perpendicularly on each side from the centreline of a pipe controlled by the NEB.

Ground Disturbance means any activity that may disturb the ground within the prescribed area.

4.0 COMPLIANCE MEASURES

The Contractor shall contact all pipeline owners listed below and request from them a copy of their technical guidelines for work adjacent to their pipelines.

Pipeline Owner	Contact Information
Not Applicable	Not Applicable

Activities requiring permission from the pipeline owner include;

- Construction of a facility across, on, along, or under a pipeline, including the pipeline right of way;
- Ground disturbance activities in the prescribed area;
- Ground disturbance using explosives or mechanical equipment within the prescribed area;

- Operation of a vehicle or mobile equipment across a prescribed area, outside the travelled portion of a highway or public road, or;

- Seismic/vibration activity within the prescribed area.

The Contractor shall submit a written application to the pipeline owner in accordance with the requirements of the pipeline owner, seeking permission to perform the work under this Contract.

The Contractor shall immediately submit a copy of the approved application to the Contract Administrator once received from the pipeline owner.

The Contractor shall comply with all conditions, requirements and procedures of the pipeline owner and not proceed with the work until written permission has been received.

Once the pipeline owner has given its permission, the Contractor shall comply with the following:

- Initiate a locate request at least three Working Days before the day on which the construction or ground disturbance activity is planned in the prescribed area, by calling Ontario One Call, or by calling the pipeline company where there is no Ontario One Call centre, to have the pipe located and marked.

- Witness the pipe being located and marked and become familiar with the meaning of the pipeline markings.

- Review NEB requirements with all persons working on your behalf and keep a copy of the approved application on site.

- Expose the pipe by hand digging or other acceptable excavation techniques approved by the pipeline company prior to any mechanical excavation within three metres of the pipe.

- Notify the pipeline company 24 hours prior to backfilling over the pipe or facilities, where the pipe or facilities have been exposed.

- Follow the instructions of the pipeline company's authorized field representative.

- Immediately notify the pipeline company if any contact is made with the pipe or its coating.

The Contractor shall comply with the following rules for ground disturbance within three metres of the pipe. Ground disturbance using mechanical equipment is not permitted within three metres of the pipe except under the following conditions:

a) When the excavation runs parallel to the pipe and;

   i. the pipe has been exposed by hand at sufficient intervals to confirm the pipe's location or;

   ii. the pipeline company has used a method that would permit it to confirm the pipe's exact location and has informed the person of that location.

b) When the excavation crosses the pipe and;

   i. the pipe has been exposed by hand at the point of crossing or;

ii. the pipeline company has used a method that would permit it to confirm the pipe's exact location, has informed the person of that location and has confirmed that the pipe is at least 60 cm deeper than the proposed excavation.

And

c) When the ground conditions render it impractical to locate the pipe using any of the methods set out in (a) and (b), the pipeline company directly supervises any excavation.

The Contractor shall not move or alter the pipe or its fittings, or in any other way interfere with the pipe without the written consent of the pipeline owner.

NON-HAZARDOUS EARTH EXCAVATION - Item No. 4

Special Provision

1.0 SCOPE

This Special Provision covers the requirements for the management and disposal of excavated non-hazardous earth (Macadam Asphalt and material to be excavated directly below the Macadam Asphalt) as identified in the Contract.

2.0 REFERENCES

OPSS 180 – General Specification for the Management of Excess Materials
OPSS 206 – Construction Specification for Grading

3.0 DEFINITIONS

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

Non-hazardous Earth means an old buried road bed and the underlying earth directly below the old buried road bed to the limits of excavation which can consist of odorous (slight hydrocarbon /diesel/creosote) weathered material as identified within the Contract Documents.

4.0 DESIGN AND SUBMISSION REQUIREMENTS

4.01 Submission Requirements

4.01.01 Submission of Certificate of Approval

A copy of the Certificate of Approval for a MOE approved landfill site for solid non-hazardous waste used to manage the non-hazardous earth from this operation shall be submitted to the Contract Administrator five (5) calendar days prior to the management of non-hazardous earth.

4.01.02 Verification of Waste Disposal

A copy of the weigh tickets or receipts provided by the operator of the MOE approved landfill site for solid non-hazardous waste shall be submitted to the Contract Administrator on a daily basis.

5.0 MATERIALS

The in-situ unit weight for Non-hazardous Earth is estimated to be 2.3 tonnes/m^3.

6.0 EQUIPMENT – Not Used

7.0 CONSTRUCTION

The Contract Documents specify locations where non-hazardous earth is expected to be encountered within the contract limits.

The Contractor shall excavate the non-hazardous earth such that the material is separated from the earth excavation. Excavated non-hazardous earth shall be disposed off-site in accordance with the Contract Documents.

Excavated soils shall not be temporarily stockpiled prior to being transported for off-site disposal.

7.01 Conditions on the Management of Non-hazardous Earth

Non-hazardous earth shall be transported directly from the construction area by a Ministry of Environment, Conservation and Parks (MECP) licensed waste hauler to a MECP licensed landfill for solid non-hazardous waste.

8.0 QUALITY ASSURANCE – Not Used

9.0 MEASUREMENT FOR PAYMENT

Measurement for payment is by tonne (t) based on weigh tickets or receipts for disposal of non-hazardous waste.

10.0 BASIS OF PAYMENT

Payment at the contract price of the above tender item shall be full compensation for all labour, equipment and materials to do the work. Payment shall be in addition to the payment for Earth Excavation.

TACK COAT - Item No. 5

Special Provision No. 308F02 February 2017

Amendment to OPSS 308, April 2012

Painting Material, Application Options, and Samples for Testing

308.05 MATERIALS

308.05.01 Tack Coat and Joint Painting Material

Clause 308.05.01 of OPSS 308 is deleted in its entirety and replaced with the following:

Tack coat and joint painting material shall consist of SS-1 or SS-1HH emulsified asphalt diluted with an equal volume of water. The undiluted material shall be according to OPSS 1103.

308.07 CONSTRUCTION

308.07.01 Application of Tack Coat

Subsection 308.07.01 of OPSS 308 is amended by the addition of the following:

f) The surface of all binder courses

g) The surface of padding and levelling courses.

308.08 QUALITY ASSURANCE

308.08.01.03 Samples for Testing

Clause 308.08.01.03 of OPSS 308 is amended by deleting the second paragraph in its entirety and replacing it with the following:

The minimum quantity of each of the QA and referee samples shall be 1 litre.

SUPERPAVE 12.5FC 1 - 40 MM LIFT THICKNESS - Item No. 9

Special Provision

Infrared Joint Heater

The Contractor shall use an infrared joint heater at the time of paving surface course, at the longitudinal paving joint between lanes of this Contract when paving in echelon is not being used.

