RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Travaux publics et Services gouvernementaux Canada
Place Bonaventure, portail Sud-Est
800, rue de La Gauchetière Ouest
7 ième étage
Montréal
Québec
H5A 1L6
FAX pour soumissions: (514) 496-3822

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Travaux publics et Services gouvernementaux Canada
Place Bonaventure, portail Sud-Est
800, rue de La Gauchetière Ouest
7 ième étage
Montréal
Québec
H5A 1L6

Title - Sujet Réfection chaussée ASC St-Hubert	
Solicitation No. - N° de l'invitation EF950-152177/A	**Amendment No. - N° modif.** 003
Client Reference No. - N° de référence du client R.022503.830	**Date** 2015-04-14
GETS Reference No. - N° de référence de SEAG PW-$MTC-065-13156	
File No. - N° de dossier MTC-4-37375 (065)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2015-04-28**	**Time Zone** **Fuseau horaire** Heure Avancée de l'Est HAE
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☑ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Duval, Diane	**Buyer Id - Id de l'acheteur** mtc065
Telephone No. - N° de téléphone (514) 496-3864 ( )	**FAX No. - N° de FAX** (514) 496-3822
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:** Agence Spatiale Canadienne St-Hubert, Qc	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm
(type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/
de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Canada

ADDENDUM NO: 2

Please find enclosed herewith the above-mentioned addendum which forms part of the tender documents. This addendum modifies the tender documents as indicated herafter.
(see next pages)

REPAIR ROADWAY
JOHN H. CHAPMAN BUILDING
CANADIAN SPACE AGENCY, ST-HUBERT, QC

R.022503.001

ADDENDUM No 02

Specifications :

Section 32 11 33 – Cement –Treated Base courses

The section 32 11 33 is replaced by that joined with the changes in bold.

Schedule for bidding:

The schedule for bidding is replaced by that joined.

Part 1 General

1.1 SUMMARY

.1 Related Sections:

.1 Section 32 12 16 – Asphalt Paving.

.2 Measurement Procedures:

.1 Measure cement stabilized base in square metres of actual surface area as indicated.

.2 Measure emulsified asphalt in litres at 15 degrees C of undiluted emulsified asphalt applied.

.3 Measure fluidised asphalt for stabilization in litres at 15 degrees C of unfluidised asphalt applied.

.4 Measure granular corrections in tonnes of material incorporated into work.

1.2 REFERENCES

.1 American Association Of State Highway and Transportation Officials (AASHTO)

.1 AASHTO M81-[92-UL(2004)], Standard Specification for Cutback Asphalt (Rapid - Curing Type), Single User Digital Publication.

.2 AASHTO M82-[75 -UL(2004)], Standard Specification for Cutback Asphalt (Medium - Curing Type), Single User Digital Publication.

.3 AASHTO M140-[03-UL(R2003)], Standard Specification for Emulsified Asphalt.

.4 AASHTO M208-[01-UL(R2005)], Standard Specification for Cationic Emulsified Asphalt, Single User Digital Publication.

.2 American Society for Testing and Materials International (ASTM)

.1 ASTM C88-[05], Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate.

.2 ASTM C117-[04], Standard Test Method for Material Finer Than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.

.3 ASTM C131-[06], Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.4 ASTM C136-[06], Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

.5 ASTM-D2397 Standard Specification for Cationic Emulsified Asphalt

.6 ASTM C171-[03], Standard Specification for Sheet Materials for Curing Concrete.

.7 ASTM D558-[04], Standard Test Methods for Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures.

.8 ASTM D559-[03], Standard Test Methods for Wetting-and-Drying Compacted Soil-Cement Mixtures.

.9 ASTM D560-[03], Standard Test Methods for Freezing and Thawing Compacted Soil-Cement Mixtures.

.10 ASTM D698-[00ae1], Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft^3) (600kN-m/m^3).

.11 ASTM D1557-[02e1], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft^3) (2,700kN-m/m^3).

.12 ASTM D2027-[1997(R2004)], Cutback Asphalt (Medium-Curing Type).

.13 ASTM D2028-[1997(R2004)], Cutback Asphalt (Rapid-Curing Type).

.14 ASTM D4318-[05], Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-8.1-[88], Sieves, Testing, Woven Wire, Inch Series.

