

Solicitation No. - N° de l'invitation

W0134-15CYNM/A

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SEE ATTACHED

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Through Canada's Economic Action Plan 2013, the Government of Canada proposes to support the employment of apprentices in federal construction and maintenance projects. Refer to Part 2, item 5.

PART 1 - GENERAL INFORMATION

1. Introduction

The Request for Standing Offers (RFSO) template is divided into seven parts plus attachments and annexes, as follows:

Part 1, General Information: provides a general description of the requirement;

Part 2, Offeror Instructions: provides the instructions applicable to the clauses and conditions of the RFSO;

Part 3, Offer Preparation Instructions: provides offerors with instructions on how to prepare their offer to address the evaluation criteria specified;

Part 4, Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria which must be addressed in the offer, if applicable, and the basis of selection;

Part 5, Certifications: includes the certifications to be provided;

Part 6, Security and Insurance Requirements: includes specific requirements that must be addressed by offerors; and

Part 7: 7A, Standing Offer, and 7B, Resulting Contract Clauses:

7A, includes the Standing Offer containing the offer from the Offeror and the applicable clauses and conditions;

7B, includes the clauses and conditions which will apply to any contract resulting from a call-up made pursuant to the Standing Offer.

The Annexes include the Statement of Work, the Basis of Payment, Health & Safety, Usage Reports, Offer, SRCL, and any other annexes.

2. Summary

2.1 Paving Repair Standing Offer, 4 Wing, CFB Cold Lake, Alberta.

Work under this standing offer includes the provision of skilled licensed labour, tools, equipment, supervision and material as requested by Department of National Defence, 4 Wing, CFB Cold Lake, Alberta in the form of call ups for the provisions Paving Repair services as detailed in the Statement of Work attached to the Request for Standing Offer. Services are to be provided on an "as required" basis. It is anticipated that only 1 firm will be issued a standing offer. The standing offer will be issued for a term of three (3) years.

This procurement contains MANDATORY requirements. See Part 4 and 5 of the RFSO for details.

2.2 Pursuant to section 01 of Standard Instructions 2006, Offerors must submit a complete list of names of all individuals who are currently directors of the Offeror. Furthermore, as determined by the Special Investigations Directorate, Departmental Oversight Branch, each individual named on the list may be requested to complete a Consent to a Criminal Record Verification form and related documentation.

2.3 "There is a security requirement associated with this requirement. For additional information, see Part 6 – Security and Insurance Requirements, and Part 7A - Standing Offer. Offerors should consult the "Security Requirements for PWGSC Bid Solicitations - Instructions for Bidders" document "

(<http://www.tpsgc-pwgsc.gc.ca/app-acq/lc-pl/lc-pl-eng.html#a31>) on the Departmental Standard Procurement Documents Web Site."

2.4 "The requirement is subject to the provisions of the Agreement on Internal Trade (AIT)."

3. Health & Safety Requirements

There are Health & Safety requirements associated with this requirement. See Annex C

4. Debriefing

After issuance of a standing offer, offerors may request a debriefing on the results of the request for standing offers. Offerors should make the request to the Standing Offer Authority within 15 working days of receipt of notification that their offer was unsuccessful. The debriefing may be provided in writing, by telephone or in person. The debriefing will include an outline of the reasons the submission was not successful, making reference to the evaluation criteria. The confidentiality of information relating to other submissions will be protected.

5. Security Requirement

There is a security requirement associated with the requirement of the Standing Offer. For additional information, see Part 6 - Security, Financial and Insurance Requirements, and Part 7 - Standing Offer and Resulting Contract Clauses.

PART 2 - STANDING OFFER - INSTRUCTIONS TO OFFERORS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the Request for Standing Offers RFSO by title, number and date are set out in the Standard Acquisition Clauses and Conditions Manual issued by Public Works and Government Services Canada (PWGSC). The Manual is available on the PWGSC Web site:

<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>

Offerors who submit an offer agree to be bound by the instructions, clauses and conditions of the RFSO and accept the terms and conditions of the Standing Offer and Resulting Contract(s).

The 2006 (2014-09-25) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the RFSO.

Subsection 5.4 of 2006, Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, is amended as follows:

DELETE sixty (60) days and **INSERT** ninety (90) days

2. Submission of Offers

Offers must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the Request for Standing Offers.

2.1 Revision of Offer:

An offer submitted in accordance with these instructions may be revised by letter or facsimile, provided that the revision is received at the office designated for the receipt of offers (Offering address) on or before the date and time set for the closing of the RFSO. The facsimile shall be on the offeror's letterhead or bear a signature that identifies the offeror.

A revision to the unit price schedule must clearly identify the change(s) in the unit price(s) and the specific item(s) to which each change applies.

A letter or facsimile submitted to confirm an earlier revision shall be clearly identified as a confirmation.

Failure to comply with any of the above provisions shall result in the rejection of the non-compliant revision(s) only. The offer shall be evaluated based on the original offer submitted and all other compliant revision(s).

Facsimile number for receipt of revisions: **(780) 497-3510**

2.2 Firm Price and/or Rates:

The Offeror is required to submit firm prices, rates or both that will apply for the entire period of the Standing Offer.

2.3 Form: Offers not submitted on the prescribed Offer Form will not be considered.

2.4 Alterations: Any alteration to the pre-printed or pre-typed sections of the Offer Form, or any condition or qualification placed upon the offer may be cause for disqualification of the offer. Alterations, corrections, changes or erasures made to statements or figures entered on the Offer Form by the offeror shall be initialed by the person or persons signing the offer. Initials shall be original(s). Alterations, corrections, changes or erasures that are not initialed shall be deemed void and without effect.

2.5 Incomplete Offers: Incomplete offers may be rejected.

2.6 Taxes

The offeror is responsible for all applicable taxes.

Offerors are not to include any amounts for the Goods and Services Tax (GST) or Harmonized Sales Tax (HST), whichever is applicable. Any amount levied in respect of the GST/HST shall be billed as a separate item on invoices submitted by the contractor, and shall be paid in addition to the amount approved by Canada for work performed under any resulting Contract. The Contractor shall be required to remit the appropriate amount to the Canada Revenue Agency in accordance with the applicable legislation.

The Federal Government is exempt from the Quebec Sales Tax (QST). Offerors shall not include in their prices any amount that is intended to cover the QST on goods and services performed in the execution of the Work except for such amounts for which an Input Tax Refund is not available. The successful Offeror should make arrangements directly with the Province of Quebec to recover any QST paid by it in performing the Work under the resulting Contract.

2.7 Performance Evaluation

Offerors shall take note that the performance of the Contractor during and upon completion of the work shall be evaluated by Canada. The evaluation shall be based on the quality of workmanship; timeliness of completion of the work; project management, contract management and management of health and safety. Should the Contractor's performance be considered unsatisfactory, the Contractor's bidding privileges on future work may be suspended indefinitely.

An electronic version of the form PWGSC-TPSGC 2913, SELECT - Contractor Performance Evaluation Report Form, used to record the performance is available on the Public Works and Government Services Canada (PWGSC) Web site.

3. Enquiries - Request for Standing Offers

All enquiries MUST be submitted in writing to the Standing Offer Authority no later than five (5) calendar days before the Request for Standing Offers (RFSO) closing date. Enquiries received after that time may not be answered.

Offerors should reference as accurately as possible the numbered item of the RFSO to which the enquiry relates. Care should be taken by offerors to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that offerors do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all offerors. Enquiries not submitted in a form that can be distributed to all offerors may not be answered by Canada.

4. Applicable Laws

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of work.

5. Public Works and Government Services Canada Apprenticeship Procurement Initiative

To encourage employers to participate in apprenticeship training, Contractors bidding on construction and maintenance contracts by Public Works and Government Services Canada (PWGSC) are being asked to sign a voluntary certification, signaling their commitment to hire and train apprentices.

1. Canada is facing skills shortages across various sectors and regions, especially in the skilled trades. Equipping Canadians with skills and training is a shared responsibility. In Economic Action Plan (EAP) 2013, the Government of Canada made a commitment to support the use of apprentices in federal construction and maintenance contracts. Contractors have an important role in supporting apprentices through hiring and training and are encouraged to certify that they are providing opportunities to apprentices as part of doing business with the Government of Canada.
2. Through the Economic Action Plan 2013 and support for training programs, the Government of Canada is encouraging apprenticeships and careers in the skilled trades. In addition, the government offers a tax credit to employers to encourage them to hire apprentices. Information on this tax measure administered by the

Canada Revenue Agency can be found at: www.cra-arc.gc.ca. Employers are also encouraged to find out what additional information and supports are available from their respective provincial or territorial jurisdiction.

3. Signed certifications (Appendix 2) will be used to better understand contractor use of apprentices on Government of Canada maintenance and construction contracts and may inform future policy and program development.
4. The Contractor hereby certifies the following:

In order to help meet demand for skilled trades people, the Contractor agrees to use, and require its subcontractors to use, reasonable commercial efforts to hire and train registered apprentices, to strive to fully utilize allowable apprenticeship ratios * and to respect any hiring requirements prescribed by provincial or territorial statutes

The Contractor hereby consents to this information being collected and held by PWGSC, and Employment and Social Development Canada to support work to gather data on the hiring and training of apprentices in federal construction and maintenance contracts.

To support this initiative, a voluntary certification signaling the Contractor's commitment to hire and train apprentices is available at Appendix 2.

If you accept fill out and sign Appendix 2

** The journeyman-apprentice ratio is defined as the number of qualified/certified journeymen that an employer must employ in a designated trade or occupation in order to be eligible to register an apprentice as determined by provincial/territorial (P/T) legislation, regulation, policy directive or by law issued by the responsible authority or agency.*

PART 3 - OFFER PREPARATION INSTRUCTIONS

1. General

- 1.1 Insert the hourly rate or unit price against each class of labour, plant, or item of specified material listed on the Unit Price Schedule of the Offer form. Insert the percentage mark-up for Unspecified Material, if any; mathematical extensions against all items including the Contractor's Mark-up on Unspecified Material if applicable, and Total Estimated Amount, GST/HST extra.
- 1.2 Submit the Offer, duly completed, to the office designated on page 1 of the RFSO in accordance with the Standard Instructions.
- 1.3 Sign and date the Offer in accordance with the RFSO.

2. Offer Preparation Instructions

Prices must appear in the financial offer only. No prices must be indicated in any other section of the offer.

Canada requests that offerors follow the format instructions described below in the preparation of their offer.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to that of the Request for Standing Offers.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>).

To assist Canada in reaching its objectives, offerors are encouraged to:

- 1) use paper containing fibre certified as originating from a sustainably-managed forest and/or containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Financial Offer

Offerors must submit their financial offer in accordance with the "Annex B, Basis of Payment". The total amount of Goods and Services Tax or Harmonized Sales Tax must be shown separately, if applicable.

Payment by Credit

Canada requests that offerors complete one of the following:

- (a) () Government of Canada Acquisition Cards (credit cards) will be accepted for payment of call-ups against the standing offer.

The following credit card(s) are accepted:

VISA _____

Master Card _____

- (b) () Government of Canada Acquisition Cards (credit cards) will not be accepted for payment of call-ups against the standing offer.

The Offeror is not obligated to accept payment by credit card.

Acceptance of credit cards for payment of call-ups will not be considered as an evaluation criterion.

Section II: Certifications

Offerors must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

- (a) Offers will be assessed in accordance with the entire requirement of the Request for Standing Offers including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the offers.
- (c) Offers shall be evaluated on the basis of the lowest compliant offer being recommended for issuance of a Standing Offer.

1.1 Technical Evaluation

1.1.1 Mandatory Technical Criteria

a) MANDATORY REQUIREMENTS - Required as part of the Offer

- i) Pursuant to the General Instructions, submission of Request for Standing Offer (RFSO), offers must be submitted to the office designated for the receipt of offers, and must be received on or before the date and time set for solicitation closing shown on page 1 of the RFSO. A rate must be entered for each item listed in the unit price schedule of the offer.

b) MANDATORY REQUIREMENTS - Precedent to issuance of a Standing Offer

- i) Health & Safety Requirements
- ii) Code of Conduct Certifications (*see Part 5 - Certifications*)
- iii) Insurance
- iv) Security Requirements

1.2. Financial Evaluation

1.2.1 Price Schedule - A rate must be entered for each item.

1.2.2 Offers retained pursuant to Part 4, will be evaluated on the basis of the total estimated amount quoted, GST/HST extra. It is anticipated that one standing offer will be issued to the lowest compliant offeror.

2. Basis of Selection

2.1 Basis of Selection - Mandatory Technical Criteria Only

An offer must comply with the requirements of the Request for Standing Offers and meet all mandatory technical evaluation criteria to be declared responsive. The responsive offer with the lowest evaluated price will be recommended for issuance of a standing offer.

3. Ranking

3.1 Only 1 firm will be issued a standing offer.

3.2 The firm submitting the lowest aggregate price compliant submission will be issued a Standing Offer.

PART 5 - CERTIFICATIONS

Offerors must provide the required certifications to be issued a standing offer. Canada will declare an offer non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications offerors provide to Canada is subject to verification by Canada during the offer evaluation period (before issuance of a standing offer) and after issuance of a standing offer. The Standing Offer Authority will have the right to ask for additional information to verify offerors' compliance with the certifications before issuance of a standing offer. The offer will be declared non-responsive if any certification made by the Offeror is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Standing Offer Authority for additional information will also render the offer non-responsive.

1. **Mandatory Certifications Required Precedent to Issuance of a Standing Offer**

1.1 **Code of Conduct and Certifications - Related documentation**

By submitting an offer, the Offeror certifies, for itself and its affiliates, to be in compliance with the Code of Conduct and Certifications clause of the 2006 (2014-09-25) Standard Instructions. The related documentation therein required will help Canada in confirming that the certifications are true.

2. **Additional Certifications Precedent to Issuance of a Standing Offer**

The certifications listed below should be completed and submitted with the offer, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Standing Offer Authority will so inform the Offeror and provide the Offeror with a time frame within which to meet the requirement. Failure to comply with the request of the Standing Offer Authority and meet the requirement within that time period will render the offer non-responsive.

2.1 **Health & Safety Requirements** - per attached Annex C .

2.2 **Insurance**, (Annex F - Insurance Certificate)

2.3 **Security Requirement** - per article 1 of Part 6.

2.4 **Former Public Servant – Competitive Requirements** M3025T (2014-11-27)

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPS, offerors must provide the information required below before the issuance of a standing offer. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of offers is completed, Canada will inform the Offeror of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the offer non-responsive.

Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the [Financial Administration Act](#) R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c. C-17, the [Defence Services Pension Continuation Act](#), 1970, c. D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c. R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c. R-11, the [Members of Parliament Retiring Allowances Act](#), R.S. 1985, c. M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Offeror a FPS in receipt of a pension? **YES** () **NO** ()

If so, the Offeror must provide the following information, for all FPS in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Offerors agree that the successful Offeror's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2012-2](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

Work Force Adjustment Directive

Is the Offeror a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **YES** () **NO** ()

If so, the Offeror must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

PART 6 - SECURITY AND INSURANCE REQUIREMENTS

1. Security Requirement

1. Before issuance of a standing offer, the following conditions must be met:
 - (a) the Offeror must hold a valid organization security clearance as indicated in Part 7A - Standing Offer;
 - (b) the Offeror's proposed individuals requiring access to classified or protected information, assets or sensitive work site(s) must meet the security requirement as indicated in Part 7A - Standing Offer;
 - (c) the Offeror must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites.
2. Offerors are reminded to obtain the required security clearance promptly. Any delay in the issuance of a standing offer to allow the successful offeror to obtain the required clearance will be at the entire discretion of the Standing Offer Authority.
3. For additional information on security requirements, bidders should consult the "Security Requirements for PWGSC Bid Solicitations - Instructions for Bidders" <http://www.tpsgc-pwgsc.gc.ca/app-acq/lc-pl/lc-pl-eng.html#a31> document on the Departmental Standard Procurement Documents Web site.

2. Insurance Terms

The Offeror must provide a certificate from an insurance broker or an insurance company licensed to operate in Canada stating that the Offeror, if issued a standing offer as a result of the request for standing offer, can be insured in accordance with the Insurance Requirements specified in SACC Manual clause R2900D GC10 - Insurance (2008-05-12)

If the information is not provided in the offer, the Standing Offer Authority will so inform the Offeror and provide the Offeror with a time frame within which to meet the requirement. Failure to comply with the request of the Standing Offer Authority and meet the requirement within that time period will render the offer non-responsive.

Certificate of Insurance attached at Annex F.

1) Insurance Contracts

- (a) The Contractor must, at the Contractor's expense, obtain and maintain insurance contracts in accordance with the requirements of the Certificate of Insurance. Coverage must be placed with an Insurer licensed to carry out business in Canada.
- (b) Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract. The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

2) Period of Insurance

- (a) The policies required in the Certificate of Insurance must be in force from the date of contract award and be maintained throughout the duration of the Contract.

3) Proof of Insurance

- (a) Before commencement of the Work, and no later than thirty (30) days after acceptance of its bid, the Contractor must deposit with Canada a Certificate of Insurance on the form attached herein.
- (b) Upon request by Canada, the Contractor must provide originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the Certificate of Insurance.

4) Insurance Proceeds

In the event of a claim, the Contractor must, without delay, do such things and execute such documents as are necessary to effect payment of the proceeds.

5) Deductible

The payment of monies up to the deductible amount made in satisfaction of a claim must be borne by the Contractor.

PART 7 - CLAUSES & CONDITIONS

PART 7(A) - STANDING OFFER

1. Offer - attached at Annex E

- .1 General Provisions
- .2 Financial Terms
- .3 Prices
 - Payments by Credit Card

2. Security Requirement For Canadian Supplier:

1. The Contractor/Offeror must, at all times during the performance of the Contract/Standing Offer, hold a valid Designated Organization Screening (DOS), issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).
2. The Contractor/Offeror personnel requiring access to sensitive work site(s) must EACH hold a valid RELIABILITY STATUS, granted or approved by CISD/PWGSC. Until the security screening of the Contractor personnel required by this Contract has been completed satisfactorily by the CISD, PWGSC, the Contractor personnel **MAY NOT ENTER** sites without an escort.
3. Subcontracts which contain security requirements are **NOT** to be awarded without the prior written permission of CISD/PWGSC.
4. The Contractor/Offeror must comply with the provisions of the:
 - (a) Security Requirements Check List and security guide (if applicable), attached at Annex H;
 - (b) Industrial Security Manual (Latest Edition).

For additional information on security requirements, proponents should consult the Industrial Security web site at: <http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>.

3. Standard Clauses and Conditions

- 1) .1 General Conditions - Standing Offer, 2005 (2014-09-25)
- 2) The documents identified by title, number and date in paragraph 1) are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

4. Term of Standing Offer

4.1 Period of the Standing Offer

The period for making call-ups against the Standing Offer is for three years from the date of Standing Offer Issuance.

5. Authorities

5.1 Standing Offer Authority

The Standing Offer Authority is:

Name: **Marc Poot** (*see front page of Standing Offer for details*)
Public Works and Government Services Canada
Acquisitions Branch

Directorate: Real Property Contracting

The Standing Offer Authority is responsible for the establishment of the Standing Offer, its administration and its revision, if applicable. Upon the making of a call-up, as Contracting Authority, they are responsible for any contractual issues relating to individual call-ups made against the Standing Offer by any Identified User.

5.2 Project Authority

The Project Authority for the Standing Offer is identified in the call-up against the Standing Offer.

The Project Authority is the representative of the department or agency (Departmental Representative) for whom the Work will be carried out pursuant to a call-up against the Standing Offer and is responsible for all the technical content of the Work under the resulting Contract.

6. Identified users

The Identified User authorized to make call-ups against the Standing Offer is: Department of National Defence, 4 Wing Cold Lake, Alberta.

7. Call-up Procedures

1. Best Standing Offer: the offer that provides best value (lowest aggregate price) will be retained.

The Project Authority will establish the scope of work to be performed by the successful firm and negotiate the level of effort required to perform the work based on the hourly rates contained in the Standing Offer.

8. CALL-UP INSTRUMENT

Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

CALL-UP AGAINST A STANDING OFFER
COMMANDE SUBSÉQUENTE À UNE OFFRE
PERMANENTE

In accordance with
STANDING OFFER NO.: _____

Conformément à
L'OFFRE PERMANENTE No. _____

Call-up no. - No de commande

Dated _____
and the terms and conditions therein, you are
Requested to carry out the worked described
below.

En date du _____
Et les modalités qui y sont énumérées, vous êtes prié
d'exécuter les travaux décrits ci-après.

Contractor's name and address - Nom et adresse de l'entrepreneur		Send invoice to - Expédier la facture à
Fax No. ()		attention:
Project no. - No du projet	Note: Quote standing offer number, project number and call-up number on your invoice. Inscrire le numéro de l'offre permanente, le numéro du projet et le numéro de commande sur la facture.	
Location of work - Endroit des travaux	Call-up cost, GST/HST extra - Coût de la commande, TPS en plus	

Work description - Description des travaux	
Certified pursuant to subsection 32 (1) of the Financial Administration Act Certifié en vertu du paragraphe 32 (1) de la Loi sur la gestion des finances publiques	Date _____
Signature _____	
Departmental Representative - Représentant du ministère	Date _____
Signature _____	

9. Limitation of Call-ups

Individual call-ups against the Standing Offer must not exceed \$60,000.00 (Goods and Services Tax or Harmonized Sales Tax included).

10. Priority Documents

If there is a discrepancy between the wording of any documents which appear on the list, the wording of the document which first appears on the list has priority over the wording of any document which subsequently appears on the list.

- a) the call up against the Standing Offer, including any annexes and any amendments;
- b) the articles of the Standing Offer;
- c) the general conditions 2005 (2014-09-25), General Conditions - Standing Offers - Goods or Services
- d) any amendment or variation in the Standing Offer that is made in accordance with the terms and conditions of the Standing Offer;
- e) the general conditions dated and listed in Part 7B, Resulting Contract Clauses;
- f) the Supplemental general conditions;
- g) Annexes:
 - Annex A, Statement of Work and any amendment to the solicitation document incorporated in the Standing Offer before the date of the Standing Offer;
 - Annex B, Basis of Payment;
 - Annex C, Health & Safety Requirements - Alberta
 - Annex D, Periodic Usage Report Form; and
 - Annex F, Insurance
 - Annex G; Voluntary Report for Apprentices Employed During the Contract
 - Annex H; Security Requirement Check List (SRCL).
- h) the Offeror's offer Annex E, dated _____ (insert date of offer);

11. Certifications

11.1 Compliance

Compliance with the certifications provided by the Offeror is a condition of authorization of the Standing Offer and subject to verification by Canada during the term of the Standing Offer and of any resulting contract that would continue beyond the period of the Standing Offer. In the event that the Offeror does not comply with any certification or it is determined that any certification made by the Offeror in its offer is untrue, whether made knowingly or unknowingly, Canada has the right to terminate any resulting contract for default and set aside the Standing Offer.

12. Applicable Laws

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of work.

13. Estimates

Where an estimate of the cost of performing specific work is required, the Identified User will provide the Offeror with a statement of the work required and the Offeror must provide the Identified User with an estimate of the cost of performing the specified work in accordance with the pricing provision of the Standing Offer. The Offeror must not undertake any of the specified work unless and until a call-up is issued by the Identified User. The estimated cost stated in the call-up must not be exceeded without the specific written authorization of the Identified User.

14. Proactive Disclosure of Contracts with Former Public Servants A3025C (2013-03-21)

By providing information on its status, with respect to being a former public servant in receipt of a Public Service Superannuation Act (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Secretariat of Canada.

PART 7 (B) - RESULTING CONTRACT CLAUSES

- 1) The following clauses and conditions apply to and form part of any contract resulting from a call-up against the Standing Offer:
 - (a) Statement of Work - The Contractor must perform the Work described in the call-up against the Standing Offer;
 - (b) General Conditions:

(i)	GC1	General Provisions	R2810D	(2015-04-01);
(ii)	GC2	Administration of the Contract	R2820D	(2015-02-25);
(iii)	GC3	Execution and Control of the Work	R2830D	(2015-02-25);
(iv)	GC4	Protective Measures	R2840D	(2008-05-12);
(v)	GC5	Terms of Payment	R2550D	(2015-02-25);
(vi)	GC6	Delays and Changes in the Work	R2865D	(2013-04-25);
(vii)	GC7	Default, Suspension or Termination of Contract	R2870D	(2008-05-12);
(viii)	GC8	Dispute Resolution	R2884D	(2008-05-12);
(ix)	GC10	Insurance	R2900D	(2008-05-12);
 - (c) Supplementary Conditions, if any;
 - (d) Allowable Costs for Contract Changes Under GC6.4.1 R2950D (2015-02-25);
 - (e) Any amendment issued or any allowable bid revision received before the date and time set for solicitation closing;
 - (f) Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
 - (g) Any amendment or variation of the contract documents that is made in accordance with the General Conditions.
- 2) The documents identified by title, number and date in paragraph 1) are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Website: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>
- 3) The language of the contract documents shall be the language of the Bid and Acceptance Form submitted.
- 4) A contract is formed between Canada and the Offeror only when a Call-up duly signed is issued by the Departmental Representative and accepted by the Offeror*. The Offeror shall then be referred to as "the Contractor" and the Contract includes the Offer, the Specifications referred to in the Unit Price Schedule, the General Conditions, and the Call-up .

5) Interpretation

"Accepted by the Offeror" * means that the Offeror has agreed to, and commenced performance of the work.

"Minister" includes a person acting for the Minister, the Minister's successor in office, their lawful deputy and their representatives appointed for the purpose of the Standing Offer.

"Departmental Representative" means the Project Authority who is the representative of the department or agency for whom the Work will be carried out pursuant to a call-up against the Standing Offer and is responsible for all the technical content of the Work under the resulting Contract.