The longitudinal paving joint shall be heated using an infrared joint heater capable of heating the HMA at the joint to a sufficiently hot temperature. The joint will be considered sufficiently hot if the joint HMA retains a temperature of 90° C +/- 10° C immediately prior to placement of the adjacent lane material. When the joint HMA is not sufficiently hot, the paving operation shall be adjusted to reach the required temperature. The Contractor shall stop paving if at any time the existing pavement or adjacent lane pavement at the joint:

a) reaches a temperature exceeding 150° C
b) burns
c) chars.

If paving is stopped due to high pavement temperatures, burning, or charring the Contractor shall demonstrate to the Contract Administrator that the equipment will no longer over heat, burn or char the pavement prior to paving resuming. The make, model, capacity and type of joint heater shall be provided to the Contract Administrator a minimum of 10 Business Days prior to the start of paving operations.

CLEAR STONE - Item No. 12

Special Provision

1.0 SCOPE

This special provision covers the requirements for the placement of clear stone.

2.0 REFERENCES - Not Used

3.0 DEFINITIONS - Not Used

4.0 DESIGN AND SUBMISSION REQUIREMENTS - Not Used

5.0 MATERIALS

5.01 Clear Stone

Clear stone shall conform to OPSS 1004.

6.0 EQUIPMENT - Not Used

7.0 CONSTRUCTION

Supply, deliver and install 19mm nominal diameter clear stone bedding for the Precast Concrete Box culverts.

8.0 QUALITY ASSURANCE - Not Used

9.0 MEASUREMENT FOR PAYMENT

The unit of measure is by metric tonne.

10.0 BASIS OF PAYMENT

10.01 Clear Stone - Item

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

REMOVAL OF ASPHALT PAVEMENT - Item No. 23
REMOVAL OF ASPHALT PAVEMENT, PARTIAL-DEPTH - Item No. 24

Special Provision

Amendment to OPSS 510, November 2014

510.07 CONSTRUCTION

510.07.06 Pavement Work

510.07.06.01 General

Clause 510.07.06.01 of OPSS 510 is amended by the addition of the following:

Longitudinal edge drops of 40 mm or greater between lanes and at transverse steps created during pavement removal operations shall be ramped at a slope of 10H:1V. All temporary ramping shall be removed prior to placing adjacent hot mix asphalt paving.

TEMPORARY FLOW PASSAGE SYSTEM - Item No. 32

Special Provision No. 517F01 July 2017

Amendment to OPSS 517, November 2016

Design Storm Return Period and Preconstruction Survey Distance

517.01 SCOPE

Section 517.01 of OPSS 517 is deleted in its entirety and replaced with the following:

This specification covers the requirements for the design, operation, and removal of a dewatering or temporary flow passage system or both to control water during construction, and the control of the water prior to discharge to the natural environment and sewer systems.

517.04 DESIGN AND SUBMISSION REQUIREMENTS

517.04.01 Design Requirements

Subsection 517.04.01 of OPSS 517 is amended by deleting the first paragraph in its entirety and replacing it with the following:

A dewatering or temporary flow passage system or both shall be designed to control water at the locations specified in the Contract Documents and at any other location where a system is necessary to complete the work. The design of the system shall be sufficient to permit the work at each location to be carried out as specified in the Contract Documents.

Subsection 517.04.01 of OPSS 517 is further amended by deleting the second last paragraph in its entirety and replacing it with the following:

Temporary flow passage systems shall be designed, as a minimum, for a 2 year design storm return period and groundwater discharge, except for the work specified in Table A. For the work specified in Table A, the temporary flow passage system shall be designed, as a minimum, for the design storm return period specified in Table A and groundwater discharge. A longer return period shall be used when determined appropriate for the work.

Intensity-Duration Factor (IDF) curve location, site specific minimum return period, return period flow estimates, and other information is provided in Table A. The IDF information can be accessed through the MTO IDF Curve Look up Tool on the Drainage and Hydrology page of MTO's website. The return period flow estimates do not include flow volumes from groundwater discharge. The Owner specifically excludes these flow estimates from the warranty in the Reliance on Contract Documents subsection of OPSS 100, MTO General Conditions of Contract.

Table A

IDF Curve Location (Culv. 6, 8, 10 & 12)	Latitude: 42.970833			Longitude: -79.770833	
Temporary Flow Passage Systems					
Site Name / Station Reference	Minimum Return Period (Years)	Return Period Flow Estimates (m^3/s)			Design Engineer Requirements (Note 1)
		2 Year	5 Year	10 Year	25 Year	
H3C-1	2	0.05	0.13	0.48	0.84	No
H3C-2	2	0.05	0.10	0.26	0.41	No
HRC-1	2	0.05	0.13	0.48	0.84	No
HRC-2	2	0.04	0.14	0.64	1.18	No

Note:

1. "Yes" means the design Engineer and design-checking Engineer shall have a minimum of 5 years of experience in designing systems of similar nature and scope to the required work. "No" means a minimum experience level is not required for the design Engineer and design-checking Engineer.
2. "N/A" indicates a preconstruction survey is not required.

TEMPORARY TRAFFIC CONTROL SIGNS - Item No. 36
ROAD CLOSING/RESTRICTION NOTICE SIGNS (TC-64) - Item No. 37

Special Provision

Amendment to OPSS 706, November 2016

706.07 CONSTRUCTION

706.07.01.03 Contract Information Signs

Subsection 706.07.01.03 of OPSS 706 is amended by the addition of the following:

The messages for the contract information signs shall be:

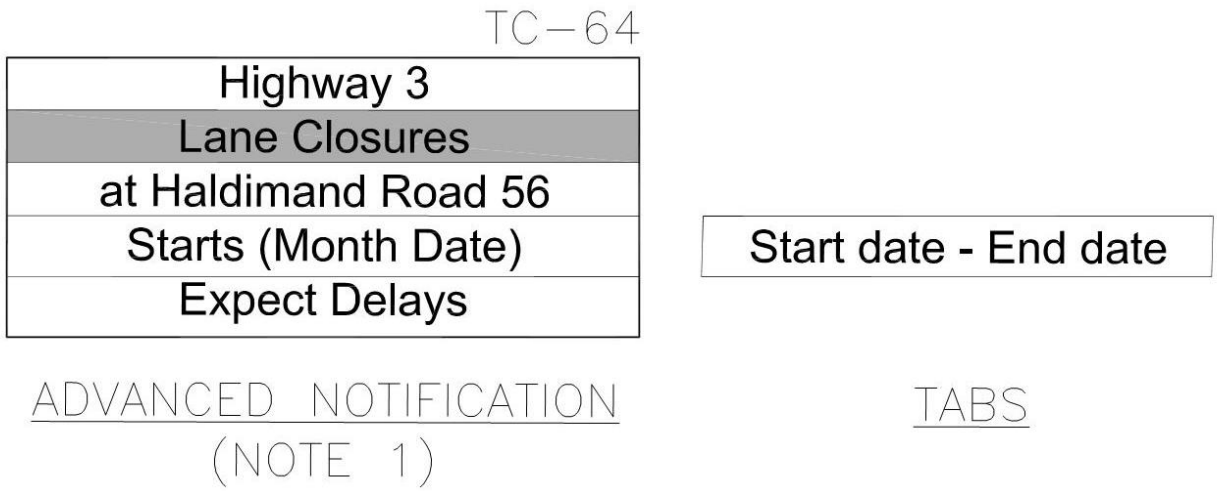
Sign Number	Message Details
TC-81a	Highway Improvements Next 1 km

