BOILER # 1 REPLACEMENT

NOTRE DAME BAY MEMORIAL HEALTH CENTRE

TWILLINGATE, NL

ISSUED FOR TENDER SPECIFICATIONS

TENDER # 2017-19

CLOSING DATE: AUGUST 3, 2017
CLOSING TIME: 2:00 PM NL TIME

Prime Consultants:

CORE ENGINEERING INC.

57 PIPPY PLACE
ST. JOHN'S, NL, CANADA A1B 4H8

TEL. 709/722-9613
FAX 709/722-3690
TENDER DOCUMENTS FOR
Boiler #1 Replacement - NDBMHC - Twillingate

OWNER: Central Regional Integrated Health Authority (CRIHA)
21 Carmelite Road
Grand Falls-Windsor, NL
A2A 1Y4

PRIME CONSULTANT: CORE Engineering Inc.
57 Pippy Place
St. John’s, NL
A1B 4H8

CR #2017-19
Core Engineering Project #17-2689
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6. Contractor Safety Handbook
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END OF LIST OF DRAWINGS
Re-Issued October 2010

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
C/O CENTRAL HEALTH REGIONAL INTEGRATED HEALTH AUTHORITY
TENDER FOR
STIPULATED PRICE CONTRACT

Tender for: 
Boiler #1 Replacement – NDBMHC – Twillingate.
Tender # 2017-19

Addressed to: 
Mr. David Perry
Director of Facilities Management & Engineering
Central Health Regional Office
21 Carmelite Rd.
Grand Falls-Windsor NL
A1V 1Y4

Gentlemen,

1. Having carefully examined the site of the proposed work and all conditions affecting such, as well as the Contract Documents including the Specifications, all Drawings listed in the Specifications, (if drawings are not listed in the specifications such a list appears as Appendix "B") all Addenda, and the Instructions to Bidders for this project,

WE, THE UNDERSIGNED, hereby offer to furnish all necessary Labour, materials, superintendence, plant, tools and equipment, and everything else required to perform expeditiously and complete in a satisfactory manner the work for the sum of

__________________________________________________________________
__________________________________________________________________

($                      ) in lawful money of Canada which includes all prime costs, allowances and Government sales or excise taxes, including HST, in force at this date, except as otherwise provided in the tender documents.

2. The Work will be substantially performed within three (3) months from the date of notification of award of contract.

3. WE ENCLOSE HEREWITH if required by the Instructions to Bidders

(a) A Bid Bond in an acceptable form and correct amount issued by a company licenced to carry on such a business in the Province of Newfoundland or
(b) A certified cheque in the correct amount.

In the event of this tender being accepted within the time stated in Section 4 below and our failure to enter into a contract in the form hereinafter mentioned for the amount of our tender the said security may at the option of the Owner be forfeited. The forfeiting of the security does not limit the right of action of the Owner against us for our failure or refusal to enter into a contract.

4. **IF NOTIFIED IN WRITING BY THE OWNER OF THE ACCEPTANCE OF THIS TENDER WITHIN 60 DAYS OF THE TENDER CLOSING DATE SUBJECT TO SUCH OTHER PERIOD AS MAY BE SPECIFIED IN THE TENDERING DOCUMENTS, WE WILL:**

(a) execute the Standard Form of Construction Contract;

(b) if specified, furnish the security for the proper completion of the work, the said security, if in the form of bonds, to be issued on an acceptable form;

(c) complete substantially all the work included in the contract within the time and under conditions specified.

5. **WE understand that Performance Bond, Labour and Materials Bond and Insurance as required by the Contract Documents must be provided and in force prior to the commencement of any work and satisfactory proof of such be provided to the Owner.**

6. **WE confirm that the sums herein tendered include all sales taxes, royalties, custom duties, foreign exchange charges, transportation, travelling costs, all overhead and profit, all co-ordination fees, insurance premiums, and all other charges.**

7. **WE understand and agree to list the names of sub-contractors and suppliers whose bids have been used in the preparation of this tender price in Appendix "A". The list will be subject to the approval of the Owner. "By own forces" will be considered valid and satisfactory only if the tenderer is recognized by the Newfoundland and Labrador Construction Association or by the Road Builders Association as being a "bona fide" contractor or supplier of that particular trade or item.**

   WE agree to authorize the Owner to release the names of subcontractors used in our tender where such information is requested from the Owner.

   WE reserve to us the right to substitute other sub-contractors for any trades in the event of any sub-contractor becoming bankrupt after the date hereof. Any such substitution shall be subject to the approval of the Owner and contingent upon satisfactory evidence of bankruptcy.

8. **WE understand and agree that the Owner may order changes to the work in the form of additions or deletions in accordance with the General Conditions, Supplementary General Conditions and the intent of the Contract Documents.**
9. We hereby acknowledge receipt of the following addenda:

Addendum No.

Addendum No.

10. In order for a Tender to be valid, it must be signed by duly authorized officials as indicated in the Instructions to Bidders.

SIGNATURE OF TENDERER

Firm Name: ______________________________________________________
Address: _________________________________________________________
Postal Code: ____________________ E-Mail _______________________
Ph # ___________________________ Fax # _________________________

____________________________________________________________
Signing Officer

Corporate Seal

____________________________________________________________
Signing Officer

Witnessed by
APPENDIX "A"

Herewith is the list of Sub-contractors referred to in Section 7 of the tender submitted by

________________________________________________________________________
________________________________________________________________________

________________________________________________________________________
________________________________________________________________________

to

________________________________________________________________________

dated __________________________________ and which is an integral part of the above noted tender.

IF NOT USED, BAR AND INITIAL THE SPACE BELOW.

<table>
<thead>
<tr>
<th>Division/Work</th>
<th>Names and Addresses of Sub-Contractors and Suppliers included in our Tender Price</th>
</tr>
</thead>
</table>
APPENDIX "B"

Hereunder is the list of description of drawings referred to in Section I of the tender submitted by

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

to

________________________________________________________________________

__ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ ____
## APPENDIX "C"
### TENDER PRICE TABLE

<table>
<thead>
<tr>
<th>Sections</th>
<th>Description</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Base Tender</td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Separate Prices</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Subtotal Separate Prices</td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>Unit Prices</td>
<td>Quantity</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtotal Unit Prices</td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>Cash Allowances</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Subtotal Cash Allowances</td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>SubTotal Tender Prices</td>
<td>(Sum of Sections C1-C4)</td>
</tr>
<tr>
<td>C6</td>
<td>Harmonized Sales Tax (HST)</td>
<td>(Multiply Section C5 by 15%)</td>
</tr>
<tr>
<td>C7</td>
<td>TOTAL TENDER AMOUNT</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
1. For the purposes of the Public Tender Act and the evaluation of tenders received, the bid shall be the Total Tender Amount.
2. Work associated with the Separate Prices may be deleted at the sole discretion of the Owner at the time of contract award and a deduction(s) will be made to the Total Tender Amount equal to the amount(s) in C2 of the Tender Price Table.
3. Costs associated with the Unit Price work will vary depending upon the quantities authorized by the Engineer/Architect during the course of construction and the final contract amount will be adjusted accordingly, upwards or downwards, based upon the quoted unit rate. Unit prices shall be all inclusive of mark-ups and overhead.
4. Contractor to provide unit price above as $/m all inclusive of all associated works. This amount shall be multiplied by the Quantity listed above to arrive at the total unit price amounts to be included in the far right column. Actual quantity shall be adjusted during construction with unit rate applied.
STIPULATED PRICE CONTRACT
INDEX
INSTRUCTION TO BIDDERS

1. Tenders
2. Tender Documents
3. Tender Surety and Bonding
4. Completion of Tender Form
5. Unacceptable Tenders
6. Amendments to Tender
7. Withdrawal of Tender
8. Substitution of Materials
9. Use of Bid Depository
10. Acceptance of Tender
11. Provincial Preference Policy
INSTRUCTION TO BIDDERS

1. TENDERS

(a) Envelopes containing the Tender are to be clearly marked:

Tender for: Boiler # 1 Replacement – NDBMHC – Twillingate.
Tender # 2017-19

Addressed to: Mr. David Perry
Director of Facilities Management & Engineering
Central Health Regional Office
21 Carmelite Rd.
Grand Falls-Windsor NL
A1V 1Y4

The name and address of the Bidder and the closing time must be shown on the envelope.

(b) All bids must be received in the office of the Regional Purchasing Manager in a sealed envelope on or before the exact closing time and date with Tender Name and Number clearly marked. Any bids received after the closing time and date will not be accepted.

(c) The Form of Agreement is included in the Contract Documents at the time of tendering for the purpose of information to Bidders and shall not be completed at the Time of Tendering.

(d) Before submitting a Tender, tenderers shall carefully examine the Contract Documents and the site of the proposed work and fully inform themselves of the existing conditions and limitations. No subsequent allowance under the Contract Documents will be considered for any Bidder who had failed to become familiar with all aspects of the work.

(e) The Owner will not defray any expenses incurred by the tenderers in the preparation and submission of their tenders.

2. TENDER DOCUMENTS

(a) The Tender Documents consist of the Instructions to Bidders, Tender Form, Agreement, Drawings, Specifications, and any Amendments to the Contract Documents issued during the tender period.

(b) Every interpretation of or addition to the Contract Documents to be
considered a valid part of the Contract Documents will be issued in the form of a written addendum.

(c) No addendums will be issued less than seven (7) days prior to the closing date of the Tender.

3. TENDER SURETY AND BONDING

(a) Bidding Security

Every tenderer shall submit with his Tender a bid bond issued by an approved Surety Company licensed to do business in the Province of Newfoundland and made out in favour of the Central Regional Integrated Health Authority.

The bid bond shall be at least ten percent (10%) of the tendered amount. No bidding security will be required for a tendered amount of less than $25,000 unless specifically called for elsewhere in the tender document. An approved certified cheque may be substituted in lieu of the bid bond. The bidding security will be returned upon receipt of the Performance and Labour and Materials Bonds.

The terms of the bid security will be invoked and the amount retained by the Owner if the Bidder fails to enter into an agreement when notified of the award of the work within the tender validity period; or fails to provide the Performance and Labour and Materials Bonds in the amount and within the period specified.

(b) Performance Bond

A Performance Bond will be required in the amount of fifty percent (50%) of the contract price. The Performance Security is to be received not later than two (2) weeks after the award of the contract by the letter of intent and prior to the formal execution of the agreement. No work is to be undertaken until the Performance Security has been received. Performance Security will not be required for a contract value of less than $25,000.

In lieu of the Performance Bond, the Owner may accept at its sole discretion an approved certified cheque for ten percent (10%) of the tendered amount. The cheque will be retained until satisfactory completion of the work including the guarantee period, after which this amount will be returned to the Contractor together with the accrued interest thereon at the current bank rate.
(c) Labour and Materials Payment Bond

A Labour and Materials Payment Bond will be required in the amount of fifty percent (50%) of the contract price. The Labour and Materials Payment Bond is to be received not later than two (2) weeks after the award of the contract by the letter of intent and prior to the execution of the formal agreement. No work is to be undertaken until the Labour and Materials security has been received. Labour and Materials security will not be required for a contract valued at less than $25,000.

In lieu of the Labour and Materials Bond, the Owner may accept at its sole discretion an approved certified cheque of ten percent (10%) of the tendered amount. The cheque will be retained until substantial completion of the work as defined by the Mechanics Lien Act and upon receipt of a completed and approved Statutory Declaration Form. This security, if in the form of a cheque, will be returned to the Contractor together with the accrued interest thereon at the current bank rate.

4. COMPLETION OF TENDER FORM

(a) The Tender Form is to be completed in its entirety and submitted in the envelopes provided and the name of the Tenderer entered in the "Name of Bidder" space on the tender envelope. The Tenderer should retain a copy of the tender for his records.

(b) Type or legibly print the information required on the Tender Form.

(c) Type or legibly print the Tenderer's full business name and address in the spaces provided on the Tender Form.

(d) Sign the Tender Form in the space provided as indicated:

In the case of a Sole Proprietorship, signature of Sole Proprietor will sign where indicated in the presence of a witness who will sign where indicated. Insert the words "Sole Proprietor" next to the signature.

In the case of a Partnership, signature of all partners will sign where indicated in the presence of a witness who will sign where indicated. Insert the word "Partner" next to signatures.

In the case of a Limited Company, signatures of authorized signing officers in the presence of a witness who will sign where indicated, and the corporate seal will be affixed. Indicate next to signature the corporate title of each signer.
(e) Spaces or Appendices will be provided with the Tender Form if required for a list of sub-contractors, use of bid depository, contractor's experience, list of equipment. All such spaces and appendices must be completed in their entirety legibly by typewriter or by printing in ink.

(f) If it becomes necessary to correct an error made on the Tender Form, such correction must be initialed and dated by the person or persons signing the Tender Form.

5. UNACCEPTABLE TENDERS

(a) Tenders not submitted on the Tender Form provided will not be considered.

(b) Facsimile or email tenders will not be accepted.

(c) Tenders received after the Tender Closing time will not be considered.

(d) Incomplete Tenders will be rejected.

(e) Tenders not accompanied by an approved security in the correct amount will be rejected.

(f) Tenders containing qualification or additional clauses to the Tender Form will be rejected.

(g) Incorrectly prepared tenders may be rejected.

6. AMENDMENTS TO TENDER

Properly documented amendments to the Tender will be permitted up to the Tender closing time. Amendments documented by fax to 709-292-6290 will be acceptable.

7. WITHDRAWAL OF TENDERS

Bids may be withdrawn without penalty by written facsimile request if received prior to the time fixed for the opening.
8. SUBSTITUTION OF MATERIALS

(a) Tenders shall be based upon using the materials or products as specified without substitution. Where two or more brand names are specified the choice shall be left to the contractor. Where only one brand name is stated there shall be no substitution.

(b) Where the Specifications include the "or approved equal" clause, substitutions may be proposed provided that:

1. the request for a substitution is made in writing at least fourteen (14) days prior to the bid date;

2. the request shall clearly define and describe the product for which the substitution is requested;

3. the substituted article is equivalent to the specified article with regards to design, function, appearance, durability, operation and quality.

Approval of the substitution by the Engineer/Architect shall be in the form of an addendum to the Specifications issued at least seven (7) days prior to the Tender closing date to all of those contractors listed as having received a copy of the Contract Documents.

9. USE OF BID DEPOSITORY

The attention of the Bidder is drawn to the fact that the Bid Depository of the Newfoundland and Labrador Construction Association will be used for the Trade as listed in Appendix N/A.

10. ACCEPTANCE OF TENDER

(a) The Owner will not necessarily accept the lowest or any tender.

(b) Upon written acceptance of the tender within the tender validity period, the Tender Form becomes part of the Contract Documents and the successful tenderer becomes the Contractor. The Contractor will be required to execute a formal agreement with the Owner within thirty (30) days of the date of the letter of intent.

(c) The Contractor shall, within 14 days of receipt of the letter of intent, submit to the Owner a breakdown of the bid to the satisfaction of the Owner.
11. PROVINCIAL PREFERENCE POLICY

(a) Tender evaluation and award of contract for this project will be done in accordance with the procedures outlined in the latest Guidelines and Instructions for the Implementation of the Provincial Preference Policy and in accordance with the Public Tender Act, 1984, the Provincial Preference Act, and associated Regulations.

(b) Firms which do not have Provincial Overhead Allowance (POA) percentages assigned are urged to contact the Government Purchasing Agency, Tendering & Contracts, Tel. 729-2017, for application information. In order to obtain the POA benefit contractors or subcontractors must have POA percentages assigned not later than five clear days after tender closing date. Those who do not have POA percentages assigned in the prescribed time will receive no Provincial Overhead Allowance benefit in the tender evaluation.

(c) The Provincial Materials and Equipment List contained in the tender documents identifies (not necessarily all inclusively) items in the tender call which are Provincialy manufactured, fabricated, processed or supplied.
1 TENDER SURETY AND BONDING

(a) Bidding Security

Please delete sentence

"No bidding security will be required for a tendered amount of less than $25,000.00 unless specifically called for elsewhere in the tender documents"

and replace with:

"All tenders, regardless of monetary value require a Bid Security of at least ten percent (10%) of the total tendered amount, with a minimum security of five hundred dollars ($500.00)." Bid Securities shall be in the form of a Bid Bond or Certified Cheque in favour of Central Health.

Add the following:

For tenders less than $25,000.00, the terms of the Bid Security will be invoked and the amount retained by the Owner, if the Bidder fails to provide the required insurances and commence work within 30 days of being notified of the award of the work within the tender validity period.

The Tender Security of the unsuccessful bidders numbers 2 & 3 will be returned to them upon award of the contract, Tender Securities of bidders higher than 3 will be returned after the tender opening. The Tender Security of the successful bidder will be retained until the first progress payment.

Bidders are reminded that the failure to submit a bid security in accordance with this requirement will result in rejection of bid submitted.

THE OWNER RESERVES THE RIGHT TO WAIVE THESE REQUIREMENTS IN PART OR IN WHOLE FOR ANY PROJECT, BY FURTHER SUPPLEMENTARY INSTRUCTIONS TO BIDDERS.

2 PROVINCIAL PREFERENCE POLICY

Delete Section 11 in its entirety.
3 TENDER SURETY AND BONDING

Bidders are advised that both the 50% Performance Bond referenced in 3(b) and the 50% Labour & Materials Payment Bond referenced in 3(c) will be based on the Contract Price which will either be the Sub-Total of Tender Prices or the Total Estimated Tender Items, not including the Harmonized Sales Tax (HST).

4 INSTRUCTIONS TO BIDDERS, ISSUANCE OF ADDENDUM

Reference is made to Section 2. (c) - Tender Documents regarding the time frame permitted for the issuance of addendum prior to the tender closing date. Change seven (7) days to read five (5) days.

Reference is also made to Section 8. - Substitution of Materials. Change seven (7) days to read five (5) days.

5 CONTRACTOR’S PERFORMANCE EVALUATION SYSTEM

Contractors are advised that effective July 1, 2000 a Contractor Performance Evaluation System will be introduced. Upon completion of each contract, the contractor’s performance will be evaluated according to prescribed criteria.

In accordance with the Public Tender Act Regulations 1998, NFLD Reg. 103/98, Section 3(4), contractors may be required to maintain a certain performance rating to bid. Contractors whose performance on previous contracts falls below the required minimum may have their bids disqualified.

Complete details of the Performance Evaluation System are available upon request.

6 TENDER FORM, APPENDIX ‘A’ AND APPENDIX ‘B’

Notwithstanding Article 7 of the Tender Form, Bidders are not required to complete or submit Appendix “A” or Appendix “B” at time of tender. Bidders may be required to complete these appendices after tender close, if requested by the Owner, and in such instance the appendices shall be submitted by Bidders within seventy-two (72) hours of request.
AGREEMENT BETWEEN OWNER AND CONTRACTOR
for use when a stipulated price forms the
basis of payment and to be used only
with the General Conditions of the Contract

THIS AGREEMENT made on the _____ day of _______ in the year two thousand and ________.

BY AND BETWEEN

__________________________________________________________________________________
__________________________________________________________________________________
hereinafter called the "Owner"

AND

__________________________________________________________________________________
__________________________________________________________________________________
hereinafter called the "Contractor"

WITNESSETH: that the Owner and Contractor undertake and agree as follows:

ARTICLE A-1 THE WORK

The Contractor shall:

(a) perform all the Work required by the Contract Documents for Well System Upgrades – Fogo Island Health Centre which have been signed in triplicate by both the parties,

(b) do and fulfil everything indicated by this Agreement, and

(c) commence the Work by the 24th day of July, 2017 and substantially perform the Work of this Contract as certified by the Engineer/Architect by the 24th day of October 2017.

(d) The "Engineer/Architect" is the person designated as such from time to time by the Owner.
ARTICLE A-2 CONTRACT DOCUMENTS

The following is an exact list of the Contract Documents referred to in Article A-1: (SEE TABLE OF CONTENTS FOR LIST OF DOCUMENTS AND DRAWINGS). See Attached

ARTICLE A-3 CONTRACT PRICE

THE CONTRACT PRICE IS $ ________________________________

____________________________________ (HST INCLUDED) Canadian funds which price shall be subject to adjustments as may be required in accordance with the General Conditions of the Contract.

ARTICLE A-4 PAYMENT

(a) Subject to applicable legislation and, where such legislation does not exist or apply, in accordance with such prescribed regulations or industry practice respecting holdback percentages and in accordance with the provisions of the General Conditions of the Contract, the Owner shall:

(1) make monthly payments to the Contractor on account of the Contract Price. The amounts of such payments shall be as certified by the Engineer/Architect; and
(2) upon Substantial Performance of the work as certified by the Engineer/Architect pay to the contractor any unpaid balance of holdback monies then due; and
(3) upon Total Performance of the Work as certified by the Engineer/Architect pay to the contractor any unpaid balance of the Contract Price then due.

(b) If the Owner fails to make payments to the Contractor as they become due under the terms of this Contract or in any award by a court, interest at the rate and in the manner specified in GC21-Certificates and Payments, shall become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.
ARTICLE A-5 ADDRESSES FOR NOTICES

All communications in writing between the parties or between them and the Engineer/Architect shall be deemed to have been received by the addressee if delivered to the individual or to a member of the firm or to an officer of the Corporation for whom they are intended or if sent by post or by facsimile addressed as follows:

The Owner at: ________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

The Contractor at: _____________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

The Engineer/Architect at: ______________________________________________________
___________________________________________________________________________
___________________________________________________________________________

ARTICLE A-6 SUCCESSION

The General Conditions of the Contract hereto annexed, and all other aforesaid Contract Documents, are all to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall ensure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.
IN WITNESS WHEREOF the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers hereunto duly authorized.

SIGNED, SEALED AND DELIVERED
in the presence of:

OWNER:  CONTRACTOR

________________________________________  ______________________________________
signed  signed

________________________________________  ______________________________________
name and title  name and title

________________________________________  ______________________________________
date  signed / witnessed

________________________________________  ______________________________________
name and title  name and title

________________________________________  ______________________________________
date

N.B. Where any legal jurisdiction, local practice or client requirement calls for proof of authority to execute this document, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign the Agreement for and on behalf of the Corporation or Partnership, should be attached.
GENERAL CONDITIONS

OF

STIPULATED PRICE CONTRACTS
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GC 1  DEFINITIONS

1.1 “Contract Documents”  
The Contract Documents consist of the INSTRUCTIONS TO BIDDERS, executed AGREEMENT BETWEEN OWNER AND CONTRACTOR, GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, any representations made by the Contractor during the tender period, Specifications, Drawings and such other documents as are listed in Article A-2 of the Agreement, including all amendments thereto incorporated before their execution and subsequent amendments thereto made pursuant to the provisions of the contract or agreed upon between the parties. The Successful bidder's tender, and any addenda to the Specifications issued during the bidding period shall also form part of the Contract Documents.

1.2 “Contract”  
The legal agreement, represented by the Contract Documents, between the Contractor and Owner by which the Contractor agrees to undertake and perform the Work for the Contract Amount stipulated, for the quality prescribed and by the scheduled completion date detailed in the Agreement Between Owner and Contractor.

1.3 “Final Completion”  
Final Completion shall mean when the entire Work has been performed to the requirements of the Contract Documents and is so certified by the Project Manager.

1.4 “Materials and Equipment” and/or “Products”  
The terms Materials and Equipment and/or Products means all materials, machinery, equipment and fixtures forming the completed work as required by the Contract Documents but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work and normally referred to as construction machinery and equipment.

1.5 “Other Contractor”  
The term Other Contractor means any person, firm or corporation employed by or having a separate contract directly or indirectly with the Owner for work other than that required by the Contract Documents.

1.6 “Owner”, “Project Manager”, “Contractor”  
The Owner, Project Manager and Contractor are the persons, firms or corporation identified as such in the Agreement between Owner and Contractor and referred to throughout the Contract Documents as if singular in number and gender neutral. They also mean the Owner, Project Manager or Contractor or their authorized representatives as designated by each party in writing. Reference to the “Engineer”, “Architect/Engineer”, “Consultant” or other similar terms as may be used elsewhere in the Contract Documents, including the technical specifications and drawings, shall mean the Project Manager.

1.7 “Place of the Work”  
The Place of the Work is the designated site or location of the Work identified in the Contract Documents.

1.8 “The Project”  
The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part.

1.9 “Subcontractor / Supplier”  
a) A Subcontractor is a person, firm or corporation having a direct contract with the Contractor to perform a part or parts of the Work included in the Contract, or to supply products worked to a special design according to the Contract Documents, but does not include one who merely supplies products not so worked.

b) A Supplier is a person or entity having a direct contract with the Contractor to supply Products not worked to a special design for the Work.

1.10 “Substantial Completion”  
Subject to GC 44, a Contract shall be deemed to be substantially completed

a) when the work or a substantial part thereof is ready for use or is being used for the purpose intended; and

b) when the work to be done under the contract is capable of completion or correction at a cost of not more than:
(i) three percent of the first two hundred and fifty thousand dollars ($250,000) of the contract price, and

(ii) two percent of the next two hundred and fifty thousand dollars ($250,000) of the contract price, and

(iii) one percent of the balance of the contract price.

Notwithstanding any convention of the construction industry in Canada and despite any other definitions herein, the contract shall not be substantially completed until the Project Manager has determined that with respect to the Work:

(i) all regulatory occupancy permits are in place;

(ii) fire safety systems have been certified and are fully operational;

(iii) building systems have been inspected, performance tested and placed into satisfactory operation for a period of at least 5 days prior to occupancy of the Work; and

The contract price, for the purposes of this article, shall be the original contract price as identified in Art. A-3 of the Agreement between Owner and Contractor plus the net value of all approved change orders.

The value of portions of the work that cannot be completed expeditiously for reasons beyond the control of the Contractor shall be deducted from the contract price in determining if Substantial Completion has been attained. The date of Substantial Completion of the Work is the date certified by the Project Manager.

1.11 “Substantial Defects or Deficiencies”
Those defects or deficiencies in the Work which affect the Project to such an extent or in such a manner that a significant part or the whole of the Work is unfit for the purpose specified in the Contract Documents as determined by the Project Manager.

1.12 “Time”
a) The Contract Time is the time stated in Article A-1 (c) of the AGREEMENT BETWEEN THE OWNER AND THE CONTRACTOR

b) The term day, as used in the Contract Documents, shall mean the calendar day.

c) The term working day means any working day observed by the construction industry in the area of the place of Work up to a maximum of twelve (12) hours per day.

1.13 “Work”
Work includes the whole of the undertakings, Materials, Equipment, Products, matters and things required to be done, furnished and performed by the Contractor under the Contract.

GC 2 CONTRACT DOCUMENTS

2.1 The AGREEMENT BETWEEN OWNER AND CONTRACTOR shall be signed in duplicate by the Owner and the Contractor.

2.2 Words which have well known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

2.3 In the event of conflicts between Contract Documents the following shall apply:

a) Documents of later date shall govern.

b) Figured dimensions shown on the Drawings shall govern even though they may differ from scaled dimensions.

c) Drawings of larger scale shall govern over those of smaller scale of the same date.

d) Specifications shall govern over Drawings
e) The GENERAL CONDITIONS of Contract shall govern over Specifications.

f) SUPPLEMENTARY GENERAL CONDITIONS (if any) shall govern over the GENERAL CONDITIONS of the Contract.

g) The AGREEMENT BETWEEN OWNER AND CONTRACTOR shall govern over all documents.

2.4 Only electronic copies of the Contract Documents will be made available to the Contractor without charge. Printed copies required by the Contractor will be at their sole cost.

2.5 The Contractor shall keep one copy of all current Contract Documents submittals, reports, records of meetings and shop drawings on the site, in good order and available to the Project Manager. This requirement shall not be deemed to include the executed Contract Documents.

2.6 All Contract documents and copies thereof, and all models, are and shall remain the property of the Owner and are not to be used on other Work. Such documents are not to be copied, except for purposes related to the work under this Contract, or revised in any manner without the written authorization of the Owner.

2.7 The specifications and drawings may be subdivided into sections. They should be read as a whole and are not intended to be a means of separating the work under the Contract. Unless specifically delineated in the Specifications or Drawings, the Owner shall not be responsible for the separation of work between Subcontractors, Suppliers, and the Contractor. The headings contained in the Contract Documents are inserted for the purpose of convenient reference only and are not to be considered in any construction or interpretation of the Contract Documents.

2.8 The Contractor acknowledges that the General Conditions are revised or amended from time to time by the Owner and acknowledges that the provisions herein represent the most current version. The Contractor understands and agrees that it shall not use an interpretation or understanding from a previous version to support an interpretation or understanding of the Contract Documents which has specifically changed or been amended by this version.

GC 3 EMERGENCIES

3.1.1 The Project Manager has authority in an emergency to stop the progress of the work whenever the Project Manager is of the opinion that such stoppage may be necessary to ensure the safety of life, or the work, or neighboring property. This includes authority to make changes in the work, and to order, assess and award the cost of such work, extra to the Contract or otherwise, as may in the Project Manager’s opinion be necessary. The Project Manager shall, within two (2) working days, confirm in writing any such instructions. In such a case if work has been performed under direct order of the Project Manager, the Contractor shall retain the right to claim the value of such work.

3.1.2 Should the work be stopped by civil pickets, or other disorder, neither the Owner nor the Contractor shall have claim for change in the price of the Contract.

3.1.3 When requested in writing by the Owner, the Contractor shall make appropriate alterations in the method, Products or work force at any time the Owner considers the Contractor’s actions to be unsafe, or damaging to either the Work or existing facilities or the environment.

GC 4 LAWS, NOTICES, PERMITS AND FEES

4.1 The laws of the Province of Newfoundland and Labrador shall govern the Work and the Contract Documents.

4.2 The Contractor shall obtain all applicable permits, licenses and certificates and pay all fees required for the performance of the Work which are in force at the date of tender submission, but this shall not include the obtaining of permanent easements or rights of servitude. The Contractor shall provide written evidence of compliance to the Project Manager. The Owner is not required by law to obtain any permit from any municipality in this Province related to the Work. As such, the Contractor is not to carry the cost of a municipal permit related to the conduct of the Work as part of the Contractor’s tender price related to the same. If any such permit is found by the Owner to be required as it deems fit, the payment for such to the municipality concerned will either be directly by the Owner, or alternately by the Contractor on behalf of the Owner. If payment of any such permit is by the Contractor on behalf of the Owner, the Owner will issue a change order to allow for its payment at direct
cost only, with no markup if any kind. Nothing in this General Condition relieves the Contractor of its obligation to make such filings and to submit such documents and notices with respect to the Work on behalf of the Owner as are normally required by the municipality to facilitate its conduct. Further the Contractor is to advise the Owner of any request by a municipality that the Contractor pay for and obtain a permit related to the conduct of the Work. The Owner and the Contractor will jointly deal with any such requests in the manner provide for above. All other permits are remaining the responsibility of the Contractor.

4.3 The Contractor shall give all required notices and comply with all laws, ordinances, rules, regulations, codes and order of all authorities having jurisdiction relating to the Work or to the preservation of public health and construction safety, which are or become in force during the performance of the Work.

4.4 The Contractor shall not be responsible for verifying that the Contract Documents are in compliance with the applicable laws, ordinances, rules, regulations and codes relating to the Work. If the Contract Documents are at variance therewith, or changes which require modification to the Contract Documents are made to any of the laws, ordinances, rules, regulations and codes by the authorities having jurisdiction subsequent to the date of tender submission, any resulting change in the cost shall constitute a corresponding change in the Contract Price. The Contractor shall notify the Project Manager in writing requesting immediate direction if any such variance or change is found.

4.5 If the Contractor fails to notify the Project Manager in writing and obtain direction as required in GC 29.4 and performs any work knowing it to be contrary to any laws, ordinances, rules, regulations, codes and orders of any authority having jurisdiction, the Contractor shall be responsible for and shall correct any violations thereof and shall bear all costs, expense and damages, attributable to their failure to comply with the Provisions of such laws, ordinances, rules, regulations, codes and orders.

4.6 All notices, claims, payments, reports and other communications required under this Agreement shall be in writing. The address for service are as follows:

For the Client:

xxxx

xxxx

4.7 Notices, requests or documents shall be deemed to have been received by the addressee as follows:

   a) As of the date on which they are delivered where delivery is by a party or by messenger or special courier service;

   b) As of the date on which they are sent where delivery is by facsimile, e-mail or other means of electronic communication; and

   c) Six (6) days after delivery to Canada Post Corporation where the postal service is used.

4.8 The address of either party, or the person authorized to receive notices, may be changed by notice in the manner set out in this provision.

GC 5 PATENT FEES

5.1 The Contractor shall pay all royalties and patent license fees required for the performance of the contract and such royalties or fees shall be deemed to have been included in the contract price. The Contractor shall hold the Owner harmless from and against all claims, demands, losses, costs, damages, actions, suits or proceedings arising out of the Contractor's performance of the Contract which are attributable to an infringement or an alleged infringement of any patent or invention by the Contractor or anyone for whose acts the Contractor may be liable.

5.2 The Owner shall hold the Contractor harmless against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the Contractor's performance of the Contract which are attributable to an infringement or an alleged infringement of any patent or invention in executing anything for the purpose of the Contract, the model, plan or design of which was supplied to the Contractor by the Owner.

GC6 STATUS OF THE CONTRACTOR

6.1 The Contractor is engaged under the Contract as an independent contractor.
6.2 The Contractor and any employee of the Contractor are not engaged by the Contract as an employee, servant or agent of the Owner.

6.3 For the purposes of the Contract the Contractor shall be solely responsible for any and all payments and deductions required to be made by law including those required for the Owner, Canada Pension Plans, Employment Insurance, Worker's Compensation, provincial health or insurance plans, and Income Tax.

6.4 Contractors shall provide, prior to signing of Contract, a current certification of good standing from the Registry of Companies, Province of Newfoundland and Labrador.

GC 7 WORKER’S COMPENSATION

7.1 The Contractor shall, within ten (10) working days of the date of the Letter of Award and prior to commencement of the work, provide evidence of compliance with all requirements with respect to worker’s compensation in the Province, including payments due thereunder. The Contractor shall again provide similar evidence, in accordance with GC 44.7 - CERTIFICATES AND PAYMENTS, prior to receiving any holdback monies.

7.2 At any time during the term of Contract, when requested by the Project Manager, the Contractor shall also provide such evidence of their compliance, including any Subcontractors and any other persons performing work who are required to comply with such legislation.

7.3 Non incorporated companies (i.e. partnerships, sole proprietorships, and independent operators) must provide coverage for any employees and personal coverage for the principals.

7.4 The Contractor shall provide to the Owner with each progress claim a Worker’s Compensation Certificate from the Province of Newfoundland and Labrador.

GC 8 CERTIFICATIONS AND POLICIES

8.1 The Contractor may be required to, within ten (10) working days of the date of the Letter of Award and prior to commencement of the work and at the Client’s sole discretion, provide a valid Letter of Good Standing under the Certificate of Recognition Program from the Newfoundland and Labrador Construction Safety Association. The Letter of Good Standing must be unexpired and verify that the Contractor has reached full “Certificate of Recognition” status. The Contractor shall be responsible for maintaining this status for the duration of the contract and, if the validity date of the Letter of Good Standing precedes completion of the Work, the Contractor may be requested to provide additional letters of good standing to substantiate continuing compliance. In the event the Contractor’s status is “pending”, the Contractor shall comply with all measures directed by the Owner as the Owner sees fit at his sole and unfettered discretion.

8.2 For contracts valued at less than $100,000 and deemed by the Owner to present a low level risk for occupational, health and safety, the Owner, in its sole discretion, may accept a Letter of Good Standing at the “Audit Pending” status, provided this is the Contractor’s first contract with the Owner.

8.3 In accordance with GC 18.1 - SUBCONTRACTORS, at any time during the term of the Contract, when requested by the Owner, the Contractor shall provide similar evidence of compliance by any Subcontractors undertaking construction work on the Contract.

8.4 Failure to provide a Letter of Good Standing or meet the requirements of GC 8.1 or GC 8.2 may be deemed an act of default by the Contractor and subject to the provisions of GC 52 – OWNER’S RIGHT TO STOP WORK OR TERMINATE CONTRACT.

8.5 The Contractor will be required to perform all works in strict accordance with the Owner’s Nosocomial Infection Protocol policy and the latest edition of CSA Z317 (Infection Control During Construction or Renovation of Health Care Facilities).

8.6 The Contractor shall be required to abide by the Newfoundland and Labrador Occupational Health and Safety Act and Regulations, the Personal Health Information Act and all Owner policies including, but not limited to,

   a) Contractor and Vendor Safety Policy (OHS-10-0100)
   b) Incident Reporting (PSQ-5-020)
   c) Management of Adverse Events (PSQ-5-030)
   d) Identification of Personnel (HR-3-010)
   e) Oath / Affirmation of Confidentiality (P&A-9-020)
   f) Security of Confidential information (P&A-9-030)
g) Privacy/Confidentiality Breach Management (P&A-9-040)

h) Construction, Renovation or Maintenance in health care Facilities (IC-6-60)

**GC 9  UNSUITABLE WORKERS**

9.1 The Owner shall instruct the Contractor to remove from the site of the Work any person employed by the Contractor for purposes of the Contract who, in the opinion of the Owner acts, and continues to act after having been warned twice in writing, with or without conditions, by the Owner through the Contractor, in failing to display the technical, managerial, safety, timeliness, integrity or any other regulated or industry recognized skills required of a person performing equivalent Work or has otherwise acted improperly, and the Contractor shall not permit a person who has been removed to return to the site of the Work. Nothing herein is to be construed as giving the Owner any right to dismiss or terminate an employee, agent, Subcontractor or Supplier of the Contractor but represents the right of the Owner to preserve and protect its property. This does not affect any legal right of a Contractor to dismiss or terminate an employee, agent Subcontractor or Supplier as it may decide in its sole discretion.

**GC 10  PUBLIC CEREMONIES AND SIGNS**

10.1 The Contractor shall not permit any public ceremony in connection with the Work without the prior consent of the Owner.

10.2 The Contractor shall not erect nor permit the erection of any sign or advertising on the Work or its site without the prior consent of the Owner.

**GC 11  SECURITY AND PROTECTION OF DOCUMENTS**

11.1 The Contractor shall guard and protect Contract Documents, drawings, information, models and copies thereof, whether supplied by the Owner or the Contractor, against loss or damage from any cause or against any unauthorized, prohibited, illegal or any other non-related Work use or application.

11.2 The Contractor shall keep confidential all information provided to the Contractor by or on behalf of The Owner in connection with the Work, and all information developed by the Contractor as part of the Work, and shall not disclose any such information to any person without the written permission of the Owner, except that the Contractor may disclose to a subcontractor, authorized in accordance with the Contract, information necessary to the performance of a subcontract. This section does not apply to any information that

(a) is publicly available from a source other than the Contractor; or

(b) is or becomes known to the Contractor from a source other than the Owner, except any source that is known to the Contractor to be under an obligation to the Owner not to disclose the information.

11.3 When the Contract, the Work, or any information referred to in paragraph 11.2 is identified as SECRET, CONFIDENTIAL or PROTECTED by the Owner, the Contractor shall, at all times, take all measures reasonably necessary for the safeguarding of the material so identified, including such measures as may be further specified elsewhere in the Contract or provided, in writing, from time to time by the Owner.

11.5 Without limiting the generality of paragraphs 11.2 and 11.3, when the Contract, the Work, or any information referred to in paragraph 11.2 is identified as SECRET, CONFIDENTIAL or PROTECTED by the Owner, the Owner shall be entitled to inspect the Contractor's premises and the premises of its subcontractors or suppliers and any other person at any tier, for security purposes at any time during the term of the Contract, and the Contractor shall comply with, and ensure that any such subcontractors or suppliers comply with all written instructions issued by the Owner dealing with the material so identified, including any requirement that employees of the Contractor and its subcontractors and suppliers and any other person at any tier execute and deliver declarations relating to reliability screenings, security clearances and other procedures.

**GC 12  TIME OF THE ESSENCE**

12.1 Time is of the essence of the Contract.

**GC 13  WARRANTY**
13.1 Without restricting any warranty or guarantee implied or stipulated by law, the Contractor hereby warrants that the Work shall be free of any and all defects, deficiencies or faults and the Contractor shall bear the expense, rectify and make good any defect or fault appearing within a period of one year from the date of Substantial Completion of the Work or within such other warranty period as may be specified in the Contract Documents or in connection with those applicable parts of the Work described in the Certificate of Substantial Completion any defect appearing within a period of one year of Final Completion, provided that the Contractor shall not be responsible for any defect or fault caused by the Owner’s improper operation or maintenance, or resulting from the design of the work, unless under the Contract, the Contractor has responsibility for such design.

13.2 The Contractor shall correct at its own cost, and if not corrected be responsible for the payment to correct, any new or additional damage done to already completed Work, or to the adjoining or integrated property of the Owner, which results from the responsibility of the Contractor under GC 13.1.

13.3 The Contractor shall transfer and assign to the Owner, any subcontractor, manufacturer or supplier extended warranties or guarantees implied or imposed by law or contained in the Contract covering periods beyond the one year period stipulated in GC 13.1. Extended warranties or guarantees referred to herein shall not extend the one year period whereby the Contractor, except as may be provided elsewhere in the Contract Documents, must rectify and make good any defect or fault that appears in the Work or come to the attention of the Owner.

13.4 Neither the Project Manager's Final Completion certificate nor payment thereunder shall relieve the Contractor from this responsibility hereunder.

13.5 The Owner and/or the Project Manager shall promptly give the Contractor written notice of any observed defects or deficiencies occurring during the Warranty Period.

13.6 Any defect or fault appearing within the warranty period and prior to the issuance of a Final Completion Certificate shall be subject to the set-off provisions outlined in GC 44.12(d) – CERTIFICATES AND PAYMENTS.

GC 14 ASSIGNMENT

14.1 The Contractor shall not to assign the contract or any part thereof or any benefit or interest therein or thereunder without the prior written consent of the Owner.

GC 15 SUCCESSION

15.1 The Contract shall inure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and, subject to GC 14 ASSIGNMENT, permitted assigns.

GC 16 PROJECT MANAGER'S DECISIONS AND INSTRUCTIONS

16.1 The Project Manager, in the first instance, shall decide on questions arising under the Contract Documents and interpret the requirements therein. Such decisions shall be given in writing.

16.2 The Contractor shall notify the Project Manager in writing within ten (10) working days of receipt of a decision of the Project Manager referred to in GC 16.1 should the Contractor hold that such decision is in error and/or at variance with the Contract Documents. Unless the Contractor fulfills this requirement, subsequent claims by the Contractor for extra compensation, arising out of the decision, will not be accepted.

16.3 If the question of error and/or variance is not resolved immediately, and the Project Manager decides that the disputed work shall be carried out, the Contractor shall act according to the Project Manager's written decision. Any question of change in Contract Price and/or extension of Contract Time due to such error and/or variance shall be decided as provided in GC 54 - SETTLEMENT OF DISPUTES AND CLAIMS.

16.4 During the progress of the Work the Project Manager shall furnish to the Contractor such additional instructions as may be necessary to supplement the Contract Documents. All such instructions shall be consistent with the intent of the Contract Documents and issued with reasonable promptness and in accordance with any schedule agreed upon. Additional instructions may include minor changes to the Work which affect neither the Contract Price nor the Contract Time and may be in the form of drawings, samples, models or written instructions.

GC 17 SUPERINTENDENCE

17.1 The Contractor shall employ a competent superintendent(s) and necessary assistants who shall be in continuous
attendance at the Work site at all times while work is being performed. Provisions must be made by the Contractor to have adequate replacement / additional superintendence personnel of equal qualifications and experience on site for work during extended hours, weekends, turnaround and any time while work is being undertaken and the primary superintendent is not available. The superintendent shall be satisfactory to the Project Manager and shall not be changed except for good reason.

17.2 Upon request of the Owner, the Contractor shall remove any superintendent who, in the opinion of the Project Manager, acts, and continues to act after having been warned twice in writing, with or without conditions, by the Owner through the Contractor, in failing to display the technical, managerial, safety, timeliness, integrity or any other regulated or industry recognized skills required of a person performing equivalent Work or has been otherwise acted improperly and shall forthwith designate another superintendent who is acceptable to the Project Manager. Nothing herein is to be construed as giving the Owner any right to dismiss or terminate an employee, agent, Subcontractor or Supplier of the Contractor but represents the right of the Owner to preserve and protect its property. This does not affect any legal right of a Contractor to dismiss or terminate an employee, agent Subcontractor or Supplier as it may decide in its sole discretion.

17.3 The superintendent shall represent the Contractor at the Work site and directions received from the Project Manager shall be held to have been given to the Contractor. Important directions shall be confirmed to the Contractor in writing, other directions will be so confirmed if requested.

17.4 The superintendent shall maintain good order among employees of the Contractor and Subcontractors and advise the Project Manager of any instances of disturbances, disruptions or any and all other matters required to be reported to the Project Manager, on behalf of the Owner, under the Contract Documents or by law, regulation or policy.

GC 18 SUBCONTRACTORS

18.1 The Contractor agrees to preserve and protect the rights of the Owner under the Contract with respect to any work to be performed under any subcontract. The Contractor shall:

a) require Subcontractors to perform their work in accordance with and subject to the terms and conditions of the Contract Documents, and

b) be fully responsible to the Owner for acts and omissions of Subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the Contractor, and

c) ensure compliance with worker’s compensation, obtain bonding and insurance from Subcontractors if required by the Contract and, if requested, provide evidence of compliance, and

d) require Subcontractors undertaking construction work on the Contract to maintain compliance with the requirements of GC 8 - CERTIFICATE OF RECOGNITION PROGRAM and, if requested, provide evidence of compliance.

The Contractor therefore agrees to incorporate all the terms and conditions of the Contract Documents into all Subcontract Agreements.

18.2 The Contractor shall employ those Subcontractors proposed in writing and accepted by the Owner prior to the signing of the Contract for such portions of the work as may be designated in the bidding requirements. The Owner may, in its sole, absolute and unfettered discretion and for reasonable cause, object to the use of a proposed Subcontractor and may require the Contractor to employ one of the other Subcontractor Bidders. In the event that the Owner requires a change from any proposed Subcontractor, the Contract Price shall be adjusted by the difference in cost as may be occasioned by such required change. The Contractor shall not be required to employ as a Subcontractor any person or firm to whom they may reasonably object.

18.3 The Project Manager may, upon reasonable request, provide to a Subcontractor, information as to the percentage of the Subcontractor's work which has been certified for payment.

18.4 Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor or Supplier and the Owner.

GC 19 USE OF PREMISES
19.1 The Contractor shall confine his apparatus, the storage of products and the operations of his workmen to limits indicated by laws, ordinances, permits or by directions of the Project Manager and shall not unreasonably encumber the premises with his products.

19.2 The Contractor shall not load or permit to be loaded any part of the Work with a mass that will endanger its safety.

19.3 The Contractor shall enforce the Project Manager’s instructions regarding signs, advertisements, fires and smoking.

19.4 Unless otherwise provided the Contractor shall, at his own expense, and without extra cost to the Owner, make suitable provision to accommodate all traffic either pedestrian or vehicular, over or around, the project upon which work is being performed, in a manner satisfactory to the Project Manager.

19.5 The Contractor shall provide and maintain at his own expense such fences, barriers, signs, lights and watchmen as may be necessary to prevent avoidable accidents to residents or to the public generally.

**GC 20 CONSTRUCTION SCHEDULE**

20.1 The Contractor shall, within fifteen (15) days of receipt of the Letter of Award, provide the Project Manager with a schedule of work acceptable to the Owner in digital form and in native file format and subject to any conditions identified elsewhere in the Contract. Such schedule shall indicate the timing of the major activities of the Work and provide sufficient detail of the critical events and their interrelationship to demonstrate the Work will be performed in conformity with the Contract Time.

20.2 The Contractor shall provide updated schedules during the progress of the Work, if at any point, the existing or future Work deviates from the current schedule.

20.3 The Contractor shall advise the Project Manager in writing of any changes required to the schedule as a result of extensions to the completion time granted under GC 47 – CHANGES IN THE WORK.

20.4 The Contractor shall provide to the Project Manager, upon issuance of a Certificate of Substantial Completion, an update of the schedule with full details of a timetable, acceptable to the Project Manager, for the completion of any unfinished portion of the Work and the correction of all listed deficiencies or defects.

**GC 21 CUTTING AND REMEDIAL WORK**

21.1 The Contractor shall do all cutting and remedial work that may be required to make the several parts of the Work come together properly.

21.2 The Contractor shall coordinate the schedule for the Work to ensure that this requirement is kept to a minimum.

21.3 Should the Owner or anyone employed by him be responsible for ill-timed work necessitating cutting and/or remedial work shall be valued as provided in GC17 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK and added to the Contract Price.

21.4 Cutting and remedial work shall be performed by specialists familiar with the materials affected and shall be performed in a manner to neither damage nor endanger any Work.

**GC 22 SHOP DRAWINGS**

22.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.

22.2 The Contractor shall arrange for the preparation of clearly identified shop drawings as called for by the Contract Documents or as the Project Manager may reasonably request.

22.3 Prior to Submission to the Project Manager the Contractor shall review all shop drawings. By this review the Contractor represents that he has determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data or will do so and that he has checked and coordinated
each shop drawing with the requirements of the Work and of the Contract Documents. The Contractor's review of each shop drawing shall be indicated by stamp, date and signature of a responsible person.

22.4 The Contractor shall submit shop drawings to the Project Manager for his review with reasonable promptness and in orderly sequence so as to cause no delay in the Work or in the Work of Other Contractors. If either the Contractor or the Project Manager so requests they shall jointly prepare a schedule fixing the dates for submission and return of shop drawings. Shop drawings shall be submitted in the form of a responsible transparency or prints as the Project Manager may direct. At the time of submission the Contractor shall notify the Project Manager in writing of any deviations in the shop drawings from the requirements of the Contract Documents.

22.5 The Project Manager will review and return shop drawings in accordance with any schedule agreed upon, or otherwise with reasonable promptness so as to cause no delay. The Project Manager’s review shall be for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract Documents unless a deviation on the shop drawings has been approved in writing by the Project Manager.

22.6 The Contractor shall make any changes in shop drawings which the Project Manager may require consistent with the Contract Documents and resubmit unless otherwise directed by the Engineer/Architect. When resubmitting the Contractor shall notify the Project Manager in writing of any revisions other than those requested by the Project Manager.

**GC 23 SAMPLES**

23.1 The Contractor shall submit for the Project Manager's approval such standard manufacturers’ samples as the Engineer/Architect may reasonably require. Samples shall be labelled as to origin and intended use in the Work and shall conform to the requirements of the Contract Documents.

23.2 The Contractor shall provide samples of special products, assemblies, or components when so specified. The cost of such samples not specified shall be authorized as an addition to the Contract Price as provided in GC 47 - CHANGES IN THE WORK.

**GC 24 TESTS AND MIX DESIGNS**

24.1 The Contractor shall furnish to the Project Manager test results and mix designs as may be requested. The testing company must first be approved by the Project Manager.

24.2 The cost of tests and mix designs beyond those called for in the Contract Documents or beyond those required by laws, ordinances, rules and regulations relating to the work and the preservation of public health, shall be authorized as an addition to the Contract Price as provided in GC 47 - CHANGES IN THE WORK.

**GC 25 MATERIALS AND SUBSTITUTIONS**

25.1 Materials, described and named in the specifications with "or approved equal" clause after the Manufacturer's name, or so described as to establish quality only and substitutions of a similar material may be made after award of the contract provided the Project Manager’s approval is obtained.

25.2 Requests for substitutions must be accompanied by sufficient information in the form of shop drawings, manufacturer's literature, samples and other data to permit proper investigation of the substitutes proposed. Also, indicate the increase or decrease in price.

25.3 Whenever a substitute is proposed for approval the Contractor shall guarantee that such proposed substitute will not adversely affect the space requirements allocated on the drawings for the material specified, and he shall agree to bear any additional expense incurred due to his use of the proposed substitute.

25.4 The Project Manager may accept or reject any or all of the proposed substitutions as he sees fit, and his decision on a question of equality shall be final.
GC 26  MATERIAL, PLANT AND REAL PROPERTY BECOME PROPERTY OF THE OWNER

26.1 Subject to GC 4 - LAWS, NOTICES, PERMITS AND FEES, all Material and Plant and the interest of the Contractor in all real property, licences, powers and privileges purchased, used or consumed by the Contractor for the Work shall, immediately after the time of their purchase and/or delivery to site, use or consumption be the property of the Owner for the purposes of the Work and they shall continue to be the property of the Owner
   a) in the case of Material, until the Owner indicates that the Materials shall not be required for the Work; and
   b) in the case of Plant, real property, licences, powers and privileges, until the Owner indicates that the interest vested in the Owner therein is no longer required for the purposes of the Work.

26.2 Material or Plant, that is the property of the Owner by virtue of 26.1, shall not be taken away from the site of the Work nor used nor disposed of except for the purposes of the Work without the written consent of the Owner.

26.3 The Owner is not liable for loss of nor damage from any cause to the Material or Plant referred to in 26.1, and the Contractor is liable for such loss or damage notwithstanding that the Material or Plant is the property of the Owner.

GC 27  LABOUR

27.1 In carrying out the duties under this contract, the Contractor shall comply with all Provincial and Federal legislation respecting labour and the employment of labour, where applicable, including the labour standards code and shall not operate in conflict with Human Rights legislation.

27.2 The Contractor and Subcontractors shall maintain and keep available for inspection by the Owner, a record of the names and addresses of all persons employed on the Project.