"Superintendent" or "Supervisor" means the employee or representative of the Contractor designated by the Contractor to act as Superintendent;

"Unit Price Table" means the table of prices per unit set out in the Offer; and

"Work" means, subject only to any express stipulation in the Contract to the contrary, everything that is necessary to be done, furnished or delivered by the Contractor to perform the Contract in accordance with the work as described in each Call-up, and in the technical specifications or statement of work.

SUPPLEMENTAL CONDITIONS

SC01 INSERT the following supplementary conditions in the resulting General Conditions:

1.1. T1204 - Direct Request by Customer Department

- 1.1.1 Pursuant to paragraph 221 (1)(d) of the Income Tax Act, R.S. 1985, c.1 (5th Supp.), payments made by departments and agencies to contractors under applicable services contracts (including contracts involving a mix of goods and services) must be reported on a T1204 Government Service Contract Payments slip.
- 1.1.2 To enable departments and agencies to comply with this requirement, the Contractor must provide Canada, upon request, its business number or Social Insurance Number, as applicable. (These requests may take the form of a general call-letter to contractors, in writing or by telephone).

1.2. Periodic Reports

- 1.2.1 The Offeror shall provide to the Standing Offer Authority biannual reports on usage of the Standing Offer, showing the number and total value of call-ups by each consignee. Reports shall be submitted in the format shown on the attached Annex D "Periodic Usage Report Form" and forwarded to the Standing Offer Authority no later than fifteen (15) days after the designated reporting period.
- 1.2.2 The Offeror understands that failure to comply may result in the setting aside of the Standing Offer.

SC02 TERM OF CONTRACT

2.1 Period of the Contract

The Work must be completed in accordance with the call-up against the Standing Offer.

SC03 PAYMENT

3.1 CHANGES TO GC5 R2550D (2014-06-26) - TERMS OF PAYMENT

DELETE GC5.4, GC5.5, and GC5.6 and **INSERT** the following:

GC5.4 Payment

.1 Terms of Payment

1. Where the duration of the work identified in a call-up is greater than 30 days, the Contractor may submit monthly progress claims, and shall be entitled to receive progress payments at monthly or other agreed intervals. Subject to verification by the Departmental Representative, payment of the Contractor's invoice for work satisfactorily completed shall be made not later than 30 days after receipt thereof. The due date shall be the 30th day following receipt of a properly submitted invoice.
2. The Contractor shall submit a separate invoice for each Call-up to the Departmental Representative in accordance with any invoicing instructions set out herein. The properly submitted invoice shall be delivered to the Departmental Representative in the agreed format with sufficient detail, information, and backup to permit verification.
The Contractor's invoice shall show the following, as separate items:
 - (a) the amount of the progress payment being claimed for Work satisfactorily performed excluding GST/HST;
 - (b) the amount for any tax calculated (GST/HST) in accordance with the applicable federal tax legislation; and
 - (c) the total amount which shall be the sum of the amounts referred to in (a) and (b) above.
3. The amount of the tax shown on the invoice shall be paid by Canada to the Contractor in addition to the amount of the progress payment for Work satisfactorily performed.

4. If, within 15 days of receipt of the invoice, additional information is requested by the Departmental Representative for the purpose of verification, the 30 day payment period shall commence upon receipt of the requested information. Payment shall be made prior to or on the thirtieth (30) day after receipt of the corrected invoice or the required information.
 - .1 Any monthly progress payment made to the Contractor may be subject to a 10% holdback which shall be released to the Contractor with the final payment unless the amount held back is required by Canada to remedy any defect in the Contractor's work.
 - .2 Where the duration of the Work identified in a call-up is equal to or less than thirty (30) days, the Contractor may receive a single payment as full consideration for the Work performed.
5. Upon completion of the Work in the progress claim, the Contractor maybe requested to provide a completed and signed statutory declaration containing a declaration that, up to the date of the progress claim, the Contractor has complied with all lawful obligations with respect to the Labour Conditions and that, in respect of the Work, all lawful obligations of the Contractor to its Subcontractors and Suppliers, referred to collectively in the declaration as "subcontractors and suppliers", have been fully discharged before any further payment is made.
6. Upon written notice by a Sub-Contractor, with whom the Contractor has a direct contract, of an alleged non payment to the Sub-Contractor, the Departmental Representative may provide the Sub-Contractor with a copy of the latest approved progress payment made to the Contractor for the Work.
7. Upon the satisfactory completion of all Work, the amount due, less any payments already made, shall be paid to the Contractor not later than thirty (30) days after receipt of a properly submitted invoice, and upon request, with a Statutory Declaration in accordance with paragraph 5 above.

3.2 Basis of Payment - see Annex B

3.3 Limitation of Price

Canada will not pay the Contractor for any changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

3.4 Supplemental Invoicing Instructions

.1 Invoices

- .1 All invoices submitted for payment shall show:
 - .1 Construction Engineering Work Order Number,
 - .2 Construction Engineering File Number,
 - .3 Requisition Number, DSS 942 (Requisition on Contract),
 - .4 Public Works and Government Services Canada (PWGSC) Standing Offer Number, and
- .2 Invoices are to include a breakdown as follows:
 - .1 Hourly rate per the Offer and hours of work for each tradesperson.
 - .2 An itemized list of materials used, by cost, shall be shown on all invoices submitted for payment.
 - .3 Extended total.
 - .4 Good and Services Tax (GST/HST) shall be shown as a separate item.
 - .5 Where subcontracting is involved a copy of subcontractor's invoice shall accompany the invoice against the requisition.
 - .6 Where discount or markup is applicable, indicate separately.
- .3 Invoices submitted for payment against this contract that are not properly identified will be returned to the Contractor for proper annotation before certification for payment is made.

3.5 Payment of Invoices by Credit Card (see PART 3)

The credit cards _____ and _____ are accepted.

Section GC5.11 Delay in Making Payment, Interest on Overdue Accounts, of GC5 - Terms of Payment R2550D (2014-06-26) will not apply to payments made by credit cards.

ANNEXES

Annex A	Statement of Work
Annex B	Basis of Payment
Annex C	Health & Safety Requirements
Annex D	Periodic Usage Report Form
Annex E	Offer
	Appendix 1 - List of Individuals who are Currently Directors of the Offeror
	Appendix 2 - Voluntary Certification to Support the Use of Apprentices
Annex F	Insurance Certificate
Annex G	Voluntary Reports for Apprentices Employed During the Contract
Annex H	Security Requirements Checklist
Annex I	Apprentices

ANNEX A

Statement of Work

(See attached PDF document)

ANNEX B

Basis of Payment

.1 Basis of Payment

Payments in respect of the agreed price shall be made upon satisfactory performance of the Work, and upon approval of the Departmental Representative, but such payments shall not exceed the amount(s) as specified in the Call Up, for the Work without written authorization.

In consideration of the Contractor satisfactorily completing all of its obligations under the resulting Contract, the Contractor will be paid a firm price, Goods and Services Tax or Harmonized Sales Tax extra.

See the attached for details in Annex E.

ANNEX C

MANDATORY HEALTH AND SAFETY - for Work in the Province of Alberta

1. SPECIAL INSTRUCTIONS TO BIDDERS

WCB AND SAFETY PROGRAM

- 1) The recommended Bidder shall provide to the Contracting Authority, prior to Standing Offer issue:
 - 1.1 a Workers Compensation Board Premium Rate Statement - Alberta, or equivalent documentation from another jurisdiction;
 - 1.2 a Workers Compensation Board letter of good standing, also listing covered Directors, Principals, Proprietor(s) or Partners who will be or who are anticipated to be present on the work site(s), or equivalent documentation from another jurisdiction; and
 - 1.3 a Certificate of Recognition (COR) or Registered Safety Plan (RSP). A health and safety policy and program, as required by other provincial/territorial Occupational Health and Safety Acts, will be acceptable in lieu of a COR or RSP.
- 2) The recommended Bidder shall deliver all of the above documents to the Contracting Authority on or before the date stated (usually 3-5 days after notification) by the Contracting Authority. Failure to comply with the request may result in the bid being declared non-compliant.

2. SUPPLEMENTARY CONDITIONS

Workplace Safety and Health

1. EMPLOYER/PRIME CONTRACTOR

- 1.1 The Contractor shall, for the purposes of the Occupational Health and Safety Act, Alberta, and for the duration of the Work:
 - 1.1.1 act as the Employer, where there is only one employer on the work site, in accordance with the Authority Having Jurisdiction;
 - 1.1.2 accept the role of Prime Contractor, where there are two or more employers involved in work at the same time and space at the work site, in accordance with the Authority Having Jurisdiction; and
 - 1.1.3 agree, in the event of two or more Contractors working at the same time and space at the work site, without limiting the General Conditions, to Canada's order * to:
 - 1.1.3.1 accept, as the Prime Contractor, the responsibility for Canada's other Contractor(s); or
 - 1.1.3.2 accept that Canada's other Contractor is Prime Contractor and conform to that Contractor's Site Specific Health and Safety Plan.

* "order" definition: after contract award, Contractor is ordered by a Change Order

2. SUBMITTALS

2.1 The Contractor shall provide to Canada:

- 2.1.1 prior to the pre-construction meeting, a transmittal and copy of a completed Notice of Project form PWGSC - TPSGC 458 (form will be provided to the proposed contractor prior to award), as sent to the Authority Having Jurisdiction (AHJ); and
- 2.1.2 prior to commencement of work and without limiting the terms of the General Conditions:
 - 2.1.2.1 copies of all other necessary permits, notifications and related documents as called for in the scope of work/specifications and/or by the AHJ; and
 - 2.1.2.2 a site specific Health and Safety Plan as requested.

NOTE: Please do not include any forms that include personal 3rd party information such as the names of the contractor's employees and their related claims information.

3. LABOUR AUTHORITY CONTACT:

The contact below represents the Labour Authority in the jurisdiction (AHJ). They are not representatives of the Workers Compensation.

Do not contact the people referenced below for issues pertaining to WCB or WCB Clearances. Those queries must be directed specifically to the WCB, and where the WCB has both a Labour and Compensation component, WCB issues must be directed to the Compensation/Employer Services sections.

ALBERTA North

Alberta Human Resources and Employment
Workplace Health and Safety
10th Floor, 7th Street Plaza
10030-107 Street
Edmonton, Alberta, T5J 3E4

Telephone: 1(866) 415-8690
Email: All submissions are to be scanned and
emailed to whs@gov.ab.ca

ANNEX D

Periodic Usage Report Form

As a requirement of this Request for Standing Offer, a report shall be submitted as follows:

Return to:

Marc Poot	(780) 497-3510	marc.poot@pwgsc-tpsgc.gc.ca
<i>Name</i>	<i>Fax</i>	<i>Email Address</i>

at:

Public Works and Government Services Canada
Real Property Contracting, Acquisitions Branch
5th Floor, 10025 Jasper Avenue
Edmonton, Alberta
T5J 1S6

REPORT ON THE VOLUME OF BUSINESS

SUPPLIER: _____

REPORT FOR THE PERIOD ENDING: _____

Description of Work	Call-up #	TOTAL BILLING

NIL REPORT: We have not done any business with the federal government for this period _____.

PREPARED BY:

NAME: _____

SIGNATURE: _____

TELEPHONE NO.: _____

ANNEX E OFFER

Description of Work: Paving Repairs, Department of National Defence, 4 Wing, CFB Cold Lake, Alberta

1. OFFER

- .1 This Standing Offer is made by the Offeror to Canada;
- .2 This Offer is to furnish all necessary tools, plant, equipment, services, materials and labour to execute and complete the Work described above in careful and workmanlike manner;
- .3 The Work shall be more particularly described in individual Call-ups to be issued by the Project Authority, hereinafter called the "Departmental Representative";
- .4 Individual Call-ups may be issued, from time to time, during the period identified in Part 7A, clause 4.1, hereinafter called the "Term".

2. GENERAL PROVISIONS

- .1 This Offer when signed by or on behalf of the Offeror, the Specifications referred to in the Unit Price Schedule below and the General Conditions shall constitute the complete Offer subject to the provisions contained therein;
- .2 The Hourly Rate and the Unit Price, as offered, govern in calculating each Estimated Total Price; any errors in the extension of the Unit Price and in the addition of the Estimated Total Prices will be corrected in order to obtain the actual Total Estimated Amount;
- .3 This Offer supersedes and cancels all communications, negotiations and agreements relating to the Work other than those contained in the Offer;
- .4 that this tender may not be withdrawn for a period of 90 days following the tender closing time,

The Offeror agrees

- .1 to carry out individual work projects as requisitioned from time to time by the Departmental Representative in **Call- ups Against a Standing Offer**, form PWGSC/TPSGC 2829 or 942, copies of which the Offeror acknowledges to have in its possession, in accordance with the requirements set out therein and in consideration of payment of amounts to be determined pursuant to section 3. Below;
- .2 to provide, on demand from the Departmental Representative, a detailed price estimate, calculated in accordance with section 4 below, and a proposed work schedule for each work project; and
- .3 to commence Work promptly upon receipt of each Call-up issued pursuant to this Offer, duly signed by the Departmental Representative.
- .5 This Offer does not constitute a binding contract between Canada and the Offeror. The Departmental Representative shall have the right to issue a Call-up with those other offerors which have also submitted offers to Canada.
- .6 A contract is formed between Canada and the Offeror only when a Call-up duly signed is issued by the Departmental Representative and accepted by the Offeror. The Offeror shall then be referred to as "the Contractor" and the Contract includes the Offer, the Specifications referred to in the Unit Price Schedule below, the General Conditions and the Call-up .
- .7 The estimated number of hours, the quantities of material and plant, and the amount of the Allowance for Unspecified material set out in the Unit Price Schedule are for the purpose of comparative evaluation of the offers and do not express an obligation on the part of Canada to order any or all of the work, material or plant listed therein.

- .8 The Offeror declares that no bribe, gift or benefit has been or will be paid, given, promised or offered directly or indirectly to any official or employee of Canada or to a member of the family of such person, with a view to influence the entry into or the administration of any contract which may result from this Offer.

3. FINANCIAL TERMS

- .1 Each item specified in the Unit Price Schedule in subsection 4.1 includes wages, traveling time and costs, allowances, supervision, liabilities as employer, insurance, and the use of all tools, tackle, etc., overhead, profit and all other liabilities whatsoever.
- .2 Unspecified Material shall be reimbursed at net cost, as supported by invoices, plus Markup as established in section 4 of this Offer. "Net Cost" means all amounts reasonably and properly paid by the Offeror in respect of materials required for and used in the Work, and includes packing, handling and delivery charges, less any trade discounts received by the Offeror. The Offeror's Markup on Unspecified Material covers overheads, profit, and all other expenses whatsoever.
- .3 The prices inserted in section 4 of this Offer include all applicable federal, provincial, and municipal taxes.
 - .1 However, they do not include any amount for the Goods and Services Tax (GST) or Harmonized Sales Tax (HST). The appropriate GST/HST amounts will be paid by Canada to the Offeror in addition to the amounts paid against the amount of the contract. The Offeror shall make appropriate remittances to Revenue Canada in accordance with the legislation.
 - .2 The prices do not include the Québec Sales Tax. The Offeror shall arrange directly with the Province of Québec for the reimbursement of Provincial Sales Tax paid to this Province for the purpose of any contract resulting from this Offer.
- .4 Payment by Canada for the Offeror's own special equipment not covered by the Unit Price Schedule and required at the job site will be no greater than the local going rental rate for such equipment or the rate published by the local construction association for such equipment, whichever is the lower.
- .5 The cost of subcontract work, including special equipment rentals approved by the Project Authority, shall be reimbursed at actual cost with the addition of ten (10) percent to cover overheads, profit, and all other expenses whatsoever. "Actual cost" means all amounts reasonably and properly paid by the Contractor for those parts of the Work carried out by subcontractors.
- .6 Pricing
 - .1 The prices requested in the Offer are:
 - .1 firm unit price;
 - .2 miscellaneous items not listed to be charged at the contractor's actual cost plus mark up.
 - .2 The unit rates requested in the offer and acceptance for specific types of service shall be the total cost to perform the work including but not limited to:
 - .1 labour including supervision, allowances and liability insurance;
 - .2 travel time;
 - .3 transportation/vehicle expenses;
 - .4 tools and tackle;
 - .5 overhead and profit;
 - .6 any other incidental expenses other than supply of materials and replacement parts relating to the delivery of labour.
 - .3 It is considered that regular hours of work fall between 0800 and 1600 hours, Monday to Friday.

4. PRICES

The Offeror agrees that the following are the prices referred to in sections 1 and 2 above:

4.1 Unit Price Schedules - Rates

SCHEDULE A - Initial Year Term

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6
Item	Class of Labour, material or plant	Unit	Estimated Quantity	Unit Price \$ ¢	Estimated total price \$ ¢
1	Excavating	m3	420		\$
2	Sub grade repairs (granular base)	m2	600		\$
3	New 250mm base	m3	420		\$
4	Small patches, less than 20m2 x 50mm thick.	m2	420		\$
5	Small patches, less than 20m2 x 100mm thick.	m2	420		\$
6	Larger patches, larger than 20m2 x 50 mm thick.	m2	420		\$
7	Larger patches, larger than 20m2 x 100 mm thick.	m2	300		\$
8	Overlay 65m2 to 1000m2 X 50 mm thick.	m2	210		\$
9	Overlay over 1000m2 X 50 mm thick.	m2	210		\$
10	Overlay patch (bandaid), 65m2 or less X 50 mm thick.	m2	210		\$
11	Feathered asphalt, manhole tops, 25-36m2 each	m2	210		\$
12	Pothole repairs (1-10m2)	m2	210		\$
13	Manhole catch basins patches	EA	6		\$
14	Crack sealant	LM	210		\$
15	Saw cutting	LM	210		\$
16	Miscellaneous Items not listed above to be charged at the Contractor's actual cost plus a markup. (% mark up x \$15,000.00 =	N/A	\$15,000.00	_____ %	\$

Sub Total SCHEDULE A: Estimated Total Amount 1st Year GST/HST Extra	\$
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continued

4.1 Unit Price Schedules - Rates (continued)

SCHEDULE B - Year 2 Term

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6
Item	Class of Labour, material or plant	Unit	Estimated Quantity	Unit Price \$ ¢	Estimated total price \$ ¢
1	Excavating	m3	420		\$
2	Sub grade repairs (granular base)	m2	600		\$
3	New 250mm base	m3	420		\$
4	Small patches, less than 20m2 x 50mm thick.	m2	420		\$
5	Small patches, less than 20m2 x 100mm thick.	m2	420		\$
6	Larger patches, larger than 20m2 x 50 mm thick.	m2	420		\$
7	Larger patches, larger than 20m2 x 100 mm thick.	m2	300		\$
8	Overlay 65m2 to 1000m2 X 50 mm thick.	m2	210		\$
9	Overlay over 1000m2 X 50 mm thick.	m2	210		\$
10	Overlay patch (bandaid), 65m2 or less X 50 mm thick.	m2	210		\$
11	Feathered asphalt, manhole tops, 25-36m2 each	m2	210		\$
12	Pothole repairs (1-10m2)	m2	210		\$
13	Manhole catch basins patches	EA	6		\$
14	Crack sealant	LM	210		\$
15	Saw cutting	LM	210		\$
16	Miscellaneous Items not listed above to be charged at the Contractor's actual cost plus a markup. (% mark up x \$15,000.00) =	N/A	\$15,000.00	_____ %	\$

Sub Total SCHEDULE B: Estimated Total Amount 2nd Year GST/HST Extra	\$
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Continued

.1 Unit Price Schedules - Rates (continued)

SCHEDULE C - Year 3 Term

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6
Item	Class of Labour, material or plant	Unit	Estimated Quantity	Unit Price \$ ¢	Estimated total price \$ ¢
1	Excavating	m3	420		\$
2	Sub grade repairs (granular base)	m2	600		\$
3	New 250mm base	m3	420		\$
4	Small patches, less than 20m2 x 50mm thick.	m2	420		\$
5	Small patches, less than 20m2 x 100mm thick.	m2	420		\$
6	Larger patches, larger than 20m2 x 50 mm thick.	m2	420		\$
7	Larger patches, larger than 20m2 x 100 mm thick.	m2	300		\$
8	Overlay 65m2 to 1000m2 X 50 mm thick.	m2	210		\$
9	Overlay over 1000m2 X 50 mm thick.	m2	210		\$
10	Overlay patch (bandaid), 65m2 or less X 50 mm thick.	m2	210		\$
11	Feathered asphalt, manhole tops, 25-36m2 each	m2	210		\$
12	Pothole repairs (1-10m2)	m2	210		\$
13	Manhole catch basins patches	EA	6		\$
14	Crack sealant	LM	210		\$
15	Saw cutting	LM	210		\$
16	Miscellaneous Items not listed above to be charged at the Contractor's actual cost plus a markup. (% mark up x \$15,000.00) =	N/A	\$15,000.00	_____ %	\$

Sub Total SCHEDULE C: Estimated Total Amount 3rd Year GST/HST Extra	\$
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4.1 Unit Price Schedules - Rates (continued)

4.2 TOTAL EVALUATED PRICE (Initial 1 Year Term + 2nd Year Term + 3rd Year Term)

Col. 1	Col. 2	Col. 3	Col. 4
Sub Total SCHEDULE A Initial Year Term	Sub Total SCHEDULE B 2nd Year	Sub Total SCHEDULE C 3rd Year	Total Evaluated Price (col.1 + col.2 + col.3 = col.4)
\$ _____	\$ _____	\$ _____	\$ _____ GST/HST Extra

These items will be used for cost evaluation purposes only and do not constitute a guarantee or commitment on behalf of Canada of the quantity or amount to be used under the Standing Offer.

A rate must be entered for each item.

The Offeror agrees that the Price(s) per Unit as tendered govern in calculating the Total Evaluated Price. The Offeror understands that any errors in the extension of the Price per Unit, in the addition of the Estimated Total Price, and Estimated Total Amount will be corrected in order to obtain the Total Evaluated Price.

Cost will be evaluated on the Total Evaluated Price in Column 4. It is anticipated that only one standing offer will be issued to the lowest compliant offeror.

APPENDIX 2 - VOLUNTARY CERTIFICATION TO SUPPORT THE USE OF APPRENTICES

Not: The contractor will be asked to fill out a report every six months as included a Annex G

Name: _____

Signature: _____

Company Name: _____

Company Legal Name: _____

Solicitation Number: _____

Optional information to provide: _____

Number of apprentices planned to be working on this contract: _____

Trades of those apprentices:

A sample of the "Voluntary Reports for Apprentices Employed during the Contract" is provided at Annex G

ANNEX F

Certificate of Insurance. Refer to Part 6 clause 2.

(See attached PDF document)

ANNEX H

SECURITY REQUIREMENTS CHECKLIST (SRCL)

(See attached PDF document)

**DEPARTMENT OF NATIONAL DEFENCE
4 WING COLD LAKE**

WING CONSTRUCTION ENGINEERING

**STATEMENT OF WORK
FOR**

PAVING REPAIRS

**CFB COLD LAKE
ALBERTA, T9M 2C6**



**Requisition Number: W0134-15-CYNM
Contract Card: PAVENM
Date: 17 Jul 2014
Project Authority: MCpl Darrow
SOW Template: July 2014**

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PART 1 - GENERAL

- 1.1 Description of Work .1 Work under this Contract comprises the furnishing of all labour, materials and equipment required to carry out asphalt repairs, c/w tack coating at 4 Wing Cold Lake, Cold Lake, AB. The work includes all Base roads inside the Base boundaries.
- .2 Examples of repairs required are as follows:
.1 Excavate alligatored asphalt and soft granular base to a maximum depth of 450mm.
.2 Supply and compact in place new granular base.
.3 Large hot mix asphalt patches.
.4 Small hot mix asphalt patches.
.5 Overlay with hot mix asphalt x 50mm thick.
.6 Overlay with hot mix asphalt x 65mm thick.
.7 Overlay with hot mix asphalt x 75mm thick.
.8 Pavement markings.
.9 Repair locations to be identified by the Engineer.
- .3 The work also includes sealing of pavement cracks on all Base roads within to the Base General Restricted Area boundaries.
- 1.2 Security Authorization .1 This project will be issued with [Security Mitigation Measures.] [an SRCL.]
- 1.3 Contract Administration .1 This contract will be administered in English.
- 1.4 Documents Required .1 Maintain at job site, one copy each of the following:
.1 Contract drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed shop drawings.
.5 Change orders.
.6 Other modifications to Contract.
.7 Copy of approved work schedule.
.8 Manufacturers' installation and application instructions.
-

1.5 Work Schedule

- .1 Provide within 3 working days after call-up, construction schedule showing anticipated progress stages and final completion of work within time period required by call-up.
- .2 Interim reviews of work progress based on work schedule will be conducted as deemed by DND Rep and schedule updated by Contractor in conjunction with and to approval of DND Rep.

1.5 Contractor's Use of Site

- Exclusive and complete for execution of work except as follows:
 - .1 Movement around site shall be subject to restrictions imposed by Wing Commander and/or DND Rep.
 - .2 Do not unreasonably encumber site with materials or equipment.
- .2 PLER/Jimmy Lake special precautions:
 - .1 Day to day restrictions enroute to Jimmy Lake site may occur from time to time while military live range missions are underway. These restrictions are usually of short duration in terms of hours however may result in a full day.
 - .2 No work will be permitted during the multi-nation Maple Flag exercises.
 - .3 Normal working hours are from 0730 to 1600 but are subject to change.
 - .4 Weekend work is permitted with special arrangements.
 - .5 Obtain permission from Wing Operation Range Control 48hrs before proceeding to site.

1.6 Property Damage

- .1 Contractor is responsible to make good any damage to DND property resulting from his work conducted on site. Repairs shall be carried out at the contractors expense.
- .2 The contractor shall immediately notify the DND Rep or Contracting Authority of any damage incident. Damage to any surface feature or underground utility are included in this definition such as gas lines, power lines, water lines, buildings, survey markers, etc.
- .3 Any tree removed or damaged during the work must be replaced with a trees equalling the total diameter of trees removed. The replacement trees should be no less than half

1.7 Property Damage .3
(Cont'd)

(Cont'd)
the calliper of the trees that are damaged/removed. CE Roads and Grounds (Loc 8432) should be contacted for a list of preferred species; each area will have specific requirements based on location, soils proximity to paved areas, moisture etc.

