The Municipality of Powassan

SEALED QUOTES FOR PAVING WILL BE RECEIVED BY:

The Corporation of the Municipality of Powassan
250 Clark Street, PO Box 250
POWASSAN, ON, P0H 1Z0

TENDER NUMBER: 2022-05

PAVING

TENDER CLOSING DATE AND TIME:	10:00 A.M. LOCAL TIME JUNE 16, 2022
TENDER OPENING TIME:	10:30 A.M. LOCAL TIME JUNE 16, 2022 To be awarded at the council meeting of June 21, 2022
QUOTE FOR:	The pulverizing of existing surface treatment, placement of granular 'A', reshaping for roadway crown, compaction of pulverized reshaped materials, and the supply and placement of a 50mm lift of SP12.5 asphalt.

This complete tender package must be submitted in a sealed envelope, clearly marked "Paving" Tender: 2022-05
LOWEST OR ANY QUOTE NOT NECESSARILY ACCEPTED

Location Of Work:

The locations of work are to be:

- Big Bend Ave; from South Street Easement to End/Cul-de-sac, approx. 397m.

Schedule of Contract Documents:

1. The following information for bidders
2. The following Special Provisions
3. Bid Form
4. Appendix A-Typical Cross Section
5. Appendix B-Aerial View of Construction Limits
6. Appendix C-City of North Bay Standards
7. Standards OPSS.MUNI 100, OPSS 206, OPSS 330, OPSS 314, OPSS 501, OPSS 310, OPSS.PROV 313, OPSS.MUNI 1151(These forms are not attached hereto).

General Information:

All inquiries concerning the tender, prior to tender closing shall be directed to:

Codey Munshaw, Director of Public Works & Engineering
Municipality of Powassan
Box 250, 250 Clark Street, Powassan ON P0H 1Z0
Telephone 724-2813 ext. 202 or 705-491-1749/Fax 724-5533
Email: cmunshaw@powassan.net

For the purpose of this document a company conducting work for the Municipality of Powassan, will hereby be referred to as a "Contractor".

The Contractor shall contact the above designated municipal employee for all matters related to the bidding process. The Municipality of Powassan will not be liable for any and all information the contractor receives from any Municipal employees and/or council members, that are not listed as a point of contact in this tender.

The Contractor will submit their sealed proposals by traditional mail/drop-off at the previously stated Municipal building before tender closure. Contractors must submit this entire completed Tender package.

A Contractor may amend their Tenders at any time prior to the set closing date/time by submitting a signed and sealed amendment. No amendments will be accepted post Tender closure. A Tender may be voided by superseding it with a later Tender or letter of withdrawal, prior to the closing date and time.

Any and all Tenders that are received after the Tender closing date/time, will be rejected by the Municipality. Any and all unsigned Tenders will be deemed unacceptable, and will be rejected by the Municipality.

The Municipality reserves the right to reject any or all tenders. The Municipality shall have the right to cancel the request process and to place a new request for tenders. The tenders shall be evaluated by the Municipality in its sole and unfettered discretion. The Municipality reserves the right, in its absolute discretion to accept a tender which it deems most advantageous to itself and the right to reject any tender, in each case without giving any notice. Supplementary materials changing the terms of the request shall render the quote non-compliant. Tenders which contain qualifying conditions may, at the sole discretion of the Municipality, be disqualified or rejected. In no event will the Municipality be responsible for the costs of the preparation of the submission of a tender. No Bidder shall have any claim for any compensation of any kind because of participating in this tendering process and by submitting a tender each Bidder shall be deemed to have agreed that it has no claim.

Notification of Acceptance of tender will be by telephone and written form of notice, to the address of the Contractor used on the bid forms. The Date of Acceptance shall be deemed to be the date the Contractor receives the Notification of Acceptance.

The Tender opening will be on June 16, 2022, at 10:30am at 250 Clark Street, Powassan. For those wishing to attend the Tender opening, please see the front reception prior to the opening time.

