

RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works & Government Services
Canada/Réception des soumissions Travaux publics et
Services gouvernementaux Canada
1713 Bedford Row
Halifax, N.S./Halifax, (N.E.)
B3J 1T3
Halifax
Bid Fax: (902) 496-5016

Revision to a Request for a Standing Offer

Révision à une demande d'offre à commandes

Regional Individual Standing Offer (RISO)

Offre à commandes individuelle régionale (OCIR)

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

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Real Property Contracting
1713 Bedford Row
P.O. Box 2247/C.P.2247
Halifax, N.S./Halifax, (N.E.)
B3J 3C9
Halifax

Title - Sujet ASPHALT PAVING AND REPAIRS		
Solicitation No. - N° de l'invitation W010C-12C004/A		Date 2012-04-03
Client Reference No. - N° de référence du client W010C-12-C004		Amendment No. - N° modif. 002
File No. - N° de dossier PWA-1-64236 (122)	CCC No./N° CCC - FMS No./N° VME	
GETS Reference No. - N° de référence de SEAG PW-\$PWA-122-4869		
Date of Original Request for Standing Offer		2012-03-28
Date de la demande de l'offre à commandes originale		
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-05-08		Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT
Address Enquiries to: - Adresser toutes questions à: Chinye, Chukwudi		Buyer Id - Id de l'acheteur pwa122
Telephone No. - N° de téléphone (902) 496-5476 ()	FAX No. - N° de FAX (902) 496-5016	
Delivery Required - Livraison exigée		
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:		
Security - Sécurité This revision does not change the security requirements of the Offer. Cette révision ne change pas les besoins en matière de sécurité de la présente offre.		

Instructions: See Herein

Instructions: Voir aux présentes

Acknowledgement copy required	Yes - Oui	No - Non
Accusé de réception requis	<input type="checkbox"/>	<input type="checkbox"/>
The Offeror hereby acknowledges this revision to its Offer. Le proposant constate, par la présente, cette révision à son offre.		
Signature	Date	
Name and title of person authorized to sign on behalf of offeror. (type or print) Nom et titre de la personne autorisée à signer au nom du proposant. (taper ou écrire en caractères d'imprimerie)		
For the Minister - Pour le Ministre		

Solicitation No. - N° de l'invitation

W010C-12C004/A

Client Ref. No. - N° de réf. du client

W010C-12-C004

Amd. No. - N° de la modif.

002

File No. - N° du dossier

PWA-1-64236

Buyer ID - Id de l'acheteur

pwa122

CCC No./N° CCC - FMS No/ N° VME

Amendment 002 is raised to incorporate the following change:

ANNEX "A"

STATEMENT OF WORK

Insert

All Other Terms and Conditions Remain the Same.

Department of National Defence



Specification

Standing Offer Agreement

Asphalt Paving & Repairs

CFB Halifax, NS

Job No.W010C-12-C004

2011-12-08

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PART 1 - GENERAL

- 1.1 RELATED REQUIREMENTS .1 Section 03 10 00 CONCRETE WORK.
.2 Section 32 12 16 ASPHALT CONCRETE PAVING AND REPAIRS.
- 1.2 DESCRIPTION OF WORK .1 Work under this Standing Offer Agreement comprises the furnishing of all labour, materials, tools, equipment and transportation required to carry out repairs and install of new asphalt and concrete surfaces including granular bases preparation for various areas of CFB Halifax.
- 1.3 WORK INCLUDED .1 Work under this Standing Offer comprises the carrying out of the following:
- .1 Cutting and removal of existing asphalt;
 - .2 Replacement of granular sub-base, base and paving;
 - .3 Adjustment of manholes, water valves and any other appurtenances associated with scope of work;
 - .4 Re-paving of deteriorated asphalt;
 - .5 Routing out, filling and sealing cracks;
 - .6 Removal of damaged or deteriorated concrete;
 - .7 Replacement of granular sub-base, base and concrete;
 - .8 Formwork;
 - .9 Miscellaneous concrete work;
 - .10 Saw cutting;
 - .11 Replacement of damaged topsoil and sods
 - .12 Clean-up.
- 1.4 ENGINEER .1 All reference to the Engineer in this specification, is to be understood, that the Engineer is the Contract Inspector who is representing the Formation Construction Engineering Officer(FCEO).
.2 The address of the Engineer is:
-

1.4 ENGINEER
(Cont'd)

.2 The address of the Engineer is:(Cont'd)

Formation Construction Engineering
Maritime Forces Atlantic
PO Box 99000 Stn Forces Willow Park Bldg 7
Halifax, NS B3K 5X5
Attn: Contract Inspector
Tel: (902)722-4139
Fax: (902)722-1847

.3 The Engineer will provide the Contractor a list of his authorized representatives at the pre-job meeting.

1.5 LOCATION OF
JOB SITES

.1 Areas covered under this Specification include but not limited to the following locations:

- .1 Stadacona - Halifax, NS;
- .2 Windsor Park - Halifax, NS;
- .3 Willow Park - Halifax, NS;
- .4 Royal Artillery(RA) Park - Halifax, NS;
- .5 Halifax Armoury - Halifax, NS;
- .6 Damage Control Division - Herring Cove, NS;
- .7 Ferguson's Cove - Ferguson's Cove, NS;
- .8 HMC Dockyard - Halifax, NS;
- .9 Dockyard Annex(NAD) - Dartmouth, NS;
- .10 Shannon Park - Dartmouth, NS;
- .11 Bedford Magazine(CFAD Bedford) - Bedford, NS;
- .12 Degaussing Range, Wright's Cove - Dartmouth, NS;
- .13 Bedford Rifle Range - Bedford, NS;
- .14 Defence Research and Development Canada(DRDC Atlantic) - Dartmouth, NS;
- .15 12 Wing Shearwater - Eastern Passage, NS;
- .16 Osbourne Head - Cow Bay, NS;
- .17 NRS Newport Corner - Newport Corner, NS;

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- 1.5 LOCATION OF JOB SITES (Cont'd) .1 (Cont'd)
.18 NRS Mill Cove - Mill Cove, NS;
.19 Windsor Armoury - Windsor, NS.
- 1.6 PRE-JOB MEETING .1 Immediately upon receipt of award of Standing Offer, the successful Contractor will contact the Engineer at (902)722-4139 to arrange a pre-job meeting prior to commencement of any work.
- 1.7 SITE ACCESS .1 Access to the site is under the direction of the Department of National Defence. All visitors entering areas issuing a daily pass will be aware of the requirement for search as a condition of issue.
.2 While within the confines of CFB Halifax, all employees and representatives of the Contractor must comply with all of the Standing Orders as promulgated by Base authorities. Engineer will provide copies of relevant Standing Orders.
- 1.8 SECURITY CLEARANCE .1 The Contractor and his/her personnel must be suitable for security clearance as defined by the Department of National Defence Security Officer.
.2 The Contractor must obtain security clearances for all employees in accordance with the PWGSC Industrial Security Manual.
.3 Within 30 days of Work commencement, the Contractor must provide the Engineer with proof positive that all submissions required by PWGSC to initiate security clearance procedures have been completed. This is to include a valid Visitor's Clearance Request(VCR).
- 1.9 CONTRACTOR'S QUALIFICATIONS .1 The Contractor must satisfy the Engineer that he/she has adequate and qualified staff to perform the services expected. This includes the processing of all service calls within an acceptable time period.
.2 The Contractor must provide evidence that the firm is duly registered to carry out this type of work and will be required to provide evidence of past services and contracts of this nature. (Subcontractors included).
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- 1.10 CONTRACTOR'S USE OF SITE .1 Limited to areas of work and storage. Contractor will be briefed on use of site by Engineer.
- .2 Do not unreasonably encumber site with materials or equipment.
- .3 Move stored products or equipment which interferes with operations of Engineer or other Contractors.
- .4 Obtain and pay for use of additional storage or work areas needed for operations.
- 1.11 HOURS OF WORK .1 Normal working hours will be 0730 to 1600 hours, Monday to Friday. Any work carried out other than normal working hours must be authorized by the Engineer.
- 1.12 PARKING .1 Parking space will be made available on site for company vehicles and equipment only. Maintain and administer this space as directed.
- 1.13 LICENSES AND PERMITS .1 The Contractor will be responsible for obtaining and paying for all licenses and permits required to perform the work requested.
- .2 Obtain from the Engineer a properly completed «Excavation Permit» prior to any digging. This pertains to sidewalk removals and other shallow excavations.
- 1.14 CODES AND STANDARDS .1 Perform work in accordance with the latest edition of the following codes: Nova Scotia Transportation and Public Works Standard Specification Highway Construction and Maintenance, Part II of the Canada Labour Code, and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements will apply.
- .2 Meet or exceed requirements of Standing Offer documents, specified standards, codes and referenced documents.
- .3 All codes, standards and regulations, addendums, revisions and acts mentioned in all sections of this specification must be latest editions.
-