1.8 Codes and Standards .1

Perform work in accordance with the latest edition of National Building Code of Canada (NBC), and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

1.9 Workmanship .1

Workmanship:
.1 Workmanship shall be executed by workers qualified in respective duties for which they are employed.
.2 Decisions as to quality or fitness of workmanship, in case of dispute, rest solely with DND Rep, whose decision is final.

.2

Qualification:
.1 All work shall be carried out by qualified journeyman or apprentice in accordance with the conditions of the Alberta Provincial Act respecting manpower, vocational training and qualification.
.2 Apprenticed employees registered in the provincial apprenticeship program shall be permitted to work only under the direct supervision of a qualified journeyman.

1.10 Project Meetings .1

DND Rep will arrange project meetings, assume responsibility for setting times and recording and distributing minutes.

1.11 Project Layout .1

Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.

.2

Provide devices as required to lay out and construct project.

-
- 1.11 Project Layout (Cont'd)
- .3 Supply such devices as straight edges and templates required to facilitate DND Rep's inspection of work.
 - .4 Supply stakes and other survey markers required for project layout.
- 1.12 Location of Equipment and Fixtures
- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
 - .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
 - .3 Inform DND Rep of impending installations and obtain approval for actual location.
 - .4 Submit field drawings to indicate relative position of various services and equipment as required by DND Rep.
 - .5 Before the start of construction, the Contractor will be responsible to identify and preserve DND Survey Monuments.
 - .6 If during construction, Contractor discovers a DND Survey Monument, (complete with marker post, 50 mm round pipe with 75 x 100 mm aluminium plate), do not disturb the area, carefully preserve survey monuments and inform DND Rep before proceeding.
 - .7 Should a DND Survey Monument be disturbed during construction, the Contractor will be responsible to re-survey and replace if the Monument if necessary, by a certified land surveyor approved by DND Rep.
- 1.13 Cutting and Patching
- .1 Execute cutting, including excavation, fitting and patching required to allow proper fitting of construction elements.
 - .2 Where new elements connect with existing and where existing are altered, cut, patch and make good to match existing.
 - .3 Obtain DND Rep's approval before cutting, boring or sleeving load-bearing members.
-

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- 1.19 Building Smoking Environment .1 4 Wing Cold Lake has a smoking policy in effect. Contractor is to obtain a copy from DND Rep and adhere to it.
- 1.20 Asbestos Discovery .1 If, during execution of contract work, workers uncover or disturb suspected asbestos products that are not covered in the contract specifications, STOP work in that area and advise DND Rep.
- 1.21 Security .1 Access
.1 Work carried out under the terms of this contract will be conducted within the General Restricted Area (GRA) where special and unique security regulations are enforced. Individuals without authorized passes in their possession will not be permitted to enter the GRA.
- .2 Clearances
.1 Work clearance will be granted in two possible ways, please see clause 1.2 for authorization:
.1 Security Mitigation Measures
.2 Security Requirements Check List.
- .3 Security Mitigation Measures
.1 In the case of Security Mitigation Measures, contractor will have access to the GRA only under full time escort.
.2 At no time shall the contractor's employees or sub-contractors be found within the GRA without an authorized pass and escort.
.3 Every effort will be made to provide escorts according to the provided construction schedule.
.4 The Contractor shall give minimum 48 hours notice (two working days) for the processing of the information and subsequent issue of the passes. The Contractor shall ensure that all employees are advised not to enter the GRA without prior authorization (GRA pass) and government issued photo identification.
- .4 Security Requirements Check List
.1 All personnel employed by the Contractor and performing work within the GRA will be subject to a Reliability screening performed by Public Works and Government Services Canada Security Division. Prior to commencement of the Work, the Contractor and each of his
-

1.21 Security .4
(Cont'd)

(Cont'd)

.1 (Cont'd)

personnel involved in the performance of the Contract must be security screened by the Canadian and International Industrial Security Division of the Department of Public Works and Government Services at the level of RELIABILITY STATUS.

.2 Information that the contractor must provide for this screening include: Date of Birth; Address; Country of Origin; Education/Professional qualifications; Employment history; and References/Personal character. The security Division will perform Criminal Record check and Credit check on each applicant. If significant adverse information arises during the conduct of a security assessment, the individual will be notified, in person, and given an opportunity to explain the circumstances. If the Deputy Minister, PWGSC, after reviewing a security assessment, denies the granting of RELIABILITY STATUS, the individual(s) concerned shall be so notified in writing along with information relating to their right of appeal and subsequent admission to the GRA will be prohibited, pending the outcome of any appeal.

.3 The Contractor shall obtain GRA passes from the Wing Military Police Identification Section from information provided by the Contractor to the Contracting Authority or Contract Inspector. The Contractor shall give minimum 48 hours notice (two working days) for the processing of the information and subsequent issue of the passes. The Contractor shall ensure that all employees are advised not to enter the GRA without prior authorization (GRA pass) and government issued photo identification.

.4 The Contractor shall be responsible for his sub-contractors, ensuring all security related requirements are met.

.5 The Contractor shall provide a list of employees and sub-contractors, complete with telephone numbers, who may be contacted during non-working hours in the event of any emergency.

.6 The Contractor shall ensure that all passes issued to his designated employees and sub-contractors are returned for cancellation prior to issuance of the DND Rep's final certificate of completion.

SPEC NOTE: The following Section may be deleted if no work is to take place at PLER.

1.21 Security .5
(Cont'd)

[CLAWR (Cold Lake Air Weapons Range) Special conditions.

.1 The contractor shall provide DND a list of personnel who need access to the area to perform work under the terms of the contract.

.2 All personnel are required to attend a 1 hour "Range Safety Briefing" prior to conducting any work or accessing the PLER site.

.3 Contractor shall provide schedule minimum 14 days in advance of scheduled work on site. Any changes to this schedule shall be provided to the inspector at a minimum of 48 hours advance notice (two working days) for processing of information and subsequent clearances to PLER. The Contractor shall ensure that all employees are advised not to enter the PLER without prior authorization.

.4 Information that the contractor must provide for access: name of individual(s), dates and times for access, location of work, phone number, drivers licence.

.5 Work clearance will be granted by DND through Wing Operations Mr Dick Brakely @ local 7978.

.6 The Contractor shall be responsible for his sub-contractors, ensuring all security related requirements are met.

.7 Garbage or refuse shall be removed off the CLAWR.

.8 Feeding wildlife is prohibited.

.9 All meals must be prepared and consumed in a suitable enclosed space or building.

.10 Report to Range Safety Officer (RSO) as required by DND.

.11 The Contractor shall provide a list of employees and sub-contractors, complete with telephone numbers, who may be contacted during non-working hours in the event of any emergency.]

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

————— END —————

PART 1 - GENERAL

- 1.1 Section Includes .1 Shop drawings and product data.
.2 Samples.
- 1.2 Precedence .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.3 Administrative .1 Submit to DND Rep submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
.2 Work affected by submittal shall not proceed until review is complete.
.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
.4 Where items or information is not produced in SI Metric units converted values are acceptable.
.5 Review submittals prior to submission to DND Rep. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
.6 Notify DND Rep, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
.7 Verify field measurements and affected adjacent Work are coordinated.

1.3 Administrative
(Cont'd)

- .8 Contractor's responsibility for errors and omissions in submission is not relieved by DND Rep's Consultant's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by DND Rep Consultant review.
- .10 Keep one reviewed copy of each submission on site.

1.4 Shop Drawings

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Allow 14 days for DND Rep's review of each submission.
- .4 Adjustments made on shop drawings by DND Rep are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to DND Rep prior to proceeding with Work.
- .5 Make changes in shop drawings as DND Rep may require, consistent with Contract Documents. When resubmitting, notify DND Rep in writing of any revisions other than those requested.
- .6 Accompany submissions with transmittal letter containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.

1.4 Shop Drawings
(Cont'd)

- .7 Submissions shall include:
- .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .8 After DND Rep's review, distribute copies.
- .9 Submit prints, number as required by contractor plus two(2) copies to be retained by DND Rep, of shop drawings for each requirement requested in specification Sections and as consultant may reasonably request.
- .10 Submit prints, number as required by contractor **plus two(2)** copies to be retained by DND Rep, of product data sheets or brochures for requirements requested in specification Sections and as requested by DND Rep where shop drawings will not be prepared due to standardized manufacture of product.
- .11 Delete information not applicable to project.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by DND Rep, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same

1.4 Shop Drawings
(Cont'd)

- .13 (Cont'd)
procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .14 The review of shop drawings by Department of National Defence (DND) is for sole purpose of ascertaining conformance with general concept. This review shall not mean that DND approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.5 Product Data

- .1 Manufacturers' catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
- .2 Submit 2 copies of product data.
- .3 Sheet size: 215 x 280 mm.
- .4 Delete information not applicable to project.
- .5 Supplement standard information to provide details applicable to project.
- .6 Cross-reference product data information to applicable portions of Contract documents.

1.6 Samples

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to DND Rep.
- .3 Notify DND Rep in writing, at time of submission of deviations in samples from requirements of SOA Documents.

- 1.6 Samples
(Cont'd)
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
 - .5 Adjustments made on samples by DND Rep are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to DND Rep prior to proceeding with Work.
 - .6 Make changes in samples which DND Rep may require, consistent with Contract Documents.
 - .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not Used.

END

PART 1 - GENERAL

- 1.1 Section Includes .1 Informational and Warning Devices.
.2 Protection and Control of Public Traffic.
.3 Operational Requirements.
- 1.2 Precedence .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.3 References .1 Uniform Traffic Control Devices for Canada, (UTCD) January 1976 (distributed by Transportation Association of Canada).
.2 Manual of Uniform Traffic Control Devices for Streets and Highways, US FHWA, Part IV, - 1988.
- 1.4 Protection of Public Traffic .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
.2 When working on travelled way:
.1 Place equipment in position to present minimum of interference and hazard to traveling public.
.2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
.3 Do not leave equipment on travelled way overnight.
.3 Do not close any lanes of road without approval of DND Rep . Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Part D of UTCD.
-

1.4 Protection of
Public Traffic
(Cont'd)

- .4 Keep travelled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
 - .1 Provide minimum 7 m wide temporary roadway for traffic in two-way sections through Work and on detours.
 - .2 Provide minimum 5 m wide temporary roadway for traffic in one-way sections through Work and on detours.
- .5 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, unless other means of road access exist that meet approval of DND Rep.

1.5 Informational
and Warning Devices

- .1 Provide and maintain signs, flashing warning lights and/or other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices, of UTCD manual.
- .3 Place signs and other devices in locations recommended in UTCD manual.
- .4 Meet with DND Rep prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Dnd rep.
- .5 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.6 Control of
Public Traffic

- .1 Provide competent flag persons, trained in accordance with, and properly equipped as specified in, UTCD manual in following situations:
-

1.6 Control of
Public Traffic
(Cont'd)

- .1 (Cont'd)
 - .1 When public traffic is required to pass working vehicles or equipment which block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
 - .7 At each end of restricted sections where pilot cars are required.
 - .8 Delays to public traffic due to contractor's operators: maximum 15min.
- .2 Where roadway, carrying two-way traffic, to be restricted to one lane, for 24 h each day, provide portable traffic signal system. Adjust, as necessary, and regularly maintain system during period of restriction. Signal system to meet requirements of Part IV of Manual of Uniform Traffic Control Devices to Street and Highways, US FHWA.

1.7 Operational
Requirements

- .1 Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified herein and approved by DND Rep to protect and control public traffic.
 - .2 Maintain existing conditions for traffic crossing right-of-way.
-

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

END

PART 1 - GENERAL

1.1
Division 1

Precedence .1 For Federal Government projects,
Sections take precedence over technical
specification sections in other Divisions of
this Project Manual.

1.2 General
Protection

- .1 Do not disrupt airport business except as permitted by DND Rep .
- .2 Provide temporary protection for safe handling of public, personnel, pedestrians and vehicular traffic:
- .3 Provide barricades and lights where directed.

1.3 Movement of
Equipment and
Personnel

- .1 In areas of airport not closed to aircraft traffic:
 - .1 Obtain DND Rep's approval on scheduling of Work.
 - .2 Control movements of equipment and personnel as directed by DND Rep .
 - .3 Provide qualified field personnel at locations designated by DND Rep to relay signals from airport traffic control tower to equipment and personnel wishing to cross live traffic areas.
 - .4 Obey signals from airport traffic control tower instantly.

1.4 Unserviceable
Areas

- .1 Mark off areas made unserviceable for aircraft by Work of this Contract by providing plainly visible danger markings by day and red lights by night. Open flames and inflammable fuels are not permitted.
- .2 Park equipment not in use and stockpile materials so that stockpile tops are below 50 to 1 ratio from ends of useable landing strip and below 20 to 1 ratio from sides of aircraft traffic areas. Mark tops with red lights.

- 1.10 active runways,
- Cleaning FOD .1 Where travel routes cross taxiways or parking aprons, broom clean immediately.
- .2 Where access routes cross active runways, taxiways or parking aprons, keep crossings free of mud and debris at all times.
- .3 See Section 01 74 11 - Cleaning for further FOD info.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

END

PART 1 - GENERAL

1.1
Division 1

Precedence .1 For Federal Government projects,
Sections take precedence over technical
specification sections in other Divisions of
this Project Manual.

- .2 The contractor will be acting as the Prime
Contractor for this contract and will certify
this agreement in writing with the DND
representative. Refer to Annex D for prime
contractors's Agreement.

1.2

References .1 Canada Labour Code, Part 2, Canada
Occupational Safety and Health Regulations.

- .2 Province of Alberta Occupational Health and
Safety Act, R.S.A. 1980.

1.3
Section

Submittals .1 Make submittals in accordance with
01 33 00 - Submittal Procedures.

- .2 Submit site-specific Health and Safety Plan:
Within 7 days after date of Notice to Proceed
and prior to commencement of Work. Health and
Safety Plan must include:
.1 Results of site specific safety hazard
assessment.
.2 Results of safety and health risk or
hazard analysis for site tasks and operation
found in work plan.
- .3 Submit copies of Contractor's authorized
representative's work site health and safety
inspection reports to DND Rep weekly.
- .4 Submit copies of reports or directions issued
by Federal, Provincial and Territorial health
and safety inspectors.
- .5 Submit copies of incident and accident
reports.
- .6 Submit Material Safety Data Sheets (MSDS) to
DND Rep.
-

- 1.3 Submittals (Cont'd)
- .7 DND Rep will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 10 days after receipt of plan. Revise plan as appropriate and resubmit plan to DND Rep within 10 days after receipt of comments from DND Rep.
 - .8 DND Rep 's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
 - .9 Medical Surveillance: Where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to DND Rep.
 - .10 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.
- 1.4 Filing of Notice
- .1 File Notice of Project with Provincial authorities prior to commencement of Work.
- 1.5 Safety Assessment
- .1 Perform site specific safety hazard assessment related to project.
- 1.6 Meetings
- .1 Schedule and administer Health and Safety meeting with DND Rep prior to commencement of Work.
- 1.7 Project/Site Conditions
- .1 Work at site may involve contact with:
 - .1 Asbestos.
 - .2 Lead Paint
- 1.8 General Requirements
- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and
-

1.8 General
Requirements
(Cont'd)

- .1 (Cont'd)
Safety Plan must address project specifications.
- .2 DND Rep may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.9 Responsibility .1

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.10 Compliance
Requirements

- .1 Comply with Occupational Health and Safety Act, General Safety Regulation, Alberta. Reg. 1980. and 4 Wing Safety Measures listed below;
 - .2 Contractors and their personnel shall be familiar with this section and its requirements.
 - .3 Observe and enforce construction safety measures required by National Building Code 2005, Part 8; Provincial Government, Workmen's Compensation Board and municipal statutes and authorities.
 - .4 Hard hats and safety boots shall be worn at all times at construction site.
 - .5 Hard hats and safety boots shall be worn at all times while operating mobile equipment.
 - .6 Eye or face protection shall be worn when handling any material liable to injure or irritate the eyes or when engaging in any work producing hazard from flying objects or when operating power lawn equipment and tools.
 - .7 Hearing protection shall be worn when entering or working in a noise hazardous area. This is to include, but not limited, to the
-

1.10 Compliance
Requirements
(Cont'd)

- .7 (Cont'd)
flight line when aircraft are running, shop operations where sound levels exceed 85 decibels and operators of vehicles or equipment which produce excessive noise.
 - .8 Respirators shall be worn when a worker is or may be exposed to an oxygen deficient area or to harmful concentration of gas, vapours, smoke, fumes, mist or dust.
 - .9 All employees who handle or are exposed to hazardous materials as defined under the Hazardous Product Act (WHMIS Legislation) shall be WHMIS trained in accordance with the act.
 - .10 Material safety data sheets (MSDS) for all materials falling under the WHMIS program shall be supplied to the work site by the Contractor/Sub-contractor or user(s), and readily accessible to all on-site personnel.
 - .11 No employee shall enter or be permitted to enter a hazardous confined space unless such entry is made in compliance with Occupational Safety and Health and Labour Canada Standards.
 - .12 Confined spaces entry permit must be obtained from the Fire Department and completed prior to the entry into a confined space.
 - .13 Safety belts and lifelines shall be worn when working at heights greater than 3.26 metres above floor level where it is impractical to provide adequate work platforms or staging.
 - .14 All elevated work sites shall have the area underneath cordoned off to prevent injuries from falling debris.
 - .15 All construction sites which present a potential hazard to the public shall be properly cordoned off and signs prominently placed, warning of possible dangers.
 - .16 No burning, cutting, welding or use of any heat producing device is allowed without a hot work permit from the Fire Department (Annex B). A pre-work inspection and post-work inspection is mandatory.
 - .1 Fire Department phone number for Safety/Fire Inspector is:
 - .1 840-8000 ext 8198.
-

1.10 Compliance
Requirements
(Cont'd)

- .17 All accidents are to be reported through the DND Rep immediately.
- .18 In addition to these 4 Wing Cold Lake's General Safety Contractor Regulations, all Alberta Occupational Health and Safety Regulations shall be adhered to at all times.
- .19 In event of conflict between any provisions of above authorities the most stringent provisions govern.
 - .1 The following are the known hazardous substances and/or hazardous conditions at the work site which will be considered as health or environmental hazards and shall be properly managed should they be encountered as part of the work.
 - .2 Specific hazards that may impact significantly on the contract or present significant risk:
 - a. Excavation
 - b. Hot work
 - c. Fall Hazards
 - d. Heavy Equipment
 - e. Overhead/underground Utilities
 - f. Traffic
 - .3 Contractors are required to be aware of the known hazardous substances and/or hazardous conditions and are to include in their tender price all work associated in working with, in and around the hazards.
 - .4 The above lists shall not be construed as being complete and inclusive of all safety and health hazards encountered as a result of the Contractor,s operations during the course of work. Include the above items into the hazard assessment program specified herein.

1.11 Cell Phones

- .1 Use of cellular phones are prohibited within Refueling Compounds.
- .2 Cell phones shall not be operated within 15M of an aircraft.

1.12 Overloading

- .1 Ensure no part of work is subjected to loading that will endanger its safety or will cause permanent deformation.
-

1.13 Hazardous Material .1 All hazardous material must be identified and labelled in accordance with the Workplace Hazardous Material Information System (WHMIS) and copies of the Material Safety Data Sheet (MSDS) shall be supplied to both the Wing Fire Chief and DND Rep.

1.14 Unforeseen Hazards .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction. Advise DND Rep verbally and in writing.

1.15 Health and Safety Co-ordinator .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:

- .1 Have minimum 2 years' site-related working experience specific to construction activities taking place.
- .2 Have working knowledge of occupational safety and health regulations.
- .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .5 Be on site during execution of any hazardous Work and report directly to and be under direction of site supervisor.

1.16 Posting of Documents .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with DND Rep.

- 1.17 Correction of Non-Compliance .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by DND Rep.
- .2 Provide DND Rep with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 DND Rep may stop Work if non-compliance of health and safety regulations is not corrected.
- 1.18 Work Stoppage .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not used.

PART 1 - GENERAL

1.1
Division 1

Precedence .1 For Federal Government projects,
Sections take precedence over technical
specification sections in other Divisions of
this Project Manual.

1.2 Fire Department .1
Briefing

DND Rep will coordinate arrangements for
contractor to be briefed on Fire Safety at
their pre-work conference by Fire Chief before
any work is commenced.

1.3
alarm box and

Reporting Fires .1 Know location of nearest fire
telephone, including emergency phone number.

- .2 Report immediately all fire incidents to the
Fire Department as follows:
 - .1 Activate nearest fire alarm box, or
 - .2 Telephone 911 EMERGENCY ONLY.
- .3 Person activating fire alarm box will remain
at the front entrance to direct Fire
Department to scene of fire.
- .4 When reporting fire by telephone, give
location of fire, name or number of building
and be prepared to verify the location.

1.4 Fire Safety
Plan .1

Submit a fire safety plan for the
construction site prior to commencement of
construction work. The fire safety plan shall

- .2 conform to the National Fire Code of Canada.
Post the fire safety plan at the entrance
to the construction site or near the
construction site's health and safety board.
 - .3 The fire safety plan shall conform to the
National Fire Code of Canada, and shall
contain, at minimum:
 - .1 Emergency procedures to be used in case
of fire, including
 - .1 Sounding the fire alarm;
-

.2 Notifying the fire department;

1.3 Reporting Fires .4
(Cont'd)

- (Cont'd)
- .1 (Cont'd)
 - .3 Instructing occupants on procedures to be followed when the fire alarm sounds;
 - .4 Evacuating occupants, including special provisions for persons requiring assistance; and
 - .5 Confining, controlling and extinguishing fires.
 - .2 The appointment and organization of designated supervisory staff to carry out fire safety duties.
 - .3 The training of supervisory staff and other occupants in their responsibilities for fire safety.
 - .4 Documents including diagrams, showing the type, location and operation of building fire emergency systems.
 - .5 The holding of fire drills (where applicable).
 - .6 The control of fire hazards in the building.
 - .7 The inspection and maintenance of building facilities provided for the safety of occupants.

1.5 Interior and Exterior Fire Protection and Alarm Systems .1

- Fire protection and alarm system will not be:
- .1 obstructed;
 - .2 shut-off; and
 - .3 left inactive at end of working day or shift without authorization from Fire Chief.

- .2 Fire hydrants, standpipes and hose systems will not be used for other than fire-fighting purposes unless authorized by Fire Chief.

1.6 Fire Protection System Impairment .1

- Notify the DND Representative and Fire Chief 48 hours prior to shutting down any active fire protection system, including water

supply, fire suppression, fire detection and

- .2 Implement all fire protection system impairments in accordance with the National Fire Code of Canada and departmental policy.

- 1.7 Fire Extinguishers
- .1 Supply fire extinguishers, as scaled by Fire Chief, necessary to protect work in progress and contractor's physical plant on site.
- 1.8 Blockage of Roadways
- .1 Advise Fire Chief of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by Fire Chief, erecting of barricades and digging of trenches.
- .2 Wing Transport shall be advised of any work that would impede "Emergency" vehicles located at:
- .1 Building 4 - Fire Hall
 - .2 Building 5 - Wing Transport
 - .3 Building 785 - MP Station
 - .4 Building 75 - Ambulance location
- .3 Minimum horizontal clearance: clear width of not less than 5m.
- .4 Minimum vertical clearance: overhead height of not less than 6m.
- 1.9 Smoking Precautions
- .1 Smoking is prohibited in all DND buildings. Observe posted smoking restrictions near existing buildings.
- 1.10 Rubbish and Waste Materials
- .1 Rubbish and waste materials are to be kept to a minimum.
- .2 Burning of rubbish is prohibited.
- .3 Removal:
- .1 Remove all rubbish from work site at end of work day or shift or as directed.
- .4 Storage:
- .1 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.
 - .2 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles and removed as specified above.
-

1.11 Flammable and
Combustible Liquids

- .1 Handling, storage and use of flammable and combustible liquids are to be governed by the current National Fire Code of Canada.
- .2 Flammable and combustible liquids such as gasoline, kerosene and naphtha will be kept for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires permission of Fire Chief.
- .3 Transfer of flammable and combustible liquids is prohibited within buildings or jetties.
- .4 Transfer of flammable and combustible liquids will not be carried out in vicinity of open flames or any type of heat-producing devices.
- .5 Flammable liquids having a flash point below 38° C such as naphtha or gasoline will not be used as solvents or cleaning agents.
- .6 Flammable and combustible waste liquids, for disposal, will be stored in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and Fire Department is to be notified when disposal is required.

1.12 Hazardous
Substances

- .1 Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, will be in accordance with National Fire Code of Canada.
 - .2 Obtain from Fire Chief a "Hot Work" permit (Annex B) for work involving welding, burning or use of blow torches and salamanders, in buildings or facilities.
 - .3 When Work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of the Fire Chief. Contractors are responsible for providing fire watch service for work on a
-

- 1.12 Hazardous Substances (Cont'd) .3 (Cont'd)
scale established and in conjunction with Fire Chief at pre-work conference.
- .4 Where flammable liquids, such as lacquers or urethanes are to be used, proper ventilation shall be provided and all sources of ignition are to be eliminated. Fire Chief is to be informed prior to and at cessation of such work.
- 1.13 Questions and/or Clarifications .1 Direct any questions or clarification on Fire Safety in addition to above requirements to the DND representative. DND is responsible to
- 1.14 Fire Inspection .1 Site inspections by Fire Chief will be coordinated through DND Rep.
- .2 Allow Fire Chief unrestricted access to work site.
- .3 Co-operate with Fire Chief during routine fire safety inspection of work site.
- .4 Immediately remedy all unsafe fire situations observed by Fire Chief.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not Used.