706.07.02 Road Closing/Restriction Notice Sign (TC-64)

Subsection 706.07.02 of OPSS 706 is amended by deleting and replacing the first sentence with the following:

Road closing/restriction notice (TC-64) signs shall be installed as follows:

- On Highway 3 600m in advance of the east project limits for westbound approaching traffic;
- On Highway 3 600m in advance of the west project limit for eastbound approaching traffic;
- On Haldimand Road 56 600m in advance of the north project limit for southbound approaching traffic; and
- On Haldimand Road 32 600m in advance of the south project limit for northbound approaching traffic.



HEAVY-DUTY WIRE-BACKED SILT FENCE BARRIERS - Item No. 47

Special Provision

Amendment to OPSS 805, November 2015

805.05 MATERIALS

805.05.05 Control Measure Support

Subsection 805.05.05 is amended by deleting the first paragraph and replacing it with the following:

Control measure support shall be a separate product or one bonded to silt fence geotextile, and shall meet the following specifications:

Table 1
Control Measure Support

Control Measure	Type	Size (mm)	Nominal Diameter of Coated Wire (mm)
Heavy-Duty Wire-Backed Silt Fence Barriers	Galvanized Steel	50 x 100	1.63

HEAVY-DUTY WIRE-BACKED SILT FENCE BARRIERS - Item No. 47
FIBRE ROLL FLOW CHECK DAMS - Item No. 48
ROCK FLOW CHECK DAMS - Item No. 49

Special Provision No. 805F01 December 2018

Amendment to OPSS 805, November 2018

805.07 CONSTRUCTION

805.07.01.06 Construction and Removal of Measures

Clause 805.07.01.06 of OPSS 805 is deleted and replaced by the following:

Further to requirements specified in the Contract Documents, the following items shall be installed and removed according to the timing constraints set out in Table A below:

Table A

Tender Item	Location	Timing Constraints	
		Installation	**Removal**
Heavy-Duty Wire-Backed Silt Fence Barriers	Throughout	Prior to upstream work / replacement or adjustment grading	To remain in place until completion of the Contract or as directed by the Contract Administrator
Fibre Roll Flow Check Dams	Throughout	Prior to upstream work / replacement or adjustment grading	To remain in place until completion of the Contract or as directed by the Contract Administrator
Rock Flow Check Dams	Throughout	Prior to upstream work / replacement or adjustment grading	To remain in place until completion of the Contract or as directed by the Contract Administrator

RIGID DUCTS, CONCRETE ENCASED - Item No. 53
RIGID DUCTS, DIRECT BURIED - Item No. 54
RIGID DUCTS, DIRECT BURIED (TEMPORARY) - Item No. 55

Special Provision

Amendment to OPSS 603, November 2014

Table 1, "Ducts and Fittings", of OPSS 603 is deleted in its entirety and replaced with the following:

TABLE 1
Ducts and Fittings

Duct & Fitting Description	Type	Direct Buried	Concrete Encased	Subsurface Installation		Embedded Work	Surface Mounted	Standard
				In Ground	In Liner			
PE	Flexible	X	-	-	-	-	-	CSA B137.1 Series 75
ENT	Flexible	X	X	X	X	X	-	CAN/CSA C22.2 No. 227.1
HDPE	Flexible	X	-	X (Note 1)	-	-	-	UL 651B; ASTM F 2160,

								Schedule 40; and NEMA TC 7 for type EPEC
PVC	Rigid	X	X	X	X	X	X	CSA C22.2 No. 211.2
Polymeric PVC	Rigid	-	-	-	-	-	-	-
RTRC	Rigid	X standard or heavy wall (Note 2)	X standard or heavy wall	X standard or heavy wall (Note 2)	X standard or heavy wall	X standard or heavy wall	X standard or heavy wall	CSA C22.2 No. 2515
Galvanized Steel	Rigid	X	-	X	X	0	X	CSA C22,2 No. 45.1

Notes:

1. HDPE duct may be used for sub-surface installation for extra low-voltage cables only where ducts are 50 mm diameter or smaller. For sub-surface installations, thick wall (25mm thick minimum) HDPE pipe may also be used for encasement 300mm in diameter or larger.

2. Heavy wall shall be used where ducts are 100 mm diameter or greater.

SUPPLY CONTROL CABINET ASSEMBLIES - Item No. 68

Special Provision No. 614F01 April 2017

Amendment to OPSS 614, November 2012

614.05 MATERIALS

Subsection 614.05.02 of OPSS 614 is deleted in its entirety and replaced with the following:

614.05.02 Supply Control Cabinet Assemblies

Supply control cabinet assemblies shall be according to OPSS 2414 and the requirements as described in Table 2.

Supply control cabinet assemblies shall include an Arc Flash and Shock Hazard warning label according to Figure 1. The warning sign shall be prominently displayed on the outside of each exterior door. The Contractor shall enter the location information in Figure 1 as indicated by the local MTO electrical coordinator.

The AC arc flash analysis and results in Figure 1 are applicable to ministry highway electrical systems with the following characteristics:

a) Single phase.

b) Nominal system voltage of 240 VAC or less.

c) Continuous current rating of main breaker of 100 A or less.

d) Size of upstream transformer of 100 kVA or less.

e) Condition of electrical plant shall be in good condition and well maintained.

TABLE 2
Description of Supply Control Cabinet Assemblies

Description of Permanent supply cabinet 'A'
Supply Control Cabinet Assembly, Type **1**, **120/240** Volt, **100** Amp. , **1** Phase, complete with: **100** Amp. Main Circuit Breaker **1-60, 1-pole** Amp. Traffic Signal Breaker **4-30, 1-pole** Amp. Branch Circuit Breakers. **100** Amp. meter socket as per Hydro One standards.

