

**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
**Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada**  
**800 Burrard Street, Room 219**  
**800, rue Burrard, pièce 219**  
**Vancouver**  
**British Columbia**  
**V6Z 0B9**  
**Bid Fax: (604) 775-9381**

**INVITATION TO TENDER**  
**APPEL D'OFFRES**

**Tender To: Public Works and Government Services  
Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Soumission aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**  
PSAB

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

**Issuing Office - Bureau de distribution**  
Public Works and Government Services Canada -  
Pacific Region  
800 Burrard Street, Room 219  
800, rue Burrard, pièce 219  
Vancouver  
British C  
V6Z 0B9

<b>Title - Sujet</b> Lower Post Demolition & Remediation	
<b>Solicitation No. - N° de l'invitation</b> EZ897-150824/A	<b>Date</b> 2014-08-14
<b>Client Reference No. - N° de référence du client</b>	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$PWY-026-7301
<b>File No. - N° de dossier</b> PWY-4-37109 (026)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2014-08-29</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Pacific Daylight Saving Time PDT	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Liu (PWY), Patty	<b>Buyer Id - Id de l'acheteur</b> pwy026
<b>Telephone No. - N° de téléphone</b> (604) 775-6227 ( )	<b>FAX No. - N° de FAX</b> (604) 775-6633
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> PWGSC - Lower Post, BC	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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## INVITATION TO TENDER

### IMPORTANT NOTICE TO BIDDERS

**This procurement has been set aside under the federal government's Procurement Strategy for Aboriginal Business (PSAB). In order to be considered, a supplier must certify that it qualifies as an Aboriginal business as defined under PSAB and that it will comply with all requirements of PSAB.**

### SUPPORT THE USE OF APPRENTICES

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 SI11.

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### **R2710T GENERAL INSTRUCTIONS - CONSTRUCTION SERVICES – BID SECURITY REQUIREMENTS (GI) (2014-06-26)**

The following GI's are included by reference and are available at the following Web Site <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

- GI01 Integrity Provisions - Bid
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## SPECIAL INSTRUCTIONS TO BIDDERS (SI)

### SI01 INTEGRITY PROVISIONS - ASSOCIATED INFORMATION

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in GI01 of Integrity Provisions - Bid of General Instructions – Construction Services – Bid Security Requirements, R2710T. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

### SI02 BID DOCUMENTS

1. The following are the bid documents:
  - a. Invitation to Tender - Page 1;
  - b. Special Instructions to Bidders;
  - c. General Instructions - Construction Services - Bid Security Requirements R2710T (2014-06-26)
  - d. Clauses & Conditions identified in "Contract Documents";
  - e. Drawings and Specifications;
  - f. Bid and Acceptance Form and related Appendix(s); and
  - g. Any amendment issued prior to solicitation closing.

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

2. General Instructions - Construction Services - Bid Security Requirements R2710T is incorporated by reference and is 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>

### SI03 ENQUIRIES DURING THE SOLICITATION PERIOD

1. Enquiries regarding this bid must be submitted in writing to the Contracting Officer named on the Invitation to Tender - Page 1 as early as possible within the solicitation period. Except for the approval of alternative materials as described in GI15 of R2710T, enquiries should be received no later than five (5) calendar days prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may not result in an answer being provided.
2. To ensure consistency and quality of the information provided to Bidders, the Contracting Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.
3. All enquiries and other communications related to this bid sent throughout the solicitation period are to be directed ONLY to the Contracting Officer named on the Invitation to Tender - Page 1. Failure to comply with this requirement may result in the bid being declared non-responsive.

### SI04 MANDATORY SITE VISIT

There will be a site visit on August 21, 2014 at 1:00pm. Bidders must check in at the front office upon arrival at Lower Post. Directions: Traveling southeast, approx. 22km from Watson Lake turn right at the Daylu Dena Council's sign posted on the right side of the highway. Travel along this road until the first left. You will see a wooden structure with flags and a Band office.

The site visit for this project is MANDATORY. The representative of the bidder will be required to sign the Site Visit Attendance Sheet at the site visit. Bids submitted by **Bidders who have not signed the attendance sheet will not be accepted.**

Interested bidders are requested to provide their name(s) and company name(s) to Patty Liu at [Patty.Liu@pwgsc.gc.ca](mailto:Patty.Liu@pwgsc.gc.ca) **no later than 24 hours** prior to the site visit.

### SI05 REVISION OF BID

A bid may be revised by letter or facsimile in accordance with GI10 of R2710T. The facsimile number for receipt of revisions is (604) 775-9831.

#### **SI06 BID RESULTS**

1. A public bid opening will be held in the office designated on the Front Page "Invitation to Tender" for the receipt of bids shortly after the time set for solicitation closing.
2. Following solicitation closing, bid results may be obtained by calling no. (604) 775-9384.

#### **SI07 INSUFFICIENT FUNDING**

In the event that the lowest compliant bid exceeds the amount of funding allocated for the Work, Canada in its sole discretion may

- a. cancel the solicitation; or
- b. obtain additional funding and award the Contract to the Bidder submitting the lowest compliant bid; and/or
- c. negotiate a reduction in the bid price and/or scope of work of not more than 15% with the Bidder submitting the lowest compliant bid. Should an agreement satisfactory to Canada not be reached, Canada shall exercise option (a) or (b).

#### **SI08 BID VALIDITY PERIOD**

1. Canada reserves the right to seek an extension to the bid validity period prescribed in BA04 of the Bid and Acceptance Form. Upon notification in writing from Canada, Bidders shall have the option to either accept or reject the proposed extension.
2. If the extension referred to in paragraph 1. of SI08 is accepted, in writing, by all those who submitted bids, then Canada shall continue immediately with the evaluation of the bids and its approvals processes.
3. If the extension referred to in paragraph 1. of SI08 is not accepted in writing by all those who submitted bids then Canada shall, at its sole discretion, either
  - a. continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or
  - b. cancel the invitation to tender.
4. The provisions expressed herein do not in any manner limit Canada's rights in law or under GI11 of R2710T.

#### **SI09 CONSTRUCTION DOCUMENTS**

The successful Contractor will be provided with one paper copy of the sealed and signed drawings, the specifications and the amendments upon acceptance of the offer. Additional copies, up to a maximum of two (2), will be provided free of charge upon request by the Contractor. Obtaining more copies shall be the responsibility of the Contractor including costs.

#### **SI10 PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND DEFENCE CONSTRUCTION CANADA APPRENTICE PROCUREMENT INITIATIVE**

1. 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.
2. 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.

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3. 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](http://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.
  4. Signed certifications (Appendix 5) 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.
  5. 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<sup>1</sup> 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 5.

If you accept fill out and sign Appendix 5.

<sup>1</sup> The journey-person-apprentice ratio is defined as the number of qualified/certified journey-persons 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.

## **SI11 PROCUREMENT STRATEGY FOR ABORIGINAL BUSINESS**

1. This procurement has been set aside under the federal government's Procurement Strategy for Aboriginal Business (PSAB). In order to be considered, a supplier must certify that it qualifies as an Aboriginal business as defined under Requirements for the Set-aside Program for Aboriginal Business and attached as Appendix 1 to the Bid and Acceptance Form.
2. By executing the certification, the Bidder warrants that it is an Aboriginal business as defined in the Set-aside Program for Aboriginal Business.

**Failure to provide this certification completed with the bid will render the bid non-responsive.**

## **3. OWNER/EMPLOYEE CERTIFICATION - SET-ASIDE FOR ABORIGINAL BUSINESS**

1. For each procurement under the PSAB, suppliers will be required to provide, with their bid, a certification stating that they meet the definition of an Aboriginal business, according to the definition provided, on the date that the bid/offer/arrangement was submitted, and an undertaking that the business will continue to meet this definition throughout the life of the contract. Refer to the attached as Appendix 1 to the Bid and Acceptance Form.
  2. Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after contract award. The Contracting Authority will have the right to ask for additional information to verify bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.
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**4. SET-ASIDE UNDER THE PROCUREMENT STRATEGY FOR ABORIGINAL BUSINESS (A3002T) 2014-06-26**

This procurement is set aside under the federal government's Procurement Strategy for Aboriginal Business, as detailed in Annex 9.4 Requirements for the Set-aside Program for Aboriginal Business, of the Supply Manual.

Further to Article 1802 of the Agreement on Internal Trade (AIT), AIT does not apply to this procurement.

**SI12 WEB SITES**

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494&section=text#appL>

Buy and Sell <https://www.achatsetventes-buyandsell.gc.ca>

Canadian economic sanctions <http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

Contractor Performance Evaluation Report (Form PWGSC-TPSGC 2913)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913.pdf>

Bid Bond (form PWGSC-TPSGC 504) <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/504.pdf>

Performance Bond (form PWGSC-TPSGC 505) <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/505.pdf>

Labour and Material Payment Bond (form PWGWSC-TPSGC 506)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/506.pdf>

Standard Acquisition Clauses and Conditions (SACC) Manual

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

PWGSC, Industrial Security Services <http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>

PWGSC, Code of Conduct and Certifications

<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/index-eng.html>

PWGSC Consent to a Criminal Record Verification (PWGSC-TPSGC 229)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/229.pdf>

Construction and Consultant Services Contract Administration Forms Real Property Contracting

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>

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## SUPPLEMENTARY CONDITIONS (SC)

### SC01 INSURANCE TERMS

- 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.
  - (b) The Contractor must be responsible to provide and maintain coverage for Products/Completed Operations hazards on its Commercial General Liability insurance policy, for a period of six (6) years beyond the date of the Certificate of Substantial Performance.
- 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.

### SC2 ABORIGINAL BUSINESS CERTIFICATION (A3000C) 2011-05-16

1. The Contractor warrants that its certification of compliance is accurate and complete and in accordance with the "Requirements for the Set-aside Program for Aboriginal Business" detailed in Annex 9.4 of the Supply Manual.
2. The Contractor must keep proper records and documentation relating to the accuracy of the certification provided to Canada. The Contractor must obtain the written consent of the Contracting Authority before disposing of any such records or documentation before the expiration of six (6) years after final payment under the Contract, or until settlement of all outstanding claims and disputes, under the Contract, whichever is later. All such records and documentation must at all times during the retention period be open to audit by the representatives of Canada, who may make copies and take extracts. The Contractor must provide all reasonably required facilities for any audits.
3. Nothing in this clause must be interpreted as limiting the rights and remedies which Canada may otherwise have pursuant to the Contract.

## CONTRACT DOCUMENTS (CD)

1. The following are the contract documents:
  - a. Contract Page when signed by Canada;
  - b. Duly completed Bid and Acceptance Form and any Appendices attached thereto;
  - c. Drawings and Specifications;
  - d. General Conditions and clauses
 

GC1 General Provisions – Construction Services	R2810D	(2014-06-26);
GC2 Administration of the Contract	R2820D	(2014-06-26);
GC3 Execution and Control of the Work	R2830D	(2014-03-01);
GC4 Protective Measures	R2840D	(2008-05-12);
GC5 Terms of Payment	R2850D	(2014-06-26);
GC6 Delays and Changes in the Work	R2860D	(2013-04-25);
GC7 Default, Suspension or Termination of Contract	R2870D	(2008-05-12);
GC8 Dispute Resolution	R2880D	(2012-07-16);
GC9 Contract Security	R2890D	(2014-06-26);
GC10 Insurance	R2900D	(2008-05-12);
Allowable Costs for Contract Changes Under GC6.4.1	R2950D	(2014-06-26);
Supplementary Conditions		
  - e. Any amendment issued or any allowable bid revision received before the date and time set for solicitation
  - 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 above 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>
3. The language of the contract documents is the language of the Bid and Acceptance Form submitted.

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## BID AND ACCEPTANCE FORM (BA)

This procurement has been set aside under the federal government's Procurement Strategy for Aboriginal Business (PSAB). In order to be considered, a supplier must certify that it qualifies as an Aboriginal business as defined under PSAB and that it will comply with all requirements of PSAB.

### BA01 IDENTIFICATION

Lower Post Demolition and Remediation Project  
Lower Post, BC

### BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ PBN: \_\_\_\_\_

### BA03 THE OFFER

The Bidder offers to Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the **TOTAL BID AMOUNT INDICATED IN APPENDIX 2.**

### BA04 BID VALIDITY PERIOD

The bid shall not be withdrawn for a period of thirty [30] days following the date of solicitation closing.

### BA05 ACCEPTANCE AND CONTRACT

Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents identified in Contract Documents (CD).

### BA06 CONSTRUCTION TIME

Work to be initiated within 10 days of Contract Award. Site work to be completed by November 1, 2014. Post Construction Submittals and As-Builts are to be finalized by December 1, 2014.

### BA07 BID SECURITY

The Bidder is enclosing bid security with its bid in accordance with GI08 - Bid Security Requirements of R2710T - General Instructions - Construction Services - Bid Security Requirements.

### BA08 SIGNATURE

\_\_\_\_\_  
Name and title of person authorized to sign on behalf of Bidder (Type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## APPENDIX 1 - SET-ASIDE PROGRAM FOR ABORIGINAL BUSINESS

### Requirements for the Set-aside Program for Aboriginal Business (Annex 9.4 of the Supply Policy Manual) – 2014-07-31)

#### 1. Who is eligible?

- a. An Aboriginal business, which can be:
  - i. a band as defined by the Indian Act
  - ii. a sole proprietorship
  - iii. a limited company
  - iv. a co-operative
  - v. a partnership
  - vi. a not-for-profit organization

in which Aboriginal persons have at least 51 percent ownership and control,

OR

- b. A joint venture consisting of two or more Aboriginal businesses or an Aboriginal business and a non-Aboriginal business(es), provided that the Aboriginal business(es) has at least 51 percent ownership and control of the joint venture.

When an Aboriginal business has six or more full-time employees at the date of submitting the bid, at least thirty-three percent of them must be Aboriginal persons, and this ratio must be maintained throughout the duration of the contract.

The supplier must certify in its submitted bid that it is an Aboriginal business or a joint venture constituted as described above.

#### 2. Are there any other requirements attached to suppliers in the Set-Aside Program for Aboriginal Business?

Yes

- a. In respect of a contract, (goods, service or construction), on which a supplier is making a proposal which involves subcontracting, the supplier must certify in its bid that at least thirty-three percent of the value of the work performed under the contract will be performed by an Aboriginal business. Value of the work performed is considered to be the total value of the contract less any materials directly purchased by the contractor for the performance of the contract. Therefore, the supplier must notify and, where applicable, bind the subcontractor in writing with respect to the requirements that the Aboriginal Set-Aside Program (the Program) may impose on the subcontractor or subcontractors.
- b. The supplier's contract with a subcontractor must also, where applicable, include a provision in which the subcontractor agrees to provide the supplier with information, substantiating its compliance with the Program, and authorize the supplier to have an audit performed by Canada to examine the subcontractor's records to verify the information provided. Failure by the supplier to exact or enforce such a provision will be deemed to be a breach of contract and subject to the civil consequences referred to in this document.
- c. As part of its bid, the supplier must complete the Certification of Requirements for the Set-Aside Program for Aboriginal Business(certification) stating that it:
  - i. meets the requirements for the Program and will continue to do so throughout the duration of the contract;
  - ii. will, upon request, provide evidence that it meets the eligibility criteria;
  - iii. is willing to be audited regarding the certification; and
  - iv. acknowledges that if it is found NOT to meet the eligibility criteria, the supplier shall be subject to one or more of the civil consequences set out in the certification and the contract.

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See Standard Acquisition Clauses and Conditions (SACC) Manual clause [A3000T](#).

### 3. How must the business prove that it meets the requirements?

- a. It is not necessary to provide evidence of eligibility at the time the bid is submitted. However, the business should have evidence of eligibility ready in case it is audited.
- b. The civil consequences of making an untrue statement in the bid documents, or of not complying with the requirements of the Program or failing to produce satisfactory evidence to Canada regarding the requirements of the Program, may include: forfeiture of the bid deposit; retention of the holdback; disqualification of the business from participating in future contracts under the program; and/or termination of the contract. In the event that the contract is terminated because of an untrue statement or non-compliance with the requirements of the Program, Canada may engage another contractor to complete the performance of the contract and any additional costs incurred by Canada shall, upon the request of Canada, be borne by the business.

### 4. What evidence may be required from the business?

- a. Ownership and control
  - i. Evidence of ownership and control of an Aboriginal business or joint venture may include incorporation documents, shareholders' or members' register; partnership agreements; joint venture agreements; business name registration; banking arrangements; governance documents; minutes of meetings of Board of Directors and Management Committees; or other legal documents.
  - ii. Ownership of an Aboriginal business refers to "beneficial ownership" i.e., who is the real owner of the business. Canada may consider a variety of factors to satisfy whether Aboriginal persons have true and effective control of an Aboriginal business. (See [Appendix A Set-aside Program for Aboriginal Business](#) for a list of the factors, which may be considered by Canada.)
- b. Employment and employees
  - i. Where an Aboriginal business has six or more full-time employees at the date of submitting the certification and is required by Canada to substantiate that at least 33 percent of the full-time employees are Aboriginal, the business must, upon request by Canada, immediately provide a completed Owner/Employee Certification form for each full-time employee who is Aboriginal. See SACC Manual clause [A3001T](#).
  - ii. Evidence as to whether an employee is or is not full-time and evidence as to the number of full-time employees may include payroll records, written offers for employment, and remittance and payroll information maintained for Canada Revenue Agency purposes as well as information related to pension and other benefit plans.
  - iii. A full-time employee, for the purpose of this program, is one who is on the payroll, is entitled to all benefits that other full-time employees of the business receive, such as pension plan, vacation pay and sick leave allowance, and works at least 30 hours a week. It is the number of full-time employees on the payroll of the business at the date of bid submission that determines the ratio of Aboriginal to total employees of the business for the purpose of establishing eligibility under the Program.
  - iv. Owners who are Aboriginal and full-time employees who are Aboriginal must be ready to provide evidence in support of such status. The Owner/Employee Certification to be completed by each owner and full-time employee who is Aboriginal shall state that the person meets the eligibility criteria and that the information supplied is true and complete. This certification shall provide the person's consent to the verification of the information submitted.

### 5. Subcontracts

- a. Evidence of the proportion of work done by subcontractors may include contracts between the contractor and subcontractors, invoices, and paid cheques.
- b. Evidence that a subcontractor is an Aboriginal business (where this is required to meet the minimum Aboriginal content of the contract) is the same as evidence that a prime contractor is an Aboriginal business.

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**6. Who is an Aboriginal Person for Purposes of the Set-Aside Program for Aboriginal Business?**

- a. An Aboriginal person is an Indian, Metis or Inuit who is ordinarily resident in Canada.
- b. Evidence of being an Aboriginal person will consist of such proof as:
  - i. Indian registration in Canada;
  - ii. membership in an affiliate of the Metis National Council or the Congress of Aboriginal Peoples, or other recognized Aboriginal organizations in Canada;
  - iii. acceptance as an Aboriginal person by an established Aboriginal community in Canada;
  - iv. enrollment or entitlement to be enrolled pursuant to a comprehensive land claim agreement;
  - v. membership or entitlement to membership in a group with an accepted comprehensive claim;
  - vi. evidence of being resident in Canada includes a provincial or territorial driver's license, a lease or other appropriate document.

**Annex A to Appendix 1: Set-aside Program for Aboriginal Business**

(Excerpt from Treasury Board Contracting Policy Notice 1996-6, Annex A.)

Factors that may be considered in determining whether Aboriginal persons have at least 51% ownership and control of an Aboriginal business include:

- a. capital stock and equity accounts, i.e., preferred stock, convertible securities, classes of common stock, warrants, options;
- b. dividend policy and payments;
- c. existence of stock options to employees;
- d. different treatment of equity transactions for corporations, partnerships, joint ventures, community organizations, cooperatives, etc.;
- e. examination of charter documents, i.e., corporate charter, partnership agreement, financial structure;
- f. concentration of ownership or managerial control in partners, stockholders, officers trustees and directors-based definition of duties;
- g. principal occupations and employer of the officers and directors to determine who they represent, i.e., banker, vested ownerships;
- h. minutes of directors meetings and stockholders meetings for significant decisions that affect operations and direction;
- i. executive and employee compensation records for indication of level of efforts associated with position;
- j. nature of the business in comparison with the type of contract being negotiated;
- k. cash management practices, i.e., payment of dividends - preferred dividends in arrears;
- l. tax returns to identify ownership and business history;
- m. goodwill contribution/contributed asset valuation to examine and ascertain the fair market value of non-cash capital contributions;
- n. contracts with owners, officers and employees to be fair and reasonable;
- o. stockholder authority, i.e., appointments of officers, directors, auditors;
- p. trust agreements made between parties to influence ownership and control decisions;

- 
- q. partnership - allocation and distribution of net income, i.e., provision for salaries, interest on capital and distribution share ratios;
  - r. litigation proceedings over ownership;
  - s. transfer pricing from non-Aboriginal joint venture;
  - t. payment of management or administrative fees;
  - u. guarantees made by the Aboriginal business;
  - v. collateral agreements.

### **SET-ASIDE FOR ABORIGINAL BUSINESS (A3000T) 2010-08-16**

1. This procurement is set aside under the federal government's Procurement Strategy for Aboriginal Business, as detailed in Annex 9.4, Requirements for the Set-aside Program for Aboriginal Business, of the Supply Manual.
2. The Bidder:
  - (i) certifies that it meets, and will continue to meet throughout the duration of any resulting contract, the requirements described in the above-mentioned annex;
  - (ii) agrees that any subcontractor it engages under any resulting contract must satisfy the requirements described in the above-mentioned annex; and
  - (iii) agrees to provide to Canada, immediately upon request, evidence supporting any subcontractor's compliance with the requirements described in the above-mentioned annex.
3. The Bidder must check the applicable box below:
  - (i) (    ) The Bidder is an Aboriginal business that is a sole proprietorship, band, limited company, co-operative, partnership or not-for-profit organization.  
OR
  - (ii) (    ) The Bidder is either a joint venture consisting of two or more Aboriginal businesses or a joint venture between an Aboriginal business and a non-Aboriginal business.
4. The Bidder must check the applicable box below:
  - (i) (    ) The Aboriginal business has fewer than six full-time employees.  
  
OR
  - (ii) (    ) The Aboriginal business has six or more full-time employees.
5. The Bidder must, upon request by Canada, provide all information and evidence supporting this certification. The Bidder must ensure that this evidence will be available for audit during normal business hours by a representative of Canada, who may make copies and take extracts from the evidence. The Bidder must provide all reasonably required facilities for any audits.
6. By submitting a bid, the Bidder certifies that the information submitted by the Bidder in response to the above requirements is accurate and complete.



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**Owner/Employee Certification - Set-aside for Aboriginal Business (A3001T) 2011-05-16**

If requested by the Contracting Authority, the Bidder must provide the following certification for each owner and employee who is Aboriginal:

1. I am \_\_\_\_\_ (insert "an owner" and/or "a full-time employee") of

\_\_\_\_\_ (insert name of business), and an Aboriginal person, as defined in Annex 9.4 of the Supply Manual entitled "Requirements for the Set-aside Program for Aboriginal Business".