-
- 1.5 Drainage
(Cont'd) .3 (Cont'd)
harmful substances in accordance with local
authority requirements.
- 1.6 Site Clearing
and Plant
Protection .1 Protect trees and plants on site and adjacent
properties where indicated.
- .2 Wrap in burlap, trees and shrubs adjacent to
construction work, storage areas and trucking
lanes, and encase with protective wood
framework from grade level to height of 2 m.
- .3 Protect roots of designated trees to dripline
during excavation and site grading to prevent
disturbance or damage. Avoid unnecessary
traffic, dumping and storage of materials over
root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removal to areas indicated or
designated by DND Rep. See Section 01 00 01
1.6.3 for tree replacement requirements.
- 1.7 Work Adjacent
to Waterways .1 Do not operate construction equipment in
waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or
debris in waterways.
- .4 Design and construct temporary crossings to
minimize erosion to waterways.
- .5 Do not skid logs or construction materials
across waterways.
- .6 Avoid indicated spawning beds when
constructing temporary crossings of waterways.
- .7 Do not blast under water or within 100 m of
indicated spawning beds.
- 1.8 Pollution
Control .1 Maintain temporary erosion and pollution
control features installed under this
contract.
-

- 1.8 Pollution Control
(Cont'd)
- .2 Control emissions from equipment and plant to local authorities emission requirements.
 - .3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
 - .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- 1.9 Protection of Monitoring Wells
- .1 Protect any and all existing groundwater monitoring wells. Report any disturbances or damage to the Project Authority immediately. Wing Environment will need to be informed
- 1.10 Halocarbons
- .1 Refrigeration units will comply with the Federal Halocarbon Regulations (FHR), 2003.
 - .2 Halocarbon refrigerants shall be R410A or a suitable CFC free substitute. Non-halocarbon refrigerants are still acceptable.
 - .3 When the unit is installed, serviced, or decommissioned by a contractor, the Halocarbon Reporting Form must be completed and submitted to the Project Authority.
 - .4 Report all halocarbon releases to the Project Authority, Wing Fire Hall and Wing Environment.
- 1.11 Spill Response and Report
- .1 Spill kits will be on site where there is potential for spillage onto the ground.
 - .2 Personnel on site will be educated in the use of spill kits and spill response based on the equipment on site.
-

- .3 Secondary containment will be provided for generators or other fuel-powered equipment. This equipment will not be located within 30m of a waterway.
- .4 Secondary containment for temporary fuel storage tanks, held on site by the contractor, will be implemented.
- .5 Any spill, regardless of size, will be reported immediately to the Project Authority following the Environmental Incident and Emergency Plan, so proper reporting procedures can be implemented.
- .6 An Environmental Incident Report will be completed and submitted to Wing Environment to report the spill within 24 hrs, follow-up may be required. Environmental Incident Report forms are available from W Env or Project Authority.
- .7 Should the spill exceed the capabilities of the spill kits and the personnel on site, the Fire Department shall be contacted.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

PART 1 - GENERAL

1.1
Division 1

Precedence .1 For Federal Government projects,
Sections take precedence over technical
specification sections in other Divisions of
this Project Manual.

1.2
Institute,

- Associations .1 ANSI - American National Standards
25 West 43rd Street, 4th Floor, New York, New
York, U.S.A. 10036 URL <http://www.ansi.org>
- .2 ARI - Air Conditioning and Refrigeration
Institute, 4100 N Fairfax Drive, Suite 200,
Arlington, Virginia, U.S.A. 22203 URL
<http://www.ari.org>
- .3 ASHRAE - American Society of Heating,
Refrigeration and Air-Conditioning Engineers,
1791 Tullie Circle NE, Atlanta, Georgia,
U.S.A. 30329 URL <http://www.ashrae.org>
- .4 ASTM - American Society for Testing and
Materials, 100 Barr Harbor Drive West,
Conshohocken, Pennsylvania 19428-2959 URL
<http://www.astm.org>
- .5 AWPA - American Wire Producer's Association,
801 N Fairfax Street, Suite 211, Alexandria,
VA U.S.A. 22314-1757 URL <http://www.awpa.org>
- .6 AWPA - American Wood Preservers' Association,
P.O. Box 5690, Granbury Texas, U.S.A.
76049-0690 URL <http://www.awpa.com>
- .7 AWS - American Welding Society, 550 N.W.
LeJeune Road, Miami, Florida U.S.A. 33126 URL
<http://www.amweld.org>
- .8 CCA Canadian Construction Association, 75
Albert St., Suite 400 Ottawa, Ontario, K1P 5E7
URL <http://www.cca-acc.com>
- .9 CCDC Canadian Construction Documents
Committee, Refer to ACEC, CCA, CSC or RAIC
- .10 CFFM - Canadian Forces Fire Marshal, 101
Colonel By Drive, 8NT MGen George R. Pearkes
Bldg., Ottawa, Ontario K1A 0K2
-

- .11 CGSB - Canadian General Standards Board,
Place du Portage, Phase III, 6B1, 11 Laurier

1.2 Associations
(Cont'd)

- .11 (Cont'd)
Street, Hull, Quebec K1A 0S5 URL
<http://w3.pwgsc.gc.ca/cgsb>
- .12 CISC - Canadian Institute of Steel
Construction, 201 Consumers Road, Suite 300,
Willowdale, Ontario M2J 4G8 URL
<http://www.cisc-icca.ca>
- .13 CLA - Canadian Lumbermen's Association, 27
Goulburn Avenue, Ottawa, Ontario, K1N 8C7 URL
<http://www.cla-ca.ca>
- .14 CRCA - Canadian Roofing Contractors
Association, 155 Queen Street, Suite 1300,
Ottawa, Ontario K1P 6L1 URL
<http://www.roofingcanada.com>
- .15 CSA - Canadian Standards Association
International, 178 Rexdale Blvd., Toronto,
Ontario M9W 1R3 URL
<http://www.csa-international.org>
- .16 CSC - Construction Specifications Canada, 120
Carlton Street, Suite 312, Toronto, Ontario
M5A 4K2 URL <http://www.csc-dcc.ca>
- .17 CSDMA - Canadian Steel Door Manufacturers
Association, One Yonge Street, Suite 1801,
Toronto, Ontario M5E 1W7
- .18 CSSBI - Canadian Sheet Steel Building
Institute, 652 Bishop St. N., Unit 2A,
Cambridge, Ontario N3H 4V6 URL
<http://www.cssbi.ca>
- .19 CWC - Canadian Wood Council, 1400 Blair
Place, Suite 210, Ottawa, Ontario K1J 9B8 URL
<http://www.cwc.ca>
- .20 EC - Environment Canada, Conservation and
Protection, Inquiry Centre, 351 St. Joseph
Blvd, Hull, Québec KIA 0H3 URL
<http://www.ec.gc.ca>
- .21 MPI - The Master Painters Institute, 4090
Graveley Street, Burnaby, BC V5C 3T6 URL
<http://www.paintinfo.com>
- .22 NABA - National Air Barrier Association, PO
Box 2747, Winnipeg, Manitoba R3C 4E7 URL
<http://www.naba.ca>

- 1.2 Associations
(Cont'd)
-
- .23 NLGA - National Lumber Grades Authority, 406-First Capital Place, 960 Quayside Drive, New Westminster, B.C. V3M 6G2
- .24 NRC - National Research Council, Building M-58, 1200 Montreal Road, Ottawa, Ontario K1A 0R6 URL <http://www.nrc.gc.ca>
- .25 NSPE National Society of Professional Engineers, 1420 King Street, Alexandria, VA U.S.A. 22314-2794 URL <http://www.nspe.org>
- .26 QPL - Qualification Program List, c/o Canadian General Standards Board, Place du Portage, Phase III, 6B1, 11 Laurier Street, Hull, Quebec K1A 1G6 URL <http://www.pwgsc.gc.ca/cgsb>
- .27 RAIC Royal Architectural Institute of Canada, 55 Murray Street, Suite 330, Ottawa, Ontario, K1N 5M3 URL <http://www.raic.org>
- .28 SCC - Standards Council of Canada, 270 Albert Street, Suite 2000, Ottawa, Ontario K1P 6N7 URL <http://www.scc.ca>
- .29 UL - Underwriters' Laboratories, 333 Pfingsten Road, Northbrook, Illinois, U.S.A. 60062-2096 URL <http://www.ul.com>
- .30 ULC - Underwriters' Laboratories of Canada, 7 Crouse Road, Toronto, Ontario M1R 3A9 URL <http://www.ulc.ca>
- 1.3 Reference Standards
-
- .1 Within the text of the specifications, reference may be made to the following standards:
- .1 AA - Aluminum Association
 - .2 ACI - American Concrete Institute
 - .3 ACEC - Association of Consulting Engineers of Canada
 - .4 AISC - American Institute of Steel Construction
 - .5 ANSI - American National Standards Institute
 - .6 API - American Petroleum Institute
 - .7 ASPT - Association for Asphalt Paving Technologists
 - .8 ASME - American Society of Mechanical Engineers
 - .9 ASTM - American Society for Testing and Materials
-

1.3 Reference Standards
(Cont'd)

- .1 (Cont'd)
- .10 AWMAC - Architectural Woodwork Manufacturers Association of Canada
 - .11 AWPA - American Wire Producers Association
 - .12 AWS - American Welding Society
 - .13 CCA - Canadian Construction Association
 - .14 CCDC - Canadian Construction Documents Committee
 - .15 CCME - Canadian Council of Ministers of the Environment
 - .16 CEC - Canadian Electrical Code (published by CSA)
 - .17 CEMA - Canadian Electrical Manufacturer's Association
 - .18 CEPA - Canadian Environmental Protection Act
 - .19 CGSB - Canadian General Standards Board
 - .20 CISC - Canadian Institute of Steel Construction
 - .21 CLA - Canadian Lumberman's Association
 - .22 CPCA - Canadian Painting Contractors' Association
 - .23 CPCI - Canadian Prestressed Concrete Institute
 - .24 CPMA - Canadian Paint Manufacturers Association
 - .25 CRCA - Canadian Roofing Contractors Association
 - .26 CSA - Canadian Standards Association
 - .27 CSC - Construction Specifications Canada
 - .28 CSSBI - Canadian Sheet Steel Building Institute
 - .29 ECP - Environmental Choice Program
 - .30 EIMA - EIFS Industry Manufacturer's Association
 - .31 EPA - Environmental Protection Agency
 - .32 FGMA - Flat Glass Manufacturers Association
 - .33 FM - Factory Mutual Engineering Corporation
 - .34 GRI - Geosynthetic Research Institute
 - .35 ICEA - Insulated Cable Engineers Association
 - .36 IEEE - Institute of Electrical and Electronic Engineers
 - .37 IPCEA - Insulated Power Cable Engineers Association
 - .38 LSGA - Laminators Safety Glass Association
 - .39 MSS Manufacturers Standardization Society of the Valve and Fittings Industry
 - .40 NAAMM - National Association of Architectural Metal Manufacturers
 - .41 NBC - National Building Code

1.3 Reference Standards
(Cont'd)

- .1 (Cont'd)
- .42 NEMA - National Electrical Manufacturers Association
- .43 NFPA - National Fire Protection Association
- .44 NHLA - National Hardwood Lumber Association
- .45 NLGA - National Lumber Grades Authority
- .46 NSPE - National Society of Professional Engineers
- .47 RAIC - Royal Architectural Institute of Canada
- .48 SSPC - Steel Structures Painting Council
- .49 TTMAC - Terrazzo, Tile and Marble Association of Canada
- .50 ULC - Underwriters' Laboratories of Canada

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

PART 1 - GENERAL

1.1
Division 1

Precedence .1 For Federal Government projects,
Sections take precedence over technical
specification sections in other Divisions of
this Project Manual.

1.2 Installation
and Removal

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.
- .3 Remove temporary facilities from site when directed by Engineer.

1.3

Dewatering .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.4
temporary

Water Supply .1 DND can provide, free of charge,
water for construction purposes.

- .2 Engineer will determine delivery points and quantitative limits. Engineer's written permission is required before any connection is made.
- .3 Provide, at no cost to DND, all equipment and temporary lines to bring these services to work area.
- .4 Supply of temporary services by DND is subject to DND requirements and may be discontinued by Engineer at any time without notice, without any acceptance of any liability for damage or delay caused by such withdrawal of temporary services.

1.5 Temporary Power
and Light

.1 DND can provide, free of charge, temporary electric power for construction purposes

- .2 Engineer will determine delivery points and
quantitative limits. Engineer's written

1.5 Temporary Power .2
and Light
(Cont'd)

- (Cont'd)
- 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 work area.
- .4 Supply of temporary services by DND is subject to DND requirements and may be discontinued by Engineer at any time without notice, without any acceptance of any liability for damage or delay caused by such withdrawal of temporary services.
- .5 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.
- .6 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Engineer provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.

1.6 Temporary
Communication
Facilities

- .1 Provide and pay for temporary telephone, fax, data hook up, lines and equipment necessary for own use.

1.7 Fire
Protection

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

National Defence
4 Wing Cold Lake
L-C252-9900/366

Temporary Utilities

Section 01 51 00
Page 3
2011-12-20

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

END

PART 1 - GENERAL

- 1.1 Section Includes .1 Construction aids.
- .2 Office and sheds.
- .3 Parking.
- .4 Project identification.
- 1.2 Precedence .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.3 Related Sections .1 Section 01 51 00 - Temporary Utilities.
- 1.4 References .1 Canadian General Standards Board (CGSB)
- .1 CGSB 1-GP-189M, Primer, Alkyd, Wood, Exterior.
- .2 CAN/CGSB-1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA International)
- .1 CAN/CSA-A23.1-00, Concrete Materials and Methods for Concrete Construction/Method of Test for Concrete.
- .2 CSA O121-M1978 (R1998), Douglas Fir Plywood.
- .3 CSA Z321-96, Signs and Symbols for the Occupational Environment.
- 1.5 Installation and Removal .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.
- .3 Remove temporary facilities from site when directed by DND Rep.
-

- 1.6 Scaffolding .1 Design and construct scaffolding in accordance with CAN/CSA-S269.2-M87 (R1998)
- .2 Construct and maintain scaffolding in rigid, secure and safe manner.
- .3 Erect scaffolding independent of walls. Remove promptly when no longer required.
- .4 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms or temporary stairs.
- 1.7 Hoisting .1 Provide, operate and maintain hoists required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.
- .2 Hoists shall be operated by qualified operator.
- 1.8 Elevators .1 Designated existing and permanent elevators may be used by construction personnel and transporting of materials. Co-ordinate use with DND Rep .
- .2 Provide protective coverings for finish surfaces of cars and entrances.
- 1.9 Site Storage/Loading .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.
- 1.10 Construction Parking .1 Parking will be permitted on site provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to project site.
-

- 1.10 Construction Parking (Cont'd)
- .3 Build and maintain temporary roads where indicated and provide snow removal during period of Work.
 - .4 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.
 - .5 Clean runways and taxi areas where used by Contractor's equipment.
- 1.11 Security
- .1 Erect temporary site enclosure using new 1.2 m high snow fence wired to rolled steel "T" bar fence posts spaced at 2.4 m oc. Provide one lockable truck gate. Maintain fence in good repair.
 - .2 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays as directed by DND Rep.
- 1.12 Equipment, Tool and Materials Storage
- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
 - .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.
- 1.13 Sanitary Facilities
- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
 - .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
 - .3 Permanent facilities may be used on approval of DND Rep.
-

1.14 Construction Signage

- .1 Signs and notices for safety and instruction shall be in English or Graphic symbols and shall conform to Z321-96.
- .2 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by DND Rep.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

END

PART 1 - GENERAL

- 1.1 Section Includes .1 Progressive cleaning.
.2 Final cleaning.
- 1.2 Precedence .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.3 Related Section .1 Section 01 77 00 - Closeout Procedures.
- 1.4 Project Cleanliness .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.
.2 Remove waste materials from site at regularly scheduled times or dispose of as directed by DND Rep. Do not burn waste materials on site.
.3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
.4 Remove all waste materials and debris from site and dispose off DND property. Provide following information to DND Rep:
.1 Provide a Certificate of Disposal indicating the following:
.1 Date of disposition.
.2 Time of disposition.
.3 Location of disposition.
.4 Name of Vehicle operator.
.5 Vehicle License Number.
.5 Provide on-site containers for collection of waste materials and debris.
.6 Provide and use clearly marked separate bins for recycling.
.7 Remove waste material and debris from site at end of each working day.

1.4 Project
Cleanliness
(Cont'd)

- .8 Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
- .13 Foreign Object Damage control or FOD will be exercised on a continuous basis in vicinity of aircraft, runways or aprons. Control all blowing debris at all times. DND Rep will coordinate and approve Contractors plans to fulfill this requirement.

1.5 Final Cleaning .1

- .1 In preparation for acceptance of the project, on an interim or final certificate of completion, perform final cleaning.
- .2 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .4 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .5 Remove waste products and debris other than that caused by Owner or other Contractors.

1.5 Final Cleaning
(Cont'd)

- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .8 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.
- .9 Clean lighting reflectors, lenses, and other lighting surfaces.
- .10 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .11 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .12 Remove dirt and other disfiguration from exterior surfaces.
- .13 Clean and sweep roofs, gutters, areaways, and sunken wells.
- .14 Sweep and wash clean paved areas.
- .15 Clean equipment and fixtures to a sanitary condition; clean or replace filters of mechanical equipment.
- .16 Leave entire work area neat and clean.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not Used.

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Cleaning

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PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

END

PART 1 - GENERAL

- 1.1 Section Includes .1 Administrative procedures preceding preliminary and final inspections of Work.
- 1.2 Precedence .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.3 Related Sections .1 Section 01 78 00- Closeout Submittals.
- 1.4 Inspection and Declaration .1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
.1 Notify DND Rep in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
.2 Request DND Rep's Inspection.
.2 DND Rep's Inspection: DND Rep and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
.3 Completion: submit written certificate that following have been performed:
.1 Work has been completed and inspected for compliance with Contract Documents.
.2 Defects have been corrected and deficiencies have been completed.
.3 Equipment and systems have been tested, adjusted and balanced and are fully operational.
.4 Operation of systems have been demonstrated to Owner's personnel.
.5 Work is complete and ready for Final Inspection.
.4 Final Inspection: when items noted above are completed, request final inspection of Work by DND Rep, and Contractor. If Work is deemed

1.4 Inspection and Declaration (Cont'd) .4 Final Inspection: (Cont'd) incomplete by DND Rep, complete outstanding items and request reinspection.
PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

----- END -----

PART 1 - GENERAL

- 1.1 Section Includes .1 As-built, samples, and specifications.
.2 Equipment and systems.
.3 Product data, materials and finishes, and related information.
.4 Operation and maintenance data.
.5 Spare parts, special tools and maintenance materials.
.6 Warranties and bonds.
.7 Final site survey.
- 1.2 Precedence .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- 1.3 Related Sections .1 Section 01 77 00 - Closeout Procedures.
- 1.4 Submission .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
.2 Prior to Substantial Performance of the Work, submit to the DND Rep, three final copies of operating and maintenance manuals in English.
.3 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
.4 If requested, furnish evidence as to type, source and quality of products provided.
.5 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
.6 Pay costs of transportation.

- 1.5 Format
- .1 Assemble, coordinate, bind and index required data into Operation and Maintenance Manual. Organize data in the form of an instructional manual.
 - .2 Organize data into same numerical order as contract specifications.
 - .3 Provide O & M manual in PDF format on CD. Manual is to be FULLY INDEXED or BOOKMARKED.
 - .4 Provide 1:1 scaled CAD files in dwg format on CD.
 - .5 Only If requested by the DND Rep provide O % M Manuals in Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
 - .6 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
 - .7 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
 - .8 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
 - .9 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
 - .10 Text: Manufacturer's printed data, or typewritten data.
- 1.6 Contents - Each Volume
- .1 Cover sheet containing:
 - .1 Date submitted.
 - .2 Project title, location and project number.
 - .3 Names and addresses of Contractor, and all Sub-contractors.
 - .2 Table of Contents.
 - .3 Warranties, guarantees.
 - .4 Copies of approvals, and certificates.

-
- 1.6 Contents - Each .5 Provide data as specified in individual
Volume sections of this specification with schedule
(Cont'd) of products and systems, indexed to content of
volume.
- .6 For each product or system: list names,
addresses and telephone numbers of
subcontractors and suppliers, including local
source of supplies and replacement parts.
 - .7 Nameplate information including equipment
number, make, size, capacity, model number and
serial number.
 - .8 Parts list.
 - .9 Installation details.
 - .10 Operating instructions.
 - .11 Maintenance instructions for equipment.
 - .12 Maintenance instructions for finishes.
 - .13 One complete set of reviewed final shop
drawings and product data.
 - .14 Drawings: supplement product data to
illustrate relations of component parts of
equipment and systems, to show control and
flow diagrams.
 - .15 Typewritten Text: as required to supplement
product data. Provide logical sequence of
instructions for each procedure, incorporating
manufacturer's instructions.
- 1.7 As-builts and .1 In addition to requirements in General
Samples Conditions, maintain one record copy of:
- .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to
the Contract.
 - .5 Reviewed shop drawings, product data,
and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field
office apart from documents used for

1.7 As-builts and
Samples
(Cont'd)

- .2 (Cont'd)
construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by DND Rep.
- .6 Identify each drawing in lower right hand corner in letters 12 mm high to read: "As Built Drawings", with Signature of Contractor and Date.

1.8 Recording
Actual Site
Conditions

- .1 Record information on set of black lineopaque drawings, provided by DND Rep
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Maintain project record drawings and record accurately any deviations from Contract documents.
- .4 Record information concurrently with construction progress to show all work as actually installed including change orders. Do not conceal Work until required information is recorded.
- .5 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.

-
- 1.8 Recording Actual Site Conditions (Cont'd)
- .5 Contract Drawings and shop drawings: (Cont'd)
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
 - .6 Specifications: legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
 - .7 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.
- 1.9 As Built Drawings
- .1 At completion of project and prior to final inspection, transfer as-built notations to second paper drawing set and submit to DND Rep for review.
 - .1 Prepare as-built drawings in AutoCAD format following same conventions used for original design drawings or use DND CAD Standards ie: levels, colors, weights, etc.
 - .2 In addition to as-built printed set, drawings shall be submitted in electronic file format (both AutoCAD and PDF) on CD or DVD media.
- 1.10 As Built Survey Drawings
- .1 Provide "As-Built Survey" with project deviations relative to DND survey monuments and obtain an accurate record of all manhole locations, catch basins, storm outfalls, sewer alignment, utilities (ie: elec, gas, telecom, etc), paint lines, roads, sidewalks, etc. pertinent to the project.
 - .1 Submit survey with final record drawing submission.
 - .2 Use GPS and Total station to survey new installations and surface features, including underground utility lines.
 - .3 All surveys to be performed by a Registered Alberta Land Surveyor.

1.10 As Built
Survey Drawings
(Cont'd)

- .4 Horizontal and vertical accuracy shall be minimum Third Order. Vertical and horizontal control in the vicinity of survey shall be used.
- .5 All control point information and coordinate system (NAD 83-UTM) used must be obtained at 4 Wing WCE GIS cell prior to starting the survey.
- .6 Accuracy: Horizontal - third order (Northing & Easting coordinates); Vertical (control points, Building floor elevation, Manhole & catchbasin only), - third order. Vertical (all other features), total station elevations.
- .7 Control points and temporary iron bars used, along with their coordinates and elevations must be indicated on each survey drawing.
- .8 An electronic drawing copy of existing site will be provided by WCE GIS.
- .9 Provide one as-built hard copy drawing set. Submit final drawing set on full size media using DND CAD Standard Drawing Sheet.
- .10 In addition to as-built printed set, drawings shall be submitted in electronic file format (both AutoCAD and PDF) on CD/DVD.
- .11 Provide as-built electronic copy in AutoCAD 3D file format. Ensure all features are drawn in 3D (x y z).
- .12 Follow DND CAD and GIS Standards for easy incorporation of data into existing GIS spatial database.
- .13 Provide comma delimited ASCII text file for each survey point: Point Number, Easting, Northing, Elevation, Feature Class Name/Layer Name/Survey Code and optional description.
- .14 For information regarding WCE GIS system contact: 4WCE GIS Co-ordinator at (780)840-8000 ext 8251.

1.11 Water Valve
Markers

- .1 Install DND supplied blue marker stake at each water valve location. Markers are provided by DND WCE Plumbing Shop @ loc 8427.

1.12 Equipment and
Systems

- .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour coded wiring diagrams.
- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- .6 Provide servicing and lubrication schedule, and list of lubricants required.
- .7 Include manufacturer's printed operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.
- .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

1.12 Equipment and Systems
(Cont'd)

- .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- .14 Include test and balancing reports.
- .15 Additional requirements: As specified in individual specification sections.

1.13 Materials and Finishes
Finishes

- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional Requirements: as specified in individual specifications sections.

1.14 Spare Parts

- .1 Provide spare parts, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to DND Rep. Include approved listings in Maintenance Manual. Include the following:
 - .1 Part number.
 - .2 Identification of equipment or system for which parts are applicable.
 - .3 Installation instructions as applicable.
 - .4 Name and address of nearest supplier.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.15 Maintenance
Materials

- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to DND Rep. Include approved listings in Maintenance Manual.
- .5 Identify, on carton or package, colour, room No., system or area as applicable where item is used
- .6 Obtain receipt for delivered products and submit prior to final payment.

1.16 Special Tools .1

- .1 Provide special tools, in quantities specified in individual specification section.
- .2 Provide items with tags identifying their associated function and equipment.
- .3 Deliver to location as directed; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to DND Rep. Include approved listings in Maintenance Manual and Include the following:
 - .1 Identification tag reference.
 - .2 Identification of equipment or system for which tools are applicable.
 - .3 Instruction on intended use of tool.

1.17 Storage,
Handling and
Protection

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.