Figure 1
Arc Flash and Shock Hazard Warning Label



Arc Flash and Shock Hazard

Location: _____

Arc Flash		**Shock**	
Working distance:	460 mm (19 inches)	Nominal system voltage:	240 VAC
Incident energy:	2.1 cal/cm^2	Limited approach:	1000 mm (40 inches)
Arc Flash Boundary:	635 mm (26 inches)	Restricted approach:	300 mm (12 inches)

Minimum PPE Requirements: PPE according to CSA Z462 Arc Flash PPE Category 2

Analysis Date: October 2015

LED ROADWAY LIGHTING LUMINAIRES AND BRACKET ASSEMBLIES - Item No. 75

Special Provision No. 617F03 February 2014

Amendment to OPSS 617, November 2013

617.05 MATERIALS

617.05.01 Luminaires

Subsection 617.05.01 of OPSS 617 is amended by the addition of the following clauses:

617.05.01.04 LED Roadway Lighting Type

LED roadway lighting luminaires shall be according to the Contract Documents and the requirements as described in Table 2.

PART A and PART B
LED roadway lighting luminaire(s) - **134**-Watt, IES type **II-M** distribution, for **120**-Volt operation. Manufacturer's Name & Photometric curve(s): **LED Roadway Lighting, Photometric Curve Number/Model Number: NXT-60M-700mA-2ES-4000K-ITL80756.** OR LED roadway lighting luminaire(s) - **137**-Watt, IES type **III-S** distribution, for **120**-Volt operation. Manufacturer's Name & Photometric curve(s): **Cree Canada, Photometric Curve Number/Model Number: STRLWYEMEHT1F-ULA40K-ITL80845**.

617.09 MEASUREMENT FOR PAYMENT

617.09.01.01 Roadway Lighting Luminaires and Bracket Assemblies

Clause 617.09.01.01 of OPSS 617 is amended to include the following tender item:

LED Roadway Lighting Luminaires and Bracket Assemblies

617.10 BASIS OF PAYMENT

Subsection 617.10.01 of OPSS 617 is amended by the addition of the following tender items:

LED Roadway Lighting Luminaires and Bracket Assemblies - Item

TRAFFIC SIGNAL CONTROLLERS - Item No. 78

Special Provision No. 622F03 May 2017

Amendment to OPSS 622, April 2017

622.07.08 Traffic Signal Controller Programming and Timing

Subsection 622.07.08 of OPSS 622 is amended with the addition of the following clause:

622.07.08.01 Traffic Signal Controller Timing Sheet

Traffic signal timing for the controller shall be as specified in the Generic Signal Timing Sheet below:

GENERIC SIGNAL TIMING SHEET

ACTUATED [ ] PRE-TIMED [ ] SIGNAL TO BE MAINTAINED BY: _____

LOCATION: _____ SIGNAL TO BE OPERATED BY: _____

MAINSTREET (HWY): _____ TIMING DEVELOPED BY: _____

DATE TIMING DEVELOPED: _____

GENERIC TIMING IDENTIFIED HERE SHALL BE TRANSCRIBED ONTO "OFFICIAL" TIMING SHEETS FOR THE TRAFFIC SIGNAL CONTROLLER BEING USED AT THIS SIGNALIZED INTERSECTION. A COPY OF THE "OFFICIAL" LOCAL TIMING SHEETS AND COORDINATION SHEETS IF USED, SHALL BE ATTACHED TO THIS FORM AND FILED IN THE MTO REGIONAL TRAFFIC OFFICE.

OPERATIONAL NOTES:

1. All Protected/Permissive left turn movements shall be followed by parent through movements without exception.
2. If serving F2 and F6 the signal must cycle to F4 and/or F8 prior to serving a call for F1 and/or F5 if these left turn movements are protected/permissive.
3. If serving F4 and F8, the signal must cycle to F2 and/or F6 prior to serving a call for F3 and/or F7 if these left turn movements are protected/permissive.
4. Through Movements shall lag left turn movements unless otherwise specified.

FUNCTION/OPERATION	**MOVEMENT (FAZE)**							
	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
PERMITTED MOVEMENTS	-	-	-	-	-	-	-	-
RED LOCK	-	-	-	-	-	-	-	-
AMBER LOCK	-	-	-	-	-	-	-	-
VEHICLE RECALL	-	-	-	-	-	-	-	-
PEDESTRIAN RECALL	**na**	-	**na**	-	**na**	-	**na**	-
VEHICLE MAX RECALL	-	-	-	-	-	-	-	-
OVERLAP A	-	-	-	-	-	-	-	-
OVERLAP B	-	-	-	-	-	-	-	-
PROT/PERM LEFT TURN ARROW	-	**na**	-	**na**	-	**na**	-	**na**
PROT/PERM FAST FLASH ADVANCE GREEN	-	**na**	-	**na**	-	**na**	-	**na**
FULLY PROTECTED LEFT TURN	-	**na**	-	**na**	-	**na**	-	**na**
DISPLAY AMBER ON STARTUP	-	-	-	-	-	-	-	-
PLACE PEDESTRIAN CALLS ON STARTUP	-	-	-	-	-	-	-	-
PLACE VEHICLE CALLS ON STARTUP	-	-	-	-	-	-	-	-
REST IN WALK	**na**	-	**na**	-	**na**	-	**na**	-
MOVEMENTS MUST GAP OUT SIMUL'LY	-	-	-	-	-	-	-	-
DOUBLE ENTRY	**na**	-	**na**	-	**na**	-	**na**	-
EXCLUSIVE PHASING BY APPROACH	-	-	-	-	-	-	-	-

na --- not applicable

INTERVAL TIMES	**MOVEMENT (FAZE)**							
	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
WALK	**na**	-	**na**	-	**na**	-	**na**	-
FLASHING DON'T WALK	**na**	-	**na**	-	**na**	-	**na**	-
MINIMUM GREEN	-	-	-	-	-	-	-	-
VEHICLE EXTENSION (PASSAGE TIME)	-	-	-	-	-	-	-	-
MAX GREEN (INCLUDES MIN GREEN)	-	-	-	-	-	-	-	-
MAX GREEN 2 (ALTERNATE MAX GREEN)	-	-	-	-	-	-	-	-
AMBER CLEARANCE	-	-	-	-	-	-	-	-
ALL RED CLEARANCE	-	-	-	-	-	-	-	-
MAX GAP (VEH. EXTENSION)	-	-	-	-	-	-	-	-
MIN GAP (VEH. EXTENSION)	-	-	-	-	-	-	-	-
REDUCE GAP BY	-	-	-	-	-	-	-	-
REDUCE GAP EVERY	-	-	-	-	-	-	-	-
MAX INITIAL GREEN TIME (VAR. INIT)	-	-	-	-	-	-	-	-
TIME ADDED/VEHICLE (VAR. INIT)	-	-	-	-	-	-	-	-

na --- not applicable

DETECTOR SETUP	**MOVEMENT (FAZE)**							
	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
DELAY TIME ON PRESENCE DETECTION	-	-	-	-	-	-	-	-
DELAY TIME ON LONG DIST. DETECTION	-	-	-	-	-	-	-	-
CARRY-OVER ON PRESENCE DETECTION	-	-	-	-	-	-	-	-
CARRY-OVER ON LONG DIST. DETECTION	-	-	-	-	-	-	-	-