2. I certify that the above statement is true and consent to its verification upon request by Canada.

\_\_\_\_\_  
Printed name of owner and/or employee

\_\_\_\_\_  
Signature of owner and/or employee

\_\_\_\_\_  
Date

## APPENDIX 2 - COMBINED PRICE FORM

- 1) The prices per unit shall govern in establishing the Total Extended Amount. Any arithmetical errors in this Appendix will be corrected by Canada.
- 2) Canada may reject the bid if any of the prices submitted do not reasonably reflect the cost of performing the part of the work to which that price applies.

### UNIT PRICE TABLE

The Unit Price Table designates Work to which a Unit Price Arrangement applies.

- (a) Work included in each item is as described in the referenced specification section.
- (b) The Price per Unit shall not include any amounts for Work that is not included in that unit price item.

Item	Description of Work	Unit	Estimated Quantity	Unit Price (Excluding Applicable Extra)	Total Price (Excluding Applicable Taxes)
<b>SOIL REMEDIATION GENERAL CONSTRUCTION</b>					
1	<b>Mobilization</b> - Mobilizing of all necessary equipment, materials, supplies, facilities, and personnel to Site. Includes pre-mobilization submittals, insurance, bonding, and permits.	Lump Sum	1		
2	<b>Demobilization</b> - Demobilizing all equipment, materials, supplies, facilities, and personnel from the Site, decontaminating all equipment prior to removal from Site and preparing Site for closure.	Lump Sum	1		
3	<b>Site Facilities Provision</b> - Provide, design, and erect all infrastructures, including temporary structures and facilities, sanitary facilities, roadways, security, and services.	Lump Sum	1		
4	<b>Site Facilities Operation</b> - Time to operate and maintain all infrastructures, including temporary structures and facilities, sanitary facilities, roadways, security, and services. Includes meetings, traffic control, health and safety, environmental protection, and cleaning. Includes living out allowances, including travel, room and board.	Day	35		
5	<b>Dewatering Equipment Provision</b> Provide all pumps, hoses, lines and 5,000L tank as necessary to dewater the excavation and store wastewater for disposal.	Lump Sum	1		
6	<b>Dewatering Equipment Operation</b> Volume of wastewater collected during dewatering. This item also includes storage, transport and disposal of the collected water to a permitted offsite Disposal Facility. There will be no separate payment for standby time.	Litre	5000		
7	<b>Site Fencing</b> - Provide, erect, maintain, and demobilize materials and supplies	Lineal m	500		
8	<b>Standby</b> - Cost to cover all personnel and equipment if work is unable to proceed due to non-specified delays caused solely by the Departmental Representative. Reviews, sampling, or other work conducted by Departmental Representative which have a time duration identified will not result in an increase in either the Contract price or the Contract time.	Day	1		

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9	<b>Site Preparation</b> - Prepare the Site for planned construction works, including clearing and grubbing, and utility location, rerouting, and protection. Includes removal of any incidental or generated material.	Lump Sum	1		
10	<b>Site Closure</b> - Restore the Site to make suitable for post-remediation use. Includes Removal of any incidental or generated material.	Lump Sum	1		
11	<b>Post Construction Submittals and As Built</b> – Cost to Prepare and Submit documents and As Built Drawings in accordance with the specifications.	Lump Sum	1		
<b>HAZARDOUS MATERIAL ABATEMENT AND DEMOLITION</b>					
12	<b>Material and Equipment Provision</b> – Provide all materials and equipment necessary to remove, handle and dispose the lead and asbestos containing materials specified.	Lump Sum	1		
13	<b>Hazmat Abatement</b> – Abate lead and asbestos containing materials and prepare for disposal.	Square Meter	360		
14	<b>Transport and Disposal: Lead and Asbestos Containing Material</b> - Transport includes loading, hauling, and unloading for all material transported from Site. Weight identified at receiving offsite facility and approved by Department Representative.	Tonne	8.8		
15	<b>Demolition</b> - Demolish the Northern Two Storey House and dispose all building materials and associated M & E equipment and Utility services	Lump Sum	1		
<b>EXCAVATION, TRENCHING AND BACKFILL</b>					
16	<b>Excavation</b> - In-situ volume removed as determined by the Department Representative. Excavation includes onsite transport and stockpiling. Volumes may be tracked using truck counts or other method acceptable to Departmental Representative.	Cubic Meter	8811		
17	<b>Backfilling - Non Contaminated Overburden Soil</b> - Compacted, graded volume emplaced as determined by Department Representative. Backfilling includes placing, grading and compacting.	Cubic Meter	8089		
18	<b>Backfilling - Imported Fill</b> - Compacted, graded volume emplaced as determined by Department Representative. Backfilling includes placing, grading and compacting.	Cubic Metre	1096		
19	<b>Access Road Reinstatement</b> - Surface area restored as surveyed by Contractor's Surveyor and as necessary to reinstate any part of the access road removed as part of the remedial excavation. Includes reinstatement to applicable BC Ministry of Transport Standard Specifications for Highway Construction and the Subdivision Roads Specifications. Includes costs for inspection of road construction.	Square Meter	156		
20	<b>Restoration</b> - Surface area restored as surveyed by Contractor's Surveyor. Includes re-vegetation of disturbed areas, including excavated area and stockpile area, with fertilizer and seed mixture appropriate for location.	Square Meter	2704		

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21	<b>Transport: Treatable Hazardous Waste -</b> Weight identified at receiving offsite facility and approved by Departmental Representative. Transport includes loading, hauling, and unloading for all material transported from excavation area	Tonne	10		
22	<b>Treatment &amp; Disposal: Treatable Hazardous Waste -</b> Weight identified at receiving offsite facility and approved by Department Representative.	Tonne	10		
23	<b>Transport: Treatable Non-Hazardous Waste</b> Weight identified at receiving offsite facility and approved by Departmental Representative. Transport includes loading, hauling, and unloading for all material transported from Site.	Tonne	1444		
24	<b>Treatment &amp; Disposal: Treatable Non-Hazardous Waste</b> –Weight identified at receiving offsite facility and approved by Department Representative	Tonne	1444		
25	<b>Transport and Disposal – Nontreatable Metals -</b> Disposal at an appropriate offsite Facility.	Tonne	10		
26	<b>Non-Contaminated Waste Removal and Disposal</b>	Tonne	10		
	<b>Total Bid Amount (Excluding Applicable Taxes)</b>				

Note all other requirements noted in the specifications and drawings are to be built into the Unit Prices as shown

**WRITE DIRECTORS' AND/OR OWNERS' SURNAMES AND GIVEN NAMES**

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## **APPENDIX 4 – CERTIFICATE OF INSURANCE (ATTACHED)**

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## APPENDIX 5 - VOLUNTARY CERTIFICATION TO SUPPORT THE USE OF APPRENTICES

*Note: The Contractor will be asked to fill out a report every six months as included as Annex A*

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:

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

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## **ANNEX A - VOLUNTARY REPORT FOR APPRENTICES EMPLOYED DURING THE CONTRACT**

**(Sample)** *(This report is not required at bid deposit)*

The Contractor should compile and maintain records on the number of apprentices and their trade that were hired to work on the contract.

The Contractor should provide this data in accordance with the format below. If no apprentices were hired during the contract period, the Contractor should still provide a "nil" report.

The data should be submitted six months after the Contract award or at the end of the Contract, whichever comes first to the Contracting Authority.

<b>Number of apprentices hired</b>	<b>Trade</b>

(Add rows as needed)





**Public Works and  
Government Services Canada**

Requisition No. EZ987-150824

MERX I.D. No. \_\_\_\_\_

**SPECIFICATIONS**

For

**AANDC Lower Post Demolition and Remediation Project  
Lower Post, BC.**

Project No. R.071841.001

**APPROVED BY:**

  
Regional Manager  
Environmental Services

2014/08/13  
Date

  
Regional Construction Safety Coordinator

2014-08-01  
Date

**TENDER:**

  
Project Manager

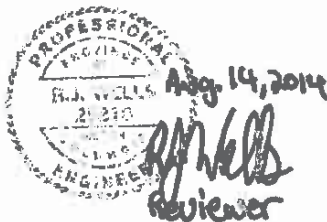
2014-08-13  
Date

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01 31 19 Project Meetings	2
01 33 00 Submittal Procedures	3
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A1-02 Northern Two Storey House Photos	
00069-02-IT-A3-01 Site Location	
00069-02-IT-A3-02 Site Plan	
00069-02-IT-A3-03 2013 Soil Analytical Results	
00069-02-IT-A3-04 Aerial Extent of Contamination	
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## **1. PART 1 - GENERAL**

### **1.1. Measurement Procedures**

1.1.1. Not Used

### **1.2. Action and Informational Submittals**

1.2.1. Not Used

### **1.3. Definitions**

- 1.3.1. Contaminated Waste: material where substances occur at concentrations that: (1) are above background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment, or (2) exceed the levels specified in policies and regulations. Includes Hazardous Waste and Non-Hazardous Waste; does not include Non-Contaminated Waste. Relevant regulations, unless otherwise indicated or as determined by Departmental Representative, include:
- 1.3.1.1. For all sites: Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines and CCME Canada-Wide Standards.
- 1.3.1.2. For sites in BC: BC Hazardous Waste Regulations, BC Contaminated Sites Regulation.
- 1.3.1.3. For sites in Yukon: YT Special Waste Regulation, YT Contaminated Sites Regulation.
- 1.3.2. Disposal Facility: an existing offsite facility located in Canada where waste is placed in or on land and that is designed, constructed and operated to prevent any pollution from being caused by the facility outside the area of the facility. The facility must hold a valid and subsisting permit, certificate, approval, or any other form of authorization issued by a province or territory for the disposal of soil or other material that is Waste Quality. Waste Quality means soil or other material that is not suitable for industrial, commercial, urban park, residential, agricultural, wildlands or any other land use specified in the BC Contaminated Sites Regulation.
- 1.3.3. Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- 1.3.4. Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; vibrations; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
- 1.3.5. Environmental Protection Plan: plan developed by the Contractor identifying all environmental risks and mitigation measures, including: personnel requirements, emergency contacts, environmental protection methods, procedures, and equipment, and emergency response including a Spill Control Plan.
- 1.3.6. Hazardous Waste: Contaminated Waste which meets the regulatory definition of Hazardous Waste. Includes:
- 1.3.6.1. Hazardous Waste – Treatable: Hazardous Waste which contains only contaminants which are amenable to treatment.
- 1.3.6.2. Hazardous Waste – Nontreatable: Hazardous Waste which contains only contaminants which are not amenable to treatment.
- 1.3.6.3. Hazardous Waste – Comingled: Hazardous Waste which contains some contaminants which are amenable to treatment and some that are not.
- 1.3.7. Land Farming: a method of reducing the concentrations of hydrocarbon constituents in soil through biodegradation, characterized by spreading contaminated soil over a large surface area in the absence of engineered structures designed to contain the contamination. No active remediation (eg tilling) is required for Land Farming.
- 1.3.8. Landfill: an existing offsite facility located in Canada where waste is placed in or on land and that is designed, constructed and operated to prevent any pollution from being caused by the facility outside the area of the facility. The facility must hold a valid and subsisting permit, certificate, approval, or any other form of authorization issued by a province or territory for the disposal of waste.

- 1.3.9. Materials Source Separation Program (MSSP): consists of a series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- 1.3.10. Non-Contaminated Waste: waste which is not Contaminated Waste. Includes cleared and grubbed vegetation, litter, rubbish, debris, excess construction material, lumber, steel, plastic, concrete, asphalt, and wastewater not treated onsite. Includes surplus or unsuitable material such as topsoil or excavated non-contaminated soil, which cannot be reused onsite.
- 1.3.11. Non-Hazardous Waste: Contaminated Waste which does not meet the regulatory definition of Hazardous Waste. Includes:
  - 1.3.11.1. Non-Hazardous Waste – Treatable: Non-Hazardous Waste which contains only contaminants which are amenable to treatment.
  - 1.3.11.2. Non-Hazardous Waste – Nontreatable: Non-Hazardous Waste which contains only contaminants which are not amenable to treatment.
  - 1.3.11.3. Non-Hazardous Waste – Comingled: Non-Hazardous Waste which contains some contaminants which are amenable to treatment and some that are not.
- 1.3.12. Relocation: consists of excavating, loading, transporting, unloading, and placing soil or other material from one place on the Site to another.
- 1.3.13. Removal: consists of collecting, loading, transporting, unloading, and disposal of Non-Contaminated Waste at a Landfill. As determined by Departmental Representative, also includes: reuse onsite rather than disposal, recycling instead of disposal, and treatment in addition to disposal.
- 1.3.14. Site: area identified on Drawings.
- 1.3.15. Soil Treatment Facility (STF): an onsite engineered structure designed to contain hydrocarbon contaminated soil while reducing concentrations of hydrocarbon constituents through biodegradation. Examples of soil treatment facilities include biocells, biopiles and windrows but do not include Land Farms. Includes berms, ditches, and filters to contain contaminants.
- 1.3.16. Treatment Facility: an existing offsite facility located in Canada designed, constructed and operated for the handling or processing of waste in such a manner as to change the physical, chemical or biological character or composition of the waste. The facility must hold a valid and subsisting permit, certificate, approval, or any other form of authorization issued by a province or territory for the treatment of soil or other material that is Waste Quality. Waste Quality means soil or other material that is not suitable for industrial, commercial, urban park, residential, agricultural, wildlands or any other land use specified in the BC Contaminated Sites Regulation.
- 1.3.17. Waste Audit (WA): relates to projected waste generation. Involves controlled separation of waste.
- 1.3.18. Waste Reduction Workplan (WRW): a written report which addresses opportunities for reduction, reuse or recycling of materials.

#### **1.4. Work Covered by Contract Documents**

- 1.4.1. Work under this Contract covers Remediation by Excavation at a Former Residential School Complex in Lower Post, BC. The Site is identified in the Drawings. The work is required to remove residual soil contamination left in place during the remedial excavation program in 2013. Following the excavation, a delineation program was undertaken to determine the extent of the residual contamination. One area of soil contamination remains at a depth of greater than 6 m below grade. Removal and appropriate sloping of significant overburden materials will be required to access the non-compliant soil. During the previous excavation the non-compliant soil was located within the water table. Wet excavation techniques will likely be required to successfully remove the non-compliant soil.
- 1.4.2. Demolition of the Northern Two Storey House and dispose all building materials including abatement and disposal of hazardous materials.
- 1.4.3. Remove and terminate all utility services associated with the building removed and restore site with backfill, grading and natural vegetation.
- 1.4.4. Work to be performed under this Contract includes, but is not limited to, the following items covered further in the Contract Documents:
  - 1.4.4.1. Prime Contractor for Health and Safety at Site.
  - 1.4.4.2. All design activities to complete Work.
  - 1.4.4.3. Prepare Site for Work.
  - 1.4.4.4. Mobilization and Demobilization of all equipment personnel and materials
  - 1.4.4.5. Plan excavation

- 1.4.4.6. Excavate non-contaminated overburden soil and stockpile.
- 1.4.4.7. Excavate contaminated soil and stockpile.
- 1.4.4.8. Load, haul, and deposit contaminated soil to be taken offsite to Disposal Facility or Treatment Facility.
- 1.4.4.9. Survey Control and survey of all completed excavations
- 1.4.4.10. Backfill Excavation with non-contaminated overburden soil and imported backfill
- 1.4.4.11. Reinstate disturbed section of Access Road in accordance with BC MoT specifications (see Attachments 2 and 3).
- 1.4.4.12. Restore and close Site.
- 1.4.4.13. All ancillary activities required to complete Work.
- 1.4.5. "Green Requirements":
  - 1.4.5.1. Use only environmentally responsible green materials/products with no Volatile Organic Compounds (VOC) emissions or minimum VOC emissions of indoor off-gassing contaminants for improved indoor air quality – subject of Departmental Representative's approval of submitted Materials Safety Data Sheet (MSDS) Product Data.
  - 1.4.5.2. Use materials/products containing highest percentage of recycled and recovered materials practicable – consistent with maintaining cost effective satisfactory levels of competition.
  - 1.4.5.3. Adhere to waste reduction requirement for reuse or recycling of waste materials, thus diverting materials from landfill.
- 1.4.6. Work not included in Contract comprises such work and services specifically listed as:
  - 1.4.6.1. Not Used.

#### **1.5. Project/Site Conditions**

- 1.5.1. Work at Site will involve contact with contaminated materials including:
  - 1.5.1.1. Hydrocarbons in soils and groundwater
  - 1.5.1.2. Metals, Nitrate and Nitrite in Groundwater
  - 1.5.1.3. Asbestos and Lead in the building to be demolished.
- 1.5.2. Complete list of anticipated contaminants and concentration levels on the Site and hazardous materials in the building are shown on the drawings and appendices.

#### **1.6. Other Contracts**

- 1.6.1. Another contract is currently in progress at Site.
- 1.6.2. Other contract is:
  - 1.6.2.1. Environmental consultant.
- 1.6.3. Further contracts may be awarded while this Contract is in progress.
- 1.6.4. Cooperate with other contractors in carrying out their respective works and carry out instructions from Departmental Representative.
- 1.6.5. Coordinate Work with that of other contractors. If any part of Work under this Contract depends for its proper execution or result upon work of another contractor, report promptly to Departmental Representative, in writing, any defects which may interfere with proper execution of this Work.

#### **1.7. Contractor's Use of Site**

- 1.7.1. Use of Site:
  - 1.7.1.1. Exclusive and complete for execution of Work.
  - 1.7.1.2. Assume responsibility for assigned premises for performance of this Work.
  - 1.7.1.3. Be responsible for coordination of all Work activities onsite, including the work of other contractors engaged by the Departmental Representative.
- 1.7.2. Perform Work in accordance with Contract Documents. Ensure Work is carried out in accordance with indicated phasing.
- 1.7.3. Do not unreasonably encumber Site with material or equipment.

#### **1.8. Time of Completion**

- 1.8.1. Work to be initiated within 10 days of Contract Award. Site work to be completed by November 1, 2014. Post Construction Submittals and As-Builts are to be finalized by December 1, 2014.

**1.9. Hours of Work**

**1.9.1. Restrictive as follows:**

- 1.9.1.1. Normal weekday working hours are 07:00 to 19:00.
- 1.9.1.2. Notify Departmental Representative of all after hours work, including weekends and holidays.

**1.10. Codes, Bylaws, Standards**

- 1.10.1. Perform Work in accordance with the National Building Code of Canada (NBC), and other required or indicated Codes, Construction Standards and/or any other Code or Bylaw of local application.
- 1.10.2. Comply with restrictions of applicable local bylaws, rules and regulations enforced at the location concerned. These include:
  - 1.10.2.1. Pollution, waste, or garbage restrictions.
  - 1.10.2.2. Truck, traffic, and road access restrictions.
  - 1.10.2.3. Water, stormwater, and sewer restrictions.
  - 1.10.2.4. Noise restrictions.
  - 1.10.2.5. Signage, fencing, hoarding restrictions.
  - 1.10.2.6. Fire prevention restrictions.
  - 1.10.2.7. Fuel equipment and storage restrictions.
- 1.10.3. Meet or exceed requirements of Contract Documents, specified standards, codes and referenced documents.
- 1.10.4. In any case of conflict or discrepancy, the most stringent requirements will apply.

**1.11. Security Clearances**

- 1.11.1. Not Used

**2. PART 2 - PRODUCTS**

**2.1. Not Used**

- 2.1.1. Not Used

**3. PART 3 - EXECUTION**

**3.1. Not Used**

- 3.1.1. Not Used

**END OF SECTION**



## **1. PART 1 - GENERAL**

### **1.1. Measurement Procedures**

- 1.1.1. Not Used

### **1.2. Action and Informational Submittals**

- 1.2.1. Not Used

### **1.3. Codes**

- 1.3.1. Perform Work to Current Codes, Construction Standards and Bylaws, including Amendments.

### **1.4. Contract Documents**

- 1.4.1. The Contract Documents, including drawings and specifications, **are** intended to complement each other, and to provide for and include everything necessary for the completion of the Work.
- 1.4.2. Drawings are, in general, diagrammatic and **are** intended to indicate the scope and general arrangement of the Work.

### **1.5. Division of Specifications**

- 1.5.1. The specifications are subdivided in accordance with the current 6-digit National Master Specifications System.
- 1.5.2. A division may consist of the Work of more than 1 subcontractor. Responsibility for determining which subcontractor provides the labour, material, equipment and services required to complete the Work rests solely with the Contractor.

### **1.6. Work Schedule**

- 1.6.1. Carry on Work as per indicated "PHASES" and as follows:
- 1.6.1.1. Within 5 working days after Contract award, provide a "phasing bar chart" and a schedule showing anticipated progress stages and final completion of the Work within the time period required by the Contract Documents. Indicate the following:
- 1.6.1.1.1. Submission of product data and samples.
- 1.6.1.1.2. Commencement and completion of Work of each section of the specifications or trade for each phase as outlined.
- 1.6.1.1.3. Work initiation and final completion date within the time period required by the Contract Documents.
- 1.6.1.2. Do not change accepted Schedule without notifying Departmental Representative.
- 1.6.1.3. Interim reviews of Work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.

### **1.7. Cost Breakdown**

- 1.7.1. Before submitting the first progress claim, submit a breakdown of the Contract lump sum prices in detail as determined by the Departmental Representative and aggregating Contract price.

### **1.8. Documents Required**

- 1.8.1. Maintain 1 copy each of the following posted at the job Site:
- 1.8.1.1. Contract drawings.
- 1.8.1.2. Contract specifications.



- 1.8.1.3. Addenda or other modifications to Contract Documents.
- 1.8.1.4. Change orders.
- 1.8.1.5. Copy of current Work schedule.
- 1.8.1.6. One set of record drawings and specifications for "as-built" purposes.
- 1.8.1.7. Field test reports.
- 1.8.1.8. Reviewed and accepted submissions.
- 1.8.1.9. Manufacturers' installation and application instructions (as appropriate).
- 1.8.1.10. National Building Code of Canada (as appropriate).
- 1.8.1.11. Current construction standards of workmanship listed in technical Sections (as appropriate).
- 1.8.1.12. Health and Safety documents.
- 1.8.1.13. Environmental Protection Plan.
- 1.8.1.14. Permits and other approvals.

### **1.9. Regulatory Requirements**

- 1.9.1. Generally, provincial and municipal laws and regulations do not apply on federal lands or to federal undertakings. Soils and other materials that are removed from federal lands may become subject to provincial or municipal laws and regulations.
- 1.9.2. Provincial or municipal standards may be used in relation to federal lands only as guidelines for the purpose of establishing remediation goals and objectives. The term "standards" is used in this part in order to maintain consistency in terminology throughout this document, and does not imply that standards contained in provincial or municipal laws and regulations apply on federal lands.
- 1.9.3. Obtain and pay for – Building Permit, Certificates, Licenses and other permit enforced at the location concerned required by regulatory municipal, provincial or federal authorities to complete the Work.
- 1.9.4. Provide inspection authorities with plans and information required for issue of acceptance certificates.
- 1.9.5. Furnish inspection certificates in evidence that the Work installed conforms with the requirements of the authority having jurisdiction.

### **1.10. Examination**

- 1.10.1. Examine Site and be familiar and conversant with existing conditions likely to affect Work, including Contaminated Waste.
- 1.10.2. Provide photographs of surrounding properties, objects and structures liable to be damaged or be the subject of subsequent claims.