1.17 Storage,
Handling and
Protection
(Cont'd)

.5 Remove and replace damaged products at own
expense and to satisfaction of DND Rep.

1.18 Warranties and
Bonds

- .1 Separate each warranty or bond with index tab
sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and
manufacturer, with name, address, and
telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in
duplicate by subcontractors, suppliers, and
manufacturers, within ten days after
completion of the applicable item of work.
- .4 Except for items put into use with Owner's
permission, leave date of beginning of time of
warranty until the Date of Substantial
Performance is determined.
- .5 Verify that documents are in proper form,
contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time
specified for submittal.

PART 2 - PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 - EXECUTION

3.1 Not Used

.1 Not Used.

PART 1 - GENERAL

1.1
concrete PROCEDURES

- MEASUREMENT .1 Measure removal of asphaltic pavement in square metres for each thickness specified.
- .2 Measure removal of Portland cement concrete pavement in square metres for each thickness specified.
- .3 Measure removal of base and sub-base pavement materials in square metres cubic metres in place.
- .4 Measure removal of concrete and masonry foundations in cubic metres.
- .5 Measure removal of masonry foundations in cubic metres in place.
- .6 Measure removal of culverts, pipe sewers and drains in metres regardless of diameter for each diameter. End points of measurements will be at centres of manholes or catch basins or open ends of pipes, as applicable.
- .7 Measure removal of manholes and catch basins in units.
- .8 Measure removal of cable duct banks regardless of number of ducts in each bank, in metres from end to end of duct bank for each size.
- .9 Measure removal of fences curbs and guard rails in metres.
- .10 Payment for salvage, stockpiling, sealing, disposal, alternative disposal, recycling, excavating backfilling and restoration will be included in above removal items.
.1 Measure removal of waste materials designated for alternate disposal from the site in tonnes.

1.2

- REFERENCES .1 Canadian Council of Ministers of the Environment (CCME).
- .2 Department of Justice Canada (Jus).
.1 Canadian Environmental Assessment Act (CEAA), 1995, c. 37.
-

1.2 REFERENCES
(Cont'd)

- .2 (Cont'd)
 - .2 Canadian Environmental Protection Act, 1999 (CEPA), c. 33.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .4 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

1.3 DEFINITIONS

- .1 Demolition: rapid destruction of building following removal of hazardous materials.
- .2 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well being or environment if handled improperly.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Shop drawings.
 - .1 Submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning, where required by authorities having jurisdiction.
 - .2 Submit drawings stamped and signed by qualified professional engineer registered or licensed in Province of Alberta, Canada.
 - .3 Hazardous Materials: provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.
 - .4 Certificates: submit copies of certified weigh bills bills of lading receipts from authorized disposal sites and reuse and recycling facilities for material removed from site on weekly monthly basis upon request of DND Representative .
-

1.4 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

.5 Written authorization from DND Representative is required to deviate from hauler facilities receiving organizations listed in Waste Reduction Workplan.

1.5 QUALITY
ASSURANCE

- .1 Regulatory Requirements: ensure Work is performed in compliance with CEPA, CEEA, TDGA, and applicable Provincial/Territorial regulations.
- .2 Health and Safety.
 - .1 Do construction occupational health and safety in accordance with Section 01 35 30
- .3 Perform Work in accordance with Section 01 35 43 - Environmental Procedures. Health and Safety Requirements.

1.6 SITE CONDITIONS

- .1 Perform work in accordance with Section 01 35 43 - Environmental Procedures.
- .2 Ensure that selective demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
- .3 Do not dispose of waste of volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
- .4 Ensure proper disposal procedures are maintained throughout the project.
 - .1 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.
- .5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities as directed by DND Representative
- .6 Protect trees, plants and foliage on site and adjacent properties where indicated.
- .7 Existing Conditions.
 - .1 Remove contaminated or hazardous materials listed as hazardous as defined by authorities having jurisdiction as directed by DND Representative from site, prior to start

1.6 SITE CONDITIONS .7
(Cont'd)

(Cont'd)
.1 (Cont'd)
of demolition Work, and dispose of at designated disposal facilities in safe manner in accordance with TDGA and other applicable regulatory requirements.

PART 2 - PRODUCTS

2.1 EQUIPMENT .1

Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

PART 3 - EXECUTION

3.1 PREPARATION .1 Inspect site with DND Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.

.2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

.3 Notify and obtain approval of utility companies before starting demolition.

3.2 REMOVAL OPERATIONS

.1 Remove items as indicated.

.2 Do not disturb items designated to remain in place.

.3 Removal of Pavements, Curbs and Gutters:
.1 Square up adjacent surfaces to remain in place by saw cutting or other method approved by DND Representative.
.2 Protect adjacent joints and load transfer devices.
.3 Protect underlying and adjacent granular materials.

.4 Prevent contamination with base course aggregates, when removing asphalt pavement for subsequent incorporation into hot mix asphalt concrete paving,

3.2 REMOVAL
OPERATIONS

(Cont'd)

- .5 Excavate at least 300 mm below pipe invert, when removing pipes under existing or future pavement area.
- .6 Decommission water wells and monitoring wells in accordance with Municipal and Provincial guidelines/ regulations.
- .7 Remove designated trees during demolition.
 - .1 Obtain written approval of DND Representative prior to removal of trees not designated.
- .8 Dispose trees designated for removal and identified by DND Representative.
 - .1 Grind, chip, or shred other vegetation for mulching and composting, or use as mill pulp or process fuel.
- .9 Stockpile topsoil for final grading and landscaping.
 - .1 Provide erosion control and seeding if not immediately used.
- .10 Disposal of Material.
 - .1 Dispose of materials not designated for salvage or reuse on site as instructed by DND Representative at authorized facilities approved in Waste Reduction Workplan.
 - .2 Trim disposal areas to approval of DND Representative.
- .11 Backfill.
 - .1 Backfill in areas as indicated and in accordance with Section 31 23 33 - Excavating, Trenching and Backfilling.

3.3 STOCKPILING

- .1 Label stockpiles, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.
- .4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede

3.3 STOCKPILING
(Cont'd)

- .4 (Cont'd)
disassembly, processing, or hauling
procedures.

3.4 REMOVAL FROM
SITE

- .1 Remove stockpiled material as directed by
DND Representative, when it interferes with
operations of project.
- .2 Remove stockpiles of like materials by
alternate disposal option once collection of
materials is complete.
- .3 Transport material designated for alternate
disposal using approved haulers facilities
receiving organizations listed in Waste
Reduction Workplan and in accordance with
applicable regulations.
.1 Written authorization from DND
Representative is required to deviate from
haulersfacilities receiving organizations
listed in Waste Reduction Workplan.
- .4 Dispose of materials not designated for
alternate disposal in accordance with
applicable regulations.
.1 Disposal Facilities: approved and listed
in Waste Reduction Workplan.
.2 Written authorization from DND
Representative is required to deviate from
disposal facilities listed in Waste Reduction
Workplan.

3.5 RESTORATION

- .1 Restore areas and existing works outside
areas of demolition to conditions that existed
prior to beginning of Work match condition of
adjacent, undisturbed areas.
- .2 Use soil treatments and procedures which are
not harmful to health, are not injurious to
plants, and do not endanger wildlife, adjacent
water courses or ground water.

3.6 CLEANING

- .1 Remove debris, trim surfaces and leave work
site clean, upon completion of Work
- .2 Use cleaning solutions and procedures which
are not harmful to health, are not injurious
to plants, and do not endanger wildlife,
adjacent water courses or ground water.

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PART 1 - GENERAL

1.1 WASTE MANAGEMENT AND DISPOSAL .1 Divert unused asphalt materials from landfill to local quarry/ facility approved by Departmental Representative .

PART 2 - PRODUCTS

2.1 EQUIPMENT .1 Use cold milling, planning or grinding equipment with automatic grade controls capable of operating from stringline, and capable of removing part of pavement surface to depths or grades indicated.

PART 3 - EXECUTION

3.1 inspect PREPARATION .1 Prior to beginning removal operation, and verify with Departmental Representative areas, depths and lines of asphalt pavement to be removed.

3.2 for PROTECTION .1 Protect existing pavement not designated removal, light units and structures from damage. In event of damage, immediately replace or make repairs to approval of Departmental Representative at no additional cost.

3.3 lines and REMOVAL .1 Remove existing asphalt pavement to grades as indicated or established by Departmental Representative in field.

.2 Use equipment and methods of removal and hauling which do not damage or disturb underlying pavement.

.3 Prevent contamination of removed asphalt pavement by topsoil, underlying gravel or other materials.

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.4 Provide for suppression of dust generated by
removal process.

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3.4 STOCKPILING OF MATERIAL .1 Dispose of removed asphalt pavement by stock-piling in locations designated by Departmental Representative .

.2 Removed asphalt pavement which is to be recycled in hot mix asphalt concrete under this contract may be stockpiled at designated asphalt plant site.

3.5 FINISH TOLERANCES .1 Finished surfaces in areas where asphalt pavement has been removed to be within +/-5 mm of grade specified but not uniformly high or low.

3.6
surfaces SWEEPING .1 Sweep remaining asphalt pavement clean of debris resulting from removal operations using rotary power brooms and hand brooming as required.

END

PART 1 - GENERAL

1.1
maximum

Summary .1 This section defines correction to dry density to take into account aggregate particles larger than 4.75 mm.

1.2
Materials

REFERENCES .1 American Society for Testing and International (ASTM)
.1 ASTM C 127-01, Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate.
.2 ASTM D 698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
.3 ASTM D 1557-02, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
.4 ASTM D 4253-00, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.

1.3

DEFINITIONS .1 Corrected maximum dry density is defined as:
.1 $D = (D1 \times D2) / ((F1 \times D2) + (F2 \times D1))$
.2 $D = (F1 \times D1) + (0.9 \times D2 \times F2)$
.3 Where: D = corrected maximum dry density kg/m³.
.1 F1 = fraction (decimal) of total field sample passing 19 4.75 mm sieve
.2 F2 = fraction (decimal) of total field sample retained on 19 4.75 mm sieve (equal to 1.00 - F1)
.3 D1 = maximum dry density, kg/m³ of material passing 19 4.75 mm sieve determined in accordance with Method A C of ASTM D 698-00a ASTM D 1557-02.
.4 D2 = bulk density, kg/m³, of material retained on 19 4.75 mm sieve, equal to 1000G where G is bulk specific gravity (dry basis) of material when tested to ASTM C 127-01.
.4 For free draining aggregates, determine D1 (maximum dry density) to ASTM D 4253-00 dry method wet method when directed by DND Representative

National Defence	Corrected Max Dry Density	31 05 10
4 Wing Cold Lake		
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PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

END

PART 1 - GENERAL

1.1
Materials

- REFERENCES .1 American Society for Testing and
(ASTM)
.1 ASTM D 4791-99, Standard Test Method for
Flat Particles, Elongated Particles, or Flat
and Elongated Particles in Coarse Aggregate.

1.2
Section

- SAMPLES .1 Submit samples in accordance with
01 33 00 - Submittal Procedures.
- .2 Allow continual sampling by DND
Representative during production.
- .3 Provide DND Representative with access to
source and processed material for sampling.
- .4 Install sampling facilities at discharge end
of production conveyor, to allow DND
Representative to obtain representative
samples of items being produced. Stop conveyor
belt when requested by DND Representative to
permit full cross section sampling.
- .5 Pay cost of sampling and testing of
aggregates which fail to meet specified
requirements.
- .6 Provide water, electric power and propane to
DND Representative laboratory trailer at
production site.

1.3 WASTE
MANAGEMENT AND
DISPOSAL

- .1 Divert unused granular materials from
landfill to local quarry facility as approved
by DND Representative .

PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for use intended.
 - .2 Flat and elongated particles of coarse aggregate: to ASTM D 4791-99.
 - .1 Greatest dimension to exceed five times least dimension.
 - .3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:
 - .1 Natural sand.
 - .2 Manufactured sand.
 - .3 Screenings produced in crushing of quarried rock, boulders, gravel or slag.
 - .4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:
 - .1 Crushed rock.
 - .2 Gravel and crushed gravel composed of naturally formed particles of stone.
 - .3 Light weight aggregate, including slag and expanded shale.
- 2.2 SOURCE QUALITY CONTROL
- .1 Inform DND Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to commencing production.
 - .2 If, in opinion of DND Representative , materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.
 - .3 Advise DND Representative 4 weeks in advance of proposed change of material source.
 - .4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks

2.2 SOURCE QUALITY .4
CONTROL
(Cont'd)
PART 3 - EXECUTION

(Cont'd)
uniformity, or if its field performance is found to be unsatisfactory.

3.1

PREPARATION .1 Topsoil stripping

- .1 Do not handle topsoil while in wet or frozen condition or in any manner in which soil structure is adversely affected.
- .2 Begin topsoil stripping of areas as indicated as directed by DND Representative after area has been cleared of brush weeds and grasses and removed from site.
- .3 Strip topsoil to depths as indicated as directed by DND Representative. Avoid mixing topsoil with subsoil.
- .4 Stockpile in locations as indicated directed by DND Representative. Stockpile height not to exceed 2 m.
- .5 Dispose of topsoil to location as indicated as directed by DND Representative.

.2 Aggregate source preparation

- .1 Prior to excavating materials for aggregate production, clear and grub area to be worked, and strip unsuitable surface materials. Dispose of cleared, grubbed and unsuitable materials as directed by DND Representative approved by authority having jurisdiction.
- .2 Where clearing is required, leave screen of trees between cleared area and roadways as directed.
- .3 Clear, grub and strip area ahead of quarrying or excavating operation sufficient to prevent contamination of aggregate by deleterious materials.
- .4 When excavation is completed dress sides of excavation to nominal 1.5:1 slope, and provide drains or ditches as required to prevent surface standing water.
- .5 Trim off and dress slopes of waste material piles and leave site in neat condition.

.3 Processing

- .1 Process aggregate uniformly using methods that prevent contamination, segregation and degradation.
- .2 Blend aggregates, if required, to obtain gradation requirements, percentage of crushed particles, or particle shapes, as specified.

3.1 PREPARATION
(Cont'd)

- .3 (Cont'd)
 - .2 (Cont'd)

Use methods and equipment approved by DND Representative .
 - .3 Wash aggregates, if required to meet specifications. Use only equipment approved by DND Representative .
 - .4 When operating in stratified deposits use excavation equipment and methods that produce uniform, homogeneous aggregate.
- .4 Handling
 - .1 Handle and transport aggregates to avoid segregation, contamination and degradation.
- .5 Stockpiling
 - .1 Stockpile aggregates on site in locations as indicated unless directed otherwise by DND Representative . Do not stockpile on completed pavement surfaces.
 - .2 Stockpile aggregates in sufficient quantities to meet Project schedules.
 - .3 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.
 - .4 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 300 mm in depth to prevent contamination of aggregate. Stockpile aggregates on ground but do not incorporate bottom 300 mm of pile into Work.
 - .5 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.
 - .6 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by DND Representative DCC Representative within 48 h of rejection.
 - .7 Stockpile materials in uniform layers of thickness as follows:
 - .1 Max 1.5 m for coarse aggregate and base course materials.
 - .2 Max 1.5 m for fine aggregate and sub-base materials.
 - .3 Max 1.5 m for other materials.
 - .8 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.
 - .9 Do not cone piles or spill material over edges of piles.
 - .10 Do not use conveying stackers.
 - .11 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.2 CLEANING

- .1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.
- .2 Leave any unused aggregates in neat compact stockpiles as directed by DND Representative .
- .3 For temporary or permanent abandonment of aggregate source, restore source to condition meeting requirements of authority having jurisdiction.

END

PART 1 - GENERAL

1.1 MEASUREMENT
PROCEDURES

- .1 Rock Excavation.
 - .1 Measure in cubic metres.
 - .2 Calculate volume excavated from solid rock surfaces from cross sections of original rock surface and design grade line for excavation. Where design grade line is less than 300 mm below original rock surface, consider excavation depth to be 300 mm below original rock surface.
 - .3 Determine volume of excavated boulders and rock fragments by measuring three maximum mutually perpendicular dimensions.
- .2 Common Excavation.
 - .1 Measure in cubic metres calculated from cross sections taken in areas of excavation.
 - .2 In areas of excavation on airport airfield property (cut areas and borrow pits), take initial cross sections after clearing, and grubbing and prior to stripping of topsoil.
 - .3 In areas of excavation off airport airfield property (borrow pits provided by contractor), take initial cross sections after clearing and stripping, and immediately prior to excavation of material to be incorporated into work.
 - .4 No measurement for payment will be made for stripping.
- .3 Unclassified Excavation.
 - .1 Measure in cubic metres calculated from cross sections taken in areas of excavation.
 - .2 In areas of excavation on airport airfield property (cut areas and borrow pits), take initial cross sections after clearing, and grubbing and prior to stripping of topsoil.
 - .3 In areas of excavation off airport airfield property (borrow pits provided by contractor), take initial cross sections after clearing and stripping, and immediately prior to excavation of material to be incorporated into work.
 - .4 No measurement for payment will be made for stripping.
- .4 Measure topsoil placing for payment as common excavation.
 - .1 If double handling of topsoil obtained from airport airfield property is directed by

1.1 MEASUREMENT
PROCEDURES
(Cont'd)

- .4 (Cont'd)
.1 (Cont'd)
(stockpiling and later placing), then measure quantities twice; on excavation from original location and on excavation from stockpile.
- .5 Measure pavement subgrade compaction in square metres.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
.1 ASTM C 117-95, Test Method for Materials Finer Than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing.
.2 ASTM C 136-01, Test Method for Sieve Analysis of Fine and Coarse Aggregates.
.3 ASTM D 422-63(2002), Method for Particle-Size Analysis of Soils.
.4 ASTM D 4318-00, Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- .2 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.

1.3 DEFINITIONS

- .1 Excavation classes: two classes of excavation will be recognized; common excavation and rock excavation.
.1 Rock Excavation: excavation of material from solid masses of igneous, sedimentary or metamorphic rock which, prior to its removal, was integral with its parent mass, and boulders or rock fragments having individual volume in excess of 1 m³.
.2 Common Excavation: excavation of materials of whatever nature, which are not included under definition of rock excavation, including dense tills, hardpan and frozen materials.
.3 Unclassified excavation: excavation of deposits of whatever character encountered in work.
- .2 Compaction classes: two classes of soil are recognized for compaction purposes; cohesionless and cohesive soil:

1.3 DEFINITIONS
(Cont'd)

- .2 Compaction classes: (Cont'd)
- .1 Cohesionless soil:
- .1 Soils which have less than 20% passing 0.075 mm sieve, when tested to ASTM C 117-95, regardless of plasticity of fines.
- .2 Soils containing between 20% to 50% passing 0.075 mm sieve and having liquid limit less than 25 and plasticity index less than 6 when tested to ASTM D 4318-00.
- .2 Cohesive soil: soil not having properties to be classified as cohesionless.
- .3 Topsoil: material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
- .4 Waste material: excavated material unsuitable for use in work or surplus to requirements.
- .5 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of work.
- .6 Pavement structure: combination of layers of unbound or stabilized granular sub-base, base, and asphalt or concrete surfacing.
- .7 Subgrade elevation: elevation immediately below pavement structure.
- .8 Unsuitable materials:
- .1 Weak and compressible materials under pavement areas.
- .2 Frost susceptible materials under pavement areas.
- .3 Frost susceptible materials:
- .1 Fine grained soils with plasticity index less than 10 when tested to ASTM D 4318-00, and gradation within limits specified when tested to ASTM D 422-63(2002) and ASTM C 136-01: Sieve sizes to CAN/CGSB-8.1-88.
- | Sieve Designation | % passing |
|-------------------|-----------|
| 2.00 mm | 100 |
| 0.10 mm | 45-100 |
| 0.02 mm | 10-80 |
| 0.005 mm | 0-45 |
- .2 Coarse grained soils containing more than 20 % by mass passing 0.075 mm sieve.

National Defence	Airfield Grading	31 22 14
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PART 2 - PRODUCTS

2.1 MATERIALS .1 Fill materials: to approval of DND Representative.

PART 3 - EXECUTION

3.1 STRIPPING OF TOPSOIL .1 Commence topsoil stripping of areas as indicated as directed by DND Representative after area has been cleared of brush weeds and grasses and these materials removed from site.

.2 Strip topsoil to depths as indicated as directed by DND Representative.
.1 Do not mix topsoil with subsoil.

.3 Stockpile in locations as indicated as directed by DND Representative. Stockpile height not to exceed 2 m.

.4 Dispose of unused topsoil to location as indicated as directed by DND Representative off site.

3.2 EXCAVATING .1 General:

.1 Advise DND Representative at least 7 days in advance of excavation operations for initial cross sections to be taken.

.2 Excavate to lines, grades, elevations and dimensions as directed by DND Representative .

.3 Ensure drainage of excavated areas and maintain crowns and cross slopes to provide surface drainage.

.4 Notify DND Representative whenever unsuitable materials are encountered in cut sections, remove unsuitable materials as directed and replace with material approved by DND Representative to depth and extent as directed.

.5 Treat ground slopes at grade points, where subgrade is on transition from excavation to embankment or earth to rock, in accordance with Transport Canada's guidelines for "Cut and Fill Construction Methods at Grade Points" as indicated as directed by DND Representative.

3.2 EXCAVATING
(Cont'd)

- .1 General: (Cont'd)
 - .6 Dispose of waste material as directed by DND Representative off project limits.
- .2 Rock excavation:
 - .1 During excavation: when material appearing to conform to classification for rock is encountered, notify in sufficient time to enable measurements to be made to determine volume of rock.
 - .2 Provide drainage to ditches, leaving no undrained pockets in foundation.
- .3 Borrow excavation:
 - .1 Obtain from borrow areas located on airfield airport property, fill material required in excess of quantities available from cut areas.
 - .1 DND Representative will designate location and extent of borrow areas, and allowable depth of cutting.
 - .2 Shape edges of borrow areas on slopes of 1vertical to 5horizontal and provide drainage as directed by DND Representative.
 - .2 Trim and leave borrow pits in condition to permit accurate measurement of material removed.
- .4 Make cuts in areas to be paved only after pavement sub-drains have been installed and are operating. Ensure that sub-drain filter material has been placed minimum 150mm above subgrade level.
- .5 Do not disturb foundation materials of adjacent pavements or structures which are to remain in place.

3.3 PLACING FILL

- .1 Before taking material from borrow areas, completely use, in fill areas, suitable materials removed from excavation.
 - .2 Do not place material which is frozen nor place material on frozen surfaces.
 - .3 Maintain crowned surface during construction to ensure run-off of surface water. Do not place material in free standing water. Drain low areas, before placing material.
-

3.3 PLACING FILL
(Cont'd)

- .4 Material containing less than 25% by volume of rock fragments larger than 100 mm maximum dimension:
- .1 Place and compact to full width in uniform layers not exceeding 200 mm loose thickness. DND Representative may authorize thicker lifts if specified compaction can be achieved.
 - .2 Compact fill materials, in non-pavement areas, minimum 90 % of corrected maximum dry density.
 - .3 Compact cohesionless fill soils , under pavement areas, minimum 95 % of corrected maximum dry density and cohesive fill soils minimum 90 % of corrected maximum dry density.
- .5 Where material consists principally of rock:
- .1 Place full width, in layers of sufficient depth to contain maximum sized rocks but in no case is layer thickness to exceed 1 m.
 - .2 Individual rock fragments not exceeding 1.5 m in vertical dimension will be permitted provided their vertical dimension does not exceed one third of fill section depth.
 - .3 Distribute rock material to fill voids with smaller fragments to form compact mass.
 - .4 Fill surface voids at subgrade level with rock spalls or selected material to form an earth-tight surface.
- .6 Do not place stones and boulders exceeding 50 mm maximum dimension within 100 mm of finished surface in graded areas.

3.4 SUBGRADE
COMPACTION IN
PAVEMENT AREAS

- .1 Fill area: do not place stones and boulders exceeding 150mm maximum dimension within 0.5 m of subgrade elevation.
- .2 Remove stones and boulders, in cut areas, exceeding 150mm maximum dimension within specified depth, for subgrade compaction.
- .3 Scarify and mix pavement subgrade surface, after grading has been completed, to required depth of subgrade compaction.
- .4 Compact top 150 mm of cohesive subgrade soils minimum 98 % of corrected maximum dry density.
- .5 Compact top 300 mm of cohesionless subgrade soils minimum 98 % of corrected maximum dry density.