1.15 EXISTING SERVICES

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian and vehicular traffic.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify Engineer of findings.
- .3 Submit schedule to and obtain approval from Engineer for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Where unknown services are encountered, immediately advise Engineer and confirm findings in writing.
- .5 Execute work with least possible interference or disturbance to occupants, public and normal use of premises. Arrange with Engineer to facilitate execution of work.
- .6 Where security has been reduced by work of the Standing Offer, provide temporary means to maintain security.
- .7 Provide temporary dust screens, barriers, warning signs in locations where renovation and alteration work is adjacent to areas used by public or government staff.

1.16 CUTTING, FITTING AND PATCHING

- .1 Execute cutting, fitting and patching required to make work fit properly.
- .2 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .3 Make cuts with clean, true, smooth edges. Make patches inconspicuous in the final product.

1.17 PROTECTION OF EXISTING FACILITIES

- .1 The Contractor must take all necessary precautions to ensure against damage to existing facilities. Any damage to such facilities as a result of the Contractor's operations must be repaired or replaced by the Contractor at his/her own expense, as soon as is reasonably possible.
- .2 Special coverings and protection must be provided to protect plants, walls, projections and adjacent work where materials are being removed, installed or hoisted.
- .3 Where the Engineer considers it necessary, provide and erect warning signs and barriers.

1.18 POWER AND
WATER SUPPLY

- .1 DND may provide, free of charge, temporary electric power and water for construction purposes.
- .2 Engineer will determine delivery points and quantitative limits. Engineer's written permission is required before any connection is made. Connect to existing power supply in accordance with Canadian Electrical Code.
- .3 Provide, at no cost to DND, all equipment and temporary lines to bring these services to project site.
- .4 Supply of temporary services by DND is subject to DND requirements and may be discontinued by DND site representative at any time without notice, without acceptance of any liability for damage or delay caused by such withdrawal of temporary services.
- .5 After the temporary service lines are no longer required, the Contractor must remove all lines and equipment, restore the connection points to their original condition and return the land to its original contour.

1.19 WORKMANSHIP

- .1 Workmanship must be the best quality executed by workers experienced and skilled in the respective duties for which they are employed.
- .2 Do not employ any unfit person or anyone unskilled in their required duties. The Engineer reserves the right to require the dismissal from the site, workers deemed incompetent, careless, insubordinate or otherwise objectionable.
- .3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Engineer whose decision is final.
- .4 The Contractor must employ a competent and experienced supervisor with the authority to speak on his/her behalf on day-to-day routine matters.

1.20 INSPECTION

- .1 All work and materials covered by this specification will be subject to inspection at any times and all times by the Engineer or his/her elected representative.

1.21 REPORTING
IRREGULARITIES

- .1 The Contractor must notify the engineer of irregularities in the work area, such as structural defects, mechanical and/or electrical problems and/or any beyond the scope of work.

1.22 NOTIFICATION
OF REQUIREMENT

- .1 A PWGSC 942 "Call-up Against a Standing Offer" will be issued by the Engineer or his/her representative, to notify the Contractor of requirements against this Standing Offer.
- .2 Prior to commencing work, an estimated cost must be submitted to the Engineer in writing including the total costs for all work that will be performed as requested.
- .3 When requested by Engineer, provide an adequate breakdown quote to show how costs were incurred.

1.23 METHOD OF
INVOICING

- .1 Invoices will be made out separately for each PWGSC 942, "Call-up Against a Standing Offer".
- .2 Invoices for Work completed under this specification will be made out in one(1) copy and forwarded to:

Accounts Payable Section
Formation Construction Engineering
Maritime Forces Atlantic Willow Park Bldg 7
PO Box 99000 Station Forces
Halifax NS B3K 5X5
- .3 All invoices must be submitted within 30 days of completion of work.
- .4 Each invoice will clearly indicate the following information:
 - .1 Contract number;
 - .2 Work Order/Serial number;
 - .3 Requisition/order offer number;
 - .4 Building number or location;
 - .5 Dates during which the Work was accomplished;
 - .6 A detailed description of the work performed, with itemized list of materials & labour (a copy of the Contractor's invoice from his material supplier will also be included plus any other costs being charged), labour, overhead, profit and applicable taxes will be included separately on the invoice.
 - .7 Labour costs are to be broken down by trade and sub-trade. Labour time sheets will also be provided upon request.
- .5 All call-outs supported with a PWGSC 942 "Call-up Against a Standing Offer" will be invoiced separately.

1.23 METHOD OF
INVOICING
(Cont'd)

.6 No invoices will be processed without proper information as outlined in this section.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

PART 1 - GENERAL

- 1.1 CONSTRUCTION SAFETY MEASURES .1 Observe and enforce construction safety measures by complying with the requirements of the following statutes and authorities:
- .1 Canada Labour Code Part II and the Canada Occupational Health and Safety Regulations.
 - .2 The Nova Scotia Occupational Health and Safety Act and supporting Occupational General Safety Regulations as amended from time to time.
 - .3 Most recent amendments to the National Building Code of Canada, Part 8 and National Fire Code of Canada.
- .2 Refer to Section 01 35 35, DND Fire Safety Requirements.
- .3 Engineer will provide a copy of any relevant special written instructions to be followed.
- .4 **Prior to Contract Award**
- .1 Bidders/Tenders are to provide a copy of the company's safety policy, signed by the owner or authorized representative of the company.
 - .2 Bidders/Tenders are to provide documents and evidence to the satisfaction of the Crown, indicating that the bidder/tender has successfully completed an independent SAFETY AUDIT and will maintain that safety audit for the life of the Standing Offer(Contractor and Sub-contractor(s)).
- .5 **Before Work Begins**
- .1 Bidder/Tender to provide documentation if requested by the Crown, indicating all safety training attained for each person who will be involved with the Standing Offer.
- .6 The following disciplinary measures will be taken for any violations of safety under this Standing Offer Agreement:
- .1 **First Violation:** Verbal warning issued to the Contractor for the first violation of a safety regulation(Violation will be documented on Standing Offer file, copy to Contractor DCC or PWGSC).
 - .2 **Second Violation:** Written warning to Contractor for second violation of a safety regulation(Violation will be documented on Standing Offer file, copy to Contractor, DCC or PWGSC).
 - .3 **Third Violation:** A third violation of a safety regulation may result in the termination of the Standing Offer with a
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1.1 CONSTRUCTION SAFETY MEASURES
(Cont'd)

- (Cont'd)
- .3 Third Violation:(Cont'd)
recommendation to the Contracting Authority that the Contractor be denied access to Formation Construction Engineering contracts(Documented to Standing Offer file, copies to Contractor, DCC or PWGSC).
 - .4 **Serious Violation:** For a serious violation of a safety regulation as deemed by a regulator, project manager or safety officer a recommendation will be made to the Contracting Authority to immediately terminate the Contract/Standing Offer(Violation documented on Standing Offer file, copies to Contractor, DCC or PWGSC).
 - .5 **Charges Laid or Guilty Determination by Courts:**
Infractions of safety regulations that result in charges being laid by a regulator against the Contractor or the Contractor being found guilty by the courts may result in that Contractor being denied access to Formation Construction Engineering contracts.

1.2 ASBESTOS PRODUCT & ASBESTOS ACTIVITY

- .1 Within the confines of the Base, the provision of new products containing fibrous asbestos materials is prohibited.
- .2 Demolition or disturbance of spray or trowel-applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in course of work, stop work and notify Engineer immediately. Do not proceed until written instructions have been received from Engineer.