### **1.11. Existing Services**

- 1.11.1. Where Work involves breaking into or connecting to existing services, carry out Work at times determined by the authorities having jurisdiction.
- 1.11.2. Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- 1.11.3. Provide alternative routes for personnel, pedestrian, and vehicular traffic.
- 1.11.4. Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
- 1.11.5. Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- 1.11.6. Provide temporary services as required to maintain critical building and tenant systems.
- 1.11.7. Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.

- 1.11.8. Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- 1.11.9. Construct barriers as required for safety.

**1.12. Setting out of Work**

- 1.12.1. Assume full responsibility for and execute complete layout of Work to locations, lines and elevations indicated.
- 1.12.2. Provide devices needed to lay out and construct Work.
- 1.12.3. Supply such devices as templates required to facilitate Departmental Representative's inspection of Work.

**1.13. Acceptance of Substrates**

- 1.13.1. Each trade will examine surfaces prepared by others and job conditions which may affect his work, and will report defects to the Departmental Representative. Commencement of Work will imply acceptance of prepared Work or substrate surfaces.

**1.14. Quality of Work**

- 1.14.1. Ensure that quality workmanship is performed through use of skilled tradesmen, under supervision of qualified journeyman.
- 1.14.2. The workmanship, erection methods and procedures to meet minimum standards set out in the National Building Code of Canada.
- 1.14.3. In cases of dispute, decisions as to standard or quality of Work rest solely with the Departmental Representative, whose decision is final.

**1.15. Works Coordination**

- 1.15.1. Coordinate work of subtrades.
  - 1.15.1.1. Designate one person to be responsible for review of contract documents and shop drawings and managing coordination of Work.
- 1.15.2. Convene meetings between subcontractors whose work interfaces and ensure awareness of areas and extent of interface required.
  - 1.15.2.1. Provide each subcontractor with complete plans and specifications for Contract, to assist them in planning and carrying out their respective work.
- 1.15.3. Work coordination:
  - 1.15.3.1. Ensure cooperation between trades in order to facilitate general progress of Work and avoid situations of spatial interference.
  - 1.15.3.2. Ensure that each trade provides all other trades reasonable opportunity for completion of Work and in such a way as to prevent unnecessary delays, cutting, patching and removal or replacement of completed Work.
  - 1.15.3.3. Ensure disputes between subcontractors are resolved.
- 1.15.4. Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.

**1.16. Approvals of Product Data and Samples**

- 1.16.1. Submit the requested product data samples indicated in each of the technical Sections to the Departmental Representative.
- 1.16.2. Allow sufficient time for the following:
  - 1.16.2.1. Review of product data.
  - 1.16.2.2. Approval of Products.
  - 1.16.2.3. Review of re-submission.
  - 1.16.2.4. Ordering of accepted material and/or products.

**1.17. Relics and Antiquities**

- 1.17.1. Relics and antiquities and items of historical or scientific interest will remain property of Department. Protect such articles and request directives from Departmental Representative.
- 1.17.2. Give immediate notice to Departmental Representative if evidence of archeological finds are encountered during excavation/construction, and await Departmental Representative's written instructions before proceeding with Work in this area.

**1.18. Products Supplied by Departmental Representative**

- 1.18.1. Not Used.

**1.19. Testing and Inspection**

- 1.19.1. With the exception of environmental confirmatory sampling within the excavation, the Contractor will appoint and pay for the services of testing agency or testing laboratory as specified, and where required for the following:
  - 1.19.1.1. Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
  - 1.19.1.2. Inspection and testing performed exclusively for Contractor's convenience.
- 1.19.2. Contractor will organize and pay for material testing required by BC MoT Subdivision Road Specifications and Standard Specifications for Highway Construction.
- 1.19.3. Contractor will organize and pay for inspections required by BC MoT Subdivision Road Specifications and Standard Specifications for Highway Construction.
- 1.19.4. Where tests or inspections by designated testing laboratory reveal Work is not in accordance with the Contract requirements, Contractor will pay costs for additional tests or inspections as the Departmental Representative may require to verify acceptability of correct Work.
- 1.19.5. Contractor will furnish labour and facilities to:
  - 1.19.5.1. Notify Departmental Representative in advance of planned testing.
- 1.19.6. Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- 1.19.7. Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and reviewed for acceptance by Departmental Representative.
- 1.19.8. The Departmental Representative may require, and pay for, additional inspection and testing services not included above.
- 1.19.9. Provide Departmental Representative with 2 copies of testing laboratory reports as soon as they are available.

**1.20. As-Built Documents**

- 1.20.1. The Departmental Representative will provide 2 sets of drawings, 2 sets of specifications, and 2 copies of the original AutoCAD files for "as-built" purposes.
- 1.20.2. As Work progresses, maintain accurate records to show all deviations from the Contract Documents. Note on as-built specifications, drawings and shop drawings as changes occur.

**1.21. Cleaning**

- 1.21.1. Conduct daily cleaning and disposal operations. Comply with local ordinances and anti-pollution laws.
- 1.21.2. Ensure cleanup of the work areas each day after completion of Work.

**1.22. Dust Control**

- 1.22.1. Prevent fugitive dust from the Site from interfering with onsite and offsite uses.

**1.23. Environmental Protection**

- 1.23.1. Prevent extraneous materials from contaminating air beyond construction area, by providing temporary enclosures during Work.
- 1.23.2. Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers.
- 1.23.3. Ensure proper disposal procedures in accordance with all applicable territorial regulations.

**1.24. Additional Drawings**

- 1.24.1. The Departmental Representative may furnish additional drawings for clarification. These additional drawings have the same meaning and intent as if they were included with plans referred to in the Contract Documents.
- 1.24.2. Upon request, Departmental Representative may furnish up to a maximum of 2 sets of Contract Documents for use by the Contractor at no additional cost. Should more than 2 sets of documents be required the Departmental Representative will provide them at additional cost.

**1.25. Smoking Environment**

- 1.25.1. Smoking on the Site is not permitted

**1.26. System of Measurement**

- 1.26.1. The metric system of measurement (SI) will be employed on this Contract.

**1.27. Familiarization with Site**

- 1.27.1. Before submitting tender become familiar with all conditions likely to affect the cost of the Work.
- 1.27.2. No claims or change orders will be considered by PWGSC in regard to existing conditions due to the Contractor's lack of familiarity with the Site.

**1.28. Submission of Tender**

- 1.28.1. Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract Documents and inspected the Site, and is fully conversant with all conditions.

**2. PART 2 - PRODUCTS**

**2.1. Not Used**

- 2.1.1. Not Used

**3. PART 3 - EXECUTION**

**3.1. Not Used**

- 3.1.1. Not Used

**END OF SECTION**



**1. PART 1 - GENERAL**

**1.1. Measurement Procedures**

1.1.1. Not Used

**1.2. Action and Informational Submittals**

1.2.1. Not Used

**1.3. Administrative**

- 1.3.1. Schedule and administer project meetings throughout the progress of the Work at the call of Departmental Representative.
- 1.3.2. Prepare agenda for meetings.
- 1.3.3. Distribute written notice with agenda of each meeting 2 working days in advance of meeting date to Departmental Representative.
- 1.3.4. Provide physical space and make arrangements for meetings.
- 1.3.5. Preside at meetings.
- 1.3.6. Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
- 1.3.7. Reproduce and distribute copies of minutes within 2 working days after meetings and transmit to meeting participants, affected parties not in attendance, and Departmental Representative.
- 1.3.8. Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

**1.4. Preconstruction Meeting**

- 1.4.1. Within 5 working days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- 1.4.2. Departmental Representative, Contractor, Superintendent, major Subcontractors, field inspectors and supervisors will be in attendance.
- 1.4.3. Establish time and location of meeting and notify parties concerned minimum 3 working days before meeting.
- 1.4.4. Agenda to include:
  - 1.4.4.1. Appointment of official representative of participants in the Work.
  - 1.4.4.2. Schedule of Work.
  - 1.4.4.3. Schedule of submissions.
  - 1.4.4.4. Requirements for temporary facilities.
  - 1.4.4.5. Site security.
  - 1.4.4.6. Change orders, procedures, approvals required, administrative requirements.
  - 1.4.4.7. Monthly progress claims, administrative procedures, hold backs.
  - 1.4.4.8. Appointment of inspection and testing agencies or firms.

**1.5. Progress Meetings**

- 1.5.1. During course of Work schedule progress meetings bi – weekly (ie twice per work week).
- 1.5.2. Contractor, Superintendent, major Subcontractors involved in Work, Departmental Representative, and Owner are to be in attendance.

- 1.5.3. Agenda to include:
  - 1.5.3.1. Review, approval of minutes of previous meeting.
  - 1.5.3.2. Review of Work progress since previous meeting.
  - 1.5.3.3. Field observations, problems, conflicts.
  - 1.5.3.4. Problems which impede construction schedule.
  - 1.5.3.5. Review of offsite fabrication delivery schedules.
  - 1.5.3.6. Corrective measures and procedures to regain projected schedule.
  - 1.5.3.7. Revision to construction schedule.
  - 1.5.3.8. Progress schedule, during succeeding work period.
  - 1.5.3.9. Review submittal schedules: expedite as required.
  - 1.5.3.10. Maintenance of quality standards.
  - 1.5.3.11. Review proposed changes for affect on construction schedule and on completion date.
  - 1.5.3.12. Other business.

#### **1.6. Tailgate Meetings**

- 1.6.1. During the course of the work daily tailgate meetings at the start of each work shift. Multiple meetings will be required if the Contractor intends to work multiple shifts within a 24-hour period.
- 1.6.2. All construction workers to attend, including Contractor, Superintendent, major Subcontractors, and environmental consultants. Departmental Representative may attend.
- 1.6.3. Agenda to include:
  - 1.6.3.1. Planned Work activities and environmental considerations for that shift.
  - 1.6.3.2. Coordination activities required between Contractor, Subcontractors, Departmental Representative, and other contractors including environmental consultant.
  - 1.6.3.3. Health and Safety items as identified or otherwise required.

### **2. PART 2 - PRODUCTS**

#### **2.1. Not Used**

- 2.1.1. Not Used

### **3. PART 3 - EXECUTION**

#### **3.1. Not Used**

- 3.1.1. Not Used

**END OF SECTION**



**1. PART 1 - GENERAL**

**1.1. Measurement Procedures**

1.1.1. Not Used

**1.2. Action and Informational Submittals**

1.2.1. Not Used

**1.3. Approvals**

1.3.1. Approval of shop drawings and samples required by Departmental Representative as indicated.

**1.4. General**

- 1.4.1. This Section specifies general requirements and procedures for the Contractor's submissions of shop drawings, product data, samples and other requested submittals to Departmental Representative for review. Additional specific requirements for submissions are specified in individual technical sections.
- 1.4.2. Present shop drawings, product data and samples in SI Metric units.
- 1.4.3. Where items or information is not produced in SI Metric units, converted values are acceptable.
- 1.4.4. Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submissions.
- 1.4.5. Notify Departmental Representative in writing at time of submission, identifying deviations from requirements of Contract Documents and stating reasons for deviations.
- 1.4.6. Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review of submission unless Departmental Representative gives written acceptance of specific deviations.
- 1.4.7. Make any changes in submissions which Departmental Representative may require consistent with Contract Documents and resubmit as determined by Departmental Representative.
- 1.4.8. Notify Departmental Representative in writing, when resubmitting, of any revisions other than those requested by Departmental Representative.
- 1.4.9. Do not proceed with Work until relevant submissions are reviewed and accepted by the Departmental Representative.
- 1.4.10. Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- 1.4.11. Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated 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 considered rejected.
- 1.4.12. Verify field measurements and affected adjacent Work are coordinated.
- 1.4.13. Adjustments made on submittals by Departmental Representative are not intended to change Contract price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- 1.4.14. Keep one reviewed copy of each submission on site.



### **1.5. Submission Requirements**

- 1.5.1. Coordinate each submission with the requirements of the Work and the Contract Documents. Individual submissions will not be reviewed until:
  - 1.5.1.1. Submissions are complete.
  - 1.5.1.2. All related information is available.
- 1.5.2. Allow 5 working days for Departmental Representative's review of each submission, unless noted otherwise.
- 1.5.3. Accompany submissions with transmittal letter, in duplicate, containing:
  - 1.5.3.1. Date.
  - 1.5.3.2. Project title and number.
  - 1.5.3.3. Contractor's name and address.
  - 1.5.3.4. Identification and quantity of each shop drawing, product data and sample.
  - 1.5.3.5. Other pertinent data.
- 1.5.4. Submissions must include:
  - 1.5.4.1. Date and revision dates.
  - 1.5.4.2. Project title and number.
  - 1.5.4.3. Name and address of:
    - 1.5.4.3.1. Subcontractor.
    - 1.5.4.3.2. Supplier.
    - 1.5.4.3.3. Manufacturer.
  - 1.5.4.4. Contractor's stamp, signed by Contractor's authorized representative, certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - 1.5.4.5. Details of appropriate portions of Work as applicable.
- 1.5.4.6. After Departmental Representative's review, distribute copies.

### **1.6. Samples**

- 1.6.1. For all imported material to be used for backfill, collect samples and send them for analysis at an accredited laboratory prior to material arriving onsite.
  - 1.6.1.1. Collect samples in clean 125mL glass soil sample jars.
  - 1.6.1.2. Request testing for the following parameters:
    - 1.6.1.2.1. CCME BTEX/F1
    - 1.6.1.2.2. CCME hydrocarbons F2-F4
    - 1.6.1.2.3. CCME LEPH/HEPH/PAH
    - 1.6.1.2.4. Metals
- 1.6.2. For all imported material to be used for road construction, collect sufficient material and request testing of aggregate required by the BC MoT Standard Specifications for Highway Construction.
- 1.6.3. Provide the results of analysis to the Departmental Representative and import material only with approval from the Departmental Representative.
- 1.6.4. Departmental Representative will inspect imported material, and will not allow import of material that varies from provided samples.

### **1.7. Progress Schedule**

- 1.7.1. Submit work schedule and cost breakdown as required.

### **1.8. Test Results and Inspection Reports**

- 1.8.1. Submit in duplicate test results and inspection reports required.

**2. PART 2 - PRODUCTS**

**2.1. Not Used**

**2.1.1. Not Used**

**3. PART 3 - EXECUTION**

**3.1. Not Used**

**3.1.1. Not Used**

**END OF SECTION**



## **1. PART 1 - GENERAL**

### **1.1. Measurement Procedures**

- 1.1.1. Not Used

### **1.2. Action and Informational Submittals**

- 1.2.1. Not Used

### **1.3. Protection of Public Traffic**

- 1.3.1. 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.
- 1.3.2. Comply with current version of BC Ministry of Transportation Traffic Control Manual for Work on Roadways.
- 1.3.3. Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, except where other means of road access exist that meet approval of Departmental Representative.

### **1.4. Informational and Warning Devices**

- 1.4.1. Provide and maintain signs, flashing warning lights, and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- 1.4.2. Supply and erect signs, delineators, barricades and miscellaneous warning devices to BC Ministry of Transportation Traffic Control Manual for Work on Roadways.
- 1.4.3. Place signs and other devices in locations recommended in BC Ministry of Transportation Traffic Control Manual for Work on Roadways.
- 1.4.4. Meet with Departmental Representative 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 Departmental Representative.
- 1.4.5. Continually maintain traffic control devices in use:
- 1.4.5.1. Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
- 1.4.5.2. Remove or cover signs which do not apply to conditions existing from day to day.

### **1.5. Control of Public Traffic**

- 1.5.1. Provide competent flag personnel, trained in accordance with, and properly equipped to BC Ministry of Transportation Traffic Control Manual for Work on Roadways for situations as follows:
- 1.5.1.1. When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
- 1.5.1.2. In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

### **1.6. Operational Requirements**

- 1.6.1. 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 and approved by Departmental Representative to protect and control public traffic, existing conditions for traffic to be restricted as follows:

1.6.1.1. Maintain existing conditions for traffic crossing right-of-way.

**2. PART 2 - PRODUCTS**

**2.1. Not Used**

2.1.1. Not Used

**3. PART 3 - EXECUTION**

**3.1. Not Used**

3.1.1. Not Used

**END OF SECTION**

## **1. PART 1 - GENERAL**

### **1.1. Measurement Procedures**

#### **1.1.1. Not Used**

### **1.2. Action and Informational Submittals**

- 1.2.1. Contaminated Waste Management Plan:** within 5 working days after Contract award and prior to mobilization to Site submit plan detailing management of Contaminated Waste.
- 1.2.2. Submittals for Progress Meetings:** make submittals at least 24 hours prior to scheduled progress meetings as follows:
  - 1.2.2.1. Updated progress schedule** detailing activities. Include review of progress with respect to previously established dates for starting and stopping various stages of Work, major problems and action taken, injury reports, equipment breakdown, and material removal.
  - 1.2.2.2. Copies of transport manifests, trip tickets, and disposal receipts** for waste materials removed from work area.
  - 1.2.2.3. Other information** required by Departmental Representative or relevant to agenda for upcoming progress meeting.
- 1.2.3. Site Layout:** within 5 working days after Contract award and prior to mobilization to Site, submit site layout drawings showing existing conditions and facilities, construction facilities and temporary controls provided by Contractor including following:
  - 1.2.3.1. Equipment and personnel decontamination areas.**
  - 1.2.3.2. Means of ingress, egress and temporary traffic control facilities.**
  - 1.2.3.3. Equipment and material staging areas.**
  - 1.2.3.4. Soil stockpile areas.**
  - 1.2.3.5. Other required features** as specified in Contractor's site-specific Health and Safety Plan.
  - 1.2.3.6. Grading, including contours,** required to construct temporary facilities.
- 1.2.4. Equipment Decontamination Procedures:** Submit equipment decontamination procedures and the proposed area for decontamination in the site layout within 5 days of contract award to Departmental Representative for review prior to commencing the work. Equipment decontamination procedures are to be consistent with industry practices with the level of contamination as identified in the drawings.
- 1.2.5. Transport Manifests:** within 5 working days of offsite transport, submit documentation verifying that material has been transported appropriately, including:
  - 1.2.5.1. Method of transport.**
  - 1.2.5.2. Name of transport company.**
  - 1.2.5.3. Location, date, and quantity of pick-up.**
  - 1.2.5.4. Location, date, and quantity of drop-off.**
- 1.2.6. Certificate of Disposal:** within 30 working days of disposal at offsite Disposal Facility, submit documentation verifying that materials have been disposed by Contractor, including:
  - 1.2.6.1. Issued by the Disposal Facility.**
  - 1.2.6.2. On company letterhead.**
  - 1.2.6.3. Name and location of facility** where the material is being disposed.
  - 1.2.6.4. Date and quantity for each shipment received and total quantity received.**
  - 1.2.6.5. Signed by identified authorized company representative.**
- 1.2.7. Certificate of Treatment:** within 30 working days of treatment at offsite Treatment Facility, submit documentation verifying that materials have been treated by Contractor, including:
  - 1.2.7.1. Issued by the Treatment Facility.**
  - 1.2.7.2. On company letterhead.**

- 1.2.7.3. Name and location of facility where the material is being treated.
- 1.2.7.4. Date and quantity for each shipment received and total quantity received.
- 1.2.7.5. Date and quantity for each treatment event and total quantity treated.
- 1.2.7.6. Treatment methodology.
- 1.2.7.7. Laboratory certificates demonstrating treatment objectives were met.
- 1.2.7.8. Disposition of treated material.
- 1.2.7.9. Signed by identified authorized company representative.

### **1.3. Sequencing and Scheduling**

- 1.3.1. Do not commence Work involving contact with potentially Contaminated Wastes until decontamination facilities are operational and reviewed for acceptance by Departmental Representative.

### **1.4. Equipment Decontamination**

- 1.4.1. Prior to commencing Work involving equipment contact with potentially Contaminated Wastes, develop an equipment decontamination area to accommodate largest piece of onsite potentially contaminated equipment. Commence Work involving equipment contact with potentially Contaminated Waste only after Equipment Decontamination Area is operational.
- 1.4.2. Provide, operate, and maintain necessary equipment required to collect and contain equipment decontamination waste and transfer materials to accepted storage facilities.
- 1.4.3. Decontaminate equipment after working in potentially contaminated work areas and prior to subsequent Work or travel on clean areas.
- 1.4.4. Perform equipment decontamination as per decontamination procedures required in submittals.
- 1.4.5. At minimum, perform following steps during equipment decontamination: mechanically remove packed dirt, grit, and debris by scraping and brushing without using steam or high-pressure.
- 1.4.6. Each piece of equipment will be inspected by Departmental Representative after decontamination and prior to removal from Site and/or travel on clean areas. Departmental Representative will have right to require additional decontamination to be completed if deemed necessary at no additional cost.
- 1.4.7. Transfer sediments to soil staging area.
- 1.4.8. Furnish and equip personnel engaged in equipment decontamination with protective equipment as required in the Contractor's Health and Safety Plan.

### **1.5. Soil Stockpiling Facilities**

- 1.5.1. Provide, maintain, and operate storage/stockpiling facilities as required. Obtain approval of proposed storage/stockpiling facilities areas from Departmental Representative. Soil stockpiles to be located within a reasonable distance of the excavation area and within the site boundary.
- 1.5.2. Segregate non-contaminated soil from contaminated soil.
- 1.5.3. Store non-contaminated soil excavated only on non-contaminated site surface areas. Ensure no contact between non-contaminated excavated soil and drainage or contaminated water or contaminated soil.
- 1.5.4. Store excavated, contaminated soil in water-tight temporary storage cells.
  - 1.5.4.1. Install impermeable liner below proposed stockpile locations to prevent contact between stockpile material and ground.

- 1.5.4.2. Cover stockpiled material when not being worked or sampled to prevent release of airborne dust, vapours, or odours, and to prevent saturation and leachate generation of material.
- 1.5.4.3. Segregate different suspect material in discrete piles as determined by Departmental Representative.
- 1.5.4.4. Assist Departmental Representative in collection of stockpile samples for exsitu characterization. Exsitu characterization may take up to 5 working days. No standby charges or delays to be incurred for confirmatory sampling.
- 1.5.4.5. Equip facility with tarps capable of covering stockpiled material until Departmental Representative advises Contractor to dispose of material offsite.

#### **1.6. Vehicular Access and Parking**

##### **1.6.1. Maintenance and Use:**

- 1.6.1.1. Prevent contamination of access roads. Immediately scrape up debris or material on access roads which is suspected to be contaminated as determined by Departmental Representative; transport and dispose of in appropriate offsite disposal facility. Clean access roads at least once per working day.
- 1.6.1.2. Departmental Representative may collect soil samples for chemical analyses from traveling surfaces of constructed and existing access routes prior to, during, and upon completion of Work. Excavate and dispose of clean soil contaminated by Contractor's activities at no additional cost or time.

#### **1.7. Dust and Particulate Control**

- 1.7.1. Execute Work by methods to minimize raising dust from construction operations.
- 1.7.2. Implement and maintain dust and particulate control measures immediately as determined necessary by Departmental Representative during construction and in accordance with regulations.
- 1.7.3. Provide positive means to prevent airborne dust from dispersing into atmosphere. Use potable water for dust and particulate control.
- 1.7.4. As minimum, use appropriate covers on trucks hauling fine or dusty material. Use watertight vehicles to haul wet materials.
- 1.7.5. Prevent dust from spreading to adjacent property sites.
- 1.7.6. Departmental Representative will stop Work at any time when Contractor's control of dusts and particulates is inadequate for wind conditions present at Site, or when air quality monitoring indicates that release of fugitive dusts and particulates into atmosphere equals or exceeds specified levels.
- 1.7.7. If Contractor's dust and particulate control is not sufficient for controlling dusts and particulates into atmosphere, stop Work. Contractor must discuss procedures that Contractor proposes to resolve problem. Make necessary changes to operations prior to resuming excavation, handling, processing, or other Work that may cause release of dusts or particulates at no additional cost or time.