PRE-EMPTION	**MOVEMENT (FAZE)**							
	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
1ST EMERG. PRE-EMPT MOVEMENTS	-	-	-	-	-	-	-	-
1ST EMERG. PRE-EMPT DELAY TIME	-	-	-	-	-	-	-	-
1ST EMERG. PRE-EMPT CLEARANCE TIME	-	-	-	-	-	-	-	-
2ND EMERG. PRE-EMPT MOVEMENTS	-	-	-	-	-	-	-	-
2ND EMERG. PRE-EMPT DELAY TIME	-	-	-	-	-	-	-	-
2ND EMERG. PRE-EMPT CLEAR'CE TIME	-	-	-	-	-	-	-	-
RR PRE-EMPT TRACK CLEAR'CE MV'MTS	-	-	-	-	-	-	-	-
RR PRE-EMPT CLEARANCE TIME	-	-	-	-	-	-	-	-
RR PRE-EMPT DELAY TIME	-	-	-	-	-	-	-	-
RR PRE-EMPT LIMITED SERVICE MV'NTS	-	-	-	-	-	-	-	-

TIME OF DAY	TIME OF DAY		DAY OF WEEK							**MOVEMENT (FAZE)**							
OPERATIONS	[START]	[END]	S	M	T	W	T	F	S	[NB LEFT]	[NB THRU]	[WB LEFT]	[WB THRU]	[SB LEFT]	[SB THRU]	[EB LEFT]	[EB THRU]
PHASE OMIT			-	-	-	-	-	-	-	**-**	**na**	**-**	**na**	**-**	**na**	**-**	**na**
MAX RECALL			-	-	-	-	-	-	-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
PED RECALL			-	-	-	-	-	-	-	**na**	**-**	**na**	**-**	**na**	**-**	**na**	**-**
MIN RECALL			-	-	-	-	-	-	-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
MAX GREEN 2			-	-	-	-	-	-	-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
REST IN WALK			-	-	-	-	-	-	-	**na**	**-**	**na**	**-**	**na**	**-**	**na**	**-**
AMBER LOCK			-	-	-	-	-	-	-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
RED LOCK			-	-	-	-	-	-	-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

na --- not applicable

LOOP DETECTORS - Item No. 79

Special Provision

Amendment to OPSS 623, April 2017

623.07 CONSTRUCTION

623.07.01 Loop Detectors

Subsection 623.07.01 of OPSS 623 is amended by the addition of the following:

All traffic data collection detector loops which are being replaced shall be replaced up to the connection at the terminal block.

When required, the Contractor shall replace the terminal block in the terminal electric box. Terminal blocks shall be double-row barrier terminal blocks which can accommodate forks type of wire terminations, with current capacity equal to the ampacity of #14 AWG stranded copper wire. The size and number of the terminal blocks shall suit the number of the detector loop cable leads.

623.07.01.01 Layout

Clause 623.07.01.01 of OPSS 623 is amended by the addition of the following:

Vehicle detectors are to be placed, in the upper binder course, prior to construction of the final pavement surface course. All permanent pavement markings, lane lines and stop bars shall be marked and documented prior to installing vehicle detectors in the pavement.

Vehicle detector locations shall be clearly marked and documented on the final pavement surface with non-permanent materials to facilitate accurate zone painting.

SCHEDULE OF MATERIALS TO BE SUPPLIED BY THE OWNER

Pursuant to Subsection GC 5.01, Supply of Material, this Special Provision lists all the Materials to be supplied by the Owner:

(A) The Owner supplies the following Materials F.O.B. haulage vehicles at a point within the Working Area. Deliveries to the Working Area shall be as requested by the Contractor but subject to the approval of the Contract Administrator:

Nil

The Contractor shall complete Owner's Standard Form PH-CC-765 "Contract Material Delivery Schedule", detailing the Contractor's required delivery date for each item of Material to be supplied by the Owner.

The form shall be completed in triplicate and returned to the Team Lead, Contract Tendering Section within the time limit specified by the Owner in a letter to the Contractor.

At any time following the required delivery date which the Contractor enters in Form PH-CC-765 for each item of Material, the Contractor shall either accept delivery of that Material when required by the supplier or shall make alternative arrangements satisfactory to the supplier which do not result in any additional cost to the Owner.

(B) The Owner supplies the following Materials as indicated below:

Material	Quantity	Supply Point
Small Signs, Ground Mounted, New	36 each	MTO Sign Shop, 1927 Kipling Avenue, Rexdale, ON

This Special Provision shall take precedence over all other Special Provisions with respect to the supply of the above materials.

THE CONTRACTOR SHALL SUPPLY **ALL** OTHER MATERIALS FOR THIS CONTRACT.

SECTION B
FAIR WAGE PROGRAM

Labour Conditions for Road Building Contracts
(Classifications and wage rates listed in attached schedules)

DEFINITIONS

1. In these Labour conditions,

(1) "Contract" means a Contract between _____(Owner) Ministry/Crown Corporation/agent

and the Contractor for the Work at _____(location).

(2) "Contractor" refers to

_____
(name of business)

_____
(business address)

_____
(business phone no./fax no.)

(3) "Employee" means a person in the employ of the Contractor a Sub-Contractor or any other person doing or contracting to do the whole or any part of the Work contemplated by this Contract.

(4) "Employer" means the Contractor, and/or any of the Contractor's Sub-Contractors, who has control or direction of, or is directly or indirectly responsible for, the employment of a person therein.

(5) "Fair Wage" or "Fair Wage Rates" means the respective wage rates listed in the attached Schedule(s), or any revisions from time to time, for each classification of labour.

(6) "Owner" refers to the ministry, crown corporation or agent named in subsection (1) as one of the contracting parties of the Contract.

(7) "Provincial Zone" means a geographic area in the Province of Ontario which is designated by the Ontario Ministry of Labour from time to time as non-urban, for the purpose of establishing the Fair Wage Rates.

(8) "Regular rate" means

(a) the hourly rate paid to an Employee for her/his normal non-overtime work week; or

(b) in the case of an Employee to whom clause (a) does not apply, the amount obtained by dividing her/his total earnings for the week by the number of hours he or she worked in the week;

(9) "Sub-Contractor" means any person, firm or corporation having a Contract for the execution of a part or parts of the Work included in the Contract, or a person, firm or corporation furnishing material called for in the Contract and worked to a special design according to the Contract but does not include one who merely furnishes material not so worked.

(10) "Urban Zone" means a geographic area in the Province of Ontario which is designated by the Ontario Ministry of Labour from time to time as urban, for the purpose of establishing the Fair Wage Rates.

(11) "Work on roads" means the preparation, construction, finishing and construction maintenance of roads, streets, highways and parking lots and includes all work incidental thereto other than work on structures.