1.3 FASTENING DEVICES EXPLOSIVE ACTUATED

- .1 Explosive actuated devices must not be used.

1.4 HOT WORK

- .1 All hot work activity is to take place with Engineer's approval and written permission from the Formation Fire Chief(Hot work permit). Hot work permits and fire-watch requirements will be provided by the Dockyard Fire Hall at 427-3500.
- .2 The ventilation system in the area of any Hot Work activity is to be isolated to prevent migration of fumes/smoke and to reduce any possible spread of fire to other areas of the facility.
- .3 Contractor is to employ an employee trained in the use of fire extinguishers as fire watch during any Hot Work for a minimum of 30 minutes after activity has ceased.

- 1.5 CONFINED SPACES .1 All work in confined spaces will be carried out in compliance with the Canada Occupational Safety and Health Regulations, Part XI.
- .2 The Contractor to provide and maintain all equipment as required by any person to enter and/or perform work in a safe manner, in compliance with the Canada Occupational Safety and Health Regulations, Part XI.
- .3 The Contractor to provide and maintain training, as required by the Canada Occupational Safety and Health Regulations, Part XI.
- .1 The Contractor and/or his employees must provide proof of training and qualifications when requested by the Engineer.
- .4 The Contractor to provide the Engineer with a copy of an «Entry Permit» for each and every entry into the confined space to ensure compliance with the Canada Occupational Safety and Health Regulations, Part XI.
- .5 The Contractor to have a hazard assessment of the confined space performed.
- .1 The Contractor to provide the Engineer with a copy of the hazard assessment.
- 1.6 FALL PROTECTION .1 All work carried out above the mandatory height restrictions, from unguarded structure and/or scaffolding, will be done in compliance with the Canada Occupational Safety and Health Regulations, Part XII, Section 12.10.
- .2 The components of a fall protection system must meet the standards as outlined in the Canada Occupational Safety and Health Regulations, Part XII, Section 12.10(2).
- .3 The Contractor is to ensure fall protection equipment is maintained, inspected and tested by a qualified technician as required by the Canada Occupational Safety and Health Regulations, Part XII, Section 12.3.
- 1.7 ARC FLASH .1 The Contractor is to ensure all electrical equipment such as switchboards, panel boards, motor control centres and meter socket enclosures be marked to warn persons of potential electric shock and arc flash hazards. This labeling is required for all new & modified installations.
- .2 The warning label must also include information regarding «arc flash hazard category(0 to 4)» and the «Flash Protection Boundary» as defined in NFPA 70E. All projects specifications must include short circuit study and flash hazard analysis.
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- 1.7 ARC FLASH (Cont'd) .3 In accordance with the new CSA Standards Z462-08 para 4.3.3.3 Electrical Contractors are now required to perform a shock and flash hazard analysis to select the appropriate PPE to wear. Electrical Contractors are now required Arc-rated personal protective equipment while troubleshooting and diagnostic testing that cannot be performed unless the electrical conductor or circuit part is energized. All Contractor work practices must protect each employee from arc flash and from contact with live parts directly with any part of the body or indirectly through some other conductive object.
- 1.8 SAFETY .1 The Contractor must provide a copy of their company's Occupational Health and Safety Policy Program. It must meet the Provincial Occupational Health and Safety Acts. The Engineer will instruct the Contractor where the Federal Standards apply.
- .2 The Contractor must perform site hazard assessments to establish site specific safe work practice procedures for the safety and well being of his/her employees. Copies must be made available to Department of National Defence upon request.
- .3 All copies of the formal Hazard Assessments conducted by the Contractor throughout the duration of the work will be retained and made available to the Engineer immediately upon request.
- .4 It is the Contractor's responsibility to be familiar with all applicable Safety Acts, Regulations, Codes and Standing Offer requirements. These must be identified and addressed in the Safety Plan, by identifying Standard Operating Procedures(SOP) and safe work practices(SWP) which incorporate clear and specific control measures, applicable rules, procedures and practices, all of which will become mandatory.
- .5 The Contractor must ensure all workers and authorized persons entering the work site are notified of and abide by the posted Safety Plan, safety rules, procedures, safe work practices and applicable Safety Acts, Regulations, and codes. Any person not complying with these will not be permitted on the site.
- .6 Contractor must ensure that all applicable personal protective equipment(PPE) is used.
- .1 All personnel are required to wear hard hats, in accordance with CSA Z94.1-05.
- .2 All personnel are required to wear safety footwear, in accordance with CSA Z195-09.
- .3 All personnel are required to wear eye & face protection, in accordance with CSA Z94.3.1-09.
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1.8 SAFETY
(Cont'd)

- .6 (Cont'd)
- .4 When and where noise level is above 85 decibels; all personnel are required to wear hearing protection, in accordance with CAN/CSA Z94.2-02(R2007).
 - .5 Where toxic or noxious gas fumes, or oxygen deficiency or excessive dust may occur, so as to create a hazard to life, safety or health; all personnel are required to wear respiratory protection, in accordance with CAN/CSA Z94.4-02(R2007).
 - .7 The Engineer will coordinate arrangements for the Contractor to be briefed on site safety within fourteen(14) days of award of Standing Offer Agreement.

1.9 SITE SIGNS
AND NOTICES

- .1 Safety and instruction signs and notices:
- .1 Signs and notices for safety and instruction must be in both official languages. Graphic symbols must conform to CAN/CSA Z321-96(R2006).

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

PART 1 - GENERAL

- 1.1 EMERGENCY REPORTING .1 Telephone Number: Dial 9-1-1.
- 1.2 FIRE SAFETY ENFORCEMENT .1 Within the confines of the Base, the prescription and enforcement of mandatory Fire Safety measures will be exercised under the authority of the Formation Fire Chief.
- .2 Comply with and enforce compliance by all Contractor personnel with all requirements of this specification section, and with the most recent edition of the National Building Code of Canada(NBCC) and the National Fire Code of Canada(NFC), including all subsequent revisions issued by the National Research Council of Canada.
- .3 The Engineer reserves the right to require the dismissal from site of persons deemed careless or otherwise in violation of the Fire Safety Requirements.
- 1.3 FIRE SAFETY BRIEFING .1 Prior to commencement of work under this Standing Offer, the Engineer will arrange a meeting of all parties concerned to review and clarify requirements for Fire Safety measures. This may involve a briefing by the Formation Fire Chief.
- .2 The Engineer will provide direction for reporting of fire including the emergency telephone number for fire reporting and location of fire alarms within or adjacent to work area.
- 1.4 FIRE WATCH .1 For hot work activity, the Contractor will provide the service of fire-watch persons on a scale and schedule as prescribed by the Dockyard Fire Hall at the time of issuance of the hot work permit.
- 1.5 FIRE EXTINGUISHERS .1 Supply fire extinguishers, as prescribed by the Formation Fire Chief, necessary to protect work in progress and contractor's physical plant on site.
- 1.6 SMOKING PRECAUTIONS .1 In accordance with these Fire Safety requirements particular to the work area and site, the Engineer and Formation Fire Chief will designate hazardous areas as well as non-restricted areas where smoking may be permitted.
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- 1.6 SMOKING PRECAUTIONS
(Cont'd)
- .2 Smoking is prohibited in all buildings.
- .3 In all other areas, exercise care and comply with written or oral directives of the Engineer for the use of smoking materials.
- 1.7 REPORTING FIRE INCIDENTS
FIRE INCIDENTS
- .1 Report immediately all fire incidents as follows:
- .1 Activate nearest fire alarm, or
- .2 Dial 9-1-1 or designated number given at the time of briefing.
- .3 Telephone the Engineer.
- .2 Persons activating fire alarm must remain at the alarm to direct the Fire Department to the scene of the fire.
- .3 When reporting a fire by telephone, give location of fire, name and number of building and be prepared to direct the Fire Department to the scene of the fire.
- 1.8 INTERIOR & EXTERIOR FIRE PROTECTION AND ALARM SYSTEM
ALARM SYSTEM
- .1 Notify Formation Fire Chief at least 48 hours prior to scheduling any work that may require Fire Alarm and/or Protection Systems to be:
- .1 Obstructed in any way.
- .2 Shut-off.
- .3 Left inactive at the end of a working day or shift.
- .2 Do not commence any such work until Engineer confirms approval and direction by the Formation Fire Chief.
- .3 Fire hydrants, standpipes and hose systems must not be used for other than fire fighting purposes unless authorized by the Engineer and the Formation Fire Chief.
- 1.9 BLOCKAGE OF ACCESS FOR FIRE APPARATUS
APPARATUS
- .1 Obtain approval of the Engineer and Formation Fire Chief 24 hours prior to commencing any work that by any means would impede access for fire fighting apparatus. Immediately notify the Engineer of any infringement on minimum vertical or horizontal clearances either inside or outside buildings, as prescribed by the Formation Fire Chief.
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1.10 RUBBISH &
WASTE MATERIAL