#### **1.8. Pollution Control**

- 1.8.1. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious toxic substances and pollutants produced by construction operations.
- 1.8.2. Be prepared to intercept, clean up, and dispose of spills or releases that may occur whether on land or water. Maintain materials and equipment required for cleanup of spills or releases readily accessible onsite.



- 1.8.3. Promptly report spills and releases potentially causing damage to environment to:
  - 1.8.3.1. Authority having jurisdiction or interest in spill or release including conservation authority, water supply authorities, drainage authority, road authority, and fire department.
  - 1.8.3.2. Departmental Representative.
- 1.8.4. Take immediate action using available resources to contain and mitigate effects on environment and persons from spill or release.
- 1.8.5. Provide spill response materials including, containers, adsorbent, shovels, and personal protective equipment. Make spill response materials available at all times in which hazardous materials or wastes are being handled or transported. Spill response materials: compatible with type of material being handled.
- 1.8.6. Volatile Organic Compounds (VOC) Control:
  - 1.8.6.1. In addition to requirements of Health and Safety for Contaminated Sites, monitor air quality for volatile organics at perimeter security locations as approved by Departmental Representative, every hour during contaminated materials excavation and management activities, and maintain log of air quality readings.
  - 1.8.6.2. If air quality monitoring indicates that release of volatile organics in air at site boundary exceeds Level C of Personnel Protective Equipment threshold for air quality, implement corrective actions to control volatile organics.
  - 1.8.6.3. If actions are not sufficient to control release of volatile organics within 1/2 hour of identification of air quality problem, suspend work resulting in excessive volatile organic emissions. Departmental Representative and Contractor to discuss additional methods that Contractor proposes to control release of volatile organics.
  - 1.8.6.4. Make necessary changes at no additional cost to Departmental Representative prior to resuming Work.

## **1.9. Water Control**

- 1.9.1. When working above the water table or as directed by the Departmental Representative maintain excavations free of water.
- 1.9.2. Protect Site from puddling or running water. Grade Site to drain. Provide water barriers as necessary to protect Site from soil erosion.
- 1.9.3. Prevent surface water runoff from leaving work areas.
- 1.9.4. Do not discharge decontaminated water, or surface water runoff, or groundwater which may have come in contact with potentially Contaminated Waste, offsite or to municipal sewers.
- 1.9.5. Prevent precipitation from infiltrating or from directly running off stockpiled materials. Cover stockpiled materials with an impermeable liner during periods of Work stoppage including at end of each working day and as determined by Departmental Representative.
- 1.9.6. Direct surface waters that have not contacted potentially Contaminated Wastes to surface drainage systems.
- 1.9.7. Control surface drainage including ensuring that gutters are kept open, water is not allowed across or over pavements or sidewalks except through accepted pipes or properly constructed troughs, and runoff from unstabilized areas is intercepted and diverted to suitable outlet.
- 1.9.8. Dispose of water in manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.
- 1.9.9. Provide, operate, and maintain necessary equipment appropriately sized to keep above water table excavations, staging pads, and other work areas free from water.

## **1.10. Erosion and Sediment Control**

- 1.10.1. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas, from stockpiles, staging areas, and other work areas. Prevent erosion and sedimentation.
- 1.10.2. Minimize amount of bare soil exposed at one time. Stabilize disturbed soils as quickly as practical. Strip vegetation, regrade, or otherwise develop to minimize erosion. Remove accumulated sediment resulting from construction activity from adjoining surfaces, drainage systems, and water courses, and repair damage caused by soil erosion and sedimentation as determined by Departmental Representative.
- 1.10.3. Provide and maintain temporary measures which may include, silt fences, hay or straw bales, ditches, geotextiles, drains, berms, terracing, riprap, temporary drainage piping, sedimentation basins, vegetative cover, dikes, and other construction required to prevent erosion and migration of silt, mud, sediment, and other debris offsite or to other areas of Site where damage might result, or that might otherwise be required by Laws and Regulations. Make sediment control measures available during construction. Place silt fences and/or hay or straw bales in ditches to prevent sediments from escaping from ditch terminations.
- 1.10.4. Hay or Straw Bale: wire bound or string tied; securely anchored by at least 2 stakes or rebars driven through bale 300 mm to 450 mm into ground; chinked (filled by wedging) with hay or straw to prevent water from escaping between bales; and entrenched minimum of 100 mm into ground.
- 1.10.5. Silt Fence: assembled, ready to install unit consisting of geotextile attached to driveable posts. Geotextile: uniform in texture and appearance, having no defects, flaws, or tears that would affect its physical properties; and contain sufficient ultraviolet ray inhibitor and stabilizers to provide minimum 2-year service life from outdoor exposure.
- 1.10.6. Net Backing: industrial polypropylene mesh joined to geotextile at both top and bottom with double stitching of heavy-duty cord, with minimum width of 750 mm.
- 1.10.7. Posts: sharpened wood, approximately 50 mm square, protruding below bottom of geotextile to allow minimum 450 mm embedment; post spacing 2.4 m maximum. Securely fasten each post to geotextile and net backing using suitable staples.
- 1.10.8. Plan construction procedures to avoid damage to Work or equipment encroachment onto water bodies or drainage ditch banks. In event of damage, promptly take action to mitigate effects. Restore affected bank or water body to existing condition.
- 1.10.9. Installation:
  - 1.10.9.1. Construct temporary erosion control items as required.
  - 1.10.9.2. Do not construct bale barriers and silt fence in flowing streams or in swales.
  - 1.10.9.3. Check erosion and sediment control measures weekly after each rainfall; during prolonged rainfall check daily.
  - 1.10.9.4. Bales and/or silt fence may be removed at beginning of work day, replace at end of work day.
  - 1.10.9.5. Whenever sedimentation is caused by stripping vegetation, regrading, or other development, remove it from adjoining surfaces, drainage systems, and watercourses, and repair damage as quickly as possible.
  - 1.10.9.6. Prior to or during construction, Departmental Representative may require installation or construction of improvements to prevent or correct temporary conditions onsite. Improvements may include berms, mulching, sediment traps, detention and retention basins, grading, planting, retaining walls, culverts, pipes, guardrails, temporary roads, and other measures appropriate to specific condition. Temporary improvements must remain in place and in operation as necessary or until otherwise determined by Departmental Representative.
  - 1.10.9.7. Repair damaged bales, end runs, and undercutting beneath bales.

- 1.10.9.8. Unless requested by Departmental Representative, remove temporary erosion and sediment control devices upon completion of Work. Spread accumulated sediments to form a suitable surface for seeding or dispose of, and shape area to permit natural drainage to satisfaction of Departmental Representative. Materials once removed become property of Contractor.
- 1.10.10. Construct fill areas by selective placement to avoid erosive surface silts or clays.
- 1.10.11. Do not disturb existing embankments or embankment protection.
- 1.10.12. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- 1.10.13. If soil and debris from Site accumulate in low areas, storm sewers, roadways, gutters, ditches, or other areas where in Departmental Representative's determination it is undesirable, remove accumulation and restore area to original condition.

#### **1.11. Progress Cleaning**

- 1.11.1. Maintain cleanliness of Work and surrounding site to comply with federal, provincial, and local fire and safety laws, ordinances, codes, and regulations.
- 1.11.2. Coordinate cleaning operations with disposal operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.

#### **1.12. Final Decontamination**

- 1.12.1. Perform final decontamination of construction facilities, equipment, and materials which may have come in contact with potentially Contaminated Wastes prior to removal from Site.
- 1.12.2. Perform decontamination as specified to satisfaction of Departmental Representative. Contractor to perform additional decontamination if required.

#### **1.13. General Removal**

- 1.13.1. Remove all waste within Work areas as determined by Departmental Representative.
- 1.13.2. The Contractor becomes the owner of, and is responsible for, any soil or other material once it is loaded on a vehicle, barge, or other vessel for transport offsite.
- 1.13.3. Remove surplus materials and temporary facilities from Site.
- 1.13.4. Dispose waste materials, litter, debris, and rubbish offsite.
- 1.13.5. Do not burn or bury rubbish and waste materials onsite.
- 1.13.6. Do not dispose of volatile or hazardous wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
- 1.13.7. Do not discharge wastes into streams or waterways.
- 1.13.8. Dispose of following materials at appropriate Landfill identified by Contractor and accepted by Departmental Representative:
  - 1.13.8.1. Non-Contaminated Waste.
  - 1.13.8.2. Disposable PPE worn during final cleaning.
- 1.13.9. Minimize generation of Hazardous Waste to maximum extent practicable. Take necessary precautions to avoid mixing Non-Contaminated Waste and Contaminated Waste.
- 1.13.10. Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
  - 1.13.10.1. Hazardous Waste recycled in manner constituting disposal;
  - 1.13.10.2. Hazardous Waste burned for energy recovery;
  - 1.13.10.3. Lead-acid battery recycling;
  - 1.13.10.4. Hazardous Waste with economically recoverable precious metals.

#### **1.14. Contaminated Waste Removal**

- 1.14.1. Contaminated Waste will be segregated, transported, treated, and disposed into the following classifications as determined by the Departmental Representative:
  - 1.14.1.1. Hazardous Waste – Treatable: This material must be treated at a Treatment Facility prior to disposal at a Disposal Facility unless otherwise indicated or determined by Departmental Representative.
  - 1.14.1.2. Non-Hazardous Waste – Nontreatable: This material must be disposed at a Disposal Facility unless otherwise indicated or determined by Departmental Representative.
- 1.14.2. Contaminated Waste Transport: transport offsite using appropriate containers.
  - 1.14.2.1. Transport material offsite as soon as practical. Do not unreasonably stockpile material onsite.
  - 1.14.2.2. Cover material while being transported to prevent release of airborne dust, vapours, or odours, and to prevent saturation and leachate generation of material.
  - 1.14.2.3. Manifest all material removed from Site documenting movement, interim storage and treatment, and final destination.
- 1.14.3. Contaminated Waste Treatment: treat offsite at Treatment Facility identified by Contractor and accepted Departmental Representative.
  - 1.14.3.1. Treat material offsite as soon as practical. Do not unreasonably stockpile material offsite.
  - 1.14.3.2. Material treated must subsequently be disposed of at a Disposal Facility after treatment.
  - 1.14.3.3. Certificate of Treatment required for all material treated offsite.
  - 1.14.3.4. Treatment includes bioremediation, thermal desorption, and incineration. Treatment does not include blending, mixing, or dilution.
  - 1.14.3.5. If proposed Treatment Facility is not acceptable to Departmental Representative, Contractor must identify an alternate Treatment Facility that is acceptable.
- 1.14.4. Contaminated Waste Disposal: dispose offsite at Disposal Facility identified by Contractor and accepted by Departmental Representative.
  - 1.14.4.1. Dispose material offsite as soon as practical. Do not unreasonably stockpile material offsite.
  - 1.14.4.2. Material sent to a Disposal Facility must be permanently stored at that facility.
  - 1.14.4.3. Certificate of Disposal required for all material disposed offsite.
  - 1.14.4.4. If proposed Disposal Facility is not acceptable to Departmental Representative, Contractor must identify an alternate Disposal Facility that is acceptable.

### **1.15. Record Keeping**

- 1.15.1. Maintain adequate records to support information provided to Departmental Representative regarding exception reports, annual reports, and biennial reports.
- 1.15.2. Maintain asbestos waste shipment records for minimum of 3 years from date of shipment or longer period required by applicable law or regulation.
- 1.15.3. Maintain bills of lading for minimum of 375 days from date of shipment or longer period required by applicable law or regulation.

## **2. PART 2 - PRODUCTS**

### **2.1. Not Used**

## **3. PART 3 - EXECUTION**

### **3.1. Not Used**

**END OF SECTION**



## **1. PART 1 – GENERAL**

### **1.1. Measurement Procedures**

#### **1.1.1. Not Used**

### **1.2. Action and Informational Submittals**

- 1.2.1. Submit to Departmental Representative submittals listed for review.
- 1.2.2. Work affected by submittal will not proceed until review is complete.
- 1.2.3. Submit the following:
  - 1.2.3.1. Health and Safety Plan.
  - 1.2.3.2. Copies of reports or directions issued by Federal and Provincial health and safety inspectors.
  - 1.2.3.3. Copies of incident and accident reports.
  - 1.2.3.4. Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
  - 1.2.3.5. Emergency Procedures.
- 1.2.4. The Departmental Representative will review the Contractor's site-specific project Health and Safety Plan and emergency procedures, and provide comments to the Contractor within 5 working days after receipt of the plan. Revise the plan as appropriate and resubmit to Departmental Representative.
- 1.2.5. 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 Departmental Representative.
- 1.2.6. Submission of the Health and Safety Plan, and any revised version, to the Departmental Representative is for information and reference purposes only. It will not:
  - 1.2.6.1. Be construed to imply approval by the Departmental Representative.
  - 1.2.6.2. Be interpreted as a warranty of being complete, accurate and legislatively compliant.
  - 1.2.6.3. Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

### **1.3. References**

- 1.3.1. Government of Canada:
  - 1.3.1.1. Canada Labour Code - Part II
  - 1.3.1.2. Canada Occupational Health and Safety Regulations
- 1.3.2. National Building Code of Canada (NBC):
  - 1.3.2.1. Part 8, Safety Measures at Construction and Demolition Sites.
- 1.3.3. Canadian Standards Association (CSA) as amended:
  - 1.3.3.1. CSA Z797-2009 Code of Practice for Access Scaffold
  - 1.3.3.2. CSA S269.1-1975 (R2003) Falsework for Construction Purposes
  - 1.3.3.3. CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structures
- 1.3.4. Fire Protection Engineering Services, HRSDC:
  - 1.3.4.1. FCC No. 301, Standard for Construction Operations
  - 1.3.4.2. FCC No. 302, Standard for Welding and Cutting
- 1.3.5. American National Standards Institute (ANSI):
  - 1.3.5.1. ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems
- 1.3.6. Province of British Columbia:
  - 1.3.6.1. Workers Compensation Act Part 3-Occupational Health and Safety
  - 1.3.6.2. Occupational Health and Safety Regulation



- 1.3.7. Yukon Territory
- 1.3.7.1. Occupational Health and Safety Act, R.S.Y.

#### **1.4. Regulatory Requirements**

- 1.4.1. Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at Site.
- 1.4.2. In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

#### **1.5. Worker's Compensation Board Coverage**

- 1.5.1. Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the Work.
- 1.5.2. Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

#### **1.6. Compliance with Regulations**

- 1.6.1. PWGSC may terminate the Contract without liability to PWGSC where the Contractor, in the opinion of PWGSC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.
- 1.6.2. It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the Work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

#### **1.7. Responsibility**

- 1.7.1. Assume responsibility as the Prime Contractor for Work under this contract.
- 1.7.1.1. Be responsible for health and safety of persons onsite, safety of property onsite and for protection of persons adjacent to Site and environment to extent that they may be affected by conduct of Work.
- 1.7.1.2. 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.

#### **1.8. Health and Safety Coordinator**

- 1.8.1. The Health and Safety Coordinator must:
  - 1.8.1.1. Be responsible for completing all health and safety training, and ensuring that personnel that do not successfully complete the required training are not permitted to enter the Site to perform Work.
  - 1.8.1.2. Be responsible for implementing, daily enforcing, and monitoring the site-specific Health and Safety Plan.
  - 1.8.1.3. Be on Site during execution of Work.

#### **1.9. General Conditions**

- 1.9.1. Provide safety barricades, fencing and lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.
- 1.9.2. Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site:
  - 1.9.2.1. Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.

- 1.9.2.2. Fence excavation areas with temporary fence panels (6' height x 10' width minimum). Maintain fence integrity.
- 1.9.2.3. Secure Site at night time or provide security guard as deemed necessary to protect Site against entry.

#### **1.10. Project/Site Conditions**

- 1.10.1. Work at Site will involve contact with hazardous materials and contaminants identified in Drawings and Appendices.
- 1.10.2. Coordinate with representative from Daylu Dena Council for safety and access to site and hours of operation.

#### **1.11. Work Permits**

- 1.11.1. Obtain specialty permits related to project before start of Work.

#### **1.12. Filing of Notice**

- 1.12.1. The Prime Contractor is to complete and submit a Notice of Project as required by Provincial or Territorial authorities.
- 1.12.2. Provide copies of all notices to the Departmental Representative.

#### **1.13. Health and Safety Plan**

- 1.13.1. Conduct a site-specific hazard assessment based on review of Contract Documents, required Work, and project Site. Identify any known and potential health risks and safety hazards.
- 1.13.2. Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:
  - 1.13.2.1. Primary requirements:
    - 1.13.2.1.1. Contractor's safety policy.
    - 1.13.2.1.2. Identification of applicable compliance obligations.
    - 1.13.2.1.3. Definition of responsibilities for project safety/organization chart for project.
    - 1.13.2.1.4. General safety rules for project.
    - 1.13.2.1.5. Job-specific safe work, procedures.
    - 1.13.2.1.6. Inspection policy and procedures.
    - 1.13.2.1.7. Incident reporting and investigation policy and procedures.
    - 1.13.2.1.8. Occupational Health and Safety Committee/Representative procedures.
    - 1.13.2.1.9. Occupational Health and Safety meetings.
    - 1.13.2.1.10. Occupational Health and Safety communications and record keeping procedures.
  - 1.13.2.2. Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the Work.
  - 1.13.2.3. List hazardous materials to be brought onsite as required by Work.
  - 1.13.2.4. Indicate Engineering and administrative control measures to be implemented at the Site for managing identified risks and hazards.
  - 1.13.2.5. Identify personal protective equipment (PPE) to be used by workers.
  - 1.13.2.6. Identify personnel and alternates responsible for site safety and health.
  - 1.13.2.7. Identify personnel training requirements and training plan, including site orientation for new workers.
- 1.13.3. Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.



- 1.13.4. Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.
- 1.13.5. Departmental Representative's review: the review of Health and Safety Plan by Public Works and Government Services Canada (PWGSC) will not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract Documents.

#### **1.14. Emergency Procedures**

- 1.14.1. List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (ie names/telephone numbers) of:
  - 1.14.1.1. Designated personnel from own company.
  - 1.14.1.2. Regulatory agencies applicable to Work and as per legislated regulations.
  - 1.14.1.3. Local emergency resources.
  - 1.14.1.4. Departmental Representative and site staff.
- 1.14.2. Include the following provisions in the emergency procedures:
  - 1.14.2.1. Notify workers and the first-aid attendant, of the nature and location of the emergency.
  - 1.14.2.2. Evacuate all workers safely.
  - 1.14.2.3. Check and confirm the safe evacuation of all workers.
  - 1.14.2.4. Notify the fire department or other emergency responders.
  - 1.14.2.5. Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
  - 1.14.2.6. Notify Departmental Representative and site staff.
- 1.14.3. Provide written rescue/evacuation procedures as required for, but not limited to:
  - 1.14.3.1. Work at high angles.
  - 1.14.3.2. Work in confined spaces or where there is a risk of entrapment.
  - 1.14.3.3. Work with hazardous substances.
  - 1.14.3.4. Underground work.
  - 1.14.3.5. Work on, over, under and adjacent to water.
  - 1.14.3.6. Workplaces where there are persons who require physical assistance to be moved.
- 1.14.4. Design and mark emergency exit routes to provide quick and unimpeded exit.
- 1.14.5. Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

#### **1.15. Hazardous Products**

- 1.15.1. Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.
- 1.15.2. Where use of hazardous and toxic products cannot be avoided:
  - 1.15.2.1. Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as required.
  - 1.15.2.2. In conjunction with Departmental Representative, schedule to carry out Work during "off hours" when tenants have left the building.
  - 1.15.2.3. Provide adequate means of ventilation as required.

#### **1.16. Unforeseen Hazards**

- 1.16.1. Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the Work, immediately stop Work and advise the Departmental Representative verbally and in writing.

**1.17. Posted Documents**

1.17.1. Post legible versions of the following documents onsite:

1.17.1.1. Health and Safety Plan.

1.17.1.2. Sequence of Work.

1.17.1.3. Emergency procedures.

1.17.1.4. Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.

1.17.1.5. Notice of Project.

1.17.1.6. Floor plans or site plans.

1.17.1.7. Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.

1.17.1.8. Workplace Hazardous Materials Information System (WHMIS) documents.

1.17.1.9. Material Safety Data Sheets (MSDS).

1.17.1.10. List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.

1.17.2. Post all Material Safety Data Sheets (MSDS) onsite, in a common area, visible to all workers and in locations accessible to tenants when Work of this Contract includes construction activities adjacent to occupied areas.

1.17.3. Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as accepted by the Departmental Representative.

**1.18. Meetings**

1.18.1. Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.

1.18.2. Ensure all site personnel attend a daily health and safety "tailgate" or "toolbox" meeting, which will include:

1.18.2.1. Sign-in of all attendees.

1.18.2.2. Planned Work activities and environmental considerations for that shift.

1.18.2.3. Hazards associated with these Work activities, including environmental hazards (eg potential for hypothermia, heat exhaustion, heat stroke).

1.18.2.4. Appropriate job-specific safe work procedures.

1.18.2.5. Required personal protective equipment (PPE).

1.18.2.6. Appropriate emergency procedures.

1.18.3. Retain records of all health and safety meetings onsite during Work, and retain as corporate records for a minimum of 7 years after Work is completed.

**1.19. Correction of Non-Compliance**

1.19.1. Immediately address health and safety non-compliance issues identified by the Departmental Representative.

1.19.2. Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.

1.19.3. The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a "stop work order".

**1.20. Utility Clearance**

- 1.20.1. The Contractor is solely responsible for utility clearance.
- 1.20.2. The Contractor will not rely upon drawings or other information provided with utility locations.

### **1.21. Personal Protective Equipment Program**

- 1.21.1. Submit Personal Protective Equipment (PPE) program addressing:
  - 1.21.1.1. Donning and doffing procedures.
  - 1.21.1.2. PPE selection based upon Site hazards.
  - 1.21.1.3. PPE use and limitations of equipment.
  - 1.21.1.4. Work mission duration, PPE maintenance and storage.
  - 1.21.1.5. PPE decontamination and disposal.
  - 1.21.1.6. PPE inspection procedures prior to, during, and after use.
  - 1.21.1.7. Evaluation of effectiveness of PPE program, and limitations during temperature extremes, and other appropriate medical considerations.
  - 1.21.1.8. Medical surveillance requirements for personnel assigned to work at Site.
  - 1.21.1.9. Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment.
  - 1.21.1.10. Site control measures employed at Site including site map, site work zones, use of 'buddy system', site communications including site security, alerting means for emergencies, standard operating procedures or safe work practices, and identification of nearest medical assistance.
  - 1.21.1.11. Decontamination procedures for both personnel and equipment.
  - 1.21.1.12. Emergency response requirements addressing: pre-emergency planning, personnel roles, lines of authority and communication, emergency recognition and prevention, safe distances and places of refuge, site security and control, evacuation routes and procedures, decontamination procedures not covered under decontamination section, emergency medical treatment and first aid, emergency alerting and response procedures, critique of response and follow-up, PPE and emergency equipment, site topography, layout, prevailing weather conditions, and procedures for reporting incidents to local, provincial, or federal agencies.
  - 1.21.1.13. Written respiratory protection program for project activities.
  - 1.21.1.14. Procedures dealing with heat and/or cold stress.
  - 1.21.1.15. Spill containment program if drummed waste material is generated, excavated, stored, or managed onsite.