Project Details:

The work shall consist of: pulverization to the full depth of existing surface treatment, application of 50mm of granular 'A' (quarried), reshaping of roadway to ensure a minimum of 3% crown (See Appendix A-Typical Cross Sections), compaction of granular materials to 98% standard proctor, application of a 50mm lift of SP12.5 (as per Appendix C), and the application of granular 'A' on shoulders to bring shoulders flush with asphalt paving.

SP12.5 shall use 58-34 performance grade asphalt cement (PGAC). The Contractor shall provide the Director of Public Works & Engineering with asphalt mix design for approval prior to commencement of work. No work shall commence until the Contractor has received approval from the Public Works Engineer. Placement of Superpave asphalt shall be in accordance with the attached special provisions, Appendix C, and previously stated OPSS.

Locations of work shall be:

- Big Bend Ave; from South Street Easement (20m North of 153 Big Bend Driveway) to End/Cul-de-sac, approx. 410m.

Approximate construction limits are identified in Appendix A & B, however the start and end limits will be confirmed on site after contract has been awarded.

To be completed by AUGUST 26, 2022

The name and location of the asphalt plant materials will be sourced from _____. The granular extraction for asphalt mix, must be from a valid licensed industrial pit or quarry. It is the responsibility of the bidder to ensure proper operations and licensing. Name of pit/quarry product is to be taken from

_____. A copy of Aggregate Resources Act License for source of material must accompany tender.

The quantities listed in the tender form are approximate only and are subject to increase or decrease at no liability to the Municipality beyond the bid unit price, please refer to the Bid Form for quantities.

The Contractor shall perform his/her work in such a way to cause the least possible inconvenience to the travelling public and shall provide all necessary warning signs and flagmen or other protective and/or warning devices as required by Ontario Traffic Manual-Book 7. The work shall be completed during **daylight** hours only.

For the unit price bid, the Contractor shall supply all materials, labour, tools, equipment and all other things necessary to complete the work in accordance with these contract documents and to the satisfaction of the Municipal Public Works Engineer or his representative.

Payment:

Measurement for payment shall be as follows: pulverization of existing surface treatment shall be paid per square meter (m^2), asphalt removal shall be paid per square meter (m^2), quarried granular 'A' shall be paid in tonnes per truck, and SP12.5 shall be paid by in tonnes per truck. Measurement and ticket for each load will be issued to the Public Works Engineer. The method of weighing shall be by permanent scale, portable flat scale, or loader scale. Proof of calibration of scale must be provided prior to commencement of work.

Payment will be made in response to the Contractor's invoice, and will be made when all work has been completed to the satisfaction of the Public Works Engineer or his representative. Confirmation of the material weight, performed at the MTO Wasi Truck Inspection Station, may be requested at any time during construction by the Public Works Engineer.

Asphalt Best Practices:

The Contractor shall ensure that industry best practices are used during the mixing of asphalt. The contractor will ensure that the following best practices are utilized:

PGAC Quality and Durability. Control the quality of your PGAC by specifying MSCR, DENT and Ash Content for all modified grades, in addition to the regular PG specification. This will eliminate questionable modification techniques; will ensure responsible use of REOBs; will mandate elastomeric (polymer) modification and will ensure superior fatigue properties for the binder. Refrain from banning or mandating ingredients, as this approach does not ensure high performance binders.

PGAC Low Temperature Properties. The adoption of the Extended BBR test is not recommended, as it will take binders in a whole new direction regarding physical properties and will lead to substantial cost increases. If concerns exist about thermal cracking or other cold weather distresses, it should be addressed by lowering the low-end grade of the PGAC.

AC content for HMA mixes. A minimum asphalt cement content of 4.7% for base mixes and 5.0% for surface mixes is recommended. Binder content is the single most important parameter for ensuring superior fatigue performance and durability in HMA mixes.

Rational use of RAP. Control a reasonable utilization of RAP in HMA mixes. The virgin PGAC grade must be adjusted if the RAP content in the HMA exceeds 20%, as per the guideline in the table below. Maximum recommended virgin AC replacement ratios are also shown in the table below. The rational use of RAP ultimately depends on the RAP's characteristics (PGAC content and its recovered properties, gradation, etc.), which should be verified at the mix design stage.