27.3 All work shall be done by persons skilled in their various trades.

27.4 There shall be no discrimination in the selection of workers for employment on the project in respect of political affiliation.

27.5 The Owner may instruct the Contractor to remove from the site of the Work any person employed by the Contractor for purposes of the Work who, in the opinion of the Project Manager, acts, and continues to act after having been warned twice in writing, with or without conditions, by the Owner through the Contractor, in failing to display the technical, managerial, safety, timeliness, integrity or any other regulated or industry recognized skills required of a person performing equivalent Work or is guilty of improper conduct, or has failed to comply with applicable security clearance requirements of the Contract Documents and the Contractor shall not permit a person who has so been removed to return to the site of the Work. Nothing herein is to be construed as giving the Owner any right to dismiss or terminate an employee, agent, Subcontractor or Supplier of the Contractor but represents the right of the Owner to preserve and protect its property. This does not affect any legal right of a Contractor to dismiss or terminate an employee, agent Subcontractor or Supplier as it may decide in its sole discretion.

GC 28  PRECONSTRUCTION MEETINGS & ORIENTATIONS

28.1 Within 10 days after award of Contract, The Contractor shall request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities. The Contractor shall establish time and location of meetings and notify parties concerned minimum 5 days before meeting. Agenda to include following:
   a) Appointment of official representative of participants in Work.
   b) Schedule of Work
   c) Schedule of submission of shop drawings, samples, colour chips
   d) Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences
   e) Delivery schedule of specified
   f) Site security
   g) Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
   h) Record drawings
   i) Maintenance manuals
   j) Take-over procedures, acceptance, and warranties
k) Monthly progress claims, administrative procedures, photographs, and holdbacks.

l) Appointment of inspection and testing agencies or firms

This meeting shall be minuted by the Owner and approval of said minutes by both the Owner and the Contractor is required before Works can proceed.

**GC 29 CONSTRUCTION SAFETY**

29.1 The Contractor shall be solely responsible for construction safety at the place of the Work and for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Work. In any emergency, the Contractor shall either stop the Work, make changes or order extra work to ensure the safety of life and the protection of the Work and neighbouring property and shall promptly notify the Project Manager of its actions.

29.2 Prior to commencing the Work, the Contractor shall notify the authorities having jurisdiction for construction safety at the site of the Work with respect to the intended commencement of the Work, and shall provide such authority with whatever additional information may be required by that authority.

**GC 30 INSPECTION OF WORK**

30.1 The Owner and his authorized representatives shall have access to the Work for inspection wherever it is in preparation or progress. The Contractor shall cooperate to provide reasonable facilities for such access.

30.2 If special tests, inspections or approvals are required by the Contract Documents or the Project Manager's instructions or the laws or ordinances of the place of building, the Contractor shall give the Project Manager timely notice requesting inspection. Inspection by the Project Manager shall be made promptly. The Contractor shall arrange inspection by other authorities and shall notify the Project Manager of the date and time.

30.3 If the Contractor covers or permits to be covered any of the Work that is subject to inspection or before any special tests and approvals are completed without the approval of the Project Manager, the Contractor shall uncover the Work, have the inspection satisfactorily completed and make good the Work at the Contractor’s expense.

30.4 Examination of any questioned work may be ordered by the Project Manager. If such work be found in accordance with the Contract the Owner shall pay the cost of examination and replacement, together with the cost of subsequent verification testing. If such Work be found not in accordance with the Contract through the fault of the Contractor, the Contractor shall pay such cost.

30.5 The Contractor shall provide to the Project Manager all assistance, including access to the Work, necessary for the provision of required assurances to regulatory agencies respecting substantial conformance of the construction of the Work with the design approved by the applicable authority for issuance of the building permit.

30.6 The Contractor shall furnish promptly to the Project Manager two (2) copies of all certificates and inspection reports relating to the Work.

**GC 31 DEFECTIVE WORK**

31.1 Defective Work, whether the result of poor workmanship, use of defective Products or damage through carelessness or other act or omission of the Contractor, and whether incorporated in the Work or not, which has been rejected by the Project Manager as failing to conform to the Contract Documents shall be removed promptly from the premises by the Contractor and replaced and/or re-executed promptly in accordance with the Contract Documents at the Contractor's expense.

31.2 Other Contractor's work destroyed or damaged by such removals or replacements shall be made good promptly at the Contractor's expense.

31.3 If in the opinion of the Project Manager it is not expedient to correct defective Work not done in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the Work as done and that called for by the Contract, the amount of which shall be determined by the Project Manager.

31.4 The failure of the Project Manager to reject any defective Work shall not constitute a deemed acceptance of any portion of the Work which is not in accordance with the requirements of the Contract Documents.
GC 32 CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

32.1 The Contractor shall have complete control of the Work except as provided in GC 3 - EMERGENCIES. The Contractor shall effectively direct and supervise the Work and be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all parts of the Work under the Contract.

32.2 The Contractor shall provide or furnish, and pay for, all professional services, labour, Plant, Material, Products, construction machinery and equipment, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the Work in accordance with the Contract.

32.3 The Contractor shall, at all times, perform the Work in a proper, diligent and expeditious manner as is consistent with construction industry standards and in accordance with the progress schedule prepared pursuant to GC 20 - CONSTRUCTION SCHEDULE and shall provide sufficient personnel to fulfill the Contractor's obligations in accordance with that schedule.

32.4 The Contractor shall have the sole responsibility for the design, erection, operation, maintenance and removal of temporary structural supports, fill and other temporary facilities and the design and execution of construction methods required in their use. The Contractor shall engage and pay for registered professional engineering personnel skilled in the appropriate discipline to perform these functions where required by law or by the Contract Documents and in all cases where such temporary facilities and their method of construction are of such a nature that professional engineering skill is required to produce safe and satisfactory results.

32.5 Notwithstanding the provisions of GC 32.1 and 32.4 above, or any provisions to the contrary elsewhere in the Contract Documents where such Contract Documents include designs for temporary structural supports, fill and other temporary facilities and methods shall be deemed to comprise part of the overall design of the Work and the Contractor shall not be held responsible for that part of the design or the specified method of construction. The Contractor shall, however, be responsible for the execution of such design or specified method of construction in the same manner that he is responsible for the execution of the Work.

32.6 The Contractor shall carefully examine the Contract Documents and shall promptly report to the Project Manager any error or omission discovered. Failure to do so will not necessarily relieve the Contractor from being liable for any damage resulting from any such errors or omissions in the Contract Documents.

32.7 The Contractor, in consultation with the Project Manager, shall arrange following execution of the Contract and during performance of the Work, site meetings at regular intervals requiring the attendance of all parties involved with the Work in order to ensure proper coordination of the Work.

32.8 Any use of the Place of Work for which the Contractor is deemed to be licensed to use by virtue of the Contract Documents, ceases upon the last day of the conduct of the Work, or earlier as provided in the Contract Documents.

GC 33 OTHER CONTRACTORS AND OWNERS' FORCES

33.1 The Owner reserves the right to award separate contracts or have separate work performed by the Owner's own forces in connection with the Project, of which the Work is part, even if such separate work is not described in the Contract. Such separate work may include, but not necessarily be limited to, the installation of equipment and storage of material.

33.2 Unless specified elsewhere in the Contract Documents, the Owner shall coordinate the separate work and insurance coverage of Other Contractors and Owners’ forces as it affects the Work of this Contract. The Project Manager shall issue instructions, as may be necessary, to resolve any areas of overlap or conflict.

33.3 The Contractor shall cooperate and make reasonable efforts to coordinate their work with that of Other Contractors or Owners’ forces for any such work identified in the Contract Documents. Any change in the costs incurred by the Contractor in the planning and performance of such work which is not shown or included in the Contract Documents shall be evaluated as provided under GC 51 - VALUATION AND CERTIFICATION OF CHANGES IN THE WORK. Any costs incurred by the Contractor resulting from failure to coordinate work specified in the Contract Documents will not be reimbursed by the Owner.

33.4 The Contractor shall report to the Project Manager any apparent deficiencies in Other Contractor's work which would affect the Work of this Contract immediately upon discovery and, prior to proceeding with that part of the
Work, shall confirm such report in writing. Failure by the Contractor to so report shall invalidate any claims against the Owner by reason of the deficiencies of Other Contractor's work except as to those of which the Contractor was not reasonably aware.

**GC 34 OWNER'S RIGHT TO DO WORK**

34.1 If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of the Contract, the Owner may notify the Contractor in writing that the Contractor is in default of their contractual obligations and instruct them to correct or rectify the default within five (5) working days of receiving the notice.

34.2 If the correction or rectification of the default as enumerated by the provisions of GC 34.1 above, cannot be completed within the five (5) working days specified, the Contractor shall be considered to be in compliance with the Owner's instructions if he or she:

a) commences the correction or rectification of the default within the specified time;

b) provides the Owner with a schedule, acceptable to the Owner, for such correction; and

c) completes the correction in accordance with such schedule.

34.3 If the Contractor fails to comply with the provisions in GC 34.1 and GC 34.2 the Owner may, without prejudice to any other right or remedy the Owner may have, including but not limited to GC 45 and 52, correct or rectify such default and may deduct the cost thereof from the payment then or thereafter due the Contractor.

**GC 35 CLEANUP AND FINAL CLEANING OF WORK**

35.1 The Contractor shall maintain the Work in a tidy condition and free from the accumulation of waste products and debris, other than that caused by the Owner, other Contractors or their employees.

35.2 When the Work is Substantially Performed the Contractor shall remove all of his surplus products, tools, construction machinery and equipment not required for the performance of the remaining work. He shall also remove any waste products and debris and leave the Work clean and suitable for occupancy by the Owner unless otherwise specified.

35.3 When the Work is Totally Performed, the Contractor shall remove all of his surplus Products, tools, construction machinery and equipment. He shall also remove any waste products and debris, other than that caused by the Owner, other Contractors or their employees.

**GC 36 PROTECTION OF WORK AND PROPERTY**

36.1 The Contractor shall protect the property adjacent to the Place of Work from damage resulting from their operations under the Contract.

36.2 The Contractor shall protect the Work and the Owner's property from damage and shall be responsible for any damage which may arise as the result of or is contributed to by the Contractors' operations under the Contract.

36.3 Should any damage occur to the Work and/or Owner's property for which the Contractor is responsible, either directly or by contribution, the Contractor shall make good such damage and bear the expense or pay all costs incurred by others in making good such damage. The degree of contribution shall be determined by the Project Manager.

36.4 Should any damage occur to the Work and/or Owner's property for which the Contractor is not deemed responsible as provided in GC 41 - INDEMNIFICATION, the Contractor shall make good such damage to the Work and, if the Owner so directs, to the Owner's property, and the Contract Price and Contract Time shall be adjusted in accordance with GC 47 - CHANGES IN THE WORK.

36.5 The Contractor shall be completely responsible for the safety of the Work as it applies to protection of the public and property and the construction of the Work and maintain strict compliance with all applicable codes and product manufacturers’ recommendations, particularly the Newfoundland and Labrador Occupational Health and Safety Act.
In the event of a shutdown or interruption, the Contractor shall be responsible for the care, protection and maintenance of the Work, subject to the provisions of GC 50 – DELAY.

**GC 37 PRECAUTIONS AGAINST DAMAGE, INFRINGEMENT OF RIGHTS, FIRE & OTHER HAZARDS**

37.1 The Contractor shall do whatever is necessary to ensure that
   a) no person, property, right, easement nor privilege is injured, damaged or infringed upon by reasons of the Contractor's activities in performing the Work;
   b) pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted nor endangered by the performance or existence of the Work;
   c) fire hazards in or about the Place of the Work are eliminated and any fire is promptly extinguished;
   d) the health and safety of all persons employed in the performance of the Work is not endangered by the methods nor means of their performance;
   e) adequate medical services are available to all persons employed on the Place of the Work at all times during the performance of the Work;
   f) adequate sanitation measures are taken in respect of the Place of the Work; and
   g) all stakes, buoys and marks placed on the Work or its site by the Owner are protected and are not removed, defaced, altered nor destroyed.

37.2 The Owner may direct the Contractor to do such things and to perform such work as the Owner considers reasonable and necessary to ensure compliance with or to remedy a breach of 37.1, and the Contractor shall promptly comply with the direction of the Owner.

**GC 38 MATERIAL, PLANT AND REAL PROPERTY SUPPLIED BY THE OWNER**

38.1 The Contractor is liable to the Owner for any loss of or damage to Material, Plant or real property that is supplied or placed in the care, custody and control of the Contractor by the Owner for use in connection with the Contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control.

38.2 The Contractor is not liable to the Owner for any loss or damage to Material, Plant or real property referred to in 38.1 if that loss or damage results from and is directly attributable to reasonable wear and tear.

38.3 The Contractor shall not use any Material, Plant or real property supplied by the Owner except for the purpose of performing the Contract.

38.4 When the Contractor fails to make good any loss or damage for which the Contractor is liable under 38.1 within a reasonable time, the Owner may cause the loss or damage to be made good at the Contractor's expense, without prejudice to any other right or remedy the Owner may have, including but not limited to GC 52, and the Contractor shall thereupon be liable to the Owner for the cost thereof and shall, on demand, pay to the Owner an amount equal to that cost.

38.5 The Contractor shall keep records of all Material, Plant and real property supplied by the Owner as the Owner requires and shall satisfy the Owner, when requested, that such Material, Plant and real property are at the place and in the condition in which they ought to be.

**GC 39 CONTAMINATED SITE CONDITIONS**

39.1 A contaminated site condition exists when a solid, liquid, gaseous, thermal or radioactive irritant or contaminant, or other hazardous or toxic substance or material, including moulds and other forms of fungi, is present at the site of the Work to an extent that constitutes a hazard, or potential hazard, to the environment, property, or the health or safety of any person.

39.2 If the Contractor encounters a contaminated site condition of which the Contractor is not aware or about which the Contractor has not been advised, or if the Contractor has reasonable grounds to believe that such a site condition exists at the site of the Work, the Contractor shall:
   a) take all reasonable steps, including stopping the Work, to ensure that no person suffers injury, sickness or death, and that neither property nor the environment is injured or destroyed as a result of the contaminated site condition;
   b) immediately notify the Project Manager of the circumstances in writing; and
   c) take all reasonable steps to minimize additional costs that may accrue as a result of any work stoppage.
Upon receipt of a notification from the Contractor, the Owner shall promptly determine whether a contaminated site condition exists, and shall notify the Contractor in writing of any action to be taken, or work to be performed, by the Contractor as a result of the Owner's determination.

If the Contractor's services are required by the Owner, the Contractor shall follow the direction of the Owner with regard to any excavation, treatment, removal and disposal of any polluting substance or material.

The Owner, at the Owner's sole discretion, may enlist the services of experts and specialty contractors to assist in determining the existence of, and the extent and treatment of contaminated site conditions, and the Contractor shall allow them access and co-operate with them in the carrying out of their duties and obligations.

Except as may be otherwise provided for in the Contract, the provisions of GC 51- VALUATION AND CERTIFICATION OF CHANGES IN THE WORK shall apply to any additional work made necessary because of a contaminated site condition.

**GC 40 DAMAGES AND MUTUAL RESPONSIBILITY**

If either party to this Contract should suffer damage in any manner because of any wrongful act or neglect of the other party or anyone employed by them, then they shall be reimbursed by the other party for such damages. The party reimbursing the other party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party.

Claims shall be made in writing to the party liable within reasonable time after the first observance of such damage and not later than the time limits stipulated in GC 44 - CERTIFICATES AND PAYMENTS, and may be adjusted by agreement or in the manner set out in GC 54 - SETTLEMENT OF DISPUTES AND CLAIMS.

If the Contractor has caused damage to any Other Contractor on the work, the Contractor agrees upon due notice, to settle with such Other Contractor by agreement, mediation or arbitration, if the Other Contractor will so settle. If such Other Contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor and may require the Contractor to defend the action at the Contractor's expense. If any final order or judgment against the Owner arises therefrom the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

If the Contractor becomes liable to pay or satisfy any final order, judgment or award against the Owner then the Contractor, upon undertaking to indemnify the Owner against any and all liability for costs, shall have the right to appeal in the name of the Owner such final order or judgment to any and all courts of competent jurisdiction.

The provisions of this GC 40 shall survive the Contract.

**GC 41 INDEMNIFICATION**

Except as provided in GC 41.2, the Contractor shall be liable to the Owner for, and shall indemnify and hold harmless the Owner against, all claims, demands, losses, costs, damages, actions, suits or proceedings, whatsoever arising under any statute or common law:

(a) in respect of personal injury to or the death of any person whomsoever arising out of, or in the course of, or caused by the carrying out of the Work; and

(b) in respect of any injury or damage whatsoever to any property, real or personal or any chattel real, insofar as such injury or damage arises out of, or in the course of, or by reason of the carrying out of the Work.

The Contractor shall not be liable to or indemnify the Owner under GC 41.1 if the injury, death, loss or damage is due to any negligence of the Owner or the Project Manager.

**GC 42 TAXES AND DUTIES**

The Contractor shall pay all government sales taxes, customs duties and excise taxes with respect to the Contract. The Owner will pay the Contractor with each regular progress payment the applicable portion of the Harmonized Sales Tax (HST). Contractors are advised the provincial government is not exempt from the HST. The lump sum price quoted by the contractor on the tender form should include the HST. The Owner will pay the HST to the Contractor with each regular progress billing.

Any increase or decrease in costs to the Contractor due to changes in such taxes and duties as outlined in GC 42.1, after the date of tender submission and prior to issuance of a Final Completion Certificate, shall increase or...
42.3 The Contractor shall maintain full records of their estimates and actual costs of the work, together with all proper tender calls, quotations, contracts, correspondence, invoices, receipts and vouchers relating thereto, shall make them available to audit and inspection by the Owner, the Auditor General for Newfoundland and Labrador or by persons acting on their behalf, shall allow them to make copies thereof and to take extracts therefrom, and shall furnish them with any information which they may require from time to time in connection with such records.

GC 43 APPLICATION FOR PAYMENT

43.1 Applications for payment on account as provided for in Article A-4 of the AGREEMENT BETWEEN OWNER AND CONTRACTOR shall be made monthly, on a date to be agreed between the Owner and the Contractor, as the Work progresses.

43.2 For Work covered by unit prices, application for payment shall be for the value of work performed and products delivered to the site at the date agreed in GC 43.1.

43.3 For Work covered by lump sum prices, application for payment shall be for the value, proportionate to the amount of the lump sum work, of the Work performed and products delivered to the site at the date agreed in GC 43.1. If requested by the Project Manager, the Contractor shall submit, at time of delivery of Construction Schedule pursuant to GC 20.1 before the first application for payment, a schedule of values of the various parts of the lump sum work, aggregating the total amount of the lump sum work and divided so as to facilitate evaluation of applications for payment. This schedule shall be made out in such form, and supported by such evidence as to its correctness, as the Project Manager may reasonably direct, and when approved by the Project Manager shall be used as the basis for application for payment. When making application for payment, the Contractor shall submit a statement based upon this schedule. Claims for products delivered to the site but not yet incorporated into the Work shall be supported by such evidence as the Project Manager may reasonably require to establish the value and delivery of the products. No payment shall be made in advance unless specifically agreed to.

43.4 Applications for release of holdback monies following the Substantial Completion of the Work and the application for final payment shall be made at the time and in the manner set forth in GC 44 - CERTIFICATES AND PAYMENTS.

GC 44 CERTIFICATES AND PAYMENTS

44.1 Except as provided in GC 44.6 and GC 44.8, the Project Manager shall, within ten (10) days of receipt of an application for payment from the Contractor submitted in accordance with GC 43 - APPLICATION FOR PAYMENT with all required supporting documentation, issue a certificate for payment in the amount applied for or such other amount as shall be determined to be properly due. If the Project Manager amends the application, the Contractor shall be promptly notified in writing stating the reasons for the amendment.

44.2 The Owner shall within twenty-one (21) days of the issuance of a certificate for payment by the Project Manager, make payment to the Contractor on account, in accordance with the provisions of the Contract Documents.

44.3 If payment is not made within sixty (60) days of receipt of the Contractor's application for payment to the Project Manager, the Owner will be liable for interest on the amount owing at the approved rate per annum from the sixty-first (61st) day to the date of payment. The approved rate is the provincial prime lending rate of the Owner, plus one percent (1%), as is established on a quarterly basis.

44.4 Notwithstanding any other provisions of this Contract:

a) If on account of climatic or other conditions reasonably beyond the control of the Contractor there are items of work that cannot be performed, the payment for that which has been performed as certified by the Project Manager shall not be withheld or delayed by the Owner on account thereof, but the Owner may withhold from the Contract Price until the remaining work is finished an amount equal to two times of the cost to the Owner of performing such remaining work and to adequately protect the Owner.

b) Where legislation permits and where, upon application by the Contractor, the Project Manager has certified that a Subcontract has been totally performed prior to the Substantial Completion of this Contract, the Owner shall pay the Contractor the holdback retained for such Subcontractor on the day following the expiration
of the Statutory Limitations Period stipulated in the Mechanics’ Lien Act applicable to the place of building.

The holdbacks will be released on the following conditions:

i) a copy of the contract between the Subcontractor and the Contractor, or some other suitable Document satisfactory to the Owner, must be presented to the Owner,

ii) the Subcontract is completed without deficiencies;

iii) the warranty for the Subcontract will not start until Substantial Completion of the General Contract;

iv) the Contractor provides an approved statutory declaration that all monies have been paid to the Subcontractors.

44.5 Notwithstanding the provisions of GC 44.4(b) and notwithstanding the wording of such certificate, the Contractor shall ensure that such work is protected pending the Final Completion of the Contract and be responsible for the correction of any defects in it regardless of whether or not they were apparent when such certificates were issued.

44.6 The Project Manager shall, within fifteen (15) days of receipt of an application from the Contractor for a Substantial Completion Certificate, make an inspection and assessment of the work to verify the validity of the application. The Project Manager shall within five (5) days of the inspection notify the Contractor if the application will be approved and issue a certificate of payment, if warranted, in accordance with GC 15.1. When the Project Manager finds the Work to be substantially completed, a Substantial Completion certificate shall be issued indicating the date on which the Work was determined to have reached Substantial Completion. Immediately following the issuance of the certificate of Substantial Completion, the Project Manager, in consultation with the Contractor, shall establish a reasonable date for the Final Completion of the Contract, if not otherwise specified.

44.7 Following the issuance of the certificate of Substantial Completion and upon receipt from the Contractor of all documentation called for in the Contract Documents including evidence of compliance with worker’s compensation per GC 7.1 WORKER’S COMPENSATION, the Project Manager shall issue a certificate for payment of holdback monies. Holdback monies authorized by this certificate shall become eligible for release on the day following the expiration of the Statutory Limitation Period stipulated in the Mechanics’ Lien Act applicable to the place of building, providing that no lien or privilege claims against the Work exist and the Contractor has submitted to the Owner an approved statutory declaration that all accounts for labour, subcontracts, products, construction machinery and equipment and any other indebtedness which may have been incurred by the Contractor in the Substantial Completion of the Work and for which the Owner might in any way be held responsible, have been paid in full except holdback monies properly retained.

44.8 The Project Manager shall, within fifteen (15) days of receipt of an application from the Contractor for payment upon Final Completion of the Contract, make an inspection and assessment of the work to verify the validity of the application. The Project Manager shall within five (5) days of the inspection notify the Contractor if the application has been approved. When the Project Manager finds the Work to be totally performed, a Final Completion certificate will be issued and payment will be certified for the remaining monies due to the Contractor under the Contract less any holdback monies which are required to be retained. The Final Completion certificate shall indicate the date on which the Work was determined to have reached Final Completion. The Owner shall within 30 days of issuance of the Final Completion certificate make payment to the Contractor in accordance with the provisions of Article A-4 of the Agreement.

44.9 No certificate for payment, or any payment made thereunder, or any partial or entire use of occupancy of the Work by the Owner, shall constitute an acceptance of any work or products not in accordance with the Contract Documents.

44.10 The issuance of the certificate of Final Completion shall constitute a waiver of all claims by the Owner against the Contractor except those previously made in writing and still unsettled, if any, and those arising from the provisions of GC 13 - WARRANTY, breach of contract or those arising from negligence on the part of the Contractor or those made in writing within a period of two years from the date of Substantial Completion and arising from any liability of the Contractor for damages resulting from the Contractor’s performance of the Contract with respect to Substantial Defects or Deficiencies in the Work for which the Contractor is responsible. Similarly, the issuance of the certificate of Final Completion and of the payment due thereunder shall constitute a waiver of all claims by the Contractor against the Owner except those made in writing prior to the application for
payment upon Final Completion of the Contract and still unsettled, if any.

44.11 The holdback value to be used by the Project Manager when issuing a certificate of payment will be ten (10) percent of the value of the work completed at the date of the Contractor's claim.

44.12 Notwithstanding the provisions of GC 44.3 or any other provision of this Contract, the Owner may:

   a) in the event of a claim by the Owner against the Contractor for damages arising out of the performance or non-performance of the Contract, withhold payment of any amount equal to the alleged damages until the liability for damages is established and no amount of interest will be paid on amounts held under this clause;

   b) set-off amounts owing by the Contractor to the Owner,

   c) set-off amounts to cover costs of remedying defective or uncompleted work,

   d) following the issuance of the certificate of Substantial Completion, withhold payment of an amount equal to twice the cost, as estimated by the Project Manager, of remedying set-off items under GC 15.13(c) until the issuance of a certificate of Final Completion and no amount of interest will be paid on amounts held under this clause.

44.13 Costs related to the inspection and assessment of applications from the Contractor submitted for Substantial Completion or Final Completion in accordance with GC 44.6 or GC 44.8, that are disapproved by the Project Manager, may be deducted from amounts payable to the Contractor by issuance of a credit change order by the Owner in accordance with GC 51 – VALUATION AND CERTIFICATION OF CHANGES IN THE WORK if, in the opinion of the Project Manager, a second or subsequent inspection and assessment will be needed because the extent of the remaining Work or deficiencies from the disapproved application was such that the Contractor's application was judged by the Project Manager to have been unwarranted.

**GC 45  RIGHT OF SETOFF**

45.1 Without limiting any right of setoff or deduction given or implied by law or elsewhere in the Contract, the Owner may set off any amount payable to the Owner by the Contractor under the Contract, or under any current contract or on any other project, against any amount payable to the Contractor under the Contract.

45.2 For the purposes of 45.1, "current contract" means a contract between the Owner and the Contractor under which the Contractor has an undischarged obligation to perform or supply work, labour or material; or in respect of which the Owner has, since the date of the Contract, exercised any right to take the work that is the subject of that contract out of the Contractor's hands.

**GC 46  ASSESSMENT OF LIQUIDATED DAMAGES FOR LATE COMPLETION**

46.1 For purposes of this Section;

   a) The Work shall be deemed to be completed on the date of the Certificate of Substantial Completion referred to in GC44.6 – CERTIFICATES AND PAYMENTS, and

   b) "Period of delay" means the number of days commencing on the day fixed by the Agreement Between Owner and Contractor for completion of the Work and ending on the day immediately preceding the day on which the work is completed but does not include any day in which, in the opinion of the Project Manager, completion of the work was delayed for reasons beyond the control of the Contractor.

46.2 If the Contractor does not complete the work by the day fixed for its completion in the AGREEMENT BETWEEN OWNER AND CONTRACTOR but completes it thereafter, the Contractor shall pay the Owner, if demanded, as liquidated damages and not as a penalty, an amount equal to the aggregate of

   a) all salaries, wages and traveling expenses incurred by the Owner in respect of persons overseeing the performance of the work during the period of delay, and

   b) all other expenses and consequential damages of any kind incurred or sustained by the Owner during the period of delay as a result of the work not being completed by the day fixed for its completion as defined by GC 46.1.
46.3 Notwithstanding, this right is without prejudice to the rights of the Owner as set forth in GC 52 - OWNER’S RIGHT TO STOP WORK OR TERMINATE CONTRACT which are cumulative and remain in force.

**GC 47 CHANGES IN THE WORK**

47.1 The Owner may make changes by altering, adding, or deducting from the Work, with the contract price and the contract time being adjusted accordingly.

   a) When a change in the Work is proposed or required, the Project Manager will provide the Contractor with a written description of the proposed change in the Work.

   b) The Contractor shall promptly present, in a form acceptable to the Project Manager, a method of adjustment or an amount of adjustment in the Contract Price, if any, and the adjustment in the Contract Time, if any, for the proposed changes in the Work.

   c) When the Owner and the Contractor agree to the adjustments in the Contract Price and Contract Time or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a Change Order. The value of the work performed as a result of the Change Order shall be included in the application for progress payment.

47.2 Except as provided in GC 3 - EMERGENCIES, no change shall be made without a written order from the Project Manager and no claim for an addition or deduction to the Contract Price or change in the Contract Time shall be valid unless so ordered by the Project Manager.

**GC 48 CHANGE DIRECTIVE**

48.1 If the Owner requires the Contractor to proceed with a change in the Work prior to the Owner and the Contractor agreeing upon the corresponding adjustment in Contract Price and Contract Time (or in the event the Owner and the Contractor cannot agree), the Owner shall issue a Change Directive.

48.2 A Change Directive shall be used to direct a change in the Work which is within the general scope and intent of the Project in the Owner’s sole discretion.

48.3 Upon receipt of a Change Directive, the Contractor shall proceed immediately with the change in the Work.

48.4 The adjustment in the Contract Price for a change carried out by way of a Change Directive shall be determined on the basis of the cost of the Contractor’s actual and reasonable expenditures and savings attributable to the Change Directive, valued in accordance with GC 51.1 (c)

**GC 49 CONCEALED OR UNKNOWN CONDITIONS**

49.1 If the Owner or the Contractor discovers conditions at the Place of the Work which are:

   (a) concealed physical conditions or subsurface conditions which existed before the commencement of the Work which differ materially from those indicated in the Contract Documents; or

   (b) physical conditions or subsurface conditions of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents;

   Then the observing party shall notify the other party in writing before conditions are disturbed and not later than five (5) working days after the first observance of the conditions.

49.2 The Project Manager will promptly investigate such conditions and make a finding. If the finding is that the conditions differ materially, and this would cause an increase or decrease in the Contractor’s costs or time to perform the Work, the Project Manager, with the Owner’s approval, shall issue appropriate instructions for a change in the Work as provided for in GC 47.

49.3 If the Project Manager finds that the conditions at the Place of the Work are not materially different or that no change in the Contract Price or Contract Time is justified, the Project Manager shall report the reasons for this finding to the Owner and the Contractor in writing.

49.4 Where the Contractor finds Items of possible historical or archeological significance, in or immediately adjacent to the Place of Work, the Project Manager shall be notified promptly and thereafter the Contractor shall use rea-
reasonable efforts to continue the Work without disturbing such items and shall continue to do so until such time as
a preliminary inspection and determination has been made by the Owner. Where preservation or recovery of the
items is determined to be required by the Owner, the necessary adjustments to the Contract Documents shall be
negotiated. Ownership of the items shall be that of the Owner despite anything herein to the contrary.

**GC 50 DELAY**

50.1 If it can be clearly shown that the Contractor is delayed in the performance of the work by any act contrary to
the Contract Documents or fault of the Owner, Other Contractor or the Project Manager, then the contract time
shall be extended for such reasonable time as the Project Manager may decide in consultation with the Contrac-
tor. The Contractor shall be reimbursed for any reasonable costs incurred as a result of such a delay occasioned
by the act or fault, provided that it can be clearly shown that the Contractor's forces cannot work efficiently
elsewhere on the project and that the incurred cost is limited to that which could not reasonably have been
avoided.

50.2 If the Contractor is delayed in the performance of the Work by a STOP WORK ORDER issued by any court or
other public authority, and providing that such order was not issued as the result of any act or fault of the Con-
tractor or of anyone employed directly or indirectly by the Contractor, then the Contract Time shall be extended
for such reasonable time as the Project Manager may decide, in consultation with the Contractor, and the Con-
tractor shall be reimbursed for any reasonable costs incurred as the result of such delay.

50.3 If the Contractor is delayed in the performance of the Work by civil disorders, labour disputes, strikes, lock-outs
(including lock-outs decreed or recommended for its members by a recognized Contractor's Association, of
which the Contractor is a member) fire, unusual delay by common carriers or unavoidable casualties or, without
limit to any of the foregoing, by any cause of any kind whatsoever beyond the Contractor's control, then the
Contract Time shall be extended for such reasonable time as may be decided by the Project Manager in consulta-
tion with the Owner and the Contractor, but in no case shall the extension of time be less than the time lost as the
result of the event causing the delay, unless such shorter extension of time be agreed to by the Contractor. The
Contractor shall not be entitled to payment for costs incurred by such delays unless such delays result from ac-
tions by the Owner or the Project Manager.

50.4 No extension shall be made for delay unless written notice of claim is given to the Project Manager within ten
(10) working days of its commencement, providing that in the case of a continuing cause of delay only one no-
tice shall be necessary.

50.5 The foregoing does not relieve the Contractor from any duty to mitigate its loss.

**GC 51 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK**

51.1 The value of any change shall be determined by one or more of the following methods:

a) by estimate and acceptance in a lump sum;

b) by unit prices agreed upon or as listed in the Contract; or

c) by cost and a fixed or percentage fee

In the case of changes in the work valued as outlined in GC 51.1(a), the Contractor shall submit a lump sum es-
timate. If the estimate is not deemed acceptable or sufficient for evaluation, the Contractor shall, upon request
from the Project Manager, provide a detailed breakdown of the lump sum estimate, acceptable to the Project
Manager, for all Materials and Labour to complete the extra work, including subcontractors’ and suppliers’
signed quotations and breakdown estimates. Such lump sum estimate shall be inclusive of overhead and profit of
the Contractor and be reasonable and consistent with market rates in the local market for such labour and materi-
als.

Pursuant to GC 51.1(b), in the case of changes in the work using unit prices not listed in the Contract, the Con-
tractor shall submit for approval an itemized estimate acceptable to the Project Manager for areas of work where
quantities can be measured. The Owner will pay the Contractor only for those quantities which are incorporated
into the work. Unit prices provided shall be deemed to be fully inclusive of all markups for overhead and profit.

In the case of changes in the work valued as outlined in GC 51.1(c), the Contractor shall submit detailed original
invoices, vouchers and time sheets for all materials and labour required to complete the extra work.
If the change in the work necessitates a change in the Contract Time, or has an impact on the work, the Contractor shall identify the change in the Contract Time and include the resulting cost, if any, in its breakdown.

51.2 Changes calculated in accordance with GC51.1(a) or (c) shall be based upon reasonable and proper amounts payable by the Contractor which are directly attributable to the performance of the change and fall into one or more of the following classes of expenditure, plus allowable markups as determined in accordance with GC 51.3;

a) the cost of necessary materials, supplies and equipment incorporated or consumed in the work.

b) subject to the provisions of GC 51.6, the cost of labour to perform the work including, where applicable, travel and living expenses.

c) subject to the provisions of GC 51.4, rental costs for machinery and equipment or an amount equivalent to the rent if the machinery or equipment is owned by the contractor, including all applicable discounts.

d) costs for the preparation, inspection, delivery, installation and removal of material and equipment necessary for the execution of the work.

e) payments to Subcontractors and Suppliers.

f) subject to the approval of the Project Manager, such other costs that may be deemed necessary for the execution of the work.

51.3 For changes in the work valued as outlined in GC51.1(a) or (c), the maximum markup shall be a maximum of fifteen (15) percent for the portion of the change performed by the Contractor’s or Sub-contractor’s own forces and a maximum of ten (10) percent for the portion of the change performed by subcontract. The markups shall be applied to the aggregate agreed costs, for changes valued in accordance with GC 51.1(a), or aggregate actual costs, to the extent reasonable and proper, that can be verified by the Contractor, for changes valued in accordance with GC51.1(c). Changes agreed by lump sum, without the need of a breakdown estimate, shall be deemed to include the above markups.

Mark-ups for both the Contractor and Subcontractor shall be limited to and considered full compensation for:

a) all head office costs including salaries (specifically including the costs of superintendence pursuant to GC 17), financing, overhead, profit and risk of undertaking the work;

b) all normal administration, communications, supervision and coordination costs generally associated with routine change orders;

c) all costs associated with the normal preparation of the change order quotation, such as investigation time, miscellaneous discussions, and coordination and negotiations; and

d) costs related to

i) the purchase or rental of material, plant and equipment.

ii) small tool and supplies.

iii) incidental or routine safety and protective measures, except not including labor and materials associated with special safety processes and procedures.

iv) permits, bonds, insurance, engineering, as-built drawings, project record documents, commissioning and site office facilities. The Contractor will be compensated, without markup, at the end of the Contract, upon presentation of specific invoices or supporting documentation, clearly demonstrating the additional costs incurred for permits, bonds, and insurance associated with the net value of all change order work.

v) fines and any insurance deductibles payable upon fault of the Contractor in performance of the Work; and

vi) all other costs not included in the foregoing.

51.4 For changes in the work valued as outlined in GC 51.1(a) or (c), costs for Contractor owned equipment will be calculated in accordance with the latest version of the equipment rental rate schedule published by the Highway Design Division of the Department of Transportation and Works or, for rates not contained in the booklet, at lo-
cal industry rates. Rates from the equipment rental rate schedule include applicable markups and will not be subject to the markups provided in GC 51.3. Costs for equipment rented by the Contractor shall be based upon detailed invoices for work done under GC 51.1(c), or the equipment rental rate schedule for work done under GC 51.1(a) and the rates shall be entitled to markup provided under GC 51.3 except the markup amount shall be ten (10%) percent. Small tools and equipment normally supplied by either the Contractor or Subcontractor or their employees will not be considered as owned or rented equipment for the purposes of this article and the Contractor shall be deemed to be fully compensated for such costs as provided in GC 51.3.

51.5 Credits will be based on the net cost of material and labour or the net difference in unit price quantities. For change orders involving related additions and deletions to the Work, the percentage markups referred to in GC 51.3 shall apply only when the cost of the additions minus the cost of the deletions would result in an increase in the Contract Price. The percentage mark-ups shall only be applied to that portion of the costs of the additions that are in excess of the cost of the deletions.

51.6 For changes in the work valued as outlined in GC 51.1 (a) or (c), hourly labour rates for the Contractor and Subcontractor shall be calculated from a base labour rate established in accordance with one of the following methods:

a. actual employee pay rate, supported by payroll information submitted by the Contractor

b. rates which may be published periodically in the Fair Wage Schedule by Human Resources and Social Development Canada or other recognized survey deemed acceptable to the Owner

c. for unionized employees only, the rates stipulated in applicable collective agreements, including associated benefits

The base hourly labour rate may be increased by an amount, not to exceed 30%, to cover labour burden which shall be deemed to include, but not limited to, statutory contributions for employment insurance, payroll taxes, Canada pension plans, worker’s compensation, insurance and health premiums, statutory holidays and other applicable labour burdens paid directly by the employer such as vacation pay, health benefits, and fringe benefits.

The Contractor shall submit to the Project Manager a detailed breakdown of the base hourly labour rate, calculated in accordance with this article, for each trade involved in the change.

Time spent by a working foreperson may be included in the number of labour hours if the working foreperson is actually performing the work covered by the change.

Time attributable to material handling, productivity factors, and approved rest periods shall be included in the number of hours required for the change and shall not be included in the calculation of the base hourly labour rate.

51.7 When a change in the work is proposed or required, the Contractor shall present to the Project Manager for approval a claim for any change in the Contract Price and/or change in the Contract Time. When the Project Manager is satisfied as to the correctness of such claim and, when approved, shall issue a written change order to the Contractor to proceed with the change. The value of work performed in the change shall be included for payment with the regular certificate for payment.

51.8 For changes in the Work to be paid under methods (b) and (c) of GC 51.1, the form of presentation of costs and methods of measurement shall be agreed to by the Project Manager and Contractor before proceeding with the change. The Contractor shall keep accurate records, as agreed upon, of quantities or costs and present an account of the cost of the change in the Work, together with vouchers where applicable.

51.9 If the method of valuation, measurement and the change in Contract Price and/or change in Contract Time cannot be promptly agreed upon, and the change is required to be proceeded with, then the Project Manager shall direct the change in the manner herein appearing and determine the method of valuation, measurement and the change in Contract Price and/or Contract Time subject to final determination in the manner set out in GC 54 – SETTLEMENT OF DISPUTES AND CLAIMS. On receipt of this directive, the Contractor shall proceed promptly with the change in the Work and, should the Contractor disagree with the method of valuation, measurement, change in Contract price and/or change in Contract Time, he or she shall provide written notice as set out in GC 16 - PROJECT MANAGER’S DECISIONS. The Project Manager shall issue a written authorization for the change as noted above setting out the method of valuation and if by lump sum the Project Manager’s valuation of the change in Contract Price and/or Contract Time.
51.10 In the case of a dispute in the valuation of a change authorized in the Work pending final determination of such value, the Project Manager shall certify the value of work performed and include the undisputed amount with the regular certificates for payment.

51.11 It is intended in all matters referred to above that both the Project Manager and Contractor shall act promptly.

**GC 52 OWNER'S RIGHT TO STOP WORK, SUSPEND THE WORK, OR TERMINATE CONTRACT**

52.1 If the Contractor should be adjudged bankrupt or insolvent, or makes a general assignment for the benefit of creditors or if a receiver is appointed on account of insolvency, the Owner may, without prejudice to any other right or remedy he or she may have, by giving the Contractor written notice, terminate the Contract.

52.2 The Owner may notify the Contractor in writing that he or she is in default of their contractual obligations, if the Contractor:

a) fails to proceed regularly and diligently with the work or in accordance with the schedule agreed to under GC 20 - CONSTRUCTION SCHEDULE

b) without reasonable cause wholly suspends the carrying out of the work before the completion thereof;

c) refuses or fails to supply sufficient properly skilled persons or proper workmanship, products or construction machinery and equipment for the scheduled performance of the work within five (5) working days of receiving written notice from the Project Manager, except in those cases provided in GC 50 - DELAY;

d) fails to make payments due to Subcontractors, suppliers or workers;

e) persistently disregards laws or ordinances, or the Project Manager's instructions; or

f) otherwise violates the provisions of the Contract.

Such written notice by the Owner shall instruct the Contractor to correct or rectify the default within five (5) working days from the receipt of the written notice.

52.3 If the correction or rectification of the default, as enumerated by the provisions of GC 52.2 above, cannot be completed within the five (5) working days specified, the Contractor shall be considered to be in compliance with the Owners’ instructions if the Contractor:

a) commences the correction or rectification of the default within the specified time;

b) provides the Owner with a schedule, acceptable to the Owner, for such correction; and

c) completes the correction in accordance with such schedule.

52.4 If the Contractor fails to correct or rectify the default within the time specified or subsequently agreed upon, the Owner may, without prejudice to any other right or remedy, stop the work or terminate the Contract.

52.5 Subject to the Contract being terminated under the conditions set out above, the Owner shall be entitled to:

a) take possession of the premises and products and utilize the temporary buildings, plants, tools, construction machinery and equipment, goods, materials, intended for, delivered to and placed on or adjacent to the work and may complete the work by whatever method deemed expedient but without undue delay or expense;

b) withhold any further outstanding payments to the Contractor until the work is finished;

c) upon Final Completion of the work, charge the Contractor by way of setoff the amount by which the full cost of finishing the work including compensation to the Project Manager for their additional services and a reasonable allowance to cover the cost of any corrections required by GC 37 - WARRANTY, exceeds the unpaid balance of the Contract Price, or if such cost of finishing the work is less than the unpaid bal-
ance of the Contract Price, pay the Contractor the difference; and

d) on expiry of the warranty period, charge the Contractor the amount by which the cost of corrections under GC 13 - WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the Contractor the difference.

52.6 The Contractor’s obligation under the Contract as to quality, correction and warranty of the work performed by the Contractor up to the time of termination shall continue in force after such termination.

52.7 When, in the Owner’s opinion, it is in the public interest to do so, the Owner may require the Contractor to suspend performance of the Work either for a specified or an unspecified period, by giving a notice of suspension in writing to the Contractor in accordance with Article A5 of the Agreement.

52.8 When a notice of suspension is received by the Contractor, the Contractor shall suspend all operations in respect of the Work except those that the Owner determines are necessary for the care and preservation of the Work. Subject to any directions in the notice of suspension, the Contractor shall discontinue ordering materials if facilities and supplies and make every effort to delay delivery of existing orders.

52.9 During a period of suspension, the Contractor shall not remove any part of the Work from its site without the consent of the Owner.

52.10 If a period of suspension is 60 days or less, the Contractor shall resume the performance of the Work on the expiration of that period, and the Contractor is entitled to be paid the extra costs necessarily incurred by the Contractor as a result of the suspension, determined in accordance with GC 51 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK.

52.11 If a period of suspension is more than 60 days, the Owner and the Contractor may agree that the performance of the Work will be continued by the Contractor, and the Contractor shall resume performance of the Work subject to any terms and conditions agreed upon by the Owner and the Contractor. If the Owner and the Contractor do not agree that performance of the Work will be continued by the Contractor, or upon the terms and conditions under which the Contractor will continue the Work, the notice of suspension may, at the option of either the Owner or the Contractor be deemed to be a notice of termination.

**GC 53 CONTRACTOR’S RIGHT TO STOP WORK OR TERMINATE CONTRACT**

53.1 If the Owner should be adjudged bankrupt or insolvent, or makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of insolvency, the Contractor may, without prejudice to any other right or remedy, by giving the Owner written notice, terminate the Contract.

53.2 If the work should be stopped or otherwise delayed for a period of thirty days or more under an order of any court, or other public authority, and providing that such order was not issued as the result of any act or fault of the Contractor or of any one they may have directly or indirectly employed, the Contractor may, without prejudice to any other right or remedy, by giving the Owner fifteen (15) working days written notice, terminate the Contract.

53.3 The Contractor may notify the Owner in writing that the Owner is in default of their contractual obligations if:

a) the Project Manager fails to issue within a reasonable period, a certificate in accordance with GC 44 - CERTIFICATES AND PAYMENTS;

b) the Owner fails to pay to the Contractor, when due, any amount certified by the Project Manager and verified by the audit of the Owner.

Such written notice shall advise the Owner that if such default is not corrected within fifteen (15) working days from the receipt of the written notice the Contractor may, without prejudice to any other right or remedy he or she may have, stop the work and/or terminate the contract.

53.4 Subject to the Contract being terminated under the conditions set out above, the Contractor shall be entitled to be paid for all work performed and for any loss sustained upon products and plant supplied, and accepted by the Owner with reasonable overhead, profit and damages.
54.1 In the case of any dispute or claim arising between the Owner and the Contractor as to their respective rights and obligations under the Contract, either party hereto shall give the other written notification of such dispute or claim. The notification of dispute or claim shall be made within ten (10) working days of the dispute or cause of action arising and thereafter the parties shall attempt to resolve the matter through discussions and/or negotiations.

a) If the dispute or claim cannot be first resolved to the satisfaction of both parties through discussions and/or negotiations, either party may refer the matter to mediation. The parties agree to jointly select a mediator. If they are unable to do so, a mediator will be chosen, upon application by the parties, by the Alternative Dispute Resolution Institute of Canada.

b) If within 30 days of the appointment of the mediator, the parties do not resolve some or all of the issues in dispute, the parties shall submit those issues in dispute to binding arbitration pursuant to the provincial arbitration act or the equivalent thereof.

c) All information exchanged during the dispute resolution process shall be regarded as “without prejudice” communications for the purposes of settlement negotiations and shall be treated as confidential by the parties and their representatives unless otherwise required by law. However, evidence that is independently admissible or discoverable shall not be rendered inadmissible or non-discoverable by virtue of its use during negotiation or mediation.

d) The parties agree that the representatives selected to participate in the dispute resolution process will have the authority required to resolve the dispute, or will have a rapid means of obtaining the requisite authorization.

f) The parties agree that they will each be responsible for the costs of their own legal counsel and personal travel. Fees and expenses of the mediator or arbitrator and all administrative costs, such as the cost of a meeting room, if any, shall be borne equally by the parties.

54.2 Legal proceedings shall not take place until after Substantial Completion of the Work and only if no resolution is reached through the above attempts described in GC 54.1 except:

a) where either party can show that the matter in dispute requires immediate consideration while evidence is available; or

b) in the case of legal proceedings, where the action may become proscribed by reason of delay.

54.3 Notwithstanding the process described under this GC 54, the Contractor shall also have the sole right to first submit the dispute to a Dispute Resolution Committee, as may be designated or established by the Owner. Authority of the Dispute Resolution Committee may be limited to address specific types of disputes and shall act in accordance with guidelines, as may be published and modified periodically by the Owner. Referrals to the Committee shall be made after Substantial Completion of the contract and decisions by the Committee will be non-binding on either party.

55.1 Commercial General Liability Insurance

(a) Without restricting the generality of GC 41- Indemnification, the Contractor shall provide and maintain, either by way of a separate policy or by an endorsement to his existing policy, Commercial Liability Insurance acceptable to the Owner and subject to limits set out in detail in the Certificate of Insurance inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof.

(b) This insurance shall include as an additional insured the Owner and the Occupant/Operator of the property. The Contractor shall not commence any work until he obtains, at his expense, all required insurances as specified in the General Conditions and the Supplementary General Conditions. Such insurance must have the approval of the Engineer/Architect and be to the limits, form and amounts specified. The Contractor will not permit any Subcontractor to commence work on this Project until the same insurance requirements have been compiled with by the Subcontractor.
(c) The insurance shall also include as Unnamed Insureds the architectural and engineering consultants of the Owner with respect to work performed by the Contractor, but excluding professional liabilities associated with such architectural and engineering consultants.

(d) The Commercial General Liability Insurance will not be limited to, but shall include coverage for:

1) premises and operations liability
2) products or complete operations liability
3) blanket contractual liability
4) broad form property damage
5) cross liability
6) elevator and hoist liability
7) contingent employer’s liability
8) personal injury liability
9) liability with respect to non-owned licensed vehicles
10) shoring, blasting, excavating, underpinning, demolition, pile driving and caisson work, work below ground service, tunneling and grading, as applicable only.

55.2 Automobile Liability Insurance

(i) The Contractor shall provide and maintain liability insurance in respect of (i) owned licensed vehicles and (ii) leased vehicles, subject to limits set out in the Supplementary General Conditions inclusive.

55.3 Aircraft and Watercraft Liability Insurance

The Contractor shall provide and maintain liability insurance with respect to owned and non-owned aircraft and watercraft, as may be applicable, subject to limits set out in the Supplementary General Conditions inclusive. Such insurance shall be in the names of the Contractor, Her Majesty the Queen in Right of Newfoundland, the Owner and the Engineer/Architect as defined in 26.1(b) and (c) where they have an insurable interest in the use and operation of such aircraft and watercraft.

55.4 Completed operations shall be maintained continuously until twelve (12) months after the date the Engineer/Architect issues a Certificate of Substantial Performance.

55.5 All insurance policies shall contain an endorsement requiring notification of Her Majesty and the Named Insured, in writing, thirty (30) days prior to cancellation of any policy or material change, except in the event of non-payment where policy conditions dealing with termination will apply.

GC 56 PROPERTY INSURANCE

56.1 The Contractor shall provide and maintain property insurance for contracts over $25,000, acceptable to the Owner, insuring the full value of the work in the amount of the contract price and the full value as stated of products for incorporation into the Work, subject to such exclusion as may be stated in the Certificate of Insurance.

56.2 Property insurance coverage shall be provided for by either a Broad Form Builders' Risks Policy, or an Installation Floater, or a Piers, Wharves, and Docks Rider.

56.3 The policies shall insure on a Broad Form basis direct loss or damage subject to any exclusion as may be specified in the Supplementary General Conditions. Such coverage shall apply to:

(a) all products, labour, and supplies of any nature whatsoever, the property of the Insureds or of others for which the Insureds may have assumed responsibility, to be used in or pertaining to the site preparations, demolitions of existing structures, erections and/or fabrication and/or reconstruction and/or repair of the insured project, while on the site or in transit, subject to the exclusion of the property specified.

(b) the installation, testing and any subsequent use of machinery and equipment including boilers, pressure ves-
sels or vessels under vacuum.

(c) damage to the Work caused by an accident to and/or the explosion of any boiler(s) or pressure vessel(s) forming part of the Work.

Such coverage shall exclude construction machinery, equipment, temporary structural and other temporary facilities, tools, and supplies used in the construction of the work and which are not expendable under the Contract.

56.4 Policies provided shall contain an endorsement requiring notification of the Owner and the Named Insured, in writing, thirty (30) days prior to cancellation of any policy or material change of coverage except in the event of non-payment where policy conditions dealing with termination will apply.

56.5 All such insurance shall be maintained continuously until the date the Project Manager issues a Certificate of Substantial Completion. All such insurance shall provide for the Owner to take occupancy of the work or any part thereof during the term of the insurance. Any increase in the cost of this insurance arising out of such occupancy shall be at the Owner’s expense.

56.6 The policies shall provide that in the event of a loss, payment for damage to the Work shall be made to the Owner and the Contractor as their respective interests may appear. The Contractor shall act on behalf of the Owner for the purpose of adjusting the amount of such loss with the Insurers. On the determination of the extent of the loss, the Contractor shall immediately proceed to restore the Work and shall be entitled to receive from the Owner (in addition to any sum due under the Contract) the amount at which the Owner’s interest in the restoration work has been appraised, such amount to be paid as the work of restoration proceeds and in accordance with the Project Manager’s certificates for payment. Damage shall not affect the rights and obligations of either party under the Contract except that the Contractor shall be entitled to such reasonable extension of time for Substantial and Final Completion of the work as the Project Manager may decide.