- .1 Storage:
 - .1 Where it is necessary to store oily waste in work areas exercise extreme care to ensure maximum possible safety and cleanliness.
 - .2 Greasy or oily rags or materials subject to spontaneous combustion must be deposited and kept in a receptacle approved by the Formation Fire Chief and removed as directed by the Engineer.
- .2 The burning of rubbish is prohibited.
- .3 Removal:
 - .1 All rubbish must be removed from the work site at the end of the work day or shift or as directed by the Engineer.

1.11 FLAMABLE
LIQUIDS

- .1 The handling, storage and use of flammable liquids are to be governed and guided by the requirements established by the Formation Fire Chief and in accordance with the approved Fire Safety Plan.
- .2 Indoor storage of flammable liquids must not exceed thirty(30) litres provided that they are stored in areas and containers approved by the Formation Fire Chief.
- .3 The Engineer reserves the right to require removal from the site any storage containers not acceptable to the Formation Fire Chief.
- .4 The Engineer will not permit indoor storage of quantities of flammable liquids exceeding thirty(30) litres for on-site work purposes, without the written permission of the Formation Fire Chief.
- .5 Transfer of flammable liquids within buildings is prohibited.
- .6 Transfer of flammable liquids must not be carried out in the vicinity of open flames or any type of heat producing devices.
- .7 Flammable liquids having a flash point below twenty-two(22) degrees C such as naphtha or gasoline must not be used as solvents or cleaning agents.
- .8 Flammable waste liquids, for disposal, must be stored in approved containers located in a safe ventilated area. Quantities are not to exceed thirty(30) litres. Dumping or burning of flammable liquids on site is prohibited.

1.12 HAZARDOUS
SUBSTANCES

- .1 Exercise special precautions necessary to safeguard life and property from damage by fire or explosives.
- .2 If the work entails the use of any toxic or hazardous materials, chemicals or explosives, or otherwise creates a hazard to life, safety or health, work must be in accordance with the most recent edition of the requirements of the National Fire Code of Canada, and measures prescribed by the Formation Fire Chief.

1.13 HAZARDOUS
HOT WORK

- .1 Prior to commencing any «Hot Work» involving open flame, burning, welding or heating, the Contractor must obtain a «hot work permit» issued by the Formation Fire Chief at the Dockyard Fire Hall, 427-3500.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not used.

PART 1 - GENERAL

CONTRACTOR MUST ENSURE THAT ALL THEIR PERSONNEL ARE FAMILIAR WITH THESE REGULATIONS AND REQUIREMENTS.

- 1.1 GENERAL .1 The following is a summary of the security, safety and fire regulations of Canadian Forces Ammunition Depot, Bedford, as promulgated by the Base Commander, CFB Halifax and administered by the Superintendent CFAD Bedford NS.
- .2 Contractor's personnel will be subject to all of the regulations while working within confines of CFAD Bedford.
- 1.2 PRE JOB SECURITY AND SAFETY MEETING .1 Prior to commencement of work, the Contractor must meet with the Site Security, Safety and Fire Safety Regulations Officers. In accordance with direction of Engineer and these site officers, ensure that all employees of the Contractor are given thorough instructions on security, safety and fire precautions peculiar to an Ammunition Depot and that the regulations are fully compiled with, at all times, by all Contractor personnel.
- 1.3 SECURITY PASSES .1 Contractors must report to the NCO I/C Commissionaires at Building 153; submit names of all their personnel and description of all their vehicles to arrange the issue of the required temporary passes prior to proceeding to work within the the confines of the depot.
- 1.4 CONDITIONS FOR ACCESS .1 All visitors will be issued a daily pass and will be required to sign an acknowledgement that they are aware of and consent to the following conditions for access.
- .2 The person to whom this pass is issued agrees to return the pass to the Security Guard at the gate when the Contract or employment at CFAD Bedford expires.
- .3 All vehicles entering and leaving CFAD Bedford may be searched to ensure that no prohibited articles are taken into nor contraband articles are taken out of the Ammunition Depot.
- 1.5 FIRE SERVICE CFAD BEDFORD .1 Fire service at CFAD Bedford is provided by DND Fire Service from 0730 until 1600 hours, Monday to Friday. All Contract work will be ended by 1530 hours daily. Fire response at all other times is provided by HRM. Before any work is carried out during
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1.5 FIRE SERVICE .1
CFAD BEDFORD
(Cont'd)

(Cont'd)
silent hours, the Dockyard Platoon Chief must be contacted at 427-0550, local 3500.

1.6 SEARCHES .1

The Canadian Corps of Commissionaires may conduct a personal search of individuals at any time within the Ammunition Depot. Vehicles entering or leaving the Depot may be searched to ensure that contraband articles are not taken into the Explosives Area and that property is not taken out without authorization.

1.7 ALARMS .1

Depot Alarms: A Siren is sounded only in the event of an emergency such as a fire, explosion, thunderstorm or evacuation. A Siren is also sounded to signify «All Clear».

.2

Fire Emergency: A series of «Hi-Lo» sounds on the Depot Alarm System signifies an emergency in the explosive area. Contractors must cease operations and proceed in their own vehicles to the nearest exit gate out of the explosive area. If no vehicle available proceed to the nearest «Fire Assembly Point» at Buildings 169 or 143.

.3

Thunder and Lightning: A series of «Beeps» on the Depot Alarm System signifies a thunder/lightning storm warning. Contractors must cease operations and proceed in their own vehicles to the nearest exit gate out of the explosive area. If no vehicle available proceed to the nearest «Fire Assembly Point» at Buildings 169 or 143.

.4

Evacuation: A series of «Slow Whoops» on the Depot Alarm System signifies that evacuation in the explosive area has been ordered by the Superintendent. The evacuation could be extended to include the non-explosive area as well as so ordered by the Superintendent.

.5

All Clear: A continuous blast on the Depot Alarm System signifies that the emergency situation is «All Clear».

1.8 REPORTING OF .1
FIRES

All fires, regardless of whether they have been extinguished or not, must be reported immediately to the Base Fire Department.

.2

All Contractors and employees must familiarize themselves with the locations of the nearest fire alarm box or telephone.

.3

Fires may be reported by ringing the nearest street alarm box or by telephoning 911. Persons reporting the fire must remain at the alarm box or telephone until the Fire Department arrives and be prepared to direct Fire Fighters to the scene of the fire.

1.9 PROHIBITED
ARTICLES

- .1 The following articles are prohibited and/or controlled from being taken inside the explosive area. Permission by the Superintendent may be granted for certain articles:
- .1 Matches or other flame producing equipment(including vehicle lighters);
 - .2 Pipes, smoking appliances, tobacco products, or smoking materials in any form;
 - .3 Explosives or chemicals;
 - .4 Lights, lamps or electrical devices/tools which are not explosion proof;
 - .5 Cameras;
 - .6 Food and drink; and
 - .7 Radio transmitting devices(i.e. mobile radios, cellular phones, remote car starters, and garage door openers, etc).
- .2 No persons will introduce, possess or consume alcoholic beverages, narcotics or any intoxicant within the confines of the Ammunition Depot.
- .3 The site security officers will seize and hold at the gate, any such materials found by search.