.2 CAN/CGSB-8.2-[M88], Sieves, Testing, Woven Wire, Metric.

.4 **Cahier des charges et devis généraux (CCDG) from Ministère des transports du Québec;**

.5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

1.3 SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Samples:

.1 Inform ministry Representative of proposed source of aggregates and provide access for sampling at least 2 weeks prior to beginning production.

.2 Test reports: submit at least 2 weeks prior to beginning work with copies of manufacturer's test data and certification that cement and asphalt delivered to job site meets requirements of this Section.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Packing, shipping, handling and unloading:

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Waste Management and Disposal:

.1 Evacuate of site any rapping materials and transport them to an appropriate recycling plant.

.2 Place into designated containers any substance that complies with toxic or dangerous material.

.3 The unused granular materials shall be transported off the site to a quarry.

.4 Unused bituminous material shall be transport to an appropriate recycling plant.

1.5 AMBIENT CONDITIONS

.1 Suspend operations when air temperature is less than 15 degrees C or when rain is forecast within 2 hours.

Part 2 Products

2.1 MATERIALS

.1 Cement: to CAN/CSA-A3001, Type GU.

.2 Emulsified asphalt: to ASTM **D2397**: **Type CSS-I ou CSS-1H**.

.3 Cutback asphalt: to **Ministère des transports du Québec** standards **type PG 52-34 (SHARP)**.

.4 Aggregate: in accordance with Section 31 05 17 - Aggregate Materials and following requirements:

.1 Crushed stone or gravel.

.2 Gradations to be within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.2.

.3 Table:

Sieve Designation	% Passing
100 mm	-
75 mm	-
50 mm	-
37.5 mm	-
25 mm	[100]
19 mm	-
12.5 mm	[75 - 100]
9.5 mm	-
4.75 mm	[55 - 95]
2.00 mm	-
0.425 mm	[10 - 30]
0.180 mm	-
0.075 mm	[0 - 10]

.4 Liquid limit: ASTM D4318, maximum 25.

.5 Plasticity index: ASTM D4318, maximum 6.

.6 Los Angeles Degradation: ASTM C131, maximum % loss by mass: 45 %.

.7 Soundness: ASTM C88, using Magnesium Sulphate. Maximum % loss by mass: coarse aggregate 12, fine aggregate 16.

.5 Potable Water, clean, cool and free of excessive amounts of oil, acid, salt, acalide, organic material or other substances that may alter the cure.

.1 Test water of questionable quality in accordance with CAN/CSA-A23.1/A23.2, as directed by Ministry Representative.

2.2 MIXES

.1 **Method of formulation shall be as proposed by Direction – Laboratoire des chaussées du Ministère des Transports "Méthodes de formulation à froid des matériaux recyclés stabilisés à l'émulsion de bitume – Procédure de laboratoire LC-26-2".**

.1 Minimal cement content: **1%** to aggregate dry mass.

.2 Dry Marshall stability : 7 500 N.

.3 Retained Stability (under vaccum and immersed) at 22°C : 70

.4 Agregates coating % : 50

.2 Mix design formula subject to approval of Ministry Representative. Each mix formula shall contain the following information :

.1 Sieve size of pulverised air dried bituminous sample, type, origin, proportion, percentage of added aggregates (if required) and the estimated result aggregate pro portion and of combined bituminous dose after correction.

.2 Physical caracteristics curvs of mix design mélange in four points for each of the following :

.1 Dyr bold density;

.2 Marshall modified stability, dry state at 22°C;

.3 Marshall stability after immersion and saturated under vacuum at 22°C;

.4 Retained Stability percentage after and saturated under vacuum at 22°C;

.5 Maximum percentage of total voids;

.6 Percentage of absorbed water after immersion and saturated under vacuum at 22°C.

2.3 CURING MATERIALS

.1 In accordance with stabilising agent, curing lenght shall be equal or superior to the specified the following curing length :

Stabilising agent	Minimal curing lenght
Emulsified asphalt	3 days of good weather, otherwise 7 days
Fluidised asphalt	24 hours of good weather, otherwise 3 days

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 SITE PREPARATION

.1 Clean debris from area to be stabilized.

.2 Inspect subbase for capability, to withstand without displacement compaction specified for mixture.

.3 Correct ruts, soft or yielding areas in subbase by removing or adding material or aerating or wetting materials as required.