"Work on structures' means the construction, reconstruction, repair, alteration, remodelling, renovation or demolition of any bridge, tunnel or retaining wall and includes the preparation for and the laying of the foundation of any bridge, tunnel or retaining wall and installation of equipment and appurtenances incidental thereto.

The Ontario Minister of Labour may at his or her sole discretion determine whether any particular work is to be classified as work on roads or as work on structures and such decision may be made notwithstanding the definitions in subsection (11).

GENERAL

2. (1) These Labour Conditions are subject to the Employment Standards Act and the regulations made thereunder.

(2) These Labour Conditions are intended for application primarily to work on the Contract site. Work that is carried out at sites that are not in the immediate vicinity of the Contract site or that are not used exclusively for the purposes of Contracts including municipal contracts containing similar Labour Conditions will not be subject to these Labour Conditions.

HOURS OF WORK -- GENERAL

3. (1) Subject to section 4, the regular work week for a person employed on work on roads being done under this Contract or any other Contract subject to these or similar Labour Conditions shall not exceed fifty-five hours and all time worked by such person in excess of fifty-five hours a week shall be overtime.

(2) Subject to section 4, the regular work week for a person employed on work on structures being done under this Contract or any other Contract subject to these or similar Labour Conditions shall not exceed forty-four hours and all time worked by such person in excess of forty-four hours a week shall be overtime.

HOURS OF WORK -- PROVINCIAL ZONE

4. (1) The regular work week for a person employed on work on roads being done in the provincial zone under this Contract or any other Contract subject to these or similar Labour Conditions shall not exceed fifty-five hours and all time worked by such person in excess of fifty-five hours a week shall be overtime, except that part of the hours of work in excess of fifty-five hours a week which, together with the hours worked in the preceding week, do not exceed fifty-five hours in that preceding week, but in no case shall the number of hours that can be included in the hours of work for that preceding week exceed twenty-two hours.

(2) The regular work week for a person employed on work on structures being done in the provincial zone under this Contract or any other Contract subject to these or similar Labour Conditions shall not exceed fifty hours and all time worked by such person in excess of fifty hours a week shall be overtime, except that part of the hours of work in excess of fifty hours a week which, together with the hours worked in the preceding week, do not exceed fifty hours in that preceding week, but in no case shall the number of hours that can be included in the hours of work for that preceding week exceed twenty-two hours.

WAGES AND OVERTIME PAY

5. (1) Every person employed by the Contractor or a Sub-Contractor or other person to do any part of the work contemplated by this Contract shall be paid while employed on such work not less than the wage rate set out in the Roads and Structures Fair Wage Schedule for the appropriate classification of such work or not less than such other wage rates as, during the continuance of the work, are fixed by the Ontario Minister of Labour for hours of work that are not overtime.

(2) The Fair Wage rates apply to work performed under a Contract let by a ministry of the Ontario government, a corporation established under the Capital Investment Planning Act, 1993, a third party acting on behalf of the Ontario government as its agent, or a municipality receiving funding from the Ontario government for work performed in this Contract.

(3) The wage rates set out in the Roads and Structures Fair Wage Schedule are subject to change periodically.

(4) Any increase in costs incurred by a change in the wage rates referred to in subsection (3) shall be borne by the Contractor.

6. (1) For Urban Zones only, Fair Wage Rates represent 85% of the union rate established in the specific zone for the respective classification, as determined by the Ontario Ministry of Labour from time to time, plus 15% in lieu of non-statutory benefits.

(2) In Urban Zones, employers may pay a portion of the Fair Wage Rates, up to a maximum of 15% of the applicable Fair Wage Rate, to their Employees in non-statutory benefits, and the remainder of not less than 85% of the Fair Wage Rate shall be paid to these Employees in wages.

(3) In the Provincial Zone, employers shall pay their Employees the full amount (100%) of the Fair Wage Rates in wages, exclusive of non-statutory benefits.

(4) In the event that an Employer is performing Work in an Urban Zone and it chooses to pay a portion of the Fair Wage Rates to its Employees in non-statutory benefits, the Contractor must inform the Owner, prior to commencing the Contract or the relevant sub-contract, as to the total cost of such non-statutory benefits to the Contractor, and/or its Sub-Contractor where a Sub-Contractor has elected to provide these non-statutory benefits. The cost of any non-statutory benefit paid to Employees shall be calculated in accordance with subsection (6).

(5) Upon informing the Owner as to its selection in accordance with subsection (2), the Contractor shall provide documentation to the Owner, prior to commencing the Contract or relevant sub-Contract, to sufficiently substantiate, in the Owner's opinion, the total cost of the all non-statutory benefits to the Contractor and/or respective Sub-Contractor.

(6) The cost to the Contractor, and/or a Sub-Contractor, of any non-statutory benefit shall be calculated on the basis of the total weekly cost to the Contractor/Sub-Contractor of each non-statutory benefit provided to Employees divided by forty-eight (48). The total cost of all non-statutory benefits equals the sum of the costs of each non-statutory benefit provided to Employees.

(7) Where the documentation is not provided to the Owner in accordance with subsections (5) and (6), the Contractor and/or relevant Sub-Contractor is responsible for paying its Employees the full amount (100%) of the Fair Wage Rates in wages, exclusive of non-statutory benefits.

(8) Notwithstanding subsection (7), where the Contractor fails to inform and/or provide such documentary proof to the Owner as required by subsections (4) (5) and (6) and the Contractor or any of its Sub-Contractors proceeds to pay a portion, up to a maximum of 15%, of the Fair Wage Rates in non-statutory benefits, the Owner may withhold payments under the Contract until such time as the Owner is satisfied that the Employees have received their Fair Wages.

(9) Once an Employer has made its selection pursuant to subsection (2), it shall continue to pay its Employees in accordance with its initial selection for the entire duration of the Contract and/or relevant sub-contract.

7. (1) Every person employed by the Contractor or a Sub-Contractor or other person to do any part of the work contemplated by this Contract shall be paid while employed on such work one and one-half times his or her regular rate for all hours of work that are overtime.

(2) Notwithstanding that a Contractor, Sub-Contractor, or other person pays wages in excess of the wage rates set out in the Roads and Structures Fair Wage Schedule, the Contractor, Sub-Contractor or other person shall not, in computing overtime wages payable to an Employee, set off against such overtime wages any part of the wages earned by the Employee in respect of their regular work period.

(3) Where a person is working on more than one Contract that is subject to these conditions, including any municipal Contract that contains similar labour conditions, the regular work week and the entitlement to overtime for that person shall be based upon the total hours worked on all such Contracts and if, on this basis, overtime is worked on this Contract the Contractor shall pay such person at the overtime rate and no waiver by that person of this entitlement to overtime wages and no interposition of a third party by way of an employment agency or as the nominal employer of that person shall relieve the Contractor of the obligation to pay that person the overtime wages.