1.10 SAFETY AND
FIRE REGULATIONS

- .1 **Smoking:** Is strictly prohibited in explosive areas.
- .2 **Buildings:** Smoking is prohibited in all buildings.
- .3 **Safety Precautions Electrical/Electronic Equipment:** All personnel operating or maintaining electrical/electronic equipment involving the use of voltage higher than 50V must brief the Site Safety and Fire Safety Officers concerning all safety rules in the operating and instructional manuals covering the equipment.
- .4 **Flammables, Explosives or Chemicals:** As required, may be allowed into the explosive area provided that the Depot Safety Officer and the Depot Fire Department are made aware of this and that approval by the Superintendent is given. These items after approval may be transported by the Contractors provided the transportation route is known by the Depot Fire Department and adequate fire extinguishers are available.
- .5 **Open Flame or Welding:** Prior approval must be obtained before commencing any work involving cutting, welding or use of open flame appliances in or around buildings containing explosives. The Fire Safety Officer will check out the work area and ensure

1.10 SAFETY AND
FIRE REGULATIONS
(Cont'd)

- .5 Open Flame or Welding:(Cont'd)
that adequate fire extinguishers and first aid appliances are available and that fire watchers have been posted.
- .6 **Fuel Dispensing Containers:** Contractors must ensure that all of their fuel dispensing containers meet or exceed the following standards:
 - .1 Type II safety container, leakproof, Terne plate construction, UL listed and FM approved.
 - .2 Container must have spring-operated spout cap which opens to allow vapours to escape and self closes on release of internal pressures.
 - .3 Container must have flexible or rigid built-in metal dispensing nozzle to prevent static sparks.
 - .4 Standard of Acceptance: Protectoseal, Model Nos. 247, 249, 8410 and 8420.
 - .5 Other acceptable products: Safe-T-Way.
 - .6 Any other model must be approved by the BFC.
 - .7 Violation of any of the above regulations will result in immediate cancellation of the offender's Security Pass and expulsion from the site.

1.11 TRAFFIC
REGULATIONS

- .1 **Vehicles:** All operators must adhere strictly to the following rules while proceeding through the Ammunition Depot.
 - .1 Drivers must not leave the motors of their vehicles running or leave the vehicles unattended when parked between buildings or traverses.
 - .2 Drivers must not drive vehicles in the direction opposite to that indicated by the «One-Way» signs.
 - .3 No one will operate a vehicle within the Depot area at a speed greater than 25 kilometers per hour at any time.
 - .4 No one will operate a vehicle within the Depot area at a speed greater than 8 kilometers per hour at any time, while passing between blast walls and buildings.
 - .5 No one will leave a vehicle unattended within 10 metres of a fire hydrant or within 30 metres of a building containing explosives.
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1.11 TRAFFIC
REGULATIONS
(Cont'd)

- .1 Vehicles:(Cont'd)
- .6 All vehicles must be equipped with a fire extinguisher of a suitable size and type so that it may be used to extinguish any fire originating in that vehicle.
- .7 Violation of any of the above regulations will result in immediate cancellation of the offender's Vehicle Pass and expulsion from the site.
- .2 **Roadways:** In the event of a fire or emergency all roads and buildings within CFAD Bedford must be accessible at all times. Contractors required to disrupt roadways during the course of their work, must ensure that at least one lane of each roadway is passable, at all times. Vehicles not required to transport personnel to the nearest exit gate must be parked on the side of the road and away from the nearest building.
- .3 **Fueling:** Fueling of vehicles within the explosive areas is prohibited. Small equipment(lawn mowers, chainsaws, etc.) may be re-fueled, but only at sites designated by the Safety Officer and Fire Safety Officer. Comply with all safety practices pertaining to re-fueling hot equipment. Provide adequate fire extinguishers of types prescribed by the Fire Safety Officer. Only approved safety dispensing containers, as specified at sub-paragraph 1.10.6, will be permitted within the confines of the Ammunition Depot.
- .4 Violation of any of the above regulations will result in immediate cancellation of the vehicle pass and expulsion of the offender from the site.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

PART 1 - GENERAL

- 1.1 PROJECT CLEANLINESS
- .1 Contractor must conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - .2 Store volatile waste and rags in covered metal containers, and remove from premises at end of each working day.
 - .3 Prevent accumulation of waste which creates hazardous conditions.
 - .4 Provide adequate ventilation during use of volatile or noxious substances.
 - .5 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
 - .6 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
 - .7 All surrounding walls and surfaces must be protected against soiling or damage during work and any damaged or soiled surfaces must be cleaned and/or repaired to their original finish to the satisfaction of the Engineer.
- 1.2 CLEANING DURING CONSTRUCTION
- .1 Contractor must maintain project grounds, and public properties free from accumulations of waste materials and rubbish by broom cleaning paved surfaces and raking grass and other surfaces.
 - .2 Load waste material directly into truck.
 - .3 Remove waste materials and rubbish from site to the complete satisfaction of the Engineer.
- 1.3 FINAL CLEANING
- .1 Remove grease, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed finished surfaces as a result of this work.
 - .2 Prior to final review remove surplus products, tools, construction machinery and equipment.
 - .3 Remove waste products and debris other than including that caused by Owner or other Contractors.
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PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not used.

PART 1 - GENERAL

- 1.1 RELATED REQUIREMENTS .1 Section 01 11 00 GENERAL INSTRUCTIONS.
.2 Section 32 12 16 ASPHALT CONCRETE PAVING AND REPAIRS.
- 1.2 REFERENCES .1 **Canadian Standards Association(CSA International):**
.1 CAN/CSA-A23.1-04/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
.2 CAN/CSA-S269.3-M92(R2008), Concrete Formwork, National Standard of Canada.
.3 CSA-O151-04, Canadian Softwood Plywood.
.2 **American Society for Testing and Materials International(ASTM):**
.1 ASTM C150/C150M-11, Standard Specification for Portland Cement.
.2 ASTM D994/D994M-11, Standard Specification for Preformed Expansion Joint Filler for Concrete(Bituminous Type).
.3 ASTM C309-11, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- 1.3 CONCRETE PRODUCTS .1 **Concrete:** Must be mixed to produce a minimum compressive strength of 35MPa after 28 days in accordance with CAN/CSA-A23.1-04/A23.2-04 with a 5% to 7% air entrained concrete.
.2 **Portland Cement:** To ASTM C150/C150M-11.
.3 **Water and aggregate:** To CAN/CSA-A23.1-04/A23.2-04.
- 1.4 JOINT FILLER .1 **Joint filler:** To ASTM D994/D994M-11, 9.5mm preformed, non-extruding, resilient, bituminous type, board.

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|-----------------------------------|----|---|
| <u>1.5 FORMWORK</u> | .1 | Construct formwork in accordance with CAN/CSA-S269.3-M92(R2008) and to suit site conditions and profiles. |
| <u>1.6 CURING COMPOUND</u> | .1 | Curing compound: To CAN/CSA-A23.1-04/A23.2-04 and ASTM C309-11, Type 2, white, Ritecure/Sternsure as supplied by Sternson's Ltd would be an acceptable product. |
| <u>1.7 FREEZE-THAW PROTECTION</u> | .1 | One-to-one mixture of boiled linseed oil and kerosene. |
| <u>1.8 REMOVALS</u> | .1 | Remove existing walkways where indicated. |
| | .2 | Remove existing damaged or deteriorated curbs where indicated. |
| <u>1.9 GRADE PREPARATION</u> | .1 | Construct embankments using excavated material free from organic matter or other objectionable materials. |
| | .2 | Provide borrow material for fill when a deficiency of excavated material exist. |
| | .3 | Place fill in 150mm layers and compact to not less than 98% of maximum dry density in accordance with ASTM D698 method C. |
| <u>1.10 GRANULAR BASE</u> | .1 | Obtain Engineer's approval of subgrade before placing granular base. |
| | .2 | Place granular base material to lines, widths, and depths indicated or directed. |
| | .3 | Compact granular base to not less than 98% of maximum dry density in accordance with ASTM D698 method C. |
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PART 2 - PRODUCTS

- 2.1 MATERIALS .1 **Formwork materials:**
- .1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-O151.
 - .2 For concrete with special architectural features, use formwork materials to CAN/CSA-A23.1-04/A23.2-04.