RAP Content in HMA	**Virgin PGAC Grade**
RAP Content in HMA 0 – 20%	Use original PG grade (ex. 58-28)
20 – 40%	1 PG grade softer (ex. 52-34)
Over 40%	2 PG grades softer (ex. 46-40) or special grade
Max. Virgin PGAC Replacement Ratio, %	40% max in base mixes 20% max in surface mixes

HMA Design and Construction. Ensure that HMA crucial durability requirements are met, such as moisture resistance and target compaction levels. If needed, use antistripping additives, lime, compaction aides, WMA additives, etc., as required by the design. Always ensure that paving best practices are met and that a robust quality assurance testing program is in place.

Performance Evaluation:

Failure to execute the contract in a competent and timely manner will result in the disqualification of the bidder from bidding on the Municipality of Powassan's contracts for a period of two (2) years.

Special Provisions:

See appendix C for asphalt specifications. If there is conflicting information between Appendix C and the OPSS stated in the contract, Appendix C shall govern.

Testing:

a) Asphalt mix design and lab test results shall be provided to the Director of Public Works & Engineering in advance of construction.

b) Costs for tests on asphalt materials ordered by the Director will be paid by the Municipality.

c) Notwithstanding the above, all other testing programs, or tests of failed specimens, or excessive amounts of testing which in the Director's opinion results from inefficiency or lack of normal care and workmanship, will be at the Contractor's expense.

Should the materials testing not meet the standards set forth in the applicable OPSS, the Contractor may be requested to replace all materials from the failed material lot, at his/her own expense.

Contractors Ability To Perform Work:

The Contractor is required to complete the following statements, and is required to include the said statements using the space provided or similar documentation provided by the Contractor in their Tender submission.

Statement A: The Contractor must state contracts and/or experience in successfully performing similar projects.

Statement B: The Contractor must provide names and addresses of all Subcontracts that will be performing work on this contract, and shall state the portion of work allotted to each. Only one Subcontractor shall be named for each part of the work sublet.

Statement C: The Contractor shall provide a list of suppliers.

Statement A – Contractor's Experience For Reference:

_____
_____
_____
_____

Statement B – List of Subcontractors:

_____
_____
_____
_____

Statement C – List of Suppliers:

_____
_____
_____
_____

Liability/Indemnification:

The Contractor shall indemnify the Municipality, its officers, employees and agents from all claims, demands, actions, or other proceedings initiated by others arising out of or attributable to anything done, or omitted to be done by the Contractor, its officers, employees or agents in connection with the services performed or required to be performed under this Contract.

Liability/Insurance:

The Contractor shall maintain a policy of motor vehicle liability insurance for both owned and non-owned licensed vehicles having limits of not less than $5,000,000.00 inclusive per occurrence for bodily injury, death, and damage to property.

The Contractor shall maintain a policy of general liability insurance having limits of not less than $5,000,000.00 inclusive per occurrence for bodily injury, death, and damage to property.

The general liability policy shall include the Municipality as an additional insured, but only in respect of and for the duration of the services to be performed under this contract and shall contain a cross liability clause endorsement.

The Contractor shall provide proof of valid WSIB coverage.

Prior to the beginning of the Contract the Contractor must provide proof of insurance (certificate of insurance or certified copy of policy) to the Clerk of the Municipality.
POLICY NO.: _____ INSURANCE CO.: _____
AMOUNT: _____ EXPIRY DATE: _____

Motor Vehicles and Excess Loading:

The Contractor is responsible for having and maintaining a valid CVOR (Commercial Vehicle Operator's Registration) certificate throughout the duration of this contract.

Where a vehicle is hauling materials for use on the work under the contract, in whole or in part upon a public highway and where motor vehicle registrations is required for such vehicle, the Contractor shall not cause or permit such vehicles to be loaded beyond the legal limit as specified in the Highway Traffic Act, whether such vehicle is registered in the name of the Contractor or otherwise, except where there are designated areas in the contract where overloading is permitted. The Contractor shall bear the onus of weighing disputed loads.