8. Travelling time will not be subject to the Fair Wage Schedule. The hours and wages or moneys paid for travelling time are to be deleted from the wage record of an Employee in computing his or her wage entitlement.

9. The amount of room and board allowance will be negotiated between the employer and Employee, but in no case shall the amount of wages paid to an Employee net of the allowance be less than the amount the Employee would be entitled to receive if he or she was paid the minimum wage set out in the regulations under the Employment Standards Act less the amount of room and board allowance prescribed in those regulations.

CLASSIFICATION OF WAGE RATES

10. For the purpose of this Contract, the following interpretations apply:

(1) (a) Employees, other than students, learning to operate equipment are classified as "apprentice equipment operators" during their first three months operating equipment which does not require a licensed operator or during their first eighteen months operating equipment which requires a licensed operator.

(b) The wages for apprentice equipment operators are as follows:
(i) Windsor Zone - wage rate for Cement Improver;
(ii) Hamilton Zone - wage rate for Asphalt Raker;
(iii) Toronto Zone - wage rate for Asphalt Raker;
(iv) Ottawa Zone - wage rate for Skilled Labourer;
(v) Provincial Zone - wage rate for Skilled Labourer.

(2) Employees other than an operator are to be classified as "Pile Driver Operators" and shall be entitled to the wage rate for "Labourer - Structure Section".

(3) Employees engaged as Gravel and Chip Spreaders shall be paid the wage rate of Equipment and Maintenance Operator, Group "B".

(4) The attachment for a farm or industrial tractor must be power operated and be an integral part of the tractor.

(5) (a) Students employed as flagpersons or watchpersons shall be entitled to the wage rate for those classifications.

(b) Students performing work in positions that are classified in the Fair Wage Schedule, other than flagpersons or watchpersons, shall be entitled to receive the student rate, notwithstanding the rate set out in Schedule for the classification applicable to the work.

(c) Students employed for more than three months in a classified position shall then be entitled to the wage rate for that classification.

(d) Students performing work in positions that are not classified in the Fair Wage Schedule shall be entitled to receive the student rate, regardless of the location of the Contract.

DISCRETION OF THE MINISTER OF LABOUR

11. (1) The Ontario Minister of Labour may decide that special circumstances exist which make it expedient for him/her to decide:

(a) what the current or fair and reasonable wage rates for overtime are; and/or

(b) the proper classification of any Work for the purposes of wages and hours.

(2) The Contractor and Sub-Contractor(s), upon receipt of notice of any decision of the Ontario Minister of Labour, shall adjust accordingly the wage rates, hours, classification of Work so as to give effect to such decision.

CONTRACTOR'S OBLIGATIONS

12. The Contractor must comply with the requirements set out in these Labour Conditions.

13. (1) The Contractor shall post and keep posted these Labour Conditions, and the applicable Road and Structure Fair Wage Schedule, and any revisions thereto, in a conspicuous place on the Site.

(2) The Contractor shall ensure that the posted applicable Schedule includes a breakdown of the wages and non-statutory benefits paid to the Employees of the Contractor and each Sub-Contractor electing to pay the Fair Wage Rates in accordance with Section 6(2).

14. (1) The Contractor shall keep proper records showing the names, trades and addresses of all of the Contractor's Employees who perform any part of the work contemplated by this Contract and the wages paid to and time worked by them, as well as the Contractor's costs for all non-statutory benefits where the Contractor chooses to pay its Employees Fair Wages in accordance with Section 6(2).

(2) The records referred to in subsection (1) shall be kept separate from any records concerning Employees of the Contractor who do not perform any part of the work contemplated by this Contract.

(3) The records referred to in subsection (1) shall be kept in the Province of Ontario and made available for inspection by the Owner's Representative upon request, whether or not any Employee has complained that he or she is not being paid in accordance with section 6.

15. The Contractor shall deliver to the Owner's representative an affidavit or declaration attesting to the Contractor's compliance with these labour conditions accompanying the final invoice to be delivered under this Contract.

CONTRACTOR'S OBLIGATION WITH RESPECT TO SUB-CONTRACTORS

16. (1) The Contractor is responsible for ensuring that Sub-Contractors under the Contractor and any other persons doing or contracting to do the whole or any part of the work contemplated by this Contract under the Contractor comply with these Labour Conditions.

(2) The Contractor must provide all Sub-Contractors with a copy of these Labour Conditions and the applicable Schedule before any work is performed by the Sub-Contractor.

17. Without restricting the generality of Section 16(1), if any Sub-Contractor under the Contractor or any other person doing or Contracting to do the whole or any part of the work contemplated by this Contract under the Contractor fails to pay wages to an Employee of the Sub-Contractor or other person in accordance with section 6, the Contractor shall pay directly to the Employee, regardless of whether or not monies are still owed by the Contractor to the Sub-Contractor, the difference between the amount of wages that the Employee was paid by the Sub-Contractor or other person and the amount of wages that he or she would have been paid had the Sub-Contractor or other person paid wages in accordance with section 6.

18. The Contractor shall, in any Contract with a Sub-Contractor or other person doing or contracting to do the whole or any part of the work contemplated by this Contract who employs an Employee, require the sub-Contractor or other person,

    (a) to pay the Employee in accordance with section 6 of these labour conditions;

    (b) to keep proper records showing the names, trades and addresses of all Employees who perform any part of the work contemplated by this Contract and the wages paid to and time worked by them, as well as the Sub-Contractors's costs for all non-statutory benefits where the Sub-Contractor chooses to pay its Employees Fair Wages in accordance with Section 6(2);

    (c) to keep the records referred to in clause (b) separate from any records concerning Employees who do not perform any part of the work contemplated by this Contract;

    (d) to keep the records referred to in clause (b) in the Province of Ontario and to make them available for inspection by the Contractor and/or the Owner's representative upon request, whether or not any Employee has complained that he or she is not being paid in accordance with section 6; and

    (e) in any Contract with any other person doing or Contracting to do the whole or any part of the work contemplated by this Contract who employs an Employee, to require that other person to assume the same obligations in relation to his, her or its Employees as the Contractor is required by this section to require parties with whom the Contractor Contracts to assume in relation to their Employees.

CLAIM PROCEDURE

19. (1) Wage claims with respect to Contracts issued by the Owner should be made directly to the Owner's Representative.

    (2) An Employee employed by the Contractor shall file his/her completed form regarding a Fair Wage complaint with the Owner's Representative at the earliest time but no later than forty-five (45) days following total completion of the Contract, as defined in the Construction Lien Act.

    (3) An Employee employed by a Sub-Contractor shall file his/her completed form regarding a Fair Wage complaint with the Owner's Representative at the earliest time but no later than forty-five (45) days following total completion of the relevant sub-contract, as defined in the Construction Lien Act.

(4) Third parties may assert a Fair Wage complaint on the Owner's prescribed form on behalf of an Employee where it is based on specific information.