56.7 Further to the requirements of GC 55 and 56, the Contract Documents contain a Certificate of Insurance indicating type and limit of insurance required for the Work. The Contractor will be required to have the Certificate of Insurance completed by their insurance company and delivered to the Owner prior to commencement of work but not later than ten (10) working days after the date of the Letter of Award.

56.8 The Contractor shall be responsible for any deductible amounts under the policies and the payment of monies up to the deductible amount made in a satisfaction of a claim shall be borne by the Contractor.

56.9 The Contractor shall be responsible for providing such additional insurance as may be required to protect the insured against loss on items excluded from the policies referred to in the Contract. The provisions of the insurance coverage requirements contained in the Contract are not intended to cover all of the Contractor’s obligations under GC 41 INDEMNIFICATION. Any additional risk management measures or additional insurance coverages the Contractor may deem necessary to fulfill the Contractor’s obligations under GC 41 shall be at the Contractor’s discretion and expense.

GC 57 BONDS

57.1 The Owner shall have the right, during the period stated in the tender documents for acceptance of the tender, to require the Contractor to provide and maintain in good standing until the fulfillment of the Contract, bonds covering the faithful performance of the Contract including the requirements of the Warranty provided for in GC 13 - WARRANTY, and the payment of all obligations arising under the Contract.

57.2 All such bonds shall be issued by a duly incorporated surety company approved by the Owner and authorized to transact a business of suretyship in the Province of Newfoundland and Labrador.

57.3 Unless stated elsewhere in the Contract Documents, the Contractor is required to provide, as a minimum, a 50% Labour and Materials Bond and a 50% Performance Bond. The costs attributable to providing such bonds shall be and are deemed to be included in the tender price.

57.4 Should the Owner require the provision of additional bond or bonds by the Contractor other than those provided for under GC 57.3 or requested in the tender period, the Contract Price shall be increased by all costs attributable to providing such bonds.
57.5 The Contractor shall promptly provide the Owner with any bonds that are required in accordance with the Contract.

57.6 The Contractor shall notify the bonding company of all changes to the Work and Contract Documents with a copy to the Project Manager.

**GC58 CLAIMS AGAINST, AND OBLIGATIONS OF, THE CONTRACTOR**

58.1 The Owner may, in order to discharge lawful obligations of and satisfy lawful claims against the Contractor by a Sub-Contractor, with whom the Contractor has a direct contract, for Works rendered to, or on behalf of, the Contractor, pay an amount from money that is due and payable to the Contractor directly to the claimant Sub-Contractor.

58.2 For the purposes of GC58.1 a claim shall be considered lawful when it is so determined

   a) by a court of legal jurisdiction, or
   
   b) by an arbitrator duly appointed to arbitrate the said claim, or
   
   c) by a written notice delivered to the Owner and signed by the Contractor authorizing payment of the said claim or claims.

58.3 A payment made pursuant to subsection 1 is, to the extent of the payment, a discharge of the Owner’s liability to the Contractor under the Agreement and will be deducted from any amount payable to the Contractor under the Agreement.

58.4 GC58.1 shall only apply to claims and obligations

   a) the notification of which has set forth the amount claimed to be owing and a full description of the Services or a part of the Services for which the claimant has not been paid. The notification must be received by the Owner in writing before the final payment is made to the Contractor and within one hundred twenty (120) days of the date on which the claimant

      i. should have been paid in full under the claimant’s Agreement with the Contractor where the claim is for an amount that was lawfully required to be held back from the claimant; or

      ii. performed the last of the Work pursuant to the claimant’s Agreement with the Contractor where the claim is not for an amount referred to in (i) above, and

   b) the proceedings to determine the right to payment of which shall have commenced within one year from the date that the notification referred to in GC58.4.(a) was received by the Owner.

58.5 The Owner may, upon receipt of a notification of claim referred to in GC58.4.(a), withhold from any amount that is due and payable to the Contractor pursuant to the Agreement the full amount of the claim or any portion thereof.

58.6 The Owner shall notify the Contractor in writing of receipt of any notification of claim and of the intention of the Client to withhold funds pursuant to GC58.5. The Contractor may, at any time thereafter and until payment is made to the claimant, post with the Owner, security in a form acceptable to the Owner in an amount equal to the value of the said claim. Upon receipt of such security the Owner shall release to the Contractor any funds which would be otherwise payable to the Contractor, that were withheld pursuant to the provision of GC58.5.

58.7 The Contractor shall discharge all lawful obligations and shall satisfy all lawful claims against the Contractor for Services rendered to, or on behalf of, the Contractor in respect of the Agreement at least as often as the Agreement requires the Owner to discharge its obligations to the Contractor.
CERTIFICATE OF INSURANCE

DESCRIPTION & LOCATION OF WORK: Boiler #1 Replacement – NDBMHC – Twillingate.

<table>
<thead>
<tr>
<th>PROJECT NO:</th>
<th>AWARD DATE:</th>
<th>VALUE $:</th>
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INSURER:

ADDRESS:

BROKER:

ADDRESS:

INSURED NAME OF CONTRACTOR:

ADDRESS:

ADDITIONAL INSURED (Excluding Automobile Liability Policy)

- [ ] The OWNER: Central Regional Integrated Health Authority
- [ ] The Occupant/Operator of the Property:
- [ ] Project Consultants of the OWNER (excluding professional liabilities)

This document certifies that the following policies of insurance and indicated coverage are at present in force subject to the terms, conditions and exclusions as contained therein covering the operations of the insured in connection with the above noted contract made between the named insured and the Owner.

<table>
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<tr>
<th>POLICY TYPE</th>
<th>NUMBER</th>
<th>INCEPTION DATE</th>
<th>EXPIRY DATE Y/M/D</th>
<th>LIMITS OF LIABILITY</th>
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<tr>
<td>1.1 COMMERCIAL GENERAL LIABILITY or</td>
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<td>1.2 WRAP-UP LIABILITY (Including where indicated)</td>
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<tr>
<td>A. BLASTING</td>
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<tr>
<td>B. PILE DRIVING OR CAISSON WORK</td>
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</table>
| C. REMOVAL OR WEAKENING OF SUPPORT | | | | $
| 2A. BUILDERS’ RISK “BROAD FORM” or | | | | 
| 2B. INSTALLATION FLOATER “BROAD FORM” or | | | | 
| 2C. PIERS, WHARVES, & DOCKS RIDER | | | | 
| 3. AUTOMOBILE LIABILITY INSURANCE | | | | $2,000,000 Minimum |
| 4. AIRCRAFT and/or WATER CRAFT LIABILITY INSURANCE | | | | Not required |
| 5. ENVIRONMENTAL IMPAIRMENT LIABILITY | | | | Not required |
| 6. SHIPBUILDER’S or SHIP REPAIRER’S LIABILITY INSURANCE | | | | Not required |
| 7. HULL & MACHINERY INSURANCE, and PROTECTION & INDEMNITY Insurance including 4/4th COLLISION LIABILITY | | | | Not required |

The Insurer agrees to notify the Owner, as defined above, in writing, thirty (30) days prior to cancellation, termination or material change of any policy.

NAME OF INSURER’S OFFICER or AUTHORIZED REPRESENTATIVE: SIGNATURE:

Date:

Tele.:

Email:

Issuance of this certificate shall not limit or restrict the right of the Owner to request at any time duplicate certified copies of said insurance policies.
OATH / AFFIRMATION OF CONFIDENTIALITY

This Oath / Affirmation of Confidentiality encompasses personal and / or personal health information of the client, employee and business information of Central Health. As an employee, health care professional/provider, trustee, student, volunteer, contractor or any other affiliated individual engaged by Central Health, we have a legal and ethical obligation to ensure that information to which we have access is kept private and confidential. It is understood that this access will be gained only through appropriate authorization and be used only for the purpose for which the access was granted. All information must be protected to ensure maintenance of full confidentiality and privacy.

Central Health employees and agents may have disclosure and/or advocacy obligations arising from professional standards, regulations and concerns regarding safety of clients and services delivered. Central Health acknowledges the responsibility of health care professionals and organizations for appropriate disclosure to the public. It is the expectation of Central Health that any concerns/issues initially be brought forward to Central Health for resolution.

I, __________________________________, of __________________________ solemnly
(Print name)                     (City / Town, Province of residence)

Swear / affirm the following:

1. I have reviewed and will adhere to the content of Central Health’s policy on Confidentiality, including responsibilities regarding confidential information obtained during the course of services provided to Central Health.

2. I have been informed on how to access policies and procedures of Central Health as they relate to the Newfoundland and Labrador Personal Health Information Act and other relevant regulations, and I understand my role and obligations under same.

3. I understand that it is my duty to adhere to the provisions of the Newfoundland and Labrador Personal Health Information Act; Access to Information and Protection of Privacy Act, all other relevant legislation and regulations, policies, professional practice standards (where applicable), and agree to same.

4. I understand that all personal / personal health / business information, to which I have access is confidential, and is not to be discussed, disclosed or communicated to anyone who is not authorized to know the information, in any manner and at anytime, as in accordance with Central Health’s policies and procedures regarding same.

5. I will not access or use personal / personal health / business information, except as it is necessary to perform my duties and / or as I am authorized to do so by Central Health.

6. I will not allow any unauthorized person to access personal / personal health information or business information.
7. I will immediately report any breaches of privacy and / or confidentiality to my immediate manager/director/senior management.

8. I understand that it is my responsibility to secure information to which I have access in accordance with the policies and procedures of Central Health governing the security of information.

9. I understand that if I have questions or concerns respecting access, use or disclosure of personal / personal health / business information, I am responsible for addressing those questions or concerns with my immediate manager/director/senior management.

10. Should I inadvertently breach any of the provisions of Central Health’s policies regarding the access, use or disclosure of personal / personal health / business information, or cause a security breach which could lead to improper disclosure of information held by Central Health or improper access by others to information held by Central Health, I understand that a record of this breach will be maintained by Central Health and that I may be required to undertake additional privacy and security education.

11. Should I willfully breach any of the provisions of Central Health’s policies respecting the access, use or disclosure of personal / personal health / business information or cause a security breach which could lead to improper disclosure of information held by Central Health or improper access by others to information held by Central Health, I understand that I may face disciplinary action, up to and including termination of my employment / contract for service.

12. I understand that this Oath / Affirmation of Confidentiality survive the termination of my employment / engagement with Central Health and that I may be fined and / or face civil penalties should I breach this Oath / Affirmation of Confidentiality even after my employment / engagement with Central Health has ended.

13. I understand that this Oath / Affirmation of Confidentiality will be retained as part of my personnel file.

Sworn / Affirmed at ____________________________, this ______ day of __________, 20______, before me.

__________________________________________  __________________________________________
Signature  Signature - Commissioner of Oaths/Notary Public

__________________________________________  __________________________________________
Print Name  Print Name

Revised June 2011 2
POLICY

Central Health has a legal and ethical responsibility to safeguard the confidentiality of information, in any form, that is in the custody or control of the organization and the privacy of the individual who is the subject of that information. Central Health is accountable to ensure all of its health care professionals/providers, employees, trustees, students, volunteers, contractors and any other affiliated individuals are aware of and bound by the organization’s duty to maintain confidentiality.

Central Health considers the following information confidential:

- Personal information / personal health information of clients and their families, in any form,
- Personal information, employment information and compensation information of health care professionals/providers, employees, trustees, students, volunteers and contractors,
- Business information with respect to the operations of Central Health that is not publicly disclosed by the organization.

PROCEDURE

All Health Care Professionals/Providers, Employees, Trustees, Students, Volunteers, Contractors and any other affiliated individuals must:

1. Familiarize themselves with the organization’s policies and procedures with respect to the collection, use, disclosure, storage, and destruction of confidential information.

2. Collect, access, and use personal health information only as authorized and required to provide care/services and perform the duties to which they have been assigned.

3. Share, copy, transmit, disclose, or otherwise release confidential information only as authorized and required to provide care or perform assigned duties. (Please also refer to Release of Information policies).
4. Ensure adherence to technological, physical and administrative safeguards to ensure privacy and confidentiality of information. (Please refer to E-mail policy and Faxing policy).

5. Review applicable program/department specific information, policies and procedures that relate to confidentiality.

6. Consult one’s manager/director/senior leader and/or privacy manager regarding confidentiality issues or inquiries.

7. Report to one’s manager/director/senior leader or privacy manager any suspected breaches of confidentiality or any practices where they believe that confidential information within the organization is at risk.

8. Continue to respect and maintain the terms of the Oath / Affirmation of Confidentiality both during and after the course of services provided to Central Health as the confidentiality agreement survives the termination of employment / engagement with Central Health.

Any misuse, inappropriate disclosure, inappropriate access, or failure to safeguard information will be subject to disciplinary action as per Human Resources policy.

All breaches of confidentiality are treated as an occurrence in accordance with the Occurrence Reporting policy and an Occurrence Report form must be completed.

All Employees, Managers/Directors/Senior Leaders must:

1. At the commencement of employment, contract or service provision with Central Health, ensure that the individual:
   a) Reviews this policy and signs an Oath / Affirmation of Confidentiality form to be retained on the individual’s personnel file;
   b) Completes a Privacy/Confidentiality education session offered by the organization;
   c) Reviews applicable program/department specific information policies and procedures that relate to privacy and confidentiality.

2. On an ongoing basis:
   a) Address any confidentiality concerns and potential privacy breaches with the individual. (Refer to Privacy Breach Policy).
b) Identify and refer any individual for further information/education on privacy and confidentiality, as deemed appropriate, through the Professional Development and Continuing Education and/or Health Information Management and Privacy Departments.

c) Submit to Professional Development and Continuing Education the names of employees who have received additional information/education on privacy and confidentiality for monitoring and tracking purposes.

3. **On an annual basis:**

   a) Review this policy with the employee during completion of annual Employee Performance Appraisal.

**Health Care Professionals/Providers Not Employed by Central Health (though providing health care services through Central Health facilities) must:**

1. **At the commencement of contract or service provision within Central Health:**

   a) Review this policy and sign an Oath / Affirmation of Confidentiality form to be retained on the individual’s applicable service contract file.

   b) Complete a Privacy/Confidentiality education session offered by the organization to ensure awareness of duties and compliance with legislation and information practices, policies and procedures of Central Health.

   c) Enter into a written agreement with Central Health to ensure the protection of personal health information against unauthorized collection, access, use, disclosure, disposition, loss or modification in accordance with Central Health policies and procedures.

   d) Review applicable program/department specific information policies and procedures that relate to privacy and confidentiality.

**All affiliates (Trustees, Volunteers, Pastoral Care, Students) of Central Health must:**

1. **At the commencement of service provision within Central Health:**

   a) Review this policy and sign an Oath / Affirmation of Confidentiality form to be retained on the specific department/program file.

   b) Review Central Health information/learning resources regarding the duties imposed by the *Personal Health Information Act* and the regulations.
c) Review applicable program/department specific information policies and procedures that relate to privacy and confidentiality.

All Other Affiliates (Vendors, Contractors) of Central Health must:

1. At the commencement of contract or service provision within Central Health:

   a) Review this policy and sign an Oath / Affirmation of Confidentiality form to be retained by Central Health as part of the service contract.

   b) Review Central Health information/learning resources regarding the duties imposed by the *Personal Health Information Act* and the regulations, as well as of the information policies and procedures of Central Health relating to same. (See Awareness of Obligations Policy).

   c) Enter into a written and binding service agreement contract with Central Health which ensures the protection of personal health information against unauthorized access, use, disclosure, disposition, loss or modification in accordance with Central Health policies and procedures.

**DEFINITIONS**

<table>
<thead>
<tr>
<th><strong>Affiliates</strong></th>
<th>Individuals who are not employed by Central Health, but perform specific tasks at or for the organization, including, but not limited to, trustees, students, volunteers, pastoral care, researchers, contractors, vendors and individuals working at the organization, but funded through an external source.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collect</strong></td>
<td>To gather, acquire, receive, or obtain the information by any means from any source and collection as a corresponding meaning.</td>
</tr>
<tr>
<td><strong>Confidential Business Information</strong></td>
<td>Information with respect to Central Health’s business that is not publicly disclosed by the organization. Employees / affiliates may come in contact with such information that is not generally known to the public as they perform their duties. Examples include:</td>
</tr>
<tr>
<td>• legal matters involving the organization that are not public knowledge,</td>
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<td>• financial information that is not available in Central Health’s annual report,</td>
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<tr>
<td>• contractual agreements with vendors, consultants, contractors, and third parties (The confidentiality of this information may be written into the contract, e.g. non-</td>
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<tr>
<td><strong>Disclosure</strong></td>
<td>disclosure of the cost of the service), information about intellectual property such as development of new technology and treatments or unpublished reports, information pertaining to Central Health’s information technology access and security systems.</td>
</tr>
<tr>
<td><strong>Disclose</strong></td>
<td>To make the information available or to release it but does not include a use of the information and “disclosure” as a corresponding meaning</td>
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</table>
| **Health Care Professional** | A person, including a corporation, that is licensed or registered to provide health care by a body authorized to regulate a health care professional under one of the following enumerated Acts but does not include an employee of a health care profession when acting in the course of his or her employment:  
Chiropractors Act  
Dental Act  
Denturists Act, 2005  
Dieticians Act  
Dispensing Opticians Act, 2005  
Hearing Aid Practitioners Act, 2005  
Licensed Practical Nurses Act, 2005  
Massage Therapy Act, 2005  
Medical Act, 2005  
Occupational Therapists Act, 2005  
Optometry Act, 2004  
Pharmacy Act  
Physiotherapy Act, 2006  
Psychologists Act, 2005  
Registered Nurses Act, 2005  
Social Workers Association Act |
| **Health Care Provider** | A person, other than a health care professional, who is paid by MCP, another insurer or person, whether directly or indirectly or in whole or in part, to provide health care services to an individual |
| **Personal Health Information** | Identifying information in oral or recorded form about an individual that relates to:  
- information concerning the physical or mental health of the individual, including information respecting the individual’s health care status and history and the health history of the individual’s family;  
- the provision of health care to the individual, including information respecting the person providing the health care; |
<table>
<thead>
<tr>
<th>Personal Information</th>
<th>Recorded information about an identifiable individual including:</th>
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<tr>
<td></td>
<td>• the individual's name, address, or telephone number,</td>
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<td>• the individual's race, national or ethnic origin, color, or</td>
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<td>religious or political beliefs or associations,</td>
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<td>• the individual's age, sex, sexual orientation, marital status</td>
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<td>or family status,</td>
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<td>• an identifying number, symbol or other particular assigned</td>
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<td>to the individual,</td>
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<td>• the individual's fingerprints, blood type or inheritable</td>
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<td>characteristics,</td>
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<td>• information about the individual's health care status or</td>
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<td>history, including a physical or mental disability,</td>
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<td></td>
<td>• information about the individual's educational, financial,</td>
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<td>criminal, or employment status or history,</td>
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<td></td>
<td>• the opinions of a person about the individual, and</td>
</tr>
<tr>
<td></td>
<td>• the individual's personal views or opinions.</td>
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</table>

| Use                   | To handle or deal with the information or to apply the       |
|                       | information for a purpose and includes reproducing the       |
|                       | information, but does not include disclosing the information.|

- the donation by an individual of a body part or any bodily substance, including information derived from the testing or examination of a body part or bodily substance;
- registration information;
- payments or eligibility for a health care program or service in respect of the individual, including eligibility for coverage under an insurance or payment arrangement with respect to health care;
- an individual’s entitlement to benefits under or participation in a health care program or service;
- information about the individual that is collected in the course of, and is incidental to, the provision of a health care program or service or payment for a health care program or service;
- a drug as defined in the Pharmacy Act, a health care aid, device, product, equipment or other item provided to an individual under a prescription or other authorization issued by a health care professional; or
- the identity of a person’s representative as defined in Section 7 of the Personal Health Information Act.
REFERENCES


Province of Newfoundland and Labrador, *Personal Health Information Act*, SNL 2008, c. P-7.01. s.2, 5, 13, 14, 22

October 2011

Re: Letter of Notification – Vendor/Contractor requirements under the Personal Health Information Act

Central Health is committed to respecting privacy and safeguarding confidential information in its custody and control in accordance with legislation, public expectations of privacy and accepted fair information practices. Central Health considers personal / personal health / business information not otherwise publicly available confidential and has an obligation to protect all forms of this information.

As a custodian under the Personal Health Information Act (PHIA) Central Health must ensure all vendor/contractors having purposeful or incidental access to personal health information comply with the Act and regulations. Specifically, Central Health must ensure all contractors and vendors comply with the following legislative requirements:

- Take an Oath/Affirmation of Confidentiality or sign an Information Sharing Agreement depending on defined role under the Act;
- Are aware of the duties imposed by the Act and the regulations;
- Comply with the Act and the regulations; and
- Comply with Central Health’s information policies and procedures in the protection of personal / personal health/ business information respecting the manner of collection, storage, transfer, copying, modification, use and disposition of information whether within or outside the province.

Enclosed please find a copy of Central Health’s Confidentiality policy and Vendor/Contractors Informational Pamphlet for your review.

Also find enclosed a Vendor/Contractor Oath/Affirmation of Confidentiality or Information Sharing Agreement for review and signing on behalf of your company, its employees, subcontractors and all other affiliates individuals.

The signed and witnessed Oath/Affirmation of Confidentiality or Information Sharing Agreement, as applicable, must be returned to the address indicated below.

Health Information Management and Privacy, James Paton Memorial Regional Health Centre
125 Trans Canada Highway, Gander, NL Canada A1V 3P7
upon commencement of your contract with Central Health and will be retained as part of your vendor/contractor profile as mandated by legislation. Thank you for your consideration and anticipated cooperation with this directive. Any inquiries may be directed to Health Information Management & Privacy at privacy@centralhealth.nl.ca

Respectfully

Tracey Steele
Regional Privacy Analyst
Health Information Management and Privacy
Basic Privacy Tips

- Access confidential information only as needed to perform your duties.
- Do not share or discuss any client, employee or business information to any person within or outside of Central Health except as may be required in the course of your duties or as required by law.
- Do not discuss client or confidential information in public places.
- If you have any questions on what is considered as confidential information, contact Central Health’s privacy contact person.
- If you find any confidential information in a public area within Central Health, contact Central Health’s privacy contact person.
- If you become exposed to confidential information during your service to Central Health, you have an obligation to keep this information private and confidential.
- If you overhear confidential information between Central Health employees and/or health care professionals, or clients, etc., please ensure that this information is kept private and confidential.
- Keep client and/or other confidential information secure at all times.

WHO CAN I CONTACT AT CENTRAL HEALTH?

If you have any questions about privacy practices at Central Health please contact us at (709) 256-5743 or email at privacy@centralhealth.nl.ca

ADDITIONAL RESOURCES...

This brochure provides a basic overview of your privacy obligations as well as your obligations under the Personal Health Information Act (PHIA). This brochure does not constitute a legal direction or advice. For interpretation and/or guidance you are advised to consult with the Act and/or speak with your legal representative.

For more information please review Central Health’s privacy/confidentially policies on the website at:
www.centralhealth.nl.ca
or visit the following link:
www.health.gov.nl.ca/health/PHIA/

DISCLAIMER: This brochure provides general information only and is not legal advice regarding all rights and obligations under Newfoundland and Labrador’s privacy law.
CH - HIP 003
What is the Personal Health Information Act?

The Personal Health Information Act (PHIA) is a health-sector specific privacy law, proclaimed on April 1, 2011, that establishes rules for the collection, use and disclosure (sharing) of personal health information in both the public and private sectors. PHIA also sets out the rights of individuals of Newfoundland and Labrador regarding obtaining access to and correction of their personal health information.

Personal health information includes information (oral and recorded) that can be used to identify an individual. This can include their name, address, health care number, as well as any information relating to the physical or mental health of an individual and/or care provided to them (i.e., test results, family health history, treatment records, registration information, etc.).

PHIA recognizes that people expect their health information to be kept private and confidential and that it should not be collected, used or disclosed (shared) for purposes not related to their care and treatment unless by consent or otherwise required by law.

Why is this important to me?

Whatever your role is within Central Health, it is important to understand your responsibilities and obligations related to PHIA, as well as Central Health’s policies and procedures regarding privacy, confidentiality and security of confidential information.

Central Health may engage the services of contractors and vendors to support their operations. Under certain circumstances, these contractors and vendors may need to access, use or disclose (share) personal information, personal health information or business information of Central Health. In these instances, such access, use and disclosure (sharing) is restricted to what is needed to achieve the specific purpose that has been identified.

In completing your duties, you may also inadvertently or unintentionally become exposed to confidential information (i.e.: observe a client’s presence in one of our facilities or unintentionally overhear a conversation that relates to confidential information). Regardless of how confidential information is obtained, all contractors, vendors and other affiliated individual with Central Health have an obligation to ensure that information to which they have access is kept private and confidential.

When you access, use or disclose (share) confidential information other than what is necessary for the purpose of the contract or service provisions with Central Health, this is considered a privacy breach.

What are your responsibilities?

At commencement of contract or service provisions with Central Health, all contractors and vendors are required to review Central Health’s policies on privacy and confidentiality, sign an Information Sharing Agreement or Oath / Affirmation of Confidentiality and adhere to the statements contained therein. The Oath/Affirmation must be witnessed by a designated official such as a Commissioner of Oaths or a Notary Public. For this purpose there are Commissioners of Oaths designated at sites throughout Central Health.

As well it is important that all contractors and vendors ensure they are aware of their duties and compliance with legislation and information practices. It is the responsibility of all contractors and vendors to review all informational materials and policies related to PHIA, privacy and confidentiality as they are provided or referred to, while adhering to all related legislation and policies. It is your responsibility to be informed of Central Health’s expectations on privacy and confidentiality.

Privacy Breaches

At Central Health, privacy breaches are taken very seriously. The unauthorized collection, use or disclosure (sharing) of personal health, employee or business information is considered a privacy breach. Examples of a privacy breach are:

- Intentional access, use and/or viewing of personal health information or confidential information that is
PURPOSE

Central Health is committed to providing a smoke-free environment for its clients, employees, physicians, visitors, volunteers, general public and others by:

- offering tobacco cessation counseling and referral,
- protecting all people from tobacco smoke on Central Health property,
- supporting our communities in adopting healthy lifestyles,
- providing leadership in tobacco reduction initiatives.

POLICY

Smoking is not permitted in or on all Central Health owned or operated premises and facilities including the interior, exterior grounds and parking lots. Smoke free grounds will be clearly indicated by appropriate signage.

All clients, residents, employees, physicians, visitors, volunteers, general public and others must comply with the smoke free policy.

All clients, residents, employees, physicians, visitors, volunteers, general public and others have a shared responsibility for supporting the smoke free policy.

The smoke free policy applies to the following categories of Central Health owned and/or operated facilities/sites:

- Health Centres
- Community Health Centres
- Long Term Care Facilities
- Office Buildings
- Parking lots and vehicles parked on Central Health property
- All Central Health outbuildings such as sheds, workshops, etc.
- Accommodations (Staff and Physicians):
  i. Transient (< 3 months) accommodations
  ii. Accommodations physically attached to health facilities
iii. Multi unit accommodations
iv. Single unit accommodations. Smoking is not permitted indoors but tenants are not required to go off the property.

- Vehicles owned, operated or leased by Central Health no matter where they are located.

Exemptions:

- Buildings currently not owned or operated by Central Health such as leased space, which may have multiple tenants, and the landlord cannot provide a smoke free property because of other lease requirements. **N.B. For any future lease agreements entered into on behalf of Central Health, facilities staff must ensure that the building meets the Smoke Free Environments Act 2005 and must provide smoke free properties.**

**PROCEDURE**

A. **Clients / Patients / Residents:**

Inpatients

1. Admission booklets and admission notification letters will outline the smoke free policy.
2. Inpatient nursing staff must advise all patients on admission of the smoke free policy and their obligation under the policy on admission. This discussion must be documented in the inpatient health record.
3. Inpatient nursing staff must screen all patients for tobacco use upon admission. Tobacco use must be documented in the inpatient health record or physician’s progress note.
4. Inpatient staff must provide a supportive environment to inpatients who smoke during their involuntary tobacco abstinence, including referral to smoking cessation programs and nicotine replacement as prescribed by the physician/clinician if appropriate.
5. Inpatients who wish to leave the premises or grounds to smoke do so at their own risk. Employees must not facilitate inpatient smoking. For example, employees must not escort the patient to the property perimeter so that the patient can smoke.
6. As appropriate, inpatient staff will refer patients for smoking cessation support in keeping with the Smoking Cessation Support: Community Action and Referral Effort (CARE).
Ambulatory Clients

1. All ambulatory clients will be advised / reminded of the smoke free policy when making their appointment and on all appointment letters.
2. Staff interacting with ambulatory clients must advise all clients of the smoke free policy and their obligations under the policy upon registration or initial visit. This discussion must be documented on the health record.
3. Ambulatory clients who wish to leave the premises or grounds to smoke do so at their own risk.
4. As appropriate, ambulatory client staff will refer patients for smoking cessation support in keeping with the Smoking Cessation Support: Community Action and Referral Effort (CARE).

Long Term Care (LTC) Residents

1. During the assessment for placement, Continuing Care staff must advise all new applicants of the smoke free policy and their obligations upon admission to LTC.
2. Effective September 1, 2008, no new residents will be permitted to smoke in LTC facilities.
3. Current LTC residents who smoke will be grandfathered in indefinitely.
4. Residents who smoke will be encouraged to quit. A supportive environment including referral to smoking cessation programs and access to appropriate prescribed nicotine replacement therapies will be provided.
5. LTC residents who wish to leave the premises or grounds to smoke do so at their own risk. Employees must not facilitate resident smoking. For example, employees must not escort the resident to the property perimeter so that the resident can smoke.

Cottages

1. Effective January 21, 2009, no new occupants will be permitted to smoke in the cottages owned or operated by Central Health.
2. Current occupants who smoke will be grandfathered in indefinitely.
3. Occupants who smoke will be encouraged to quit. A supportive environment including referral to smoking cessation programs and access to appropriate prescribed nicotine replacement therapies will be provided.
4. Occupants are not permitted to smoke on Central Health grounds, including vehicles on Central Health grounds. Any smoking must occur within the cottage occupied by the smoker.

Home Based Clients

1. The smoke free policy will be communicated to the client prior to a visit from the Central Health employee.
2. Clients and others in the home are requested to refrain from smoking one hour prior to and during the visit from the Central Health employee. If the client should choose not to comply with the policy, alternate service options will be explored if it does not result in a risk to the clients' health.

3. In cases where it is determined that the imminent threat to the client is greater than that to the employee, service may be provided and appropriate documentation completed. This is also the case for unannounced or unscheduled home visits.

4. As appropriate, community staff will refer patients for smoking cessation support in keeping with the *Smoking Cessation Support: Community Action and Referral Effort (CARE)*.

**B. Employees, Physicians, Students and Volunteers**

**Human Resources**

1. A comprehensive workplace smoking cessation program will be offered to all employees and physicians. The program will include self-help materials, referral to the Smokers Help Line, access to an adult smoking cessation group program at no cost to the employee and subsidized nicotine replacement therapy (NRT).

2. Nicotine replacement therapy subsidization – 80% subsidy for one course of NRT for each employee who smokes including permanent full time, permanent part time and temporary employees, provided that the employee has enrolled in a smoking cessation program and has discussed the use of replacement therapy with their health care provider. See Appendices A and B.

3. Subject to operational requirements, employees who smoke will be permitted to attend smoking cessation group classes on work time.

4. Family members of employees shall have access to the smoking cessation group classes at no charge.

5. All recruitment material and letters of appointment will refer to the smoke free policy.

**Employee Wellness**

1. The Employee Health Program will include:
   a. Assessment for tobacco use and referral to the workplace smoking cessation program.
   b. Information on smoking will be collected during the pre-employment health screen and smokers will be referred to appropriate resources.

2. Information on the smoke free policy will be included at all orientation sessions for employees.

3. The employee smoking cessation group program will be delivered as a regular component of the employee wellness program.
Volunteers

1. Volunteers will be eligible to participate in the employee smoking cessation group program.
2. Information on the smoke free policy will be included at all orientation sessions for volunteers.

C. Compliance, Monitoring and Enforcement

1. All clients, residents, employees, visitors, volunteers, general public and others have a shared responsibility for supporting and complying with the smoke free policy.
2. Central Health managers are responsible to be champions for compliance and support of the policy. Managers will address all infractions or concerns regarding the policy.
3. Effective July 2009, security staff or a person with a “Badge of Authority” will provide secondary assistance if initial contact does not resolve the issue.
4. At sites where security services are not provided, site management will monitor and enforce the policy.
5. Employees who do not comply with the policy will be subject to Central Health’s progressive discipline.
6. Others who do not comply with the policy will be subject to normal guidelines of appropriate behavior.

D. Compliments and Complaints

1. All compliments and complaints regarding the smoke free policy and its implementation will be received from patients and other members of the public through the existing complaints process.
2. Compliments and complaints from employees should go through their immediate supervisor.
3. Supervisors must document all compliments and complaints with respect to this policy from employees through the existing compliments and complaints process.

RELATED POLICIES/GUIDELINES

- Clients Compliments and Complaints
- Progressive Discipline
DEFINITIONS

**Manager:** Refers to supervisor or immediate designate who would be involved in the day-to-day operations of the department.

**Badge of Authority:** Refers to management personnel with progressively increasing authority such as a director, Director of Health Services, Director of or Chief Operating Officer, or Central Health security personnel.

REFERENCES

Smoke Free Environment Act 2005

APPROVED BY:
(R)
(r)

APPROVAL DATE:
Appendix A: Nicotine Replacement Therapy Subsidy Program Guidelines

- Central Health will provide for a **one time subsidy of 80%** of the cost of Nicotine Replacement Therapy (NRT). NRT will be dispensed through the pharmacies at Central Health and will include nicotine gum, nicotine patches and nicotine lozenges.
- NRT will be provided through the Central Health pharmacies at a significantly lower cost than retail pharmacies.
- Employees must discuss smoking cessation with their physician or nurse practitioner and have a prescription for NRT. Employees who are unable to obtain a prescription should contact the Occupational Health Nurse at their nearest facility (JPMRHC @ 256-5709 or CNRHC @ 292-2641).
- Employees should bring their prescription to the Central Health pharmacy in their nearest health facility. At that time the employee will be asked to sign a contract stating they agree to pay 20% of the cost of the NRT once they have completed the course of treatment.
- Employees with a prescription for NRT in regional locations with no in house pharmacy should fax a signed contract (available on the intranet), along with their prescription to their Regional Pharmacy (JPMRHC @ 256-5737 or CNRHC @ 292-2253).
- If an employee does not complete a full course of treatment, they may chose to pay for the total cost of the NRT already dispensed and reserve the right to obtain NRT through the subsidy program at a later date.
- Once the contract has been signed, the pharmacy will automate a referral to the Smoker’s Helpline and dispense the NRT at your site via their regular route for medications.
- Employees must be enrolled in one of the available group cessation programs offered by Central Health. If for some reason an employee is unable to attend a group, e.g. group not available at work site, scheduling conflicts, participation in the Smokers’ Helpline program is required.
- Smoking cessation group programs will be offered based on demand throughout the region and will be available to all Central Health employees and their family members.
- Employees will be encouraged and supported to attend group programs in all possible ways, i.e.: lunch time sessions, flexing schedules, other alternatives subject to operational requirements.
Appendix B: Subsidized Nicotine Replacement Therapy Contract

I __________________________ agree to voluntarily participate in a Nicotine Replacement Therapy plan as prescribed by my doctor/nurse practitioner and dispensed through Central Health. At the end of the program, the total cost of the replacements will be tabulated. I understand that Central Health will cover 80% of the total cost (one time only).

Payment for the remainder of the cost (20%) will be my responsibility and will be paid in full or arranged through payroll deduction at the end or termination of the plan.

If at any point I chose to discontinue my therapy prior to completion, it is my responsibility to notify the pharmacy and arrange payment.

I also agree to a Smoker’s Helpline referral as part of my program.

Signed: __________________________ Date: __________________________

Phone#: __________________________

Witness: __________________________
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*Appendix M:* Contractor Occupational Health and Safety Non- Compliance Report
Introduction

This document provides information, procedures and work practices for the implementation and maintenances of the contractor safety program. It is an active document intended for all facilities owned and operated by Central Health.

The contractor safety program is a system to ensure that Central Health, contractors, subcontractors and vendors work together to ensure that contract activities are conducted efficiently and safely, thus achieving a healthy and safe work environment for all involved.

Central Health is committed to the health and safety of all of our employees, and expects the same commitment by each contractor to its own employees.

See Appendix A - Contractor Safety Policy

Central Health has developed this program for use by all contractors who perform work or provide services on Central Health’s premises. Contractors include all on site contractors, subcontractors and vendors. Outside carriers, delivery and pickup personnel are generally not required to complete the Contractor Safety Program requirements unless the scope of the service that they provide will go beyond the routine delivery/pickup of commodities at approved points in Central Health. Professional consultants generally are not required to complete the Contractor Safety Program requirements, unless the scope of the service that they provide will impose health and safety hazards.

This program may not cover all of the site-specific or even project-specific health and safety issues that may arise. This program is by no means meant to be all inclusive of the requirements of the Occupational Health and Safety (OH&S) Act and or any other applicable regulations.
Definitions

**Contractor:** Any company, agency, or individual contracted to provide goods or services, or carry out works of any type for Central Health. Contractors may include (but are not restricted to): builders, cleaners (trauma, hazardous or toxic waste), general handymen, painters, tilers, fencers, bricklayers, carpenters, removalists, locksmiths.

**Subcontractor:** An individual or business that signs a contract to perform part or all of the obligations of another's contract.

**Vendor:** An individual or business that provides goods or services to a company and is also known as a supplier. A vendor often manufactures inventorial items and sells those items to a customer. In general, contractors provide project work, while vendors provide ongoing services. Vendors may include vending machine technicians, chemical supplier, etc.

**Qualified Coordinator:** A qualified coordinator is an individual who is knowledgeable of the work, the hazards involved and the means to control the hazards, by reason of education, training, experience or a combination thereof.

**Site Representative:** This Central Health’s personnel will be selected and delegated to oversee projects that involves contractors. They will ensure that a contractor is following the guidelines set out in the tendering documentation and following applicable OH&S requirements. These representatives can be selected based on individual facility staff structure. Examples would include director of support services, departmental managers, team leads, etc.
Roles and Responsibilities

Central Regional Health Authority

1. Have responsibility for ensuring that statutory obligations to contractors’ health and safety are met.

Materials Management Department

1. Ensure that all documentation pertaining to OH&S is included in tendering documentation. This documentation would include but not limited to the Contractor’s Safety Handbook and the Contractor’s Safety Agreement.

2. Collect OH&S (OH&S) documentation from a project and store for future reference. This documentation must be kept on file for at least 5 years.

3. Train and educate employees on their roles and responsibilities pertaining to the contractor safety process.

4. Consult with Employee Wellness/Health and Safety Division regarding additional OH&S documentation for the tendering process.

Plant Services and Maintenance Department or Designated Department

1. Responsible to oversee and implement contractor safety for an entire project once the contract is awarded. This would include enforcing applicable OH&S legislative requirements and conducting disciplinary actions to ensure compliance.

2. Assign a site representative to ensure the contractor, subcontractors and their workers comply with the tendering agreement, OH&S legislation, standards, codes, guidelines, etc.

3. Ensure that the site representative conducts a pre-project meeting and those weekly site meetings and visits are conducted and documented throughout the project.

4. Train and educate site representative in their roles and responsibilities pertaining to the contractor safety process.

5. Notify in writing to Department of Government Services – OH&S Division if the construction project will take 30 days or longer in duration.

6. Assign a qualified coordinator where a construction project has two or more contractors overlapping or adjoining work activities and there is more than five workers project before work begins.
7. Collect OH&S documentation from a project and store for future reference. This would include but not limited to safety meetings, OH&S plans, hazard assessments, safety agreement, training records, OH&S inspections/directives, disciplinary actions, etc. This documentation must be kept on file for at least five years.

Site Representatives

1. Avail of training and education to understand his roles and responsibilities as a site representative.

2. Conduct pre-project meeting with the contractor to review all OH&S aspects of the project. This would include reviewing existing/potential hazards and control measures. Minutes of the meeting must be recorded and forwarded to Plant Services and Maintenance Department.

3. Acknowledge the contractor, subcontractors and their workers received the Contractor Handbook and are knowledgeable with its contents.

4. Acknowledge the Contractor’s Safety Agreement has been signed and dated by the contractor, subcontractors and their workers. The site representative will ensure that this document is sent to Plant Services and Maintenance Department or designate department.

5. Ensure that the contractor, subcontractors and vendors are educated in the various emergency preparedness codes for the facility. The site representative will provide an emergency contact list for all parties involved.

6. Coordinate with the contractor work schedules and tasks to provide safe working conditions for workers and staff.

7. Ensure training records of workers are available upon request to confirm appropriate qualifications (such as asbestos, fall protection, electrical work, etc.).

8. OH&S non-compliance must be reported immediately to the site representative and must be corrected immediately. If the non-compliance continues the contractor will be required to leave the premises and will be refused re-entry until compliance is achieved. The site representative will be responsible to participate in OH&S compliance and conduct disciplinary action to ensure compliance. These processes must be documented and forwarded to Plant Services and Maintenance Department or Designated Department.

9. Report all incidents/accidents immediately to the site representative. The site representative must participate in accident/incident investigations by either taking part of the investigation process and/or reviewing completed investigation reports.
10. Report all accidents that result in a serious injury or has the potential to cause a serious injury illustrated under section 54 of the OH&S Act immediately to the Assistant Deputy Minister.

11. Provide the contractor and their employees with appropriate ID cards when working on Central Health’s property. The site representative will ensure that the ID cards are distributed, worn daily and a daily sign in and sign out process is achieved.

12. Conduct regular site meetings and visits once project work commences to ensure the contractor is following minimum OH&S legislative requirements and guidelines set out by Central Health. Both site meetings and visits must be documented.

13. Ensure that the work performed has met the tendering specifications and good cleaning practices were achieved. All equipment/material that is owned by Central Health must be recovered.


Contractor

1. Comply with the OH&S requirements outlined by the OH&S Legislation and of Central Health.

2. Review Contractor’s Safety Handbook and educate all contracted workers in all OH&S aspects of the project.

3. Ensure the Contractor’s Safety Agreement is signed and dated by all parties involved.

4. Participate in the pre-project meeting and regular site meetings with Central Health’s site representative and/or designate. The contractor must present the signed Contractor’s Safety Agreement to the site representative at the pre-project meeting.

5. Notify Central Health prior to a task that is likely to create a hazard to a worker of another contractor on the same project.

6. Submit written OH&S documentation/manual for the project, if requested by Central Health. At a minimum it should outline a completed hazard assessment which illustrates potential/existing hazards and control measures.

7. Coordinate with the Central Health’s representative/designates work schedules and tasks to provide safe working conditions for workers and staff.
8. Ensure workers have the appropriate qualifications to perform the work.

9. Stop work immediately if potential/existing hazards are identified and ensure corrective actions are taken. Report such incidents to the site representative immediately.

10. Conduct regular OH&S meetings with their workers and subcontractors. All contractors will be responsible to conduct at a minimum weekly safety meetings. These meetings must be documented and forwarded the site representative on a weekly basis.

11. Ensure all equipment/personal protective equipment meets legislative requirements, standards, codes, etc. and is properly used and maintained.

12. Ensure that their workers and those of subcontractors are educated as to the various emergency preparedness codes before work commences.

13. Report to the site representative and investigate any incidents and accidents that occur on the project. Ensure proper written reports are conducted.

14. Comply with any other OH&S directives deemed necessary by Central Health or other bodies to ensure legislative requirements and injury prevention.

Subcontractors

1. Have the same rights and responsibilities as a contractor (see above list).

Contractor/Subcontractor’s Employees

1. Take reasonable care to protect their personal OH&S and the safety of others on the worksite.

2. Report immediately any hazardous condition and accident/incident to their supervisor.

3. Attend and participate in safety meetings throughout a project.

4. Use all necessary safeguards & safety devices that will protect themselves and others at the worksite.

5. Wear appropriate Personal Protective Equipment (PPE) while on the worksite.

Vendor

1. Review the Contractor’s Safety Handbook and sign the Safety Agreement initially and it must be renewed annually.
2. Have the same rights and responsibilities as a contractor (see above list).

Central Health Employees:

1. Report to their manager or supervisor any contractor performing unsafe acts or OH&S regulatory non-compliance.

2. Be aware of the project environment and obey all posted signage, barricades, restricted zones, etc.

OH&S Committee/Worker Health & Safety Representative

1. Receive OH&S issues/concerns that could arise from a project and provide guidance to the parties involved.

2. Participate in activities at Central Health if deemed necessary to improve the OH&S of a project. Such activities could include getting involved in workplace inspections, accident/incident investigations, reviewing training requirements, reviewing OH&S orders, OH&S research, etc.

Employee Wellness/Health and Safety Division

1. Provide OH&S consultation services to ensure the project meets minimum legislative requirements and other guidelines set by Central Health.

2. Take part in site meetings and visits which are deemed necessary to ensure OH&S compliance and injury prevention.

3. Participate in an accident/incident investigation process to ensure corrective measures are identified, if deemed necessary.

4. Maintain the written Contractor Safety Program, reviewing, modifying and revising where needed.

5. Participate in OH&S non-compliances and disciplinary actions if deemed necessary.
Contractor Project Qualifications and Work Requirements

For a contractor to qualify for a project they must have a letter of good standing from the Workplace Health, Safety & Compensation Commission and have Certification of Recognition (COR) through the Newfoundland & Labrador Construction Safety Association. Proof of these documents will be requested in the tendering processes and at the pre-project meeting.

A contractor will be responsible to ensure that their own workers and subcontractors’ workers have the necessary skills and knowledge to perform their tasks properly and safely. If a worker is found not to have the qualifications and/or skills to perform a task safely they will be required to stop work immediately. The contractor either must ensure the worker has the necessary skills before recommencing work or replace the worker with an individual who has the qualifications and skills.

Central Health has the right to review the status during a project and will have the authority to suspend and/or cancel a contractor from a project if the statuses are not maintained.
Contractor Occupational Health and Safety Plan

Plant Services and Maintenance Department, in its tendering process and/or before the project commences, may request the contractor to develop and implement a health and safety plan. This detailed plan will highlight all aspects of OH&S and will consider and respond to the specific OH&S hazards and issues relevant to the project and will document the systems and methods to be implemented to reduce/eliminate the hazards.

Central Health may also request the contractor to develop and implement a Hazard Assessment before and during the project to ensure a safe and healthy working environment for all parties involved. This hazard assessment once completed must be submitted immediately to the site representative for approval.

See Appendix B - Health and Safety Hazard Assessment
Communication of Occupational Health and Safety Expectations and Requirements

Central Health will inform contractors that they must meet the requirements of the OH&S Act and Regulations and the organization’s requirements in relation to OH&S.

Contractors will be responsible to identify potential/existing hazards and to communicate how they are doing to mitigate these hazards. If there are any specialized training, material and/or personal protective equipment required then the contractor must communicate these requirements to those who will be affected. All OH&S communication strategies and record keeping must comply with Central Health’s polices and the OH&S legislation.

The OH&S requirements for contractors will be included in the tendering specifications, documentation such as the contractor safety handbook and throughout regular on site meetings.

Contractor’s Safety Handbook and Safety Agreement

The Contractor’s Safety Handbook is a document which informs a contractor of their legal obligation in relation to OH&S at Central Health’s properties. The Safety Agreement, once it is signed, will demonstrate that a contractor and its workers understand the expectations and requirements under OH&S and will comply with Central Health’s OH&S program.

See Appendix C - Contractor’s Safety Handbook
See Appendix D - Safety Agreement

On Site Meetings

Communication between Central Health and contractors is essential to ensure injury prevention. Pre-project meetings and regular site meetings throughout a project with all parties will ensure critical OH&S issues and concerns are identified and control measures implemented to reduce or eliminate the hazards. All contractors working on a project will be responsible to conduct weekly safety meetings at a minimum. These meetings must be documented and forwarded to the site representative. Central Health has the right to advise a contractor to increase the number of safety meetings where required.

See Appendix E - OH&S Meeting Form
Contractor’s Safety Handbook and Safety Agreement
Requirements

All contractors/subcontractors and their workers will be required to review the Contractor’s Safety Handbook and sign the Safety Agreement before a project commences.

All projects which proceed through a tendering process will require contractors/subcontractors to review the handbook and sign the Safety Agreement. This documentation will be sent in the tendering documentation and must be completed and returned to Materials Management Department. Also, the contractor/subcontractor will be required to keep a copy of the signed Safety Agreement and present it to the site representative (usually at the pre-project meeting) before the work commences.

Projects or service work that does not proceed through a tendering process will require the contractors/subcontractors to review the handbook and sign the Safety Agreement at least annually. This documentation must be forwarded to the site representative and to Materials Management Department.

**Important:** If a worker is assigned to a project/service work after it commences it will be the responsibility of the contractor/subcontractor to review the handbook with the worker and ensure that he/she signs the Safety Agreement. Once the agreement is signed the contractor/subcontractor must present it to the site representative before the worker may begin work.

**Vendors** who are used on an ongoing basis must review the Contractor’s Safety Handbook and sign the Safety Agreement initially and it must be renewed annually.
Coordination of Work

Following the applicable OH&S Legislation, Central Health will ensure work will be conducted in a safe manner when there are multiple contractors involved on a project. Each contractor will be responsible to notify Central Health prior to any task that is likely to create a hazard to a worker of another contractor.

Important: Where a project has two or more contractors overlapping or adjoining work activities and there is more than five workers combined an individual must be designated as a Qualified Coordinator. This individual must be designated at the work location and their main purpose is to communicate OH&S to all parties. Central Health’s site representative will be appointed to this position, however if this is not possible Central Health will appoint an individual from the project before work begins.
Checklist of Actions

Central Health will use various checklists to ensure that contractors are complying with the tendering requirements, Central Health’s policies/procedures and OH&S Legislation. The below outlines the different checklists which will be implemented to monitor compliance.

OH&S Tendering Documentation Checklist

Once a contract is awarded Materials Management will use and complete this checklist to ensure that the contractor receives the applicable OH&S documentation.

See Appendix F - OH&S Tendering Checklist

Contractor Safety: Pre-Project Meeting Checklist

Before a project begins the site representative will conduct a pre-project meeting with all parties involved. This checklist will be used and completed by the site representative to ensure that all OH&S responsibilities and requirements for the project are understood by all.

See Appendix G - Contractor Safety: Pre-Project Meeting Checklist

Contractor Safety: Weekly Project Worksite Checklist

This checklist will be used and completed by the site representative throughout the duration of a project on a weekly basis. The checklist will illustrate that a contractor is in compliance with Central Health’s OH&S program and applicable legislation.

See Appendix H - Contractor Safety: Project Worksite Checklist

Contractor Safety: Post-Project Checklist

Once the project is completed the site representative will conduct a post inspection to ensure that that the work met the tendering specification and it is safe to occupy and work.

See Appendix I - Contractor Safety: Post - Project Checklist
Incident/Accident Reporting and Investigation

A contractor will be required to notify Central Health as soon as reasonably possible of any incident/accident that occurs during the performance of the work. This would include any accident/incident, injury, property or environmental damage throughout Central Health’s facilities (includes both internal and external areas).

The contractor will be responsible to conduct their own accident/incident investigation and develop a report that outlines the details of the incident/accident, including results of investigations into it cause, and any recommendations or strategies for prevention in the future. This report will be given to Central Health as soon as reasonably practical (usually in three days).

See Appendix J - Accident/Incident Investigation Form

If a contractor’s employee sustains a serious injury as described in the Occupational Health & Safety Act, while performing work at Central Health, the contractor must IMMEDIATELY notify the Department of Government Services – OH&S division by calling (709)729-4444. The contractor must also immediately contact the site representative and Central Health’s Employee Wellness/Health & Safety Division at (709) 256-5983.

The following are considered serious accidents under the OH&S Act:

- An accident that results in a death
- A fracture of the skull, spine, pelvis, femur, humerus, fibula, tibia, radius or ulna
- An amputation of a major part of a hand or foot
- The loss of sight of an eye
- A serious internal haemorrhage
- A burn that requires medical attention
- An injury caused directly or indirectly by explosives
- An asphyxiation or poisoning by gas resulting in a partial or total loss of physical control
- Another injury likely to endanger life or cause permanent injury, but does not include injuries to a worker of a nature that may be treated through first aid or medical treatment and the worker is able to return to his or her work either immediately after the treatment or at his or her next scheduled shift

Central Health has the right to take part or full control over a contractor’s accident/incident investigation at any point during the investigation process, or to conduct its own investigation.
Emergency Preparedness

Central Health has developed and implemented various emergency code plans for safety and to effectively handle emergencies and disasters that could occur at its facilities.

See Appendix K - Emergency Codes

Before a project commences the site representative/designate and the contractor will discuss applicable emergency codes and practices. Once this is completed a list of emergency contact information must be developed and copies must be distributed to all parities involved. If an emergency does arise this contact information will provide an effective list for communication.

See Appendix L - Emergency Contact Form

The contractor will have the responsibility to ensure their workers and those of the subcontractor are educated with regards to the applicable emergency codes before the work commences.
Non-Compliance to Occupational Health and Safety

The contractor shall ensure that work is conducted in a safe manner consistent with the intent of the OH&S Act & Regulations and any other applicable standard, code or guideline.