.4 Grade and shape area to be stabilized; conform to lines, grades, and cross sections prior to placing cement-treated course.

.5 Surface: approved by Ministry Representative prior to base course placement.

.6 Determine moisture-density relationship of existing soils in accordance with ASTM D1557.

.7 Perform laboratory tests on existing materials prior to initial construction.

.8 Maintain lines and grades as indicated.

.1 When stabilized course is part of pavement which is to meet fixed grade, construct transition long enough to minimize abrupt or noticeable grade changes.

3.3 SEQUENCE OF OPERATION

.1 Mixed-in-place:

.1 Ensure no frozen materials are used in mixing.

.2 Travelling mixing machine to have following features:

.1 Capable of picking up aggregate and cement off grade for dry mixing.

.2 Equipped with spray nozzle type of watering system.

.3 Capable of spreading mix in uniform layers.

.3 Begin placement at crown or high side of one way design slope.

.4 Add the corrective aggregates.

.5 Spread base aggregate to required depth or place in windrow as required by type of mixing machine used.

.6 Spread cement on aggregate by approved self-powered mechanical cement spreader at rate approved by Ministry Representative.

.7 Pick up and mix dry cement and aggregate until homogeneous.

.1 Add water and remix until water is evenly distributed.

.8 Spread and compact mix in uniform layer of **175** mm compacted thickness.

.2 Joints:

.1 When placing mix against stabilized base less than 30 min in place, no special jointing required.

.2 When placing mix against stabilized base more than 30 min in place, prepare construction joint by cutting back existing material as necessary to expose uniform aligned full depth vertical face, composed of well compacted material.

.1 Cutting back is not necessary if form is used.

.3 Offset joints at least 250 mm from design joint locations of overlaying pavement.

.4 Compact new material against joints to ensure bond.

.3 Compacting:

.1 Compaction equipment: capable of obtaining required material densities.

.2 Compact stabilized base to at least 97 % of maximum density, ASTM D558, (method B) except compactive effort to be in accordance with ASTM D1557 98 % of maximum density ASTM D698.

.3 Begin compaction immediately after spreading to complete surface finishing within 2 hour from start of mixing.

.4 Begin compaction with roller covering outer edge of material and proceed continuously back and forth across area until specified compaction is obtained.

.1 Space successive roller passes no more than 75% of width of rear roller wheel is on uncompact material.

.5 Operate compaction equipment forward and backward without turning around.

.6 Keep stabilized base surface moist during compaction operation.

.7 Complete final compaction using pneumatic tired rollers.

.8 Correct high areas by scarifying and removing material until surface is within specified tolerance.

.9 Dispose of excess material.

.1 Do not use excess material to fill depressions.

.10 Correct low areas by adding materials, scarifying, removing, and wasting at least 50 mm of compacted base before bringing to grade with new material.

.11 Compact corrected areas.

.4 Curing:

.1 Prior to application of curing membrane, clean surface of loose material and keep moist continuously by means of fine spray of water.

.2 Apply curing membrane of emulsified asphalt within 2 hours following final finishing operations.

.3 Apply [emulsified asphalt with pressure distributor truck at 1.35 L/m^2 or cutback asphalt with pressure distributor truck at 1.0 L/m^2.

.4 Completely cover stabilized base surface with emulsified or cutback asphalt and use hand application methods to complete areas missed by distributor truck.

3.4 SITE TOLERANCES

.1 Finish cement stabilized granular base to plus or minus 10 mm of design grade and cross section, but not uniformly high or low.

3.5 FINISHING

.1 Moisten surface, after compaction and shape to required lines, grades and cross section.

.2 Lightly scarify surface to eliminate imprints made by compacting or shaping equipment.

.3 Compact surface to specified density with rubber tired rollers and smooth-wheel tandem rollers to provide smooth, dense, uniform surface free of surface checking, ridges or loose material and conforming to crown, grade and line indicated.

.4 Complete finishing operations within 2 hours after completion of mixing operations.

.5 In places not accessible to finishing and shaping equipment, compact mixture with mechanical tampers to density specified; shape and finish by hand methods.

.6 Reprocess with additional cement that portion of compacted mix with density less than that specified or that has not properly hardened or that is improperly finished.

.7 Place material along edges of stabilized course in quantity that will compact to thickness of course being constructed.