20. In addition to, or alternately to Section 19, an Employee may file a lien claim for wages, in respect of a failure to comply with any requirements under Section 6, under the Construction Lien Act. These lien claims must be filed directly with the Owner.

21. Claims made with respect to Contracts issued by municipalities should be made directly to them under the provisions of the Construction Lien Act.

OWNER'S RIGHT TO HOLD BACK

22. (1) If the Owner receives a complaint that an Employee is not being paid in accordance with section 6 or if Owner finds that an Employee is not being paid in accordance with section 6, the Ministry may withhold from any money that it owes to the Contractor an amount equal to the amount that the complainant alleges is owing or that the Owner has found to be owing to the Employee.

(2) Subsection (1) applies even though the Employee is not the Employee of the Contractor.

(3) The Owner is not required to disclose the identity of a complaining Employee unless the Owner finds that the Employee has not been paid by his or her employer in accordance with section 6 and that Employee is the only Employee of the employer who has not been so paid.

(4) An amount withheld under subsection (1) because the Owner received a complaint that an Employee was not being paid in accordance with section 6 will be paid to the Contractor if,

(i) the Owner finds that the Employee was in fact being paid in-accordance with section 6; or

(ii) the Owner finds that although the Employee was not being paid in accordance with section 6, the Employee has subsequently been paid the difference between the amount of wages that he or she had been paid and the amount of wages that he or she would have been paid had he or she been paid in accordance with section 6.

(5) If the Owner has found that an amount is owing to an Employee, and that amount has not been paid within 105 days of the completion of the work to be performed under this Contract, the amount withheld may be forfeited to the Crown at the discretion of the Owner in which case the entitlement of the Contractor under this Contract is reduced by the amount forfeited.

FAIR WAGE SCHEDULE
ROADS AND STRUCTURES CONSTRUCTION, ONTARIO
PROVINCIAL ZONE

ROAD BUILDING SECTION

CLASSIFICATION OF LABOUR	**Fair Wage Rate Per Hour not less than:**
	Effective Date: April 1, 1995
LICENSED OPERATORS	$13.83
LICENSED MECHANICS AND WELDERS, CLASS "A"	12.99
EQUIPMENT AND MAINTENANCE OPERATORS, GROUP "A"	12.85
EQUIPMENT AND MAINTENANCE OPERATORS, GROUP "B"	12.20
SKILLED LABOURERS	11.69
TRUCK DRIVERS - Tow Tractor Operators - Rollermen (Grade)	11.48
LABOURERS	11.19
FLAGPERSON	9.40
WATCHPERSON	9.40
STUDENTS (registered in day school)	9.04

STRUCTURE SECTION

CARPENTERS, FORM BUILDERS	13.83
RODMEN, CONCRETE FINISHERS, PAINTERS	12.69
STRUCTURE LABOUR OPERATIONS	11.34
STRUCTURAL TRAINEES	11.48

CLASSIFICATION DEFINITIONS:

Licensed Operators: Includes Shovel, Clam, Gradall, Backhoe, Dragline, Piledriver Operator.

Equipment and Maintenance Operators, Group A: Includes Mechanic and Welder, Class B, Rollerman - Asphalt, Burnerman, Powerman, Boiler Engineer (with papers). Float Driver (over 25 tons), Concrete Paver (over 1 cu. yd.), Bulldozer (75 Drawbar HP and over), Grader, Class A (Finished Grading), Front End Loader (1-1/2 yds. and over), Scraper, Crusher, Asphalt Spreader Operator.

Equipment and Maintenance Operators, Group B: Includes Boiler Fireman, Mixerman, Float Driver (25 tons and under), Front End Loader (under 1-1/2 yds.) Grader, Class B (Gravel and other Grading), Farm and Industrial Tractor with Power Attachments, Driller (Air Track), Bulldozer (under 75 Drawbar HP) Operator.

Skilled Labourers: Includes Air Tool Operator, Asphalt Raker, Form Setter, Pipe Layer, Screedman.

Structure Labour Operations: Includes Labourers on Structures.

Structural Trainee: Means an Employee who is enrolled in the Ontario Road Builders Association Pilot Training Programme.

SECTION C
LIQUIDATED DAMAGES

Working Days and Charges

1. Time

Time shall be of the essence for carrying out and completing the Work.

2. Progress of the Work and Time for Completion

The charging of Working Days shall commence on **10 Jun 2019** and the Contractor shall diligently carry out the Work on this Contract to completion on or before the expiration of **75** Working Days from the date of commencement.

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

Working Days shall be charged until the Contract is complete in its entirety.

3. Working Day

3.1 Definition

The definition of "Working Day" in subsection GC 1.07, Definitions, of the MTO General Conditions of Contract, November 2016, is amended by the addition of the following:

d) Except any day between **02 Dec 2019 to 17 May 2020** inclusive, even though the Contractor may elect to carry out any approved work as called for under this Contract during this period.

e) Except when hot mix paving is the Controlling Operation in the fall and it is expected to remain the Controlling Operation until seasonal shutdown, the Contractor may request permission to shut down the paving operation prior to **02 Dec 2019**. The Contract Administrator will consider the circumstances at the time the request is made, including but not limited to the need to provide a safe roadway for the winter or to cover a granular grade. If permission is granted, the Contract Administrator will cease charging Working Days on the date when the Contractor shuts down the paving operation for the winter.

3.2 Statement of Record of Working Days

The Contract Administrator will furnish to the Contractor for the Contractor's signature a weekly "Statement of Record of Working Days". The Contractor will be allowed two weeks in which to file a written protest setting forth in what respects the said weekly statement is incorrect, otherwise, the statement shall be deemed to have been accepted by the Contractor as correct.

4. Liquidated Damages

It is agreed by the parties to the Contract that in case all the Work called for under the Contract is not finished or completed within the number of Working Days as set forth in the Special Provisions or as extended according to subsection GC3.06, Extension of Contract Time or Interim Completion Dates, of MTO General Conditions of Contract, November 2016, a loss or damage will be sustained by the Owner. Since it is and will be impracticable and extremely difficult to ascertain and determine the actual loss or damage which the Owner will suffer in the event of and by reason of such delay, the parties hereto agree that the Contractor will pay to the Owner the sum of **$3,100.00** as liquidated damages for each and every Day's delay in completing the Work in excess of the number of Working Days prescribed. It is agreed that this amount is an estimate of the actual loss or damage to the Owner which will accrue during the period in excess of the prescribed number of Working Days.

The Contractor shall incur interest on Liquidated Damages and pay such interest in accordance with GC 7.19. For greater certainty, the Owner may also retain interest charges from monies owing to the Contractor under GC 8.02.04.11 (Owner’s Set-Off).

ASSISTANT DEPUTY MINISTER,
PROVINCIAL HIGHWAYS MANAGEMENT DIVISION
MINISTRY OF TRANSPORTATION, ONTARIO