Bidder Deposit And Holdback:

Bidders are required to deposit a certified cheque or bid bond, payable to the Corporation of the Municipality of Powassan for 10% of the total bid price. Unsuccessful bidders' cheques will be returned upon award of the contract, and the successful bidders cheque will be returned upon satisfactory completion of all work stated in this contract.

The Municipality of Powassan will retain a Holdback of ten percent (10%) of the total invoiced amount. The release of Holdback will be made after forty-five (45) calendar days from the issue of Certificate of Substantial Performance by the Municipality. The release of the Holdback is contingent on the following:

- Performance of construction. All infrastructure constructed by the contractor performs as per the intended purpose, and no signs of faulty workmanship or materials are evident.
- The Contractor provides the Municipality with a document stating that all liabilities incurred during the construction of this project have been rectified, all subcontractors have been paid in full, and that there are no outstanding WSIB claims in relation to the Contractor's work for the Municipality.

Health & Safety:

All work performed under this Contract must be carried out in accordance with the Municipality's Health and Safety Policy and any federal and provincial health and safety legislation and regulations. Failure to comply with this condition will be considered a breach of contract.

Breach of Contract and Contract Termination:

If the Contractor or Municipality shall fail to meet the terms of the contract herein explained, the party conforming to the contract will have the opportunity to terminate the contract due to the other party breaching the contract. When a non-conformance is noticed by a party, the conforming party has a responsibility to notify (either by letter or email) the non-conforming party. The non-conforming party will have 10 business days to meet the terms of the contract, failure to do so will be a breach of contract and will be grounds for immediate dismissal.

Additionally, should the Contractor or Municipality knowingly provide false information during the completion of this contract document, it will be henceforth considered that the complying party was given insufficient information to formal accept the contract; meaning that the contract will be now in void, unless both parties can agree on new terms to this contract.

BID FORM

The Contractor has carefully examined the conditions and specifications attached and referred to in this contract, and has carefully examined the site and work location and understands and accepts the said conditions and specifications, and for the prices set forth in this quote, hereby offers to furnish all labour, equipment and materials, except as otherwise specified in the contract, to complete the work in strict accordance with said conditions and specifications for the sum provided in the table below:

Item	OPSS/Spec	Description	Unit	Quantity	Unit Bid Price	Total Bid
Big Bend Avenue						
1	330	Pulverization of existing surface treatment Full Depth)	m^2	2740	$	$
2		Asphalt Removal (at start of construction limits)	m^2	64		
3	206, 314, 501	50mm thick layer of granular 'A' (quarried) on roadway and 100mm thick layer on shoulders	Tonne	490	$	$
4	Appendix C	50mm lift of SP 12.5	Tonnes	360	$	$
5	206, 314, 501	Supply and place granular 'A' (quarried) in Private Entrances	Tonnes	40	$	$
					HST	$
					Total Bid	$

Bidder Initials: _____

BID FORM

I/We (the Contractor) promise: that I/we are over the age of 18, are of right mind, are not under the influence of alcohol or controlled substances, wish to enter into a legally binding contract with the Municipality of Powassan, and agree to perform the work without undue delay to ensure work is completed as specified by the above stated Tender no later than: AUGUST 26, 2022

Name of Individual or Firm _____
hereinafter referred to as the
"Contractor" (Print)
Address:
_____