PART 3 - EXECUTION

- 3.1 FABRICATION AND ERECTION .1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.
- .2 Fabricate and erect formwork in accordance with CAN/CSA-S269.3-M92(R2008) to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CAN/CSA-A23.1-04/A23.2-04.
- 3.2 CONCRETE .1 Obtain Engineer's approval of granular base prior to placing concrete.
- .2 Applying bonding agents to existing concrete surfaces adhering strictly to manufacturer's recommendations.
- .3 Finish surfaces to within 3mm in 3m from line, level or grade as measured with a straight edge placed on surface.
- 3.3 CURING AGENT .1 Apply curing agent adhering strictly to manufacturer's application instructions.
- 3.4 REMOVAL OF FORMWORK .1 Let concrete stand a minimum of 48 hours prior the removal of forms.
- .2 Provide necessary reshoring of members where early removal of forms may be required or where members may be subjected to additional loads during construction as required.
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- 3.5 BACKFILL .1 Allow concrete to cure for seven(7) days prior to backfilling.
- .2 Backfill to designated elevations with suitable material, compact and shape to required contours as indicated or as directed by Engineer.
- 3.6 FREEZE-THAW PREVENTION .1 Apply two(2) coats of one-to-one mixture of boiled linseed oil and kerosene by low pressure spray method at least two(2) weeks after placing.
- .2 Ensure all surfaces are clean and dry and air temperature is above 10°C. Allow first coat to completely dry before applying second coat.
- 3.7 RESTORATION .1 Restore all disturbed sodded areas as directed by the Engineer with approved topsoil and sods to match adjacent surfaces.
- .2 Reinststate all asphalt, ground and gravelled areas to original profiles and condition as directed by the Engineer.
- .3 Seal between new curbs and asphalt sealant as indicated.

PART 1 - GENERAL

- 1.1 RELATED REQUIREMENTS .1 Section 01 11 00 GENERAL INSTRUCTIONS.
.2 Section 03 30 00 CONCRETE WORK.
- 1.2 REFERENCES .1 Nova Scotia Transportation and Public Works - Standard Specification Highway Construction and Maintenance, February 1, 1997
.2 **American Society for Testing and Materials International(ASTM):**
.1 ASTM C117-95, Standard Test Method for Material Finer Than 0.075(No. 200)mm Sieve in Mineral Aggregates by Washing.
.2 ASTM C136-01, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
.3 ASTM D995-95b(2002), Standard Specification for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
.4 ASTM D3203-94(2000), Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures.
.5 ASTM D4791-99, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
.6 ASTM D6690-07 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
.3 **Canadian General Standards Board(CGSB):**
.1 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.
.2 CAN/CGSB-16.1-M89, Cutback Asphalts for Road Purposes.
.3 CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.
.4 CAN/CGSB-16.3-M90, Asphalt Cements for Road Purposes.
.5 CAN/CGSB-16.4-M89, Emulsified Asphalts, Cationic Type, for Road Purposes.
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1.2 REFERENCES
(Cont'd)

.4 **American Association of State Highway and Transportation
Officials(AASHTO):**

- .1 AASHTO T245-97(2001), Resistance to Plastic flow of
Bituminous Mixtures Using Marshall Apparatus.

1.3 ASPHALT
GENERAL

- .1 Asphalt concrete materials, mixing and method of work called for
in this section must conform to the latest edition of the Nova
Scotia Transportation and Public Works - Standard Specification
Highway Construction and Maintenance(technical descriptions
only). In case of conflict between the DND specification and the
Department of Transportation specification, the DND
specification will apply.

1.4 ASPHALT
CONCRETE
DESCRIPTION

- .1 The asphalt concrete must be a dense graded paving material
consisting essentially of a hot mix and hot laid, designed
combination of dried mineral aggregate uniformly coated with
asphalt, all mixed in an approved mixing plant as specified by the
Province of Nova Scotia, Department of Transportation, Standard
Specification Highway Construction and Maintenance, Division 4,
Section 4, mixture type "C" must be used for resurfacing work and
type "B" for all repair work.
- .2 The type "C" mixture must have an asphalt content of between
4.5% and 9.5% and the type "B" mixture must have asphalt
content between 4.0% and 9.0%. The optimum percentage of
asphalt will be determined by test and inspection, so that, when
mixed with the specified physical requirements. The mix must be
approved by the Engineer prior to use.
- .3 Physical requirements must conform to the Province of Nova
Scotia Department of Transportation, Standard Specification
Highway Construction and Maintenance, latest edition, Division 4,
Section 4, Table 4.4.1.

1.5 COLD MIX
ASPHALT FOR
WINTER PATCHING

- .1 **Cold mix asphalt:** Must be a plant mixed material composed of
crushed aggregate and modified asphalt binders
manufactured(dried and mixed through a hot mix plant) and
delivered, placed and compacted at the work site as directed by
the Engineer.
- .2 **Physical requirements:** Must conform to the Province of Nova
Scotia Department of Transportation, Standard Specification
Highway Construction and Maintenance, latest edition, Division 4,
Section 15, paragraphs 4.0 to 4.3.
- .3 **Construction methods:** Must conform to the Province of Nova
Scotia Department of Transportation, Standard Specification

<u>1.5 COLD MIX ASPHALT FOR WINTER PATCHING (Cont'd)</u>	.3	Construction methods:(Cont'd) Highway Construction and Maintenance, latest edition, Division 4, Section 15, paragraphs 5.0 to 5.2.
<u>1.6 MIXING PLANT</u>	.1	The mixing plant must conform to ASTM D 995-95b(2002), Standard Specification for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
<u>1.7 PRPREPARATION OF ASPHALT CEMENTS</u>	.1	The asphalt cement must be brought to a temperature within the limits before mixing with the aggregates in accordance with ASTM D995-95b(2002) and the Province of Nova Scotia Department of Transportation, Standard Specification Highway Construction and Maintenance, latest edition.
<u>1.8 TRANSPORTATION OF MIX</u>	.1	Transport mix to job site in vehicles cleaned of foreign material. Vehicles must be covered with tarpaulins in accordance with the Province of Nova Scotia Department of Transportation, Standard Specification, latest edition, Division 4, Section 4 paragraph 5.2.
	.2	Paint or spray truck beds with limewater, soap or detergent solution, or non petroleum based commercial product, at least daily or as required. Elevate truck bed and thoroughly drain. No excess solution to remain in truck bed.
	.3	Schedule delivery of material for placing in daylight, unless Engineer approves artificial light.
	.4	Deliver material to paver at uniform rate and in an amount within capacity of paving and compacting equipment.
	.5	Deliver loads continuously in covered vehicles and immediately spread and compact. Deliver and place mixes at temperature within range as directed by Engineer, but not less than 135°C.
<u>1.9 CRACKFILLING PREPARATION</u>	.1	Clean cracks designated by the Engineer.
	.2	Remove existing sealer and loose materials: .1 From spalled edges and pavement surface. .2 To minimum depth of 50mm.
	.3	Rout designated cracks to width of 12mm using rotary routers approved by Engineer.

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- 1.9 CRACKFILLING PREPARATION (Cont'd)
- .4 Rout designated cracks to depth between 20mm and 32mm.
- .5 Clean loose material from cracks in accordance with the Province of Nova Scotia Department of Transportation, Standard Specification Highway Construction and Maintenance, latest edition, Division 4, Section 4 paragraph 5.1.4 and 5.2.1 or by other approved methods acceptable to the Engineer.
- .6 Dispose of material removed from cracks off DND property.
- 1.10 CRACKFILLING
- .1 Prepared cracks and type of sealants to be used must be approved by the Engineer prior to filling.
- .2 Ensure cracks are clean and dry immediately before filling.
- .3 Fill cracks designated and approved by Engineer.
- .4 Do not use frozen aggregate.
- .5 Fill cracks when air temperature is above 10°C, when daily low temperature does not fall below 5°C, and when no rain is forecast.
- .6 Fill and tamp cracks with sufficient applications to ensure cured fill material is level with pavement surface.
- .7 Cracks wider than 50mm may be filled with hot mix asphalt concrete and tamped, immediately prior to placement of asphalt concrete overlay, where approved by Engineer.
- .8 Remove and dispose of excess filling material as directed by the Engineer.
- 1.11 CRACKFILLING SEALING COMPOUND APPLICATION
- .1 The sealing compound must be applied by a mechanical, pressure-type applicator equipped with a satisfactory means of keeping the sealant heated, positive temperature control, an effective mechanically-operated agitator, and a suitable show at the point of discharge to strike off the sealing material so as to obtain a completely filled joint or crack, neat in appearance and without an excess of sealant.
- .2 The joint or crack must be dry, clean and freed from dust before the sealing compound is applied.
- .3 The joints or cracks must be filled in a neat and workmanlike manner so that upon completion of the work the surface of the sealing material will not be above nor more than 3mm below the adjacent pavement surface.
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- 1.11 CRACKFILLING SEALING COMPOUND APPLICATION (Cont'd)
- .4 When the sealant shrinks or settles into the joint or cracks after the initial pouring a second application must be applied to bring the material up to the specified level.
 - .5 The overfilling of joints or cracks and the spillage of sealant on exposed pavement surfaces must be immediately corrected by the Contractor at his own expense.