### **1.22. Offsite Contingency and Emergency Response Plan**

- 1.22.1. Prior to commencing Work involving handling of hazardous materials, develop offsite Contingency and Emergency Response Plan.
- 1.22.2. Plan must provide immediate response to serious site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from Site.

### **1.23. Personnel Health, Safety, and Hygiene**

- 1.23.1. Training: ensure personnel entering Site are trained in accordance with specified personnel training requirements. Training session must be completed by Health and Safety Officer.
- 1.23.2. Levels of Protection: establish levels of protection for each Work area based on planned activity and location of activity.
- 1.23.3. Personal Protective Equipment:
  - 1.23.3.1. Furnish site personnel with appropriate PPE as specified above. Ensure that safety equipment and protective clothing is kept clean and maintained.

- 1.23.4. Develop protective equipment usage procedures and ensure that procedures are strictly followed by site personnel; include following procedures as minimum:
  - 1.23.4.1. Ensure prescription eyeglasses worn are safety glasses and do not permit contact lenses onsite within work zones.
  - 1.23.4.2. Ensure footwear is steel-toed safety shoes or boots and is covered by rubber overshoes when entering or working in potentially contaminated work areas.
  - 1.23.4.3. Dispose of or decontaminate PPE worn onsite at end of each workday.
  - 1.23.4.4. Decontaminate reusable PPE before reissuing.
  - 1.23.4.5. Ensure site personnel have passed respirator fit test prior to entering potentially contaminated work areas.
  - 1.23.4.6. Ensure facial hair does not interfere with proper respirator fit.
- 1.23.5. Respiratory Protection:
  - 1.23.5.1. Provide site personnel with extensive training in usage and limitations of, and qualitative fit testing for, air purifying and supplied-air respirators in accordance with specified regulations.
  - 1.23.5.2. Develop, implement, and maintain respirator program.
  - 1.23.5.3. Monitor, evaluate, and provide respiratory protection for site personnel.
  - 1.23.5.4. Ensure levels of protection as listed have been chosen consistent with site-specific potential airborne hazards associated with major contaminants identified onsite.
  - 1.23.5.5. In absence of additional air monitoring information or substance identification, retain an industrial hygiene specialist to determine minimum levels of respiratory protection required.
  - 1.23.5.6. Immediately notify Departmental Representative when level of respiratory protection required increases.
  - 1.23.5.7. Ensure appropriate respiratory protection during Work activities. As minimum requirement, ensure that persons entering potentially contaminated work areas are supplied with and use appropriate respiratory protection.
- 1.23.6. Heat Stress/Cold Stress: implement heat stress or cold stress monitoring program as applicable and include in site-specific Health and Safety Plan.
- 1.23.7. Personnel Hygiene and Personnel Decontamination Procedures. Provide minimum as follows:
  - 1.23.7.1. Suitable containers for storage and disposal of used disposable PPE.
  - 1.23.7.2. Potable water and suitable sanitation facility.
- 1.23.8. Emergency and First-Aid Equipment:
  - 1.23.8.1. Locate and maintain emergency and first-aid equipment in appropriate location onsite including first-aid kit to accommodate number of site personnel; portable emergency eye wash; two 9 kg ABC type dry chemical fire extinguishers.
- 1.23.9. Site Communications:
  - 1.23.9.1. Post emergency numbers near site telephones.
  - 1.23.9.2. Ensure personnel use of "buddy" system and develop hand signal system appropriate for site activities.
  - 1.23.9.3. Provide employee alarm system to notify employees of site emergency situations or to stop Work activities if necessary.
  - 1.23.9.4. Furnish selected personnel with 2-way radios.
  - 1.23.9.5. Safety Meetings: conduct mandatory daily safety meetings for personnel, and additionally as required by special or Work-related conditions; include refresher training for existing equipment and protocols, review ongoing safety issues and protocols, and examine new site conditions as encountered. Hold additional safety meetings on as-needed basis.

**2. PART 2 - PRODUCTS**

**2.1. Not Used**

**2.1.1. Not Used**

**3. PART 3 - EXECUTION**

**3.1. Not Used**

**3.1.1. Not Used**

**END OF SECTION**

## 1. PART 1 - GENERAL

### 1.1. Measurement Procedures

#### 1.1.1. Not Used

### 1.2. Action and Informational Submittals

- 1.2.1. Within 5 working days after Contract award and prior to mobilization to Site, submit Environmental Protection Plan for review by Departmental Representative.

### 1.3. Environmental Protection Plan

- 1.3.1. Ensure Environmental Protection Plan includes comprehensive overview of known or potential environmental issues to be addressed during construction.
- 1.3.2. Comply with:
- 1.3.2.1. Federal, Provincial, Municipal, permit, and contractual environmental requirements.
  - 1.3.2.2. Regulatory guidelines and best management practices.
  - 1.3.2.3. Relevant Environmental Management Plans.
- 1.3.3. Address topics at level of detail commensurate with environmental issue and required construction tasks. Include methods, procedures, and equipment.
- 1.3.4. Include in Environmental Protection Plan:
- 1.3.4.1. Names of persons responsible for ensuring adherence to Environmental Protection Plan.
  - 1.3.4.2. Names and qualifications of persons responsible for manifesting material to be removed from Site.
  - 1.3.4.3. Communications Plan identifying emergency contact list and conditions for implementing emergency contact. Emergency contact to include: Contractor emergency response team, Departmental Representative and alternate, Owner and alternate, Federal, Provincial, and Municipal emergency contacts.
  - 1.3.4.4. Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Ensure plans include measures to minimize amount of mud transported onto paved public roads by vehicles or runoff. Trucks and truck traffic must comply with all Federal, Provincial, and Municipal laws and regulations.
  - 1.3.4.5. Spill Control Plan including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance. Identify locations and contents of spill kits.
  - 1.3.4.6. Solid Non-Contaminated Waste Disposal Plan identifying methods and locations for solid waste disposal including clearing waste.
  - 1.3.4.7. Historical, Archaeological, Cultural Resources, Biological Resources and Wetlands Plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands. Include procedures if previously unknown historical, archaeological, cultural resources are discovered during Work.

### 1.4. Fires

- 1.4.1. Fires and burning of rubbish onsite not permitted.

### 1.5. Drainage

- 1.5.1. Provide Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls provided. Ensure plan includes monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.



- 1.5.2. Provide temporary drainage and pumping required to keep excavations and Site free from water.
- 1.5.3. Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.
- 1.5.4. Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

#### **1.6. Site Clearing and Plant Protection**

- 1.6.1. Protect trees and plants onsite and adjacent properties as required.
- 1.6.2. 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 minimum.
- 1.6.3. 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.
- 1.6.4. Minimize stripping of topsoil and vegetation.
- 1.6.5. Restrict tree removal to areas required or designated by Departmental Representative.

#### **1.7. Work Adjacent to Waterways**

- 1.7.1. Guidelines and Practices
  - 1.7.1.1. Follow practices described in Fisheries and Oceans Canada (September 1993) Land Development Guidelines for the Protection of Aquatic Habitat.
  - 1.7.1.2. Follow practices described in BC Ministry of Environment (March 2004) Standards and Best Practices for Instream Works.
- 1.7.2. General
  - 1.7.2.1. Construction equipment to be operated on land only.
  - 1.7.2.2. Do not use waterway beds for borrow material.
  - 1.7.2.3. Waterways to be free of excavated fill, waste material and debris.
  - 1.7.2.4. Design and construct temporary crossings to minimize erosion to waterways.
  - 1.7.2.5. Do not skid logs or construction materials across waterways.
  - 1.7.2.6. Avoid spawning beds when constructing temporary crossings of waterways.
- 1.7.3. Machinery
  - 1.7.3.1. Ensure all hydraulic machinery to be used instream uses environmentally sensitive hydraulic fluids which are non-toxic to aquatic life, and which are readily or inherently biodegradable
  - 1.7.3.2. Place oil drip trays or absorbent materials (eg pads) under any heavy equipment working within the Fisheries Sensitive Zone adjacent to the watercourse to ensure there is no potential for contamination of the streambanks or watercourse resulting from leaks or drip off machinery. Ensure that there is no potential for oil, grease or other deleterious substances to enter any watercourse, ravine or storm sewer system.
  - 1.7.3.3. All equipment and machinery working within 15 meters of any watercourse must be in good working condition (power washed) and free of leaks or excess oil and grease. No fuels, lubricants, construction wastes or other deleterious substances may enter any watercourse at any time.
- 1.7.4. Watercourse Maintenance
  - 1.7.4.1. Unless otherwise indicated, care must be taken not to disturb streamside or riparian vegetation. Important in-water aquatic vegetation, such as cattails, will not be disturbed.
  - 1.7.4.2. Unless otherwise indicated, there must be no disturbance to the watercourse bank or the root systems of vegetation growing on the watercourse banks.
- 1.7.5. Sediment Control and Deleterious Substances

- 1.7.5.1. All work must be undertaken and completed in such a manner to prevent the release of silt, sediment or sediment laden water, raw concrete or concrete leachate, or any other deleterious substances to any ditch, watercourse, ravine or storm sewer system.
- 1.7.5.2. Construction and excavation wastes, overburden, soil, concrete, concrete leachate, grout, oil, grease or any other substance deleterious to aquatic life must be disposed of or placed in a manner that will prevent their entry into any watercourse, ravine or storm sewer system.
- 1.7.5.3. All excavated material must be removed from the Site or placed in a stable area above the high water mark of the watercourse, as far as possible from the channel, and protected from erosion by mitigating measures including temporary covering exposed soil with: polyethylene tarps, geotextile fabric, hydro-seed or planting vegetation. Material that is moved offsite must be disposed of in such a manner as to prevent its entry into any ditch, watercourse, wetland, floodplain, ravine or storm sewer system.
- 1.7.5.4. Unless otherwise indicated, any fill used must be inert material, free from contaminants and must be placed so that it will not gain entry into any ditch, watercourse, wetland, floodplain, ravine or storm sewer system.
- 1.7.5.5. No fill is to be stockpiled on marsh or marsh fringe areas.
- 1.7.6. Unless otherwise indicated, at a minimum sediment plumes must meet:
  - 1.7.6.1. When background is less than or equal to 50 nephelometric turbidity units (NTU), induced turbidity must not exceed 5 NTU above the background value.
  - 1.7.6.2. When background is greater than 50 NTU, induced turbidity must not exceed the background value by more than 10% of the background value.
  - 1.7.6.3. When background is less than or equal to 100 milligrams per liter (mg/L) non-filterable residue (NFR or TSS), induced NFR or TSS must not exceed 10 mg/L above background value.
  - 1.7.6.4. When background is greater than 100 mg/L NFR or TSS, induced NFR or TSS must not exceed the background level by more than 10 % of the background value.

## **1.8. Pollution Control**

- 1.8.1. Maintain temporary erosion and pollution control features installed under this Contract.
- 1.8.2. Control emissions from equipment and plant to local authorities' emission requirements.
- 1.8.3. Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.
- 1.8.4. Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- 1.8.5. Spill kits and containment are to be maintained onsite and ready for deployment in the event of spills, leaks, or other releases.
  - 1.8.5.1. Spill kits are to include sufficient quantities of absorbent material.
  - 1.8.5.2. Spill kits are to be in close proximity to machinery.
  - 1.8.5.3. During the Work there are to be trained and qualified personnel available that are ready to deploy spill kits when necessary.
- 1.8.6. The Contractor is responsible for all costs associated with a spill, leak, or other release of a deleterious substance as a result of their Work. This will include costs of spill response equipment and materials, associated sampling and analysis, and any required restoration of the impacted area.
- 1.8.7. Do not store fuel on the Site other than tanks forming part of the equipment.
- 1.8.8. Contractor to regularly inspect all machinery on the Site to ensure it is in good repair and free of leaks.

## **1.9. Notification**



- 1.9.1. Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws, regulations, permits, or other environmental procedure violations.
- 1.9.2. Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for acceptance by Departmental Representative.
- 1.9.2.1. Do not take action until after receipt of written acceptance by Departmental Representative.
- 1.9.3. Departmental Representative will issue stop order of Work until satisfactory corrective action has been taken.
- 1.9.4. No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

## **2. PART 2 - PRODUCTS**

### **2.1. Not Used**

- 2.1.1. Not Used

## **3. PART 3 - EXECUTION**

### **3.1. Not Used**

- 3.1.1. Not Used

**END OF SECTION**

**1. PART 1 - GENERAL**

**1.1. Measurement Procedures**

1.1.1. Not Used

**1.2. Action and Informational Submittals**

1.2.1. Not Used

**1.3. Access and Delivery**

1.3.1. Only the designated entrance may be used for access to Site.

1.3.1.1. Maintain for duration of Contract.

1.3.1.2. Make good damage resulting from Contractor's use.

1.3.2. Use of the Site will be granted to the Contractor through the Departmental Representative.

1.3.2.1. Parking of private vehicles is not permitted on the Site.

**1.4. Installation and Removal**

1.4.1. Provide temporary utilities controls in order to execute work expeditiously.

1.4.2. Remove from site all such work after use.

**1.5. Dewatering**

1.5.1. Provide temporary drainage and pumping facilities to keep excavations and Site free from standing water.

**1.6. Storage Facilities**

1.6.1. Storage space will be limited to the area of construction.

**1.7. Power**

1.7.1. Power is not available at existing Site and must be supplied at no cost.

**1.8. Water Supply**

1.8.1. Water supply is not available at existing Site and must be supplied at no cost.

**1.9. Sanitary Facilities**

1.9.1. Sanitary facilities are not available at existing Site and must be supplied at no cost.

**1.10. Removal of Temporary Facilities**

1.10.1. Remove temporary facilities from Site when determined by the Departmental Representative.

**1.11. Signs and Notices**

1.11.1. Signs and notices for safety and instruction will be in both official languages or graphic symbols conforming to CAN/CSA-Z321.

1.11.2. Maintain accepted signs and notices in good condition for duration of project, and dispose of offsite on completion of project or when determined by Departmental Representative.

**1.12. Fire Protection**

- 1.12.1. Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws.

**2. PART 2 - PRODUCTS**

**2.1. Not Used**

- 2.1.1. Not Used

**3. PART 3 - EXECUTION**

**3.1. Not Used**

- 3.1.1. Not Used

**END OF SECTION**

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## 1.1 RELATED WORK

- .1 All Specification Sections, refer to Table of Contents.

## 1.2 DEFINITIONS

- .1 Waste Audit (WA): relates to projected waste generation. Involves controlled separation of waste.
- .2 Waste Reduction Workplan (WRW): a written report which addresses opportunities for reduction, re-use or recycling of materials.

## 1.3 MATERIALS SOURCE SEPARATION

- .1 Before project start-up, prepare Materials Source Separation Program. Provide separate containers for re-usable and/or recyclable materials of the following:
  - .1 Gypsum board.
  - .2 Metals.
  - .3 Wood.
  - .4 Plastics
  - .5 Other materials as indicated in technical sections.
- .2 Implement Materials Source Separation Program for waste generated on project in compliance with approved methods and as approved by Departmental Representative.
- .3 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .4 Locate separated materials in areas which minimize material damage.

## 1.4 DIVERSION OF MATERIALS

- .1 Create a list of materials to be separated from the general waste stream and stockpiled in separate containers, to the approval of the Departmental Representative and consistent with applicable fire regulations.
  - .1 Mark containers.
  - .2 Provide instruction on disposal practices.

## 1.5 STORAGE, HANDLING AND APPLICATION

- .1 Do work in compliance with Waste Reduction Workplan.
- .2 Handle waste materials not re-used, salvaged, or recycled in accordance with appropriate regulations and codes.
- .3 Materials in separated condition: collect, handle, store on site, and transport off-site to an approved and authorized recycling facility.
- .4 Materials must be immediately separated into required categories for re-use or recycling.

- .5 Unless specified otherwise, materials for removal become the Contractor's property.
- .6 On-site sale of salvaged/recyclable material is not permitted.
- .7 **Provide Departmental Representative with receipts** indicating quantity of material delivered to landfill.
- .8 **Provide Departmental Representative with receipts** indicating quantity and type of materials sent for recycling.

**END OF SECTION**

## **1. PART 1 - GENERAL**

### **1.1. Measurement Procedures**

- 1.1.1. Not Used

### **1.2. Action and Informational Submittals**

- 1.2.1. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- 1.2.2. Revise content of documents as required before final submittal.
- 1.2.3. Phasing of submission:
  - 1.2.3.1. 2 weeks before substantial performance of the Work for construction, submit to Departmental Representative as-built documents.
- 1.2.4. Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

### **1.3. As-Built Documents**

- 1.3.1. Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
  - 1.3.1.1. Extents of the remedial excavation as determined by the contractor's surveyor.
  - 1.3.1.2. Area disturbed by the remedial excavation.
  - 1.3.1.3. Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
  - 1.3.1.4. Field changes of dimension and detail.
  - 1.3.1.5. Changes made by change orders.
  - 1.3.1.6. Details not on original Contract drawings.
  - 1.3.1.7. References to related shop drawings and modifications.
- 1.3.2. Contract Specifications: legibly mark each item to record actual "Workmanship of Construction", including:
  - 1.3.2.1. Manufacturer, trade name, and catalogue number of each "Product/Material" actually installed, particularly optional items and substitute items.
  - 1.3.2.2. Changes made by addenda and change orders.
- 1.3.3. As-built information:
  - 1.3.3.1. Record changes in red ink.
  - 1.3.3.2. Mark on 1 set of drawings, specifications and shop drawings at completion of project and, before final inspection, neatly transfer notations to second set.
  - 1.3.3.3. Provide 1 set of CDs in AutoCAD 14 (.dwg) file format with all as-built information on the CDs.
  - 1.3.3.4. Submit all sets for the Departmental Representative.

### **1.4. Completion**

- 1.4.1. Submit a written certificate that the following have been performed:
  - 1.4.1.1. Work has been completed and inspected for compliance with the Contract Documents.
  - 1.4.1.2. Defects have been corrected and deficiencies have been completed.
  - 1.4.1.3. Work is complete and ready for final inspection.

## **2. PART 2 - PRODUCTS**

### **2.1. Not Used**

- 2.1.1. Not Used

**3. PART 3 - EXECUTION**

**3.1. Not Used**

**3.1.1. Not Used**

**END OF SECTION**

## **1 GENERAL**

### **1.1 SECTION INCLUDES**

- .1 Methods and procedures for removal of existing buildings as described in the Contract Documents and as specified herein.

### **1.2 RELATED SECTIONS**

- .1 All Sections Refer to Table of Contents

### **1.3 CODES, REFERENCES, and STANDARDS**

- .1 Government of British Columbia
  - .1 British Columbia Building Code (BCBC)
    - .1 Part 8 - Safety Measures at Construction and Demolition Sites.
  - .2 Worker's Compensation Board (WCB)
- .2 Canadian Standards Association (CSA)
  - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structure.

### **1.4 DEFINITIONS**

- .1 Alternate Disposal: reuse and recycling of materials by designated facility, user or receiving organization which has valid Certificate of Approval to operate. Alternative to landfill disposal.
- .2 Deconstruction: systematic dismantling of structure to salvage materials for reuse. What cannot be reused is considered subsequently for recycling. Ultimate objective is to recover potentially valuable resources while diverting from landfill what has traditionally been significant portion of waste stream.
- .3 Demolition: rapid destruction of structure with or without prior removal of hazardous materials.
- .4 Disassembly: physical detachment of materials from structure and may include: prying, pulling, cutting, un-screwing.
- .5 Hauler: company (possessing appropriate and valid Certificate of Approval) contracted to transport waste, reusable or recyclable materials off site to designated facility, user or receiving organization.
- .6 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: 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.
- .7 Processing: tasks which are subsequent to disassembly and may include: moving materials, de-nailing, cleaning, separating and stacking.



- .8 Recyclable: ability of product or material to be recovered at end of its life cycle and re manufactured into new product for reuse by others.
- .9 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .10 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .11 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
- .12 Salvaging reusable materials from remodelling projects before the demolition stage, for resale, reuse on current project or for storage for use on future projects.
- .13 Returning reusable items may include pallets and unused products to vendors.
- .14 Salvage: removal of structural and non structural structure materials from industrial, commercial and institutional structure deconstruction/disassembly projects for purpose of reuse or recycling.
- .15 Source Separation: acts of keeping different types of waste materials separate beginning from first time they become waste.
- .16 Used Building Material Receipt: receipt issued at end destination for materials designated for alternate disposal.
- .17 Waste Audit (WA): detailed inventory of materials in building. Involves quantifying (by volume or weight) amounts of materials and wastes generated during deconstruction. Indicates quantities of reuse, recycling and landfill.
- .18 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .19 Waste Reduction Workplan (WRW): written report which outlines actions to be taken to reduce, reuse and recycle materials during course of deconstruction. Actions based on finding of the Waste Audit (WA).
- .20 Weigh Bill: receipt received from recycling facility indicating weight and content of each load/bin of material.

## **1.5 PROJECT CONDITIONS**

- .1 Accept the site as it exists and be responsible for all demolition work as shown on the drawings and as specified herein.
- .2 Existing Conditions:

- .1 Hazardous materials are known to be present on the site. Refer to Hazardous Materials Report appended to these documents.
- .2 Should materials resembling spray or trowel applied asbestos or other designated substance listed as hazardous be encountered in course of deconstruction, stop work, take preventative measures, and notify Departmental Representative immediately. Do not proceed until written instructions have been received.
- .3 Structures to be deconstructed on their condition on date of contract award at time of site visit during Bid period. Be responsible for provision of services required for deconstruction.
- .3 Make arrangements through the Departmental Representative to visit the site prior to submission of a bid and take whatever time is required to ascertain the site conditions and surrounding features related to the proposed demolition and new construction work and ensure that conditions are suitable for execution of the work. No additional sums of money will be allowed for after acceptance of bid for any items resulting from lack of understanding and familiarity with the site conditions, and failing to report immediately to the Departmental Representative any discrepancies observed on site that are in conflict with the intent of drawings and specifications.
- .4 Maintain public safety and traffic control precautions at all times during the demolition work, using properly trained qualified persons to control all Contractor's activities, vehicles, equipment, traffic and all public pedestrian and vehicles traffic that are coming to and from the site or passing along the vicinity of the site access locations.
- .5 Provide and maintain necessary perimeter protection including hoarding, guard railing, screen cover, lights and warning signs during execution of the work to fully protect all persons.
- .6 Maintain unobstructed safe site access for personnel and removal of materials.
- .7 Take precautions to guard against movement, settlements, collapse and damage to adjacent structures, services, utilities, streets, lanes, crosswalks, curbs, paving, landscaping and construction designated to remain.
- .8 Prevent debris from accumulating and blocking surface drainage systems and blocking safe exit passage to adjoining streets and property.
- .9 Location of existing site utilities are not guaranteed nor is their existence confirmed. Verify the existence of all known service utilities by site examination and review of applicable site servicing engineering drawings available from the municipality, the Owner and utility companies prior to submission of a bid and prior to the commencement of the Work to identify exact locations.
- .10 Protect and maintain existing active services designated to remain or as required to facilitate the Work.
- .11 Keep utility and service outages to a minimum. Outages will be permitted only with written permission from the Departmental Representative. Make outage requests at least 7 calendar days before date of proposed outage.