_____

_____

Phone Number _____

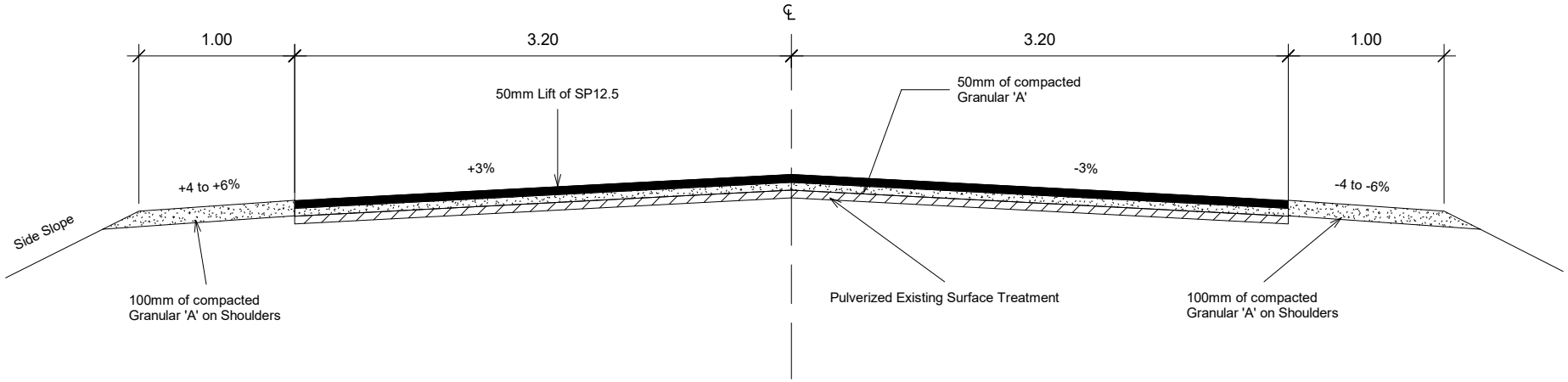
Authorized Signature _____

Title _____

Date _____

Witness or Firm Seal _____

Appendix A: Typical Cross Section



Sta: 0+000 to 0+410

1 Big Bend Ave

1 : 25

The Municipality of Powassan

The Municipality Of Powassan: Engineering Department

No.	Description	Date

Municipality Of Powassan

Powassan Asphalt Paving

Proposed Cross-Sections 1 Of 1

Project number	2022-05
Date	June 01, 2022
Drawn by	Codey Munshaw, EIT
Checked by	N/A
Scale	1 : 25

G01

Appendix B: Aerial View of Construction Limits

Proposed Asphalt Paving Locations - 1 OF 1

Project Number: 2022-05

Big Bend Ave

Municipality of Powassan

LEGEND

= 50mm lift of SP12.5

Produced By: Public Works- Engineering Services
Municipality Of Powassan

N

Scale: Not to Scale

The Municipality of Powassan

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NBSS 1101 – MATERIAL SPECIFICATION FOR PERFORMANCE GRADE ASPHALT CEMENT (OPSS 1101 SUPPLEMENTARY SPECIFICATION)

1 GENERAL

a) The following are amendments and additions to the November 2013 revision.

2 REFERENCES (1101.02)

2.1 ONTARIO MINISTRY OF TRANSPORTATION PUBLICATIONS

a) LS-299 Determining Asphalt Cement's Resistance to Ductile Failure Using Double Edge Notched Tension Test (DENT)

b) LS-308 Determination of Performance Grade of Physically Aged Asphalt Cement Using Extended Bending Beam Rheometer (BBR) Method

2.2 ASTM INTERNATIONAL

a) D 7343-12 Standard Practice for Optimization, Sample Handling, Calibration, and Validation of X-ray Fluorescence Spectrometry Methods for Elemental Analysis of Petroleum Products and Lubricants

2.3 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

a) T 350-14 Standard Method of Test for Multiple Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)

3 DEFINITIONS (1101.03)

a) **Low Temperature Limiting Grade (LTLG)** means the warmest of the Limiting Grades, TL, obtained for 1 hour, 24 hours, 72 hours and the two conditioning temperatures according to LS-308, and Form B of LS-308.

b) **Low Temperature Performance Grade (-YY)** means the low temperature performance grade of PGAC specified elsewhere in the Contract Documents where the PGAC grade specified is PGAC XX-YY.

c) **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 and meets the requirements of AASHTO M 320 or M 332.

d) **PGAC XX-YY** means PGAC with XX being the high temperature performance grade and –YY being the low temperature performance grade, as specified elsewhere in the Contract Documents, and meets the requirements of AASHTO M 320.

e) **PGAC XXS-YY** means PGAC graded using Multiple Stress Creep Recovery (MSCR) test for standard traffic level, as specified elsewhere in the Contract Documents, and meets the requirements of AASHTO M 332.

f) **PGAC XXH-YY** means PGAC graded using Multiple Stress Creep Recovery (MSCR) test for high traffic level, as specified elsewhere in the Contract Documents, and meets the requirements of AASHTO M 332.

g) **PGAC XXV-YY** means PGAC graded using Multiple Stress Creep Recovery (MSCR) test for very high traffic level, as specified elsewhere in the Contract Documents, and meets the requirements of AASHTO M 332.