PART 2 - PRODUCTS

- 2.1 MATERIAL
- .1 **Tack Coat:** Emulsified asphalt to CAN/CGSB-16.3-M90, grade RS-1, or cutback asphalt RC 70.
 - .2 **Prime Coat:** CAN/CGSB-16.1-M89, grade RC 70
 - .3 **Sand blotter:** Clean granular material passing 4.75mm sieve and free from organic matter or other deleterious materials.
- 2.2 GRANULAR BASE COARSE
- .1 Granular base coarse to be Gravel Type 1 as specified by the Province of Nova Scotia Department of Transportation, Standard Specification Highway Construction and Maintenance, latest edition, Division 3, Sections 2 & 5.
- 2.3 AGGREGATES
- .1 Coarse aggregates, fine aggregates and mineral filler must conform to the requirements specified by the Province of Nova Scotia Department of Transportation, Standard Specification Highway Construction and Maintenance, latest edition, Division 4, Section 4, Tables 4.4.2 and 4.4.4. Composition of Asphalt Concrete Paving Mixtures, Mixture type "B" or "C" as specified and must conform to the grading listed in the same Table for the Mixture.
 - .2 Fine aggregate must not contain organic matter in excess of limitations as permitted in accordance with ASTM D4791-99.
- 2.4 ASPHALT CEMENT
- .1 **Asphalt cement:** To CGSB 16-GP-3M, grade 120-150 for roads and grade 85-100 for parking areas.
- 2.5 LIQUID ASPHALT
- .1 For sealing cracks and tack coating, the liquid asphalt must conform to specification for RC 70 and/or RS-1 in accordance with CAN/CGSB-16.1-M89 and CAN/CGSB-16.2-M89.
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2.6 RUBBERIZED
SEALING COMPOUND
FOR CRACKS

- .1 To ASTM D6690-07 Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

2.7 ASPHALT MIX
FOR CRACKS

- .1 Liquid asphalt to CAN/CGSB-16.1-M89 and CAN/CGSB-16.2-M89 for grade MC70 and/or RS-1

- .2 Sand to ASTM C117-95 and ASTM C136-01.

Sieve Designation % Passing

2.360mm	100
0.075mm	0-8

- .3 Mix to the approval of the Engineer or on site Engineer.

2.8 EQUIPMENT

- .1 **Pavers:** Mechanical grade controlled self-powered pavers capable of spreading mix within specified tolerances, true to line, grade and crown indicated.

- .2 **Rollers:** Sufficient number of type and weight to obtain specified density of compacted mix in accordance with the Province of Nova Scotia Department of Transportation, Standard Specification, latest edition, Division 4, Section 4 paragraph 5.4.1.2.

- .3 **Vibratory rollers:**

.1 Minimum drum diameter: 1200mm.

.2 Maximum amplitude of vibration(machine setting): 0.5mm for lifts less than 40mm thick.

- .4 **Haul trucks:** Sufficient number and of adequate size, speed and condition to ensure orderly and continuous operation and as follows:

.1 Boxes with tight metal bottoms.

.2 Covers of sufficient size and weight to completely cover and protect asphalt mix when truck fully loaded.

.3 In cool weather or for long hauls, insulate entire contact area of each truck box.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Reshape granular roadbed and asphalt pavement as required.
 - .2 When paving over existing asphalt surface, clean pavement surface. When levelling course is not required, patch and correct depressions and other irregularities to approval of Engineer before beginning paving operations.
 - .3 Apply primer coat and tack coat in accordance with the Province of Nova Scotia Department of Transportation, Standard Specification, latest edition, Division 4 prior to paving.
 - .4 Prior to laying mix, clean surfaces of loose and foreign material.
 - .5 **Tack coat:**
 - .1 Where resurfacing areas start and stop and where existing pavement is badly worn, a tack coat of RC-70 asphalt must be applied at the rate of 0.14 L/m² at a liquid temperature between 40°C and 80°C.
 - .2 The tack coat must not be applied to a wet surface or when the air temperature is less than 10°C in the shade, without written approval from the Engineer.
 - .6 **Prime coat:**
 - .1 Apply asphalt prime to granular base at rate not less than 1.00 L/m² nor more than 2.75 L/m².
 - .2 Apply on dry surface unless otherwise directed.
 - .3 Paint contact surfaces of curbs, gutters, headers, manholes and like structures with a thin, uniform coat of asphalt prime material.
 - .4 Do not apply prime when air temperature is less than 10°C or when rain is forecast within 2 hours.
 - .5 Allow primer to penetrate for such time as Engineer directs. If asphalt primer fails to penetrate within time directed (usually 2 hours) spread sand blotter material in amounts required to absorb excess material. Sweep and remove excess blotter material.
 - .6 Prevent overlap at junction of spreads.
 - .7 Do not prime surfaces that will be visible when paving is complete.
 - .8 Correct areas not sufficiently covered.
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3.1 PREPARATION .6
(Cont'd)

- Prime coat:(Cont'd)
- .9 Keep traffic off primed areas until asphalt prime has cured.
 - .10 Permit prime to cure before placing asphalt paving mixture.

3.2 HOLES AND .1
BROKEN PAVEMENT

- .1 The area to be excavated and rebuilt must be determined by the Engineer.
- .2 All loose material over the indicated area must be removed, including unstable sub-base material, where requested by the Engineer.
- .3 The excavated areas, where required, must be backfilled with granular base course thoroughly compacted to the satisfaction of the Engineer.
- .4 The asphalt patch must be rebuilt with hot mix asphalt concrete as specified to at least the same thickness of the existing pavement. The edges of the excavated areas must be cut straight and square and primed with liquid asphalt before laying the asphalt concrete.
- .5 Compaction as required in accordance with paragraph 3.6 of this section.

3.3 RESURFACING .1

- .1 All repairs must be approved by the Engineer before resurfacing.

3.4 PLACING .1

- .1 Obtain Engineer's approval of base, existing surface, tack coat, and prime coat prior to placing asphalt.
 - .2 Place asphalt concrete to thicknesses, grades and lines as directed by Engineer.
 - .3 **Placing conditions:**
 - .1 Place asphalt mixtures only when air temperature is above 5 degrees C.
 - .2 When temperature of surface on which material is to be placed falls below 10 degrees C, provide extra rollers as necessary to obtain required compaction before cooling.
 - .3 Do not place hot-mix asphalt when pools of standing water exist on surface to be paved, during rain, or when surface is damp.
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3.4 PLACING
(Cont'd)

- .3 Placing conditions:(Cont'd)
 - .4 Minimum 135 degrees C mix temperature required when spreading.
 - .5 Maximum 160 degrees C mix temperature permitted at any time.
- .4 When the mixture is to be spread by hand, upon arrival of the work, it must be dumped near the area on which it is to be spread. Immediately thereafter the material must be deposited from the shovels into small piles which will be spread with lutes or rakes. The shovellers will not be allowed to spread the asphalt mix by broadcasting it over the surface to be covered. Any part of the mix that has formed into lumps and does not break down easily must be discarded. Loads must not be dumped any faster than they can be properly handled by the shovellers. The shovellers must not distribute the dumped load faster than it can be properly handled by the rakers.
- .5 The rakers will not be permitted to stand in the hot mixture while raking it, except where necessary to correct errors in the first raking. The raking must be carefully and skillfully done in such a manner that after the first passage of the roller over the raked mixture, a minimum amount of back patching will be required.