Non-compliance may be discovered prior to the contractor undertaking work through the tendering process, while at the pre-project meeting or after work has commenced. Once non-compliances are identified corrective measures must be implemented as soon as reasonably possible to ensure injury prevention.

Non-compliance conditions and actions must be reported immediately to the site representative. He will order that the contractor cease work if there is a risk of injury to the public, Central Health employees or the contractor’s employees.

Once the non-compliance is reported and solution(s) identified, the contractor must comply. If the contractor does not rectify the identified unsafe condition/action in a reasonable time frame then work will be stopped immediately and a meeting between the site representative and the contractor will take place to make plans to correct the non-compliance.

If multiple non-compliance continues to happen from the contractor they will be removed from the premises and it might result in the cancellation of the contract. Negligent disregard for OH&S may negatively impact future contracts for contractors by Central Health.

Important: The site representative can at any point in the contract notify the contractor of non-compliance. This may be done verbally or by the OH&S Non-Compliance Report.

See Appendix M - Contractor OH&S Non-Compliance Report
Contact Information

Materials Management Department
Central Health Regional Office
21 Carmelite Road
Grand Falls-Windsor, NL A2A 1Y4
Phone: (709) 292-1197
Fax: (709) 489-9291

Plant Services & Maintenance Department
James Paton Memorial Regional Health Centre
125 Trans Canada Highway
Gander, NL A1V 1P7
Phone: (709) 256-5734
Fax: (709) 256-5753

Employee Wellness/Health and Safety Division
James Paton Memorial Regional Health Centre
125 Trans Canada Highway
Gander, NL A1V 1P7
Phone: (709) 256-5983
Fax: (709) 256-5624
References

Section 8 and 20 - OH&S Regulations, 2009
Section 54 – OH&S Act, 2009
APPENDIX A – CONTRACTOR SAFETY POLICY

POLICY

Central Health is safety conscious and Central Health employees are therefore expected to work safely. Contractors and their employees are expected to conform to the safety regulations of their appropriate industry on our work sites.

Contractors are required to comply with the Newfoundland and Labrador Occupational Health and Safety (OH&S) Act and Regulations. Additionally, all contracted work performed within Central Health facilities and on Central Health property must follow the guidelines as outlined in Central Health’s Contractor’s Safety Handbook.

Contractors will be required to provide at least the following documentation within the tendering process: a Certificate of Recognition (COR) from the Newfoundland & Labrador Construction Safety Association (NLCSA) and a clearance letter from the Workplace Health, Safety and Compensation Commission (WHSCC).

Contractors will sign a written agreement to abide by established OH&S rules and regulations while on Central Health property. Any contractors or their employees, including sub-contractors, breaching safety rules and/or regulations or the Newfoundland and Labrador OH&S Act and Regulations must stop work immediately and upon further investigation may be required to leave the premises and may be refused re-entry until compliance is achieved.

Each Central Health site will have a designated site representative that will ensure a contractor is following the guidelines set out within the tendering document and following applicable occupational health and safety requirements. The site representative shall require a list of all employees of the contractor on site and have them sign in and out at the beginning and end of each work day.

Contractors cannot assign a sub-contractor unless first notifying Central Health. A sub-contractor will have the same legal requirements and documentation review processes as the contractor.

A signed Contractor Safety Agreement is to be returned to the Regional Director of Materials Management or designate before the commencement of contract work at a Central Health workplace.
DEFINITIONS

Contractor: A person, partnership or group of persons who, through a contract, and agreement or ownership, directs the activities of one or more employers involved in work at a work site.

Worker/Employee: A person engaged in an occupation.

Workplace: A place where a worker or self-employed person is engaged in an occupation and includes a vehicle or mobile equipment used by a worker in an occupation.

REFERENCES


APPROVED BY: Terry Ings, V.P. Human Resources

APPROVAL DATE: 10/Dec/07

(R): 26/Nov/10
# APPENDIX B - HAZARD ASSESSMENT

<table>
<thead>
<tr>
<th>Description/Task</th>
<th>Hazards &amp; Potential Hazard</th>
<th>Source of Potential Hazard</th>
<th>Existing Controls</th>
<th>Assessment</th>
<th>Severity (SEV)</th>
<th>Probability (PROB)</th>
<th>Recommendations / Additional Controls</th>
<th>Who</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>HR = Hazard Rating</td>
<td>1. No injury or loss</td>
<td>1. Low</td>
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<td>PR = Priority Ranking</td>
<td>2. Minor injury or damage</td>
<td>2. Moderate</td>
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<td>HR = Sev. X Prob.</td>
<td>3. Lost time injury or damage</td>
<td>3. High</td>
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<td>4. Permanent disability or damage</td>
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</tbody>
</table>

**Follow-Up**

- **Severity (SEV)**
  - 1. No injury or loss
  - 2. Minor injury or damage
  - 3. Lost time injury or damage
  - 4. Permanent disability or damage

- **Probability (PROB)**
  - 1. Low
  - 2. Moderate
  - 3. High

Revised June 2011
IMPORTANT: Contactors are responsible to review and ensure that all of their employees and subcontractors employees are knowledgeable of the contents of this handbook and this will be verified through the pre-project meeting with Central Health.

All contractors, while on Central Health property, must abide by the regulations of the Newfoundland and Labrador Occupational Health and Safety (OH&S) Act and Regulations. Any contractors or their employees, including sub-contractors, breaching the Act or Central Health safety polices must stop immediately and, upon further investigation, may be required to leave the premises and may be refused re-entry. Prior to commencement of any contracted work, contractors and their workers are required to sign the Contractor’s Safety Agreement and return it to both the Regional Directors of Materials Management and Plant Services & Maintenance or their responsible management representatives.

OH&S RESPONSIBILITIES

Contractor

- Comply with the OH&S requirements outlined by the OH&S Legislation and Central Health.
- Review Contractor’s Safety Handbook and educate all contracted workers in all OH&S aspects of the project.
- Ensure the Contractor’s Safety Agreement is signed and dated by all parties involved.
- Participate in the pre-project meeting and regular site meetings with Central Health’s site representative and/or designate. The contactor must present the signed Contractor’s Safety Agreement to the site representative at the pre-project meeting.
- Notify Central Health prior to performing a task that is likely to create a hazard to a worker of another contractor on the same project, or employees or clients of Central Health.
- Submit written OH&S documentation/manual for the project if requested by Central Health. At a minimum it should outline a completed hazard assessment which illustrates potential/existing hazards and control measures.
- Coordinate with Central Health’s representatives’/designates’ work schedules and tasks to provide safe working conditions for workers and staff.
- Ensure workers have the appropriate qualifications to perform the work.
- Stop work immediately if potential/existing hazards are identified and ensure corrective actions are taken. Report such incidents to the site representative immediately.
- Conduct regular OH&S meetings with their workers and subcontractors. These meeting must be documented.
- Ensure all equipment/personal protective equipment meets legislative requirements, standards, codes, etc. and it is properly used and maintained.
- Ensure that their workers and those of subcontractors are educated as to the various emergency preparedness codes before work commences.
- Report to the site representative and investigate any incidents and accidents that occur on the project. Ensure proper written reports are conducted.
- Comply with any other OH&S directives deemed necessary by Central Health or other bodies to ensure legislative requirements and injury prevention.
Subcontractors

- Have the same rights and responsibilities as a contractor (see above list).

Contractor/Subcontractor Employees

- Take reasonable care to protect their personal occupational health and safety and the safety of others on the worksite.
- Report immediately any hazardous condition and accident/incident to their supervisor.
- Attend and participate in safety meetings during a project.
- Use all necessary safeguards & safety devices which will protect themselves and others at the worksite.
- Wear appropriate and required Personal Protective Equipment (PPE) while on the worksite.

Vendors

- Review the Contractor's Safety Handbook and sign the Safety Agreement initially and annually.
- Have the same rights and responsibilities as a contractor (see above list).

PROPERTY PROTECTION

Site Entry

Contractors must, under no circumstances, move outside the area allocated for the work at hand, unless approval is obtained from the site representative. Only the contractor and their designated employees are permitted on site. Under no circumstances are contractors to bring other people onto the site without prior approval from the site representative.

When on Central Health premises:

- Only vehicles required to facilitate the work at hand should be at the work site.
- Contractor's employees are to park private vehicles in designated areas.
- Speed limits are to be observed while travelling on Central Health property. No vehicles are permitted in "No Parking" areas.

Identification

While on Central Health property the contractor and their employees shall be required to wear appropriate identification. The Plant Services & Maintenance Department shall be contacted regarding identification prior to the commencement of any work. The site representative shall require a list of all employees of the contractor on site and have them sign in and out at the beginning and end of each work day. Plant Services & Maintenance Department will provide all contractors and their employees with a contractor ID which must be returned to Plant Services & Maintenance Department upon completion of the project.

Water Usage

Use of water is available in most locations. Use of these facilities must have prior approval of the site representative.
**Equipment Deliveries**

Contractors are to make all arrangements for delivery, off loading, storage of equipment and stocktaking, etc., prior to its arrival on site with the site representative.

**GENERAL SAFETY RULES & REQUIREMENTS**

**Housekeeping**

Contractors must maintain a clean and tidy work area throughout an entire project; such areas would include corridors, aisles, walkways, roads and paths.

When it is necessary to leave the site before completion, all materials, tools, rigging, boards and other debris must be carefully removed from the occupied work area unless in a designated construction zone. There shall be no materials or equipment left overhead or on the roof unless they are secured in place.

Adequate barricades and warnings must be erected around all openings, excavations and obstructions.

On completion of the project, at the end of each shift, and while the work area is unattended, the site is to be left clean and tidy.

**Dust Control**

Work completed in Central Health facilities should be done in compliance with the standards established under Canadian Standards Association, reference number CSA Z317.13-03 - Infection Control during Construction or Renovation of Health Care Facilities: A Practical Reference Guide.

**Smoking**

Smoking is not permitted on Central Health property per the Smoke Free Properties policy.

**Intoxicating Liquor or Drugs**

The contractor or employees of the contractor will not be permitted to enter the site with any intoxicating liquor or drugs or be under the influence of same.

**Horseplay**

Practical jokes and horseplay on the job can be dangerous and are prohibited.

**Communication**

Contractors are responsible to identify potential/existing hazards and to communicate how they are doing to mitigate these hazards. If there are any specialized training, material and/or personal protective equipment required then the contractor must communicate these requirements to all parities involved.

**Reporting Injuries**

All injuries must be reported as soon as possible to the site representative. A serious accident as outlined in section 54 of the OH&S Act must be reported immediately to Department of Government Services – OH&S Division at (709) 729-4444.

**Reporting OH&S Concerns**

If a contractor or any other party involved within the contract has an OH&S concern or issue they must contact the site representative for guidance.
**Inspections**

While on Central Health property, contractors may be subject to inspections by the site occupational health and safety committee, the site representative, Director of Employee Wellness/Occupational Health and Safety, other Central Health managers, or Department of Government Services Occupational Health and Safety Inspectors. Contractors who are found to be non-compliant with Central Health occupational health and safety guidelines or provincial occupational health and safety legislation must stop work immediately and, upon further investigation, may be asked to leave the site, may be refused re-entry or have their contract terminated. Any directives issued to contractors by Department of Government Services must be disclosed to Central Health.

**SAFE WORK PRACTICES**

**Asbestos Awareness**

Traces of asbestos have been found throughout some of the facilities operated by Central Health. If the contracted work involves potential asbestos exposure then appropriate asbestos abatement procedures must be complied with the contractor must comply with appropriate asbestos abatement procedures. This is to ensure that contracted personnel, staff, visitors and clients are not exposed to asbestos hazards. The site representative must be consulted prior to the commencement of any work which involves potential asbestos exposure.

If a contractor needs to perform work outside of the scope of the tender then the site representative must be notified so that it can be determined if there is a potential for asbestos exposure.

If a contractor is to perform any work in a facility containing asbestos they must be aware of its presence and locations. See Central Health’s Asbestos Management Program for more details.

*For more detailed information refer to the Asbestos Abatement Regulations.*

**Compressed Gas Cylinders**

Compressed gas cylinders must be stored, transported and used in a safe manner as per the Canadian Standard Association (CSA) and National Fire Protection Association (NFPA) standards and any other applicable legislation. Contracted workers must prevent cylinders from being dropped or subjected to impact. Also, workers must ensure to close valves and drain hoses once work is completed and valve protective coverings are implemented.

Workers will not use compressed air for any purpose other than for what it is provided. A stream of compressed air shall not be directed towards any person, or to clean down clothing.

*For more detailed information refer to the OH&S Regulations Part XXI – Welding, Burning and Cutting Operations.*

**Medical Gases**

Any contractor performing work in walls or ceilings must be aware of the presence of medical gas piping, and procedures must be implemented to ensure that all medical gas codes are met. The site representative must be consulted before work proceeds in any area where medical gases are present.
Tools and Equipment
Contractors must supply all their tools and equipment while working on Central Health property.

Contractors may sometimes use special equipment owned by Central Health by prior arrangement with the site representative in charge. The contractor must keep this equipment in safety working order and once finished with this equipment must give it back to Central Health.

Contractors are to ensure that all tools and equipment comply with the appropriate CSA standard and OH&S legislation.

The site representative in charge will prohibit the use of equipment, including hand tools, which are considered to be faulty or dangerous. If a tool or equipment is faulty or dangerous it must be tagged out and removed from service immediately.

Operating Equipment
Contracted employees shall not attempt to operate any equipment, machinery, valves, etc, owned by Central Health without prior approval of the site representative. Under no circumstances are contractors or their employees to operate or ride on elevated work platforms without prior approval of the site representative. Fall arrest procedures must be followed and highly visible vests worn by when using elevating work platform.

Any powered lifting equipment or vehicle supplied by contractors will be permitted on site only if the driver is licensed.

Lockout/Tagout
Contractors must ensure to implement lockout/tagout procedures on machinery or equipment per the OH&S legislation. Lockout/tagout procedures protect employees from the potential hazards created by the accidental release of energy. All lockout/tagout out procedures must be approved by the site representative before work commences.

Types of energy include:
- Chemical
- Electrical
- Mechanical
- Potential
- Thermal
- Radiation
- Gravity
- Hydraulic
- Pneumatic
- Steam
- Water (under pressure)

⇒ Lockout – is physically turning off and locking out energy flows from a power source to a circuit or device that utilizes the energy.

⇒ Tagout – is the placement of warning/informational tags on power sources cautioning against restoring energy flows. The tags will also be used to warn to not use defective tools/equipment.

For more detailed information refer to the OH&S Regulations Part IX - De-energization and Lockout
Faulty Equipment and Machinery

If a piece of equipment or machinery is faulty, the contractor must immediately implement a lockout/ tagout procedure and notify the site representative. Faulty equipment and machinery must either be repaired and brought back into service per manufacturer’s specifications or removed and discarded.

Electrical Equipment

Contractors must ensure that only qualified employees perform work on electrical conductors and equipment. Contracted employees shall not tamper with, or remove, any electrical wires / tagging or equipment, nor operate any electrical switch gear on the Central Health premises without the permission of the site representative.

The contractor is to be familiar with the law in relation to the use of electrical hand tools and appliances as well as the Canadian Electrical Code, in particular Section 24 applicable to health care facilities.

Entry into any electrical or mechanical room is prohibited unless:

- The person is certified to work on electrical equipment
- Permission is obtained from the site representative

Entry into high voltage enclosures is prohibited.

*For more detailed information refer to the OH&S Regulations – Part XXVI – Electrical Operations*

Underground Utilities

Before any underground excavating and drilling with power tools and equipment commences at Central Health premises the site representative must be notified. Contact must be made with the appropriate local utility service and underground utility services in the area must be accurately determined and control measure implemented. This information must be shared, understood and followed by all parties involved before the work begins.

*For more detailed information refer to the OH&S Regulations – Part XVIII – Excavation, Underground Work and Rock Crushing*

Welding and Cutting

Welding and cutting with the use of arcs, naked flames or grinders are prohibited in some areas. Permits are required for all hot work and may only be issued by the site representative. The site representative may also prescribe precautions that must be followed. All approved hot work permits must be in accordance with Central Health’s Hot Work Policy 2-260.

*For more detailed information refer to the OH&S Regulations – Part XXI – Welding, Burning and Cutting Operations*

Work Sites

Appropriate barriers and signage must be erected when work is performed in occupied areas, particularly in patient care units.

If protection around the work area is required, it should be in a form that complies with applicable Occupational Health and Safety Regulations and CSA Standards.

Equipment and work barriers must not be erected in such a way as to restrict access to patient rooms, lounges, nursing stations, examination rooms, offices, and other occupied areas.
If clients have to be relocated the site representative must be notified. The site representative will make the appropriate arrangements with nursing staff.

Appropriate warning notices must be erected.

No work may commence along access routes or operating areas without prior approval from the site representative once all necessary precautions have been put in place.

Equipment and any other material posing as a fall hazard must not be thrown from elevated structures - use lifting gear to lower.

**Fall Protection**

The contractor must provide and maintain a fall protection system where its workers are exposed to possible falls from elevated heights as prescribed within the OH&S legislation. The type of fall protection system to be implemented depends on the task/project and the type of risks. The site representative must be consulted prior to any work which would involve fall protection system.

*For more detailed information refer to OH&S Regulations: Part X – Fall Protection*

**Ladders and Scaffolding**

All scaffolding must be erected in accordance with OH&S requirements and CSA standards.

All ladders must be in good condition and must comply with CSA Standards and OH&S legislation.

Ladders must be of a type deemed appropriate for the type of work taking place.

Ladders are not to be used as a substitute for scaffolding.

Contractors will not be allowed to use the Central Health's ladders unless given specific permission by the site representative.

Portable ladders, while in use, shall be secured in accordance with OH&S legislation.

Ladders which are deemed unsafe must be tagged out, removed and discarded from the workplace.

*For more detailed information refer to OH&S Regulations: Part XI – Scaffolds, Stages and Work Platforms.*

**Roof Access**

Access to the roof is only permitted after the site representative has been informed. Fall protection procedures and equipment must be used as required by the applicable Occupational Health and Safety Regulations.

*For more detailed information to refer to OH&S Regulations: Part X – Fall Protection.*

**Confined Space**

When work is to be carried out in a confined space as defined in the OH&S Regulations, the site representative must be informed prior to the commencement of work so that appropriate confined space entry procedures may be implemented. All work in confined spaces requires a Confined Space Entry Permit which must be obtained from the site representative. (Confined Space Entry Policy under development)

*For more detailed information refer to OH&S Regulations: Part XXVII – Confined Space Entry*
**Hazardous Goods**

No material of a hazardous nature is to be brought on site until approval is obtained from the site representative.

All Material Safety Data Sheets (MSDS)/information relating to any such materials must be provided by the contractor prior to beginning work.

Persons handling or transporting hazardous materials must be trained in WHMIS, TDG and/or other pertinent regulations and standards.

*For more detailed information refer to Workplace Hazardous Materials Information System Regulations*

**Personal Protective Equipment (PPE)**

Hard hats must be worn in areas where there is a potential for head injuries and/or areas designated by Central Health. Where overhead work of any kind is being conducted, hard hats are compulsory for ground level workers. Contractors are to supply their employees with hard hats.

Safety glasses must be worn whenever there is a risk of damage to eyes, i.e. grinding, chipping, etc. Contractors are to supply their employees with safety glasses.

Appropriate footwear must be worn at all times on site.

Hearing protection (i.e. ear muffs or plugs) is to be worn when noise hazards are created. Contractors are to supply their own employees with such devices.

Respiratory protection must be worn whenever there are respiratory hazards present. Before respiratory protection is worn appropriate training and fit-testing must be performed as per the applicable Occupational Health and Safety Regulations and CSA Standards. Central Health reserves the right to delay any job when an outbreak of an infectious disease requires the use of respiratory protection.

All Personal Protective Equipment must meet Canadian Standard Association (CSA), (National Institute for Occupational Safety and Health (NIOSH) or other accepted standard where applicable.

Important: Employees who are found to be in non-compliance of PPE requirements will receive a verbal warning and depending on the severity of the infraction may receive a recorded warning and/or removal from the project.

*For more detailed information refer to OH&S Regulations: Part VII – Personnel Protective Equipment.*
DEFINITIONS

**Contractor**: Any person or representative of a firm that is engaged by contract or purchase order to perform repairs and/or maintenance or capital works (i.e. repairs to plant, buildings and works or machine installations, new or modified buildings and works).

**Subcontractor**: An individual or business that signs a contract to perform part or all of the obligations of another's contract.

**Vendor**: An individual or business that provides goods or services to a company and is also known as a supplier. A vendor often manufactures inventoriable items and sells those items to a customer. In general, contractors provide project work, while vendors provide ongoing services. Vendors may include vending machine technicians, chemical supplier, etc.

**Site Representative**: The individual identified as the contact person in the tender (i.e. Director of Health Services, Regional Director of Plant Maintenance, Manager of Plant Services).

**Qualified Personnel**: All contracted work must be undertaken by appropriately qualified personnel. A qualified person must, at a minimum, possess a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, demonstrating their ability to solve or resolve problems relating to the subject matter, the work, or the project.

CONCLUSION

This handbook covers general OH&S requirements for contractors who perform work within Central Health facilities, thus it does not supersede the OH&S Act and Regulations or any other legislative body that the OH&S Act and Regulations prescribes.

CENTRAL HEALTH - CONTACT INFORMATION

<table>
<thead>
<tr>
<th>Department/Division</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Management Department</td>
<td>Central Health Regional Office</td>
<td>21 Carmelite Road</td>
<td>Grand Falls-Windsor, NL A2A 1Y4</td>
</tr>
<tr>
<td></td>
<td>Plant Services &amp; Maintenance Department</td>
<td>James Paton Memorial Regional Health Centre</td>
<td>125 Trans Canada Highway</td>
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<td>Employee Wellness/Health and Safety Division</td>
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<td></td>
<td>James Paton Memorial Regional Health Centre</td>
<td>125 Trans Canada Highway</td>
<td>Gander, NL A1V 1P7</td>
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</tbody>
</table>
CONTRACTOR’S SAFETY AGREEMENT

This states that the undersigned representative of

COMPANY NAME:

ADDRESS:

has read and understood the guidelines in the Central Health “Contractors’ Safety Handbook” and hereby agree to conform to the requirements and obligations as set down within.

Failure to abide by this agreement shall mean that the contractor as stated above will not be allowed to enter the premises of Central Health for the purpose of obtaining or carrying out any contract work.

Name (Please Print):

Title or Position Held:

Date:

Signature:

Important: A copy of this signed agreement is to be returned to both the Regional Director of Materials Management and Plant Services & Maintenance or their responsible management representatives before the commencement of contract work.

CRHA Representative (Please Print):

Signature:
Part II: Contractor’s Employees

It is the responsibility of the contractor to ensure that all employees of the contractor/subcontractor have been provided with the Central Health Contractor’s Safety Handbook for their review and adherence.

By signing below the contractor certifies all employees of the contractor/subcontractor who will be working on Central Health property have reviewed the handbook and agree they will abide by the safety requirements contained therein. Safety infractions by workers of the contractor/subcontractor will be reported to the contractor.

Once a project has commenced the contractor is responsible to ensure at all new assigned workers of a project review and sign this agreement and it is forwarded to the appropriate Central Health Representative.

<table>
<thead>
<tr>
<th>Employer’s Name</th>
<th>Employee’s Name</th>
<th>Employee’s Signature</th>
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Contractor’s Safety Agreement

Contractor’s Name (Please Print):

Title or Position Held:

Date:

Signature:

CENTRAL HEALTH - CONTACT INFORMATION

Materials Management Department
Central Health Regional Office
21 Carmelite Road
Grand Falls-Windsor, NL A2A 1Y4
Phone: (709) 292-1197
Fax: (709) 489-9291

Plant Services & Maintenance Department
James Paton Memorial Regional Health Centre
125 Trans Canada Highway
Gander, NL A1V 1P7
Phone: (709) 256-5624
Fax: (709) 256-5753

Employee Wellness/Health and Safety
James Paton Memorial Regional Health Centre
125 Trans Canada Highway
Gander, NL A1V 1P7
Phone: (709) 256-5983
Fax: (709) 256-5624
APPENDIX E – CONTRACTOR SAFETY
HEALTH & SAFETY MEETING FORM

Date: __________________________  Contractor: __________________________

Facility: ________________________  Central Health’s Representative: ______

Agenda Items: __________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

Employees in Attendance:

Name (Please Print):  Signature: ________________________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

Conducted By: __________________________

Signed: ______________________________

Comments/Recommendations:

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

Revised June 2011
Please note: Before a contractor is rewarded and commences a project, Materials Management must ensure that the above documentation is sent out and received. It will be the responsibility of the contractor to complete and send the appropriate documentation back to Materials Management in a timely manner.

This document must maintained on file by Materials Management for a period of five years.

Revised June 2011

<table>
<thead>
<tr>
<th>STAFF NAME:</th>
<th>PROJECT NAME:</th>
<th>PROJECT NO:</th>
<th>LOCATION:</th>
</tr>
</thead>
</table>

### Documentation to be sent to contractor

<table>
<thead>
<tr>
<th>Document</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tender Specifications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Central Health Contractor’s Safety Handbook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Central Health Contractor’s Safety Agreement Document</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. General Specifications Construction\Renovations</td>
<td></td>
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<tr>
<td>5. Tender Submission Form</td>
<td></td>
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</tbody>
</table>

### Documentation to be received from contractor

<table>
<thead>
<tr>
<th>Document</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Central Health Contractor’s Safety Agreement Document</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. WHSCC Letter of Good Standing</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. COR Certification - NL Construction Safety Association</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Contractor Bonds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Contractors OH&amp;S Project Plan/Specifications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. List of Subcontractors</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
# APPENDIX G – CONTRACTOR SAFETY:
## PRE – PROJECT MEETING CHECKLIST
*(Contractors/Subcontractors)*

**SITE REPRESENTATIVE:**

**CONTRACTOR:**

**DATE:**

**MEETING LOCATION:**

<table>
<thead>
<tr>
<th>PRE-JOB MEETING CHECKLIST</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor received the Contractor’s Safety Handbook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contractor received and signed Contractors Safety Agreement Form</td>
<td></td>
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</tr>
<tr>
<td>Contractor’s employees signed and dated the Contractors Safety Agreement Form</td>
<td></td>
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<tr>
<td>Contractor written Health &amp; Safety Plan for the project</td>
<td></td>
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<tr>
<td>Hazard Assessment completed before the work commences</td>
<td></td>
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<tr>
<td>Contractor aware of hazards and control measures</td>
<td></td>
<td></td>
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<tr>
<td>Process for reporting hazards/injuries</td>
<td></td>
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<tr>
<td>Contractor employee training records (verify training standards of workers)</td>
<td></td>
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<tr>
<td>Emergency Code Procedures (such as fire safety, emergency outbreaks, etc.)</td>
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<tr>
<td>Emergency Contact List completed</td>
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<tr>
<td>Lockout/Tagout procedures</td>
<td></td>
<td></td>
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<tr>
<td>Underground utilities identified and control measures implemented</td>
<td></td>
<td></td>
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<tr>
<td>Fall Protection procedures</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Confined Spaces procedures</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Appropriate equipment and PPE</td>
<td></td>
<td></td>
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</tbody>
</table>

**Additional Comments/Control Measures:**

**Please Note:** This checklist will be completed by the site representative at the pre-job meeting. This will ensure that all areas of Occupational Health & Safety are communicated and understood by all parties involved.

Revised June 2011
## SUB-CONTRACTOR INFORMATION

<table>
<thead>
<tr>
<th>SUB-CONTRACTOR NAME</th>
<th>CONTACT PERSON</th>
<th>CONTACT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Signature:** ____________________________  **Date:** ____________________________

Contractor Representative

**Signature:** ____________________________  **Date:** ____________________________

Central Health Representative
# APPENDIX H - CONTRACTOR SAFETY: WEEKLY PROJECT WORKSITE CHECKLIST

(Contractor/Subcontractor)

## Please Note:

This checklist will be completed weekly by the site representative when work is being performed to ensure that the contractor is following OH&S standards and other guidelines set by Central Health.

## SITE REPRESENTATIVE:

<table>
<thead>
<tr>
<th>CONTRACTOR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE:</td>
</tr>
<tr>
<td>LOCATION:</td>
</tr>
</tbody>
</table>

## WORKSITE CHECKLIST

<table>
<thead>
<tr>
<th>Work area is neat and organized</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor employees signing in and out daily</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Employees have the appropriate training requirements (such as asbestos, fall protection, lockout/tagout, confined spaces, scaffolding, etc.)</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Are hazardous energy sources being controlled (lockout/tagout system)</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Employees wearing and maintaining personnel protective equipment (PPE) that meet the OH&amp;S Legislation, Standards and Guidelines</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>All tools and equipment comply with appropriate CSA Standards and/or applicable OH&amp;S standards</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>OH&amp;S discussed at contractors site meetings</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Contractor conducting and keeping records of OH&amp;S documentation such as inspections, safe work practices/procedures, safety meeting minutes, etc.</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Underground utilities identified and control measures implemented</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Safety devices/defences such as barricades are appropriately placed to ensure that employees and the public are not exposed to hazards</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>OH&amp;S incidents being reported, documented and followed upon</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Additional Comments/Control Measures:**

---

**Signature:** ____________________________  **Date:** ____________________________

Contractor Representative

**Signature:** ____________________________  **Date:** ____________________________

Central Health Representative

---

Revised June 2011
Please Note: This checklist will be completed by the site representative at the end of a project. This will ensure that the contractor completed the work to ensure area is safe to occupy and work.
# APPENDIX J - ACCIDENT/INCIDENT INVESTIGATION FORM

## Accident/incident resulted in:
- [ ] injury
- [ ] illness
- [ ] property damage
- [ ] first aid
- [ ] near miss
- [ ] medical aid
- [ ] recurrence
- [ ] other ____________________

## Department: ____________________

## Location of Incident: ________________ (Be specific – example – Aisle 10)

## Date of incident
- [ ] am
- [ ] pm

## Time __________

## Date reported accident/incident: ____________________

## ACCIDENT/INCIDENT INFORMATION

### Supervisor: ____________________

### Date of first missed shift: ________________

### No. of days lost: ______

### Approximate date of onset, if no specific date of injury: ____________________

### Nature of injury: ____________________

### Body part(s) affected: ____________________

## EMPLOYEE INFORMATION

### Name (Last name first – please print)

### Home phone number: ____________________

### Home Address: ____________________

### Age: ________________

### Sex: [ ] M  [ ] F

### Date of employment: ________________

### Occupation/Position: ____________________

### Experience (time) in job: ____________________

### Evaluation of loss

<table>
<thead>
<tr>
<th>Potential if not corrected</th>
<th>Loss severity potential</th>
<th>Probability of occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Major</td>
<td>[ ] Serious</td>
<td>[ ] High</td>
</tr>
<tr>
<td>[ ] Minor</td>
<td>[ ] Moderate</td>
<td>[ ] Low</td>
</tr>
</tbody>
</table>

### Describe how the event occurred.

### Immediate causes: What substandard acts/practices and conditions caused or could cause the event? See end of form.
Basic causes: What specific personal or job/system factors caused or could cause this event? See end of form.

Remedial actions: What has and/or should be done to control the causes listed?

Prevention of Accident/Incident Recurrence
Describe what action is planned or has been taken to prevent a recurrence of the accident, based on the key contributing factors
Immediate:

Long Term:

Signed by Supervisor ___________________________ Supervisor’s Name ___________________________
Signed by Investigator:_________________________ Date: ___________________________

REPORT FORM DEFINITIONS
INJURY – physical harm or damaged to a person.
ILLNESS – unhealthy condition in mind or body.
FIRST AID INJURY – a minor injury requiring only first aid treatment.
MEDICAL AID INJURY – an injury requiring treatment by a health care professional.
LOST TIME INJURY – a disabling injury where the injured person is unable to report for the next regular shift.
RECURRENTE – an accident or incident which has occurred more than once.
PROPERTY DAMAGE ACCIDENT – accidental loss to equipment, material, and/or the environment.
INCIDENT (NEAR-MISS) – an undesired event that, under slightly different circumstances, could have resulted in personal injury, property damage or loss.
**IMMEDIATE CAUSES** – check all as appropriate

<table>
<thead>
<tr>
<th>Substandard Acts/Actions</th>
<th>Substandard Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Operating equipment without authority</td>
<td>□ Inadequate guards or barriers</td>
</tr>
<tr>
<td>□ Failure to warn</td>
<td>□ Inadequate or improper protective equipment</td>
</tr>
<tr>
<td>□ Failure to secure</td>
<td>□ Defective tools, equipment or materials</td>
</tr>
<tr>
<td>□ Operating at improper speed</td>
<td>□ Congestion or restricted action</td>
</tr>
<tr>
<td>□ Making safety devices inoperable</td>
<td>□ Inadequate warning system</td>
</tr>
<tr>
<td>□ Removing safety devices</td>
<td>□ Fire and explosion hazard</td>
</tr>
<tr>
<td>□ Using defective equipment</td>
<td>□ Poor housekeeping, disorder</td>
</tr>
<tr>
<td>□ Failure to use PPE</td>
<td>□ Hazardous environmental conditions, gases, smoke, dusts, fumes</td>
</tr>
<tr>
<td>□ Improper loading</td>
<td>□ Noise exposure</td>
</tr>
<tr>
<td>□ Improper placement</td>
<td>□ Radiation exposure</td>
</tr>
<tr>
<td>□ Improper lifting</td>
<td>□ High or low temperature exposure</td>
</tr>
<tr>
<td>□ Improper position for task</td>
<td>□ Inadequate or excess illumination</td>
</tr>
<tr>
<td>□ Servicing equipment in operation</td>
<td>□ Inadequate ventilation</td>
</tr>
<tr>
<td>□ Horseplay</td>
<td></td>
</tr>
<tr>
<td>□ Under influence of alcohol and/or other substances</td>
<td></td>
</tr>
</tbody>
</table>

**BASIC CAUSES** – check all as appropriate

<table>
<thead>
<tr>
<th>Personal Factors</th>
<th>Job Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Inadequate capability</td>
<td>□ Inadequate leadership/supervision</td>
</tr>
<tr>
<td>□ Lack of knowledge/training</td>
<td>□ Inadequate engineering</td>
</tr>
<tr>
<td>□ Lack of skill</td>
<td>□ Inadequate purchasing</td>
</tr>
<tr>
<td>□ Stress</td>
<td>□ Inadequate maintenance</td>
</tr>
<tr>
<td>□ Improper motivation</td>
<td>□ Inadequate tools/equipment</td>
</tr>
<tr>
<td></td>
<td>□ Inadequate work standards</td>
</tr>
<tr>
<td></td>
<td>□ Wear and Tear</td>
</tr>
<tr>
<td></td>
<td>□ Abuse and/or misuse</td>
</tr>
</tbody>
</table>
# APPENDIX K
## EMERGENCY CODES

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code Red</strong></td>
<td>A fire or threat of fire (smoke, sparks etc.) in a Central Health facility/site. It will define specific functions, roles and responsibilities for staff to undertake and will identify procedures to include external stakeholders.</td>
</tr>
<tr>
<td><strong>Code Grey</strong></td>
<td>Noxious fumes or smoke outside the building or moving in the direction of the building. The response involves shutting down the mechanical systems for movement of air into and out of the building, as well as closing off windows and doorways (Button Down). The decision to “Shelter in Place” is usually based on inadequate time for a full evacuation.</td>
</tr>
<tr>
<td><strong>Code Brown</strong></td>
<td>A toxic chemical spill or leak inside a facility of Central Health. The response involved would exceed that usually able to be contained by the staff working in that area. It may involve a partial or total evacuation of the building, and possibly a Hazardous Material (HAZMAT) response by an external agency (Fire Department).</td>
</tr>
<tr>
<td><strong>Code Blue</strong></td>
<td>A cardio-pulmonary arrest in an adult occurring in a work site operated by Central Health. Assigned teams in acute care centers will respond to the event in a coordinated fashion. Outside of acute care, the response involves staff providing basic life support until relieved by paramedics/emergency medical transport.</td>
</tr>
<tr>
<td><strong>Code Pink</strong></td>
<td>A cardio-pulmonary arrest in a child (person under 16 years) occurring in a work site operated by Central Health. In most acute care settings the assigned team will be the same as for Code Blue. The exceptions being James Paton Memorial Regional Health Centre and Central Newfoundland Regional Health Centre, which have paediatricians on staff and dedicated paediatric in-patient/out-patient care areas.</td>
</tr>
<tr>
<td><strong>Code Orange</strong></td>
<td>An external disaster with the potential for a mass casualty response (multiple people injured including multiple fatalities) from acute care. This type of event involves scaling back of regular services, mobilizing extra staff, and redeploying existing staff. It may also involve rapid redistribution of in-patients throughout the region and to adjacent health regions.</td>
</tr>
<tr>
<td><strong>Code Green</strong></td>
<td>An evacuation of the facility/building operated by Central Health. This can be partial, precautionary, or STAT based on the nature and imminence of the threat. This type of response will involve the location to evacuate to, the processes involved for orderly movement, and the transfer of critical processes to the evacuation site.</td>
</tr>
<tr>
<td>Code</td>
<td>Definition</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Code Yellow</strong> (Missing Adult)</td>
<td>An adult person becomes missing while under the care of Central Health. This most often involves clients of acute care and long term care facilities. The response involves a building shutdown and a search of the facility and grounds by security. This type of event often escalates to involve local police authorities.</td>
</tr>
<tr>
<td><strong>Code Amber</strong> (Missing Child)</td>
<td>A child becomes missing while under the care and supervision of Central Health. In this circumstance we are referring to the legal definition of a child as recognized by the province of Newfoundland and Labrador (under 16 years). This can involve children in foster care as well as children who are in-patients. Code Amber is used to be consistent with the alert used in a number of jurisdictions in the country. A generalized alert of a missing child is announced, especially in cases of abduction. This response, although similar to Code Yellow, will involve law enforcement rather early, and will also likely involve media support.</td>
</tr>
<tr>
<td><strong>Code White</strong> (Violent Situation)</td>
<td>A violent situation in any of Central Health’s workplaces, initiated by a staff member, visitor, or client. In many sites this will involve a separate alarm system other than an overhead page. In larger work places a pre-assigned trained team will respond to the situation with the intent of subduing and restoring order. Local police authorities will become involved if the situation is not able to be safely controlled by our own staff, or when actual physical assault or other criminal act ensues.</td>
</tr>
<tr>
<td><strong>Code Black</strong> (Bomb Threat /Suspicious Package)</td>
<td>A bomb threat or bio-terrorism threat which involves a facility of Central Health. Police and fire authorities will be notified early. Partial or complete evacuation of the facility may be prudent, depending on the nature of the perceived threat.</td>
</tr>
<tr>
<td><strong>Code Purple</strong> (Hostage Taking /Abduction)</td>
<td>A hostage taking or abduction occurring in a facility operated by Central Health. This is generally exclusive of children (Code Amber), and involves the hostage taker, with his/her hostage, in a stand off position within a facility operated by Central Health. The RCMP are generally involved early in this type of response.</td>
</tr>
</tbody>
</table>
APPENDIX L - EMERGENCY CONTACT FORM

Please Note: This form will list the appropriate contact personnel and emergency numbers for serious emergency occurrences. These emergencies would include but not limited to major fires, chemical release/spills, serious accidents per OH&S legislative requirements, etc. The site representative will be responsible to complete and distribute this form to all parties involved before a project commences. Contractors will be responsible to post within the work area if possible.

Project: ____________________________________________________________

Facility: ____________________________________________________________

Central Health’s Site Representative ______________________________________

Date: ______________________________________________________________

<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>CONTACT PERSON</th>
<th>CONTACT INFORMATION</th>
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FIRE DEPARTMENT

POLICE

CHEMICAL SPILL

GOVT – SERIOUS ACCIDENT (709) 729-4444

Revised June 2011
APPENDIX M - CONTRACTOR OH&S
NON-COMPLIANCE REPORT

<table>
<thead>
<tr>
<th>CONTRACTOR’S DETAILS</th>
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</thead>
<tbody>
<tr>
<td>Contractor Name:</td>
</tr>
<tr>
<td>Contact Manager’s Name:</td>
</tr>
<tr>
<td>Contractor’s address:</td>
</tr>
<tr>
<td>Telephone:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CENTRAL HEALTH’S FACILITY DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Name:</td>
</tr>
<tr>
<td>Facility address:</td>
</tr>
<tr>
<td>Site Representative/Manager:</td>
</tr>
<tr>
<td>Phone:</td>
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</tbody>
</table>

**Please Note:** Failure on the part of the contractor to complete with this non-compliance report may result in cancellation of contract.

<table>
<thead>
<tr>
<th>OH&amp;S Non-Compliance Notified Date:</th>
</tr>
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<table>
<thead>
<tr>
<th>Location of OH&amp;S Non-Compliance:</th>
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<table>
<thead>
<tr>
<th>Description of OH&amp;S Non-Compliance:</th>
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<table>
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<tr>
<th>Action Required:</th>
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<table>
<thead>
<tr>
<th>Action Required By:</th>
</tr>
</thead>
</table>
Comments:

Name: 
Central Health’s Representative

Date: 

Name: 
Contract Manager

Date: 

***Important: A copy of this report must go to both departments listed below:

Plant Services and Maintenance
Fax: (709) 256-5753

Employee Wellness/Health and Safety
Fax: (709) 256-5624
Central Health

Contractor’s Safety Handbook
IMPORTANT: Contactors are responsible to review and ensure that all of their employees and subcontractors employees are knowledgeable of the contents of this handbook and this will be verified through the pre-project meeting with Central Health.

All contractors, while on Central Health property, must abide by the regulations of the Newfoundland and Labrador Occupational Health and Safety (OH&S) Act and Regulations. Any contractors or their employees, including sub-contractors, breaching the Act or Central Health safety polices must stop immediately and, upon further investigation, may be required to leave the premises and may be refused re-entry. Prior to commencement of any contracted work, contractors and their workers are required to sign the Contractor’s Safety Agreement and return it to both the Regional Directors of Materials Management and Plant Services & Maintenance or their responsible management representatives.

OH&S RESPONSIBILITIES

Contractor

- Comply with the OH&S requirements outlined by the OH&S Legislation and Central Health.
- Review Contractor’s Safety Handbook and educate all contracted workers in all OH&S aspects of the project.
- Ensure the Contractor’s Safety Agreement is signed and dated by all parties involved.
- Participate in the pre-project meeting and regular site meetings with Central Health’s site representative and/or designate. The contractor must present the signed Contractor’s Safety Agreement to the site representative at the pre-project meeting.
- Notify Central Health prior to performing a task that is likely to create a hazard to a worker of another contractor on the same project, or employees or clients of Central Health.
- Submit written OH&S documentation/manual for the project if requested by Central Health. At a minimum it should outline a completed hazard assessment which illustrates potential/existing hazards and control measures.
- Coordinate with Central Health’s representatives’/designates’ work schedules and tasks to provide safe working conditions for workers and staff.
- Ensure workers have the appropriate qualifications to perform the work.
- Stop work immediately if potential/existing hazards are identified and ensure corrective actions are taken. Report such incidents to the site representative immediately.
- Conduct regular OH&S meetings with their workers and subcontractors. These meeting must be documented.
- Ensure all equipment/personal protective equipment meets legislative requirements, standards, codes, etc. and it is properly used and maintained.
- Ensure that their workers and those of subcontractors are educated as to the various emergency preparedness codes before work commences.
- Report to the site representative and investigate any incidents and accidents that occur on the project. Ensure proper written reports are conducted.
- Comply with any other OH&S directives deemed necessary by Central Health or other bodies to ensure legislative requirements and injury prevention.
Subcontractors

- Have the same rights and responsibilities as a contractor (see above list).

Contractor/Subcontractor Employees

- Take reasonable care to protect their personal occupational health and safety and the safety of others on the worksite.
- Report immediately any hazardous condition and accident/incident to their supervisor.
- Attend and participate in safety meetings during a project.
- Use all necessary safeguards & safety devices which will protect themselves and others at the worksite.
- Wear appropriate and required Personal Protective Equipment (PPE) while on the worksite.

Vendors

- Review the Contractor’s Safety Handbook and sign the Safety Agreement initially and annually.
- Have the same rights and responsibilities as a contractor (see above list).

PROPERTY PROTECTION

Site Entry

Contractors must, under no circumstances, move outside the area allocated for the work at hand, unless approval is obtained from the site representative. Only the contractor and their designated employees are permitted on site. Under no circumstances are contractors to bring other people onto the site without prior approval from the site representative.

When on Central Health premises:

- Only vehicles required to facilitate the work at hand should be at the work site.
- Contractor's employees are to park private vehicles in designated areas.
- Speed limits are to be observed while travelling on Central Health property. No vehicles are permitted in "No Parking" areas.

Identification

While on Central Health property the contractor and their employees shall be required to wear appropriate identification. The Plant Services & Maintenance Department shall be contacted regarding identification prior to the commencement of any work. The site representative shall require a list of all employees of the contractor on site and have them sign in and out at the beginning and end of each work day. Plant Services & Maintenance Department will provide all contractors and their employees with a contractor ID which must be returned to Plant Services & Maintenance Department upon completion of the project.

Water Usage

Use of water is available in most locations. Use of these facilities must have prior approval of the site representative.
**Equipment Deliveries**

Contractors are to make all arrangements for delivery, off loading, storage of equipment and stocktaking, etc., prior to its arrival on site with the site representative.

**GENERAL SAFETY RULES & REQUIREMENTS**

**Housekeeping**

Contractors must maintain a clean and tidy work area throughout an entire project; such areas would include corridors, aisles, walkways, roads and paths.

When it is necessary to leave the site before completion, all materials, tools, rigging, boards and other debris must be carefully removed from the occupied work area unless in a designated construction zone. There shall be no materials or equipment left overhead or on the roof unless they are secured in place.

Adequate barricades and warnings must be erected around all openings, excavations and obstructions.

On completion of the project, at the end of each shift, and while the work area is unattended, the site is to be left clean and tidy.

**Dust Control**

Work completed in Central Health facilities should be done in compliance with the standards established under Canadian Standards Association, reference number CSA Z317.13-03 - Infection Control during Construction or Renovation of Health Care Facilities: A Practical Reference Guide.

**Smoking**

Smoking is not permitted on Central Health property per the Smoke Free Properties policy.

**Intoxicating Liquor or Drugs**

The contractor or employees of the contractor will not be permitted to enter the site with any intoxicating liquor or drugs or be under the influence of same.

**Horseplay**

Practical jokes and horseplay on the job can be dangerous and are prohibited.

**Communication**

Contractors are responsible to identify potential/existing hazards and to communicate how they are doing to mitigate these hazards. If there are any specialized training, material and/or personal protective equipment required then the contractor must communicate these requirements to all parties involved.

**Reporting Injuries**

All injuries must be reported as soon as possible to the site representative. A serious accident as outlined in section 54 of the OH&S Act must be reported immediately to Department of Government Services – OH&S Division at (709) 729-4444.

**Reporting OH&S Concerns**

If a contractor or any other party involved within the contract has an OH&S concern or issue they must contact the site representative for guidance.
Inspections

While on Central Health property, contractors may be subject to inspections by the site occupational health and safety committee, the site representative, Director of Employee Wellness/Occupational Health and Safety, other Central Health managers, or Department of Government Services Occupational Health and Safety Inspectors. Contractors who are found to be non-compliant with Central Health occupational health and safety guidelines or provincial occupational health and safety legislation must stop work immediately and, upon further investigation, may be asked to leave the site, may be refused re-entry or have their contract terminated. Any directives issued to contractors by Department of Government Services must be disclosed to Central Health.

SAFE WORK PRACTICES

Asbestos Awareness

Traces of asbestos have been found throughout some of the facilities operated by Central Health. If the contracted work involves potential asbestos exposure then appropriate asbestos abatement procedures must be complied with the contractor must comply with appropriate asbestos abatement procedures. This is to ensure that contracted personnel, staff, visitors and clients are not exposed to asbestos hazards. The site representative must be consulted prior to the commencement of any work which involves potential asbestos exposure.

If a contractor needs to perform work outside of the scope of the tender then the site representative must be notified so that it can be determined if there is a potential for asbestos exposure.

If a contractor is to perform any work in a facility containing asbestos they must be aware of its presence and locations. See Central Health’s Asbestos Management Program for more details.

For more detailed information refer to the Asbestos Abatement Regulations.

Compressed Gas Cylinders

Compressed gas cylinders must be stored, transported and used in a safe manner as per the Canadian Standard Association (CSA) and National Fire Protection Association (NFPA) standards and any other applicable legislation. Contracted workers must prevent cylinders from being dropped or subjected to impact. Also, workers must ensure to close valves and drain hoses once work is completed and valve protective coverings are implemented.

Workers will not use compressed air for any purpose other than for what it is provided. A stream of compressed air shall not be directed towards any person, or to clean down clothing.

For more detailed information refer to the OH&S Regulations Part XXI – Welding, Burning and Cutting Operations.

Medical Gases

Any contractor performing work in walls or ceilings must be aware of the presence of medical gas piping, and procedures must be implemented to ensure that all medical gas codes are met. The site representative must be consulted before work proceeds in any area where medical gases are present.
**Tools and Equipment**

Contractors must supply all their tools and equipment while working on Central Health property. Contractors may sometimes use special equipment owned by Central Health by prior arrangement with the site representative in charge. The contractor must keep this equipment in safety working order and once finished with this equipment must give it back to Central Health.

Contractors are to ensure that all tools and equipment comply with the appropriate CSA standard and OH&S legislation.

The site representative in charge will prohibit the use of equipment, including hand tools, which are considered to be faulty or dangerous. If a tool or equipment is faulty or dangerous it must be tagged out and removed from service immediately.

**Operating Equipment**

Contracted employees shall not attempt to operate any equipment, machinery, valves, etc, owned by Central Health without prior approval of the site representative. Under no circumstances are contractors or their employees to operate or ride on elevated work platforms without prior approval of the site representative. Fall arrest procedures must be followed and highly visible vests worn by when using elevating work platform.

Any powered lifting equipment or vehicle supplied by contractors will be permitted on site only if the driver is licensed.

**Lockout/Tagout**

Contractors must ensure to implement lockout/tagout procedures on machinery or equipment per the OH&S legislation. Lockout/tagout procedures protect employees from the potential hazards created by the accidental release of energy. All lockout/tagout out procedures must be approved by the site representative before work commences.

Types of energy include:

- Chemical
- Electrical
- Mechanical
- Potential
- Thermal
- Radiation

- Lockout – is physically turning off and locking out energy flows from a power source to a circuit or device that utilizes the energy.
- Tagout – is the placement of warning/informational tags on power sources cautioning against restoring energy flows. The tags will also be used to warn to not use defective tools/equipment.

*For more detailed information refer to the OH&S Regulations Part IX - De-energization and Lockout*
Faulty Equipment and Machinery

If a piece of equipment or machinery is faulty, the contractor must immediately implement a lockout/ tagout procedure and notify the site representative. Faulty equipment and machinery must either be repaired and brought back into service per manufacturer’s specifications or removed and discarded.

Electrical Equipment

Contactors must ensure that only qualified employees perform work on electrical conductors and equipment. Contracted employees shall not tamper with, or remove, any electrical wires / tagging or equipment, nor operate any electrical switch gear on the Central Health premises without the permission of the site representative.

The contractor is to be familiar with the law in relation to the use of electrical hand tools and appliances as well as the Canadian Electrical Code, in particular Section 24 applicable to health care facilities.

Entry into any electrical or mechanical room is prohibited unless:

- The person is certified to work on electrical equipment
- Permission is obtained from the site representative

Entry into high voltage enclosures is prohibited.

For more detailed information refer to the OH&S Regulations – Part XXVI – Electrical Operations

Underground Utilities

Before any underground excavating and drilling with power tools and equipment commences at Central Health premises the site representative must be notified. Contact must be made with the appropriate local utility service and underground utility services in the area must be accurately determined and control measure implemented. This information must be shared, understood and followed by all parties involved before the work begins.

For more detailed information refer to the OH&S Regulations – Part XVIII – Excavation, Underground Work and Rock Crushing

Welding and Cutting

Welding and cutting with the use of arcs, naked flames or grinders are prohibited in some areas. Permits are required for all hot work and may only be issued by the site representative. The site representative may also prescribe precautions that must be followed. All approved hot work permits must be in accordance with Central Health’s Hot Work Policy 2-260.

For more detailed information refer to the OH&S Regulations – Part XXI – Welding, Burning and Cutting Operations

Work Sites

Appropriate barriers and signage must be erected when work is performed in occupied areas, particularly in patient care units.

If protection around the work area is required, it should be in a form that complies with applicable Occupational Health and Safety Regulations and CSA Standards.

Equipment and work barriers must not be erected in such a way as to restrict access to patient rooms, lounges, nursing stations, examination rooms, offices, and other occupied areas.
If clients have to be relocated the site representative must be notified. The site representative will make the appropriate arrangements with nursing staff.

Appropriate warning notices must be erected.

No work may commence along access routes or operating areas without prior approval from the site representative once all necessary precautions have been put in place.

Equipment and any other material posing as a fall hazard must not be thrown from elevated structures - use lifting gear to lower.

**Fall Protection**

The contractor must provide and maintain a fall protection system where its workers are exposed to possible falls from elevated heights as prescribed within the OH&S legislation. The type of fall protection system to be implemented depends on the task/project and the type of risks. The site representative must be consulted prior to any work which would involve fall protection system.

*For more detailed information refer to OH&S Regulations: Part X – Fall Protection*

**Ladders and Scaffolding**

All scaffolding must be erected in accordance with OH&S requirements and CSA standards.