4 QUALITY ASSURANCE (1101.08)

4.1 BASIS OF ACCEPTANCE (1101.08.01)

a) Material acceptance of asphalt cement for performance grading and the properties and attributes shown in Table 1 shall be determined by the owner based on QA test results conducted by the Owner's designated laboratory, unless superseded by referee test results, according to the requirements of the Contract Documents.

b) Three samples are required at a time when requested by the Contract Administrator for QA Laboratory testing. Sample frequency and location shall be determined by the Contract Administrator.

c) The Contractor shall be provided with test results from the tests that are completed.

4.2 LABORATORY REQUIREMENTS (1101.08.01.01)

a) The laboratory conducting PGAC testing shall have participated in the most recent AASHTO Materials Reference Laboratory proficiency sample correlation program for PGAC and the most recent MTO correlation for all PGAC testing to be carried out.

4.3 ANTI-STRIPPING ADDITIVE (1101.08.02)

The Contractor may request that an allowance be made for the impact of the anti-stripping additive on a PGAC grade for QA or referee purposes provided that:

a) It was not added at the supplier depot to a PGAC containing polyphosphoric acid (PPA); and that

b) When production begins the Contractor submits to the Contract Administrator complete AASHTO M 320 test results for the following:

i) Asphalt cement with anti-stripping additive at the percentage identified in the mix design.

ii) Asphalt cement without the anti-stripping additive.

4.4 SAMPLING (1101.08.03)

a) The Contract Administrator shall determine the frequency of sampling and testing for each grade of PGAC based on the HMA tender quantity. The Contract Administrator shall determine the quantity and location of HMA to be represented by each PGAC sample. When only one sample is taken on the job, the sample shall be deemed to represent all HMA placed on the Contract with that PGAC grade.

b) All samples shall be obtained during the production of the asphalt mix at the asphalt mix plant from the storage tank which is directly feeding the production of the asphalt mix according to AASHTO T 40 and the asphalt plant's health and safety plan. The asphalt plant's health and safety plan and procedure for sampling shall be reviewed in advance.

c) Sample quantity, labelling and delivery requirements shall be according to Table 2. Samples shall be delivered in a condition suitable for testing.

4.4.1 REFEREE TESTING (1101.08.06)

a) The Contract Administrator shall select a referee testing laboratory acceptable to the Owner within 3 Business Days following the Contractor's written notification to invoke referee testing. Referee test samples shall be delivered to the referee testing laboratory from the QA laboratory by the Contract Administrator.

b) Test results generated by the referee laboratory shall be used to re-evaluate the PGAC to determine whether the product conforms to the Contract Documents and the disposition of the HMA represented by the sample tested.

c) Referee testing shall be carried out in the presence of the Owner's designate. The Contractor may observe the testing at no cost to the Owner.

d) Observers shall follow the referee laboratory protocols for access to the premises and testing equipment and shall not unnecessarily impede the progress of the testing. Observers shall be permitted to validate sample identification and view sample condition. Subject to safety requirements, test method and equipment limitations, they shall also be permitted to observe test procedures, take notes, view equipment readings, and review completed work sheets while in attendance. The taking of photographs and videos shall not be permitted.

e) Concerns with sample condition or sample identification shall be made known to all observers prior to commencement of the referee testing. Comments on deviations

from the applicable test method shall be made at the time of referee testing. Unresolved concerns shall be specific in nature and submitted in writing to the referee laboratory's designated representative and the other observers present, at the time of testing.

f) Table 1

Additional Asphalt Cement Testing Requirements and Acceptance Criteria for All PG Grades