- .12 Suppress all dust and dirt. Prevent the occurrence of unsanitary conditions, flooding or leaking.
- .13 Do not allow dirt, debris or discarded materials to accumulate on site. Remove promptly.
- .14 Keep fire extinguishing suppression equipment on hand at all times.
- .15 Provide illumination for safe demolition and working conditions, but in no case less than prescribed by WCB regulations in areas where Work is being done.

## **1.6 SUBMITTALS**

- .1 Where required by authorities having jurisdiction, submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning.
- .2 Demolition Trade/General Contractor to employ a Structural Engineer registered in the Province of British Columbia to design any required temporary supports to secure any part of the existing building or structure, until new work of the Contract is implemented to satisfaction of the Project Engineer.
  - .1 Submit Schedule S-B prior to commencement of demolition/retrofit and Schedule S-C on completion of demolition.

## **1.7 CLOSEOUT SUBMITTALS**

- .1 "As demolished" drawings, showing items removed.
- .2 Submit schedule S-C from the Trade/General Contractor's Structural Engineer.
- .3 Receipts from Recycling, Waste Disposal Facilities showing recycling or disposal of materials in compliance with all Provincial and Federal Government Regulations.

## **1.8 WASTE MANAGEMENT**

- .1 Separate and handle waste materials in accordance with Section 01 74 19 Waste Management and Disposal.

## **2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Coordinate with Departmental Representative for any recovery of existing materials, fittings, fixtures and equipment to be salvaged during the demolition operation. All materials forming part of this section of the Work shall become the Contractor's property and shall be removed entirely from the site and disposed of in a legal manner to an approved disposal site as applicable.

### **3 EXECUTION**

#### **3.1 EXAMINATION**

- .1** Examine the Work and notify the Departmental Representative of any conditions affecting the performance of the Work. Review the drawings and determine the total content of Work to follow.
  - .1** Develop strategy for deconstruction to facilitate optimum salvage of reusable and recyclable materials.
- .2** Site verify and locate all existing services, utilities and facilities affecting the Work:
  - .1** Ensure all services, whether built-in or exposed, are properly located and marked as to position, type of service, size, direction of flow.
  - .2** When working in the vicinity of services and utilities, clearly mark, locate and expose all existing utilities using hand labour as required. Maintain and protect all services and utilities encountered in the work.
- .3** Inspect materials, equipment, components to be reused or turned over to the Department. Note their conditions and advise the Departmental Representative in writing of any defects or conditions which would affect removal and reuse.

#### **3.2 PREPARATION**

- .1** Ensure that affected services and utilities designated for removal have been disconnected prior to the commencement of Work, including:
  - .1** Disconnect and re route electrical and telephone service lines to property line in accordance with authority having jurisdiction. Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.
  - .2** Disconnect and cap natural gas supply lines: remove to property line in accordance with authority having jurisdiction.
  - .3** Disconnect and cap sewer and water lines: remove to property line in accordance with authority having jurisdiction.
  - .4** Remove and dispose of other underground services as directed by Departmental Representative.
  - .5** Do not disrupt active or energized utilities designated to remain undisturbed.
- .2** Locate and protect existing utilities designated to remain in service. Preserve active utilities traversing the site in operating condition throughout construction.
- .3** Cut and cap existing services in accordance with applicable utility and municipal requirements. Prior to commencement of demolition work, ensure that all services and utilities affected by the work have been disconnected, capped and sealed off or properly protected.

#### **3.3 PROTECTION**

- .1** Prevent movement, settlement or damage of neighbours fences, landscaping, and adjacent grades.
  - .1** Provide bracing, shoring and under-pinning as required.

- .2 Repair damage caused by demolition as directed by Departmental Representative.

### 3.4 DEMOLITION

- .1 Remove items as indicated.
- .2 Do not disturb items designated to remain in place.
- .3 Breakup large pieces of demolished material for handling and to prevent overloading and damage to existing construction.
- .4 Schedule and execute all work in a careful manner with all necessary consideration to prevent injury or damages to persons and to surrounding property. Do not interfere with the use of and passage to and from adjoining buildings, driveways, sidewalks and other facilities.
- .5 Demolish in a manner as to minimize dusting. Keep dusty materials, areas or site wetted down thoroughly as applicable to prevent dust and dirt rising. Provide temporary waterline where required for this purpose and remove upon completion of this work.
- .6 Salvage and Reuse:
  - .1 Carefully remove existing materials and equipment to be retained for future use.
  - .2 Where any material, component, or assembly is indicated for retention or reuse, removal shall be by a trade that normally provides or installs such an item.
  - .3 Store such items being reused in a protected area until ready to be reinstalled into the new construction proposed.
  - .4 Salvaged items designated for turnover to the Department at a location on the site as directed by the Departmental Representative.
- .7 Do not let piled material endanger structure or persons at any time.
- .8 Remove stockpiled material when it interferes with operations of project.
- .9 Prevent debris from blocking any existing surface drainage catch basins or systems.
- .10 Ensure that partial or incomplete demolished structures are stable upon completion of each day's work by taking requires safety measures such as temporary shoring if required to ensure the structures are and will remain in a stable condition for a normal or extended period of inactivity should a delay be caused to the progress of the work.
- .11 Prevent contamination with base course aggregates, when removing asphalt pavement for subsequent incorporation into hot mix asphalt concrete paving,
- .12 Remove only as many trees as required to facilitate demolition.
  - .1 Obtain written approval of Departmental Representative prior to removal of trees.

- .2 Grind, chip, or shred other vegetation for mulching and composting.
- .13 Stockpile topsoil for final grading and landscaping.

### **3.5 REVIEW**

- .1 Contractor to notify Departmental Representative at least 24 hours in advance of any necessary reviews of the work.

### **3.6 CLEANING**

- .1 Upon completion of demolition, remove surplus materials, rubbish, tools and equipment barriers.

**END OF SECTION**



## **1 GENERAL**

### **1.1 REFERENCES**

- .1 Canadian Environmental Protection Act, 1999 (CEPA 1999).
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  - .1 Material Safety Data Sheets (MSDS).
- .3 National Fire Code of Canada, 2005.
- .4 Transportation of Dangerous Goods Act (TDGA), 1999 c. 34.
- .5 Transportation of Dangerous Goods Regulations (TDGR), T-19.01-SOR/2003-400.
- .6 Storage of PCB Material Regulations, SOR/92-507.
- .7 PCB Waste Export Regulations, 1996, SOR/97-109.
- .8 Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems, March 1996.

### **1.2 DEFINITIONS**

- .1 Toxic: substance is considered toxic if it is listed on Toxic Substances List found in Schedule 1 of CEPA.
- .2 List of Toxic Substances: found in Schedule 1 of CEPA, lists substances that have been assessed as toxic. Federal Government can make regulations with respect to a substance specified on List of Toxic Substances. Column II of this list identifies type of regulation applicable to each substance.
- .3 PCBs: includes chlorobiphenyls referred to in Column I of item 1 of the List of Toxic Substances in Schedule I of Canadian Environmental Protection Act.

### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
  - .2 Submit photocopy of shipping documents and waste manifests and export notices to Departmental Representative when shipping toxic wastes off site.
  - .3 Maintain 1 copy of product data in readily accessible file on site.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Store and handle toxic wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.



- .2 Store and handle flammable and combustible wastes in accordance with current National Fire Code of Canada requirements.
- .3 Co-ordinate storage of toxic wastes with Departmental Representative and follow internal requirements for labelling and storage of wastes.
- .4 Observe smoking regulations, smoking is prohibited in area where toxic wastes are stored, used, or handled.
- .5 Report spills or accidents involving toxic wastes immediately to Departmental Representative and to appropriate regulatory authorities. Take reasonable measures to contain the release while ensuring health and safety is protected.
- .6 Transport toxic wastes in accordance with federal Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .7 Use authorized/licensed carrier to transport toxic waste.
- .8 Co-ordinate transportation and disposal of toxic wastes with Departmental Representative.
- .9 Notify appropriate regulatory authorities and obtain required permits and approvals prior to exporting toxic waste.
- .10 Dispose of toxic wastes generated on site in accordance with applicable federal and provincial acts, regulations, and guidelines.
- .11 Ensure toxic waste is shipped to authorized/licensed treatment or disposal facility and that liability insurance requirements are met.
- .12 Minimize generation of toxic waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
- .13 Identify and evaluate recycling and reclamation options as alternatives to land disposal in compliance with LEED credit MR 2, such as:
  - .1 Hazardous wastes recycled in manner constituting disposal.
  - .2 Hazardous waste burned for energy recovery.
  - .3 Lead-acid battery recycling.
  - .4 Hazardous wastes with economically recoverable precious metals.

## 2 PRODUCTS

- .1 Not Used

## 3 EXECUTION

- .1 Not Used

## END OF SECTION

## **1. PART 1 - GENERAL**

### **1.1. Measurement Procedures**

- 1.1.1. Mobilization will be paid in accordance with lump sum price established for mobilizing all necessary equipment, materials, supplies, facilities, and personnel to Site. Includes pre-mobilization submittals, insurance, bonding, and permits.
- 1.1.2. Demobilization will be paid in accordance with lump sum price established for demobilizing all equipment, materials, supplies, facilities, and personnel from the Site, decontaminating all equipment prior to removal from Site and preparing Site for closure.
- 1.1.3. Site Facilities Provision will be paid in accordance with lump sum price established to provide, design, and erect all infrastructure, including temporary structures and facilities, sanitary facilities, roadways, security, and services.
- 1.1.4. Site Facilities Operation will be paid in accordance with unit rate price established for time to operate and maintain all infrastructure, including temporary structures and facilities, sanitary facilities, roadways, security, and services. Includes meetings, progress submittals, traffic control, health and safety, environmental protection, and cleaning. Includes living out allowances, including travel, room and board.
- 1.1.5. Site Fencing will be paid in accordance with unit rate price established to provide, erect, maintain, and demobilize materials and supplies.
- 1.1.6. Standby will be paid in accordance with unit rate price established for time Work is unable to proceed due to non-specified delays caused solely by the Departmental Representative. Reviews, sampling, or other work conducted by Departmental Representative, which have a time duration identified will not result in an increase in either the Contract price or the Contract time.
- 1.1.7. Site Preparation will be paid in accordance with lump sum price established to prepare the Site for planned construction works, including any removal of trees, clearing and grubbing, and utility location, rerouting, and protection. Includes Removal of any incidental or generated material.
- 1.1.8. Site Closure will be paid in accordance with lump sum price established to restore the Site to make suitable for post-remediation use. Includes Removal of any incidental or generated material.
- 1.1.9. Post Construction Submittals and As Builts will be paid in accordance with lump sum price established to prepare and submit documents and drawings in accordance with the specifications.

### **1.2. Action and Informational Submittals**

- 1.2.1. Imported fill material: 5 working days prior to bringing material onto Site, submit documentation verifying that material is acceptable for import and intended use, including:
  - 1.2.1.1. Grain-size distribution information.
  - 1.2.1.2. Chemical analyses for Potential Contaminants of Concern, including metals.
  - 1.2.1.3. Testing to be performed and reported at an accredited laboratory at sufficient frequency to characterize all material imported to Site. Test using appropriate guidelines and practices.
  - 1.2.1.4. Perform additional as required by Departmental Representative.
  - 1.2.1.5. Facilitate testing by Departmental Representative.

### **1.3. Sequencing**

- 1.3.1. If floating free phase substance is present, remove free phase from saturated soil without further contaminating soil or groundwater prior to commencing other construction Work.

- 1.3.2. Decontaminate equipment used in construction procedures before removing equipment from job site.

#### **1.4. Maintenance**

##### **1.4.1. Access roads:**

##### **1.4.1.1. Maintain Access Roads as follows:**

- 1.4.1.1.1. Obtain permission to use existing roads to access Site.
- 1.4.1.1.2. Maintain and clean roads for duration of Work.
- 1.4.1.1.3. Control mud and dust from road.
- 1.4.1.1.4. Repair damage incurred from use of roads.
- 1.4.1.1.5. Provide photographic documentation of roads used by construction vehicles before, during and after Work.

#### **1.5. Existing Conditions**

##### **1.5.1. Buried services:**

- 1.5.1.1. Before commencing Work establish location of buried services on and adjacent to Site.
- 1.5.1.2. Arrange with appropriate authority for relocation of buried services that interfere with execution of Work: pay costs of relocating services.
- 1.5.1.3. Remove obsolete buried services within 2 m of foundations: cap cut-offs.
- 1.5.1.4. Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
- 1.5.1.5. Prior to beginning Work that may disrupt utilities, notify applicable Departmental Representative and authorities having jurisdiction and establish location and state of use of buried utilities and structures. Clearly mark such locations to prevent disturbance during Work.
- 1.5.1.6. As appropriate, confirm locations of buried utilities by independent utility locator and hand test excavations and/or soil hydrovac methods.
- 1.5.1.7. Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered.
- 1.5.1.8. Record location of maintained, re-routed and abandoned underground lines. Registered surveyor to provide as-built drawings of all services to Departmental Representative.
- 1.5.1.9. Confirm locations of recent excavations adjacent to area of excavation.
- 1.5.2. Existing buildings and surface features:
  - 1.5.2.1. Conduct condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, rail tracks, pavement, roads, survey bench marks, monuments and other features which may be affected by Work.
  - 1.5.2.2. Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair.
  - 1.5.2.3. Where required for excavation, cut roots or branches.

## **2. PART 2 - PRODUCTS**

### **2.1. Fill Materials**

#### **2.1.1. Imported fill material to meet the following minimum requirements:**

- 2.1.1.1. Imported fill material to be granular aggregate composed of inert, clean, tough, durable particles of crushed rock, gravel, sand and fines capable of withstanding the deleterious effects of exposure to water, freeze-thaw, handling, spreading and compacting. The aggregate particles will be uniform in quality and free from clay lumps, wood and free from an excess of flat or elongated pieces.

- 2.1.1.2. Imported fill material must meet the standards in Column III (Soil Relocation to Agricultural Land), Schedule 7 (Standards Triggering Contaminated Soil Relocation Agreements), BC Contaminated Sites Regulation. Any backfill material which has a discrete sample exceeding these standards will be removed and replaced by the Contractor, and an alternate source of backfill must be provided.

## **2.2. Equipment**

- 2.2.1. Temporary barriers and enclosures as required.
- 2.2.2. Leave equipment and machinery running only while in use, except where extreme temperatures prohibit shutting down.
- 2.2.3. Trucks:
  - 2.2.3.1. Cleaned meticulously between loads of contaminated soil and clean fill.
  - 2.2.3.2. Cleaned meticulously at end of work day.
  - 2.2.3.3. Cover truck bodies with tarpaulins during transportation.
  - 2.2.3.4. Use watertight truck bodies for transporting contaminated soil.
- 2.2.4. Safety equipment.

## **3. PART 3 - EXECUTION**

### **3.1. Examination**

- 3.1.1. Site Verification of Conditions
  - 3.1.1.1. Determine condition of existing Site and requirements to make the Site suitable for Work.

### **3.2. Site Preparation**

- 3.2.1. Mobilize all necessary equipment, materials, and personnel to the Site.
- 3.2.2. Remove and dispose all surface Non-Contaminated Waste at a Landfill to allow access for Work.
- 3.2.3. Clear and grubbing of the Site to allow access for Work.
  - 3.2.3.1. Clearing consists of removing Non-Contaminated Waste vegetation above existing ground surface to facilitate Work. Includes: cutting off trees and brush vegetative growth, felled trees (see Drawing 00069-02-IT-A3-03), previously uprooted trees and stumps. Dispose of Non-Contaminated Waste at a Landfill or reuse onsite as determined by Departmental Representative.
  - 3.2.3.2. Grubbing consists of excavation of Non-Contaminated Waste below existing ground surface to facilitate Work. Includes: stumps, roots, boulders and rock fragments. Dispose of Non-Contaminated Waste at a Landfill or reuse onsite as determined by Departmental Representative.
- 3.2.4. Construct, operate and maintain all infrastructure, including temporary structures and facilities, sanitary facilities, roadways, security, and services.
- 3.2.5. Remove obstructions, ice and snow, from surfaces to be worked.
- 3.2.6. Protection:
  - 3.2.6.1. Protect existing features with temporary barriers and enclosures and applicable local regulations.
  - 3.2.6.2. Keep excavations clean, free of standing water, and loose soil.
  - 3.2.6.3. Where soil is subject to significant volume change due to change in moisture content, cover and protect.
  - 3.2.6.4. Protect natural and man-made features required to remain undisturbed. Unless otherwise required or located in an area to be occupied by new construction, protect existing trees from damage.

- 3.2.6.5. Protect buried services that are required to remain undisturbed.
- 3.2.6.6. Protect existing monitoring wells such that they can be used for future monitoring of subsurface conditions.
- 3.2.6.7. Manage recovered water according to contamination level and provincial/municipal/territory regulations.
- 3.2.6.8. Provide temporary structures to divert flow of surface waters from excavation.
- 3.2.6.9. Provide safety measures to ensure worker and public safety.

### **3.3. Cleaning**

- 3.3.1. Waste Management: separate waste materials for reuse and recycling.
- 3.3.2. Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

### **3.4. Site Closure**

- 3.4.1. Clean permanent **access** roads of contamination resulting from project activity as required or at request of Departmental Representative.
- 3.4.2. Decontaminate equipment used in construction **processes** and remove from sites at end of construction activities.
- 3.4.3. Remove all temporary structures.
- 3.4.4. Demobilize all necessary equipment, materials, and personnel from Site.
- 3.4.5. Remove all Non-Contaminated Waste generated from Work and dispose at a Landfill.

**END OF SECTION**

PART 1 - GENERAL

1.1 General Conditions

- .1 The Pre-Demolition Hazardous Materials Survey completed by Sterling IAQ Consultants Ltd., dated February 18<sup>th</sup>, 2014 is hereby made a part of these specifications.
- .2 All sections of the specifications form a part of the Contract Documents and shall be read to determine their effect upon the work of this section.

1.2 Outline of Work

- .1 The scope of work includes for the complete removal and disposal of all asbestos-containing materials, including, but not limited to the materials identified in the Pre-Demolition Hazardous Materials Survey completed by Sterling IAQ Consultants Ltd., dated February 18<sup>th</sup>, 2014. The words "materials identified as asbestos-containing" in the above clause shall mean not only the major items of service covered by this Specification, but all the incidental sundry components necessary for the complete execution of the work, with their labour charges, whether or not these sundry components and services are mentioned in detail in the tender documents issued in connection with the contract.
- .2 Work of this project is governed by WorksafeBC, Occupational Health and Safety Act and other applicable regulations.
- .3 As this is a demolition project (no reoccupation), all asbestos abatement may be completed under moderate-risk safe work procedures outlined in the WorksafeBC Safe Work Practices for Handling Asbestos.
- .4 All removal work shall use only hand tools and removal techniques to minimize release of airborne asbestos fibre and to enhance dust control. After removal, all surfaces are to be cleaned of any dust and debris by, HEPA vacuuming of all interior surfaces.
- .5 All asbestos waste and asbestos-contaminated debris is to be removed from the site in sealed containers and transported by a licensed hauler under a bill of lading to an approved landfill site. All non-asbestos debris, rubble and demolished building elements shall be disposed of properly.
- .6 Quality Control inspections and air monitoring will be performed by the Departmental Representative throughout the project. Any contamination, as determined by the Departmental Representative through visual inspection and/or air monitoring, of the areas adjacent to the asbestos removal work areas will require expeditious isolation and thorough cleaning of the contaminated areas by the Contractor.
- .7 Written clearance instructions issued by the Departmental Representative will allow the contractor to proceed to subsequent phases of work as follows:
  1. Preparation
  2. Abatement
  3. Tear Down
- .8 Drywall joint compound throughout the subject building was found to contain asbestos. The total amount of drywall to be abated was estimated at 3,800 square feet (353 square meters).
- .9 Dispose all waste in accordance with subsection 3.5 Waste Disposal.

1.3 Definitions

- .1 Amended water: water with a non-ionic surfactant wetting agent added to reduce water surface tension to 35 or less dynes, to allow thorough wetting of asbestos fibres.
- .2 Airlock: a system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 1.5 m apart.
- .3 Air Monitoring: The process of measuring the fibre content of a specific volume of air.
- .4 Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection, both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.
- .5 Asbestos-Containing Material (ACM): Any material containing 0.5% asbestos or greater and any concentration of asbestos found in Vermiculite.
- .6 Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.
- .7 Asbestos debris: Pieces of ACM that can be identified by colour, texture, or composition, or means dust, if the dust is determined by an accredited Departmental Representative to be ACM.
- .8 Authorized visitor: the Owner or his approved representative or persons representing regulatory agencies.



- .9 Barrier: Any surface that seals off the work area to inhibit the movement of fibres.
- .10 Clean Area: Either an operating area or an area in which removal work has already been completed.
- .11 Curtained doorway: an arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed by placing two overlapping sheets of polyethylene over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. All free edges of polyethylene shall be reinforced with duct tape and the bottom edge shall be weighted to ensure proper closing. Each polyethylene sheet shall overlap openings not less than 1.5 m on each side.
- .12 Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.
- .13 Disposal Bag: A properly labelled 6 mil thick leak-tight plastic bag used for transporting asbestos waste from the work area to the disposal site.
- .14 D.O.P. Test: Dioctylphthalate aerosol challenge of a HEPA filter system and is used to establish the integrity and effectiveness of the system to filter out asbestos fibres.
- .15 Encapsulant: A material that surrounds or embeds asbestos fibres in an adhesive matrix, to prevent release of fibres.
- .1 Bridging encapsulant: an encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.
- .2 Penetrating encapsulant: an encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.
- .3 Removal encapsulant: a penetrating encapsulant specifically designed to minimize fibre release during removal of asbestos-containing materials rather than for in situ encapsulation.
- .16 Encapsulation: Applying to asbestos-containing materials, with an encapsulant.
- .17 Filter: A media component used in respirators, vacuum cleaners or negative pressure filter fan units to remove solid or liquid particles from the inspired air.
- .18 Friable Asbestos Material: Material that contains asbestos that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- .19 Glovebag: A sack with inward projecting long sleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.
- .20 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .21 Departmental Representative: The Owner or person designated by the owner to provide inspection and air monitoring of the Contractor's work.
- .22 Negative pressure: a system which extracts air directly from work area, filters such extracted air through a High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building. This system shall maintain a minimum pressure differential of 0.03 inches Water Gauge relative to adjacent areas outside of work areas, be equipped with an alarm to warn of system breakdown, and be equipped with an instrument to continuously monitor and automatically record pressure differences.
- .23 Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
- .24 Polyethylene sheeting sealed with tape: polyethylene sheeting of type and thickness specified sealed with tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealant, and to prevent escape of asbestos fibres through the sheeting into a clean area.
- .25 Positive Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during inhalation and exhalation in relation to the air pressure of the outside atmosphere.
- .26 Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- .27 Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- .28 Water Filtration System: A multi-stage filtration system for filtering shower and wastewater. Typically constructed with at least two filters, the primary stage retains 20 microns or larger particles and the final stage removes 5 micron or larger particles.
- .29 Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.
- .30 Work: Includes all services, labour and material required to complete the work as specified in the contract.