.8 If constructed in two or more layers, place in quantity that will compact to thickness of each layer.

.9 Allow in each operation whenever possible, minimum width of 300 mm of shoulder to be rolled and compacted simultaneously with each layer of stabilized course.

.10 Where average measured thickness of stabilized course is more than 13 mm deficient in thickness conduct additional tests and correct deficiencies as directed by Ministry Representative.

.1 Correct excesses in thickness if so directed by Ministry Representative.

.2 Replace material removed for test holes or for deficient thickness reconstruction and compact with new soil-cement mixture.

.3 At end of each work day, form straight transverse construction joint by cutting back into completed work to form true vertical face free of loose or shattered material.

.4 Remove improperly compacted material along construction joints and replace with soil-cement that is mixed, moistened, and compacted.

3.6 CURING

.1 Immediately after completion of finishing operations, but no later than end of each days stabilization work, protect surface against rapid drying for 24 hours.

.2 Immediately after finishing, clean surface of loose and foreign matter.

.3 Ensure that surface contains sufficient moisture, by applying water in fine spray to prevent penetration of bituminous material.

.4 Using distributor, apply bituminous material at temperature between 18 and 26 degrees C and at rate between 0.90 and 1.13 litres per square metre.

.5 Treat areas inaccessible to, or missed by distributor using manually operated hose attachment.

3.7 PROTECTION

.1 Protect cement stabilized base from frost for 3 days after placement and 5 days for emulsified asphalt.

.2 Keep vehicular traffic off cement stabilized base or emulsified asphalt, except essential construction traffic.

.3 Maintain in acceptable condition until succeeding material is applied or until acceptance by Ministry Representative. If rutting occurs, restore to smooth compacted surface.

3.8 LOADING TESTS

.1 After the stabilizing operation **and required curing**, the contractor shall at his own expenses, make a loading test in accordance with the following prescriptions. The typical truck shall be:

.1 10 wheel truck with 3 axles with a load of 27 250 kg.

.2 12 wheel truck with 4 axles with a load of 32 000 kg.

.2 The chosen and fully loaded truck shall travel at least one time on each lane or parking at a speed of 5 to 10 km/h.

.3 When deformations occur after a first pass a second pass is asked.

.4 Where a deformation is noted again or amplifies, the contractor shall repair the pavement after approval of the Ministry representative.

3.9 CLEANING

.1 Proceed in accordance with Section 01 74 11 - Cleaning.

.2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

Public Works and Government Services Canada
John H. Chapmam building
Canadian space Agency, Saint-Hubert
Roadway repair
Projet SM n° : F098563
Projet TPSGC n° : R.022503.001

SCHEDULE FOR BIDDING

Post no.	Description	unit	Estimated quantity	Unit price ($)	Total price ($)
1	**PHASE 1 (Bretelle d'accès et Chemin contour Ouest)**				
	Demolition :				
1.1	Removal and disposal of off-site soil (thickness 125 mm)	Square meter	9000	--	$
1.2	Reprofiling ditch	Linear meter	50		$
	Pavement construction:				
1.3	Asphalt paving - base layer - GB-20, 80 mm thick	Metric Ton	1740		
1.4	Emulsified asphalt	Litres	3600	--	$
1.5	Asphalt paving - surface layer - ESG-10, 45 mm thick	Metric Ton	980	--	$
1.6	Soft spot excavation	cubic meter	200	--	$
	Cement-Treated Base Courses :				
2.6	Pulverizing - 300 mm thick	Square meter	9000	--	$
2.7	Stabilizing subgrade - 175 mm thick	Square meter	9000	--	$
2.8	Adding material - 5 @ 20 mm	Metric Ton	100	--	$
	Option "A"				
2.9	Emulsified asphalt for stabilizing	Liters	**12150**	--	$
	Option "B"				
2.10	Cutback asphalt for stabilizing	Liters	90000	--	$
	Miscellaneous :				
2.12	Pipe culvert T.B.A dia. 450mm Ø	Linear meter	5	--	$
2.13	Roc 100mm - 200mm , 300mm thick with geotextile Texel 7612	Unit	1	--	$
2.14	Curb	Linear meter	10	--	$
2.15	Sodding	Square meter	150	--	$
	GRAND TOTAL(Total amount to be reported at section BA03 of the Invitation to tender) :				**$**