PART 1 - GENERAL

1.1 RELATED
REQUIREMENTS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 35 43 - Environmental Procedures.

1.2 MEASUREMENT
PROCEDURES

- .1 Work performed under this section will be of prime contract.
 - .2 Excavated materials will be measured in cubic metres in their original location.
 - .3 Common excavation quantities measured will be actual volume removed within following limits:
 - .1 Width for trench excavation as indicated.
 - .2 Width for excavation for structures as indicated.
 - .3 Depth from ground elevation and surface of pavement or surface of sidewalk immediately prior to excavation, to elevation as indicated or as directed by DND Representative.
 - .4 Rock quantities measured will be actual volume removed within following limits:
 - .1 Width for trench excavation as indicated.
 - .2 Width for excavation for structures to be bounded by vertical planes up to 500 mm outside of and parallel to neat lines of footings as indicated.
 - .3 Depth from rock surface elevations immediately prior to excavation, to elevation as indicated.
 - .4 Where design elevation is less than 300 mm below original rock surface, depth will be considered to be 300 mm below original rock surface.
 - .5 Volume of individual boulders and rock fragments will be determined by measuring three maximum mutually perpendicular dimensions.
 - .5 Sheeting and bracing left in place on direction of DND Representative will be measured in square metres of surface area of plane surface of sheeting.
-

- 1.2 MEASUREMENT PROCEDURES
(Cont'd)
- .6 Shoring, bracing, cofferdams, underpinning and de-watering of excavation will not be measured separately for payment.
- .7 Backfilling to authorized excavation limits will be measured in cubic metres compacted in place for each type of material specified.
- .8 Placing and spreading of topsoil will be measured for payment in cubic metres calculated from cross sections taken in area of excavation from original location.
.1 If double handling of topsoil is directed by DND Representative (stockpiling and later placing), then quantities will be measured twice; on excavation from original location and on excavation from stockpile.
- 1.3 REFERENCES
- .1 American Society for Testing and Materials International (ASTM)
.1 ASTM C 117-95, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.
.2 ASTM C 136-01, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
.3 ASTM D 422-63(2002), Standard Test Method for Particle-Size Analysis of Soils.
.4 ASTM D 698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³).
.5 ASTM D 1557-02, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³).
.6 ASTM D 4318-00, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- .2 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.
- .3 Canadian Standards Association (CSA International)
.1 CAN/CSA-A3000-03, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
.2 CAN/CSA-A3001-03, Cementitious Materials for Use in Concrete.
-

1.3 REFERENCES
(Cont'd)

- .3 (Cont'd)
.3 CAN/CSA-A23.1-00, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
- .4 U.S. Environmental Protection Agency (EPA)/Office of Water
.1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.4 DEFINITIONS

- .1 Excavation classes: two classes of excavation will be recognized; common excavation and rock excavation.
.1 Rock : solid material in excess of 1.00 m³ and which cannot be removed by means of heavy duty mechanical excavating equipment with 0.95 to 1.15 m³ bucket. Frozen material not classified as rock.
.2 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.
- .2 Unclassified excavation: excavation of deposits of whatever character encountered in Work.
- .3 Topsoil:
.1 Material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
.2 Material reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and free from cobbles, stumps, roots, and other objectionable material larger than 25 millimeters in any dimension.
- .4 Waste material: excavated material unsuitable for use in Work or surplus to requirements.
- .5 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.
- .6 Recycled fill material: material, considered inert, obtained from alternate sources and engineered to meet requirements of fill areas.
- .7 Unsuitable materials:
.1 Weak, chemically unstable, and compressible materials.

1.4 DEFINITIONS
(Cont'd)

- .7 Unsuitable materials: (Cont'd)
- .2 Frost susceptible materials:
- .1 Fine grained soils with plasticity index less than 10 when tested to ASTM D 4318-00, and gradation within limits specified when tested to ASTM D 422-63 (2002) and ASTM C 136-01: Sieve sizes to CAN/CGSB-8.1-88 CAN/CGSB-8.2-M88.
- .2 Table:
- | Sieve Designation | % Passing |
|-------------------|-----------|
| 2.00 mm | 100 |
| 0.10 mm | 45 - 100 |
| 0.02 mm | 10 - 80 |
| 0.005 mm | 0 - 45 |
- .3 Coarse grained soils containing more than 20 % by mass passing 0.075 mm sieve.
- .8 Unshrinkable fill: very weak mixture of cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

1.5 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Quality Control:
- .1 Submit condition survey of existing conditions as described in EXISTING CONDITIONS article of this Section.
- .2 Submit for review by DND Representative proposed dewatering and heave prevention methods as described in PART 3 of this Section.
- .3 Submit to DND Representative written notice at least 7 days prior to excavation work, to ensure cross sections are taken.
- .4 Submit to DND Representative written notice when bottom of excavation is reached.
- .5 Submit to DND Representative testing results or inspection report as described in PART 3 of this Section.
- .3 Preconstruction Submittals:
- .1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.
- .2 Submit records of underground utility locates, indicating: location plan of existing utilities as found in field, clearance record

- 1.6 QUALITY ASSURANCE (Cont'd)
- .7 Do not use soil material until written report of soil test results are reviewed and approved by DND Representative
 - .8 Health and Safety Requirements:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 30 - Health and Safety Requirements.
- 1.7 WASTE MANAGEMENT AND DISPOSAL
- .1 Divert excess aggregate materials from landfill to local recycling facility for reuse as directed by DND Representative.
- 1.8 EXISTING CONDITIONS
- .1 Buried services:
 - .1 Before commencing work verify and establish location of buried services on and adjacent to site.
 - .2 Arrange with appropriate authority for relocation of buried services that interfere with execution of work: pay costs of relocating services.
 - .3 Remove obsolete buried services within 2 m of foundations: cap cut-offs.
 - .4 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
 - .5 Prior to beginning excavation Work, notify applicable DND Representative or authorities having jurisdiction and establish location and state of use of buried utilities and structures.
 - .6 Confirm locations of buried utilities by careful test excavations or soil hydrovac methods.
 - .7 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered as indicated.
 - .8 Where utility lines or structures exist in area of excavation, obtain direction of DND Representative before removing or re-routing. Costs for such Work to be finalized with DND Representative.
 - .9 Record location of maintained, re-routed and abandoned underground lines.
 - .10 Confirm locations of recent excavations adjacent to area of excavation.
-

- 1.8 EXISTING
CONDITIONS
(Cont'd)
- .2 Existing buildings and surface features:
.1 Conduct, with DND Representative, condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, rail tracks, pavement, survey bench marks and monuments which may be affected by Work.
.2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by DND Representative
.3 Where required for excavation, cut roots or branches as directed by DND Representative.

PART 2 - PRODUCTS

PART 3 - EXECUTION

- 3.1 TEMPORARY
EROSION AND
SEDIMENTATION
CONTROL
- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction and sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- 3.2 SITE
PREPARATION
- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.
-

3.3
PREPARATION/
PROTECTION

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

3.4 STRIPPING OF
TOPSOIL

- .1 Begin topsoil stripping of areas as indicated or as directed by DND Representative after area has been cleared of brush, weeds and grasses and removed from site.
- .2 Strip topsoil to depths as indicated or as directed by DND Representative.
 - .1 Do not mix topsoil with subsoil.
- .3 Stockpile in locations as indicated or as directed by DND Representative.
 - .1 Stockpile height not to exceed 2 m and should be protected from erosion.
- .4 Dispose of unused topsoil to location as indicated or as directed by DND Representative.

3.5 STOCKPILING

- .1 Stockpile fill materials in areas designated by DND Representative.
 - .1 Stockpile granular materials in manner to prevent segregation.
 - .2 Protect fill materials from contamination.
 - .3 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.
-

3.6 COFFERDAMS,
SHORING, BRACING
AND UNDERPINNING

- .1 Maintain sides and slopes of excavations in safe condition by appropriate methods and in accordance with Section 01 35 30 - Health and Safety Requirements and Health and Safety Act for the Province of Alberta.
 - .1 Where conditions are unstable, DND Representative to verify and advise methods.
- .2 Obtain permit from authority having jurisdiction for temporary diversion of water course.
- .3 Construct temporary Works to depths, heights and locations as indicated or directed by DND Representative.
- .4 During backfill operation:
 - .1 Unless otherwise indicated or directed by DND Representative, remove sheeting and shoring from excavations.
 - .2 Do not remove bracing until backfilling has reached respective levels of such bracing.
 - .3 Pull sheeting in increments that will ensure compacted backfill is maintained at elevation at least 500 mm above toe of sheeting.
- .5 When sheeting is required to remain in place, cut off tops at elevations as indicated.
- .6 Upon completion of substructure construction:
 - .1 Remove cofferdams, shoring and bracing.
 - .2 Remove excess materials from site and restore watercourses as indicated or as directed by DND Representative

3.7 DEWATERING AND
HEAVE PREVENTION

- .1 Keep excavations free of water while Work is in progress.
- .2 Avoid excavation below groundwater table if quick condition or heave is likely to occur.
 - .1 Prevent piping or bottom heave of excavations by groundwater lowering, sheet pile cut-offs, or other means.
- .3 Protect open excavations against flooding and damage due to surface run-off.
- .4 Dispose of water in accordance with Section 01 35 43 - Environmental Procedures to approved collection and in manner not detrimental to public and private property, or

3.7 DEWATERING AND
HEAVE PREVENTION
(Cont'd)

- .4 (Cont'd)
portion of Work completed or under
construction.
.1 Provide and maintain temporary drainage
ditches and other diversions outside of
excavation limits.
- .5 Provide flocculation tanks, settling basins,
or other treatment facilities to remove
suspended solids or other materials before
discharging to storm sewers, watercourses or
drainage areas.

3.8 EXCAVATION

- .1 Advise DND Representative at least 7 days in
advance of excavation operations for initial
cross sections to be taken.
- .2 Excavate to lines, grades, elevations and
dimensions as indicated or as directed by
DND Representative.
- .3 Remove concrete/ masonry/ paving walks
/demolished foundations and rubble and other
obstructions encountered during excavation.
- .4 Excavation must not interfere with bearing
capacity of adjacent foundations.
- .5 Do not disturb soil within branch spread of
trees or shrubs that are to remain.
.1 If excavating through roots, excavate by
hand and cut roots with sharp axe or saw.
- .6 For trench excavation, unless otherwise
authorized by DND Representative in writing,
do not excavate more than 30 m of trench in
advance of installation operations and do not
leave open more than 15 m at end of day's
operation.
- .7 Keep excavated and stockpiled materials safe
distance away from edge of trench as directed
by DND Representative.
- .8 Restrict vehicle operations directly adjacent
to open trenches.
- .9 Dispose of surplus and unsuitable excavated
material in approved location on site.
- .10 Do not obstruct flow of surface drainage or
natural watercourses.
-

3.8 EXCAVATION
(Cont'd)

- .11 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- .12 Notify DND Representative when bottom of excavation is reached.
- .13 Obtain DND Representative's approval of completed excavation.
- .14 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed by DND Representative.
- .15 Correct unauthorized over-excavation as follows:
 - .1 Fill under bearing surfaces and footings with concrete specified for footings or fill concrete Type 2 fill compacted to not less than 100% of corrected Standard Proctor maximum dry density.
 - .2 Fill under other areas with Type 2 fill compacted to not less than 95 % of corrected Standard Proctor maximum dry density.
- .16 Hand trim, make firm and remove loose material and debris from excavations.
 - .1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.
 - .2 Clean out rock seams and fill with concrete mortar or grout to approval of DND Representative.
- .17 Install geotextiles as directed by DND Representative.

3.9 FILL TYPES AND
COMPACTION

- .1 Use types of fill as indicated or specified below. Compaction densities are percentages of maximum densities obtained from ASTM D 698-00a and ASTM D 1557-02.
 - .1 Exterior side of perimeter walls: use Type 3 fill to subgrade level. Compact to 95% of corrected maximum dry density.
 - .2 Within building area: use Type 2 to underside of base course for floor slabs. Compact to 100 % of corrected maximum dry density.
 - .3 Under concrete slabs: provide 150 mm compacted thickness base course of Type 1 fill topped with shearmat filler as indicated to
-

- 3.9 FILL TYPES AND COMPACTION (Cont'd)
- .1 (Cont'd)
 - .3 Under concrete slabs: (Cont'd)
underside of slab. Compact base course to 100 %.
 - .4 Retaining walls: use Type 2 fill to subgrade level on high side for minimum 500 mm from wall and compact to 95 %. For remaining portion, use Type 3 fill compacted to 95 %.
 - .5 Place unshrinkable fill in areas as indicated.
- 3.10 BEDDING AND SURROUND OF UNDERGROUND SERVICES
- .1 Place and compact granular material for bedding and surround of underground services as indicated.
 - .2 Place bedding and surround material in unfrozen condition.
- 3.11 BACKFILLING
- .1 Do not proceed with backfilling operations until completion of following:
 - .1 DND Representative has inspected and approved installations.
 - .2 DND Representative has inspected and approved of construction below finish grade.
 - .3 Inspection, testing, approval, and recording location of underground utilities.
 - .4 Removal of concrete formwork.
 - .5 Removal of shoring and bracing;backfilling of voids with satisfactory soil material.
 - .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
 - .3 Do not use backfill material which is frozen or contains ice, snow or debris.
 - .4 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.
 - .5 Backfilling around installations:
 - .1 Place bedding and surround material as specified elsewhere.
 - .2 Do not backfill around or over cast-in-place concrete within 24 hours after placing of concrete.
 - .3 Place layers simultaneously on both sides of installed Work to equalize loading. Difference not to exceed 0.60 m.
-

3.11 BACKFILLING
(Cont'd)

- .5 Backfilling around installations: (Cont'd)
- .4 Where temporary unbalanced earth pressures are liable to develop on walls or other structures:
- .1 Permit concrete to cure for minimum 14 days or until it has sufficient strength to withstand earth and compaction pressure and approval obtained from DND Representative or:
- .2 If approved by DND Representative, erect bracing or shoring to counteract unbalance, and leave in place until removal is approved by DND Representative.
- .6 Place unshrinkable fill in areas as indicated.
- .7 Consolidate and level unshrinkable fill with internal vibrators.
- .8 Install filter system in backfill as indicated or as directed by DND Representative.

3.12 RESTORATION

- .1 Upon completion of Work, remove waste materials and debris, trim slopes, and correct defects as directed by DND Representative.
- .2 Replace topsoil as indicated or as directed by DND Representative.
- .3 Reinstate lawns to elevation which existed before excavation.
- .4 Reinstate pavements and sidewalks disturbed by excavation to thickness, structure and elevation which existed before excavation.
- .5 Clean and reinstate areas affected by Work as directed by DND Representative.
- .6 Use temporary plating to support traffic loads over unshrinkable fill for initial 24 hours.
- .7 Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

PART 1 - GENERAL

1.1 MEASUREMENT
PROCEDURES

- .1 Reshaping existing asphalt pavement will be measured in square metres.
- .2 New granular base material will be measured at the discretion of DND Representative in tonnes or cubic metres truck box measurement of material incorporated into Work.
- .3 Water for compaction will be measured in 1000 L units for water authorized by DND Representative and applied.
- .4 Compaction will be measured in hours for each type of compaction unit employed including operator, fuel and maintenance as shown on recording devices approved by DND Representative.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM C 117-95, Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C 131-01, Standard Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - .3 ASTM C 136-01, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .4 ASTM D 698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - .5 ASTM D 1557-02, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2700 kN-m/m³)).
 - .6 ASTM D 4318-00, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 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.

PART 2 - PRODUCTS

2.1 with MATERIALS .1 Granular base: material in accordance

Section 31 05 16 - Aggregate Materials and following requirements:

- .1 Crushed stone or gravel.
- .2 Gradations to be within limits specified when tested to ASTM C 136-01 and ASTM C 117-95. Sieve sizes to CAN/CGSB-8.1-88 CAN/CGSB-8.2-M88.

.1 Table

Sieve Designation	% Passing
200 mm	-
75 mm	-
50 mm	-
38.1 mm	-
25 mm	-
19 mm	100
12.5 mm	70-100
9.5 mm	-
4.75 mm	40-70
2.00 mm	23-50
0.425 mm	7-25
0.180 mm	-
0.075 mm	3-8

- .3 Other properties as follows:
 - .1 Liquid Limit: to ASTM D 4318-00, Maximum 25.
 - .2 Plasticity Index: to ASTM D 4318-00, Maximum 6.
 - .3 Los Angeles Degradation: to ASTM C 131-01, Max. % Loss By Weight: 45.
 - .4 Crushed particles of material retained on 4.75 mm sieve: at least 60% of particles by mass to have at least 1 freshly fractured face.
- .4 Asphalt coated with Type 1 - water based Type 2 - solvent based Sealers.
- .5 Asphalt mix include Type 1 - water based Type 2 - solvent based Emulsifiers.

- 2.2 EQUIPMENT .1 Compaction equipment must be capable of obtaining required densities in materials on project.
- .2 Equip compaction units with device that records hours of actual work, not motor running hours.

PART 3 - EXECUTION

3.1 SCARIFYING AND
RESHAPING

- .1 Scarify asphalt pavement to depth and extent as indicated, utilizing central plant hot recycling central plant cold recycling hot in-place recycling cold in-place recycling full depth reclamation processes.
- .2 Pulverize scarified material to mm maximum particle size.
- .3 Blade and trim pulverized pavement material to elevation and cross section dimensions as indicated as directed by DND Representative.
- .4 Where deficiency of pulverized material exists, add and blend in new granular base material as directed by DND Representative . Do not use frozen material.

3.2 COMPACTING

- .1 Compact to density not less than 100% corrected maximum dry density maximum dry density in accordance with ASTM D 698-00a ASTM D 1557-02.
- .2 Compact reshaped material to approval of DND Representative .
- .3 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
- .4 Apply water as necessary during compacting.
- .5 In areas not accessible to compaction equipment, compact to specified density, with mechanical tampers approved by DND Representative .

3.3 FINISH
TOLERANCES

- .1 Reshap surface to within plus or minus 10 mm of elevation as indicated, but not uniformly high or low.
- .2 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.4 MAINTENANCE .1 Maintain reshaped surface in condition
conforming to this Section until succeeding
material is applied or accepted by
DND Representative.

END

PART 1 - GENERAL

1.1 MEASUREMENT
PROCEDURES

- .1 Pavement crack sealing will be measured in linear metres.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM D 244-00, Standard Test Methods for Emulsified Asphalt.
 - .2 ASTM D 3569-95 (2000), Standard Specification for Joint Sealant, Hot Applied, Elastomeric, Jet-Fuel-Resistant Type for Portland Cement Concrete Pavements.
 - .3 ASTM D 6690-01, Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
- .2 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .3 General Services Administration Federal Specifications (GSA) - Federal Specifications (FS)
 - .1 FS-SS-S-200-E(2)1993, Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.
- .4 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).

1.3 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to DND Representative one 4L container of sealant proposed for use at least 2 weeks prior to beginning Work.
- .3 Submit certificates in accordance with Section 01 33 00 - Submittal Procedures.
- .4 Submit manufacturer's test data and certification that following materials meet requirements of this Section to DND Representative at least 2 weeks prior to beginning Work:

1.4 WASTE
MANAGEMENT AND
DISPOSAL

- .1 Separate waste materials for reuse and recycling.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Place materials defined as hazardous or toxic in designated containers.
- .5 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .6 Unused sealant material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
- .7 Dispose of unused sealant material at official hazardous material collections site or recycling facility approved by DND Representative .
- .8 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Cold applied sealant: rubberized asphalt emulsion.
- .1 To consist of suitable penetration grade asphalts, rubber latex, emulsifiers, stabilizers and suitable modifiers, uniformly dispersed in water to form homogeneous stable emulsion.
 - .2 Uniformity: emulsion when left standing undisturbed for minimum 24h after delivery to show no separation of water, no coagulation, and no separation of base solids. Settlement must be overcome easily by stirring for 3 minutes.
 - .3 Viscosity: emulsion to have Saybolt Furol viscosity of 20 to 100s at 25 degrees C when tested to ASTM D 244-00.

2.1 MATERIALS

(Cont'd)

.1

(Cont'd)

.4 Solids content: residue of solids not less than 59 %when tested to ASTM D 244-00, procedure A.

.5 Ash: mineral residue after ignition not to exceed 2.0%.

.6 Pooling loss at 25 degrees C: percent of emulsion which will flow out from channel 12 x 12 x 450 mm in 15 min must not exceed 30%.

.7 Tack-free time: 1.6 mm thick film of material to become tack-free in less than 6 hours.

.8 Resistance to water immersion: specimens of sealant 6 mm thick, when immersed in water for 24 hours after curing for 72 hours not to re-emulsify or impart any cloudiness to water after lightly rubbing its specimen surface at end of immersion period. Specimens to remain firm during immersion period and show no blistering, significant swelling or other evidence which would reduce serviceability of material.

.9 Rate of curing: specimen of sealant 6 mm thick to lose at least 65% of water content during 24 hours curing and 85% of water content during 6 days of curing at 25 degrees C (plus or minus 1 degree) and 50% relative humidity.

.10 Flow at 50 degrees C: specimens of sealant cured on asbestos-cement panels to withstand temperature of 50 degrees C for 2.5 hours without exceeding flow of 40 mm.

.11 Low temperature flexibility: specimens of sealant cured on absorbent paper not to crack or break at minus 5 degrees C when bent 180 degrees around 12 mm diameter mandrel in 30s.

.12 Elastic recovery: cured specimen stretched to eight times its original length to recover at least 40% of amount stretched in 15 min.

.13 Resealability by flame: standard joint cut open to reseal in 40s without charring or igniting when tested with propane flame.

.14 Sealing compound on delivery to have smooth uniform consistency with no evidence of coagulation or separation.

.15 After delivery, sealant to withstand storage between 5 degrees C and 35 degrees C in sealed drums for 3 months, without settlement, to extent which would prevent restoring to uniform consistency by simple mixing.

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- 2.1 MATERIALS (Cont'd)
- .1 (Cont'd)
 - .16 Deliver in non-metallic or polyethylene lined metal drums.
 - .2 Hot poured sealant: to ASTM D 6690-01.
 - .3 Cold applied aviation fuel resistant: to FS-SS-S-200.
 - .4 Hot poured jet fuel resistant sealant: to ASTM D 3569-95(2000).
- 2.2 EQUIPMENT
- .1 Heating equipment for melting sealant:
 - .1 Insulated double shell, oil jacketted kettle.
 - .2 Motor driven agitator.
 - .3 Totally automatic temperature control system controlling both heat transfer oil temperature and sealing compound temperature.
 - .2 Pressure applicator capable of applying sealant at 100 kPa by means of hose and wand fitted with size of tip suitable for cracks.
 - .1 Capable of maintaining temperature of sealant as per manufacturer's recommendation during application.
 - .3 Manual pouring cone.
 - .4 Small diameter diamond bladed pavement saws or mechanical rotary routers specifically designed for following random irregular cracks without tearing, chipping or spalling edge of cracks and capable of producing clean, vertical side walls. Open "V" type grooves not permitted.
 - .5 Mixer: in accordance with manufacturer's recommendations.

PART 3 - EXECUTION

3.1
to be

PREPARATION .1 DND Representative to designate cracks

routed, sawn, cleaned and sealed.

- .2 Use joint plows or high pressure water to remove old sealant material from designated joints or cracks.
- .3 Saw or Rout cracks to width of mm using rotary routers pavement saws approved by DND Representative.
- .4 Saw or Rout cracks to depth between mm and mm.
- .5 Centre of rout saw cut to deviate not more than plus or minus 8 mm from centreline of crack.
- .6 Dispose of material removed from cracks as directed by DND Representative.
- .7 Clean and dry routed sawn cracks using lance with oil-free hot compressed air, applied at minimum pressure of 600 kPa.
- .8 Where crack extends into base or subgrade, fill crack with clean dry fine sand sand-asphalt emulsion mixture to within mm of pavement surface.
- .9 Obtain DND Representative's approval of preparation of cracks before application of sealant.

3.2 APPLICATION OF SEALANT

- .1 Do not use sealant material that has been frozen.
- .2 Ensure cracks are clean and dry immediately before applying sealant.
- .3 Heat joint sealant slowly to application temperature in accordance with manufacturer's recommendations.
- .4 Mix two-component sealant in accordance with manufacturer's recommendations.

3.2 APPLICATION OF SEALANT
(Cont'd)

- .5 Fill crack with sealant immediately after cleaning. Maintain tip of cone or wand close to bottom of routed sawn groove during filling.
- .6 Fill cracks only when air temperature is above 10 degrees C, daily low temperature does not fall below 5 degrees C, and no rain is forecast.
- .7 Pour sealant in crack so that cooled cured sealant fills crack from bottom up to level 3 mm to 5 mm below pavement surface.
- .8 Sprinkle sealed cracks with fine sand before opening pavement to traffic.
- .9 Keep traffic off newly sealed cracks for hour.

END

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PART 1 - GENERAL

- 1.1 Measurement Procedures
- .1 Measure granular sub-base in tonnes cubic metres measured in place by cross section and calculated by average end area method by truck box measurement of material incorporated into Work and accepted by Departmental Representative.
 - .2 Measure excavation of sub-base and subgrade materials to correct deficiencies in subgrade discovered during proof rolling as common excavation under Section 31 22 14 - Airfield Grading.
 - .1 Measure backfill of subgrade with common materials as common excavation and subgrade compaction under Section 31 22 14 - Airfield Grading.
 - .2 Measure backfill of subgrade with sub-base material and replacement of sub-base material under this Section.
 - .3 Measure hauling granular sub-base material in tonne-kilometres cubic metre-kilometres, computed by taking product of number of cubic metres tonnes of material placed multiplied by haul distance in kilometres. Measure haul distance from source of material to centre of volume of material after placing, measured along shortest route determined by Departmental Representative as being feasible and satisfactory.
 - .4 Measure water in units of 1000L for water authorized by Departmental Representative and applied.
 - .5 Measure compaction of granular sub-base in hours for particular compaction units employed including operator, fuel and maintenance as shown on approved recording devices.
- 1.2References
- .1 American Society for Testing and Materials (ASTM)
 - .1 ASTM C 117-95, Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C 131-01, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

1.2 References
(Cont'd)

- .1 (Cont'd)
- .3 ASTM C 136-01, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .4 ASTM D 422-63(2002), Standard Test Method for Particle-Size Analysis of Soils.
 - .5 ASTM D 698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft³) (600kN-m/m³).
 - .6 ASTM D 1557-02, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft³) (2,700kN-m/m³).
 - .7 ASTM D 1883-99, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
 - .8 ASTM D 4318-00, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 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.

1.3 Waste Management and Disposal

- .1 Divert unused granular material from landfill to local quarry facility as approved by Departmental Representative .

PART 2 - PRODUCTS

2.1
accordance

Materials .1 Granular sub-base material: in

with Section 31 05 16 - Aggregate Materials and following requirements:

- .1 Crushed, pit run or screened stone, gravel or sand.
- .2 Gradations to be within limits specified when tested to ASTM C 136-01 and ASTM C 117-95. Sieve sizes to CAN/CGSB-8.1-88 CAN/CGSB-8.2-M88.