3.5 COMPACTING

- .1 Compaction of asphalt concrete must be by approved rollers, and in areas not accessible by rollers by approved and suitable tampers.
 - .2 Do not change rolling pattern unless mix changes or lift thickness changes. Change rolling pattern only as directed by Engineer.
 - .3 Roll asphalt continuously to density not less than 98% of Marshall density to AASHTO T245.
 - .4 **General:**
 - .1 Provide at least two rollers and as many additional rollers as necessary to achieve specified pavement density. When more than two rollers are required, one roller must be pneumatic tired type.
 - .2 Start rolling operations as soon as placed mix can bear weight of roller without excess displacement of material or cracking of surface.
 - .3 Operate roller slowly initially to avoid displacement of material. Do not exceed 5 km/h for breakdown and intermediate rolling for static steel-wheeled and pneumatic tired rollers. Do not exceed 9 km/h for finish rolling.
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3.5 COMPACTING
(Cont'd)

- .4 General:(Cont'd)
- .4 Use static compaction for levelling coarse less than 25mm thick.
 - .5 For lifts 50mm thick and greater, adjust speed and vibration frequency of vibratory rollers to produce minimum of 25 impacts per metre of travel. For lifts less than 50mm thick, impact spacing not to exceed compacted lift thickness.
 - .6 Overlap successive passes of roller by minimum of 200mm and vary pass lengths.
 - .7 Keep wheels of roller slightly moistened with water to prevent pick-up of material but do not over-water.
 - .8 Do not stop vibratory rollers on pavement that is being compacted with vibratory mechanism operating.
 - .9 Do not permit heavy equipment or rollers to stand on finished surface before it has been compacted and has thoroughly cooled.
 - .10 After traverse and longitudinal joints and outside edge have been compacted, start rolling longitudinally at low side and progress to high side. Ensure that all points across width of pavement receive essentially equal numbers of passes of compactors.
 - .11 When paving in echelon, leave unrolled 50 to 75mm of edge which second paver is following and roll when joint between lanes is rolled.
 - .12 Where rolling causes displacement of material, loosen affected areas at once with lutes or shovels and restore to original grade of loose material before re-rolling.
- .5 **Breakdown rolling:**
- .1 Begin breakdown rolling with static steel wheeled roller or vibratory roller immediately following rolling of transverse and longitudinal joint and edges.
 - .2 Operate rollers as close to paver as necessary to obtain adequate density without causing undue displacement.
 - .3 Operate breakdown roller with drive roll or wheel nearest finishing machine. When working on steep slopes or super-elevated sections use operation approved by Engineer.
 - .4 Use only experienced roller operators.
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3.5 COMPACTING
(Cont'd)

- .6 **Intermediate rolling:**
- .1 Use pneumatic-tired, steel wheel or vibratory rollers and follow breakdown rolling as closely as possible and while paving mix temperature allows maximum density from this operation.
 - .2 Rolling to be continuous after initial rolling until mix placed has been thoroughly compacted.
- .7 **Finish rolling:**
- .1 Accomplish finish rolling with two-axle or three-axle tandem steel wheeled rollers while material is still warm enough for removal of roller marks. If necessary to obtain desired surface finish, use pneumatic-tired rollers as directed by Engineer.
 - .2 Conduct rolling operations in close sequence.

3.6 JOINTS

- .1 **General:**
- .1 Remove surplus material from surface of previously laid strip. Do not deposit on surface of freshly laid strip.
 - .2 Construct joints between asphalt concrete pavement and Portland cement concrete pavement as indicated.
 - .3 Paint contact surfaces of existing structures such as manholes, curbs or gutters with bituminous material prior to placing adjacent pavement.
- .2 **Transverse joints:**
- .1 Offset transverse joint in succeeding lifts by at least 600mm.
 - .2 Cut back to full depth vertical face and tack face with thin coat of hot asphalt prior to continuing paving.
 - .3 Compact transverse joints to provide smooth riding surface. Use methods to prevent rounding of compacted surface at joints.
- .3 **Longitudinal joints:**
- .1 Offset longitudinal joints in succeeding lifts by at least 150mm.
 - .2 Cold joint is defined as joint where asphalt mix is placed, compacted and left to cool below 100 degrees C prior to paving of adjacent lane.
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3.6 JOINTS
(Cont'd)

- .3 Longitudinal joints:(Cont'd)
- .2 (Cont'd)
- .1 If cold joint can not be avoided, cut back by saw cutting previously laid lane, by at least 150mm, to full depth vertical face, and tack face with thin coat of hot asphalt of adjacent lane.
- .3 Overlap previously laid strip with spreader by 25 to 50mm.
- .4 Before rolling, carefully remove and discard coarse aggregate in material overlapping joint with lute or rake.
- .5 Roll longitudinal joints directly behind paving operation.
- .6 When rolling with static or vibratory rollers, have most of drum width ride on newly placed lane with remaining 150mm extending onto previously placed and compacted lane.
- .4 Construct feather joints so that thinner portion of joint contains fine graded material obtained by changed mix design or by raking out coarse aggregate in mix. Place and compact joint so that joint is smooth and without visible breaks in grade. Location of feather joints as indicated.
- .5 Construct butt joints as indicated.

3.7 FEATHERING OUT

- .1 Where the overlay meets existing pavement, the joint must be feathered out over a distance of not less than 1.5m.
- .2 Workers with hand shovels must remove fresh asphalt material from delivery trucks and must spread a thin layer of this material over the area. Other workers must then carefully remove all particles coarser than 10mm using fine hand rakes and must spread the remaining loose material evenly over the surface to a loose depth of 3mm.
- .3 The asphalt must then be rolled as specified to provide a tight water repellent surface, minimum thickness 25mm of all points, except at tapers.
- .4 Where directed by the Engineer, the asphalt overlay must be placed directly over the existing gutters, feathered from the specified thickness to a depth sufficient to maintain grade and permit adequate drainage.
- .5 Compaction of asphalt must be in accordance with paragraph 3.5 of this section.

- 3.8 HIGH SPOTS .1 Humps and high spots on existing pavement must be cut out where directed by the Engineer. If high spots are caused by a rock close to the surface, the rock must be removed to a depth of 30.40cm(12") below the finished grade and the hole filled with gravel and fully compacted to 95% Proctor density.
- .2 Asphalt resurfacing and compaction must be in accordance with this section.

- 3.9 DEPRESSIONS .1 Where indicated by the Engineer, depressions in the pavement must be brought to the correct grade by the application of hot mix asphaltic concrete. This material must be applied directly to the existing pavement without cutting out, provided that the areas to be so treated are thoroughly cleaned and painted or sprayed with an asphalt tack coat.
- .2 These areas are to be compacted in accordance with paragraph 3.5 of this section.

- 3.10 FINISH TOLERANCES .1 Finished asphalt surface to be within 5mm of design elevation but not uniformly high or low.
- .2 Finished asphalt surface not to have irregularities exceeding 5mm when checked with 4.5m straight edge placed in any direction.

- 3.11 PROTECTION .1 During the spraying process, the Contractor must cover concrete sidewalks, curbs, walks, grass, walls, and all items that would be spoiled should asphalt be sprayed on them.
- .2 All items so spoiled must be made good by the Contractor at no additional cost to the Engineer.

- 3.12 DEFECTIVE WORK .1 Correct irregularities which develop before completion of rolling by loosening surface mix and removing or adding material as required. If irregularities or defects remain after final compaction, remove surface course promptly and lay new material to form true and even surface and compact immediately to specified density.
- .2 Repair areas showing checking, rippling, or segregation.
- .3 Adjust roller operation and screed settings on paver to prevent further defects such as rippling and checking of pavement.
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3.13 CLEANING OF
PAVEMENT

- .1 After completion of repairs, adjustment of appurtenances and immediately prior to application of the tack coat, the surface of the pavement must be cleaned using mechanical sweepers of an approved type or by hand brooming as directed by the Engineer. All mud, dust or other foreign matter must be swept, gathered into piles and removed from the area.