All ladders must be in good condition and must comply with CSA Standards and OH&S legislation.

Ladders must be of a type deemed appropriate for the type of work taking place.

Ladders are not to be used as a substitute for scaffolding.

Contractors will not be allowed to use the Central Health’s ladders unless given specific permission by the site representative.

Portable ladders, while in use, shall be secured in accordance with OH&S legislation.

Ladders which are deemed unsafe must be tagged out, removed and discarded from the workplace.

*For more detailed information refer to OH&S Regulations: Part XI – Scaffolds, Stages and Work Platforms.*

**Roof Access**

Access to the roof is only permitted after the site representative has been informed. Fall protection procedures and equipment must be used as required by the applicable Occupational Health and Safety Regulations.

*For more detailed information to refer to OH&S Regulations: Part X – Fall Protection.*

**Confined Space**

When work is to be carried out in a confined space as defined in the OH&S Regulations, the site representative must be informed prior to the commencement of work so that appropriate confined space entry procedures may be implemented. All work in confined spaces requires a Confined Space Entry Permit which must be obtained from the site representative. (Confined Space Entry Policy under development)

*For more detailed information refer to OH&S Regulations: Part XXVII – Confined Space Entry*
Hazardous Goods

No material of a hazardous nature is to be brought on site until approval is obtained from the site representative.

All Material Safety Data Sheets (MSDS)/information relating to any such materials must be provided by the contractor prior to beginning work.

Persons handling or transporting hazardous materials must be trained in WHMIS, TDG and/or other pertinent regulations and standards.

For more detailed information refer to Workplace Hazardous Materials Information System Regulations

Personal Protective Equipment (PPE)

Hard hats must be worn in areas where there is a potential for head injuries and/or areas designated by Central Health. Where overhead work of any kind is being conducted, hard hats are compulsory for ground level workers. Contractors are to supply their employees with hard hats.

Safety glasses must be worn whenever there is a risk of damage to eyes, i.e. grinding, chipping, etc. Contractors are to supply their employees with safety glasses.

Appropriate footwear must be worn at all times on site.

Hearing protection (i.e. ear muffs or plugs) is to be worn when noise hazards are created. Contractors are to supply their own employees with such devices.

Respiratory protection must be worn whenever there are respiratory hazards present. Before respiratory protection is worn appropriate training and fit-testing must be performed as per the applicable Occupational Health and Safety Regulations and CSA Standards. Central Health reserves the right to delay any job when an outbreak of an infectious disease requires the use of respiratory protection.

All Personal Protective Equipment must meet Canadian Standard Association (CSA), (National Institute for Occupational Safety and Health (NIOSH) or other accepted standard where applicable.

Important: Employees who are found to be in non-compliance of PPE requirements will receive a verbal warning and depending on the severity of the infraction may receive a recorded warning and/or removal from the project.

For more detailed information refer to OH&S Regulations: Part VII – Personnel Protective Equipment.
DEFINITIONS

**Contractor:** Any person or representative of a firm that is engaged by contract or purchase order to perform repairs and/or maintenance or capital works (i.e. repairs to plant, buildings and works or machine installations, new or modified buildings and works).

**Subcontractor:** An individual or business that signs a contract to perform part or all of the obligations of another's contract.

**Vendor:** An individual or business that provides goods or services to a company and is also known as a supplier. A vendor often manufactures inventorial items and sells those items to a customer. In general, contractors provide project work, while vendors provide ongoing services. Vendors may include vending machine technicians, chemical supplier, etc.

**Site Representative:** The individual identified as the contact person in the tender (i.e. Director of Health Services, Regional Director of Plant Maintenance, Manager of Plant Services).

**Qualified Personnel:** All contracted work must be undertaken by appropriately qualified personnel. A qualified person must, at a minimum, possess a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, demonstrating their ability to solve or resolve problems relating to the subject matter, the work, or the project.

CONCLUSION

This handbook covers general OH&S requirements for contractors who perform work within Central Health facilities, thus it does not supersede the OH&S Act and Regulations or any other legislative body that the OH&S Act and Regulations prescribes.

CENTRAL HEALTH - CONTACT INFORMATION

<table>
<thead>
<tr>
<th>Materials Management Department</th>
<th>Plant Services &amp; Maintenance Department</th>
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<tbody>
<tr>
<td>Central Health Regional Office</td>
<td>James Paton Memorial Regional Health Centre</td>
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<tr>
<td>21 Carmelite Road</td>
<td>125 Trans Canada Highway</td>
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<tr>
<td>Grand Falls-Windsor, NL A2A 1Y4</td>
<td>Gander, NL A1V 1P7</td>
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<tr>
<td>Phone: (709) 292-1197</td>
<td>Phone: (709) 256-5624</td>
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<tr>
<td>Fax: (709) 489-9291</td>
<td>Fax: (709) 256-5753</td>
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Employee Wellness/Health and Safety Division

James Paton Memorial Regional Health Centre
125 Trans Canada Highway
Gander, NL A1V 1P7
Phone: (709) 256-5983
Fax: (709) 256-5624
CONTRACTOR’S SAFETY AGREEMENT

This states that the undersigned representative of

COMPANY NAME:

ADDRESS:

has read and understood the guidelines in the Central Health “Contractors’ Safety Handbook” and hereby agree to conform to the requirements and obligations as set down within.

Failure to abide by this agreement shall mean that the contractor as stated above will not be allowed to enter the premises of Central Health for the purpose of obtaining or carrying out any contract work.

Name (Please Print):

Title or Position Held:

Date:

Signature:

Important: A copy of this signed agreement is to be returned to both the Regional Director of Materials Management and Plant Services & Maintenance or their responsible management representatives before the commencement of contract work.

CRHA Representative (Please Print):

Signature:
**Part II: Contractor’s Employees**

It is the responsibility of the contractor to ensure that all employees of the contractor/subcontractor have been provided with the Central Health Contractor’s Safety Handbook for their review and adherence.

By signing below the contractor certifies all employees of the contractor/subcontractor who will be working on Central Health property have reviewed the handbook and agree they will abide by the safety requirements contained therein. Safety infractions by workers of the contractor/subcontractor will be reported to the contractor.

Once a project has commenced the contractor is responsible to ensure at all new assigned workers of a project review and sign this agreement and it is forwarded to the appropriate Central Health Representative.

<table>
<thead>
<tr>
<th>Employer’s Name</th>
<th>Employee’s Name</th>
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</table>
Contractor’s Safety Agreement

Contractor’s Name (Please Print):

Title or Position Held:

Date:

Signature:

CENTRAL HEALTH - CONTACT INFORMATION

Materials Management Department
Central Health Regional Office
21 Carmelite Road
Grand Falls-Windsor, NL A2A 1Y4
Phone: (709) 292-1197
Fax: (709) 489-9291

Plant Services & Maintenance Department
James Paton Memorial Regional Health Centre
125 Trans Canada Highway
Gander, NL A1V 1P7
Phone: (709) 256-5624
Fax: (709) 256-5753

Employee Wellness/Health and Safety
James Paton Memorial Regional Health Centre
125 Trans Canada Highway
Gander, NL A1V 1P7
Phone: (709) 256-5983
Fax: (709) 256-5624
Central Health

Contractor’s Safety Handbook
Contractor’s Safety Handbook

All contractors while on Central Health property must abide by the regulations of the Newfoundland and Labrador Occupational Health and Safety Act. Any contractors or their employees, including sub-contractors, breaching the Act or Central Health safety regulations may be required to leave the premises and may be refused re-entry. Prior to commencement of any contracted work, contractors are required to sign the Contractor’s Safety Agreement and return to the Director of Materials Management or designate.

PROPERTY PROTECTION

Site Entry

Contractors must, under no circumstances, move outside the area allocated for the work at hand, unless approval is obtained from the site representative. Only the contractor and their designated employees are permitted on site. Under no circumstances are contractors to bring other people onto site without prior approval from the site representative.

When on Central Health premises:

➢ Only vehicles required to facilitate the work at hand should be at the work site.
➢ Contractor's employees are to park private vehicles in appropriate areas.
➢ Speed limits are to be observed while travelling on Central Health property. No vehicles are permitted in "No Parking" areas.

Identification

While on Central Health property the contractor and their employees shall be required to wear appropriate identification. The Plant Services & Maintenance Department shall be contacted regarding identification prior to the commencement of any work. The site representative shall require a list of all employees of the contractor on site and have them sign in and out at the beginning and end of each work day. Plant Services & Maintenance Department will provide all contractors and their employees with a contractor ID which must be returned to Plant Services & Maintenance Department.

Contractor’s Tools and Equipment

Contractors must supply all their tools and equipment while working on Central Health property.

Contractors may sometimes use special equipment owned by Central Health by prior arrangement with the site representative in charge.

Contractors are to ensure that all tools and equipment comply with the appropriate CSA standard and OH&S legislation.

The site representative in charge will prohibit the use of equipment including hand tools, which are considered to be faulty or dangerous.

Use of water is available in most locations. Use of these facilities must have prior approval of the site representative.

Equipment Deliveries

Contractors are to make all arrangements for delivery, off loading, storage of equipment and stocktaking, etc., prior to its arrival on site with the site representative.

SAFE WORK PRACTICES

Asbestos Awareness

Traces of asbestos have been found throughout some of the Facilities operated by Central Health. If the contracted work involves potential asbestos exposure then appropriate asbestos abatement procedures must be complied with to ensure that contracted personnel are not exposed to asbestos hazards. The site representative must be consulted prior to any work commencing that involves potential asbestos exposure.

If a contractor needs to perform work outside of the scope of the tender document then the site representative must be notified so that it can be determined if there is a potential for asbestos exposure. If there is potential for asbestos exposure then appropriate asbestos abatement procedures must be followed.
Dust Control
Work completed in Central Health facilities should be done in compliance with the standards established under Canadian Standards Association, reference number CSA Z317.13-03 - Infection Control during Construction or Renovation of Health Care Facilities: A Practical Reference Guide.

Medical Gases
Any contractor performing work in walls or ceilings must be aware of the presence of medical gas piping and procedures must be implemented to ensure that all medical gas codes are met. The site representative must be consulted before work proceeds in any area where medical gases are present.

Qualified Personnel
All contracted work must be undertaken by appropriately qualified personnel.

Plant and Machinery
Locks and appropriate tags shall be used to isolate hazardous plant or machinery after contacting the site representative first to arrange appropriate isolation. Isolation equipment and safety guards shall not be removed without special permission from the site representative.

Operating Equipment
Contracted employees shall not attempt to operate any equipment, machinery, valves, etc, owned by Central Health without prior approval of the site representative. Under no circumstances are contractors or their employees to operate or ride on elevated work platforms without prior approval of the site representative.

Any powered lifting equipment or vehicle supplied by contractors will be permitted on site only if the driver is licensed.

Electrical Equipment
Contracted employees shall not tamper with or remove any electrical wires / tagging or equipment, nor operate any electrical switch gear on the Central Health premises without the permission of the site representative.

The contractor is to be conversant with the law in relation to the use of electrical hand tools and appliances as well as the Canadian Electrical Code, in particular Section 24 applicable to Health Care facilities.

Entry into any electrical or mechanical room is prohibited unless:
- The person is certified to work on electrical equipment
- Permission is obtained from the site representative

Entry into high voltage enclosures is prohibited.

Welding and Cutting
Welding and cutting with the use of arcs, naked flames or grinders are prohibited in some areas. They are permissible in other areas, but only if the site representative has been notified and the representative advised of any such work and fire detection systems isolated as necessary before work starts. The site representative in charge will prescribe precautions and issue a hot work permit only when all provisions allowing hot work to be performed have been met and documented. (Hot Work Policy)

Faulty Equipment
Any Central Health equipment being used by the contractor which is damaged must be reported to the site representative

WORK SITES
Appropriate barriers and signage must be erected when work is performed in occupied areas, particularly in patient care units.

If protection around the work area is required, it should be in a form that complies with applicable Occupational Health and Safety Regulations and CSA Standards.

Equipment and work barriers must not be erected in such a way as to restrict access to patient rooms, lounges, nursing stations, examination rooms, offices, and other occupied areas.

If patients have to be relocated the site representative must be notified. The site representative will make the appropriate arrangements with nursing staff.
Appropriate warning notices must be erected.

No work may commence along access routes or operating areas without prior approval from the site representative once all necessary precautions have been put in place.

Equipment must not be thrown from elevated structures - use lifting gear to lower.

**Ladders and Scaffolding**

All scaffolding must be erected in accordance with OH&S requirements and CSA standards.

All ladders must be in good condition and must comply with CSA Standards and OH&S legislation.

Ladders must be of a type deemed appropriate for the type of work taking place.

Ladders are not to be used as a substitute for scaffolding.

Contractors will not be allowed to use the Central Health’s ladders unless given specific permission by the site representative.

Portable ladders, while in use, shall be secured in accordance with OH&S legislation.

**Confined Space**

When work is to be carried out in a confined space (as defined by the Canada Labour Code, Part II), the site representative must be informed prior to the commencement of work so that appropriate confined space entry procedures may be implemented. All work in confined spaces requires a Confined Space Entry Permit that must be obtained from the site representative. (Confined Space Entry Policy under development)

**Roof Access**

Access to the roof is only permitted after the site representative has been informed. Fall protection procedures and equipment must be used as required by the applicable Occupational Health and Safety Regulations.

**Housekeeping**

Contractors must maintain a clean and tidy work area at all times.

Corridors, aisles, walkways, roads and paths must be kept clear of tools at all times.

When it is necessary to leave the site before completion, all materials, tools, rigging, boards and other debris must be carefully removed from the occupied work area unless in a designated construction zone. There shall be no materials or equipment left overhead or on the roof unless they are secured in place.

Adequate barricades and warnings must be erected around all openings, excavations and obstructions.

On completion of the project, at the end of each shift, and while the work area is unattended, the site is to be left clean and tidy.

**Reporting Injuries**

All injuries must be reported as soon as possible to the site representative.

**Personal Protective Equipment**

Hard hats must be worn in areas where designated by Central Health. Where overhead work of any kind is being conducted, hard hats are compulsory for ground level workers. Contractors are to supply their own employees with hard hats.

Safety glasses must be worn whenever there is a risk of damage to eyes, i.e. grinding, chipping, etc. Contractors are to supply their own employees with safety glasses.

Appropriate footwear must be worn at all times on site.

Hearing protection (i.e. ear muffs or plugs) is to be worn when noise hazards are created. Contractors are to supply their own employees with such devices.

Respiratory protection must be worn whenever there are respiratory hazards present. Before respiratory protection is worn appropriate training and fit-testing must be performed as per the applicable Occupational Health and Safety Regulations and CSA Standards. Central Health reserves the right to delay any job as a result of an outbreak of an infectious disease (i.e. SARS) that requires the use of respiratory protection.
Employees who are found to be violating PPE requirements will be warned by completion of a Central Health “ticket.” All infractions will be reported to the Contractor responsible for the employee.

All Personal Protective Equipment must meet CSA, NIOSH or other accepted standard where applicable.

**Smoking**
Smoking is not permitted on Central Health property unless in a designated area.

**Intoxicating Liquor or Drugs**
The contractor will not be permitted to enter the site with any intoxicating liquor or drugs or be under the influence of same.

**Compressed Air**
Contracted employees will not use compressed air for any purpose other than what it is provided for. A stream of compressed air shall not be directed towards any person, or to clean down clothing.

**Horseplay**
Practical jokes and horseplay on the job can be dangerous and are prohibited.

**Hazardous Goods**
No material of a hazardous nature is to be brought on site until approval is obtained from the site representative.

All Material Safety Data Sheets (MSDS)/information relating to any such materials must be provided by the contractor prior to beginning work.

Persons handling or transporting hazardous materials must be trained in WHMIS, TDG and/or other pertinent regulations and standards.

**INSPECTIONS**
While on Central Health property contractors may be subject to inspections by the Site Occupational Health and Safety Committee, the Site Representative, Director of Occupational Health and Safety, other Central Health Managers, or Department of Government Services Occupational Health and Safety Inspectors. Contractors violating Central Health Occupational Health and Safety Guidelines or Provincial Occupational Health and Safety Legislation may be asked to leave the site, may be refused re-entry or have their contract terminated. Any directives issued to contractors by Department of Government Services must be disclosed to Central Health.

**DEFINITIONS**

**CONTRACTORS**
Any person or representative of a firm which is engaged by contract or purchase order to perform repairs and/or maintenance or capital works (i.e. repairs to plant, buildings and works or machine installations, new or modified buildings and works).

**SITE REPRESENTATIVE**
The individual identified as the contact person in the tender document (i.e. Director of Health Services, Regional Director of Plant Maintenance, Manager of Plant Services).
Central Regional Health Authority

General Specifications in Respect to Construction/Renovation Tenders:

1. The successful bidder will be responsible for, and provide in writing, proof of general liability insurance and proof of good standing in respect to Workers Compensation. The signing of a pledge of confidentiality will be required upon commencement of duties.

2. Successful bidder is required to furnish Proof of Coverage in respect to Auto and Liability Insurance in an amount not less than $2,000,000.00. The Certificate/Letter of Coverage must come via the Insurance Agent/Broker representing the bidder, and must specifically state Central Regional Health Authority (CRHA) as covered in the policy.

3. A site visit is a prerequisite for tender consideration. See site briefing section for date, time and contact information. (When Applicable)

4. This contract may at the purchasers discretion be awarded in whole or in part.

5. All contract awards will be made on the basis of a 10% hold back for a maximum 30 day period after approved contract completion. Progress payments will not be considered. In lieu of this, 90% of contract price will be paid within ten (10) days of approved contract completion.

6. All inquiries in respect to clarification of tender specifications must be in writing and sent to the designate under “Communications During Tendering”, Section in tender documents.

7. Any requests for changes to the scope of work by either party must be agreed upon jointly by the successful bidder and the designate in Clause Six (6) above. All such requests will be communicated by fax or email only.

8. No faxed tenders will be accepted.

9. Where the specifications reads “or approved equal” information in respect to the requested substitute, product must be received at least seven (7) days prior to tender opening date for consideration. The final decision in respect to acceptability will remain that of the CRHA and its representative(s).

10. The CRHA reserves the right to not necessarily accept the lowest bid.

11. Tenders will remain open for a period not to exceed ninety (90) days from date of opening.
12. Performance of Contractors:

No contract will be awarded to a bidder whose past performance has been determined as less than acceptable by the CRHA.

13. Delay

13.1 If it can be clearly shown that the contractor is delayed in the performance of the work by any act of fault of the CRHA or other Contractor, then the contract time shall be extended for such reasonable time as the Engineer/Architect may decide in consultation with the Contractor. The Contractor shall be reimbursed for any costs incurred by him as a result of such a delay occasioned by the act or fault, provided that it can be clearly shown that the Contractor's forces cannot work efficiently elsewhere on the project and the incurred cost is limited to that which could not reasonably have been avoided.

13.2 If the Contractor is delayed in the performance of the Work by a Stop Work Order issued by any court or other public authority, and providing that such order was not issued as the result of any act or fault of the Contractor or of any one employed by him directly or indirectly, then the Contract Time shall be extended for such reasonable time as the Engineer/Architect may decide, in consultation with the Contractor, and the Contractor shall be reimbursed for any on-site costs incurred by him as the result of such delay.

13.3 If the Contractor is delayed in the performance of the Work by civil disorders, labor disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized Contractor's Association, of which the Contractor is a member) fire, unusual delay by common carriers or unavoidable casualties or, without limit to any of the foregoing, by any cause of any kind whatsoever beyond the Contractor's control, then the Contract Time shall be extended for such reasonable time as may be decided by the Engineer/Architect in consultation with the Owner and the Contractor, but in no case shall the extension of time be less than the time lost as the result of the event causing the delay, unless such shorter extension of time be agreed to by the Contractor.

13.4 No extension shall be made for delay unless written notice of claim is given to the Engineer/Architect within fourteen (14) days of its commencement, providing that in the case of a continuing cause of delay only one notice shall be necessary.
14. CRHA’s Right to Do Work:

14.1 If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of the Contract, the CRHA may notify the Contractor in writing that he is in default of his contractual obligations and instruct him to correct the default within five (5) working days of receiving the notice.

14.2 If the correction of the default cannot be completed within the five (5) working days specified, the Contractor shall be considered to be in compliance with the CRHA’s instructions if he:

   a) Commences the correction of the default within the specified time, and

   b) Provides the CRHA with an acceptable schedule for such correction, and

   c) Completes the correction in accordance with such schedule

14.3 If the Contractor fails to comply with the provisions 14.1 and 14.2, the CRHA may, without prejudice to any other right or remedy he may have, correct such default and may deduct the cost thereof from the payment then or thereafter due the Contract.

15 CRHA’s Right to Stop Work or Terminate Contract:

15.1 If the Contractor should be adjudged bankrupt, or makes a general assignment for the benefit of creditors or if a receiver is appointed on account of his insolvency, the CRHA may, without prejudice to any other right or remedy he may have, by giving the Contractor written notice, terminate the Contract.

15.2 The CRHA may notify the Contractor in writing that he is in default of his contractual obligations, if the Contractor.

   a) Fails to proceed regularly and diligently with the work: or

   b) Without reasonable cause wholly suspends the carrying out of the work before the completion thereof, or

   c) Refuses or fails to supply sufficient properly skilled workmen or proper workmanship, products or construction machinery and
equipment for the scheduled performance of work within five (5) working days of receiving written notice from the Engineer/Architect, except in those cases provided in 13 Delay; or

d) Fails to make payments due to his Subcontractors, his suppliers or his workmen; or

e) Persistently disregards laws or ordinances, or the Engineer/Architect’s instructions; or

f) Otherwise violates the provisions of the Contract to a substantial degree.

Such written notice by the CRHA shall instruct the Contractor to correct the default within five (5) working days from the receipt of the written notice.

15.3 If the correction of the default cannot be completed within five (5) working days specified, the Contractor shall be considered to be in compliance with the CRHA's instructions if the Contractor;

a) Commences the correction of the default within the specified time,

b) Provides the CRHA with an acceptance schedule for such correction, and

c) Completes the correction in accordance with such schedule.

15.4 If the Contractor fails to correct the default within the time specified or subsequently agreed upon, the CRHA may, without prejudice to any other right or remedy the contractor may have, stop the work or terminate the Contract.

15.5 If the CRHA terminates the Contract under the conditions set out above, the CRHA is entitled to;

a) Take possession of the premises and products and utilize the temporary buildings, plants, tools, construction machinery and equipment, goods materials, intended for, delivered to and placed on or adjacent to the work and may complete the work by whatever method the CRHA may deem expedient but without undue delay or expense;

b) Withhold any further payments to the Contractor until the work is finished.

c) Upon total performance of the work, charge the Contractor the amount by which the full cost of finishing the work including compensation to the
Engineer/Architect for his additional services and a reasonable allowance to cover the cost of any corrections required by 19-Warranty exceeds the unpaid balance of the Contract price; or is such cost of finishing the work is less than the unpaid balance of the Contract Price, pay the Contractor the difference.

d) On expiry of the warranty period, charge the Contractor the amount by which the cost of corrections under 19-Warranty exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the Contractor the difference.

16. Subcontractors

16.1 The Contractor agrees to preserve and protect the rights of the CRHA under the Contract with respect to any work to be performed under subcontract. The Contractor shall:

a) Require his Subcontractors to perform their work in accordance with and subject to the terms and conditions of the Contract Documents, and

b) To be fully responsible to the CRHA for acts and omission of his Subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by him.

The Contractor therefore agrees that he will incorporate all the terms and conditions of the Contract Documents into all Subcontract Agreements he enters into with his Subcontractors.

16.2 The Contractor shall employ those Subcontractors proposed by him in writing and accepted by the CRHA prior to the signing of the Contract for such portions of the work as may be designated in the bidding requirements.

16.3 The CRHA may, for reasonable cause, object to the use of a proposed Subcontractor and require the Contractor to employ one of the other Subcontractor Bidders.

16.4 In the event that the CRHA requires a change from any proposed Subcontractor the Contract Price shall be adjusted by the difference in cost occasioned by such required change.

16.5 The Contractor shall not be required to employ as a Subcontractor any person or
firm to whom he may reasonably object.

16.6 Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and the CRHA.

17. Indemnification

(a) Except as provided in (b) the Contractor shall be liable for and shall indemnify and hold harmless the CRHA against all claims, demands, losses, costs, damages, actions, suits or proceedings, whatsoever arising under any statute or Common Law.

   i) In respect of personal injury or the death of any person whomsoever arising out of, or in the course of, or caused by the carrying out of the work; and

   ii) In respect of any injury or damage whatsoever to any property, real or personal or any chattel real, insofar as such injury or damage arises out of, or in the course of, or by reason of the carrying out of the work.

b) The Contractor shall not be liable under (a) if the injury, death, loss or damage is due to any act or neglect of the CRHA.

18. Law, Notices, Permits, and Fees

18.1 The law as of the place of building shall govern the work.

18.2 The contractor shall obtain all permits, licenses and certificates and pay all fees required for the performance of the Work which are in force at the date of tender submission (but this shall not include the obtaining of permanent easements or rights of servitude).

18.3 The Contractor shall give all required notices and comply with all laws, ordinances, rules, regulations, codes and order of all authorities having jurisdiction relating to the Work, to the preservation of the public health and construction safety which are or become in force during the performance of the Work.

18.4 The Contractor shall not be responsible for verifying that the Contract Documents are in compliance with the applicable laws, ordinances, rules, regulations, and codes relating to the Work. If the contract Documents are at variance therewith, or changes which require modification to the Contract Documents are made to any
of the laws, ordinances, rules, regulations and codes by the authorities having jurisdiction subsequent to the date of tender submission, any resulting change in the cost shall constitute a corresponding change in the Contract Price. The Contractor shall notify the Engineer/Architect in writing requesting direction immediately any such variance or change is observed by him.

18.5 If the Contractor fails to notify the Engineer/Architect in writing and obtain his direction as required in 18.4 and performs any work knowing it to be contrary to any laws, ordinances, rules, regulations, codes and orders of any authority having jurisdiction, he shall be responsible for and shall correct any violations thereof and shall bear all costs, expense and damages, attributable to his failure to comply with the Provisions of such laws, ordinances, rules, regulations, codes, and orders.

19. Warranty

19.1 Without restricting any warranty or guarantee implied or stipulated by law the Contractor shall at his own expense rectify and make good any defect or fault however caused appearing within a period of one year from the date of completion.

19.2 The Contractor shall correct and/or pay for any damage to other work resulting from any corrections required under the conditions of 19.1.

19.3 Neither the Engineer/Architect's final certificate nor payment thereunder shall relieve the Contractor from his responsibility hereunder.

19.4 The CRHA and/or the Engineer/Architect shall give the Contractor written notice of observed defects promptly.

20. Assessment and Damages for Late Completion

If the Contractor does not complete the work by the day fixed for its completion by the Articles of Agreement but completes it thereafter, the contractor shall pay the CRHA an amount equal to the aggregate of;

a) All salaries, wages and traveling expenses incurred by the CRHA in respect of persons overseeing the performance of the work during the period of delay, and

b) All other expenses and damages incurred or sustained by the CRHA during the period of delay as a result of the work not being completed
by the day fixed for its completion.

21. COR Certification: Within Ten (10) days of notice of acceptance of tender by the Central Regional Health Authority (CRHA), the successful bidder shall furnish to CRHA a Certificate of Recognition Program Letter of Good Standing (COR Certification) issued by Newfoundland and Labrador Construction Safety Association confirming that on the tender closing date, the successful bidder was the holder of COR Certification.
POLICY

All construction, renovation or maintenance projects must comply with the infection prevention and control guidelines outlined in the referenced Canadian Standards Association (CSA) guidelines. This will ensure the safety and well being of occupants of the health care facilities within Central Health from exposure to microorganisms, such as fungi and moulds that may be disseminated during construction, renovation, or maintenance projects.

PROCEDURE

1. The Canadian Standards Association (CSA) publication *Infection Control During Construction or Renovation of Health Care Facilities* (Z317.13-03) will be followed throughout the duration of any construction, renovation, or maintenance project.

2. A Risk Assessment Analysis must be conducted and an Infection Control Plan developed prior to the start of the project. The necessary preventable measures will be based on the analysis of population risk groups and type of construction activity.

3. A multidisciplinary team shall be formed to oversee the project when a construction, renovation, or maintenance project is planned for Classifications III, III/IV, & IV. Depending on the project the multidisciplinary team will consist of representatives from Facility Planning, Plant Services and Maintenance, Infection Prevention and Control Services (IPCS), Occupational Health and Safety (OH&S) and Environmental Services.

4. Infection Control Preventative Measures shall be clearly outlined in the construction documents by the Project/Team Manager before any project is started.

5. Before construction begins, the Project/Team Manager shall assess all occupied adjacent areas for risk posed to the occupants and appropriate measures required. This also includes the floors above and below the construction area.
6. Construction, renovation, and maintenance activities assessed as requiring Preventative Measures III, III/IV and IV require the completion of Central Health’s “Preventative Measures Analysis” (See Appendix A). This is completed through the Project Coordinator, Facility Planning, IPCS and the General Contractor or Manager, Plant Services and Maintenance (depending on who is completing the project).

7. Changes to the preventative measures may be made only after review and approval from IPCS.

8. All construction, renovation and maintenance projects are subject to routine auditing to ensure preventative measures are being adhered to. This is completed through the “Infection Prevention and Control Audit” (Appendix B).
   i. IPCS or the Manager, Plant Services and Maintenance can conduct audits.
   ii. Auditing will be completed on a routine basis as determined by the Preventative Measures Analysis.
   iii. Any breach in assigned preventative maintenance activities must be corrected immediately and reported to the Project Coordinator and to the Manager, Plant Services and Maintenance who will then inform IPCS regarding follow up.

9. IPCS may stop work on the project if non-compliance with infection control measures is not corrected. This may be necessary to ensure safety for the public and site personnel and for the protection of clients, patients or residents.

10. Should any unforeseen infection control safety issues become evident during performance of work, the project supervisor will immediately stop work and consult with ICPS.
**COMPLETION OF THE PREVENTATIVE MEASURES ANALYSIS**

**Step 1:**
Using the following table, identify type of Construction Project Type (A-D)

<table>
<thead>
<tr>
<th>Type A</th>
<th>Inspection and Non-Invasive Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes but not limited to:</td>
</tr>
<tr>
<td>a)</td>
<td>Activities that require removal of no more than one ceiling tile or require wall or ceiling tiles to be opened.</td>
</tr>
<tr>
<td>b)</td>
<td>Painting (but not sanding), and wall covering</td>
</tr>
<tr>
<td>c)</td>
<td>Electrical trim work</td>
</tr>
<tr>
<td>d)</td>
<td>Minor plumbing work that disrupts water supply to a localized patient care area (i.e. 1 room) for less than 15 minutes; and</td>
</tr>
<tr>
<td>e)</td>
<td>Other maintenance activities that do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type B</th>
<th>Small scale short duration activities which create minimal dust</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes but not limited to:</td>
</tr>
<tr>
<td>a)</td>
<td>Activities that require access to chase spaces (i.e. where wire could be run or may include duct work)</td>
</tr>
<tr>
<td>b)</td>
<td>Where dust migration can be controlled, cutting of walls or ceilings for installing or repairing minor electrical work, ventilation components, telephone wires, or computer cables</td>
</tr>
<tr>
<td>c)</td>
<td>Sanding or repair of a small area of a wall; and Plumbing work that disrupts the water supply of more than one patient care area (i.e., two or more rooms) for less than 30 minutes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type C</th>
<th>Activities that generate a moderate to high level of dust; requires demolition; require removal of any fixed building components (e.g., sink) or assembly (e.g., countertops, cupboards); or cannot be completed in a single work shift.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes but not limited to:</td>
</tr>
<tr>
<td>a)</td>
<td>Activities that require sanding of a wall in preparation for painting or wall covering</td>
</tr>
<tr>
<td>b)</td>
<td>Removal of floor coverings, ceiling tiles, and casework</td>
</tr>
<tr>
<td>c)</td>
<td>New wall construction</td>
</tr>
<tr>
<td>d)</td>
<td>Minor ductwork</td>
</tr>
<tr>
<td>e)</td>
<td>Electrical work above ceilings</td>
</tr>
<tr>
<td>f)</td>
<td>Major cabling activities, and Plumbing work that disrupts the water supply of more than one patient care area (i.e., two or more rooms) for more than 30 minutes but less than 1 hour.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type D</th>
<th>Activities that generate high levels of dust, and major demolition and construction activities requiring consecutive work shifts to complete.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes but not limited to:</td>
</tr>
<tr>
<td>a)</td>
<td>Activities that involve heavy demolition or removal of a complete cabling system</td>
</tr>
<tr>
<td>b)</td>
<td>New construction that requires consecutive work shifts to complete; and Plumbing work that disrupts the water supply of more than one patient care area (i.e., two or more rooms) for more than 1 hour.</td>
</tr>
</tbody>
</table>
**Step 2:**
**Using the following table, identify the Patient Risk Group that will be affected. If more than one risk group will be affected, select the higher risk group.**

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Lowest Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Office areas</td>
</tr>
<tr>
<td></td>
<td>• Public areas</td>
</tr>
<tr>
<td></td>
<td>• Unoccupied wards</td>
</tr>
<tr>
<td></td>
<td>• Laundry and soiled linen cleaning areas</td>
</tr>
<tr>
<td></td>
<td>• Physical plant workshops and Housekeeping</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2</th>
<th>Medium Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• All other patient care areas unless stated in Group 3 or 4</td>
</tr>
<tr>
<td></td>
<td>• Outpatient clinics (except for oncology &amp; surgery)</td>
</tr>
<tr>
<td></td>
<td>• Admission and discharge units</td>
</tr>
<tr>
<td></td>
<td>• Waiting rooms</td>
</tr>
<tr>
<td></td>
<td>• Autopsy and morgue</td>
</tr>
<tr>
<td></td>
<td>• Occupational and Physical therapy areas remote from patient care areas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 3</th>
<th>Medium to High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Emergency room (except trauma rooms)</td>
</tr>
<tr>
<td></td>
<td>• Diagnostic Imaging</td>
</tr>
<tr>
<td></td>
<td>• Birth Unit (non-operating room)</td>
</tr>
<tr>
<td></td>
<td>• Nurseries for healthy newborns (i.e. Family Newborn Unit)</td>
</tr>
<tr>
<td></td>
<td>• Nuclear Medicine</td>
</tr>
<tr>
<td></td>
<td>• Hydrotherapy tank areas (in Physiotherapy)</td>
</tr>
<tr>
<td></td>
<td>• Echocardiography</td>
</tr>
<tr>
<td></td>
<td>• Laboratories</td>
</tr>
<tr>
<td></td>
<td>• General medicine and surgical units (other than those listed in Group 4)</td>
</tr>
<tr>
<td></td>
<td>• Pediatrics</td>
</tr>
<tr>
<td></td>
<td>• Geriatrics</td>
</tr>
<tr>
<td></td>
<td>• Food preparation, serving, dining areas</td>
</tr>
<tr>
<td></td>
<td>• Respiratory therapy</td>
</tr>
<tr>
<td></td>
<td>• Clean linen handling and storage areas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 4</th>
<th>Highest Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• All Intensive Care Areas (NICU &amp; PICU)</td>
</tr>
<tr>
<td></td>
<td>• All Operating Rooms (Birth Unit, Gyne, &amp; Pediatrics), including prep, induction, post-anesthesia care unit (Recovery Room) and scrub areas.</td>
</tr>
<tr>
<td></td>
<td>• Anesthesia storage areas and workrooms</td>
</tr>
<tr>
<td></td>
<td>• Oncology units and outpatient clinics for cancer patients (i.e. 6 North Inpatient and Ambulatory)</td>
</tr>
<tr>
<td></td>
<td>• Transplant units and outpatient units for transplant patients (i.e. 6 North Inpatient and Ambulatory)</td>
</tr>
<tr>
<td></td>
<td>• Units and outpatient clinics for patients with AIDS or other immunodeficiency diseases (i.e. PMU and MDTAU)</td>
</tr>
<tr>
<td></td>
<td>• Dialysis units (6 North or 4th floor dialysis unit)</td>
</tr>
<tr>
<td></td>
<td>• Cardiac catherization and angiography areas</td>
</tr>
<tr>
<td></td>
<td>• Endoscopy or Bronchoscopy areas</td>
</tr>
<tr>
<td></td>
<td>• Cystoscopy</td>
</tr>
<tr>
<td></td>
<td>• Pharmacy admixture rooms</td>
</tr>
<tr>
<td></td>
<td>• Central Sterile Processing Department or any sterile supply rooms</td>
</tr>
<tr>
<td></td>
<td>• Burn care units (5 South)</td>
</tr>
<tr>
<td></td>
<td>• Animal rooms</td>
</tr>
<tr>
<td></td>
<td>• Trauma rooms</td>
</tr>
<tr>
<td></td>
<td>• Protective environment isolation rooms</td>
</tr>
<tr>
<td></td>
<td>• Tissue culture laboratories</td>
</tr>
<tr>
<td></td>
<td>• Dental procedure rooms</td>
</tr>
</tbody>
</table>
Step 3:
Match the Patient Risk Group (low, medium, medium-high, highest) with the planned Construction Project Type (A, B, C, D) to find the Class Precautions (I, II, III, IV) or level of infection control activities required.

<table>
<thead>
<tr>
<th>Construction Activity</th>
<th>Risk Group</th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Type D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>I</td>
<td>II</td>
<td>II</td>
<td>III/IV</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td></td>
</tr>
<tr>
<td>Medium-High</td>
<td>I</td>
<td>III</td>
<td>III/IV</td>
<td>IV</td>
<td></td>
</tr>
<tr>
<td>Highest</td>
<td>I-III</td>
<td>III/IV</td>
<td>III/IV</td>
<td>IV</td>
<td></td>
</tr>
</tbody>
</table>

For Highest risk group and all other shaded areas (Class III, III/IV, & IV) IPCS consult shall be completed. If unsure of the level of risk or if work to take place in a patient care area IPCS shall be contacted.

Step 4:
Using the following table identify the outlined precaution (Class I-IV) and Infection Control Requirements

<table>
<thead>
<tr>
<th>Class I</th>
<th>Engineer/Maintenance Staff &amp; Contractors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1) Construction/Renovation Activities</td>
</tr>
<tr>
<td></td>
<td>a) Dust Control</td>
</tr>
<tr>
<td></td>
<td>• Immediately replace tiles displaced for visual inspection</td>
</tr>
<tr>
<td></td>
<td>• Vacuum work area</td>
</tr>
<tr>
<td></td>
<td>2) Plumbing Activities</td>
</tr>
<tr>
<td></td>
<td>• Schedule water interruptions during low activity</td>
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<tr>
<td></td>
<td>• Flush water lines prior to reuse</td>
</tr>
<tr>
<td></td>
<td>• Observe for discolored water</td>
</tr>
<tr>
<td></td>
<td>• Ensure water temperature meets the standards set by the health care facility</td>
</tr>
<tr>
<td></td>
<td>• Ensure gaskets and items made of materials that support the growth of <em>Legionella</em> are not being used</td>
</tr>
<tr>
<td></td>
<td>• Ensure faucet aerators are not installed or used</td>
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<tr>
<td></td>
<td>• Maintain as dry an environment as possible and report any water leaks that occur to walls and substructures</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Plumbing Activities</td>
</tr>
<tr>
<td>• Report discolored water and water leaks to maintenance and IPCS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical/Nursing Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Construction/Renovation Activities</td>
</tr>
<tr>
<td>a) Risk Reduction</td>
</tr>
<tr>
<td>• Minimize patients’ exposure to construction/renovation area</td>
</tr>
<tr>
<td>2) Plumbing Activities</td>
</tr>
<tr>
<td>• Report discolored water and water leaks to maintenance and IPCS</td>
</tr>
<tr>
<td>Class II</td>
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</tbody>
</table>

**Environmental Services**

**1) Construction/Renovation Activities**

**a) Dust Control**

• Wet mop and vacuum area with a HEPA filtered vacuum as needed and when work is complete

• Wipe horizontal surfaces with a disinfectant

**Medical/Nursing Staff**

**1) Construction/Renovation Activities**

**a) Risk Reduction**

• Identify high risk patients who may need to be temporarily moved away from the construction zone

• Ensure that patient care equipment and supplies are protected from dust exposure

---

**Note:** The above specifications are to be considered in addition to those listed in Class I.
Class III

**Engineer/Maintenance Staff & Contractors**

1) Construction/Renovation Activities
   a) Risk Reduction
      • Ensure that IPCS consultation has been completed and Infection Prevention and control measures have been approved.
   b) Dust Control
      • Erect an impermeable dust barrier from true ceiling (includes area above false ceiling) to the floor consisting of 2 layers of 6ml polyethylene or sheetrock.
      • Ensure that windows, doors, plumbing penetrations, electrical outlets and intake and exhaust vents are properly sealed with plastic and duct tape within the construction/renovation area.
      • Vacuum air ducts and spaces above ceilings if necessary.
      • Ensure that construction workers wear protective clothing that is removed each time they leave the construction site before going into patient care areas.
      • Do not remove dust barrier until the project is complete and the area has been cleaned thoroughly and inspected.
      • Remove dust barrier carefully to minimize spreading dust and other debris particles associated with the construction project.
   c) Ventilation
      • Maintain negative pressure within the construction zone by using portable HEPA equipped air filtration units.
      • Ensure air exhausted directly outside and away from intake vents or filtered through a HEPA filter before being recirculated.
      • Ensure ventilation system is functioning properly and is cleaned if contaminated by soil or dust after construction or renovation project is complete.
   d) Debris Removal & Cleanup
      • Remove debris at the end of the workday.
      • Erect an external chute if the construction is not taking place on the ground level.
      • Vacuum work area with HEPA filtered vacuums daily or more frequently if needed.

2) Plumbing Activities
   • Flush water lines at construction or renovation site and adjacent patient care areas before patients are readmitted.

**Environmental Services**

1) Construction/Renovation Activities
   • Increase frequency of cleaning in areas adjacent to the construction zone while the project is under way.
   • In collaboration with the ICP ensure that construction zone is thoroughly cleaned when work is complete.

**Infection Prevention and Control Personnel**

1) Construction/Renovation Activities
   a) Risk Reduction
      • Move high-risk patients who are in or adjacent to the construction area.
      • In collaboration with environmental services ensure that construction zone is thoroughly cleaned when work is complete.
### Engineer/Maintenance Staff & Contractors

1) **Construction/Renovation Activities**
   a) Dust Control
   - Before starting the construction project erect an impermeable dust barrier that also has an anteroom
   - Place walk-off mat outside the anteroom in patient care areas and inside the anteroom to trap dust from workers' shoes, equipment and debris that leaves the construction zone.
   - Ensure that construction workers leave the construction zone through the anteroom so they can be vacuumed with a HEPA filtered vacuum cleaner before leaving the work site; or that they wear cloth or paper coveralls that are removed each time they leave the work site.
   - Direct all personnel entering the construction zone to wear shoe covers
   - Ensure that construction workers change the shoe covers each time they leave the work site
   - Repair holes in walls within 8 hours or seal them temporarily.

   b) Ventilation
   - Ensure negative pressure is maintained within the anteroom and construction zone
   - Ensure ventilation systems are working properly in adjacent areas
   - Review ventilation system requirements in the construction area with ICP to ensure system is appropriate and is functioning properly

   c) Evaluation
   - Review infection control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project.

2) **Plumbing Activities**
   - If there are concerns about *Legionella*, consider hyperchlorinating stagnant potable water or superheating and flushing all distal sites before restoring or repressurizing the water system.
Environmental Services

1) Construction/Renovation Activities
   a) Evaluation
      • Review Infection Prevention and control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project.

Infection Prevention and Control Personnel

1) Construction/Renovation Activities
   a) Risk Reduction
      • Regularly visit the construction site to ensure that preventive measures are being followed. Wear coveralls and shoe covers when visiting the site.
   b) Evaluation
      • Review infection control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project.

2) Plumbing Activities
   • If there are concerns about *Legionella*, consider hyperchlorinating stagnant potable water or superheating and flushing distal sites before restoring or repressurizing the water system.

Medical/Nursing Staff

Staff are not permitted to visit the construction site.

1) Construction/Renovation Activities
   a) Evaluation
      • Review infection control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project.
   2) Plumbing Activities
      • Consider using another source of potable water for patients who are at greatest risk until potable water has been cleared for signs of *Legionella* after major plumbing installation/repairs.

Note: The above specifications are to be considered in addition to those listed in Class I, II, and III.

REFERENCES


# Appendix A

## Preventative Measures Analysis

### Infection Prevention and Control Construction & Renovation Guidelines

<table>
<thead>
<tr>
<th>Location of Construction: BOILER # 1 REPLACEMENT-NDBMHC-TWILLINGATE, NL</th>
<th>Project Start Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Coordinator:</td>
<td>Estimated Duration:</td>
</tr>
</tbody>
</table>

#### Step 1: Identify Construction Activity

<table>
<thead>
<tr>
<th>TYPE A: Inspection, non-invasive activity</th>
<th>TYPE B: Small scale, short duration, moderate to high Levels</th>
<th>TYPE C: Activity generates moderate to high levels of dust, requires &gt; 1 work shift for completion</th>
<th>TYPE D: Major duration &amp; construction activities requiring consecutive work shifts</th>
</tr>
</thead>
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<tr>
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</tbody>
</table>

#### Step 2: Identify Infection Control Risk Group

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Type D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>I</td>
<td>II</td>
<td>II</td>
<td>II/IV</td>
</tr>
<tr>
<td>Medium</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>Medium-High</td>
<td>I</td>
<td>III</td>
<td>III/IV</td>
<td>IV</td>
</tr>
<tr>
<td>Highest</td>
<td>I-III Contact IC to ensure appropriate classification</td>
<td>III/IV</td>
<td>III/IV</td>
<td>IV</td>
</tr>
</tbody>
</table>

#### Step 3: Match Construction Activity With Risk Group

#### Step 4: Infection Control Requirements

| CLASS I | 1. Execute work by methods to minimize raising dust from construction operations.  
2. Immediately replace any ceiling tile displaced for visual inspection. |
|---|---|
| CLASS II | 1. Provides active means to prevent air-borne dust from dispersing into atmosphere.  
2. Water mist work surfaces to control dust while cutting.  
3. Seal unused doors with duct tape.  
4. Block off and seal air vents.  
5. Wipe surfaces with disinfectant. |
| CLASS III | 1. Ensure ICP consultation has been completed and infection control measures approved.  
2. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.  
3. Do not remove barriers from work area until complete project is thoroughly cleaned. |

| | 3. Flush water lines prior to reuse.  
4. Schedule water interruptions during low activity. |
|---|---|
| | 6. Contain construction waste before transport in tightly covered containers.  
7. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area.  
8. Place dust mat at entrance and exit of work area. |
| | 4. Vacuum work with HEPA filtered vacuum.  
5. Wet mop with disinfectant.  
6. Remove barrier materials carefully to minimize spreading of dirt and debris associated construction.  
7. Contain construction waste before transport in tightly covered containers.  
8. Consider hyperchlorinating/superheating stagnant water. |
Infection Control During Construction, Renovation & Maintenance

### Preventative Measures

<table>
<thead>
<tr>
<th>CLASS IV</th>
<th>1. Before starting the construction project erect an impermeable dust barrier with an anteroom.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units.</td>
</tr>
<tr>
<td></td>
<td>3. Seal holes, pipes, conduits, and punctures appropriately.</td>
</tr>
<tr>
<td></td>
<td>4. Construct anteroom &amp; require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site.</td>
</tr>
<tr>
<td></td>
<td>5. Place a walk-off mat outside the anteroom and inside the anteroom to trap dust from workers shoes &amp; equipment.</td>
</tr>
<tr>
<td></td>
<td>6. Do not remove barriers from work area until thoroughly cleaned.</td>
</tr>
<tr>
<td></td>
<td>7. Vacuum work area with HEPA filtered vacuums.</td>
</tr>
<tr>
<td></td>
<td>8. Wet mop with disinfectant.</td>
</tr>
<tr>
<td></td>
<td>9. Remove barrier materials carefully to minimize spreading of dirt &amp; debris associated with construction.</td>
</tr>
<tr>
<td></td>
<td>10. Contain construction waste before transport in tightly covered containers.</td>
</tr>
<tr>
<td></td>
<td>11. Cover transport receptacles or carts. Tape covering.</td>
</tr>
</tbody>
</table>

The following Preventative Measures analysis of the construction and renovation project described below has been undertaken with the results provided below:

#### Brief Description of Construction or Renovation Project:

This project is for a heating system upgrade to fully a occupied long term health care facility.

Care must be taken at all stages of the project to minimize the creation of dust and debris. Contractor must coordinate with facility management to outline preferred traffic route for construction workers as means to limit passage through resident care areas.

All of the infection control requirements listed from ‘Class I’ to ‘Class IV’ above must be adhered to where applicable. Care must be taken in applying the containment requirements with the natural draft boilers.

In areas where cutting of existing walls or materials is required the contractor must erect construction barriers from floor to ceiling to reduce the spread of dust and debris. These barriers are to consist of a minimum of 2 layers of 6-mil polyethylene or equivalent.

Equipment to be demolished and removed from the area of work must be wrapped to prevent the spread of dirt, debris, and dust when transporting outside the boiler room.

Such movement requires coordination with facility management.

Refer to asbestos survey report prior to cutting and patching.

Adherence to CSA standards applicable to this scope of work is expected.

#### Preventative Measures Analysis Results:

Infection Control/Population Risk Group (1, 2, 3 or 4): __1__

Construction activity type (A, B, C or D): _______ C _______

Preventative measure (I, II, III, or IV): _______ II _______

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<table>
<thead>
<tr>
<th>Title</th>
<th>Signature</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Project Coordinator</td>
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<td></td>
</tr>
<tr>
<td>Infection Prevention and Control Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Contractor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART 1 GENERAL

1.1 SECTION INCLUDES

.1 Title and description of Work.
.2 Contractor use of premises.
.3 Owner occupancy.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract comprises of the removal and replacement of an existing oil-fired boiler, and all associated work as outlined in the tender documents, located at Notre Dame Bay Memorial Health Centre in Twillingate, NL.

.2 The works shall include all temporary works to maintain building and system operations, mechanical, electrical, structural, cutting and patching, and infection control required to complete the work outlined in the tender documents. The heating system shall remain in operation during this project.

.3 Commission and test all systems to ensure all systems are fully operational and functioning to the design intent and detailed requirements of these documents.

.4 Central Health will undertake all electrical works with the exception of wiring and set-up of the boiler controls, safeties, burner controls, etc. located on the boiler which shall be the responsibility of the contractor. This contractor to plan, coordinate and schedule all work completed by Central Health electricians with adequate notice provided to complete their work scope.

.5 Contractor to obtain all required permits for boiler system installation.

1.3 CONTRACTOR USE OF PREMISES

.1 Contractor has restricted use of site.
.2 Coordinate use of premises under direction of Owner’s Representative.
.3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
.4 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
.5 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Owner’s Representative.
.6 Contractor to coordinate all work and use of site with Central Health and Brookfield Health Care management staff. The building and areas of work will remain operational and occupied during the work.

1.4 OWNER OCCUPANCY

.1 Owner will occupy premises during entire construction period for execution of normal operations.

.2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

1.5 ON-SITE DOCUMENTS

.1 Maintain at job site documents as indicated in Section 01 31 00 – Project Management and Coordination.

1.6 CONTRACT DOCUMENTS

.1 Legends and schedules in the Issued for Tender Drawings take precedence over the Technical Specifications with respect to products and materials identified.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  SECTION INCLUDES

.1  Connecting to existing services.

.2  Special scheduling requirements.

1.2  RELATED SECTIONS

.1  Section 01 32 00 – Construct Progress Documentation.

.2  Section 01 56 00 - Temporary Barriers and Enclosures.

1.3  EXISTING SERVICES

.1  Notify Owner’s Representative of intended interruption of any existing services and obtain required permission.

.2  Where Work involves breaking into or connecting to existing services, give Owner’s Representative 72 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum. Carry out interruptions in conjunction with owners direction.

1.4  PHASING

.1  Facility will be occupied while the boiler replacement is completed. Contractor is to schedule/carry out work in a manner to keep heating and domestic hot water system operational, minimize disruption and is acceptable to the Owner. Temporary barriers are to be utilized to separate construction zones from non construction zones.

.2  Owner is to be consulted at all times on areas that will be affected by construction and has the right to refuse work.

.3  The existing boilers to remain operational with the exception of very short duration downtime as needed to complete connections. Install additional valves, caps, etc. as required to achieve short duration(less than 1 hr) heating system downtime.

1.5  OTHER REQUIREMENTS

.1  Refer to owners policies attached with specification, see list below. All owners Policies are to be adhered too at all times and are to make an integral part of the contract documents.

.1  Oath- Affirmation of Confidentiality

.2  Health Information Management and Privacy

.3  Letter of Notification

.4  Central Health Information for Contractors and Vendors
.5 Smoke Free Properties
.6 Contractor Safety Handbook
.7 General Specifications Construction - Renovations
.8 Infection Prevention and Control

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1

GENERAL

1.1 SECTION INCLUDES

.1 Coordination work with other contractors and subcontractors under administration of Owner’s Representative.

.2 Scheduled project meetings.

1.2 RELATED SECTIONS

.1 Section 01 11 00 - Summary of Work.

.2 Section 01 91 13 – General Commissioning (Cx) Requirements.

1.3 DESCRIPTION

.1 Coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of other contractors and subcontractors under instructions of Owner’s Representative.