.3 Table

Sieve Designation	% Passing			
100 mm	-	-	-	-
75 mm	100	100	100	-
50 mm	-	-	-	100
37.5 mm	-	-	-	-

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2.1 Materials
(Cont'd)

.1 (Cont'd)				
.3 (Cont'd)				
19 mm	-	-	-	-
12.5 mm	-	-	-	38-70
9.5 mm	-	-	-	-
4.75 mm	25-100	25-85	-	22-55
2.00 mm	15-80	-	-	13-42
0.425 mm	4-50	5-30	0-30	5-28
0.180 mm	-	-	-	-
0.075 mm	0-8	0-10	0-8	2-10

- .4 Other Properties as follows:
- .1 Liquid Limit: to ASTM D 4318-00, Maximum 25.
 - .2 Plasticity Index: to ASTM D 4318-00, Maximum 6.
 - .3 Los Angeles degradation: to ASTM C 131-01. Max% Loss by mass: 40 50.
 - .4 Particles smaller than 0.02 mm: to ASTM D 422-63(2002), Maximum 3%.
 - .5 Soaked CBR: to ASTM D 1883-99, Min40 when compacted to 100% of ASTM D 1557-02.

PART 3 - EXECUTION

3.1 Placing

- .1 Place granular sub-base after subgrade is inspected and approved by Departmental Representative .
- .2 Construct granular sub-base to depth and grade in areas indicated.
- .3 Ensure no frozen material is placed.
- .4 Place material only on clean unfrozen surface, free from snow or ice.
- .5 Begin spreading sub-base material on crown line or high side of one-way slope.
- .6 Place granular sub-base materials using methods which do not lead to segregation or degradation.
- .7 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.

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- 3.1 Placing (Cont'd)
- .8 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. Departmental Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
 - .9 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
 - .10 Remove and replace portion of layer in which material has become segregated during spreading.
- 3.2 Compaction
- .1 Compaction equipment to be capable of obtaining required material densities.
 - .2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from DND Representative before use.
 - .3 Equipped with device that records hours of actual work, not motor running hours.
 - .4 Compact to density of not less than 98% corrected maximum dry density maximum dry density in accordance with ASTM D 698-00a ASTM D 1557-02.
 - .5 Shape and roll alternately to obtain smooth, even and uniformly compacted sub-base.
 - .6 Apply water as necessary during compaction to obtain specified density.
 - .7 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by DND Representative .
 - .8 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.
- 3.3 Proof Rolling
- .1 For proof rolling use standard roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with centre to centre spacing of 730 mm maximum.

- 3.3 Proof Rolling (Cont'd)
- .2 Obtain approval from DND Representative to use non standard proof rolling equipment.
 - .3 Proof roll at level in sub-base as indicated. If non standard proof rolling equipment is approved, DND Representative to determine level of proof rolling.
 - .4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.
 - .5 Where proof rolling reveals areas of defective subgrade:
 - .1 Remove sub-base and subgrade material to depth and extent as directed by DND Representative .
 - .2 Backfill excavated subgrade with common material and compact in accordance with Section 31 22 14 - Airfield Grading sub-base material and compact in accordance with this section.
 - .3 Replace sub-base material and compact.
 - .6 Where proof rolling reveals areas of defective sub-base, remove and replace in accordance with this section at no extra cost.
- 3.4 Site Tolerances .1 Finished sub-base surface to be within 10 mm of elevation as indicated but not uniformly high or low.
- 3.5 Protection .1 Maintain finished sub-base in condition conforming to this section until succeeding base is constructed, or until granular sub-base is accepted by DND Representative .

PART 1 - GENERAL

- 1.1 Description of Work
- .1 The work comprises of repairing gravel base failures, shaping, compacting, watering and/or aerating as may be required.
 - .2 Construction shall be carried out in such a manner to provide drainage and prevent saturation of the subgrade and shaping and other associated work required to construct the granular base to the cross-section and grades directed by the Engineer.
- 1.2 Related Requirements
- .1 Section 32 11 16 - Granular Sub-base
 - .2 Section 31 22 14 - Airfield Grading
- 1.3 Measurement and Payment
- .1 Measure granular base in cubic metres measured in place by cross section and calculated by average end area method truck box measurement of material incorporated into Work and accepted by Departmental Representative.
 - .2 Measure excavation of base, sub-base and sub-grade materials to correct deficiencies in sub-grade discovered during proof rolling as common excavation under Section 31 22 14 - Airfield Grading.
 - .1 Measure backfill of sub-grade with common materials approved by Departmental Representative, as common excavation and sub-grade compaction under Section 31 22 14 - Airfield Grading.
 - .2 Measure backfill of subgrade with sub-base material and replacement of sub-base material to Section 32 11 16 - Granular Sub-base.
 - .3 Measure subsequent replacement of base materials under this Section.
 - .3 Measure hauling granular base material in tonne-kilometres, cubic metre-kilometres computed by taking product of number of cubic metres tonnes of material placed multiplied by haul distance in kilometres. Measure haul distance from source of material to centre of volume of material after placing, measured along shortest route determined by
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4 Wing Cold Lake		
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- 1.3 Measurement and .3 (Cont'd)
 Payment Departmental Representative as being feasible
 (Cont'd) and satisfactory.
- .4 Measure water in units of 1000L for water
 authorized by Departmental Representative and
 applied.
- .5 Measure compaction of granular base in hours
 for each type of compaction unit employed
 including operator, fuel and maintenance as
 shown on recording devices approved by
 Departmental Representative.
- 1.4 References .1 American Society for Testing and Materials
 (ASTM)
- .1 ASTM C 117-95, Standard Test Methods for
 Material Finer Than 0.075 mm Sieve in Mineral
 Aggregates by Washing.
- .2 ASTM C 131-01, Standard Test Method for
 Resistance to Degradation of Small-Size Coarse
 Aggregate by Abrasion and Impact in the Los
 Angeles Machine.
- .3 ASTM C 136-01, Standard Test Method for
 Sieve Analysis of Fine and Coarse Aggregates.
- .4 ASTM D 698-00a, Standard Test Methods
 for Laboratory Compaction Characteristics of
 Soil Using Standard Effort (12,400ft-lbf/ft³)
 (600kN-m/m³).
- .5 ASTM D 1557-02, Test Method for
 Laboratory Compaction Characteristics of Soil
 Using Modified Effort (56,000ft-lbf/ft³)
 (2,700kN-m/m³).
- .6 ASTM D 1883-99, Standard Test Method for
 CBR (California Bearing Ratio) of Laboratory
 Compacted Soils.
- .7 ASTM D 4318-00, Standard Test Methods for
 Liquid Limit, Plastic Limit and Plasticity
 Index of Soils.
- .2 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.
-

1.5 Delivery,
Storage, and
Handling

- .1 Deliver and stockpile aggregates in accordance with Section 31 05 16 - Aggregate Materials. Stockpile minimum 50% of total aggregate required prior to beginning operation.
- .2 Store cement in weathertight bins or silos that provide protection from dampness and easy access for inspection and identification of each shipment.

PART 2 - PRODUCTS

2.1
with

Materials .1 Granular base: material in accordance

Section 31 05 16 - Aggregate Materials and following requirements:

- .1 Crushed stone or gravel.
- .2 Gradations to be within limits specified when tested to ASTM C 136-01 and ASTM C 117-95. Sieve sizes to CAN/CGSB-8.1-88 CAN/CGSB-8.2-M88.

.1 Gradation Method # 1 to:

Sieve % Passing
Designation

	(1)	(2)	(3)
100 mm	-	-	-
75 mm	-	-	-
50 mm	100	-	-
37.5 mm	70-100	-	-
25 mm	-	100	-
19 mm	50-75	-	100
12.5 mm	-	65-100	70-100
9.5 mm	40-65	-	-
4.75 mm	30-50	35-60	40-70
2.00 mm	-	22-45	23-50
0.425 mm	10-30	10-25	7-25
0.180 mm	-	-	-
0.075 mm	3-8	3-8	3-8

.2 Gradation Method #2 to: insert name of agency and material type except that percentage finer than 0.075 mm not to exceed 8%.

.3 Material to level surface depressions to meet gradation (2) limits in accordance with Method #1.

.4 Liquid limit: to ASTM D 4318-00, maximum 25

.5 Plasticity index: to ASTM D 4318-00, maximum 6

.6 Los Angeles degradation: to ASTM C

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Aggregate Base Courses

32 11 23

131-01. Max. % loss by weight: 45

2.1 Materials (Cont'd)

- .1 Granular base: (Cont'd)
- .2 (Cont'd)
 - .7 Crushed particles: at least 60% of particles by mass within each of following sieve designation ranges to have at least 1 freshly fractured face. Material to be divided into ranges using methods of ASTM C 136-01.

Passing		Retained on
50 mm	to	25 mm
25 mm	to	19.0 mm
19.0 mm	to	4.75 mm

- .8 Soaked CBR: to ASTM D 1883-99, min 80 100, when compacted to 100% of ASTM D 1557-02.

PART 3 - EXECUTION

3.1 Sequence of Operation

- .1 Place granular base after sub-base subgrade surface is inspected and approved by Departmental Representative .
- .2 Placing
 - .1 Construct granular base to depth and grade in areas indicated.
 - .2 Ensure no frozen material is placed.
 - .3 Place material only on clean unfrozen surface, free from snow and ice.
 - .4 Begin spreading base material on crown line or on high side of one-way slope.
 - .5 Place material using methods which do not lead to segregation or degradation of aggregate.
 - .6 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.
 - .7 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. Departmental Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
 - .8 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
 - .9 Remove and replace that portion of layer in which material becomes segregated during spreading.

3.1 Sequence of
Operation
(Cont'd)

- .3 Compaction Equipment
 - .1 Compaction equipment to be capable of obtaining required material densities.
 - .2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from Departmental Representative before use.
 - .3 Equipped with device that records hours of actual work, not motor running hours.
- .4 Compacting
 - .1 Compact to density not less than 100% corrected maximum dry density maximum dry density in accordance with ASTM D 698-00a ASTM D 1557-02.
 - .2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
 - .3 Apply water as necessary during compacting to obtain specified density.
 - .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Departmental Representative .
 - .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.
- .5 Proof rolling
 - .1 For proof rolling use standard roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with centre to centre spacing of 730 mm.
 - .2 Obtain approval from DND Representative to use non standard proof rolling equipment.
 - .3 Proof roll at level in granular base as indicated. If use of non standard proof rolling equipment is approved, DND Representative to determine level of proof rolling.
 - .4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.
 - .5 Where proof rolling reveals areas of defective subgrade:
 - .1 Remove base, sub-base and subgrade material to depth and extent as directed by DND Representative .
 - .2 Backfill excavated subgrade with common material and compact in accordance with Section 31 22 14 - Airfield Grading sub-base material and compact in accordance with Section 32 11 16 - Granular Sub-Base.

- 3.1 Sequence of Operation (Cont'd) .5 (Cont'd)
- .5 (Cont'd)
- .3 Replace sub-base material and compact in accordance with Section 32 11 16 - Granular Sub-base.
- .4 Replace base material and compact in accordance with this Section.
- .6 Where proof rolling reveals defective base or sub-base, remove defective materials to depth and extent as directed by DND Representative and replace with new materials in accordance with Section 32 11 16 - Granular Sub-base and this section at no extra cost.
- 3.2 Site Tolerances .1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.
- 3.3 Protection .1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by DND Representative .

END

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PART 1 - GENERAL

- 1.1 MEASUREMENT PROCEDURES .1 Asphalt tack coat will be measured in square metres at 15 degrees C of emulsified asphalt actually applied.
- 1.2 REFERENCES .1 American Society for Testing and Materials International, (ASTM)
.1 ASTM D 140-01, Standard Practice for Sampling Bituminous Materials.
- .2 Canadian General Standards Board (CGSB)
.1 CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.
- 1.3 ACTION AND INFORMATIONAL SUBMITTALS .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit two - 1 4 L samples of asphalt tack coat material proposed for use in new, clean, airtight, sealed, wide mouth jars or bottles made with plastic or plastic lined cans to Departmental Representative , at least 2 weeks prior to beginning Work.
- .3 Sample asphalt tack coat material to: ASTM D 140-01.
- .4 Provide access on tank truck for Departmental Representative to sample asphalt material to be incorporated into Work, in accordance with ASTM D 140-01.
- 1.4 QUALITY ASSURANCE .1 Upon request by Departmental Representative , submit manufacturer's test data and certification that asphalt tack coat material meets requirements of this section.
- 1.5 DELIVERY, STORAGE AND HANDLING .1 Deliver, store and handle materials in accordance with ASTM D 140-01.
- .2 Provide, maintain and restore asphalt storage area.

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1.6 WASTE
MANAGEMENT AND
DISPOSAL

- .1 Divert unused asphalt from landfill to facility capable of recycling materials.

PART 2 - PRODUCTS

2.1

MATERIALS .1 Anionic emulsified asphalt: to CAN/CGSB-16.2-M89, grade: SS-1 SS-1h.

- .2 Water: clean, potable, free from foreign matter.

2.2

EQUIPMENT .1 Pressure distributor to be:

- .1 Designed, equipped, maintained and operated so that asphalt material can be:
 - .1 Maintained at even temperature.
 - .2 Applied uniformly on variable widths of surface up to 5 m.
 - .3 Applied at readily determined and controlled rates from 0.2 to 5.4 L/m² with uniform pressure, and with an allowable variation from any specified rate not exceeding 0.1 L/m².
 - .4 Distributed in uniform spray without atomization at temperature required.
- .2 Equipped with meter, registering metres of travel per minute, visibly located to enable truck driver to maintain constant speed required for application at specified rate.
- .3 Equipped with pump having flow meter graduated in units of 5 L or less per minute passing through nozzles and readily visible to operator. Pump power unit to be independent of truck power unit.
- .4 Equipped with an easily read, accurate and sensitive device which registers temperature of liquid in reservoir.
- .5 Equipped with accurate volume measuring device or calibrated tank.
- .6 Equipped with nozzles of same make and dimensions, adjustable for fan width and orientation.
- .7 Equipped with nozzle spray bar, with operational height adjustment.
- .8 Cleaned if previously used with incompatible asphalt material.

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PART 3 - EXECUTION

- 3.1 APPLICATION
- .1 Obtain Departmental Representative's approval of surface before applying asphalt tack coat.
 - .2 Apply asphalt tack coat only on clean and dry surface.
 - .3 Dilute asphalt emulsion with water at 1:1 ratio for application.
 - .1 Mix thoroughly by pumping or other method approved by Departmental Representative
 - .4 Apply asphalt tack coat evenly to pavement surface at rate as directed by DND Representative , but not to exceed 0.7 L/m².
 - .5 Paint contact surfaces of curbs, gutters, headers, manholes and like structures with thin, uniform coat of asphalt tack coat material.
 - .6 Do not apply asphalt tack coat when air temperature is less than 10 degrees C or when rain is forecast within 2 hours of application.
 - .7 Apply asphalt tack coat only on unfrozen surface.
 - .8 Evenly distribute localized excessive deposits of tack coat by brooming as directed by DND Representative .
 - .9 Where traffic is to be maintained, treat no more than one half of width of surface in one application.
 - .10 Keep traffic off tacked areas until asphalt tack coat has set.
 - .11 Re-tack contaminated or disturbed areas as directed by DND Representative .
 - .12 Permit asphalt tack coat to set before placing asphalt pavement.

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PART 1 - GENERAL

1.1 RELATED REQUIREMENTS	.1	Section 31 05 16 - Aggregate Materials .
	.2	Section 02 41 13 - Selective Site Demolition
	.3	Section 32 01 16 - Reshaping Asphalt Pavement
1.2 PRODUCTS SUPPLIED BUT NOT INSTALLED UNDER THIS SECTION	.1	Where reclaimed asphalt pavement (RAP) is to be incorporated into mix, use only material obtained from this contract in accordance with Section 02 41 13 - Selective Site Demolition.
1.3 MEASUREMENT PROCEDURES	.1	Measure asphalt concrete paving in tonnes of asphalt concrete actually incorporated into Work.
	.2	Measure supply of asphalt cement in tonnes/ litres at 15 degrees C at the discretion of Departmental Representative.
	.3	Measure supply of hydrated lime in tonnes.
1.4 REFERENCES	.1	American Association of State Highway and Transportation Officials (AASHTO) .1 AASHTO M320-02, Standard Specification for Performance Graded Asphalt Binder. .2 AASHTO R29-02, Standard Specification for Grading or Verifying the Performance Graded of an Asphalt Binder. .3 AASHTO T245-97(2001), Resistance to Plastic flow of Bituminous Mixtures Using Marshall Apparatus.
	.2	Asphalt Institute (AI) .1 AI MS2-1994 Sixth Edition, Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types.
	.3	American Society for Testing and Materials International, (ASTM) .1 ASTM C 88-99a, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate. .2 ASTM C 117-95, Standard Test Method for Material Finer Than 0.075mm (No.200) Sieve in Mineral Aggregates by Washing.

1.4 REFERENCES
(Cont'd)

- .3 (Cont'd)
- .3 ASTM C 123-98, Standard Test Method for Lightweight Particles in Aggregate.
 - .4 ASTM C 127-01, Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.
 - .5 ASTM C 128-01, Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate.
 - .6 ASTM C 131-01, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - .7 ASTM C 136-01, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .8 ASTM C 207-91(1997), Standard Specification for Hydrated Lime for Masonry Purposes.
 - .9 ASTM D 995-95b(2002), Standard Specification for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
 - .10 ASTM D 2419-02, Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
 - .11 ASTM D 3203-94(2000), Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures.
 - .12 ASTM D 4791-99, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
- .4 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.
 - .3 CAN/CGSB-16.3-M90, Asphalt Cements for Road Purposes.

1.5 PRODUCT DATA

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit viscosity-temperature chart for asphalt cement to be supplied showing either Saybolt Furol viscosity in seconds or Kinematic Viscosity in centistokes, temperature range 105 to 175 degrees C at least 4 weeks prior to beginning Work.
- .3 Submit manufacturer's test data and certification that asphalt cement meets requirements of this Section.

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- 1.5 PRODUCT DATA
(Cont'd)
- .4 Submit manufacturer's test data and certification that hydrated lime meets requirements of this Section.
 - .5 Submit asphalt concrete mix design and trial mix test results to Departmental Representative for approval review at least 4 weeks prior to beginning Work.
- 1.6 SAMPLES
- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Inform Departmental Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to beginning Work.
 - .3 Submit samples of following materials proposed for use at least 4 weeks prior to beginning Work.
 - .1 One 5 L container of asphalt cement.
 - .2 90 kg of hydrated lime.
- 1.7 DELIVERY, STORAGE AND HANDLING
- .1 Deliver and stockpile aggregates in accordance with Section 31 05 16 - Aggregate Materials. Stockpile minimum 50 % of total amount of aggregate required before beginning asphalt mixing operation.
 - .2 When necessary to blend aggregates from one or more sources to produce required gradation, do not blend in stockpiles.
 - .3 Stockpile fine aggregate separately from coarse aggregate, although separate stockpiles for more than two mix components are permitted.
 - .4 Provide approved storage, heating tanks and pumping facilities for asphalt cement.
 - .5 Submit to Departmental Representative copies of freight and waybills for asphalt cement as shipments are received. Departmental Representative reserves right to check weights as material is received.
 - .6 Stockpile crushed RAP separately in accordance with Section 31 05 16 - Aggregate Materials.
-

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1.7 DELIVERY, .7 Protect stockpiles of crushed RAP from rain
STORAGE AND to approval of Departmental Representative.
HANDLING
(Cont'd)

- 1.8 WASTE .1 Separate waste materials for reuse and
MANAGEMENT AND recycling.
DISPOSAL .2 Remove from site and dispose of all packaging
materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper
plastic polystyrene corrugated cardboard
packaging material in appropriate on-site bins
for recycling in accordance with Waste
Management Plan.
- .4 Divert unused aggregate materials from
landfill to quarry facility for reuse as
approved by Departmental Representative.
- .5 Divert unused asphalt from landfill to
facility capable of recycling materials.
- .6 Fold up metal banding, flatten and place in
designated area for recycling.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Asphalt cement: to CAN/CGSB-16.3-M90, grade:
, group: according to chart of Absolute
Kinematic viscosity versus penetration.
- .2 Performance graded asphalt cement: to AASHTO
M320, grade PG 58 - 28 when tested to AASHTO
R29.
- .3 Reclaimed asphalt pavement:
.1 Crushed and screened so that 100% of RAP
material passes 50 mm screen before mixing.
- .4 Aggregates: in accordance with Section
31 05 16 - Aggregate Materials: General and
following requirements:
.1 Crushed stone or gravel.
.2 Gradations: within limits specified when
tested to ASTM C 136-01 and ASTM C 117-95.
Sieve sizes to CAN/CGSB-8.2-M88.
-

2.1 MATERIALS
(Cont'd)

.4 Aggregates: (Cont'd)

.3 Table

Sieve Designation	% Passing		
	Lower Course	Surface Course	Sheet Asphalt
200 mm	-	-	-
75 mm	-	-	-
50 mm	-	-	-
38.1 mm	-	-	-
25 mm	100	-	-
19 mm	-	-	-
12.5 mm	70-85	100	-
9.5 mm	-	-	100
4.75 mm	40-65	55-75	85-100
2.00 mm	30-50	35-55	80-95
0.425 mm	15-30	15-30	40-70
0.180 mm	5-20	5-20	10-35
0.075 mm	3-8	3-8	4-14

.4 Coarse aggregate: aggregate retained on 4.75 mm sieve and fine aggregate is aggregate passing 4.75 mm sieve when tested to ASTM C 136-01.

.5 When dryer drum plant or plant without hot screening is used, process fine aggregate through 4.75 mm sieve and stockpile separately from coarse aggregate.

.6 Separate stockpiles for coarse and fine aggregates not required for sheet asphalt.

.7 Do not use aggregates having known polishing characteristics in mixes for surface courses.

.8 Sand equivalent: ASTM D 2419-02. Min: 50.

.9 Magnesium Sulphate soundness: to ASTM C 88-99a. Max% loss by mass:

.1 Coarse aggregate surface course: 12 %.

.2 Coarse aggregate lower course: 12 %.

.3 Fine aggregate, surface course: 16 %.

.4 Fine aggregate, lower course: 16 %.

.10 Los Angeles degradation: Grading B, to ASTM C 131-01. Max % loss by mass:

.1 Coarse aggregate, surface course: 25.

.2 Coarse aggregate, lower course: 35 %.

2.1 MATERIALS
(Cont'd)

- .4 Aggregates: (Cont'd)
- .11 Absorption: to ASTM C 127-01. Max % by mass:
- .1 Coarse aggregate, surface course: 1.75 %.
 - .2 Coarse aggregate, lower course: 2.00 %.
- .12 Loss by washing: to ASTM C 117-95. Max % passing 0.075 mm sieve:
- .1 Coarse aggregate, surface course: 1.5.
 - .2 Coarse aggregate, lower course: 2.0.
- .13 Lightweight particles: to ASTM C 123-98. Max % by mass less than 1.95 relative density:
- .1 Surface course: 1.5 %.
 - .2 Lower course: 3.0 %.
- .14 Flat and elongated particles: to ASTM D 4791-99, (with length to thickness ratio greater than 5): Max% by mass:
- .1 Coarse aggregate, surface course: 15 %.
 - .2 Coarse aggregate, lower course: 15 %..
- .15 Crushed fragments: at least 60 % of particles by mass within each of following sieve designation ranges, to have at least 1 freshly fractured face. Material to be divided into ranges, using methods of ASTM C 136-01.
- | Passing | | Retained on |
|---------|----|-------------|
| 25 mm | to | 12.5 mm |
| 12.5 mm | to | mm |
- .16 Regardless of compliance with specified physical requirements, fine aggregates may be accepted or rejected on basis of past field performance.
- .5 Mineral filler:
- .1 Finely ground particles of limestone, hydrated lime, Portland cement or other approved non-plastic mineral matter, thoroughly dry and free from lumps.
 - .2 Add mineral filler when necessary to meet job mix aggregate gradation or as directed to improve mix properties.
 - .3 Mineral filler to be dry and free flowing when added to aggregate.
- .6 Anti-stripping agent: hydrated lime to ASTM C 207-91(1997) type N. Add lime at rate of approximately 2-3% of dry weight of aggregate.
- .7 Water: to approval of DND Representative.

- 2.2 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 minimum of three per paver of type and weight to obtain specified density of compacted mix.
 - .3 Vibratory rollers:
 - .1 Minimum drum diameter: 1200 mm.
 - .2 Maximum amplitude of vibration (machine setting): 0.5 mm for lifts less than 40 mm 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.
 - .4 Use only trucks which can be weighed in single operation on scales supplied.
 - .5 Hand tools:
 - .1 Lutes or rakes with covered teeth for spreading and finishing operations.
 - .2 Tamping irons having mass not less than 12 kg and bearing area not exceeding 310 cm² for compacting material along curbs, gutters and other structures inaccessible to roller. Mechanical compaction equipment, when approved by Departmental Representative, may be used instead of tamping irons.
 - .3 Straight edges, 4.5 m in length, to test finished surface.
 - .6 Plant testing facility: provide laboratory space at plant site for exclusive use of Departmental Representative, for performing tests, keeping records and making reports.
- 2.3 MIX DESIGN
- .1 Mix design to be provided approved by Departmental Representative.
 - .2 Mix design to be developed by testing laboratory approved by Departmental Representative.
-

- 2.3 MIX DESIGN (Cont'd)
- .3 Mix to contain maximum 50% by mass of RAP. Departmental Representative may approve higher proportion of RAP if Contractor demonstrates ability to produce mix meeting requirements of specification.
 - .4 Design of mix: by Marshall method to requirements below.
 - .1 Compaction blows on each face of test specimens: 50 75.
 - .2 Mix physical requirements:

Property	Airfield Pavements	Roads	Sheet Asphalt
Marshall Stability at 60°C kN min	7.0	5.5 surface course/4.5 lower course	3.0
Flow Value mm	2-4	2-4	2-5
Air Voids in Mixture, %	3-5	3-5 surface course/2-6 lower course	3-5
Voids in Mineral Aggregate, % min	15 surface course/13 lower course	15 surface course/13 lower course	16
Index of Retained Stability % minimum	75	75	75

- .3 Measure physical requirements as follows:
 - .1 Marshall load and flow value: to AASHTO T245.
 - .2 Compute void properties on basis of bulk specific gravity of aggregate to ASTM C 127-01 and ASTM C 128-01. Make allowance for volume of asphalt absorbed into pores of aggregate.
 - .3 Air voids: to ASTM D 3203-94(2000).
 - .4 Voids in mineral aggregates: to AI MS2, chapter 4.
 - .5 Index of Retained Stability: measure in accordance with Marshall Immersion Test for Bitumen.
- .4 Do not change job-mix without prior approval of Departmental Representative. When change in material source proposed, new job-mix formula will be provided to be approved to be reviewed by Departmental Representative.
- .5 Return plant dust collected during processing to mix in quantities acceptable to Departmental Representative.