PGAC Grade	Property and Attributes (Unit)		Test Method	Results Reported Rounded to the Nearest	Acceptance Criteria	Rejectable
All PGAC Grades	Ash Content, % by mass of residue (%)	PG XX-28	LS-227	0.1	≤ 0.8	> 0.8
		PG XX-34			≤ 0.8	> 0.8
		PG XX-40			≤ 1.0	> 1.0
All PGAC Grades with the Exception of PG 58-28 and PG 52-34	Low temperature limiting grade (LTLG) (°C)		LS-308	0.5	≤ -YY	> -YY
	Grade Loss (°C)		LS-308	0.5	≤ 6.0	> 6.0
	Non-recoverable creep compliance at 3.2 kPa ($J_{nr-3.2}$) (kPa^{-1})		AASHTO T 350. For testing temperature see Note 1	0.01	≤ 4.5	> 4.5
	Average percent recovery at 3.2 kPa ($R_{3.2}$) (%)			0.1	≥ the lesser of [(29.371) $(J_{nr-3.2})^{-0.2633}$] or 50	< the lesser of [(29.371) $(J_{nr-3.2})^{-0.2633}$ -10] or 50
	CTOD, δ_t (mm)	PG XX-28	LS-299	0.1	≥ 8.0	< 8.0
		PG XX-34			≥ 12.0	< 12.0
		PG XX-40			≥ 16.0	< 16.0

Notes:
1. The testing temperature shall be 52°C for PGAC Zone 1 and 58°C for PGAC Zones 2 and 3.

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NBSS 1151 – MATERIAL SPECIFICATION FOR SUPERPAVE AND STONE MASTIC ASPHALT MIXTURES (OPSS 1151 SUPPLEMENTARY SPECIFICATION)

1 GENERAL

a) The following are amendments and additions to the November 2006 revision.

2 REFERENCES (1151.02)

2.1 ONTARIO MINISTRY OF TRANSPORTATION PUBLICATIONS

a) LS-227 Determination of Ash Content

b) LS-229 Determining Asphalt Cement's Resistance to Ductile Failure Using Double Edge Notched Tension Test (DENT)

c) LS-308 Determination of Performance Grade of Physically Aged Asphalt Cement Using Extended Bending Beam Rheometer (BBR) Method

3 MATERIALS (1151.05)

3.1 AGGREGATES (1151.05.02)

Refer to Table 1 for gradation for Superpave and SMA.

TABLE 1
Aggregate Gradation

HMA Type	Percentage Passing by Dry Mass of Aggregates									
	Sieve Size mm									
	50.0	**37.5**	**25.0**	**19.0**	**12.5**	**9.5**	**4.75**	**2.36**	**1.18**	**0.075**
Superpave 4.75	-	-	-	-	100	95-100	90-100	-	30-60	6-12
Superpave 9.5	-	-	-	-	100	90-100	32-90	32-67	-	2-10
Superpave 12.5, 12.5FC 1 and 12.5FC 2	-	-	-	100	90-100	45-90	45-55 (Note 1)	28-58 (Note 1)	-	2-10
Superpave 19.0	-	-	100	90-100	23-90	-	-	23-49	-	2-8
Superpave 25.0	-	100	90-100	19-90	-	-	-	19-45	-	1-7
Superpave 37.5	100	90-100	15-90	-	-	-	-	15-41	-	0-6
SMA 9.5	-	-	-	-	100	70-95	30-50	20-30	(Note 2)	8-12
SMA 12.5	-	-	-	100	90-100	50-80	20-35	16-24		8-11
SMA 19.0	-	-	100	90-100	50-88	25-60	20-28	16-24		8-11

Notes:
1. For mixes that have been identified as fine graded, the allowable range of percentage by mass passing the 4.75 mm sieve shall be 50-65, and for the 2.36 mm sieve the allowable range will be 39-58.
2. For the SMA 9.5 mm, the maximum percentage passing the 1.18 mm, 0.600 mm, and 0.300 mm sieves is 21, 18, and 15 respectively.