1.4 PROJECT MEETINGS

.1 Project meetings to be held at times and locations as determined by Owner’s Representative.

.2 Owner’s Representative will arrange project meetings and record and distribute minutes.

1.5 CONSTRUCTION ORGANIZATION AND START-UP

.1 Within 5 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

.2 Establish time and location of meetings and notify parties concerned minimum 5 days before meeting.

.3 Agenda to include following:

.1 Appointment of official representative of participants in Work.

.2 Schedule of Work, progress scheduling in accordance with Section 01 32 00 - Construction Progress Documentation.

.3 Schedule of submission of shop drawings, samples, colour chips in accordance with Section 01 33 00 - Submittal Procedures.

.4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 51 00 - Temporary Utilities.

.5 Delivery schedule of specified equipment in accordance with Section 01 32 00 - Construction Progress Documentation.
.6 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.

.7 Record drawings in accordance with Section 01 78 00 - Closeout Submittals.

.8 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.

.9 Take-over procedures, acceptance, and warranties in accordance with Section 01 77 00 - Closeout Procedures and 01 78 00 - Closeout Submittals.

.10 Monthly progress claims, administrative procedures, photographs, and holdbacks.

.11 Appointment of inspection and testing agencies or firms in accordance with Section 01 45 00 - Quality Control.

.12 Insurances and transcript of policies.

.4 Comply with Owner’s Representative's allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.

.5 During construction coordinate use of site and facilities through Owner’s Representative's procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.6 Comply with instructions of Owner’s Representative for use of temporary utilities and construction facilities.

1.6 ON-SITE DOCUMENTS

.1 Maintain at job site, one copy each of the following:

.1 Contract drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed shop drawings.

.5 List of outstanding shop drawings.

.6 Change orders.

.7 Other modifications to Contract.

.8 Field test reports.

.9 Copy of approved Work schedule.

.10 Health and Safety Plan and other Safety related documents.

.11 Manufacturers’ installation and application instructions.

.12 Labour conditions and wage schedules.

.13 Other documents as specified.

1.7 SCHEDULES

.1 Submit preliminary construction progress schedule in accordance with Section 01 32 00 - Construction Progress Documents to Owner’s Representative coordinated with Owner’s Representative's project schedule. Schedule to show anticipated, equipment deliveries, progress stages and final completion of work within time period required by contract documents.
.2 After review, revise and resubmit schedule to comply with project schedule requirements.

.3 During progress of Work revise and resubmit at project progress meetings or as directed by Owner’s Representative.

.4 Coordinate all work of owner electrical forces.

1.8 SUBMITTALS

.1 Make submittal to Owner’s Representative for review.

.2 Submit preliminary shop drawings, product data and samples in accordance with Section 01 33 00 – Submittal Procedures for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space, and for relation to Work of other contracts. After review, revise and resubmit for transmittal to Owner’s Representative.

.3 Submit requests for payment for review to Owner’s Representative.

.4 Submit requests for interpretation of Contract Documents, and obtain instructions through Owner’s Representative.

.5 Process change orders through Owner’s Representative.

.6 Deliver closeout submittals for review by Owner’s Representative.

1.9 COORDINATION DRAWINGS

.1 Provide information required by Owner’s Representative for preparation of coordination drawings.

.2 Review and approve revised drawings for submittal to Owner’s Representative.

.3 Owner’s Representative may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in contract documents.

1.10 CLOSEOUT PROCEDURES

.1 Notify Owner’s Representative when Work is considered ready for Substantial Performance.

.2 Accompany Owner’s Representative on preliminary inspection to determine items listed for completion or correction.

.3 Comply with Owner’s Representative's instructions for correction of items of Work listed in executed certificate of Substantial Performance and for access to Owner-occupied areas.

.4 Notify Owner’s Representative of instructions of items of Work determined in Owner’s Representative's final inspection.
PART 2  PRODUCTS (NOT APPLICABLE)

PART 3  EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  RELATED SECTIONS
   .1 Section 01 77 00 - Closeout Procedures.

1.2  SCHEDULES REQUIRED
   .1 Submit schedules as follows:
      .1 Construction Progress Schedule.
      .2 Submittal Schedule for Shop Drawings and Product Data.
      .3 Submittal Schedule for Samples.
      .4 Product Delivery Schedule.
      .5 Cash Allowance Schedule for purchasing Products.
      .6 Shutdown or closure activity.

1.3  FORMAT
   .1 Prepare schedule in form of a horizontal bar chart.
   .2 Provide a separate bar for each major item of work, trade or operation.
   .3 Split horizontally for projected and actual performance.
   .4 Provide horizontal time scale identifying first work day of each week.
   .5 Format for listings: chronological order of start of each item of work.
   .6 Identification of listings: By Systems description.

1.4  SUBMISSION
   .1 Submit initial format of schedules within 15 working days after award of Contract.
   .2 Submit schedules in electronic format, forward on disc as PDF files.
   .3 Submit one opaque reproduction, plus 2 copies to be retained by Owner’s Representative.
   .4 Owner’s Representative will review schedule and return review copy within 10 days after receipt.
   .5 Resubmit finalized schedule within 7 days after return of review copy.
   .6 Submit revised progress schedule with each application for payment.
   .7 Distribute copies of revised schedule to:
      .1 Job site office.
      .2 Subcontractors.
.3 Other concerned parties.

.8 Instruct recipients to report to Contractor within 10 days, any problems anticipated by timetable shown in schedule.

1.5 CRITICAL PATH SCHEDULING

.1 Include complete sequence of construction activities.

.2 Include dates for commencement and completion of each major element of construction as follows.

.1 Special Subcontractor Work.
.2 Equipment Installations.
.3 Finishes.

.3 Show projected percentage of completion of each item as of first day of month.

.4 Indicate progress of each activity to date of submission schedule.

.5 Show changes occurring since previous submission of schedule:

.1 Major changes in scope.
.2 Activities modified since previous submission.
.3 Revised projections of progress and completion.
.4 Other identifiable changes.

.6 Provide a narrative report to define:

.1 Problem areas, anticipated delays, and impact on schedule.
.2 Corrective action recommended and its effect.
.3 Effect of changes on schedules of other prime contractors.

1.6 SUBMITTALS SCHEDULE

.1 Include schedule for submitting shop drawings, product data, and samples.

.2 Indicate dates for submitting, review time, resubmission time, last date for meeting fabrication schedule.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1   GENERAL

1.1 SECTIONS INCLUDE

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 RELATED SECTIONS

.1 Section 01 32 00 – Construction Progress Documentation.

.2 Section 01 45 00 – Quality Control

.3 Section 01 78 00 – Closeout Submittals

1.3 ADMINISTRATIVE

.1 This section specifies general requirements and procedures for contractor’s submissions of shop drawings, product data, samples and mock-ups to Owner’s Representative 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 an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with work until relevant submissions are reviewed by Owner’s Representative.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Owner’s Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.

.6 Notify Owner’s Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are coordinated.

.8 Contractor’s responsibility for errors and omissions in submission is not relieved by Owner’s Representative’s review of submittals.
.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Owner’s Representative review of submission, unless Owner’s Representative gives written acceptance of specific deviations.

.10 Make any changes in submissions which Owner’s Representative may require consistent with Contract Documents and resubmit as directed by Owner’s Representative. When resubmitting, notify Owner’s Representative in writing of revisions other than those requested.

.11 Notify Owner’s Representative, in writing, when resubmitting, of any revisions other than those requested by Owner’s Representative.

.12 Keep one reviewed copy of each submission on site.

1.4 SUBMITTALS

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.

.3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.4 Allow 10 days for Owner’s Representative review of each submission.

.5 Adjustments made on shop drawings by Owner’s Representative are not intended to change contract price. If adjustments affect value of Work, state such in writing to Owner’s Representative immediately after receipt of approval of shop drawings. If value of work is to change a change order must be issued prior to proceeding with work.

.6 Accompany submissions with transmittal letter, containing:

.1 Date.
.2 Project title and number.
.3 Contractor's name and address.
.4 Identification and quantity of each shop drawing, product data and sample.
.5 Other pertinent data.

.7 Submissions shall include:

.1 Date and revision dates.
.2 Project title and number.
.3 Name and address of:
1. Subcontractor.
2. Supplier.
3. Manufacturer.
4. Contractor's stamp, signed by Contractor’s authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
5. Details of appropriate portions of Work as applicable:
   1. Fabrication.
   2. Layout, showing dimensions, including identified field dimensions, and clearances.
   3. Setting or erection details.
   5. Performance characteristics.
   7. Operating weight.
   8. Wiring diagrams.
   10. Relationship to adjacent work.
8. After Owner’s Representative review, distribute copies.
9. Submit one electronic copy in PDF format of shop drawings for each requirement requested in specification Sections and as Owner’s Representative may reasonably request.
10. Submit electronic copy in PDF format of product data sheets or brochures for requirements requested in Specification Sections and as requested by Owner’s Representative where shop drawings will not be prepared due to standardized manufacture of product.
11. Delete information not applicable to project.
12. Supplement standard information to provide details applicable to project.
14. If upon review by Owner’s Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of work may proceed.
15. Samples: examples of materials, equipment, quality, finishes, workmanship. Label samples with origin and intended use.
16. Notify Owner’s Representative in writing, at time of submission of deviations in samples from requirements of contract documents.
Where colour, pattern or texture is criterion, submit full range of samples.

Adjustments made on samples by Owner’s Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Owner’s Representative prior to proceeding with Work.

Make changes in samples, which Owner’s Representative may require, consistent with Contract Documents.

Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.5  MOCK-UPS
.1  Erect mock-ups in accordance with Section 01 45 00 - Quality Control.

1.6  PROGRESS PHOTOGRAPHS
.1  Progress photograph to be electronically formatted and labelled as to location and view.

1.7  SHOP DRAWINGS REVIEW
.1  The review of shop drawings by Owner’s Representative is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that Owner’s Representative approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and contract documents. Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all sub-trades.

PART 2  PRODUCTS (NOT APPLICABLE)

PART 3  EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  REFERENCES
   .1  Canadian Standards Association (CSA)
      .1  CAN/CSA-Z259.1 Body Belts and Saddles for Work Positioning and Travel
          Restraint.
      .2  CAN/CSA-Z259.10 Full body Harnesses.
      .3  CAN/CSA-Z259.11 Energy Absorbers and Lanyards.
      .4  CAN/CSA-Z259.2.1 Fall Arresters, Vertical Lifelines and Rails.
      .5  FCC No. 301 Standard for Construction Operations.
      .7  CSA Z275.4 Competency Standard for Divers Operations.
      .8  CSA Z797, Code of Practice for Access Scaffold.
      .2  FCC No. 302 Standard for Welding and Cutting.
   .3  Transportation of Dangerous Goods Act Regulations.
   .4  Newfoundland Occupational Health and Safety Act, Amended
   .5  Consolidated Newfoundland and Regulations 1149 WMIS Regulations Under the
       Occupational Health and Safety Act
   .6  Consolidated Newfoundland and Regulations Occupational Health and Safety
       Regulations under the Occupational Health and Safety Act.
   .7  Canada Labour Code, Part 2.
   .8  National Building Code of Canada.
   .9  Department of Transportation and Works Occupational Health and Safety Manual.

1.2  RELATED SECTIONS
   .1  Section 01 33 00 - Submittal Procedures.
   .2  Section 01 41 00 - Regulatory Requirements.

1.3  SUBMITTALS
   .1  At least 10 (ten) working days prior to commencing any site work: submit to Owner’s
       Representative copies of:
       .1  A complete Site Specific Health and Safety Plan.
.2 Acceptance of the Site Specific Health and Safety Plan and other submitted documents by the Owner’s Representative shall only be viewed as acknowledgement that the contractor has submitted the required documentation under this specification section.

.3 Owner’s Representative makes no representation and provides no warranty for the accuracy, completeness and legislative compliance of the Site Specific Health and Safety Plan and other submitted documents by this acceptance.

.4 Responsibility for errors and omissions in the Site Specific Health and Safety Plan and other submitted documents is not relieved by acceptance by Owner’s Representative.

1.4 OCCUPATIONAL HEALTH AND SAFETY (SITE SPECIFIC HEALTH AND SAFETY PLANS)


.2 Prepare a detailed Site Specific Health and Safety Plan that shall identify, evaluate and control job specific hazards and the necessary control measures to be implemented for managing hazards.

.3 Provide a copy of the Site Specific Health and Safety Plan upon request to Occupational Health and Safety Branch, Services NL, Province of Newfoundland and Labrador and the Owner.

.4 The written Site Specific Health and Safety Plan shall incorporate the following:

.1 Hazard assessment results.

.2 Engineering and administrative demonstrative controls (work-practices and procedures) to be implemented for managing identified and potential hazards, and comply with applicable federal and provincial legislation and more stringent requirements that have been specified in these specifications.

.3 An organizational structure which shall establish the specific chain of command and specify the overall responsibilities of contractor’s employees at the work site.

.4 A comprehensive workplan which shall:

.1 define work tasks and objectives of site activities/operations and the logistics and resources required to reach these tasks and objectives.

.2 establish personnel requirements for implementing the plan, and

.5 A personal protected equipment (PPE) Program which shall detail PPE:

.1 Selection criteria based on site hazards.

.2 Use, maintenance, inspection and storage requirements and procedures.

.3 Decontamination and disposal procedures.

.4 Inspection procedures prior to during and after use, and other appropriate medical considerations.
.5 Limitations during temperature extremes, heat stress and other appropriate medical consideration.

.6 An emergency response procedure, refer to Clause 1.5 Supervision and Emergency Response Procedure of this section for requirements.

.7 A hazard communication program for informing workers, visitors and individuals outside of the work area as required. This will include but not be limited to a visitor safety and orientation policy and program that will include education on hazards, required PPE and accompaniment while on site.

.8 A hearing conservation program in accordance with the OHS Regulations.

.9 A recent (current year) inspection form for all powered mobile equipment that will be used in fulfilling the terms of the contract. The inspection form shall, at a minimum, state that the equipment is in a safe operating condition.

.10 A complete listing of employee names, their driver’s license classification, expiry date, endorsements and the type of equipment that they are qualified to operate for the complete scope of work for this project. The Driver’s License Number should not be provided as this is confidential information. Provision of the License Number may breach PIPEDA - the Personal Information Protection and Electronic Documents Act - Federal Act or ATIPPA - Access to Information and Protection of Privacy Act - Part IV (Provincial Act of Newfoundland and Labrador). This shall also include documentation where required of certification in power line hazards.

.11 An acceptable parking policy for all powered mobile equipment to be used on this project. The policy shall, at a minimum, be based on a hazard assessment that considers factors such as equipment type, potential for roll over, load capacity of the parking area, pedestrian and vehicular traffic, and potential for equipment tampering, equipment energy, and equipment contact with power lines.

.12 A health and safety training program which includes a safety training matrix.

.13 General safety rules.

.5 Periodically review and modify as required each component of the Site Specific Health and Safety Plan when a new hazard is identified during completion of work and when an error or omission is identified in any part of the Site Specific Health and Safety Plan.

.6 Review the completeness of the hazard assessment immediately prior to commencing work, when a new hazard is identified during completion of work and when an error or omission is identified.

.1 Be solely responsible for investigating, evaluating and managing any report of actual or potential hazards.

.2 Clearly define accident incident investigation procedures.

.3 Clearly define policy and processes for early and safe return to work.

.4 Retain copies of all completed hazard assessments at the project site and make available to the Owner’s Representative immediately upon request.

.7 Implement all requirements of the Site Specific Health and Safety Plan.
.1 Ensure that every person entering the project site is informed of requirements under the Site Specific Health and Safety Plan.

.2 Take all necessary measures to immediately implement any engineering controls, administrative contacts, personal protective equipment required or termination of work procedures to ensure compliance with the Site Specific Health and Safety Plan.

1.5 SUPERVISION AND EMERGENCY RESCUE PROCEDURE

.1 Carry out work under the direct supervision of competent persons responsible for safety by ensuring the work complies with the appropriate section of OH&S Act and Regulations.

.2 Assign a sufficient number of supervisory personnel to the work site.

.1 Any person assigned to supervisory duties shall not conduct significant work in relation to the contract that inhibits them from the ability to properly supervise the work site.

.3 Provide a suitable means of communications and check-in for workers required to work alone.

.4 Develop an emergency rescue plan for the job site and ensure that supervisors and workers are trained in the emergency rescue plan.

.5 The emergency response plan shall address, as a minimum:

.1 Pre-emergency planning.
.2 Personnel roles, lines of authority and communication.
.3 Emergency recognition and prevention.
.4 Safe distances and places of refuge.
.5 Site security and control.
.6 Evacuation routes and procedures.
.7 Decontamination procedures which are not covered by the site specific safety and health plan.
.8 Emergency medical treatment and first aid.
.9 Emergency alarm, notification and response procedures including procedures for reporting incidents to local, provincial and federal government departments.
.10 PPE and emergency equipment.
.11 Procedures for handling emergency incidents.
.12 Site specific emergency response training requirements and schedules.

.6 The emergency response procedures shall be rehearsed regularly as part of the overall training program.

.7 Provide adequate first aid facilities for the jobsite and ensure that a minimum number of workers are trained in first aid in accordance with the First Aid Regulations.
1.6 CONTRACTORS SAFETY OFFICER

.1 The contractor shall employ a Contractor’s Safety Officer (CSO) who shall have as a minimum:

.1 Completed training in hazardous materials management and response/protocols.
.2 Completed training in the use, maintenance of fall protection systems certified by WHSCC at a minimum.
.3 Completed training in the erection and inspection of scaffolding.
.4 Completed training in confined space entry protocols, techniques and rescue plans, certified by WHSCC at a minimum.
.5 Completed supervisory training.
.6 Completed training in records and statistics.
.7 Completed training is hazard identification, inspections, analysis and control.
.8 Completed training in WHMIS.
.9 Completed training in health and safety program content.
.10 Completed training in investigations and reporting.
.11 Completed training in occupational health/hygiene.
.12 Completed training in employee training and communication.
.13 Completed training in Emergency Preparedness and First Aid.
.14 A working knowledge of occupational safety and health legislation and regulations (specific to Newfoundland and Labrador).
.15 A working knowledge of safe work practices required for execution of the work and operation of equipment specific to the project.
.16 A working knowledge of site safety and house keeping.
.17 A working knowledge of preventative maintenance program for Construction Site Equipment.

.2 The CSO shall:

.1 Be responsible for implementing, daily enforcement, monitoring and updating of the Site Specific Health and Safety Plan.
.2 Be responsible for the delivery of the site safety orientation and ensure that the personnel who have not been orientated are not permitted to enter the site.
.3 Report directly to and be under direction of the site superintendent or Contractor’s Project Manager.
.4 Prior to mobilization on-site, hold an orientation meeting with the contractors, subcontractors and Owner’s Representative to review project occupational health and safety. Include but not limit meeting to a review of:
   .1 Site Specific Health and Safety Plan.
   .2 Construction Safety Measures.
   .3 Supervision and Emergency Rescue Procedures.
   .4 Hazard Assessments
.5 Maintain a daily log of inspections, meetings, infractions and mitigating measures. Log is to be filed daily and copied to be the site superintendent and Owner’s Representative.

1.7 HEALTH AND SAFETY COMMITTEE

.1 Establish an Occupational Health and Safety Committee where ten or more workers are employed on the job site as per the OH&S Act and Regulations.

1.8 RESPONSIBILITY

.1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with Site Specific Health and Safety Plan.

.3 Where life safety risks exist, the contractor must stop the work until such time as the risk can be mitigated to a safe level.

.4 Take appropriate steps to ensure that the hazards are mitigated to a safe level, workers are notified of the hazards and how to protect themselves. As well, workers must be provided with any new safe work practices or information regarding mitigation of the risk.

1.9 UNFORSEEN HAZARDS

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

1.10 INSTRUCTION AND TRAINING

.1 Workers shall not participate in or supervise any activity on the work site until they have been trained to a level required by this job function and responsibility. Training shall as a minimum thoroughly cover the following:

.1 Federal and Provincial Health and Safety Legislation requirements including roles and responsibilities of workers and person(s) responsible for implementing, monitoring and enforcing health and safety requirements.

.2 Safety and health hazards associated with working on a contaminated site including recognition of symptoms and signs which might indicate over exposure to hazards.

.3 Limitations, use, maintenance and disinfection-decontamination of personal protective equipment associated with completing work.

.4 Limitations, use, maintenance and care of engineering controls and equipment.
.5 Limitations and use of emergency notifications and response equipment including emergency response protocol.

.6 Work practices and procedures to minimize the risk of an accident and hazardous occurrence from exposure to a hazard.

.2 Provide and maintain training of workers, as required, by Federal and Provincial legislation.

.3 Provide copies of all training certificates to Owner’s Representative for review, before a worker is to enter the work site.

.4 Authorized visitors shall not access the work site until they have been:

.1 Notified of the names of persons responsible for implementing, monitoring and enforcing the Site Specific Health and Safety Plan.

.2 Briefed on safety and health hazards present on the site.

.3 Instructed in the proper use and limitations of personal protective equipment.

.4 Briefed as the emergency response protocol including notification and evacuation process.

.5 Informed of practices and procedures to minimize risks from hazards and applicable to activities performed by visitors.

.6 Accompanied while on site, and provided with the appropriate PPE.

.5 All workers will be instructed and trained on the hazards associated with work they will perform and how to protect themselves. This will include a review of all safe work practices, the reporting and documentation of hazards, reporting accidents and injuries as well as, formal training in areas of high risk (i.e. fall protection, power line hazards, traffic control persons training).

.6 The work site shall have the appropriate number of persons trained in emergency and Standard First Aid according to the First Aid Regulations.

1.11 CONSTRUCTION SAFETY MEASURES

.1 Observe construction safety measures of National Building Code, latest edition, Provincial Government, OH&S Act and Regulations, Workplace Health and Safety Compensation Commission and Municipal Authority provided that in any case of conflict or discrepancy more stringent requirements shall apply.

.2 Administer the project in a manner that will ensure, at all times, full compliance with Federal and Provincial Acts, regulations and applicable safety codes and the Site Specific Health and Safety Plan.

.3 Provide Owner’s Representative with copies of all orders, directions and any other documentation, issued by the Occupational Health and Safety Branch, Services NL, immediately after receipt.
1.12 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province and authority having jurisdiction, and in consultation with Owner’s Representative.

1.13 HEALTH AND SAFETY MONITORING

.1 Periodic inspections of the contractor’s work may be carried out by the Owner’s Representative to maintain compliance with the Health and Safety Program. Inspections will include visual inspections as well as testing and sampling as required.

.2 The contractor shall be responsible for any and all costs associated with delays as a result of contractor’s failure to comply with the requirements outlined in this section.

1.14 NOTIFICATION

.1 For projects exceeding thirty (30) days or more, the contractor shall, prior to the commencement of work, notify in writing the Occupational Health and Safety Branch, Services NL with the following information:

   .1 Name and location of construction site.
   .2 Company name and mailing address of contractor doing the work.
   .3 The number of workers to be employed.
   .4 A copy of the Site Specific Health and Safety Plan if requested.

1.15 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Owner’s Representative.

.2 Provide Owner’s Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Owner’s Representative may stop work if non-compliance of health and safety regulations is not corrected.

1.16 WHMIS

.1 Ensure that all controlled products are in accordance with the Workplace Hazardous Materials Information System (WHMIS) Regulations and Chemical Substances of the OH&S Act and Regulations regarding use, handling, labelling, storage, and disposal of hazardous materials.

.2 Deliver copies of relevant Material Safety Data Sheets (MSDS) to job site and the Owner’s Representative. The MSDS must be acceptable to Labour Canada and Health and Welfare Canada for all controlled products that will be used in the performance of this work.

.3 Train workers required to use or work in close proximity to controlled products as per OH&S Act and Regulations.
.4 Label controlled products at jobsite as per OH&S and Regulations.

.5 Provide appropriate emergency facilities as specified in the MSDS where workers might be exposed to contact with chemicals, e.g. eye-wash facilities, emergency shower.

.1 Workers to be trained in use of such emergency equipment.

.6 Contractor shall provide appropriate personal protective equipment as specified in the MSDS where workers are required to use controlled products.

.1 Properly fit workers for personal protective equipment
.2 Train workers in care, use and maintenance of personal protective equipment.

.7 No controlled products are to be brought on-site without prior approved MSDS.

.8 The MSDS are to remain on site at all times.

1.17 OVERLOADING

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

1.18 FALSEWORK

.1 Design and construct falsework in accordance with CSA S269.1.

1.19 SCAFFOLDING

.1 Design, erect, inspect, operate, modify, and dismantle scaffolding in accordance with CSA Z797, the OH&S Act and Regulations, and the scaffold manufacturer’s written instructions.

.2 Provide trained and certified Competent Scaffold Erectors for all scaffold erection, modification and dismantling.

.3 Conduct and document daily inspections of scaffolding by trained and certified Competent Scaffold Inspectors or Erectors.

.4 Provide a scaffold tagging system as described in CSA Z797.

.5 Ensure that all industry best practices for safe scaffold usage, including fall protection, proper loading, safe access, electrical hazards, exit door management and other concerns are strictly adhered to.

1.20 WORKING AT HEIGHTS

.1 Ensure that fall restraint or fall arrest devices are used by all workers working at elevations greater than 3.05 meters above grade or floor level in accordance with CSA Z259, where alternate fall protection systems are not provided in accordance with Occupational Health and Safety Act and Regulations.
All workers performing work at height and who will be required to utilize a fall arrest system must be trained in a fall protection program certified by the WHSCC.

Prior to working at height workers shall be instructed in a Contractor SWP for working at height and associated rescue plan for working at height developed specific to the work, locations and risks.

1.21  **PERSONAL PROTECTIVE EQUIPMENT**

.1 Ensure workers on the jobsite use personal protective equipment appropriate to the hazards identified in the Site Specific Health and Safety Plan and those workers are trained in the proper care, use, and maintenance of such equipment.

.2 PPE selections shall be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the site, task-specific conditions, duration and hazards and potential hazards identified on site.

.3 Provide workers and visitors to the site with proper respiratory protection equipment.

.1 No work shall be performed in an area where an airborne contaminant exceeds recommendations of the ACGIH, do not meet the appropriate standards for the specific contaminants or are not in accordance with the OHS regulations.

.2 Respiratory protection shall be provided in accordance with the requirements of the Occupational Health and Safety Branch, Services NL and these specifications.

.3 Establish, implement and maintain a respirator inspection and maintenance program in accordance with the CSA standard identified in the OHS Regulations.

.4 Copies of all respirator owners’ maintenance manuals, shall be kept at all times at the contractor’s site office.

.4 Provide and maintain a supply of dermal protection equipment to allow visitors and all workers proper dermal protection.

.1 Dermal protection shall be sufficient to act as a protective barrier between the skin and an airborne contaminant or hazardous material. Dermal protection shall also be provided for all physical hazards.

.2 Dermal protection equipment shall not be used after exceeding 75% of the break through time. The break through time shall be based on the contaminant which requires the least amount of time to break through the protective equipment.

.3 Copies of all dermal protection user specifications, owners and maintenance manuals shall be kept at all times at the contractor’s site office.

.4 Establish, implement and maintain air inspection program to ensure proper dermal protection in accordance with CSA, NIOSH, U.S. EPA and manufacturer’s requirements.

.5 Provide all workers and up to five (5) visitors to the site with proper hearing protection. Workers and visitors shall not be exposed to noise levels greater than 85 dB (A) over an eight hour shift without proper hearing protection, in accordance with the Hearing Conservation Program.
.6 Provide all workers and up to five (5) visitors to the site with CSA approved eye protection sufficient to act as a protective barrier between the eye and airborne contaminants, hazardous materials and physical hazard.

.7 Provide workers and up to five (5) visitors to the site with CSA approved hard hats meeting the CSA Z94.1.

.8 Provide high visibility apparel as defined in Occupational Health and Safety Regulations.

.9 Provide CSA approved safety boots meeting CSA Z195.

.10 Provide other personal protective equipment, as may be required by the owner, depending on duties being performed.

1.22 TRAFFIC CONTROL

.1 Provide traffic control measures when working on, or adjacent to, roadways in accordance with the “Traffic Control Manual for Roadwork Operations”, Department of Transportation and Works.

1.23 HAZARDOUS MATERIALS

.1 Should material resembling hazardous materials (e.g. asbestos/mould) not previously identified/documented be encountered during the execution of work and notify Owner’s Representative. Do not proceed until written instructions have been received from Owner’s Representative.

.2 Unless otherwise noted the services of a recognized Environmental Consultant to provide all air monitoring and testing services required by regulatory requirements for hazardous materials abatement and repair.

1.24 HEAVY EQUIPMENT

.1 Ensure mobile equipment used on jobsite is of the type specified in OH&S Act and Regulations fitted with a Roll Over Protective (ROP) Structure and Falling Object Protective (FOP) Structure.

.2 Provide certificate of training in Power Line Hazards for operators of heavy equipment.

.3 Obtain written clearance from the power utility where equipment is used in close proximity to (within 5.5 metres) overhead or underground power lines.

.4 Equip cranes with:

   .1 A mechanism which will effectively prevent the hook assembly from running into the top boom pulley.
   .2 A legible load chart.
   .3 A maintenance log book.
1.25 WORK STOPPAGE

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations of Work.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1 GENERAL

1.1 SUMMARY

.1 Where building related projects involve work that could potentially disturb asbestos or lead based paints, disturbances must be carefully controlled by registered abatement contractors in accordance with the Occupational Health and Safety Regulations (OHS) and other applicable Sections in this Contract. The purpose of this procedure is to ensure that nuisance dust, not containing asbestos or lead, is controlled in an effective manner.

.2 Section includes:

.1 Ensuring any maintenance, repair, construction or renovation activity that impacts building materials or creates dust is performed in such a way as to eliminate, minimize, contain and clean up any and all dust generated by the activity. This applies to work preparation, work activities and post-work activities.

.2 This applies to, but is not limited to, the following types of dust generating activities:

.1 Disturbing gypsum board, plaster or other surfacing materials.
.2 Disturbing concrete or wood containing materials.
.3 Handling or disturbing fibrous building insulation.
.4 Generating welding fumes: in addition to the requirements of this procedure, a hot work permit is also required to be completed by the contractor and submitted to the Owner’s Representative for review if hot work is required in an occupied building.

1.2 RELATED WORK

.1 Division 1 – General Requirements.

.2 Section 02 82 00.02 - Asbestos Abatement.

.3 Section 06 10 00 – Rough Carpentry.

.4 Section 07 26 00 - Vapour Retarder.

1.3 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.205, Sealer for Application to Asbestos-Fibre-Releasing Materials.

.2 Canadian Standards Association (CSA)

.1 CAN/CSA Z317.13-F07, Infection Control During Construction, Renovation and Maintenance of Health Care Facilities.
PART 2 PRODUCTS

2.1 MATERIALS

.1 Polyethylene sheet in accordance with Section 07 26 00 - Vapour Retarders.

.2 Wood studs for stand-alone barriers in accordance with Section 06 10 00 - Rough Carpentry.

PART 3 EXECUTION

3.1 PRE-WORK ACTIVITIES

.1 The contractor shall ensure the following prior to commencing work:

.1 Specific dust generating activities and associated controls shall be addressed in the Site Specific Health and Safety Plan.

.2 Workforce, including sub-contractors, must be made aware of the site dust control requirements.

.3 Check the various work zones within the building and adjacent areas to confirm the area are clean.

.4 Access to all active work areas shall be restricted to authorized contractors.

.5 For occupied buildings, dust generating activities shall be performed after normal hours of operations, unless prior permission if received from the Owner’s Representative.

3.2 WORK ACTIVITIES

.1 Dust producing projects shall be classified as small scale, medium scale or large scale projects, as detailed in paragraph 3.3.

.2 For all dust generating activities, Contractor is required to have Site Safety Officer present to ensure dust control procedures are properly followed.

.3 Any dust related complaints brought to the Contractors attention, must be immediately reported to Owner’s Representative, and an incident investigation must be initiated to prevent reoccurrence.

.4 Where practical, dust generation should be eliminated or minimized through the use of proper engineering controls (i.e. containment at source such as drilling wall surface through a wet sponge, wet suppression, use of HEPA vacuum equipped tools, etc).

.5 Dust generating power tools shall be equipped with HEPA filtered dust collectors where practical. Power tools capable of generating dust without dust collection shall only be used in conjunction with suitable work area containment and with Owner’s Representative approval.

.6 Walk-off mats shall be employed for medium and large scale dust generating projects at all worker entrances/exits. Purpose of these mats is to trap dust from equipment and
shoes of personnel leaving the dust contaminated work zone. Mats shall be vacuumed daily, or more frequently as necessary, using HEPA filtered vacuums. Mats shall be of sufficient size to place both feet on mat at once.

3.3 PROJECT CLASSIFICATION

.1 Class A - Small Scale Project: (Dust producing activities disturbing less than one (1) linear meter or one (1) square meter of material. These are small scale, short duration jobs generating minimal dust.

.1 Some examples include:

.1 Installing wires or cables, sanding/repairing small section of wall, cutting out gypsum board to install receptacles.

.2 Carry out Work as follows:

.1 Remove all furniture, fixtures and belongings from the work area to a minimum of 1.5 m in all directions.

.2 Restrict access to immediate work area. Keep all doors closed where practical. Post “Dust Hazard Area – Do Not Enter” signs at all entrances to work area. In common areas use barrier tape to establish the regulated area.

.3 Place a drop cloth of polyethylene sheeting immediately underneath the work area extending a minimum of 1.5 m in each direction (unless flooring is easily cleanable).

.4 Cover all air return or exhaust vents if within 1.5 m of the work area with polyethylene sheeting and duct tape.

.5 Complete the task, minimizing dust production, as prescribed in paragraph 3.2 - Work Activities.

.6 When the work is completed, wet-wipe polyethylene sheeting and flooring and if necessary, other areas close by with a damp rag.

.7 Visually inspect the area for any remaining dust and wet wipe as necessary.

.8 If installed, remove polyethylene sheeting from air return and exhaust vents.

.9 Where practical, transport debris after hours using least congested and most direct routes. If any debris is spilled outside the work area, immediately wet-wipe debris.

.10 Clean all tools and equipment before removal from the work area.

.2 Class B - Medium Scale Project (Dust producing activities disturbing greater than one (1) square meter and less than 30 square meters of material) with anticipated moderate dust levels that are typically one shift or more in duration.

.1 Examples include:

.1 Sanding several sheets of gypsum board.

.2 Electrical work above ceiling tiles where general debris is known above the ceiling.

.3 Removing numerous ceiling tiles in an area.
.4 New wall construction.

.2 Carry out the Work as follows:

.1 Determine the most effective way of isolating the work area from occupants (i.e. using plastic barriers or by sealing off doors).

.2 Complete all items specified under small scale projects.

.3 While performing the work, limit the dust generated by removing the materials in sections, lightly misting the material as necessary. Debris shall be bagged immediately for disposal. In addition to wet wiping, HEPA filtered vacuum systems shall be employed where practical to limit airborne dust.

.4 When the task is completed, HEPA vacuum and/or wet wipe the polyethylene sheeting.

.5 Prior to removing any temporary wall partitions from floor to ceiling or polyethylene barriers, a final inspection shall be preformed by the Site Safety Officer or designate to ensure proper clean up has been completed. This inspection shall be documented by the Contractor and made available at the request of the Owner’s Representative.

.6 Establishment of containment may result in the accumulation of dust within the enclosure. As such, the need for respiratory protection and decontamination would be greater than for small scale projects (i.e. N95 half face respirator with tyvek body covering).

END OF SECTION
PART 1

GENERAL

1.1 RELATED SECTIONS

.1 Section 02 82 00.02 – Asbestos Abatement

1.2 REFERENCES AND CODES

.1 Perform Work in accordance with National Building Code of Canada (NBC) including all amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.

.2 Meet or exceed requirements of:

.1 Contract documents.
.2 Specified standards, codes and referenced documents.

1.3 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: stop work immediately should materials believed to contain asbestos be encountered in during the execution of the work and notify Owner’s Representative. Do not proceed until written instructions have been received from Owner’s Representative. Perform asbestos abatement and repair in accordance with Newfoundland and Labrador Asbestos Abatement Regulations, Latest Edition.

.2 Mould: stop work immediately should material resembling mould be encountered during the execution of work and notify Owner’s Representative. Do not proceed until written instructions have been received from Owner’s Representative.

1.4 BUILDING SMOKING ENVIRONMENT

.1 The property is non-smoking.

PART 2

PRODUCTS (NOT APPLICABLE)

PART 3

EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  RELATED DOCUMENTS

.1 Drawings and general provisions of this contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2  INDUSTRY STANDARDS

.1 Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made part of the Contract Documents by reference.

.2 All construction industry standards referenced in this specification to meet the edition of the standard referenced by the National Building Code of Canada (NBC). If the construction industry standard in not referenced in the National Building Code of Canada (NBC), the latest edition of the standard shall apply.

.3 Each entity engaged in construction on this Project must be familiar with construction industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Construction Documents.

.1 Where copies of construction industry standards are needed to perform a required construction activity, obtain copies directly from publication source and make them available upon request.

1.3  ABBREVIATIONS AND ACRONYMS FOR INDUSTRY ORGANIZATIONS

.1 Where abbreviations and acronyms are used, they shall mean the recognized name of the entities in the following list. Names are believed to be accurate and up-to-date as of the date of the Contract Documents.

.2 Industry Organizations:

.1 Air Conditioning and Mechanical Contractors Association (AMCA).
.2 Air Conditioning and Refrigeration Institute (ARI).
.3 Americans with Disability Act (ADA).
.4 Air Movement and Control Association (AMCA).
.5 The Aluminum Association, Inc. (AA).
.6 American Architectural Manufacturers Association (AAMA).
.7 American Association of State Highway and Transportation Officials (AASHTO).
.8 American Bearing Manufacturers Association (ABMA).
.9 American Boiler Manufacturer's Association (ABMA).
.10 American Concrete Institute (ACI).
.11 American Industrial Hygiene Association (AIHA).
.12 American Institute of Steel Construction (AISC).
.13 American Iron & Steel Institute (AISI).
.15 American Petroleum Institute (API).
.16 American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).
.17 American Society of Mechanical Engineers (ASME).
.18 American Society of Sanitary Engineer’s (ASSE).
.20 American Water Works Association (AWWA).
.21 American Welding Society (AWS).
.22 American Wood-Preservers' Association (AWPA).
.23 Architectural Woodwork Institute (AWI).
.24 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
.25 Asphalt Institute (AI).
.26 Associated Air Balance Council (AABC).
.27 Association of the Wall and Ceilings Industries International (AWEI).
.28 Atomic Energy Control Board Regulations.
.29 Brick Industry Association (BIA).
.30 Building Industry Consulting Services International (BICSI).
.31 Canada Green Building Council (CaGCB).
.32 Canada Labour Code.
.33 Canadian Council of Ministers of the Environment (CCME).
.34 Canadian Code for Preferred Packaging.
.35 Canadian Construction Materials Centre (CCMC).
.36 Canadian Environmental Protection Act (CEPA).
.37 Canadian Gas Association (CGA).
.38 Canadian General Standards Board (CGSB).
.39 Canadian Institute of Steel Construction (CISC).
.40 Canadian Nursery Landscape Association (CNLA).
.41 Canadian Paint Manufacturer’s Association (CPMA).
.42 Canadian Roofing Contractors' Association (CRCA).
.43 Canadian Sheet Steel Building Institute (CSSBI).
.44 Canadian Standards Association (CSA).
.45 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA).
.46 Canadian Urethane Foam Contractors' Association Inc. (CUFCA).
.47 Carpet and Rug Institute (CRI).
.48 Ceramic Tile Institute (CTI).
.49 Consumer Electronics Association (CEA).
.50 Cooling Technology Institute (CTI).
.51 Department of Justice Canada (Jus).
.52 Electrical and Electronic Manufacturers' Association of Canada (EEMAC).
.53 Electronic Industries Alliance (EIA).
.54 Environment Canada (EC).
.55 The Environmental Choice Program.
.56 Environmental Protection Agency (EPA).
.57 Environmental Protection Services (EPS).
.58 ETL Listing Laboratories (ETL).
.59 Factory Mutual (FM).
.60 Federal Communications Commission (FCC).
.61 Flat Glass Manufacturers Association (FGMA).
.62 Green Seal Environmental Standards.
.64 Hydraulics Institute (HI).
.65 Hydronic Institute of Boiler and Radiator Manufacturers (IBR).
.66 Industry Canada - Terminal Attachment Program.
.67 Institute of Electrical and Electronics Engineers (IEEE).
.68 Institute for Research in Construction (IRC).
.69 Insulated Cable Engineers Association (ICEA).
.71 International Masonry Industry All-Weather Council (IMIAC).
.72 International Standards Organization (ISO).
.73 Laminators Safety Glass Association (LSGA).
.74 Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS).
.75 Master Painters Institute (MPI).
.77 National Association of Architectural Metal Manufactures (NAAMM).
.78 National Association of Corrosion Engineers (NACE).
.79 National Building Code of Canada (NBC).
.80 National Bureau of Standards/Products Standard (NBS/PS).
.81 National Electrical Manufacturers Association (NEMA).
.82 National Environmental Balancing Bureau (NEBB).
.83 National Fire Code of Canada (NFC).
.84 National Fire Protection Association (NFPA).
.85 National Floor Covering Association (NFCA).
.86 National Hardwood Lumber Association (NHLA).
.87 National Lumber Grades Authority (NLGA).
.88 National Plumbing Code of Canada (NPC).
.89 National Research Council Canada (NRC).
.90 National Roofing Contractors Association (NRCA).
.91 National Sanitation Foundation (NSF).
.93 Plumbing and Drainage Institute (PDI).
.94 Province of Newfoundland and Labrador Building Accessibility Regulations.
.95 Provincial Boiler, Pressure Vessel and Compressed Gas Regulations.
.96 Scientific Equipment and Furniture Association (SEFA).
.97 Sealant and Waterproofer’s Institute.
.98 Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA).
.99 Society of Automotive Engineers (SAE).
.100 The Society for Protective Coatings (SSPC).
.101 South Coast Air Quality Management District (SCAQMD).
.102 Telecommunications Distribution Methods Manual (TDMM).
.103 Telecommunications Industries Association (TIA).
.104 Terrazzo Tile and Marble Association of Canada (TTMAC).
.105 Thermal Insulation Association of Canada (TIAC).
.106 Transport Canada (TC).
.107 Transport Canada - Marine Safety (TCMS).
.108 Treasury Board of Canada (TB).
.109 Treasury Board Information Technology Standard (TBITS).
.110 Truss Plate Institute of Canada (TPIC).
.111 Underwriters' Laboratories Inc. (UL).
.112 Underwriter's Laboratories of Canada (ULC).
.114 U.S. Coast Guard Equipment List (USCG).
.115 U.S. Department of Transportation (DOT).

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  SECTIONS INCLUDE

.1 Inspection and testing, administrative and enforcement requirements.

.2 Tests and mix designs.

.3 Mock-ups.

.4 Equipment and system adjust and balance.

1.2  RELATED SECTIONS

.1 Section 01 21 00 – Allowances.

.2 Section 01 33 00 – Submittal Procedures

.3 Section 01 78 00 – Closeout Submittals

1.3  INSPECTION

.1 Allow Owner’s Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Owner’s Representative instructions.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

.4 Owner’s Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Owner’s Representative shall pay cost of examination and replacement.

1.4  ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.
1.5 **PROCEDURES**

.1 Notify appropriate agency and Owner’s Representative in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 **REJECTED WORK**

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Owner’s Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

.3 If in opinion of Owner’s Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Owner’s Representative.

1.7 **REPORTS**

.1 Submit inspection and test reports to Owner’s Representative in electronic copy in PDF format.

.2 Provide copy to Subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

.3 Include copy of all inspection and test reports in Commissioning Manuals.

1.8 **MOCK-UPS**

.1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups.

.2 Construct in all locations acceptable to Owner’s Representative as specified in specific Section.

.3 Prepare mock-ups for Owner’s Representative review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 Remove mock-up at conclusion of Work or when acceptable to Owner’s Representative

.6 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

.7 Reviewed and accepted mock-ups will become standards of workmanship and material against which installed work will be verified.

.8 Mock-ups may remain as part of Work.

1.9 EQUIPMENT AND SYSTEMS

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

.2 Mechanical – coordinate with mechanical division.

.3 Electrical – Coordinate with owner forces.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  SECTION INCLUDES

.1  Construction aids.

.2  Parking.

.3  Project identification.

1.2  RELATED SECTIONS

.1  Section 01 35 29.06 – Health and Safety Requirements

.2  Section 01 51 00 - Temporary Utilities.

.3  Section 01 56 00 - Temporary Barriers and Enclosures.

1.3  INSTALLATION AND REMOVAL

.1  Provide construction facilities in order to execute work expeditiously.

.2  Remove from site all such work after use.

1.4  SCAFFOLDING

.1  Provide and maintain scaffolding in rigid, secure and safe manner.

.2  Erect scaffolding independent of walls. Remove promptly when no longer required. Refer to Section 01 35 29.06 – Health and Safety Requirements.

1.5  HOISTING

.1  Provide, operate and maintain hoists cranes required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for use thereof.

.2  Hoists cranes shall be operated by certified operator.

1.6  SITE STORAGE/LOADING

.1  Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2  Do not load or permit to load any part of Work with a weight or force that will endanger the Work.
1.7 CONSTRUCTION PARKING
   .1 Limited Parking will be permitted on site provided to the owners discretion

1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE
   .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
   .2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.9 CLEAN-UP
   .1 Remove construction debris, waste materials, packaging material from work site daily.
   .2 Clean dirt or mud tracked onto paved or surfaced roadways.
   .3 Store materials resulting from demolition activities that are salvageable.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1

GENERAL

1.1 SECTION INCLUDES

.1 Barriers.

.2 Environmental Controls.

.3 Traffic Controls.

.4 Fire Routes.

1.2 RELATED SECTIONS

.1 Section 01 52 00 – Construction Facilities.

1.3 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 GUARD RAILS AND BARRICADES

.1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.

.2 Provide as required by governing authorities.

1.5 DUST TIGHT SCREENS

.1 Provide dust tight screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.

.2 Maintain and relocate protection until such work is complete.

1.6 FIRE ROUTES

.1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.7 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.
1.8 PROTECTION OF BUILDING FINISHES

.1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.

.2 Provide necessary screens, covers, and hoardings.

.3 Confirm with Owner’s Representative locations and installation schedule 3 days prior to installation.

.4 Be responsible for damage incurred due to lack of or improper protection.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  SECTION INCLUDES

.1 Product quality, availability, storage, handling, protection, and transportation.

.2 Manufacturer's instructions.

.3 Quality of Work, coordination and fastenings.

1.2  RELATED SECTIONS

.1 Section 01 45 00 – Quality Control.

.2 Section 01 73 00 – Execution.

1.3  REFERENCES

.1 Within text of each specifications section, reference may be made to reference standards. Conform to these reference standards, in whole or in part as specifically requested in specifications.

.2 Conform to latest date of issue of referenced standards in effect on date of submission of Tenders, except where specific date or issue is specifically noted.

1.4  QUALITY

.1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Owner’s Representative based upon requirements of Contract Documents.

.4 Within 7 (seven) days of written request by Owner’s Representative, submit following information for material and equipment proposed for supply:

.1 Name and address of manufacturer.

.2 trade name, model and catalogue number,

.3 performance, descriptive and test data,

.4 manufacturer’s installation or application instructions,

.5 evidence of arrangements to procure.
.5 Use products of one manufacturer for material and equipment of same type or classification unless otherwise specified.

.6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Owner’s Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of work.

.2 In event of failure to notify Owner’s Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Owner’s Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.6 STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store sheet materials, lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.5 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.6 Remove and replace damaged products at own expense and to satisfaction of Owner’s Representative.

.7 Touch-up damaged factory finished surfaces to Owner’s Representative satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.7 TRANSPORTATION

.1 Pay costs of transportation of products required in performance of Work.
1.8 MANUFACTURER’S INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Owner’s Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Owner’s Representative may establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Owner’s Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.9 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Owner’s Representative if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Owner’s Representative reserves right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Owner’s Representative, whose decision is final.

1.10 CO-ORDINATION

.1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.11 CONCEALMENT

.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation, inform Owner’s Representative if there is interference. Install as directed by Owner’s Representative.

1.12 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.
1.13 LOCATION OF FIXTURES

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer’s recommendations for safety, access and maintenance.

.3 Inform Owner’s Representative of conflicting installation. Install as directed.

.4 Submit field drawings to indicate relative position of various services and equipment when required by Owner’s Representative.

1.14 FASTENINGS GENERAL

.1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for securing exterior work, unless stainless steel or other material is specifically requested in affected specification section.

.2 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood plugs are not acceptable.

.3 Conceal fasteners where indicated. Space evenly and lay out neatly.

.4 Fastenings which cause Spalding or cracking are not acceptable.

.5 Obtain Owner’s Representative’s approval before using explosive actuated fastening devices. If approval is obtained comply with CSA Z166.

1.15 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.16 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of any part of building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of Owner’s Representative.
1.17 **EXISTING UTILITIES**

.1 When breaking into or connecting to existing services or utilities, execute work at times directed by local governing authorities, with minimum of disturbance to work.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

.3 Submit schedule to and obtain approval from Owner’s Representative for any shut-down or closure of active services or facility. Adhere to approved schedule and provide notice to affected parties.

.4 Where unknown services are encountered, immediately advise Owner’s Representative and confirm findings in writing.

.5 Remove abandoned services lines within 2m of structures. Cap or otherwise seal lines at cut-off points as directed by Owner’s Representative.

1.18 **SELECTION OF MATERIAL AND EQUIPMENT**

.1 Material and equipment will be specified in the tender documents, and selected by Contractor, by one or more of the following methods:

.1 Specification by reference to a relevant Standard, such as CSA, ASTM, ULC, etc., select any material or equipment that meets or exceeds the specified.

.2 Specification by reference to an accepted product evaluation publication, such as the CGSB “Qualified Products List”, or CCMC Registry of Product Evaluations”, - select any manufacturer’s product so listed.

.3 Specification by Prescriptive or Performance specification – select any material or equipment meeting or exceeding specification.

.4 Specification by identification of one or more Manufacturer’s specific product(s) as an “Acceptable Product”, along with a listing of other manufacturers who may offer equivalent products – select any product so named, or select from equivalent product(s) of other listed manufacturers.

.2 “Acceptable Product” is deemed to be a complete and working commodity as described by a manufacturer’s name, catalogue number, trade name, or any combination thereof, and will constitute the minimum standard of acceptance.

.3 Owner’s Representative will determine acceptability of Contractor’s selection of material and equipment at time of Shop Drawing review.

.4 When material or equipment is specified by a Standard, Prescriptive or Performance specification, upon request of the Owner’s Representative, obtain from manufacturer an independent laboratory reporting, showing that material or equipment meets or exceeds the specified requirements.
1.19 SUBSTITUTION OF MATERIAL AND EQUIPMENT

.1 Prior to Tender closing bidders may propose addition of other manufacturer’s names to those listed in the tender documents providing requests are made in writing at least 7 days prior to tender closing date or bid depository where bid depository is used. Owner’s Representative will inform all prospective bidders of decision by addendum, issued at least 5 days prior to the tender closing date.

Where no manufacturer’s names are listed, the onus is on contractor to provide material and equipment to meet performance specification.

.2 After Contract award substitutions of material or equipment, other than as selected by Contractor from those specified, will be considered by Owner’s Representative only if:

.1 material or equipment selected from those specified are not available
.2 delivery date of material or equipment selected from those specified would unduly delay completion of the Contract; or
.3 alternative material or equipment to those specified, provided they are determined by the Owner’s Representative to be equivalent to or better that those specified, will result in a credit to the Contract amount.

.3 Requests for substitutions after Contract award must be accompanied by sufficient information in the form of shop drawings, manufacturer’s literature, samples or other data to permit proper investigation of the substitutes used. Requests must also include statements of respective costs of material or equipment originally specified and the proposed substitution.

.4 Should a proposed substitution be accepted after Contract award either in part or in whole, assume full responsibility and costs when substitution affects other work on Project. Contractor to pay for design or drawing changes required as a result of the substitution.

.5 Amounts of all credits arising from approval of substitutions after Contract award will be determined by Owner’s Representative and the Contract amount will be reduced accordingly.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  SECTION INCLUDES

.1 Requirements and limitations for cutting and patching the Work.

1.2  RELATED SECTIONS

.1 Section 01 11 00 - Summary of Work.

.2 Section 01 33 00 - Submittal Procedures.

1.3  SUBMITTALS

.1 Submit written request in advance of cutting or alteration which affects:

   .1 Structural integrity of any element of Project.
   .2 Integrity of weather-exposed or moisture-resistant elements.
   .3 Efficiency, maintenance, or safety of any operational element.
   .4 Visual qualities of sight-exposed elements.
   .5 Work of Owner or separate contractor.

.2 Include in request:

   .1 Identification of Project.
   .2 Location and description of affected Work.
   .3 Statement on necessity for cutting or alteration.
   .4 Description of proposed Work, and products to be used.
   .5 Alternatives to cutting and patching.
   .6 Effect on Work of Owner or separate contractor.
   .7 Written permission of affected separate contractor.
   .8 Date and time work will be executed.

1.4  PREPARATION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.5 Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.
.6 Obtain Owner’s Representative’s approval before cutting, boring or sleeving load-bearing members.

1.5 EXECUTION

.1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.

.2 Fit several parts together, to integrate with other Work.

.3 Uncover Work to install ill-timed Work.