- .31 Work Areas: where the actual removal, sealing and enclosure of asbestos-containing materials takes place.

#### 1.4 Regulatory Agencies

- .1 Comply with Federal, Provincial, and local requirements pertaining to asbestos, provided that in any case of conflict among those requirements or with these specifications the more stringent requirement shall apply.  
The regulations shall include but not be limited to the following:
- .1 Occupational Health and Safety Regulation under the authority of Workers' Compensation Act and Workplace Act, British Columbia Regulation 296/97.
  - .2 British Columbia Hazardous Waste Regulation 63/88, under the Environmental Management Act.
  - .3 Government of Canada Regulations respecting the Handling, Offering for Transport and Transporting of Dangerous Goods. (Extract from the Canada Gazette Part II, dated February 6, 1985).
  - .4 Regulations for Construction Projects, British Columbia.
  - .5 Office of the Fire Commissioner of Canada.
  - .6 WHMIS Regulations RRO 1990 Reg. 860.
  - .7 Canada Labour Code Part II – Canada Occupational Health and Safety Regulations.
  - .8 WorksafeBC Regulation Part 6

#### 1.5 Submittals

**NOTE:** All submittals except waste manifest must be submitted to the Departmental Representative or their representative 5 days prior to commencing work.

- .1 Submit a written proof satisfactory to the Departmental Representative that suitable arrangements have been made to dispose of asbestos-containing waste in a secure landfill as required by the BC Hazardous Waste Regulation 63/88.
- .2 Submit a written proof satisfactory to the Departmental Representative that suitable arrangements have been made to transport asbestos-containing waste to a landfill as specified in sub-section 1.5.1 by a hauler operating under a licence to transport asbestos waste as required by the Hazardous Waste Regulation 63/88. A copy of the license to transport asbestos waste must be included in the submission.
- .3 Submit a copy of written work procedures for asbestos-related work, personal protection, disposal and emergency response.
- .4 Submit a copy of a written respiratory protection program acceptable to the Workers' Compensation Board including all workers who may be required to wear a respirator.
- .5 Submit a proof satisfactory to the Departmental Representative that all employees engaging in asbestos-related work have had instruction and training in:
  - .1 the hazards of asbestos exposure;
  - .2 personal hygiene and work procedures;
  - .3 the use, and cleaning of respirators and personal protective equipment;
  - .4 the disposal of asbestos waste, respirator cartridges and protective clothing; and
  - .5 All aspects of work and protective measures as required by the written work procedures.
  - .6 medical emergency procedures for work with asbestos.A proof of a minimum of a one-day training session will be required for every worker engaging in asbestos-related work. No worker without a proper record of training shall be allowed in or around asbestos-removal work areas.
- .6 Submit Workplace Hazardous Materials Information System (WHMIS) Information Package containing Material Safety Data Sheets (MSDS) for all products and substances expected to be used on site with updates as necessary. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.
- .7 Submit manufacturer's instructions and recommendations for all products to be used in work (encapsulants, wetting agents, adhesive removal agents, etc.). Include data substantiating that material complies with requirements.
- .8 Submit proposed work schedule including work force in man hours and shifts to meet the set schedule.
- .9 Submit layout of proposed enclosures and decontamination facilities where not contained in these specifications for review and written approval.
- .10 Copies of the notifications specified in section 1.10.1.
- .11 Submit copies of all waste manifests prior to shipment of asbestos waste. Ensure that waste manifest for each waste shipment is signed by the Departmental Representative or their authorized agent.



### 1.6 Existing Conditions

- .1 Reports and information pertaining to material containing asbestos to be handled, removed, or otherwise disturbed during this project are available through the Departmental Representative, Sterling IAQ Consultants Ltd. The data available is for general information only and is not necessarily representative of all asbestos-containing materials contained within the scope of this project and is not to be used as the sole basis for bidding purposes.
- .2 Notify the Departmental Representative of suspect asbestos-containing material discovered during the work and not apparent from the drawings, specifications, or report, pertaining to the work. Do not disturb such material pending instructions from the Departmental Representative.
- .3 Normal working hours are 7:00 AM to 7:00 PM. Work on this project may be performed outside normal working hours only if authorized by the Departmental Representative.

### 1.7 Restrictions

- .1 Do not allow smoking, chewing, eating or drinking in the work area.
- .2 Do not allow entry to work area by unauthorized persons or persons not wearing protective clothing and equipment.
- .3 Compressed air shall not be used to clean up and remove asbestos dust from any surface.
- .4 Open flames will not be permitted in the work area (including but not limited to torches and propane-fired heaters).
- .5 Do not allow motorized lift equipment in an asbestos removal work area.
- .6 No worker, supervisor, or authorized visitor may have facial hair which prevents proper seal between the respirator facepiece and skin.

### 1.8 Worker Protection

- .1 Instructions: before commencing work instruct workers in all aspects of work procedures and protective measures.
- .2 Respiratory Protection: Provide workers with personally issued marked respiratory equipment acceptable to WorksafeBC suitable for the Asbestos exposure.  
Ensure that suitable respiratory protective equipment is worn by every worker who enters the work area. A respirator provided by an employer and used by a worker:
  - .1 shall be a non-powered reusable air purifying dust respirator or better, equipped with High Efficiency Particulate Aerosol (HEPA) Filters suitable for asbestos-containing dust for Type 1 Operations, Type 2 Operations and Type 3 Operations (where the asbestos-containing materials are wetted and only chrysotile is present).
  - .2 shall be powered air purifying dust respirator or better equipped with High Efficiency Particulate Aerosol (HEPA) Filters suitable for asbestos that is of a type other than chrysotile and is wetted;
  - .3 shall be fitted so that there is an effective seal between the respirator and the worker's face;
  - .4 shall be assigned to a worker for the worker's exclusive use;
  - .5 shall be used and maintained in accordance with the procedures specified by the equipment manufacturer;
  - .6 shall be cleaned, disinfected and inspected after use on each shift, or more often if necessary;
  - .7 shall have damaged or deteriorated parts replaced prior to being used by a worker;
  - .8 when not in use, shall be stored in a convenient, clean and sanitary location; and
  - .9 All respirators used must be certified by the US National Institute for Occupational Safety and Health (NIOSH) or the British Standards Institution for exposure to airborne asbestos fibre.
- .3 Protective Clothing:
  - .1 Provide workers with full body disposable coveralls:
  - .2 Full body disposable type coveralls shall:
    - .1 be worn by every worker who enters the work area,
    - .2 be made of a material which does not readily retain nor permit penetration of asbestos fibres,
    - .3 consist of full body covering including head covering with snug fitting cuffs at the wrists, ankles and neck,
    - .4 include suitable footwear,
    - .5 be repaired or replaced if torn, and
    - .6 be Tyvek by DuPont, or equivalent.

- .3 Alternatively, reusable protective clothing may be used if it is left in Equipment and Access Room until the end of asbestos abatement work, at which time such items shall be disposed of as asbestos waste.
  - .4 Provide other body protection required under applicable safety regulations.
- 1.9 Visitor Protection**
- .1 Provide protective clothing and approved respirators to authorized visitors to work areas.
  - .2 Instruct authorized visitors where required in the use of protective clothing and respirators.
  - .3 Instruct authorized visitors where required in proper procedures to be followed in entering into and exiting from work areas.

**1.10 Notification**

- .1 Not later than 24 hours before commencing work on this project notify the following in writing:
  - .1 WorksafeBC – NOPA.

**PART 2 - PRODUCTS**

**2.1 Materials**

- .1 **General Material Requirements:** Provide materials that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
- .2 **Polyethylene Sheeting:** A single polyethylene film. In 0.15 mm (6 mil) minimum thickness unless otherwise specified; in the largest sheet size possible to minimize seams and joints, clear, frosted or black as specified.
- .3 **FR (Fibre-Reinforced) Polyethylene Sheeting:** Woven fibre reinforced fabric bonded both sides with polyethylene sheeting. 0.20 mm (8 mil) fabric made up from 0.13 mm (5 mil) weave and 2 layers 0.04 mm (1.5 mil) poly laminate, in sheet size to minimize joints.
- .4 **Flame-Resistant Polyethylene Sheeting:** A single polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, in 0.15 mm (6 mils) thickness as indicated, frosted or black as indicated.
- .5 **Drop Sheets:** In polyethylene type and size appropriate for the work being performed.
- .6 **Tape:** Reinforced cloth or fibreglass reinforced tape in 2" or 3" widths suitable for sealing polyethylene sheeting under both wet conditions using amended water, and dry conditions.
- .7 **Spray Cement:** Spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- .8 **Caulking:** One component non-staining acrylic polymer sealant to conform to GSB Specification 19GP-5M.
- .9 **Foam:** Low density polyurethane expanding foam Froth-Pack or equivalent or better.
- .10 **Wetting Agent:** Water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos-containing material and retardation of fibre release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a solution of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
- .11 **Sealer:** Slow-drying sealer shall be a non-staining, clear, water dispersable type that remains tacky on the surface for a minimum of 8 hours for the purpose of trapping any residual airborne fibres during the settling period. The product must have flame spread and smoke development ratings both less than 50 and shall leave no stain when dry. Acceptable products: Borden Polyco 804, Double AD TC-55, equivalent or better.
- .12 **Encapsulant:** Type 1 penetrating Class A water based encapsulant conforming to CGSB 1-GP-205M and approved by the Fire Marshall having flame spread and smoke development ratings both less than fifty (50). Acceptable products: Ocean 666, Decadex Fire Check equivalent or better.
- .13 **Asbestos Waste Containers:** Waste shall be contained in two separate containers which shall be dust-tight and impervious to asbestos and any chemicals used during the removal process. The inner container shall be a sealable polyethylene bag (or where the glove bag method is used, the glove bag itself). Where there are sharp objects included in the waste material, the outer container shall be a sealable fibre type drum, otherwise the outer container may either be a sealable polyethylene bag. Containers shall be as follows:
  - .1 **Polyethylene Waste Bag:** 0.15 mm (6 mil) thick leak-tight polyethylene bags labelled as required by sub-section 3.5 Waste Disposal.

- .2 Fibre Drums: 55 US gallon capacity heavy duty leak tight fibre drums with tight sealing locking metal top and metal bottom.
- .3 Labels: Waste containers shall have a pre-printed cautionary asbestos warning label, acceptable to local dump authorities, clearly visible when ready for removal to disposal site.
- .14 Felts: Standard non-coated cellulose building felt approximately 1/16" thick and 36" to 72" in width.
- .15 Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of **several** extinguishers of NFPA recommended types for the exposures in each case.
- .16 First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

## 2.2 Equipment

- .1 General: provide equipment that is undamaged, clean and in serviceable condition. Provide only equipment that is recognized as being suitable for the intended use, by compliance with appropriate standards.
- .2 Airless Sprayer: Spray equipment for amended water: for application to asbestos-containing materials for saturation prior to removal. Airless spray units are only acceptable, such as Grace Hydrospray or approved equal.
- .3 Power Washer: Spray equipment for saturation of asbestos-containing material with amended water for cleaning of surfaces in abatement work area after asbestos removal, capable of delivering an airless stream of water at a pressure of not less than 1200 psi or exceeding 2500 psi.
- .4 Fine Atomizing Spray Nozzle: Nozzle for airless sprayer capable of delivering not less than 1 gallon per minute of fine particle spray of amended water.
- .5 Garden Sprayer: A hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or fine spray of liquid of amended water under pressure. (Mandatory for Glove Bag work)
- .6 HEPA Filter/Fan Units: General: HEPA filter/fan units shall be used to create negative air pressure differential in the work area. Supply the required number of HEPA filtered fan units to the site in accordance with these specifications. Use units that meet the following requirements.
  - .1 Each HEPA filter/fan unit shall consist of, but not be limited to:
    - .1 Protective cabinet.
    - .2 Inlet protective grille.
    - .3 Prefilter(s).
    - .4 HEPA filter.
    - .5 Fan.
    - .6 Pressure differential gauge and high/low switch.
    - .7 On/off switch.
  - .2 Cabinet: Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard size doorways. Provide units whose cabinets are:
    - .1 Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance.
    - .2 Arranged to provide access to and replacement of all air filters from intake end.
    - .3 Mounted on casters or wheels.
  - .3 Prefilters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of prefiltration are required. Provide units with the following prefilters:
    - .1 First-stage prefilter: low-efficiency type shall be 98% efficient for particles 100 um and larger.
    - .2 Second-stage filter: medium efficiency shall be 95% efficient for particles down to 5 um. Provide units with prefilters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.
  - .4 HEPA Filters: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.
    - .1 Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.
    - .2 Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles when tested in accordance with Military Standard

- Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.
- .3 Provide filters that are marked with: the name of the manufacturer, serial number, air flow rating, efficiency, resistance, and the direction of test air flow.
- .5 Fans: 1500 cubic feet per minute minimal capacity of fan according to usable air-moving capacity under actual operating conditions. Individual Units will be considered at 75% of published rated air flow unless individually tested and certified by a firm specializing in such measurement.
- .6 Pressure Differential Gauge and High/Low Switch
- .1 Provide units equipped with:
- .1 Magnehelic gauge or manometer to measure the pressure drop across filters in the cabinet and indicate when filters have become loaded and need to be changed.
- .2 A table indicating the usable air-handling capacity for various static pressure readings on the Magnehelic gauge affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point.
- .3 Elapsed time metre to show the total accumulated hours of operation.
- .2 Provide units with the following safety and warning devices:
- .1 Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter.
- .2 Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge.
- .3 Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red).
- .4 A low or high pre-set differential pressure condition shall cause an audible alarm to sound.
- .7 On/Off Switch: An on/off switch shall be found on the exterior of each cabinet. Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.
- .7 Negative Pressure Differential Control Units: Device capable of measuring pressure differential between work area and outside areas. Each negative pressure differential control unit shall consist of, but not be limited to:
- .1 Pressure differential gauge range 0 to 0.10 inches (water gauge).
- .2 High limit audible alarm.
- .3 Low limit audible alarm.
- .4 Sensor tubing and wall clamps.
- .5 Wall mounting brackets.
- .6 Auto re-set.
- .7 Continuous recording tape or wheel chart.
- .8 HEPA Vacuum: High Efficiency Particulate Air filtered vacuum equipment. Must have a filtering system capable of collecting and retaining asbestos fibres to an efficiency of 99.97% for fibres of 0.3 micrometres or larger. HEPA filters must have been individually tested and certified by the manufacturer. All HEPA vacuums brought onto the job site shall be visibly clean, shall be in a good state of repair and shall be maintained in such state through completion of the project shall be D.O.P. tested on site prior to use or after each filter disturbance.
- .9 Scaffolding: Scaffolding may be of the suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions. Rungs of all metal ladders, shall have an abrasive non-slip surface. Surfaces on all scaffold subject to foot traffic shall have non-skid surface and/or foot boards.
- .10 Electrical Service: General: Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period.
- .1 Ground Fault Panel: Electrical Panel equipped with breaker type ground fault circuit interrupters (GFCI) of sufficient capacity to power all electrical equipment and lights in the work area. All circuit breakers shall have 5 mA ground fault protection and shall be equipped with test button and reset switch. The panel should be complete with all necessary accessories including ground fault interrupter breakers installed by licensed electrician.



- .2 Electrical Components and Equipment: All electrical materials supplied by this Contractor shall be fully approved by the Canadian Standards Association (CSA) for use as installed and meet the requirements of this specification in all respects.
- .3 Temporary Lighting: Provide general service incandescent lamps or fluorescent lamps of wattage required for adequate illumination as required by the work. Protect lamps with guard cages grounded together to distribution panel or tempered glass enclosures.
- .4 Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas of work.
- .11 Water Services: General: Provide all connections to the Owner's water system including backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered.
  - .1 Water Pipe: Employ piping with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
  - .1 Supply Water Piping: High pressure hose including high pressure fittings and components or supply water pipe including fittings shall be Type L copper minimum with 50/50 solder joints to ASTM B032 alloy.
  - .2 Drain Water Piping: Drain pipes including fittings shall be ABS pipe to Canadian Standard B.181.1-1973 with solvent weld or by high pressure hose discharge from filters.
- .2 Hot Water Heater: ULC rated electric hot water heater appropriately sized for project to supply hot water for the Decontamination Unit shower. Activate from ground fault panel located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" x 12" x 6" deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with provincial electrical code standards.
- .3 Sump Pump: Provide totally submersible waterproof sump pump with integral float switch and shall have a manual switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.
- .4 Shower: General shower shall be of the walk through type to permit use by one person at a time.
  - .1 Shower Enclosure: Shower enclosure shall be of a minimum 24 gauge steel walls with baked enamel, galvanized steel, aluminum or stainless steel finish, 16 gauge floor with porcelain enamel finish, brass drain and tapping for mixing valve. Shower installation shall be complete with globe valve for tempered water with a shower head complete with orifice to restrict the flow to 2.5 USGPM.
  - .2 Shower Pan: Provide one piece waterproof shower pan of minimum size 4' x 8' by 6" deep. Fabricate from seamless fibreglass minimum 1/16" thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seams or, copper or lead with soldered seams.
  - .3 Shower Head and Controls: Provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower separately with water from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.
  - .4 Hose Bib: Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4" National Standard male hose outlet.
  - .5 Filters: Provide multi-stage cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the work area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
    - .1 Primary Filter - Passes particles 20 microns and smaller
    - .2 Last Filter - Passes particles 5 microns and smaller

- .1 Minimum 6 mil polyethylene, polyvinyl chloride or equivalent plastic sack, with two sealed inward projecting long sleeved gloves or mittens, pre-printed with same warning notice as a disposal bag, equipped with a pouch for storage of tools, with designated location for wand or HEPA vacuum wand, and sufficient capacity to hold removed materials and permit sealing as specified.
- .13 Securing Device: Reusable nylon straps at least 1" wide with metal tightening buckle for sealing ends of glove bags around pipe and or insulation.
- .14 Self-Contained Toilets: Single-occupant portable toilet units of the chemical type, properly vented.

PART 3 - EXECUTION

**3.2 Type Two Removal Operation**

The procedures specified under Type Two Removal Operation are to be followed during the abatement of asbestos-containing drywall joint compound on walls and ceilings, provided that the building in which the abatement is to occur will be demolished.

**1 Preparation Procedures**

- 1 Prevent the spread of dust from the work area using measures appropriate to the work to be done.
  - .1 Shut off, lock out and seal all ventilation duct vents with the application of one layer of 6 mil (0.15 mm) thick clear polyethylene sheet sealed with tape.
  - .2 Clean and remove all moveable objects within proposed work area using a HEPA vacuum.
  - .3 Clean fixed casework, plant, and equipment within proposed work area, using a HEPA vacuum and cover with polyethylene sheeting sealed with tape.
  - .4 Clean proposed work areas using, where practicable, HEPA vacuum cleaning equipment. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA filter-equipped vacuums.
  - .5 Set up an air tight enclosure around the area where work on the asbestos-containing material is to be carried out.
  - .6 Enclosure should be set up using 1 layer of FR polyethylene sheeting to cover the floors, and 1 layer of 6 mil (0.15 mm) thick clear polyethylene sheeting to cover the walls, unless walls are to be removed. Two layers of FR polyethylene sheeting should be used to cover carpeted floors. Poly on the walls should be made to overlap with the poly on the floor a minimum of 300 mm.
  - .7 Use vacuums equipped with HEPA filters to provide negative air pressure inside the enclosure.
  - .8 Entrance to the enclosure should be covered by flaps of polyethylene on each side.
  - .9 Separate parts of the building required to remain in use from the work area by polyethylene drop sheets at the perimeter of the work area.
  - .10 Separate the work area with clearly visible warning signs advising of the hazards of asbestos dust and that entry is restricted to authorized trained personnel wearing personal protective equipment.
  - .11 Erect scaffolding or platforms necessary to perform the removal work. All platforms that exceed 25 feet in height will require the submission of a shop drawing stamped by a professional engineer for approval by the Departmental Representative within a minimum of 5 days prior to commencing the work. Guard rails shall be provided around all platforms or scaffolding where practicable.
  - .12 Cover floor area of scaffold or platform with one layer of FR polyethylene.
  - .13 Extend floor of scaffolding or platform under or to item being removed to act as a catchment. Polyethylene sheeting shall be suitably braced and/or restrained so that excessive billowing or failure of the polyethylene sheeting or taped joints does not occur as a result of the negative pressure differential created by the vacuums.
  - .14 Light fixtures and all other suspended ceiling objects shall be covered and sealed air tight using clear 6 mil poly sheets.
- .2 Asbestos Removal shall not commence until:
  - .1 The work area is effectively separated from clean areas of the building.
  - .2 Warning signs are posted outside the removal work areas.
  - .3 All surfaces which are not possible to clean are sealed with polyethylene sheeting and tape.
  - .4 Arrangements have been made for waste disposal, dump site has been contacted and storage bin is on site.
  - .5 Tools equipment and materials are on hand and in the work area.
  - .6 Facilities for the washing of hands and face are available for workers leaving the work area.

**2 Worker Protection Procedures**

- 1 Before proceeding to the work area:
  - .1 Each worker shall remove street clothes in a designated clean room and shall don respirator and disposable coveralls.
- .2 Before leaving the work area:

- .1 Each worker shall decontaminate their protective clothing, boots and respirator by first HEPA vacuuming and then by damp wiping using soap and water.
- .2 The removed disposable coveralls shall be disposed of as asbestos waste in a 0.15 mm (6 mil) labelled waste bag. Respirator filter inlets shall be sealed in tape or disposed of as asbestos waste.
3. Each worker shall wash face and hands by damp wiping using soap and water prior to proceeding from the decontamination area.
- .3 Asbestos Removal Procedures
  - .1 Before beginning work remove visible dust from surfaces in the work area. Use HEPA vacuum, or damp cloths where damp cleaning is considered more appropriate. Do not use compressed air to clean up or remove dust from any surface.
  - .2 Wet materials containing asbestos to be removed, disturbed, or sealed with amended water. Use garden reservoir type low velocity fine mist sprayer. Perform work in a manner to reduce dust creation to lowest levels practicable. Spray asbestos material repeatedly during the work process to minimize asbestos fibre dispersion.
  - .3 Removed material has to be placed directly in waste bags. Wherever possible, asbestos-containing material should be removed in sections as intact as possible.
  - .4 Areas that used to be covered with the asbestos-containing material should be cleaned after the material is removed, using wirebrushes, steel wool, or any other tools suitable.
  - .5 Frequently during the work and immediately after completion of the work, clean up dust and waste containing asbestos using a HEPA vacuum or by damp wiping.
  - .6 All labelled waste bags should be placed in clean clear 6 mil poly bags before they are taken out of the enclosure.
- .4 Final Clean
  - .1 When removal is complete, clean the entire work area by HEPA vacuuming and wet wiping.
  - .2 All tools and equipment used in the removal process such as hook knives, extension cords, scrapers, wirebrushes, garden sprayers etc..., should be washed and cleaned and placed in 6 mil polyethylene bags.
  - .3 The work area shall be deemed clean by the Departmental Representative when there is no visible residue, dirt, film, stain, or discolouration resulting from either asbestos removal or cleaning activities.
  - .4 After completion of the initial cleaning and after the Departmental Representative has passed the visual inspection, spray sealant on all surfaces in the work area, including, but not limited to:
    - .1 where asbestos material has been removed.
    - .2 polyethylene sheeting used on walls, floors and ceilings.
  - .5 Sealant should be sprayed using a garden reservoir type low velocity fine mist sprayer. The sprayer cannot be used if the nozzle is partially obstructed, or if a uniform fine mist spray cannot be obtained.
  - .6 Enclosure should be left standing until all the sealant has dried, or if required, until an air sample is taken inside the enclosure, and the levels are below 0.1f/cc.
  - .7 After the area is declared clean and written approval to proceed has been received from the Departmental Representative:
    - .1 Dismantle boundaries and isolating barriers and treat as asbestos waste. Drop sheets shall be wetted and folded to contain dust and then placed in waste bags.
    - .2 Immediately before their removal from the work area, and disposal, clean each filled labelled waste bag using damp cloths or HEPA vacuum and place in second clean clear polyethylene waste bag.
    - .3 Dispose of waste as per procedures specified in subsection 3.5 Waste Disposal.
  - .8 Repair or replace objects damaged in the course of the work. Re-establish objects moved to temporary locations in the course of the work, in their proper positions. Re-secure mounted objects removed in the course of the work in their former positions.