PART 3 - EXECUTION

3.1 PLANT AND MIXING REQUIREMENTS

- .1 Batch and continuous mixing plants:
 - .1 To ASTM D 995-95b(2002).
 - .2 Feed aggregates from individual stockpiles through separate bins to cold elevator feeders. Do not load frozen materials into bins.
 - .3 Feed cold aggregates to plant in proportions to ensure continuous operations.
 - .4 Calibrate bin gate openings and conveyor speeds to ensure mix proportions are achieved.
 - .5 Before mixing, dry aggregates to moisture content not greater than 1 % by mass or to lesser moisture content if required to meet mix design requirements. Heat to temperature required to meet mixing temperature as directed by Departmental Representative after combining with RAP.
 - .6 Immediately after drying, screen aggregates into hot storage bins in sizes to permit recombining into gradation meeting job-mix requirements.
 - .7 Store hot screened aggregates in manner to minimize segregation and temperature loss.
 - .8 Heat asphalt cement and aggregate to mixing temperature directed by Departmental Representative. Do not heat asphalt cement above 160 degrees C maximum temperature indicated on temperature-viscosity chart.
 - .9 Make available current asphalt cement viscosity data at plant. With information relative to viscosity of asphalt being used, Departmental Representative to approve review temperature of completed mix at plant and at paver after considering hauling and placing conditions.
 - .10 Maintain temperature of materials within 5 degrees C of specified mix temperature during mixing.
 - .11 Mixing time:
 - .1 In batch plants, both dry and wet mixing times as directed by Departmental Representative. Continue wet mixing as long as necessary to obtain thoroughly blended mix but not less than 30s or more than 75s.
 - .2 In continuous mixing plants, mixing time as directed by Departmental Representative but not less than 45s.
 - .3 Do not alter mixing time unless directed by Departmental Representative

3.1 PLANT AND
MIXING REQUIREMENTS
(Cont'd)

- .1 (Cont'd)
- .12 Where RAP is to be incorporated into mix:
- .1 Feed from separate cold feed bin specially designed to minimize consolidation of material. Provide 50 mm scalping screen on cold feed to remove oversized pieces of RAP.
 - .2 Ensure positive and accurate control of RAP cold feed by use of hydraulic motor or electric clutch and equip with anti rollback device to prevent material from sliding backward on feed belt.
 - .3 Combine RAP and new aggregates in proportions as directed by Departmental Representative specified. Dry mix thoroughly, until uniform temperature within plus or minus 5 degrees C of mix temperature, as directed by Departmental Representative, is achieved prior to adding new asphalt cement. Do not add new asphalt cement where temperature of dried mix material is above 160 degrees C.
- .2 Dryer drum mixing plant:
- .1 To ASTM D 995-95b(2002).
 - .2 Load aggregates from individual stockpiles to separate cold feed bins. Do not load frozen materials into bins.
 - .3 Feed aggregates to burner end of dryer drum by means of multi-bin cold feed unit and blend to meet job-mix requirements by adjustments of variable speed feed belts and gates on each bin.
 - .4 Where RAP is to be incorporated into mix, dryer drum mixer is to be designed to prevent direct contact of RAP with burner flame or with exhaust gases hotter than 180 degrees C.
 - .5 Feed RAP from separate cold feed bin designed to minimize reconsolidation of material.
 - .6 Meter total flow of aggregate and RAP by an electronic weigh belt system with indicator that can be monitored by plant operator and which is interlocked with asphalt pump so that proportions of aggregate ,RAP and asphalt entering mixer remain constant.
 - .7 Provide for easy calibration of weighing systems for aggregates and RAP without having material enter mixer.
 - .8 Calibrate bin gate openings and conveyor speeds to ensure mix proportions are achieved. Calibrate weigh bridge on charging conveyor by

3.1 PLANT AND
MIXING REQUIREMENTS
(Cont'd)

- .2 Dryer drum mixing plant: (Cont'd)
- .8 (Cont'd)
weighing amount of aggregate passing over weigh bridge in set amount of time. Difference between this value and amount shown by plant computer system to differ by not more than plus or minus 2 %.
- .9 Make provision for conveniently sampling full flow of materials from cold feed.
- .10 Provide screens or other suitable devices to reject oversize particles or lumps of aggregate and RAP from cold feed prior to entering drum.
- .11 Provide system interlock stop on feed components if either asphalt or aggregate from bin stops flowing.
- .12 Accomplish heating and mixing of asphalt mix in approved parallel flow dryer-mixer in which aggregate enters drum at burner end and travels parallel to flame and exhaust gas stream. Control heating to prevent fracture of aggregate or excessive oxidation of asphalt. Equip system with automatic burner controls and provide for continuous temperature sensing of asphalt mixture at discharge, with printing recorder that can be monitored by plant operator. Submit printed record of mix temperatures at end of each week.
- .13 Mixing period and temperature to produce uniform mixture in which particles are thoroughly coated, and moisture content of material as it leaves mixer to be less than 2 %.
- .3 Temporary storage of hot mix:
- .1 Provide mix storage of sufficient capacity to permit continuous operation and designed to prevent segregation.
- .2 Do not store asphalt mix in storage bins in excess of 3 hour.
- .4 While producing asphalt mix for this Project, do not produce mix for other users unless separate storage and pumping facilities are provided for materials supplied to this project.
- .5 Mixing tolerances:
- .1 Permissible variation in aggregate gradation from job mix (percent of total mass).

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3.1 PLANT AND
MIXING REQUIREMENTS
(Cont'd)

- .5 Mixing tolerances: (Cont'd)
- .1 (Cont'd)
- 4.75 mm sieve and
larger
- 2.00 mm sieve
- 0.425 mm sieve
- 0.180 mm sieve
- 0.075 mm sieve 2.0
- .2 Permissible variation of asphalt cement
from job mix: 0.25%.
- .3 Permissible variation of mix temperature
at discharge from plant: 5 degrees C.
- .6 Addition of anti-stripping agent:
- .1 Plant to be equipped with pug mill to
thoroughly mix aggregates and lime prior to
entering the plant.
- .2 Plant to be equipped with suitable
conveyor systems capable of supplying
aggregates and lime at constant rate.
- .3 Plant and equipment used for addition of
lime to be equipped with covers to control
loss of lime.
- .4 Plant to be equipped to control rate of
lime incorporation to within 1/4%.
- .5 Add water to aggregate prior to entering
pug mill.
- .6 Add water to lime sufficiently in
advance to permit time to slake prior to
entering pug mill.

3.2 PREPARATION

- .1 Reshape asphalt pavement in accordance with
Section 32 01 16 - Reshaping Asphalt Pavement.
- .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
Departmental Representative before beginning
paving operations.
- .3 Apply prime coat and tack coat in accordance
Section 32 12 13 - Asphalt Tack Coat prior to
paving.
- .4 Prior to laying mix, clean surfaces of loose
and foreign material.

3.3 TRANSPORTATION
OF MIX

- .1 Transport mix to job site in vehicles cleaned of foreign material.
- .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 Departmental Representative approves artificial light.
- .4 Deposit mix from surge or storage silo to trucks in multiple drops to reduce segregation. Do not dribble mix into trucks.
- .5 Deliver material to paver at uniform rate and in an amount within capacity of paving and compacting equipment.
- .6 Deliver loads continuously in covered vehicles and immediately spread and compact. Deliver and place mixes at temperature within range as directed by Departmental Representative, but not less than 135 degrees C.

3.4 TEST STRIP

- .1 Construct and test test strip to approval of Departmental Representative.
- .2 For airfield pavement, construct test strip in non-critical area to resolve anticipated problems with equipment, mix behaviour or compaction, prior to starting paving operation.
- .3 Construct test strip with at least 500 tonnes of mix, and involving more than one lane, so that joint finishing techniques can be established.
- .4 During construction of test strip, Departmental Representative will establish optimum rolling pattern by taking nuclear densimeter readings and observations to:
 - .1 Determine sequence and number of passes.
 - .2 Determine correct operating characteristics of vibratory rollers.
 - .3 Determine maximum density of asphalt mix.
 - .4 Ensure smooth surface finish.

3.4 TEST STRIP
(Cont'd)

- .4 (Cont'd)
- .5 Establish actual density achieved by coring in order to determine if additional or other rolling equipment is required to achieve density of not less than 98 % of density obtained with Marshall specimens prepared from samples of mix being used.

3.5 PLACING

- .1 Obtain Departmental Representative's approval of base and existing surface and tack coat and prime coat prior to placing asphalt.
- .2 Place asphalt concrete to thicknesses, grades and lines as indicated as directed by Departmental Representative.
- .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.
- .4 Place asphalt concrete in compacted lifts of thickness as follows: indicated.
 - .1 Levelling courses to thicknesses required but not exceeding 50 mm.
 - .2 Lower course in layers of 100 mm each.
 - .3 Surface course in layers of maximum 60 mm each.
 - .4 Sheet asphalt course in one layer of mm.
- .5 Where possible do tapering and levelling where required in lower lifts. Overlap joints by not less than 300 mm.
- .6 Place individual strips no longer than 500 m.
- .7 On airport runways and taxiways, aprons and parking lots commence spreading at high side of pavement or at crown and span crowned centerlines with initial strip.
- .8 Spread and strike off mixture with self propelled mechanical finisher.
 - .1 Construct longitudinal joints and edges true to line markings. Departmental Representative to establish lines for paver to follow parallel to centerline of proposed

3.5 PLACING
(Cont'd)

.8

(Cont'd)

.1 (Cont'd)

pavement. Position and operate paver to follow established line closely.

.2 When using pavers in echelon, have first paver follow marks or lines, and second paver follow edge of material placed by first paver. Work pavers as close together as possible and in no case permit them to be more than 30 m apart.

.3 Maintain constant head of mix in auger chamber of paver during placing.

.4 If segregation occurs, immediately suspend spreading operation until cause is determined and corrected.

.5 Correct irregularities in alignment left by paver by trimming directly behind machine.

.6 Correct irregularities in surface of pavement course directly behind paver. Remove by shovel or lute excess material forming high spots. Fill and smooth indented areas with hot mix. Do not broadcast material over such areas.

.7 Do not throw surplus material on freshly screeded surfaces.

.9

When hand spreading is used:

.1 Use approved wood or steel forms, rigidly supported to assure correct grade and cross section. Use measuring blocks and intermediate strips to aid in obtaining required cross-section.

.2 Distribute material uniformly. Do not broadcast material.

.3 During spreading operation, thoroughly loosen and uniformly distribute material by lutes or covered rakes. Reject material that has formed into lumps and does not break down readily.

.4 After placing and before rolling, check surface with templates and straightedges and correct irregularities.

.5 Provide heating equipment to keep hand tools free from asphalt. Control temperature to avoid burning material. Do not use tools at higher temperature than temperature of mix being placed.

3.6 COMPACTING

.1

Roll asphalt continuously using established rolling pattern for test strip and to density of not less than 100 % of maximum density determined for test strip.

3.6 COMPACTING
(Cont'd)

- .2 Do not change rolling pattern unless mix changes or lift thickness changes. Change rolling pattern only as directed by Departmental Representative.
- .3 Roll asphalt continuously to density not less than 98 % of blow 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.
- .4 Use static compaction for levelling coarse less than 25 mm thick.
- .5 For lifts 50 mm 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 50 mm thick, impact spacing not to exceed compacted lift thickness.
- .6 Overlap successive passes of roller by minimum of 200 mm 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 75 mm of edge which second paver is following and roll when joint between lanes is rolled.

3.6 COMPACTING
(Cont'd)

- .4 General: (Cont'd)
 - .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 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 Departmental Representative.
 - .4 Use only experienced roller operators.
- .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 Departmental Representative/DCC Representative.
 - .2 Conduct rolling operations in close sequence.
- .8 Dust entire area of sheet asphalt pavements with hydrated lime immediately after rolling to eliminate tendency to pick-up under traffic.

3.7 JOINTS

- .1 General:
 - .1 Remove surplus material from surface of previously laid strip. Do not deposit on surface of freshly laid strip.

3.7 JOINTS
(Cont'd)

- .1 General: (Cont'd)
 - .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 600 mm.
 - .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 150 mm.
 - .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.
 - .1 For airfield runway paving, avoid cold joint construction in mid 30 m of runway.
 - .2 If cold joint can not be avoided, cut back by saw cutting previously laid lane, by at least 150 mm, 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 50 mm.
 - .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 150 mm 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.

National Defence
4 Wing Cold Lake
L-C252-9900/366

Asphalt Paving

32 12 16

2011-02-07

3.8 FINISH
TOLERANCES

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

3.9 DEFECTIVE WORK .1

- .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.

END

PART 1 - GENERAL

1.1
Spirits

- References .1 CAN/CGSB-1.5-M91, Low Flash Petroleum Thinner.
- .2 CGSB 1-GP-12, Standard Paint Colours.
- .3 CGSB 1-GP-71, Method, of Testing Paints and Pigments.
- .4 CGSB 1-GP-74M, Paint, Traffic, Alkyd.

1.2
Section

- Samples .1 Submit samples in accordance with 01 33 00 - Submittal Procedures.
- .2 Submit to Engineer following material sample quantities prior to commencing work.
- .1 Two 1L samples of each type of paint.
- .2 One 1kg sample of glass beads.
- .3 Sampling to CGSB 1-GP-71.
- .3 Mark samples with name of project and its location, paint manufacturer's name and address, name of paint, CGSB specification number and formulation number and batch number.

PART 2 - PRODUCTS

2.1

- Materials .1 Paint:
- .1 To CGSB 1-GP-74M, alkyd traffic paint.
- .2 Colour: to CGSB 1-GP-12, yellow 505-308 black 512-301 white 513-301.
- .3 Upon request, Engineer will supply a qualified product list of paints applicable to work. Qualified paints may be used but Engineer reserves right to perform further tests.
- .2 Thinner: to CAN/CGSB-1.5-M91.
- .3 Glass beads:
- .1 Overlay type: to CGSB 1-GP-74M.
-

PART 3 - EXECUTION

- 3.1 Equipment Requirements
- .1 Paint applicator to be an approved pressure type mobile distributor capable of applying paint in single, double and dashed lines. Applicator to be capable of applying marking components uniformly, at rates specified, and to dimensions as indicated, and to have positive shut-off.
 - .2 Distributor to be capable of applying reflective glass beads as an overlay on freshly applied paint.
- 3.2 Condition of Surfaces
- .1 Pavement surface to be dry, free from ponded water, frost, ice, dust, oil, grease and other foreign materials.
 - .2 Contractor to sweep the area to be painted regardless if in his opinion it requires it or not.
- 3.3 Application
- .1 Lay out pavement markings as directed by Engineer.
 - .2 The contractor shall give the Engineer a minimum of 24 hours notice prior to the start of work.
 - .3 The contractor shall not commence application prior to the Engineer's inspection of the paint quality and quantity.
 - .4 Unless otherwise approved by Engineer , apply paint only when air temperature is above 10°C, wind speed is less than 60km/h and no rain is forecast within next 4h.
 - .5 Apply traffic paint evenly at rate of 3m² /L.
 - .6 Do not thin paint unless approved by Engineer
 - .7 Symbols and letters to conform to dimensions indicated.
 - .8 Apply other specified markings as directed by Engineer.
-

-
- 3.3 Application
(Cont'd)
- .9 Paint lines to be of uniform colour and density with sharp edges.
 - .10 Thoroughly clean distributor tank before refilling with paint of different colour.
 - .11 Apply glass beads at rate of 200g/m² of painted area immediately after application of paint.
 - .12 Apply paint and reflective glass using specified equipment.
- 3.4 Tolerance
- .1 Paint markings to be within plus or minus 12mm of dimensions indicated.
 - .2 Remove incorrect markings as directed by Engineer and re-apply paint.
- 3.5 Protection of Completed Work
- .1 Protect pavement markings until dry.



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Contract Number / Numéro du contrat

W0134-15CYNM

Security Classification / Classification de sécurité
UNCLASSIFIED

SECURITY REQUIREMENTS CHECK LIST (SRCL)

LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine		National Defence	2. Branch or Directorate / Direction générale ou Direction WLog-CE	
3. a) Subcontract Number / Numéro du contrat de sous-traitance		3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant		
4. Brief Description of Work / Brève description du travail Paving Roads, parking lots, runway				
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. Indicate the type of access required / Indiquer le type d'accès requis				
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.			<input type="checkbox"/> No Non	<input checked="" type="checkbox"/> Yes Oui
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit?			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès				
Canada <input type="checkbox"/>		NATO / OTAN <input type="checkbox"/>		Foreign / Étranger <input type="checkbox"/>
7. b) Release restrictions / Restrictions relatives à la diffusion				
No release restrictions Aucune restriction relative à la diffusion <input type="checkbox"/>		All NATO countries Tous les pays de l'OTAN <input type="checkbox"/>		No release restrictions Aucune restriction relative à la diffusion <input type="checkbox"/>
Not releasable À ne pas diffuser <input type="checkbox"/>		Restricted to: / Limité à: <input type="checkbox"/>		Restricted to: / Limité à: <input type="checkbox"/>
Specify country(ies): / Préciser le(s) pays:		Specify country(ies): / Préciser le(s) pays:		Specify country(ies): / Préciser le(s) pays:
7. c) Level of information / Niveau d'information				
PROTECTED A PROTÉGÉ A <input type="checkbox"/>	NATO UNCLASSIFIED <input type="checkbox"/>	PROTECTED A PROTÉGÉ A <input type="checkbox"/>		
PROTECTED B PROTÉGÉ B <input type="checkbox"/>	NATO NON CLASSIFIÉ <input type="checkbox"/>	PROTECTED B PROTÉGÉ B <input type="checkbox"/>		
PROTECTED C PROTÉGÉ C <input type="checkbox"/>	NATO RESTRICTED <input type="checkbox"/>	PROTECTED C PROTÉGÉ C <input type="checkbox"/>		
CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>	NATO DIFFUSION RESTREINTE <input type="checkbox"/>	CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>		
SECRET <input type="checkbox"/>	NATO CONFIDENTIAL <input type="checkbox"/>	SECRET <input type="checkbox"/>		
TOP SECRET <input type="checkbox"/>	NATO CONFIDENTIEL <input type="checkbox"/>	TOP SECRET <input type="checkbox"/>		
TRÈS SECRET <input type="checkbox"/>	NATO SECRET <input type="checkbox"/>	TRÈS SECRET <input type="checkbox"/>		
TOP SECRET (SIGINT) <input type="checkbox"/>	NATO SECRET <input type="checkbox"/>	TOP SECRET (SIGINT) <input type="checkbox"/>		
TRÈS SECRET (SIGINT) <input type="checkbox"/>	COSMIC TOP SECRET <input type="checkbox"/>	TRÈS SECRET (SIGINT) <input type="checkbox"/>		
	COSMIC TRÈS SECRET <input type="checkbox"/>			



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PART A (continued) / PARTIE A (suite)

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS? No / Non Yes / Oui
If Yes, indicate the level of sensitivity:
Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate? No / Non Yes / Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel :
Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

- | | | | |
|---|---|---|--|
| <input checked="" type="checkbox"/> RELIABILITY STATUS
COTE DE FIABILITÉ | <input type="checkbox"/> CONFIDENTIAL
CONFIDENTIEL | <input type="checkbox"/> SECRET
SECRET | <input type="checkbox"/> TOP SECRET
TRÈS SECRET |
| <input type="checkbox"/> TOP SECRET - SIGINT
TRÈS SECRET - SIGINT | <input type="checkbox"/> NATO CONFIDENTIAL
NATO CONFIDENTIEL | <input type="checkbox"/> NATO SECRET
NATO SECRET | <input type="checkbox"/> COSMIC TOP SECRET
COSMIC TRÈS SECRET |
| <input type="checkbox"/> SITE ACCESS
ACCÈS AUX EMPLACEMENTS | | | |

Special comments:
Commentaires spéciaux :

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.
REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail? No / Non Yes / Oui
If Yes, will unscreened personnel be escorted? *Unscreened pers. may only access public/reception zones*
Dans l'affirmative, le personnel en question sera-t-il escorté? No / Non Yes / Oui

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS? No / Non Yes / Oui

11. b) Will the supplier be required to safeguard COMSEC information or assets?
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC? No / Non Yes / Oui

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ? No / Non Yes / Oui

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS? No / Non Yes / Oui

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale? No / Non Yes / Oui



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PART C - (continued) / PARTIE C - (suite)

For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.
Les utilisateurs qui remplissent le formulaire manuellement doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form online (via the Internet), the summary chart is automatically populated by your responses to previous questions.
Dans le cas des utilisateurs qui remplissent le formulaire en ligne (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category / Catégorie	PROTECTED / PROTÉGÉ			CLASSIFIED / CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL	SECRET	TOP SECRET	NATO RESTRICTED	NATO CONFIDENTIAL	NATO SECRET	COSMIC TOP SECRET COSMIC TRÈS SECRET	PROTECTED / PROTÉGÉ			CONFIDENTIAL	SECRET	TOP SECRET
				CONFIDENTIEL		TRÈS SECRET	NATO DIFFUSION RESTREINTE	NATO CONFIDENTIEL			A	B	C	CONFIDENTIEL		TRÈS SECRET
Information / Assets / Renseignements / Biens / Production																
IT Media / Support TI																
IT Link / Lien électronique																

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquez qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).



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Security Classification / Classification de sécurité UNCLASSIFIED

PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Chargé de projet de l'organisme

Name (print) - Nom (en lettres moulées) Kasper, Borden	Title - Titre Contract Inspector	Signature <i>B Kasper</i>
Telephone No. - N° de téléphone 780-840-8000	Facsimile No. - N° de télécopieur 780-840-7310	E-mail address - Adresse courriel Borden.Kasper@forces.gc.ca
		Date 2014/07/10

14. Organization Security Authority / Responsable de la sécurité de l'organisme

Name (print) - Nom (en lettres moulées) Sasa Medjovic - DUSO Industrial Security Senior Security Analyst Tel: 613-996-0286	Title - Titre	Signature <i>Sasa Medjovic</i>
Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel E-mail: sasa.medjovic@forces.gc.ca
		Date 2015-03-06 <i>sun</i>

15. Are there additional instructions (e.g. Security Guide, Security Classification Guide) attached?
Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes?

No / Non Yes / Oui

16. Procurement Officer / Agent d'approvisionnement

Name (print) - Nom (en lettres moulées)	Title - Titre	Signature
Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel
		Date

17. Contracting Security Authority / Autorité contractante en matière de sécurité

Name (print) - Nom (en lettres moulées) Rebecca Van Dyk	Title - Titre Registration Analyst	Signature <i>Rebecca Van Dyk</i>
Telephone No. - N° de téléphone 613-960-9242	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel rebecca.vandyk@pwgsc-tpsgc.gc.ca
		Date 2015/03/18

CERTIFICATE OF INSURANCE



Travaux publics et
Services gouvernementaux
Canada

Public Works and
Government Services
Canada

Description and Location of Work	Contract No. W0134-15CYNM
Paving Repair - Department of National Defence, 4 Wing, CFB Cold Lake, Alberta	Project No.

Name of Insurer, Broker or Agent	Address (No., Street)	City	Province	Postal Code
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Name of Insured (Contractor)	Address (No., Street)	City	Province	Postal Code
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Additional Insured
Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services

Type of Insurance	Insurer Name and Policy Number	Inception Date D / M / Y	Expiry Date D / M / Y	Limits of Liability		
				Per Occurrence	Annual General Aggregate	Completed Operations Aggregate
Commercial General Liability				\$	\$	\$
Umbrella/Excess Liability				\$	\$	\$
				\$		
				\$		Aggregate \$
				\$		
				\$		Aggregate \$
				\$		

I certify that the above policies were issued by insurers in the course of their Insurance business in Canada, are currently in force and include the applicable insurance coverage's stated on page 2 of this Certificate of Insurance, including advance notice of cancellation / reduction in coverage.

Name of person authorized to sign on behalf of Insurer(s) (Officer, Agent, Broker)

Telephone number

Signature

Date D / M / Y

CERTIFICATE OF INSURANCE Page 2 of 2

General

The insurance policies required on page 1 of the Certificate of Insurance must be in force and must include the insurance coverage listed under the corresponding type of insurance on this page.

The policies must insure the Contractor and must include Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services as an additional Insured.

The insurance policies must be endorsed to provide Canada with not less than thirty (30) days notice in writing in advance of a cancellation of insurance or any reduction in coverage.

Without increasing the limit of liability, the policies must protect all insured parties to the full extent of coverage provided. Further, the policies must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

Commercial General Liability

The insurance coverage provided must not be substantially less than that provided by the latest edition of IBC Form 2100.

The policy must either include or be endorsed to include coverage for the following exposures or hazards if the Work is subject thereto:

- (a) Blasting.
- (b) Pile driving and caisson work.
- (c) Underpinning.
- (d) Removal or weakening of support of any structure or land whether such support be natural or otherwise if the work is performed by the insured contractor.

The policy must have the following minimum limits:

- (a) **\$5,000,000** Each Occurrence Limit;
- (b) **\$10,000,000** General Aggregate Limit per policy year if the policy contains a General Aggregate; and
- (c) **\$5,000,000** Products/Completed Operations Aggregate Limit.

Umbrella or excess liability insurance may be used to achieve the required limits.