.4 Remove and replace defective and non-conforming Work.

.5 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.

.6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.7 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.

.9 Restore work with new products in accordance with requirements of Contract Documents.

.10 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.11 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material in accordance with Section 07 84 00 - Firestopping, full thickness of the construction element.

.12 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

.13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

.14 Make cuts with clean, true, smooth edges.

.15 Where new work connects with existing, and where existing work is altered, cut, patch and make good to match existing work.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
PART 2  PRODUCTS (NOT APPLICABLE)

PART 3  EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  GENERAL

.1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

.2 Store volatile waste in covered metal containers and remove from premises at end of each working day.

.3 Provide adequate ventilation during use of volatile or noxious substances. Use for building ventilation systems is not permitted for this purpose.

1.2  RELATED SECTION

.1 Section 01 77 00 - Closeout Procedures.

1.3  PROJECT CLEANLINESS

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.

.2 Remove waste materials and debris from site at the end of each working day. Do not burn waste materials on site.

.3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.4 Provide on-site containers for collection of waste materials and debris.

.5 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

.6 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.7 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

.8 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.9 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.4  FINAL CLEANING

.1 Refer to General Conditions.
.2 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.4 When the Work is Totally Performed, remove surplus products, tools, construction machinery and equipment. Remove waste products and debris other than that caused by the Owner or other Contractors.

.5 Remove waste materials from the site at regularly scheduled times or dispose of as directed by the Owner’s Representative. Do not burn waste materials on site.

.6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.7 Leave the work broom clean before the inspection process commences.

.8 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors and ceilings.

.10 Vacuum clean and dust building interiors, behind grilles, louvres and screens.

.11 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1

GENERAL

1.1 SECTION INCLUDES

.1 Text, schedules and procedures for systematic Waste Management Program for construction, deconstruction, demolition, and renovation projects, including:

.1 Diversion of Materials.
.2 Waste Audit (WA) - Schedule A.
.3 Waste Reduction Workplan (WRW) - Schedule B.
.4 Demolition Waste Audit (DWA) - Schedule C.
.5 Cost/Revenue Analysis Workplan (CRAW) - Schedule D.
.6 Materials Source Separation Program (MSSP).
.7 Canadian Governmental Responsibility for the Environment Resources - Schedule E.

1.2 DEFINITIONS

.1 Demolition Waste Audit (DWA): Relates to actual waste generated from project.

.2 Materials Source Separation Program (MSSP): Consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.

.3 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.

.4 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.

.5 Recycling: Process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

.6 Reuse: Repeated use of product in same form but not necessarily for same purpose. Reuse includes:

.1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
.2 Returning reusable items including pallets or unused products to vendors.

.7 Salvage: Removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.

.8 Separate Condition: Refers to waste sorted into individual types.

.9 Source Separation: Acts of keeping different types of waste materials separate beginning from first time they became waste.
1.3 **STORAGE, HANDLING AND PROTECTION**

.1 Unless specified otherwise, materials for removal become Contractor's property.

.2 Protect, stockpile, store and catalogue salvaged items.

.3 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to approved local facility.

.4 Protect structural components not removed for demolition from movement or damage.

.5 Support affected structures. If safety of building is endangered, cease operations and immediately notify Department having jurisdiction.

.6 Protect surface drainage, mechanical and electrical from damage and blockage.

.7 Separate and store materials produced during dismantling of structures in designated areas.

.8 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.

.1 On-site source separation is recommended.

1.4 **DISPOSAL OF WASTES**

.1 Do not bury rubbish or waste materials.

.2 Do not dispose of any waste into waterways, storm, or sanitary sewers.

.3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.

.4 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

1.5 **USE OF SITE AND FACILITIES**

.1 Execute work with least possible interference or disturbance to normal use of premises.

.2 Provide security measures approved by Owner’s Representative.

1.6 **SCHEDULING**

.1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.
PART 3  EXECUTION

3.1  APPLICATION

.1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.2  CLEANING

.1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.

.2 Clean-up work area as work progresses.

.3 Source separate materials to be reused/recycled into specified sort areas.

END OF SECTION
PART 1  

GENERAL  

1.1  RELATED SECTIONS  

.1 Section 01 74 11 - Cleaning.  

.2 Section 01 78 00 - Closeout Submittals.  

1.2  FINAL INSPECTION AND DECLARATION PROCEDURES  

.1 Contractor's Inspection: The Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects; repair as required. Notify the Owner’s Representative in writing of satisfactory completion of the Contractor's Inspection and that corrections have been made. Request an Owner’s Representative’s Consultant's Inspection.  

.2 Owner’s Representative’s Inspection: Owner’s Representative and the Contractor will perform an inspection of the Work to identify obvious defects or deficiencies. The contractor shall correct Work accordingly.  

.3 Completion: submit written certificate that the following have been performed:  

.1 Work has been completed and inspected for compliance with Contract Documents.  

.2 Defects have been corrected and deficiencies have been completed.  

.3 Equipment and systems have been tested, adjusted and balanced and are fully operational.  

.4 Certificates required by Fire Commissioner, Utility companies have been submitted.  

.5 Operation of systems have been demonstrated to Owner's personnel.  

.6 Work is complete and ready for Final Inspection.  

.4 Final Inspection: When items noted above are completed, request final inspection of Work by the Owner’s Representative, representative of Central Health and the Contractor. If Work is deemed incomplete by the Owner’s Representative, complete outstanding items and request a reinspection.  

.5 Declaration of Substantial Performance: When the Owner’s Representative considers deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for Certificate of Substantial Performance. Refer to General Conditions for specifics to application.  

.6 Commencement of Lien and Warranty Periods: The date of Central Health acceptance of the submitted declaration of Substantial Performance shall be the date for commencement for the warranty period and commencement of the lien period.  

.7 Declaration of Total Performance: When the Owner’s Representative considers final deficiencies and defects have been corrected and it appears requirements of the Contract have been totally performed, make application for certificate of Total Performance. Refer
1.3 REINSPECTION

.1 Should status of work require reinspection by Owner’s Representative due to failure of work to comply with Contractor’s claims for inspection, Owner will deduct amount of compensation for reinspection services from payment to Contractor.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  SECTION INCLUDES

.1  As-built, samples, and specifications.

.2  Equipment and systems.

.3  Product data, materials and finishes, and related information.

.4  Operation and maintenance data.

.5  Spare parts, special tools and maintenance materials.

.6  Warranties and bonds.

.7  Final site survey.

1.2  RELATED SECTIONS

.1  Section 01 33 00 – Submittal Procedures.

.2  Section 01 45 00- Quality Control.

.3  Section 01 71 00 – Examination and Preparation.

.4  Section 01 77 00 - Closeout Procedures.

.5  Section 01 91 13 – General Commissioning (Cx) Requirements.

1.3  SUBMISSION

.1  Prepare instructions and data using personnel experienced in maintenance and operation of described products.

.2  Submit one copy of completed volumes in final form 15 days prior to final inspection.

.3  Copy will be returned after final inspection, with Owner’s Representative’s comments.

.4  Revise content of documents as required prior to final submittal.

.5  Two weeks prior to Substantial Performance of the Work, submit to the Owner’s Representative, two final copies of operating and maintenance manuals.

.6  Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.

.7  If requested, furnish evidence as to type, source and quality of products provided.
Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

Pay costs of transportation.

### FORMAT

1. Organize data in the form of an instructional manual.
2. Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
3. When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.
4. Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
5. Arrange content under Section numbers and sequence of Table of Contents.
6. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
7. Text: Manufacturer's printed data, or typewritten data.
8. Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
9. Provide CAD files in DWG format on CD. Also provide electronic files in PDF format.

### CONTENTS - EACH VOLUME

1. Table of Contents: provide title of project; names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties; schedule of products and systems, indexed to content of volume.
2. For each product or system:
   1. List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
   3. Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
   4. Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
   5. Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.
.6 Training: Refer to Section 01 91 13 – General Commissioning (Cx) Requirements.

1.6 AS-BUILTS AND SAMPLES

.1 In addition to requirements in General Conditions, maintain at the site for Owner’s Representative one record copy of:

.1 Contract Drawings.
.2 Specifications.
.3 Addenda.
.4 Change Orders and other modifications to the Contract.
.5 Reviewed shop drawings, product data, and samples.
.6 Field test records.
.7 Inspection certificates.
.8 Manufacturer’s certificates.

.2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection by Owner’s Representative.

1.7 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on set of blue line opaque drawings, provided by Owner’s Representative.

.2 Provide felt tip marking pens, maintaining red color pens for recording information.

.3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.
.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
.4 Field changes of dimension and detail.
.5 Changes made by change orders.
.6 Details not on original Contract Drawings.
.7 References to related shop drawings and modifications.

.5 Specifications: legibly mark each item to record actual construction, including:
   .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
   .2 Changes made by Addenda and change orders.

.6 Other Documents: submit manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

.7 At completion of project provide all recorded information on print drawings or alternatively transfer to CAD files in DWG format. Submit DWG files, also with electronic files in PDF format as part of the Closeout Submittals.

1.8 EQUIPMENT AND SYSTEMS

.1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Include test and balancing reports

.15 Additional requirements: As specified in individual specification sections.

1.9 MATERIALS AND FINISHES

.1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional Requirements: as specified in individual specifications sections.

1.10 SPARE PARTS

.1 Provide spare parts, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site location as directed; place and store.

.4 Receive and catalogue all items. Submit inventory listing to Owner’s Representative. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.11 MAINTENANCE MATERIALS

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site location as directed; place and store.

.4 Receive and catalogue all items. Submit inventory listing to Owner’s Representative. Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.
1.12 SPECIAL TOOLS

.1 Provide special tools, in quantities specified in individual specification section.
.2 Provide items with tags identifying their associated function and equipment.
.3 Deliver to project site place and store.
.4 Receive and catalogue all items. Submit inventory listing to Owner’s Representative. Include approved listings in Maintenance Manual.

1.13 STORAGE, HANDLING AND PROTECTION

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
.2 Store in original and undamaged condition with manufacturer's seal and labels intact.
.3 Store components subject to damage from weather in weatherproof enclosures.
.4 Store paints and freezable materials in a heated and ventilated room.
.5 Remove and replace damaged products at own expense and to satisfaction of Owner’s Representative.

1.14 WARRANTIES AND BONDS

.1 Develop warranty management plan to contain information relevant to Warranties.
.2 Submit warranty management plan to Owner’s Representative’s approval.
.3 Warranty management plan to include required actions and documents to assure that Owner receives warranties to which it is entitled.
.4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
.5 Assemble approved information in binder and submit upon acceptance of work. Organize binder as follows:

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

.6 Include information contained in warranty management plan as follows:

.1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.

.2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and commissioned systems such as fire protection, alarm systems, sprinkler systems, lightning protection systems.

.3 Provide list for each warranted equipment, item, feature of construction or system indicating:

.1 Name of item.
.2 Model and serial numbers.
.3 Location where installed.
.4 Name and phone numbers of manufacturers or suppliers.
.5 Names, addresses and telephone numbers of sources of spare parts.
.6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.

.7 Cross-reference to warranty certificates as applicable.
.8 Starting point and duration of warranty period.
.9 Summary of maintenance procedures required to continue warranty in force.

.10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
.11 Organization, names and phone numbers of persons to call for warranty service.

.12 Typical response time and repair time expected for various warranted equipment.

.4 Procedure and status of tagging of equipment covered by extended warranties.

.5 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

.7 Respond in a timely manner to oral or written notification of required construction warranty repair work.

.8 Written verification will follow oral instructions. Failure to respond will be cause for the Owner’s Representative to proceed with action against Contractor.
1.15 **PRE-WARRANTY CONFERENCE**

.1 Meet with Owner’s Representative to develop understanding of requirements of this section. Schedule meeting prior to contract completion, and at time designated by Owner’s Representative.

.2 Owner’s Representative will establish communication procedures for:
  
  .1 Notification of construction warranty defects.
  
  .2 Determine priorities for type of defect.
  
  .3 Determine reasonable time for response.

1.16 **WARRANTY TAGS**

.1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Owner’s Representative.

.2 Leave date of acceptance until project is accepted for occupancy.

.3 Indicate following information on tag:

  .1 Type of product/material.
  
  .2 Model number.
  
  .3 Serial number.
  
  .4 Contract number.
  
  .5 Warranty period.
  
  .6 Inspector's signature.
  
  .7 Construction Contractor.

**PART 2** **PRODUCTS (NOT APPLICABLE)**

**PART 3** **EXECUTION (NOT APPLICABLE)**

END OF SECTION
PART 1  GENERAL

1.1  RELATED WORK

.1 Division 1 - General Requirements.

.2 Comply with Asbestos Abatement Regulations, Latest Edition.

.3 01 41 00 – Regulatory Requirements

1.2  SECTION INCLUDES

.1 Cutting and removal and patching as required accommodating the work. Refer to Asbestos Assessment Report for areas containing asbestos.

.2 Encapsulation as specified of all cut edges of asbestos containing drywall.

.3 Enclosure as specified of all asbestos containing material as indicated above.

.4 Removal (other than defined minor amounts) of friable materials containing asbestos.

.5 Use of power tools that are fitted with dust collectors equipped with a HEPA filter to cut, shape, grind, drill, scrape, or abrade manufactured products containing asbestos.

1.3  REFERENCES

.1 Appendix A – Asbestos Material Re-Assessment – Twillingate Hospital, Twillingatee, NL

.2 Codes and standards referenced in this section refer to the latest edition thereof.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.205, Sealer for Application to Asbestos-Fibre-Releasing Materials.

1.4  DEFINITIONS

.1 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.

.2 Amended Water: Water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.

.3 Asbestos-Containing Materials (ACMs): Materials identified under Existing Conditions (Article 1.7), including fallen materials and settled dust.

.4 Asbestos Work Area: Area where actual removal, sealing and enclosure of spray or trowel-applied asbestos-containing materials takes place.
.5 Authorized Visitors: Building Owner, Asbestos Abatement Consultant or designated representative, and persons representing regulatory agencies.

.6 Friable Material: Material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.

.7 Occupied Area: Any area of the building or work site that is outside the Asbestos Work Area.

.8 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 sealants, and to prevent escape of asbestos fibres through the sheeting into a clean area.

.9 Glove Bag: Prefabricated glove bag as follows:
   .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
   .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
   .3 Equipped with reversible double-pull double throw zipper on top.
   .4 Straps for sealing ends around pipe.
   .5 Must incorporate internal closure strip if it is to be moved or used in more than one specific location.

.10 DOP Test: A testing method used to determine the integrity of the Negative Pressure unit using dioctyl phthalate (DOP) HEPA-filter leak test.

.11 Sprayer: Garden reservoir type sprayer or airless spray equipment capable of producing a mist or fine spray. Must be appropriate capacity for scope of work.

.12 Negative pressure: A system that 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 5 Pa 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.

.13 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 2 m apart.

.14 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 as follows: Place two overlapping sheets of polyethylene over an existing or temporarily framed doorway, secure each along the top of the doorway, secure the vertical edge of one sheet along one vertical side of the doorway, and secure the vertical edge of the other sheet along the opposite vertical side of the doorway. Reinforce free edges of polyethylene with duct tape and weight the bottom edge to ensure proper closing. Each polyethylene sheet shall overlap openings not less than 1.5 m on each side.
1.5 SUBMITTALS

.1 Before commencing work:

.1 Obtain from the appropriate agency and submit to Owner’s Representative all necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Owner’s Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.

.2 Submit proof satisfactory to Owner’s Representative that all employees have had instruction on the hazards of asbestos exposure, respirator use, dress, use of showers, entry and exit from work areas, and all aspects of work procedures and protective measures. Supervisory personnel shall have attended an asbestos abatement course, of not less than two days duration, approved by the Owner’s Representative. Submit proof of attendance in the form of a certificate. Minimum of one Supervisor for every five workers.

.3 Submit layout of proposed enclosures and decontamination facilities to Owner’s Representative for review.

.4 Submit documentation including test results for sealer proposed for use.

.5 Submit Provincial and/or local requirements for Notice of Project Form.

.6 Submit proof of Contractor’s Asbestos Liability Insurance.

.7 Submit proof satisfactory to the Owner’s Representative that all employees have respirator fitting and testing. Workers must be fit-tested with the respirator that is personally issued.

.8 Submit Workplace Health, Safety and Compensation Commission status and transcription of insurance.

.9 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets for chemicals or materials including but not limited to the following:

.1 encapsulants;

.2 amended water;

.3 slow-drying sealer.

1.6 REGULATORY REQUIREMENTS

.1 Comply with Federal, Provincial, and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications the more stringent requirement applies. Comply with regulations in effect at the time the work is performed.

.2 Follow Newfoundland Regulation of the Occupation Health and Safety Act, Asbestos Abatement Regulations, Latest Edition. All work as defined under this section must be completed by a “Qualified Asbestos Abatement Contractor” (registered with the Government of Newfoundland and Labrador)

.3 Follow regulations for the transport of asbestos waste, specifically the Transportation of Dangerous Goods Act, latest edition.
Follow regulations for the disposal of asbestos waste, specifically Waste Management Regulations and Waste Material Disposal Areas Regulations.

1.7 EXISTING CONDITIONS

.1 Prior to commencing work, verify with Owner’s Representative, and review whether an asbestos audit and/or Asbestos Management Plan are in place for the building.

1.7 Appendix A - Asbestos Material Re-Assessment – Twillingate Hospital, Twillingate, NL

.2 Information contained in audits and plans are for general information only and are not necessarily representative of all asbestos containing materials covered within the scope of this project.

.3 Notify Owner’s Representative of materials believed to contain asbestos encountered during the execution of work that is not contained in the audits and plans. Do not disturb such materials until instructed by Owner’s Representative.

1.8 INSTRUCTION AND TRAINING

.1 Before commencing work, provide to the Owner’s Representative satisfactory proof that every worker has had instruction and training in the hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from the Asbestos Work Area, in all aspects of work procedures including glove bag procedures, and in the use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at a minimum:

   .1 Proper fitting of the equipment.
   .2 Inspection and maintenance of the equipment.
   .3 Disinfecting of the equipment.
   .4 Limitations of the equipment.

.3 Instruction and training must be provided by a competent, qualified person.

.4 Supervisory personnel to complete required training.

1.9 WORKER PROTECTION

.1 Protective equipment and clothing to be worn by workers while in the Asbestos Work Area includes:

   .1 Respirator equipped with HEPA filter cartridges, personally issued to the worker and marked as to efficiency and purpose, and acceptable to the Provincial Authority having jurisdiction as suitable for the type of asbestos and the level of asbestos exposure in the Asbestos Work Area. If disposable type filters are used, provide sufficient filters so that workers can install new filters following disposal of used filters and before re-entering contaminated areas.
.2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.2 Each worker shall:

.1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. All street clothes, uncontaminated footwear, towels, and similar uncontaminated articles shall be stored in clean change room.

.2 Remove gross contamination from clothing before leaving work area then proceed to Equipment and Access Room. Place contaminated worksuits in receptacles for disposal with other asbestos-contaminated materials. Clean outside of respirator with soap and water. Remove respirator; remove filters and wet them and dispose of filters in the container provided for the purpose; and wash and rinse the inside of the respirator. When not in use in the work area, store work footwear in Equipment and Access Room. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.

.3 Provide facilities for washing and/or showering when leaving Asbestos Work Area, which shall be used by every worker. Hot and cold water supply is to be provided in such a manner to allow workers to adjust water temperature during decontamination.

.4 Enter the unloading room from outside dressed in clean coveralls to remove waste containers and equipment from the Holding Room of the Container and Equipment Decontamination Enclosure system. No worker shall use this system as a means to leave or enter the work area.

.3 Workers shall not eat, drink, smoke or chew gum or tobacco at the work site except in established clean room.

.4 Workers shall be fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement.

.5 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in 1.9 of this section, in both official languages.

.6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects the seal between the respirator and the face.

1.10 VISITOR PROTECTION

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing and respirators.
.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from work areas.

1.11 NOTIFICATION

.1 Not later than ten (10) days before commencing work on this project notify the Occupational Health and Safety Division in writing as per Regulation 194/91, Section 34 Sub-Section (7). Provide telephone notification immediately prior to start of work.

.2 Notify Sanitary Landfill site.

.3 Inform all sub-trades of the presence of friable asbestos-containing materials identified in the Existing Conditions.

.4 Submit to the Owner’s Representative a copy of all notifications prior to the start of work.

PART 2 PRODUCTS

2.1 MATERIALS

.1 All materials and equipment brought to work site must be in good condition and free of asbestos, asbestos debris, and fibrous materials. Disposable items must be of new materials only.

.2 Polyethylene: Minimum 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.

.3 Tape: Fibreglass reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

.4 Wetting agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether, or other material approved by Owner’s Representative, mixed with water in a concentration to provide adequate penetration and wetting of asbestos-containing material.

.5 Asbestos waste containers: Metal or fibre - type acceptable to dump operator with tightly fitting covers and 0.15 mm minimum thickness sealable polyethylene liners. Labelling requirements: Affix a pre-printed cautionary asbestos warning, in both official languages, that is clearly visible when ready for removal to disposal site.

.6 Encapsulants: Type 2 surface film forming type Class A water based conforming to CAN/CGSB-1.205, ULC listed.

.7 Glove bag: Acceptable materials include safe-T-strip products in configuration suitable for work, or alternative material approved by addendum during the tendering period in accordance with the Instructions to Tenderers. Glove bags intended for use in more than one location must be equipped with a reversible, double-pull, double-throw zipper on the top and at approximately the mid-section of the bag.
.8 Slow drying sealer: non-staining, clear, water-dispersible type that remains tacky on surface for at least 8 hours and designed for the purpose of trapping residual asbestos fibres. Sealer shall have flame spread and smoke developed rating less than 50

PART 3 EXECUTION

3.1 PREPARATION

.1 Work Areas:

.1 Shut off and isolate air handling and ventilation systems to prevent fibre dispersal to other areas of the building during work phase. Conduct smoke tests to ensure that duct work is airtight. Active return air ducts within the Asbestos Work Area shall have all joints and seams rigid seal and caulked.

.2 Clean proposed work area using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use a wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum equipment.

.3 Put negative pressure system in operation and operate continuously from the time the first polyethylene is installed to seal openings until final completion of the work including final cleanup. Provide continuous monitoring of pressure difference using an automatic recording instrument.

.4 Seal off all openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.

.5 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Cover floors first so that polyethylene extends at least 300 mm up walls then cover walls to overlap floor sheeting.

.6 Build airlocks at all entrances to and exits from work area so that work area is always closed off by one curtained doorway when workers enter or exit.

.7 At each access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where the number in parentheses indicates the font size to be used: "CAUTION ASBESTOS HAZARD AREA (25 mm) NO UNAUTHORIZED ENTRY (19 mm) WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)".

.8 After work area isolation, remove heating, ventilating, and air conditioning filters, pack in sealed plastic bags 0.15 mm minimum thick and treat as contaminated asbestos waste. Remove ceiling-mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Owner’s Representative. Use localized water spraying during fixture removal to reduce fibre dispersal.

.9 Maintain emergency and fire exits from work area, or establish alternative exits satisfactory to Provincial Fire Commissioner.

.10 Where application of water is required for wetting asbestos-containing materials, shut off electrical power, provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with
applicable CSA Standard. Ensure safe installation of electrical lines and equipment.

.11 After preparation of work area and Decontamination Enclosure Systems remove plaster ceilings, including lath, furring, channels, hangers, wires, clips, and dispose of as contaminated waste in specified containers. Spray ceiling debris and immediate work area with amended water (see definition in Section 1.4.2) to reduce dust, as work progresses.

.2 Worker Decontamination Enclosure System:

.1 Worker Decontamination Enclosure System shall comprise an Equipment and Access Room, a Wash Area Room, and a Clean Room, as follows:

.1 Equipment and Access Room: Build an Equipment and Access Room between Wash Area Room and work area, with two curtained doorways, one to the Wash Area Room and one to work area. Install portable toilet, waste receptor, and storage facilities for workers' shoes and any protective clothing to be reworn in work area. The Equipment and Access Room shall be large enough to accommodate specified facilities, any other equipment needed, and at least one worker allowing him/her sufficient space to undress comfortably.

.2 Wash Area Room: Build a Wash Area Room between the Clean Room and Equipment and Access Room, with two curtained doorways, one to the Clean Room and one to Equipment and Access Room. Provide a constant supply of hot and cold or warm water. Provide piping and connect to water sources and drains. Pump waste water through a 5 micrometre filter system acceptable to Owner’s Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.

.3 Clean Room: Build a Clean Room between the Wash Area Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Wash Area Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install a mirror to permit workers to fit respiratory equipment properly.

.3 Container and Equipment Decontamination Enclosure System:

.1 Container and Equipment Decontamination Enclosure System consists of a Staging Area within the work area, a Holding Room, and an Unloading Room. The purpose of this system is to provide a means to decontaminate waste containers, scaffolding, waste and material containers, vacuum and spray equipment, and other tools and equipment for which the Worker Decontamination Enclosure System is not suitable.

.1 Staging Area: Designate a Staging Area in the work area for gross removal of dust and debris from waste containers and equipment, labelling and sealing of waste containers, and temporary storage pending removal to Washroom. Staging Area shall have a curtained doorway to the Washroom.
.2 Holding Room: shall be of sufficient size to accommodate at least two waste containers and the largest item of equipment used.

.3 Unloading Room: Build an Unloading Room between the Holding Room and outside, with two curtained doorways, one to the Holding Room and one to outside.

.4 Construction of Decontamination Enclosures:
   .1 Build suitable framing for enclosures or use existing rooms where convenient, and line with polyethylene sheeting sealed with tape.
   .2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through a doorway, one of the two closures comprising the doorway always remains closed.

.5 Separation of Work Areas from Occupied Areas:
   .1 Separate parts of the building required to remain in use from parts of the building used for asbestos abatement by means of an airtight barrier system constructed as follows:
      .1 Build suitable floor to ceiling lumber or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal all joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create an airtight barrier.
      .2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.

.6 Maintenance of Enclosures:
   .1 Maintain enclosures in tidy condition.
   .2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
   .3 Visually inspect enclosures at the beginning of each working period.
   .4 Use smoke methods to test effectiveness of barriers when directed by Owner’s Representative.

.7 Asbestos Abatement work shall not commence until:
   .1 Arrangements have been made for disposal of waste.
   .2 For wet stripping techniques, arrangements have been made for containing, filtering, and disposal of waste water.
   .3 Work area and decontamination enclosures and parts of the building required to remain in use are effectively segregated.
   .4 Tools, equipment, and materials waste containers are on hand.
   .5 Arrangements have been made for building security.
   .6 Warning signs specified in PART 3 are displayed where access to contaminated areas is possible.
3.2 SUPERVISION

.1 A minimum of one Supervisor for every five workers is required. Refer to Asbestos Abatement Regulations for definition and training of supervisor.

.2 An approved Supervisor must remain within the Asbestos Work Area at all times during the disturbance, removal, or other handling of asbestos-containing materials.

3.3 ASBESTOS REMOVAL

.1 Before removing asbestos:

.1 Prepare site.

.2 Spray asbestos material with water containing the specified wetting agent, using airless spray equipment capable of providing a "mist" application to prevent release of fibres. Saturate the asbestos material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.

.2 Remove the saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack the material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport.

.3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure that containers are removed from the Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.

.4 After completion of stripping work, all surfaces from which asbestos has been removed shall be wire brushed and wet-sponged to remove all visible material. During this work keep the surfaces wet.

.5 Where Owner’s Representative decides complete removal of asbestos-containing material is impossible due to obstructions such as structural members or major service elements, and provides a written direction, encapsulate the material as follows:

.1 Apply surface film forming type sealer to provide 0.635 mm minimum dry film thickness over sprayed asbestos surfaces. Apply using airless spray equipment to avoid blowing off fibres.

.6 After wire brushing and wet sponging to remove visible asbestos, and after encapsulating asbestos-containing material impossible to remove, wet clean the entire work area including the Equipment and Access Room, and equipment used in the process. After a 24 hour period to allow for dust settling, wet clean these areas and objects again. During this settling period no entry, activity, or ventilation will be permitted.
3.4 PIPE INSULATION REMOVAL USING GLOVE BAG

.1 Place tools necessary to remove insulation in tool pouch. Wrap the bag around pipe and close zippers. Seal bag to pipe with cloth straps.

.2 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.

.3 Insert nozzle of a garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.

.4 When glove bags are intended for use at more than one location: After wash-down and application of sealer, seal off waste in lower section of bag using zipper at mid-section of bag. Remove air from top section of bag through the elasticized valve using a HEPA vacuum. Remove bag from pipe, reinstall in new location, and reseal to pipe prior to opening the lower section of the bag. Repeat stripping operation.

.5 If bag is to be moved along pipe, first remove air from top section through the elasticized valve using a HEPA vacuum. Next loosen straps, move bag, re-seal to pipe using double-pull zipper to pass hangers. Repeat stripping operation.

.6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through the elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.

.7 After removal of bag ensure that pipe is free of all residue. Remove all residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow-drying sealer to seal in any residual fibres.

.8 Upon completion of work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.

3.5 FINAL CLEANUP

.1 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum all visible asbestos-containing particles observed during cleanup, immediately, using HEPA vacuum equipment.

.2 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.

.3 Work areas, Equipment and Access Room, Wash Area Room, and other enclosures that may be contaminated shall be included in the clean-up.

.4 Sealed waste containers and all equipment used in the work shall be included in the cleanup and shall be removed from work areas, via the Container and Equipment Decontamination Enclosure System, at an appropriate time in the cleaning sequence.
.5 A final check shall be carried out to ensure that no dust or debris remains on surfaces as a result of dismantling operations and air-monitoring shall be carried out again to ensure that asbestos levels in the building do not exceed 0.10 fibres/cc. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible, in conjunction with sampling until levels meet this criteria.

.6 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative who shall ensure that dumping is done in accordance with governing regulations.

3.6 AIR MONITORING

.1 From commencement of work until completion of cleaning operations, air samples will be taken on a daily basis both inside and outside of work area enclosure in accordance with Asbestos Abatement Regulations (personal, perimeter and clearance) and conforming to applicable NIOSH sampling protocol. (ie: NIOSH 7400)

.2 Results of air monitoring inside the work area will be used to establish the type of respirators to be used. Workers may be required to wear sample pumps for up to full-shift periods. If fibre levels are above the safety factor of the respirators in use, the abatement will be stopped, means of dust suppression will be applied, and a higher safety factor in respiratory protection will be used by all persons inside the enclosure. If air monitoring shows that areas outside work area enclosures are contaminated, these areas shall be enclosed, maintained and cleaned, in the same manner as that applicable to work areas.

.3 During the course of the work, fibre content of the air will be measured by a PCM test. If PCM measurements exceed 0.10 f/cc work will be stopped until procedures are corrected.

.4 Conduct final air monitoring as follows: After the Asbestos Work Area has passed a visual inspection, an acceptable coat of lock-down agent has been applied to all surfaces of the enclosure, and an appropriate setting period has passed, perform air monitoring within the Asbestos Work Area. Final air monitoring results must show fibre levels of less than 0.10 f/cc. If air monitoring results show fibre levels in excess of 0.10 f/cc, re-clean the work area and apply another acceptable coat of lock-down agent to all surfaces. Repeat as necessary until fibre levels are less than 0.10 f/cc.

3.7 INSPECTION

.1 Inspection of the Asbestos Work Area will be performed to confirm compliance with the requirements of the specifications and governing authorities. Deviation from the Asbestos Abatement Regulations is not accepted without prior approval of the governing authority. Any deviation from these requirements that have not been approved in writing by the Owner’s Representative and the governing authority may result in a stoppage of work, at no cost to the Owner.
.2 The Owner’s Representative is empowered to inspect adherence to specific procedures and materials, and to inspect for final cleanliness and completion. Additional labour or materials expended by the Contractor to provide performance to the level specified shall be at no additional cost.

.3 The Owner’s Representative is empowered to order a shutdown of work when a leakage of asbestos from the Asbestos Work Area has occurred or is likely to occur. Additional labour or materials expended by the Contractor to provide performance to the level specified shall be at no additional cost.

END OF SECTION
PART 1  

GENERAL  

1.1  RELATED SECTIONS  

.1 Section 01 33 00 - Submittal Procedures.  

.2 Section 01 74 21 - Construction / Demolition Waste Management and Disposal.  

.3 Section 01 78 00 - Closeout Submittals.  

1.2  SUBMITTALS  

.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.  

.2 Shop drawings; submit drawings stamped and signed for approval by Owner’s Representative.  

.3 Shop drawings to show:  

.1 Mounting arrangements.  

.2 Operating and maintenance clearances.  

.4 Shop drawings and product data accompanied by:  

.1 Detailed drawings of bases, supports, and anchor bolts.  

.2 Acoustical sound power data, where applicable.  

.3 Points of operation on performance curves.  

.4 Manufacturer to certify current model production.  

.5 Certification of compliance to applicable codes.  

.5 In addition to transmittal letter referred to in Section 01 33 00 - Submittal Procedures: use MCAC "Shop Drawing Submittal Title Sheet". Identify section and paragraph number.  

.6 Closeout Submittals:  

.1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.  

.2 Operation and maintenance manual approved by, and final copies deposited with, Owner’s Representative before final inspection.  

.3 Operation data to include:  

.1 Control schematics for systems including environmental controls.  

.2 Description of systems and their controls.  

.3 Description of operation of systems at various loads together with reset schedules and seasonal variances.  

.4 Operation instruction for systems and component.  

.5 Description of actions to be taken in event of equipment failure.
.6 Valves schedule and flow diagram.
.7 Colour coding chart.

.4 Maintenance data to include:
.1 Servicing, maintenance, operation and trouble-shooting instructions for each item of equipment.
.2 Data to include schedules of tasks, frequency, tools required and task time.

.5 Performance data to include:
.1 Equipment manufacturer's performance datasheets with point of operation as left after commissioning is complete.
.2 Equipment performance verification test results.
.3 Special performance data as specified.
.4 Testing, adjusting and balancing reports as specified in Section 23 05 93 - Testing, Adjusting and Balancing for HVAC.

.6 Approvals:
.1 Submit 2 copies of draft Operation and Maintenance Manual to Owner's Representative for approval. Submission of individual data will not be accepted unless directed by Owner's Representative.
.2 Make changes as required and re-submit as directed by Owner's Representative.

.7 Additional data:
.1 Prepare and insert into operation and maintenance manual additional data when need for it becomes apparent during specified demonstrations and instructions.

.8 Site records:
.1 Owner's Representative will provide 1 set of reproducible mechanical drawings or AutoCAD files. Provide sets of white prints as required for each phase of work. Mark changes as work progresses and as changes occur. Include changes to existing mechanical systems, control systems and low voltage control wiring.
.2 Transfer information weekly to reproducibles, revising reproducibles to show work as actually installed.
.3 Use different colour for each service.
.4 Make available for reference purposes and inspection.

.9 As-built drawings:
.1 Prior to start of Testing, Adjusting and Balancing for HVAC, finalize production of as-built drawings.
.2 Identify each drawing in lower right hand corner in letters at least 12 mm high as follows: "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (Signature of Contractor) (Date).
.3 Submit to Owner's Representative for approval and make corrections as directed.
.4 Perform testing, adjusting and balancing for HVAC using as-built drawings.

.5 Submit completed reproducible as-built drawings with Operating and Maintenance Manuals.

.10 Submit copies of as-built drawings for inclusion in final TAB report.

1.3 QUALITY ASSURANCE

.1 Quality Assurance: in accordance with Section 01 45 00 - Quality Control.

.2 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.4 MAINTENANCE

.1 Furnish spare parts in accordance with Section 01 78 00 - Closeout Submittals as follows:

.1 One filter cartridge or set of filter media for each filter or filter bank in addition to final operating set.

.2 Provide one set of special tools required to service equipment as recommended by manufacturers and in accordance with Section 01 78 00 - Closeout Submittals.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Waste Management and Disposal:

.1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 MATERIALS

.1 All materials used on this project shall be new and CSA approved unless noted otherwise.

PART 3 EXECUTION

3.1 PAINTING, REPAIRS AND RESTORATION

.1 Do painting in accordance with Section 09 91 23 - Interior Painting.

.2 Prime and touch up marred finished paintwork to match original.

.3 Restore to new condition, finishes which have been damaged.
3.2  FIELD QUALITY CONTROL

.1 Site Tests: conduct following tests in accordance with Section 01 45 00 - Quality Control and submit report as described in PART 1 - SUBMITTALS.

.1 Submit tests as specified in other sections of this specification.

.2 Manufacturer's Field Services:

.1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - SUBMITTALS.

.2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

.3 Schedule site visits, to review Work, as directed in PART 1 - QUALITY ASSURANCE.

3.3  DEMONSTRATION

.1 Owner’s Representative will use equipment and systems for test purposes prior to acceptance. Contractor to supply labour, material, and instruments required for testing.

.2 Supply tools, equipment and personnel to demonstrate and instruct operating and maintenance personnel in operating, controlling, adjusting, trouble-shooting and servicing of all systems and equipment during regular work hours, prior to acceptance.

.3 Use operation and maintenance manual, as-built drawings, and audio visual aids as part of instruction materials.

.4 Instruction duration time requirements as specified in appropriate sections.

.5 Owner’s Representative may record these demonstrations on video tape for future reference.

3.4  PROTECTION

.1 Protect equipment and systems openings from dirt, dust, and other foreign materials with materials appropriate to system

END OF SECTION
PART 1  GENERAL

1.1 RELATED SECTIONS

.1 Section 01 74 11 – Cleaning.

.2 Section 01 74 21 – Construction / Demolition Waste Management and Disposal

.3 Section 07 84 00 – Firestopping.

.4 Section 23 08 02 – Cleaning and Start-up of Mechanical Piping Systems.

1.2 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal materials from landfill to metal recycling facility approved by Engineer / Architect.

1.3 QUALITY ASSURANCE

.1 Installers to be certified to journeyperson.

PART 2  PRODUCTS (NOT USED)

PART 3  EXECUTION

3.1 CONNECTIONS TO EQUIPMENT

.1 In accordance with manufacturer's instructions unless otherwise indicated.

.2 Use valves and either unions or flanges for isolation and ease of maintenance and assembly.

.1 Unions are not required in installations using grooved mechanical couplings (The couplings shall serve as unions).

.3 Use double swing joints when equipment mounted on vibration isolation and when piping subject to movement.

.4 The flexible type grooved joint couplings may be used in lieu of a flexible connector at equipment connections for vibration attenuation and stress relief. Couplings shall be
placed in close proximity to the source of the vibration, as per manufacturer’s recommendations.

3.2 CLEARANCES

.1 Provide clearance around systems, equipment and components for observation of operation, inspection, servicing, maintenance and as recommended by manufacturer.

.2 Provide space for disassembly, removal of equipment and components as recommended by manufacturer or as indicated (whichever is greater) without interrupting operation of other system, equipment, components.

3.3 DRAINS

.1 Install piping with grade in direction of flow except as indicated.

.2 Install drain valve at low points in piping systems, at equipment and at section isolating valves.

.3 Pipe each drain valve discharge separately to above floor drain. Discharge to be visible.

.4 Drain valves: NPS 3/4 gate or globe valves unless indicated otherwise, with hose end male thread, cap and chain.

3.4 AIR VENTS

.1 Install automatic air vents at high points in piping systems.

.2 Install isolating valve at each automatic air valve.

.3 Install drain piping to approved location and terminate where discharge is visible.

3.5 DIELECTRIC WATERWAY FITTINGS AND COUPLINGS

.1 General: Compatible with system, to suit pressure rating of system.

.2 Locations: Where dissimilar metals are joined.

.3 NPS 2 and under: Isolating waterway fittings, unions or bronze valves.

.1 Waterway fittings shall be complete with thermoplastic liner.

.4 Over NPS 2: Isolating waterway fittings and flanges.

.1 Waterway fittings shall be complete with thermoplastic liner.

3.6 PIPEWORK INSTALLATION

.1 Installation by certified journeyperson.

.2 Screwed fittings jointed with Teflon tape or pipe dope as recommended by manufacturer.

.3 Grooved joint couplings and fittings shall be installed in accordance with the manufacturer’s written installation instructions.
.1 Gaskets shall be verified as suitable for the intended service prior to installation. Gaskets shall be molded and produced by the coupling manufacturer.

.2 The grooved coupling manufacturer’s factory trained representative shall provide on-site training for contractor’s field personnel in the use of grooving tools, application of groove, and installation of grooved joint products. The manufacturer’s representative shall periodically visit the jobsite and review installation. Contractor shall remove and replace any joints deemed improperly installed.

.4 Protect openings against entry of foreign material.

.5 Install to isolate equipment and allow removal without interrupting operation of other equipment or systems.

.6 Assemble piping using fittings manufactured to ANSI standards.

.7 Saddle type branch fittings may be used on mains if branch line is no larger than half the size of main.

.1 Hole saw (or drill) and ream main to maintain full inside diameter of branch line prior to welding saddle.

.8 Install exposed piping, equipment, rectangular cleanouts and similar items parallel or perpendicular to building lines.

.9 Install concealed pipework to minimize furring space, maximize headroom, conserve space.

.10 Slope piping, except where indicated, in direction of flow for positive drainage and venting.

.11 Install, except where indicated, to permit separate thermal insulation of each pipe.

.12 Group piping wherever possible and as indicated.

.13 Ream pipes, remove scale and other foreign material before assembly.

.14 Use eccentric reducers at pipe size changes to ensure positive drainage and venting.

.15 Provide for thermal expansion as indicated.

.16 Valves:

.1 Install in accessible locations.

.2 Remove interior parts before soldering.

.3 Install with stems above horizontal position unless otherwise indicated.

.4 Valves accessible for maintenance without removing adjacent piping.

.5 Install globe valves in bypass around control valves.

.6 Use ball or butterfly valves at branch take-offs for isolating purposes except where otherwise specified.
7. Install butterfly valves on chilled water and related condenser water systems only.

8. Install butterfly valves between weld neck flanges to ensure full compression of liner.

9. Install ball valves for glycol service.

10. Use chain operators on valves NPS 2-1/2 and larger where installed more than 2400 mm above floor in Mechanical Rooms.

.17 Check Valves:

.1 Install silent check valves on discharge of pumps and in vertical pipes with downward flow and elsewhere as indicated.

.2 Install swing check valves in horizontal lines on discharge of pumps and elsewhere as indicated.

3.7 SLEEVES

.1 General: Install where pipes pass through masonry, concrete structures, fire rated assemblies, and elsewhere as indicated.

.2 Material: Schedule 40 black steel pipe.

.3 Construction: Foundation walls and where sleeves extend above finished floors to have annular fins continuously welded on at mid-point.

.4 Sizes: 6 mm minimum clearance between sleeve and uninsulated pipe or between sleeve and insulation.

.5 Installation:

.1 Concrete, masonry walls, concrete floors on grade: Terminate flush with finished surface.

.2 Other floors: Terminate 25 mm above finished floor.

.3 Before installation, paint exposed exterior surfaces with heavy application of zinc-rich paint.

.6 Sealing:

.1 Foundation walls and below grade floors: Fire retardant, waterproof non-hardening mastic.

.2 Elsewhere: Provide space for firestopping. Maintain fire rating integrity.

.3 Sleeves installed for future use: Fill with lime plaster or other easily removable filler.

.4 Ensure no contact between copper pipe or tube and sleeve.

3.8 ESCUTCHEONS

.1 Install on pipes passing through walls, partitions, floors, and ceilings in finished areas.

.2 Construction: One piece type with set screws. Chrome or nickel plated brass or type 302 stainless steel.
.3 Sizes: Outside diameter to cover opening or sleeve. Inside diameter to fit around pipe or outside of insulation if so provided.

3.9 PREPARATION FOR FIRESTOPPING

.1 Material and installation within annular space between pipes, ducts, insulation and adjacent fire separation to Section 07 84 00 - Firestopping.

.2 uninsulated unheated pipes not subject to movement: No special preparation.

.3 uninsulated heated pipes subject to movement: Wrap with non-combustible smooth material to permit pipe movement without damaging firestopping material or installation, or install per manufacturer’s recommendation as specified within the associated approval.

.4 Insulated pipes and ducts: Ensure integrity of insulation and vapour barriers.

3.10 FLUSHING OUT OF PIPING SYSTEMS

.1 In accordance with Section 23 08 02 - Cleaning and Start-up of Mechanical Piping Systems.

.2 Before start-up, clean interior of piping systems in accordance with requirements of Section 01 74 11 - Cleaning supplemented as specified in relevant sections of other Divisions.

.3 Preparatory to acceptance, clean and refurbish equipment and leave in operating condition, including replacement of filters in piping systems.

3.11 PRESSURE TESTING OF EQUIPMENT AND PIPEWORK

.1 Advise Owner’s Representative, 48 hours minimum prior to performance of pressure tests.

.2 Pipework: Test as specified in relevant sections of other sections or Divisions.

.3 Maintain specified test pressure without loss for 4 hours minimum unless specified for longer period of time in relevant sections of other Divisions.

.4 Prior to tests, isolate equipment and other parts which are not designed to withstand test pressure or media.

.5 Conduct tests in presence of Owner’s Representative. Work to be carried out in off hours after 5 p.m., weekends or holidays.

.6 Pay costs for repairs or replacement, retesting, and making good. Owner’s Representative to determine whether repair or replacement is appropriate.
.7 Insulate or conceal work only after approval and certification of tests by Owner’s Representative.

END OF SECTION
PART 1  GENERAL

1.1  RELATED SECTIONS
   .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal
   .2 Section 23 05 05 - Installation of Pipework.
   .3 Section 23 21 13.02 - Hydronic Systems: Steel

1.2  REFERENCES
   .1 American National Standards Institute/American Society of Mechanical Engineers. (ANSI/ASME)
      .1 ANSI/ASME B31.9 Building Services.
      .2 ANSI/ASME Boiler and Pressure Vessel Code
         .1 Section V: Nondestructive Examination.
         .2 Section IX: Welding and Brazing Qualifications.
   .2 American National Standards Institute/American Water Works Association (ANSI/AWWA)
      .1 ANSI/AWWA C206, Field Welding of Steel Water Pipe.
   .3 American Welding Society (AWS)
      .1 AWS C1.1, Recommended Practices for Resistance Welding.
      .2 AWS Z49.1, Safety Welding, Cutting and Allied Process.
      .3 AWS W1, Welding Inspection Handbook.
   .4 Canadian General Standards Board
   .5 Canadian Standards Association (CSA International)
      .1 CSA W47.2, Certification of Companies for Fusion Welding of Aluminum.
      .2 CSA W48 series-, Filler Metals and Allied Materials for Metal Arc Welding.
      .3 CSA W117.2, Safety in Welding, Cutting and Allied Processes.
      .4 CSA W178.1, Certification of Welding Inspection Organizations.
      .5 CSA W178.2, Certification of Welding Inspectors.

1.3  QUALIFICATIONS
   .1 Welders
      .1 Welding qualifications in accordance with CSA B51
      .2 Use qualified and licensed welders possessing certificate for each procedure performed from authority having jurisdiction.
.3 Furnish welder's qualifications to Owner’s Representative.
.4 Each welder to possess identification symbol issued by authority having jurisdiction.
.5 Certification of companies for fusion welding of aluminum in accordance with CSA W47.2.

.2 Inspectors

1.4 QUALITY ASSURANCE

.1 Registration of welding procedures in accordance with CSA B51, CSA B52 and provincial regulations.
.2 Copy of welding procedures available for inspection.
.3 Safety in welding, cutting and allied processes in accordance with CSA-W117.2.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction / Demolition Waste Management and Disposal, and with the Waste Reduction Workplan.
.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
.3 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
.4 Divert unused metal materials from landfill to metal recycling facility as approved by Owner’s Representative.

PART 2 PRODUCTS

2.1 ELECTRODES

.1 Electrodes: in accordance with CSA W48 Series.

PART 3 EXECUTION

3.1 WORKMANSHIP

.1 Welding: in accordance with ANSI/ASME B31.1 B31.3, B 31.5, B31.9, ANSI/ASME Boiler and Pressure Vessel Code, Sections I and IX and ANSI/AWWA C206, using procedures conforming to AWS C1.1, and special procedures specified elsewhere in Mechanical Division and applicable requirements of provincial authority having jurisdiction.
3.2 INSTALLATION REQUIREMENTS

.1 Identify each weld with welder's identification symbol.

.2 Backing rings:
   .1 Where used, fit to minimize gaps between ring and pipe bore.

.3 Fittings:
   .1 NPS 2 and smaller: install welding type sockets.
   .2 Branch connections: install welding tees or forged branch outlet fittings.

3.3 INSPECTION AND TESTS - GENERAL REQUIREMENTS

.1 Review weld quality requirements and defect limits of applicable codes and standards with Owner’s Representative before work is started.

.2 Formulate "Inspection and Test Plan" in co-operation with Owner’s Representative.

.3 Do not conceal welds until they have been inspected, tested and approved by inspector.

.4 Provide for inspector to visually inspect welds during early stages of welding procedures in accordance with Welding Inspection Handbook. Repair or replace defects as required by codes and as specified.

3.4 SPECIALIST EXAMINATIONS AND TESTS

.1 General
   .1 Inspect and test welds in accordance with "Inspection and Test Plan" by non-destructive visual examination.

.2 Hydrostatically test welds to requirements of ANSI/ASME B31.1.

.3 Visual examinations: include entire circumference of weld externally and wherever possible internally.

3.5 DEFECTS CAUSING REJECTION

.1 As described in ANSI/ASME B31.1 and ANSI/ASME Boiler and Pressure Vessels Code.

3.6 REPAIR OF WELDS WHICH FAILED TESTS

.1 Re-inspect and re-test repaired or re-worked welds at Contractor's expense.

END OF SECTION
PART 1  GENERAL

1.1  SECTION INCLUDES

.1 Materials and installation for thermometers and pressure gauges in piping systems.

1.2  RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures
.2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal
.3 Section 23 05 23.01 – Valves - Bronze
.4 Section 23 05 53.01 – Mechanical Identification

1.3  REFERENCES

.1 American Society of Mechanical Engineers (ASME)
   .1 ASME B40.100, Pressure Gauges and Gauge Attachments.
   .2 ASME B40.200, Thermometers, Direct Reading and Remote Reading.
.2 Canadian General Standards Board (CGSB)
   .1 CAN/CGSB-14.4, Thermometers, Liquid-in-Glass, Self Indicating, Commercial/Industrial Type.
   .2 CAN/CGSB-14.5, Thermometers, Bimetallic, Self-Indicating, Commercial/Industrial Type.

1.4  SUBMITTALS

.1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
.2 Submit shop drawings and product data.
.3 Submit manufacturer’s product data for following items:
   .1 Thermometers
   .2 Pressure Gauges
   .3 Ball Valves
   .4 Syphons
   .5 Wells

1.5  HEALTH AND SAFETY

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.
1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

.2 Collect, separate and place in designated containers for reuse and recycling, paper, plastic, polystyrene, corrugated cardboard packaging, steel, metal, in accordance with Waste Management Plan.

.3 Fold up metal banding, flatten and place in designated area for recycling.

.4 Place materials defined as hazardous or toxic waste in designated containers.

.5 Ensure emptied containers are sealed, labelled and stored safely for disposal away from children.

PART 2 PRODUCTS

2.1 GENERAL

.1 Design point to be at mid point of scale or range.

.2 Ranges: dual imperial and metric.

2.2 DIRECT READING THERMOMETERS

.1 Industrial, variable angle type, liquid filled, accuracy ± 1 scale division, 225 mm scale length: to CAN/CGSB14.4 or ASME B40.200.

.1 Acceptable Product: Trerice, Ashcroft, Wika, Winters, Marsh.

2.3 REMOTE READING THERMOMETERS

.1 100 mm diameter liquid filled or vapor activated dial type: to CAN/CGSB-14.4 or ASME B40.200, accuracy within one scale division, brass movement, stainless steel capillary, stainless steel spiral armour, stainless steel bulb and polished brass or stainless steel case for wall mounting.

.1 Acceptable Product: Trerice, Ashcroft, Wika, Winters, Marsh.

2.4 THERMOMETER WELLS

.1 Copper pipe: copper or bronze.

.2 Steel pipe: brass or stainless steel.

2.5 PRESSURE GAUGES

.1 Dial type: 112 mm to ASME B40.100, Grade 2A, stainless steel or phosphor bronze bourdon tube having 0.5% accuracy full scale, 1% accuracy for liquid filled.

.1 Acceptable Product: Trerice, Ashcroft, Wika, Winters, Marsh.
.2 Provide:
  .1 Siphon for steam service.
  .2 Snubber for pulsating operation.
  .3 Diaphragm assembly for corrosive service.
  .4 Gasketted pressure relief back with solid front.
  .5 Bronze ball valve to Section 23 05 23.01 – Valves – Bronze.
  .6 Oil filled for high vibration applications, such as pumps.

PART 3 EXECUTION

3.1 GENERAL
  .1 Install so they can be easily read from floor or platform. If this cannot be accomplished, install remote reading units.

  .2 Install between equipment and first fitting or valve.

3.2 THERMOMETERS
  .1 Install in wells on piping. Provide heat conductive material inside well.

  .2 Install on inlet and outlet of:
     .1 Boilers.
     .2 In other locations as indicated.

  .3 Install wells.

  .4 Use extensions where thermometers are installed through insulation.

3.3 PRESSURE GAUGES
  .1 Install in following locations:
     .1 Suction and discharge of pumps. (Liquid filled.)
     .2 Upstream and downstream of PRV's.
     .3 Upstream and downstream of control valves.
     .4 Inlet and outlet of coils.
     .5 Inlet and outlet of heat exchangers.
     .6 Outlet of boilers.
     .7 In other locations as indicated.