### 3.5 Waste Disposal

- .1 Asbestos-containing wastes shall be disposed of in accordance with procedures established by the BC Ministry of the Environment Hazardous Waste Regulation B.C. Reg 63/88 (as amended) under the Environmental Management Act and the Government of Canada Transportation of Dangerous Goods Regulations.
- .2 Both sides of every vehicle used for the transportation of asbestos and every waste container must display thereon in large easily legible letters that contrast in colour with the background the word "CAUTION" in letters not less than ten centimetres in height and the words:  
**CONTAINS ASBESTOS FIBRES**  
Avoid Creating Dust and Spillage  
Asbestos May Be Harmful To Your Health  
Wear Approved Protective Equipment.
- .3 Every waste container must display thereon in large easily legible letters the word:
  - .1 For asbestos waste of unknown material or an asbestos type other than chrysotile (Asbestos, Blue, Product Identification Number "2212").
  - .2 For chrysotile asbestos (Asbestos, White, Product Identification Number "2590").
- .4 Every vehicle used for the transportation of asbestos waste shall display a Class 9 Label.
- .5 The waste must be transported in a fully-enclosed truck, or alternatively, in a fully enclosed waste disposal skip. To deal with spills or receptor breakage, the driver must be familiar with cleanup and handling procedures.
- .6 The truck must be equipped with a shovel and broom, wetting agent, protective clothing, respiratory protective equipment, polyethylene bags of at least 6 mil thickness, and bag closures.
- .7 Prior to the shipment of asbestos waste the building owner or representative shall sign and receive a copy of the bill of lading/waste manifest.

### 3.6 Air Monitoring

General: The purpose of the Owner's air monitoring is to detect faults in the work area isolation such as:

- .1 Contamination of the building outside of the work area with airborne asbestos fibres,
- .2 Failure of filtration or rupture in the differential pressure system,
- .3 Contamination of air outside the building envelop with airborne asbestos fibres.

Should any of the above occur immediately cease asbestos abatement activities until the fault is corrected. Do not recommence work until authorized by the Departmental Representative. The Contractor may engage a testing laboratory for his own usage however these results shall not be acceptable for the Owner's monitoring of the work area unless authorized by the Departmental Representative in writing.

- .1 From the commencement of work until the completion of cleaning operations, air samples may be taken by the Departmental Representative both inside and outside the work area enclosures.
- .2 If air monitoring shows that areas outside the work area enclosures are contaminated, these areas shall be enclosed, maintained and cleaned, in the same manner as that applicable to work areas.
- .3 Air tests will be taken using Phase Contrast Microscopy (PCM) methods following NIOSH 7400A rules (latest edition) from the time asbestos-containing materials may be disturbed until final clearance tests have indicated acceptable fibre levels in the work area as follows:
  - .1 Outside Work Areas: during preparation, removal and cleaning operations: One sample outside the work area per worked shift. The maximum allowable fibre concentration outside the work areas during asbestos removal or cleanup shall be 0.1f/cc. Should levels exceed this value, the work shall stop and proceed only after the cause of the high fibre counts has been remedied. The area is to be thoroughly cleaned with wet wiping and HEPA vacuuming by the Contractor to the satisfaction of the Departmental Representative. Further air monitoring will be carried out to confirm that the area has been adequately cleaned. Two samples will be taken outside of each work area during final clearance test of which only one sample will be analyzed. 0.1 f/cc will be considered the clearance level if no disturbance is detected from other removal operations.
    - .1 Outside work areas all subsections.
      - .1 3.1 Type One Removal Operation.
      - .2 3.2 Type Two Removal Operation.
      - .3 3.3 Type Three Removal Operation.
      - .4 3.4 Glove Bag Removal Method.
  - 2 Inside work area for subsection 3.2 Type Two Removal Operation.

- .1 Preparation: One sample per 8 hour shift may be taken. The maximum allowable fibre concentration shall be 0.1 f/cc.
- .2 Final Clearance Test (if required): A minimum of one sample will be taken at completion of removal work, and before the enclosure is taken down. The maximum allowable fibre concentration shall be 0.1 f/cc. If a concentration of greater than 0.1 f/cc. is measured, then the Contractor shall clean and seal the entire enclosure and work area.
- 3 All PCM results shall be reported at the 95% upper confidence limit (assuming a relative standard deviation of 0.45).
- 4 Should additional air monitoring be required over the requirements specified above due to high fibre counts, the cost of such additional air monitoring including laboratory analysis will be charged to the Contractor at \$100.00 per sample and shall be performed by the Departmental Representative.

#### **4.0 Lead-Based Paint**

General: Lead-based paints were detected in the interior walls of the subject building. The contractor must submit a Lead Paint Exposure Control Plan to the Departmental Representative 5 days prior to commencing work.

Disposal: All lead-containing waste materials must be sampled and analyzed using the standard Toxicity Characteristic Leaching Procedure (TCLP). This procedure is designed to determine the "mobility" or "leachability" of lead in liquid and solid wastes. A minimum of 50 g (100 g is preferred) of a representative lead-containing paint and associated substrate (concrete, plaster, etc.) should be collected and submitted to a certified laboratory for testing. Laboratory results are provided in milligrams per litre (mg/L) of leachable lead. The acceptable level for non-regulated disposal of lead-containing paint is less than 5 mg/L as determined through analytical TCLP.

The disposal of lead-containing paint is regulated under the Transportation of Dangerous Goods Act and by the British Columbia Ministry of Environment.

END OF SECTION



## **1 GENERAL**

### **1.1 SECTION INCLUDES**

- .1 Provide site grading as indicated on the Architectural drawings and as specified herein.

### **1.2 RELATED SECTIONS**

- .1 All Sections Refer to Table of Contents

### **1.3 QUALITY ASSURANCE**

- .1 Be responsible for the adequate control of dust for the duration of this Contract. Such control shall be to the approval of the Departmental Representative and shall be adequate to avoid inconvenience and complaints from adjoining property, or the local authority.

## **2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Fill: free draining granular fill material 76 mm (3") minus, containing not more than 5%, by dry weight, passing #200 sieve and having no organic content.
- .2 Topsoil: To better or match existing.
- .3 Use soil treatments and procedures that are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent watercourses or ground water.

## **3 EXECUTION**

### **3.1 EXAMINATION**

- .1 Verify site conditions.
- .2 Verify that survey benchmark and intended elevations for the Work are as indicated.

### **3.2 PREPARATION**

- .1 Identify required lines, levels, contours, and datum.
- .2 Utilities:
  - .1 Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.
  - .2 Stake and flag locations of known utilities.
  - .3 Protect above and below grade utilities that remain.

- .3 Protect plant life, lawns, and other features that are to remain, in addition to those features specifically noted to be protected for the duration of the work.

### **3.3 FILLING**

- .1 Fill areas to contours and elevations as indicated.
- .2 Place fill material on continuous layers and compact.
- .3 Maintain optimum moisture content of fill materials to attain required compaction density.
- .4 Make grade changes gradual. Blend slope into level areas.
- .5 Restore areas and existing works outside areas of demolition to conditions that existed prior to beginning of Work match condition of adjacent, undisturbed areas.
- .6 Remove surplus fill materials from site.

### **3.4 REVIEW**

- .1 Contractor to notify Departmental Representative at least 24 hours in advance of any necessary reviews of the work.

### **3.5 CLEANING**

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

### **END OF SECTION**

## **1. PART 1 - GENERAL**

### **1.1. Measurement Procedures**

- 1.1.1. Excavation will be paid in accordance with unit rate price established for insitu volume removed as specified in the Drawings and as determined by Departmental Representative. Excavation includes onsite transport and stockpiling. Volumes will be calculated using truck counts or other method acceptable to Departmental Representative.
- 1.1.2. Backfilling of non contaminated overburden soil will be paid in accordance with unit rate price established for compacted, graded volume emplaced as specified in the Drawings and as determined by Departmental Representative. Backfilling includes transport to Site, onsite transport, placing, grading and compacting. Volumes will be calculated using truck counts or other method acceptable to Departmental Representative.
- 1.1.3. Backfilling of imported fill will be paid in accordance with unit rate price established for compacted, graded volume emplaced as specified in the Drawings and as determined by Departmental Representative. Backfilling includes transport to Site, onsite transport, placing, grading and compacting. Volumes will be calculated using truck counts or other method acceptable to Departmental Representative.
- 1.1.4. Access Road reinstatement will be paid in accordance with unit rate price established for surface area restored as surveyed by Contractor's Surveyor and as necessary to reinstate any part of the access road removed as part of the remedial excavation. Includes reinstatement to applicable BC Ministry of Transport Standard Specifications for Highway Construction and the Subdivision Roads Specifications. Includes costs for inspection of road construction.
- 1.1.5. Restoration will be paid in accordance with unit rate price established for surface area restored as surveyed by Contractor's Surveyor as specified in the Drawings. Measurement will not include areas unnecessarily disturbed, though these areas are required to be restored.
- 1.1.6. Contaminated Waste Transport will be paid in accordance with unit rate price established for weight identified at receiving offsite facility. Transport includes loading, hauling, and unloading for all material transported from Site. If material is taken to a Treatment Facility before a Disposal Facility, payment includes Transport to both Treatment Facility and Disposal Facility.
- 1.1.7. Contaminated Waste Disposal will be paid in accordance with unit rate price established for weight identified in Certificates of Disposal.
- 1.1.8. Non-Contaminated Waste Removal and Disposal will be paid in accordance with the unit price established for removal and disposal of non-contaminated waste.

### **1.2. Action and Informational Submittals**

- 1.2.1. Excavation Plan: within 5 working days after Contract award and prior to mobilization to Site, submit documentation describing excavation plan, including:
  - 1.2.1.1. Excavation slopes.
  - 1.2.1.2. Limits of Approach
  - 1.2.1.3. Backfilling procedures. Must meet or exceed requirements identified.
  - 1.2.1.4. Procedures for excavations adjacent to utilities or other structures if the excavation has the potential to impact utility or other structure.
  - 1.2.1.5. Inspection and Tests to be completed.
  - 1.2.1.6. Excavation plan must be signed by the Contractor's Representative.

## **2. PART 2 - PRODUCTS**

### **2.1. Materials**

- 2.1.1. Backfill material to meet the gradations identified.

## **3. PART 3 - EXECUTION**

### **3.1. Site Preparation**

- 3.1.1. Ensure that all Works comply with the final design documents as prepared by the Contractor.

### **3.2. Excavation Slopes**

- 3.2.1. Maintain sides and slopes of excavations in safe condition by appropriate methods and in accordance with relevant regulations. Minimum (flattest) slope shall be 1 Vertical : 1.5 Horizontal.

### **3.3. Excavation**

- 3.3.1. Advise Departmental Representative at least 5 working days in advance of excavation operations.
- 3.3.2. Confirm the location of the excavation using drawings and in consultation with the Departmental Representative.
- 3.3.3. Excavate to lines, grades, elevations and dimensions as required in Drawings.
- 3.3.4. Depths shown are approximate and final excavation depths to be determined based on field conditions as determined by Departmental Representative.
- 3.3.5. Excavation must not interfere with bearing capacity of adjacent foundations.
- 3.3.6. Keep excavated and stockpiled materials safe distance away from edge of excavation. Adhere to limits of approach in Excavation Plan
- 3.3.7. Restrict vehicle operations directly adjacent to open excavations. Adhere to limits of approach in Excavation Plan
- 3.3.8. Segregate excavated material as follows:
  - 3.3.8.1. Non-Contaminated soil to be reused as backfill. Must be recommended by Contractor's Professional Engineer and accepted by Departmental Representative.
  - 3.3.8.2. Non-Contaminated Waste. Also includes surplus or unsuitable excavated non-contaminated soil which cannot be reused onsite.
- 3.3.9. Remove Non-Contaminated Waste.
- 3.3.10. Do not obstruct flow of surface drainage or natural watercourses.
- 3.3.11. Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- 3.3.12. Notify Departmental Representative when bottom of excavation is reached.
- 3.3.13. Obtain Departmental Representative approval of completed excavation.
- 3.3.14. Do not begin backfilling or filling operations until confirmatory sampling, analysis, and assessment has been completed by Departmental Representative. Confirmatory sampling, analysis, and assessment may take up to 5 working days. No standby charges or delays to be incurred for confirmatory sampling.
- 3.3.15. Do not begin backfilling or filling operations until surveying has been completed by Contractor's Surveyor.
  - 3.3.15.1. Disputed volumes will only be considered if supported by written report by a Land Surveyor registered in relevant jurisdiction at no additional cost or time.



### **3.4. Fill Types and Compaction**

- 3.4.1. Use only backfill material which has been submitted and accepted by Departmental Representative.
- 3.4.2. Compact material as required to ensure no long term settlement and is suitable for planned post-remediation use:
  - 3.4.2.1. Compact each layer of material to the more stringent of Excavation Plan or Drawings.
  - 3.4.2.2. Compact to minimum 95% of corrected maximum dry density
  - 3.4.2.3. In area where Access Road will be reinstated, compact in accordance with section 202 of the BC Ministry of Transport Standard Specifications for Highway Construction (Attachment 3)
  - 3.4.2.4. Compaction densities are percentages of maximum densities obtained from ASTM D698 (Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))).

### **3.5. Backfilling**

- 3.5.1. Do not proceed with backfilling operations until completion of following:
  - 3.5.1.1. Departmental Representative has inspected and accepted excavation limits based on survey data and confirmatory sampling results.
  - 3.5.1.2. Departmental Representative has inspected and accepted backfill material. Suspect backfill material may be sampled for geotechnical and environmental quality. Backfill material sampling may take up to 5 working days. No standby charges or delays to be incurred for backfill material sampling.
  - 3.5.1.3. Departmental Representative has inspected and accepted compaction results for previous lift.
- 3.5.2. Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- 3.5.3. Do not use backfill material which is frozen or contains ice, snow or debris.
- 3.5.4. Place backfill material in uniform layers not exceeding 150 mm compacted thickness. Compact each layer before placing succeeding layer.
- 3.5.5. Notify Departmental Representative when final backfill grade is reached.
- 3.5.6. Do not begin subsequent Work until surveying has been completed by Contractor's Surveyor for As Built Drawing purposes.
  - 3.5.6.1. Disputed volumes will only be considered if supported by written report by a Land Surveyor registered in relevant jurisdiction at no additional cost or time.

### **3.6. Access Road Reinstatement**

- 3.6.1. Reinstatement part of Access Road disturbed by excavation to thickness, structure and elevation, which existed before excavation, and in accordance with applicable BC Ministry of Transport Standard Specifications for Highway Construction, and Subdivision Road Specifications (Attachment 2).
- 3.6.2. Applicable specifications are for gravel "Type D" subdivision roads.
- 3.6.3. Aggregate used for road reinstatement shall be tested in accordance with table 202-A and meet the specifications in table 202-B of the BC Ministry of Transport Standard Specifications for Highway Construction.

### **3.7. Restoration**

- 3.7.1. Upon completion of Work, remove Non-Contaminated Waste materials and debris, trim slopes, and correct defects as determined by Departmental Representative.



- 3.7.2. Reinstall lawns and other landscaped areas to elevation which existed before excavation. Plant vegetation similar to pre-existing.
- 3.7.3. Reinstall non-landscaped areas to elevation which existed before excavation unless otherwise required. Revegetate disturbed areas, including excavated area and stockpile area, with fertilizer and seed mixture appropriate for location. Reference current version of BC Ministry of Transportation and Infrastructure Standard Specifications for Highway Construction, Section "Revegetation Seeding". No overspray is to occur onto equipment, roadways, utilities, structures, waterbodies, or environmentally sensitive areas.
- 3.7.4. Reinstall surface grading to give Site same appearance as before remediation Work. Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

### **3.8. Transportation**

- 3.8.1. Transport all Contaminated Waste to offsite Treatment Facility and offsite Disposal Facility based on contaminants as shown on the drawings and appendices and determined by field testing by Departmental Representative.
- 3.8.2. Material must be weighed by a scale certified by Measurement Canada. Certification and all weigh scale slips to be provided to Departmental Representative.
- 3.8.2.1. Departmental Representative may require testing of weigh scale, or require a different weigh scale be used at no additional cost or time.

### **3.9. Treatment**

- 3.9.1. Treat appropriate Contaminated Waste at offsite Treatment Facility based on contaminants as determined by Departmental Representative.
- 3.9.2. Material must be weighed by a scale certified by Measurement Canada. Certification and all weigh scale slips to be provided to Departmental Representative.
- 3.9.2.1. Departmental Representative may require testing of weigh scale, or require a different weigh scale be used at no additional cost or time.

### **3.10. Disposal**

- 3.10.1. Dispose all Contaminated Waste at offsite Disposal Facility based on contaminants shown on the drawings and appendices and as determined by field testing by Departmental Representative.
- 3.10.2. Material must be weighed by a scale certified by Measurement Canada. Certification and all weigh scale slips to be provided to Departmental Representative.
- 3.10.2.1. Departmental Representative may require testing of weigh scale, or require a different weigh scale be used at no additional cost or time.

**END OF SECTION**

## **1 GENERAL**

### **1.1 SECTION INCLUDES**

- .1 Supply and Installation of Hydraulic Seeding and related components **as** shown on the Architectural Drawings and **as** specified herein.

### **1.2 RELATED SECTIONS**

- .1 All Sections Refer to Table of Contents

### **1.3 CODES, REFERENCES, and STANDARDS**

- .1 Canada Seed Act
- .2 British Columbia Landscape Standard, 6th edition, 2001

### **1.4 QUALITY ASSURANCE**

- .1 Scheduling:
  - .1 Schedule hydraulic seeding to coincide with preparation of soil surface.
  - .2 All seeding shall be done during calm weather and on soil that is free of frost, snow and standing water, when seasonal conditions are likely to ensure successful germination and continued growth of all species of seed in the grass mix.
  - .3 Schedule hydraulic seeding using grass mixtures after frost has left ground and before June 15th or between September 1st and October 15th. Note that unanticipated variances in weather may require that alternate dates be considered.

### **1.5 PROJECT/ SITE ENVIRONMENTAL REQUIREMENTS**

- .1 Do not perform work under adverse field conditions such as wind speeds over 10 km/h, frozen ground or ground covered with snow, ice or standing water.

### **1.6 DELIVERY, STORAGE AND HANDLING**

- .1 Seed shall be packed and delivered in original containers clearly showing:
  - .1 Name of supplier
  - .2 Analysis of seed mixture
  - .3 Percentage of pure seed
  - .4 Year of production
  - .5 Net weight (mass)
  - .6 Date and location of bagging

## **2 PRODUCTS**

- .1 Seed: "Canada pedigreed grade" in accordance with Government of Canada Seeds Act and Regulations.
  - .1 Grass seed for all seeded lawn areas shall meet the requirements of the Canada Seed Act for Certified Canada No. 1 Seed.

- .1 Mixture composition:
  - .1 30% Kentucky Bluegrass
  - .2 30% Hard Fescue
  - .3 40% Perennial Rye Grass
- .2 Mulch: specially manufactured for use in hydraulic seeding equipment, non-toxic, water activated, green colouring, free of germination and growth inhibiting factors with following properties:
  - .1 Type I mulch:
    - .1 Made from wood cellulose fibre.
    - .2 Organic matter content: 95% plus or minus 0.5%.
    - .3 Value of pH: 6.0.
    - .4 Potential water absorption: 900%.
  - .2 Type II mulch:
    - .1 Made from newsprint, raw cotton fibre and straw, processed to produce fibre lengths of 15 mm minimum and 25 mm maximum. Greater proportions of ingredients to be straw.
- .3 Tackifier: water soluble vegetable carbohydrate powder.
- .4 Water: free of impurities that would inhibit germination and growth.
- .5 Fertilizer:
  - .1 The type, formulation and rate of application of fertilizer shall be as recommended by the laboratory soil specialist on the basis of tests of the growing medium.
- .6 Inoculants: inoculant containers to be tagged with expiry date.

### **3 EXECUTION**

#### **3.1 EXAMINATION**

- .1 Examine the Work and notify the Departmental Representative of any conditions affecting the performance of the Work.

#### **3.2 PREPARATION**

- .1 Cultivate areas identified as requiring cultivation to depth of 25 mm.
- .2 Obtain Departmental Representative's approval of grade and topsoil depth before starting to seed.

#### **3.3 SLURRY APPLICATION**

- .1 Ensure seed is placed under supervision of certified Landscape Planting Supervisor.
- .2 Seed fine grade areas free of humps and hollows.
  - .1 Ensure areas are free of deleterious and refuse materials.

- .3 Apply slurry uniformly, at optimum angle of application for adherence to surfaces and germination of seed.
  - .1 Using correct nozzle for application.
  - .2 Using hoses for surfaces difficult to reach and to control application.
- .4 Blend application 300 mm into adjacent grass areas or sodded areas to form uniform surfaces.
- .5 Immediately remove any material sprayed where not intended as directed by Departmental Representative.
- .6 Hydraulic seeding equipment:
  - .1 Slurry tank.
  - .2 Agitation system for slurry to be capable of operating during charging of tank and during seeding, consisting of recirculation of slurry and/or mechanical agitation method. Capable of seeding by 50 m hand operated hoses and appropriate nozzles.
  - .3 Tank volume to be certified by certifying authority and identified by authorities "Volume Certification Plate".

### **3.4 PROTECTION OF WORK**

- .1 Protect seeded areas from trespass until plants are established.
- .2 Remove protection devices as directed by Departmental Representative.

### **3.5 REVIEW**

- .1 Contractor to notify Departmental Representative at least 24 hours in advance of any necessary reviews of the work.

### **3.6 CLEANING**

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

### **3.7 MAINTENANCE DURING ESTABLISHMENT PERIOD**

- .1 Ensure maintenance is carried out under supervision of certified Landscape Maintenance Supervisor.
- .2 Perform following operations from time of seed application until acceptance by Departmental Representative.
- .3 Grass Mixture:
  - .1 Repair and reseed dead or bare spots to allow establishment of seed prior to acceptance.
  - .2 Mow grass to 60 mm whenever it reaches height of 100 mm. Remove clippings which will smother grass offsite.
  - .3 Fertilize seeded areas after in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles; water in well.

- .4 Control weeds by mechanical or chemical means utilizing acceptable integrated pest management practices.
- .5 Water seeded area to maintain optimum soil moisture level for germination and continued growth of grass. Control watering to prevent washouts.

**END OF SECTION**