  .2 Install ball valves.

  .3 Use extensions where pressure gauges are installed through insulation.
3.4 NAMEPLATES

.1 Install engraved lamicoid nameplates as specified in Section 23 05 53.01 - Mechanical Identification, identifying medium.

END OF SECTION
PART 1 GENERAL

1.1 SUMMARY

.1 Section Includes:

.1 Bronze – valves.

1.2 RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures

.2 Section 01 35 29.06 – Health and Safety Requirements.

.3 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

.4 Section 01 78 00 – Closeout Submittals.

.5 Section 23 05 05 – Installation of Pipework

1.3 REFERENCES

.1 American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME)

.1 ANSI/ASME B1.20.1, Pipe Threads, General Purpose (Inch.)

.2 ANSI/ASME B16.18, Cast Copper Alloy Solder Joint Pressure Fittings

.3 ANSI/ASME B16.22, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

.2 American Society for Testing and Materials (ASTM)

.1 ASTM A 276, Specification for Stainless Steel Bars and Shapes.

.2 ASTM A536, Specification for Ductile Iron Castings.

.3 ASTM B 16, Specification for Free-Cutting Brass Rod Bar and Shapes for Use in Screw Machines.

.4 ASTM B 62, Specification for Composition Bronze or Ounce Metal Castings.

.5 ASTM B 283, Specification for Copper and Copper Alloy Die Forgings (Hot Pressed)

.6 ASTM B 505/B505M, Specification for Copper-Base Alloy Continuous Castings.

.7 ASTM B584, Specification for Copper Alloy Sand Castings for General Applications.

.3 Canadian Standards Association (CSA)

.1 CSA B242, Groove and Solder Type Mechanical Pipe Couplings.

.4 Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS).
MSS SP-25, Standard Marking System for Valves, Fittings, Flanges and Unions.

.2 MSS SP-80, Bronze Gate, Globe, Angle and Check Valves.

.3 MSS SP-110, Ball Valves, Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

1.4 SUBMITTALS

.1 Submittals in accordance with Section 01 33 00 – Submittal Procedures.

.2 Product Data: submit WHMIS MSDS – Material Safety Data Sheets.

.1 Submit shop drawings and product data in accordance with Section 01 33 00 – Submittal Procedures.

.2 Submit data for valves specified in this section.

.3 Grooved joint couplings and fittings to be indicated on product submittals and to be specifically identified with the applicable style or series designation.

.3 Closeout Submittals

.1 Submit maintenance data for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.

1.5 QUALITY ASSURANCE

.1 Health and Safety

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

.2 All grooved joint couplings, fittings, valves, and specialties to be the products of a single manufacturer. Grooving tools to be of the same manufacturer as the grooved components.

1.6 DELIVERY, STORAGE AND DISPOSAL

.1 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

.2 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Except for specialty valves, to be single manufacturer.

.2 All products to have Canadian registration numbers (CRN).
End Connections

1. Connection into adjacent piping/tubing:
   2. Copper tube systems:
      2. Grooved ends to copper tube dimensions and CSA B242.

Lockshield Keys

1. Where lockshield valves are specified, provide 10 keys of each size: malleable iron cadmium plated.

GATE VALVES

1. Requirements common to all gate valves, unless specified otherwise:
   2. Bonnet: with hex. shoulders.
   4. Inspection and pressure testing: to MSS SP-80. Tests to be hydrostatic.
   5. Packing: high grade non-asbestos packing.
   8. Glass 125, WP=860 kPa steam, 1.4 mPa WOG
   9. Class 150 WP=1.03 mPa steam, 2.07 mPa WOG.

2. NPS 2 and under, non-rising stem, solid wedge disc, Class 125:
   1. Body: with long disc guides, screwed bonnet with stem retaining nut.
   2. Operator: Handwheel

3. NPS 2 and under, non-rising stem, solid wedge disc, Class 150:
   1. Body: with long disc guides, screwed bonnet with stem retaining nut.
   2. Operator: Handwheel

4. NPS 2 and under, rising stem, split wedge disc, Class 125:
   1. Body: with long disc guides, screwed bonnet.
   2. Disc: split wedge, bronze to ASTM B283, loosely secured to stem.
   3. Operator: Handwheel

5. NPS 2 and under, rising stem, solid wedge disc, Class 125:
   1. Body: with long disc guides, screwed bonnet.
   2. Operator: Handwheel

6. NPS 2 and under, rising stem, solid wedge disc, Class 150:
2.3 GLOBE VALVES

.1 Requirements common to all globe valves, unless specified otherwise:

.1 Standard specification: MSS SP-80.
.2 Bonnet: union with hex. shoulders.
.3 Connections: screwed with hex. shoulders.
.4 Inspection and pressure testing: to MSS SP-80. Tests to be hydrostatic.
.5 Packing: non-asbestos.
.6 Handwheel: non-ferrous.
.7 Handwheel Nut: bronze to ASTM B62.
.8 Glass 125, WP=860 kPa steam, 1.4 MPa WOG
.9 Class 150 WP=1.03 mPa steam, 2.07 MPa WOG.

.2 NPS 2 and under, composition disc, Class125:

.1 Body and bonnet: screwed bonnet.
.2 Disc and seat: renewable rotating PTFE disc regrindable bronze seat, loosely secured to bronze stem to ASTM B505.
.3 Operator: Handwheel.

.3 NPS 2 and under, composition disc, Class 150:

.1 Body and bonnet: union bonnet.
.2 Disc and seat: renewable rotating PTFE disc in easily removable disc holder, regrindable bronze seat, loosely secured to bronze stem to ASTM B505.
.3 Operator: Handwheel.

.4 NPS 2 and under, plug disc, Class 150, screwed ends:

.1 Body and bonnet: union bonnet.
.2 Disc and seat ring: tapered plug type with disc stem ring of stainless steel to ASTM A276, loosely secured to stem.
.3 Operator: Handwheel.

.5 Angle valve, NPS 2 and under, composition disc, Class 150:

.1 Body and bonnet: union bonnet.
.2 Disc and seat: renewable rotating PTFE disc in slip-on easily removable disc holder having integral guides, regrindable bronze seat, loosely secured to stem.
.3 Operator: Handwheel.

2.4 CHECK VALVES

.1 Requirements common to all check valves, unless specified otherwise:

.1 Standard specification: MSS SP-80.
2.2 Connections: with hexagonal shoulders.

2.3 Glass 125, WP=860 kPa steam, 1.4 MPa WOG

2.4 Class 150 WP=1.03 MPa steam, 2.07 MPa WOG

2.5 Class 200 1.4 MPa CWP

.2 NPS 2 and under, swing type, bronze disc, Class 125:

.1 Body: Y-pattern with integral seat at 45°, screw-in cap with hex head.

.2 Disc and seat: renewable rotating disc, two-piece hinge disc construction; seat: regrindable.

.3 NPS 2 and under, swing type, bronze disc, Class 150:

.1 Body: Y-pattern with integral seat at 45°, screw-in cap with hex head.

.2 Disc and seat: renewable rotating disc, two-piece hinge disc construction; seat: regrindable.

.4 NPS 2 and under, swing type, composition disc, Class 200:

.1 Body: Y-pattern with integral seat at 45°, screw-in cap with hex. head.

.2 Disc: renewable rotating disc, of number 6 composition to suit service conditions, bronze two-piece hinge disc construction.

.5 NPS 2 and under, horizontal lift type, composition disc, Class 150:

.1 Body: with integral seat, union bonnet ring with hex. shoulders, cap.

.2 Disc: renewable PTFE for steam, #6 composition rotating disc for water, oil or gas service in disc holder having guides top and bottom, of bronze to ASTM B62.

.6 NPS 2 and under, vertical lift type, bronze disc, Class 125:

.1 Disc: rotating disc having guides top and bottom, disc guides, retaining rings.

.7 NPS 2 and under, vertical or horizontal, lift type, 1380 kPa CWP.

.1 Disc: 301 stainless steel, center guided.

2.5 SILENT CHECK VALVES

.1 NPS 2 and under:

.1 Body: cast high tensile bronze to ASTM B62 with integral seat.

.2 Pressure rating: Class 125.

.3 Connections: screwed ends to ANSI B1.20.1 and with hex. shoulders.

.4 Disc and seat: renewable rotating disc.

.5 Stainless steel spring, heavy duty.

.6 Seat: regrindable.

2.6 BALL VALVES

.1 NPS 2 and under:
Body and cap: cast high tensile bronze to ASTM B16 or ASTM B62.
Pressure rating: Class 125, 860 MPa steam.
Stem: tamperproof ball drive.
Stem packing nut: external to body.
Ball and seat: replaceable stainless steel or hard chrome, plated brass solid ball and teflon seats.
Stem seal: TFE, EPDM, Nitrile, Fluoroelastomer with with external packing nut.
Operator: removable lever handle with extension for insulated pipe.
Cap and drain for drain service.

2.7 BUTTERFLY VALVES
NPS 2-1/2 through NPS 6.
Body: cast bronze per CDA-836 (85-5-5-5).
Pressure rating: 2065-kPa CWP.
Connections: copper tube dimensioned grooved ends.
Disc: ductile iron per ASTM A536 with elastomer coating.
Stem: integrally cast with disc.
Stem Nuts: nickel plated 416 stainless steel.
Operator: gear operator, NPS and over.

2.8 ACCEPTABLE PRODUCT

PART 3 EXECUTION
3.1 INSTALLATION
Install rising stem valves in upright position with stem above horizontal.
Remove internal parts before soldering.
Adjoining tube, couplings, and fittings with grooved joint valves shall be copper-tube dimensioned. Flaring tube or fitting ends to accommodate IPS sized valves is not permitted.
Install valves with unions at each piece of equipment arranged to allow servicing, maintenance, and equipment removal.
Unions are not required in installations using grooved mechanical couplings. The couplings shall serve as unions.
3.2 COMMISSIONING

.1 As part of commissioning activities, develop schedule of valves and record thereon identifier, location, service, purchase order number and date, manufacturer, identification data specified above.

END OF SECTION
PART 1  GENERAL

1.1  SECTION INCLUDES

.1  Valves cast iron, gate, globe, and check.

1.2  RELATED SECTIONS

.1  Section 01 33 00 – Submittal Procedures
.2  Section 01 35 29.06 – Health and Safety Requirements.
.3  Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
.4  Section 01 78 00 – Closeout Submittals.
.5  Section 23 05 05 – Installation of Pipework

1.3  REFERENCES

.1  American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME)

.1  ANSI/ASME B16.1, Cast Iron Pipe Flanges and Flanged Fittings.

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

.3  ASTM B 61, Specification for Steam or Valve Bronze Castings.
.4  ASTM B 62 – Specification for Composition Bronze or Ounce Metal Castings.
.5  ASTM B 85, Specification for Aluminum-Alloy Die Castings.
.6  ASTM B 209, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.3  Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS).

.1  MSS SP-67, Butterfly Valves.
.2  MSS SP-70, Cast Iron Gate Valves, Flanged and Threaded Ends.
.3  MSS SP-71, Grey Iron Swing Check Valves, Flanged and Threaded Ends
.4  MSS SP-82, Valve Pressure Testing Methods
.5  MSS SP-85, Cast Iron Globe and Angle Valves, Flanged and Threaded Ends.

1.4  SUBMITTALS

.1  Submittals in accordance with Section 01 33 00 – Submittal Procedures.
.2 Product Data: submit WHMIS MSDS – Material Safety Data Sheets.

.1 Submit shop drawings and product data in accordance with Section 01 33 00 – Submittal Procedures.

.2 Submit data for valves specified this section.

.3 Closeout Submittals

.1 Submit maintenance data for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.

1.5 QUALITY ASSURANCE

.1 Health and Safety

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

1.6 DELIVERY, STORAGE AND DISPOSAL

.1 Waste Management and Disposal:

.1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

.2 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

1.7 MAINTENANCE

.1 Extra Materials

.1 Furnish following spare parts:

.1 Valve seats: one for every 10 valves each size. Minimum 1.

.2 Discs: one for every 10 valves, each size. Minimum 1.

.3 Stem packing: one for every 10 valves, each size. Minimum 1.

.4 Valve handles: 2 of each size.

.5 Gaskets for flanges: one for every 10 flanged joints.

PART 2 PRODUCTS

2.1 MATERIAL

.1 Except for specialty valves, to be of single manufacturer.

.2 Standard specifications:

.1 Gate valves: MSS SP-70.

.2 Globe valves: MSS SP-85.

.3 Check valves: MSS SP-71.

.3 Requirements common to valves, unless specified otherwise:
1. Body, bonnet: cast iron to ASTM B209 Class B.
3. Inspection and pressure testing: to MSS SP-82.
5. Stem: to have precision-machined Acme or 60°V threads, top screwed for handwheel nut.
9. Identification tag: with catalogue number, size, other pertinent data.

All products to have Canadian Registration Numbers (CRN).

Bronze trim for steam, water, air or glycol service, iron trim for oil, gas or gasoline.

Acceptable Product: Crane, Jenkins, Milwaukee, Newman Hattersley, Kitz, M.A. Stewart, NIBCO.

2.2 GATE VALVES

1. NPS 2 1/2 - 8, non rising stem, inside screw, bronze or iron trim, solid wedge disc:
   1. Body and multiple-bolted bonnet: with bosses in body and bonnet for taps and drains, full length disc guides designed to ensure correct re-assembly, Class 125.
   2. Bronze Trim:
      2. Seat rings: renewable bronze to ASTM B62, screwed into body.
   3. Iron Trim:
      1. Disc: Solid offset taper wedge, cast iron to ASTM A126 Class B, secured to wrought steel stem.
      2. Seat: Integral with body.
      4. Operator: Handwheel

2. NPS 2 1/2-8, outside screw and yoke (OS&Y), bronze or iron trim, solid wedge disc:
   1. Body and multiple-bolted bonnet: with bosses in body and bonnet for taps and drains, full length disc guides designed to ensure correct re-assembly, yoke, yoke hub, yoke sleeve and nut, Class 125.
   2. Bronze Trim:
      1. Disc: Solid offset taper wedge, bronze to ASTM B62 up to NPS 3, cast iron with bronze disc rings on other sizes, secured to stem through integral forged T-head disc-stem connection.
.2 Seat rings: renewable bronze screwed into body.
.3 Stem: manganese-bronze.

.3 Iron Trim:
.1 Disc: Solid offset taper all-cast iron, secured to stem through integral forged T-head disc-stem connection.
.2 Seat rings: integral with body.
.3 Stem: nickel-plated steel for iron trim.

.4 Pressure-lubricated operating mechanism.
.5 Operator: Handwheel.

2.3 UNDERWRITERS APPROVED GATE VALVE

.1 NPS 2 1/2 - 14, OS&Y:

.1 Approvals: UL and FM approved for fire service.
.2 UL and FM Label: on valve yoke.
.3 Body, Bonnet: cast iron to ASTM A126 Class B. Wall thicknesses to ANSI B16.1 and ULC C-262 (B).
.4 Bonnet bushing, yoke sleeve: bronze, to FM requirements.
.5 Packing gland: bronze.
.6 Stem: manganese bronze. Diameter to ULC C-262 (B).
.7 Stuffing box dimensions, gland bolt diameter: to ULC C-262 (B).
.8 Bosses for bypass valve, drain: on NPS 4 and over.
.9 Disc: solid taper wedge. Up to NPS 3: bronze. NPS 4 and over: cast iron with bronze disc rings.
.10 Disc seat ring: self-aligning, Milwood undercut on NPS 3 - 12.
.11 Pressure rating:
.1 NPS 2-1/2 - 12: 1.7 MPa CWP
.2 NPS 14:1.2 MPa CWP
.5 Operator: Handwheel.

2.4 GLOBE VALVES

.1 NPS 2 ½ - 10, OSY:

.1 Body: with multiple-bolted bonnet.
.2 WP: 860 kPa steam, 1.4 MPa CWP
.3 Bonnet-yolk gasket: non-asbestos.
.4 Disc: bronze to ASTM B 62, fully guided from bottom, securely yet freely connected to stem for swivel action and accurate engagement with disc.
.5 Seat ring: renewable, regrindable, screwed into body.
.6 Stem: bronze to ASTM B 62.
.7 Operator: handwheel.
2.5 **BYPASSES FOR GATE AND GLOBE VALVES**

.1 Locations: on valves as indicated.

.2 Position of bypass valve on main valves: spindle uprights or parallel position.

.3 Size of bypass valve:

  .1 Main valve up to NPS 8: NPS 3/4.
  .2 Main valve NPS 10 and over: NPS 1.

.4 Type of bypass valves:

  .1 On gate valve: globe, with composition disc, trim, to Section 23 05 23.01 – Valves – Bronze. Pressure rating to match main valve.
  .2 On globe valve: globe, with composition disc, bronze trim, to Section 23 05 23.01 - Valves – Bronze. Pressure rating to match main valve.

2.6 **VALVE OPERATORS**

.1 Install valve operators as follows:

  .1 Handwheel: on valves except as specified.
  .2 Handwheel with chain operators: on valves installed more than 2400 mm above floor in boiler rooms and mechanical equipment rooms.

2.7 **CHECK VALVES**

.1 Swing check valves, Class 125:

  .1 Body and bolted cover: with tapped and plugged opening on each side for hinge pin. Flanged ends: plain faced with smooth finish.
    
    .1 Up to NPS 16: cast iron to ASTM A126 Class B.
    .2 NPS 18 and over: cast iron to ASTM A126 Class C.

  .2 Ratings:
    
    .1 NPS 2 1/2 - 12: 860 kPa steam; 1.4 MPa CWP.
    .2 NPS 14 - 16: 860 kPa steam; 1.03 MPa CWP.
    .3 NPS 18 and over: 1.03 MPa CWP.

  .3 Bronze Trim
    
    .1 Disc: Rotating for extended life.
      .1 Up to NPS 6: bronze to ASTM B 62.
      .2 NPS 8 and over: bronze-faced cast iron.
    .2 Seat rings: renewable bronze to ASTM B62 screwed into body.
    .3 Hinge pin, bushings: renewable bronze to ASTM B62.

  .4 Iron Trim
    
    .1 Disc: A126 Class B, secured to stem, rotating for extended life.
    .2 Seat: cast iron, integral with body.
    .3 Hinge pin: exelloy; bushings: malleable iron.
.5 Identification tag: fastened to cover.
.6 Hinge: galvanized malleable iron.

.2 Swing check valves, NPS 2 1/2 - 8 Class 250:
  .1 Body and bolted cover: cast iron to ASTM A126 Class B with tapped and plugged opening on each side for hinge pin.
  .2 Flanged ends: 2 mm raised face with serrated finish.
  .3 Rating: 1.7 mPa steam; 3.4 MPa CWP.
  .4 Disc: Rotating for extended life.
    .1 Up to NPS 3: bronze to ASTM B61.
    .2 NPS 4 - 8: Iron faced with ASTM B61 bronze.
  .5 Seat rings: renewable bronze to ASTM B61, screwed into body.
  .6 Hinge pin, bushings: renewable, bronze to ASTM B61.
  .7 Hinge: galvanized malleable iron.
  .8 Identification tag: fastened to cover.

2.8 SILENT CHECK VALVES

.1 Body: malleable iron or ductile iron with integral seat.
.2 Pressure rating: Class 125, WP = 860 kPa.
.3 Connections: grooved ends or flanged.
.4 Disc: bronze or stainless steel renewable rotating disc.
.5 Seat: renewable, EPDM.
.6 Stainless steel spring, heavy duty.
.7 Grooved end check valves.

2.9 GROOVED END BUTTERFLY VALVES

.1 Butterfly valves: to MSS-SP-67. Application: Isolating cells or section of multiple component equipment (eg. multi-section coils, multi-cell cooling towers).
  .1 NPS2 and over: Grooved ends.
  .2 2068 kPa WOG and be both bi-directional and dead end service capable to full rated pressure. Ductile iron body with blow-out proof stainless steel stems and nickel coated ductile iron disc. Seat shall be “EPDM” and have a full 360° continuous contact with the seating surface.
  .3 Valve Operators: Lever, gear operator NPS6 and over.

2.10 ACCEPTABLE MATERIAL:

.1 Jenkins, Crane, Wath, Newman Hathersley, Milwaukee, Conbraco, Kitz, Red White, M. A. Stewart, Nibco, Victaulic.
PART 3  EXECUTION

3.1 INSTALLATION

.1 Install rising stem valves in upright position with stem above horizontal. Ensure sufficient room for valve stem in fully open position.

.2 Grooved end valves to be supplied by the same manufacture of the grooved fittings.

.3 Grooved end valves to be installed in accordance with the manufacturer’s written installation instructions. Grooved ends to be clean and free from indentations and projections. Gaskets to be verified as suitable for the intended service prior to installation. Gaskets to be molded and produced by the coupling manufacturer. The grooved coupling manufacturer’s factory trained representative to provide on-site training for contractor’s field personnel in the use of grooving tools, application of groove, and installation of grooved joint products. The manufacturer’s representative to periodically visit the jobsite and review installation. Contractor to remove and replace any joints deemed improperly installed.

3.2 COMMISSIONING

.1 As part of commissioning activities, develop schedule of valves and record thereon identifier, location, service, purchase order number and date, manufacturer, identification data specified above.

END OF SECTION
PART 1 GENERAL

1.1 SUMMARY

1.2 RELATED SECTIONS

1.3 REFERENCES

.1 American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME)

.1 ANSI/ASME B1.20.1, Pipe Threads, General Purpose (Inch.)
.2 ANSI/ASME B16.1, Cast Iron Pipe Flanges and Flanged Fittings.
.3 ANSI/ASME B16.5, Pipe Flanges and Flanged Fittings.
.4 ANSI/ASME B16.11, Forged Fittings, Socket-Welding and Threaded.
.5 ANSI/ASME B16.25, Buttwelding Ends.
.6 ANSI/ASME B16.34, Valves – Flanged, Threaded and Welding Ends.

.2 American National Standards Institute (ANSI)/American Petroleum Institute (API).

.1 ANSI/API 609, Lug-and Water-Type Butterfly Valves.

.3 American Society for Testing and Materials International, (ASTM)

.2 ASTM B 62, Specification for Composition Bronze or Ounce Metal Castings.
.3 ASTM B 209M, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.4 Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS).

.1 MSS SP-67, Butterfly Valves.
1.4 SUBMITTALS

.1 Submittals in accordance with Section 01 33 00 – Submittal Procedures.

.2 Product Data: submit WHMIS MSDS – Material Safety Data Sheets in accordance with Section 02 62 00 01 – Hazardous Materials.
   .1 Submit shop drawings and product data in accordance with Section 01 33 00 – Submittal Procedures.
   .2 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.
   .3 Submit data for valves specified this section.

.3 Closeout Submittals
   .1 Submit maintenance data for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.

1.5 QUALITY ASSURANCE

.1 Health and Safety
   .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

1.6 DELIVERY, STORAGE AND DISPOSAL

.1 Waste Management and Disposal
   .1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
   .2 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

PART 2 PRODUCTS

2.1 BUTTERFLY VALVES - RESILIENT SEAT – 1.4 MPa.

.1 Except for specialty valves, to be of single manufacturer.

.2 To be suitable for dead-end service.

.3 Canadian Registration Number (CRN) required for products.

.4 Sizes: Wafer or Lug type: NPS 2 to 30.

.5 Pressure rating for tight shut-off at temperatures up to maximum for seat material.
.1 NPS 2 - 12: 1.4 MPa CWP.
.2 NPS 14 - 30: 1.4 MPa CWP.
.6 Minimum seat temperature ratings to 135°C.
.7 Application: On-off operation.
.8 Full lug body (threaded).
.9 Operators:
.2 NPS 8 - 30: Manual enclosed gear operator.
.10 Designed to comply with MSS SP-67 and API 609.
.11 Compatible with ANSI Class 125/Class 150 flanges.
.12 Construction:
.1 Body: ductile iron.
.2 Disc: aluminum bronze.
.3 Seat: EPDM.
.4 Shaft: 416 stainless steel.
.5 Taper pin: 316 SS.
.6 Key: carbon steel stainless.
.7 O-Ring: Buna-N.
.8 Bushings: Luberized bronze Teflon.

2.2 BUTTERFLY VALVES - RESILIENT SEAT -1.97 MPa
.1 Sizes: Lug type: NPS 2 to 30.
.2 Pressure rating: 1.97 MPa at 135°C.
.3 Lug body: 150 ANSI bolt pattern.
.4 Full lug body (threaded).
.5 Application: for on-off service.
.1 Operators:
.2 NPS 2 - 6: Handles capable of locking in any of ten (10) positions - 0° to 90°. Handle and release trigger - ductile iron. Return spring and hinge pin: carbon steel. Latch plate and mounting hardware: cadmium plated carbon steel.
.3 NPS 8 - 24: Manual enclosed gear operator.
.4 Install parallel or perpendicular to pipeline.
.6 Designed to comply with MSS SP-67 and API 609.

.7 Compatibility with ANSI B16.1 Class 125 (iron) and ANSI B16.5 Class 150 (steel) flanges.

.8 Construction:

.1 Body: ductile iron.
.2 Disc: aluminum bronze.
.3 Seat: EPDM.
.4 Refer to manufacturer’s literature for additional materials.
.6 Taper pin: 316 SS.
.7 Blowout proof stem.
.8 O-Ring: Buna-N.
.9 Bushings: Teflon.
.10 Disc shall not be pinned to shaft.
.11 Bubble tight shutoff with downstream flanges removed, class 6 shutoff.

2.3 BUTTERFLY VALVES- 2.1 MPa

.1 Sizes: grooved ends, NPS-2-12.

.2 Pressure rating: 2.1 MPa WOG.

.3 Body: Ductile Iron to ASTM A-536 with polypropylene coating.

.4 Disc: Ductile Iron to ASTM A-536.

.5 Disc coating: EPDM.

.6 Body coating: Polyphenylene Sulfide Blend

.7 Drive Hub Adapter and Operation Bracket: hot rolled steel, enamel coated.

.8 Upper bearing/lower Trunnion seals: EPDM

.9 Upper bearing/lower Trunnion : Navel brass or Bronze alloy.

.10 Bolts and washers: Cold rolled steel, zinc plated.

.11 Operator:

.1 NPS 2-3: two position manual handle
.2 NPS 3-6: Manual level lock
.3 NPS 8-12: Manual gear operator with handwheel
.4 Handwheel with chain operator: on valves installed more than 2400 mm above floor in boiler rooms and mechanical equipment rooms.
2.4  MOUNTING FLANGES:

.1 Class 125 cast iron to ANSI B16.1 or Class 150 steel to B16.5 pipe flanges.

PART 3  EXECUTION

3.1  PREPARATION

.1 Valve and mating flange preparation.

.1 Inspect adjacent pipeline, remove rust, scale, welding slag, other foreign material.

.2 Ensure that valve seats and pipe flange faces are free of dirt or surface irregularities which may disrupt flange seating and cause external leakage.

.3 Install butterfly valves with disc in almost closed position.

.4 Inspect valve disc seating surfaces and waterway and eliminate dirt or foreign material.

3.2  INSTALLATION OF VALVES

.1 Install in accordance with manufacturer’s instructions.

.2 Do not use gaskets between pipe flanges and valves unless instructed otherwise by valve manufacturer.

.3 Verify suitability of valve for application by inspection of identification tag.

.4 Mount actuator on to valve prior to installation.

.5 Handle valve with care so as to prevent damage to disc and seat faces.

.6 Valves in horizontal pipe lines should be installed with stem in horizontal position to minimize liner and seal wear.

.7 Ensure that valves are centered between bolts before bolts are tightened and then opened and closed to ensure unobstructed disc movement. If interference occurs due, for example to pipe wall thickness, taper bore adjacent piping to remove interference.

3.3  ACTUATOR INSTALLATION

.1 Air hoses or electrical connections to be made by actuator manufacturer.

.2 Cycle valve operation from fully closed to fully open then back to fully closed.

.3 At same time, check travel stop settings for proper disc alignment.

END OF SECTION
PART 1 GENERAL

1.1 SUMMARY

.1 Section includes:

.1 Concrete housekeeping pads, hangers and supports for mechanical piping, ducting and equipment.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

.3 Section 03 30 00 - Cast-in-Place Concrete.

.4 Section 05 50 00 - Metal Fabrications.

1.3 REFERENCES

.1 American National Standards Institute/ American Society of Mechanical Engineers (ANSI/ASME)


.2 American Society for Testing and Materials (ASTM)

.1 ASTM A125, Specification for Steel Springs, Helical, Heat-Treated.

.2 ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

.3 ASTM A563, Specification for Carbon and Alloy Steel Nuts.

.3 Factory Mutual (FM)

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

.1 Materials Safety Data Sheets (MSDS).

.5 Manufacturer's Standardization Society of the Valves and Fittings Industry (MSS)

.1 MSS SP-58, Pipe Hangers and Supports - Materials, Design and Manufacture.

.2 ANSI/MSS SP-69, Pipe Hangers and Supports - Selection and Application.

.3 MSS SP-89, Pipe Hangers and Supports - Fabrication and Installation Practices.

.6 Underwriter's Laboratories of Canada (ULC)

1.4 SYSTEM DESCRIPTION

.1 Design Requirements

.1 Construct pipe hanger and support to manufacturer's recommendations utilizing manufacturer's regular production components, parts and assemblies.
.2 Base maximum load ratings on allowable stresses prescribed by MSS SP58 or ASME B31.1.

.3 Ensure that supports, guides, anchors do not transmit excessive quantities of heat to building structure.

.4 Design hangers and supports to support systems under all conditions of operation, allow free expansion and contraction, prevent excessive stresses from being introduced into pipework or connected equipment.

.5 Provide for vertical adjustments after erection and during commissioning. Amount of adjustment to be in accordance with MSS SP58.

.2 Performance Requirements

.1 Design supports, platforms, catwalks, hangers, to withstand seismic events for location as per the National Building Code

1.5 SUBMITTALS

.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop drawings: submit drawings stamped and signed for approval by Owner’s Representative.

.3 Submit shop drawings and product data for following items:

   .1 Bases, hangers and supports.
   .2 Connections to equipment and structure.
   .3 Structural assemblies.

.4 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.

   .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
   .2 Instructions: submit manufacturer's installation instructions.

   .1 Owner’s Representative will make available 1 copy of systems supplier's installation instructions.

.5 Closeout Submittals:

   .1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals

1.6 QUALITY ASSURANCE

.1 Health and Safety:

   .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

.1 Packing, shipping, handling and unloading:
Deliver, store and handle in accordance with Section 01 61 00 - Common Product Requirements.

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

Waste Management and Disposal:


PART 2

PRODUCTS

2.1 GENERAL

Fabricate hangers, supports and sway braces in accordance with ANSI B31.1 and MSS SP-58 and SP-89.

Use components for intended design purpose only. Do not use for rigging or erection purposes.

2.2 PIPE HANGERS

Finishes:

Pipe hangers and supports: galvanized painted with zinc-rich paint after manufacture.

Use electro-plating galvanizing process or hot dipped galvanizing process.

Ensure steel hangers in contact with copper piping are copper plated or epoxy coated.

Upper attachment structural: Suspension from lower flange of I-Beam.

Cold piping NPS 2 maximum: malleable iron C-clamp with hardened steel cup point setscrew, locknut and carbon steel retaining clip.

Rod: 9 mm UL listed, 13 mm FM approved.

Cold piping NPS 2 1/2 or greater, hot piping: Malleable iron beam clamp, eye rod, jaws and extension with carbon steel retaining clip, tie rod, nuts and washers, UL listed, FM approved where required to MSS-SP58 and MSS-SP69.

Upper attachment structural: Suspension from upper flange of I-Beam.

Cold piping NPS 2 maximum: Ductile iron top-of-beam C-clamp with hardened steel cup point setscrew, locknut and carbon steel retaining clip, UL listed FM approved where required to MSS SP69.

Cold piping NPS 2 1/2 or greater, all hot piping: Malleable iron top-of-beam jaw-clamp with hooked rod, spring washer, plain washer and nut UL listed, FM approved where required.

Upper attachment to concrete.
Ceiling: Carbon steel welded eye rod, clevis plate, clevis pin and cotters with weldless forged steel eye nut. Ensure eye 6 mm minimum greater than rod diameter.

Concrete inserts: wedge shaped body with knockout protector plate UL listed FM approved where required to MSS SP-69.

Shop and field-fabricated assemblies.

Trapeze hanger assemblies: MSS SP-89.

Steel brackets: MSS SP-89.

Sway braces for seismic restraint systems: to MSS SP-89.

Hanger rods: threaded rod material to MSS SP-58.

Ensure that hanger rods are subject to tensile loading only.

Provide linkages where lateral or axial movement of pipework is anticipated.

Do not use 22 mm or 28 mm rod.

Pipe attachments: material to MSS SP-58.

Attachments for steel piping: carbon steel galvanized.

Attachments for copper piping: copper plated black steel.

Use insulation saddles for hot pipework.

Oversize pipe hangers and supports for insulated pipes.

Adjustable clevis: material to MSS SP-69, UL listed FM approved, where required clevis bolt with nipple spacer and vertical adjustment nuts above and below clevis.

Ensure "U" has hole in bottom for rivetting to insulation shields.

Yoke style pipe roll: carbon steel yoke, rod and nuts with cast iron roll, to MSS SP-69.

U-bolts: carbon steel to MSS SP-69 with 2 nuts at each end to ASTM A563.

Finishes for steel pipework: galvanized.

Finishes for copper, glass, brass or aluminum pipework: black with formed portion plastic coated or epoxy coated.

Pipe rollers: cast iron roll and roll stand with carbon steel rod to MSS SP-69.

RISER CLAMPS

Steel or cast iron pipe: galvanized black carbon steel to MSS SP-58, type 42, UL listed FM approved where required.

Copper pipe: carbon steel copper plated to MSS SP-58, type 42.


Nuts: to ASTM A563.

INSULATION PROTECTION SHIELDS

Insulated cold piping:
2.5 EQUIPMENT SUPPORTS

.1 Fabricate equipment supports not provided by equipment manufacturer from structural
  grade steel meeting requirements of Section 05 12 23 - Structural Steel for Buildings.
  Submit calculations with shop drawings.

2.6 EQUIPMENT ANCHOR BOLTS AND TEMPLATES

.1 Provide templates to ensure accurate location of anchor bolts.

2.7 PLATFORMS AND CATWALKS

.1 To Section 05 50 00 - Metal Fabrication.

2.8 HOUSE-KEEPING PADS

.1 For base-mounted equipment: Concrete, at least 100 mm high, 50 mm larger all around
  than equipment, and with chamfered edges.

.2 Concrete: to Section 03 30 00 - Cast-in-place Concrete by Division 3.

2.9 OTHER EQUIPMENT SUPPORTS

.1 From structural grade steel meeting requirements of Section 05 12 23 - Structural Steel
  for Buildings.

.2 Submit structural calculations with shop drawings.

PART 3 EXECUTION

3.1 MANUFACTURER’S INSTRUCTIONS

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

3.2 INSTALLATION

.1 Install in accordance with:

  .1 Manufacturer’s instructions and recommendations.

  .2 Vibration Control Devices:
1. Install on piping systems at pumps, boilers, chillers, cooling towers, elsewhere as indicated.

3. Clamps on riser piping:
   .1 Support independent of connected horizontal pipework using riser clamps and riser clamp lugs welded to riser.
   .2 Bolt-tightening torques to be to industry standards.
   .3 Steel pipes: Install below coupling or shear lugs welded to pipe.
   .4 Cast iron pipes: Install below joint.

4. Clevis plates:
   .1 Attach to concrete with 4 minimum concrete inserts, one at each corner.

5. Provide supplementary structural steelwork where structural bearings do not exist or where concrete inserts are not in correct locations.

6. Use approved constant support type hangers where:
   .1 vertical movement of pipework is 13 mm or more,
   .2 transfer of load to adjacent hangers or connected equipment is not permitted.

7. Use variable support spring hangers where:
   .1 transfer of load to adjacent piping or to connected equipment is not critical.
   .2 variation in supporting effect does not exceed 25 % of total load.

3.3 HANGER SPACING

1. Plumbing piping: most stringent requirements of National Plumbing Code

2. Fire protection: to applicable fire code.

3. Fuel oil piping: up to NPS 1/2: every 1.8 m.

4. Copper piping: up to NPS 1/2: every 1.5 m.

5. Hydronic, rigid, and flexible joint roll groove pipe: in accordance with table below, but not less than one hanger at joints.

<table>
<thead>
<tr>
<th>Maximum Pipe Size: NPS</th>
<th>Maximum Spacing: Steel</th>
<th>Maximum Spacing: Copper</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 1-1/4</td>
<td>2.1 m</td>
<td>1.8 m</td>
</tr>
<tr>
<td>1-1/2</td>
<td>2.7 m</td>
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</tr>
<tr>
<td>2</td>
<td>3.0 m</td>
<td>2.7 m</td>
</tr>
<tr>
<td>2-1/2</td>
<td>3.6 m</td>
<td>3.0 m</td>
</tr>
<tr>
<td>3</td>
<td>3.6 m</td>
<td>3.0 m</td>
</tr>
<tr>
<td>3-1/2</td>
<td>3.9 m</td>
<td>3.3 m</td>
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<td>3.6 m</td>
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<td>4.8 m</td>
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</tr>
<tr>
<td>6</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>5.7 m</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>6.6 m</td>
<td></td>
</tr>
<tr>
<td>Maximum Pipe Size: NPS</td>
<td>Maximum Spacing: Steel</td>
<td>Maximum Spacing: Copper</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>6.9 m</td>
</tr>
</tbody>
</table>

.6 Within 300 mm of each elbow.

.7 Pipework greater than NPS 12: to MSS SP69.

### 3.4 HANGER INSTALLATION

.1 Install hanger so that rod is vertical under operating conditions.

.2 Adjust hangers to equalize load.

.3 Support from structural members. Where structural bearing does not exist or inserts are not in suitable locations, provide supplementary structural steel members, comprised of angel iron or c-channel.

### 3.5 HORIZONTAL MOVEMENT

.1 Angularity of rod hanger resulting from horizontal movement of pipework from cold to hot position not to exceed 4 degrees from vertical.

.2 Where horizontal pipe movement is less than 13 mm, offset pipe hanger and support so that rod hanger is vertical in the hot position.

### 3.6 FINAL ADJUSTMENT

.1 Adjust hangers and supports:

.1 Ensure that rod is vertical under operating conditions.

.2 Equalize loads.

.2 Adjustable clevis:

.1 Tighten hanger load nut securely to ensure proper hanger performance.

.2 Tighten upper nut after adjustment.

.3 C-clamps:

.1 Follow manufacturer's recommended written instructions and torque values when tightening C-clamps to bottom flange of beam.

.4 Beam clamps:

.1 Hammer jaw firmly against underside of beam.

END OF SECTION
PART 1  GENERAL

1.1 SUMMARY

.1 Section Includes:

.1 Materials and requirements for the identification of piping systems, duct work, valves and controllers, including the installation and location of identification systems.

.2 Sustainable requirements for construction and verification.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

.3 Section 09 91 23 - Interior Painting.

1.3 REFERENCES

.1 Canadian Gas Association (CGA)

.1 CSA/CGA B149.1, Natural Gas and Propane Installation Code.

.2 CSAZ7396.1 Medical Gas pipeline Systems – Part 1: Pipelines for medical gases and vacuum.

.2 Canadian General Standards Board (CGSB)


.3 National Fire Protection Association (NFPA)

.1 NFPA 13, Standard for the Installation of Sprinkler Systems.

1.4 SUBMITTALS

.1 Product Data:

.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product data to include paint colour chips, other products specified in this section.

1.5 QUALITY ASSURANCE

.1 Quality assurance submittals: submit following in accordance with Section 01 33 00 – Submittal Procedures.

.2 Health and Safety:

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.
1.6 DELIVERY, STORAGE, AND HANDLING

.1 Packing, shipping, handling and unloading:

.1 Deliver, store and handle in accordance with Section 01 61 00 – Common Product Requirements.

.2 Deliver, store and handle materials in accordance with manufacturer’s written instructions.

.2 Waste Management and Disposal:

.1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Dispose of unused paint coating material at official hazardous material collections site approved by Engineer / Architect.

.3 Do not dispose of unused paint coating material into sewer system, into streams, lakes, onto ground or in locations where it will pose health or environmental hazard.

PART 2 PRODUCTS

2.1 MANUFACTURER'S EQUIPMENT NAMEPLATES

.1 Metal or plastic laminate nameplate mechanically fastened to each piece of equipment by manufacturer.

.2 Lettering and numbers to be raised or recessed.

.3 Information to include, as appropriate:

.1 Equipment: Manufacturer's name, model, size, serial number, capacity.

.2 Motor: voltage, Hz, phase, power factor, duty, frame size.

2.2 SYSTEM NAMEPLATES

.1 Colours:

.1 Hazardous: red letters, white background.

.2 Elsewhere: black letters, white background (except where required otherwise by applicable codes).

.2 Construction:

.1 3 mm thick laminated plastic or white anodized aluminum, matte finish, with square corners, letters accurately aligned and machine engraved into core.

.3 Sizes:

.1 Conform to following table:

<table>
<thead>
<tr>
<th>Size # mm</th>
<th>Sizes (mm)</th>
<th>No. of Lines</th>
<th>Height of Letters (mm)</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>Size # mm</th>
<th>Sizes (mm)</th>
<th>No. of Lines</th>
<th>Height of Letters (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 x 50</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>13 x 75</td>
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<td>8</td>
</tr>
<tr>
<td>9</td>
<td>35 x 200</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

.2 Use maximum of 25 letters/numbers per line.

.4 Locations:

.1 Terminal cabinets, control panels: Use size # 5.

.2 Equipment in Mechanical Rooms: Use size # 9.

2.3 PIPING SYSTEMS GOVERNED BY CODES

.1 Identification:

.1 Oil Burning Equipment: to B139.

2.4 IDENTIFICATION OF PIPING SYSTEMS

.1 Identify contents by background colour marking, pictogram (as necessary), legend; direction of flow by arrows. To CAN/CGSB 24.3 except where specified otherwise.

.2 Pictograms:

.1 Where required, to Workplace Hazardous Materials Information System (WHMIS) regulations.

.3 Legend:

.1 Block capitals to sizes and colours listed in CAN/CGSB 24.3.

.4 Arrows showing direction of flow:

.1 Outside diameter of pipe or insulation less than 75 mm: 100 mm long x 50 mm high.

.2 Outside diameter of pipe or insulation 75 mm and greater: 150 mm long x 50 mm high.

.3 Use double-headed arrows where flow is reversible.

.5 Extent of background colour marking:

.1 To full circumference of pipe or insulation.

.2 Length to accommodate pictogram, full length of legend and arrows.

.6 Materials for background colour marking, legend, arrows:
.1 Pipes and tubing 20 mm and smaller: Waterproof and heat-resistant pressure sensitive plastic marker tags.

.2 All other pipes: Pressure sensitive plastic-coated cloth or vinyl with protective overcoating, waterproof contact adhesive undercoating, suitable for ambient of 100%RH and continuous operating temperature of 150°C and intermittent temperature of 200°C.

.7 Colours and Legends:

.1 Where not listed, obtain direction from Owner’s Representative.

.2 Colours for legends, arrows, to following table:

<table>
<thead>
<tr>
<th>Background colour</th>
<th>Legend, arrows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>BLACK</td>
</tr>
<tr>
<td>Green</td>
<td>WHITE</td>
</tr>
<tr>
<td>Red</td>
<td>WHITE</td>
</tr>
</tbody>
</table>

.3 Background colour marking and legends for piping systems:

<table>
<thead>
<tr>
<th>Contents</th>
<th>Background colour marking</th>
<th>Legend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot water heating supply</td>
<td>Yellow</td>
<td>HEATING SUPPLY</td>
</tr>
<tr>
<td>Hot water heating return</td>
<td>Yellow</td>
<td>HEATING RETURN</td>
</tr>
<tr>
<td>Domestic cold water supply</td>
<td>Green</td>
<td>DOM. CWS</td>
</tr>
<tr>
<td>No. <em>2</em> fuel oil suction</td>
<td>Yellow</td>
<td># <em>2</em> FUEL OIL</td>
</tr>
<tr>
<td>No. <em>2</em> fuel oil return</td>
<td>Yellow</td>
<td># <em>2</em> FUEL OIL</td>
</tr>
</tbody>
</table>

2.5 IDENTIFICATION SYSTEMS

.1 50 mm high stencilled letters and directional arrows 150 mm long x 50 mm high.

.2 Colours: Black, or co-ordinated with base colour to ensure strong contrast.

.3 Identify system: e.g. Supply AHU-1, Exhaust F-7,

2.6 VALVES, CONTROLLERS

.1 Brass tags 12 mm diameter with stamped identification data filled with black paint.

.2 Include flow diagrams for each system, of approved size, showing charts and schedules with identification of each tagged item, valve type, service, function, normal position, location of tagged item.

2.7 CONTROLS COMPONENTS IDENTIFICATION

.1 Identify all systems, equipment, components, controls, sensors with system nameplates specified in section 25 05 54 – EMCS: Identification. If no EMCS included in project, identification as per this section.

.2 Inscriptions to include function and (where appropriate) fail-safe position, component ID name.
2.8 LANGUAGE
.1 Identification to be in English.

PART 3 EXECUTION

3.1 MANUFACTURER’S INSTRUCTIONS
.1 Compliance: comply with manufacturer’s written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.2 TIMING
.1 Provide identification only after all painting specified in Section 09 91 23 - Interior Painting has been completed.

3.3 INSTALLATION
.1 Perform work in accordance with CAN/CGSB-24.3 except as specified otherwise.
.2 Provide ULC and/or CSA registration plates as required by respective agency.

3.4 NAMEPLATES
.1 Locations:
   .1 In conspicuous location to facilitate easy reading and identification from operating floor.
   .2 Standoffs:
   .1 Provide for nameplates on hot and/or insulated surfaces.
   .3 Protection
   .1 Do not paint, insulate or cover in any way.

3.5 LOCATION OF IDENTIFICATION ON PIPING AND DUCTWORK SYSTEMS
.1 On long straight runs in open areas in boiler rooms, equipment rooms, galleries, tunnels: At not more than 17 m intervals and more frequently if required to ensure that at least one is visible from any one viewpoint in operating areas and walking aisles.
.2 Adjacent to each change in direction.
.3 At least once in each small room through which piping or ductwork passes.
.4 On both sides of visual obstruction or where run is difficult to follow.
.5 On both sides of separations such as walls, floors, partitions.
.6 Where system is installed in pipe chases, ceiling spaces, galleries, confined spaces, at entry and exit points, and at access openings.
.7 At beginning and end points of each run and at each piece of equipment in run.

.8 At point immediately upstream of major manually operated or automatically controlled valves, dampers, etc. Where this is not possible, place identification as close as possible, preferably on upstream side.

.9 Identification to be easily and accurately readable from usual operating areas and from access points.

.1 Position of identification to be approximately at right angles to most convenient line of sight, considering operating positions, lighting conditions, risk of physical damage or injury and reduced visibility over time due to dust and dirt.

3.6 VALVES, CONTROLLERS

.1 Valves and operating controllers, except at plumbing fixtures, radiation, or where in plain sight of equipment they serve: Secure tags with non-ferrous chains or closed "S"hooks.

.2 Install one copy of flow diagrams, valve schedules mounted in frame behind non-glare glass where directed by Owner’s Representative. Provide one copy (reduced in size if required) in each operating and maintenance manual.

.3 Number valves in each system consecutively.

3.7 CLEANING

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

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

END OF SECTION
PART 1  GENERAL

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

.3 Section 23 05 29 - Hangers and Supports for HVAC Piping and Equipment.

.4 Section 23 05 53.01 – Mechanical Identification.

1.2 REFERENCES

.1 American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)


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

.1 ASTM B209M, Specification for Aluminum and Aluminum Alloy Sheet and Plate.


.3 ASTM C411, Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.


.5 ASTM C533, Specification for Calcium Silicate Block and Pipe Thermal Insulation.


.8 ASTM C612, Specification for Mineral Fiber Block and Board Thermal Insulation.

.9 ASTM C795, Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel.

.10 ASTM C921, Practice for Determining the Properties of Jacketing Materials for Thermal Insulation.

.3 Canadian General Standards Board (CGSB)

.1 CGSB 51-GP-52Ma, Vapour Barrier, Jacket and Facing Material for Pipe, Duct and Equipment Thermal Insulation.

.4 Thermal Insulation Association of Canada (TIAC)

.1 National Insulation Standards.
.5 Underwriters Laboratories of Canada (ULC)

.1 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.

.6 National Energy Code of Canada for Buildings (NECB).

1.3 PRODUCT DATA

.1 Submit Product Data in accordance with Section 01 33 00 - Submittal Procedures.

1.4 MANUFACTURER'S INSTRUCTIONS

.1 Submit manufacturer's installation instructions in accordance with 01 33 00 - Submittal Procedures.

.2 Installation instructions to include procedures to be used, installation standards to be achieved.

1.5 QUALIFICATIONS

.1 Installer to be certified in performing work of this section, and have at least 5 years successful experience in this size and type of project, qualified to standards of TIAC.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.

.2 Protect from weather and construction traffic.

.3 Protect against damage from any source.

.4 Store at temperatures and conditions recommended by manufacturer.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Divert unused adhesive materials from landfill to official hazardous material collections site approved by Owner’s Representative.

.4 Do not dispose of unused adhesive materials into sewer systems, into lakes, streams, onto ground or in other location where it will pose health or environmental hazard.
PART 2 PRODUCTS

2.1 FIRE AND SMOKE RATING

.1 In accordance with CAN/ULC-S102:

.1 Maximum flame spread rating: 25.
.2 Maximum smoke developed rating: 50.

2.2 INSULATION

.1 Mineral fibre: includes glass fibre, rock wool, slag wool.

.2 Thermal conductivity ("k" factor) not to exceed specified values at 24°C mean temperature when tested in accordance with ASTM C335.

.3 TIAC Code A-2: Rigid moulded calcium silicate in sections and blocks, and with special shapes to suit project requirements.

.1 Insulation: ASTM C533.
.2 Maximum "k" factor: ASTM C533.
.3 Design to permit periodic removal and re-installation

.4 TIAC Code A-3: Rigid moulded mineral fibre with factory applied vapour retarder jacket.

.1 Mineral fibre: ASTM C547.
.2 Jacket: to CGSB 51-GP-52Ma.
.3 Maximum "k" factor: ASTM C547.

.5 TIAC Code C-2: Mineral fibre blanket unfaced or faced with factory applied vapour retarder jacket (as scheduled in PART 3 of this section).

.1 Mineral fibre: ASTM C553.
.2 Jacket: to CGSB 51-GP-52Ma.
.3 Maximum "k" factor: ASTM C553.

.6 TIAC Code C-4: Rigid mineral fibre board faced with factory applied vapour retarder jacket.

.1 Mineral fibre: ASTM C612.
.2 Jacket: to CGSB 51-GP-52Ma.
.3 Maximum "k" factor: ASTM C612.

2.3 CEMENT

.1 Thermal insulating and finish

.1 To: ASTM C449/C449M.
.2 Hydraulic setting or air drying on mineral wool, to ASTM C449.
2.4 JACKETS

.1 Canvas:

.1 220 gm/m² cotton, plain weave, treated with dilute fire retardant lagging adhesive to ASTM C921.

.2 Lagging adhesive: Compatible with insulation.

2.5 REMOVABLE INSULATION COVERS

.1 General:

.1 All Covers shall be sewn, stapled or “hog-ringed” covers shall not be acceptable.

.2 Covers shall conform to the configuration of the items being insulated.

.3 Covers shall include openings for all protrusions such as pipes, packing glands on valves and expansion joints, hangers, supports, instrument lines, and other appurtenances.

.4 Covers shall be designed so that no force bending or folding of the cover is necessary for installation.

.5 Minimum 50mm wide flaps at terminal ends are to be provided to overlap adjacent covers to ensure a good heat seal.

.6 Parting seems shall be at the installed low points (gravitational bottom) of the cover to allow drainage without the use of weep tubes or grommets.

.7 Valve bonnets are to be covered, but packing glands shall remain exposed.

.8 Valve covers are to be designed such that the bonnet section is sewn to the body section. For larger valves, the cover may be fabricated in two sections, each section containing one half of the valve body and bonnet.

.9 Covers with a weight of 18.1 Kg or less are to be fabricated in one piece.

.10 Covers with a weight of more than 18.1 Kg are to be fabricated in more than one piece.

.2 Insulation Core:

.1 The insulation core shall be fabricated in one piece, wherever possible.

.2 To prevent insulation settlement, the insulation core shall be secured within the jacket through the weather barrier (outer jacketing), the insulation, and the liner (inner jacketing).

.3 Insulating cores with more than one piece shall have staggered joints to prevent hot spots and heat loss. The joint edges shall be butted together and extra securement provided at those edges.

.4 Insulation core shall be comprised of 50mm thick fiberglass insulation of non-combustible wool with resilient inorganic glass fibers bonded with a thermosetting resin. Insulation density to be 38 Kg/m³. Insulation thermal conductivity to be 0.044W/m.°C at a mean temperature of 100°C.

.3 Jacket:

.1 The jacket shall be fabricated in one piece, wherever possible.
.2 Gusset walls shall be required for covers with core insulation thickness in excess of 25mm.

.3 All seams, except the final closing seam, shall be inside seams. The jackets are to be sewn inside out, then turned correct side out before inserting the insulation core. The final closing seam shall be sewn on the exterior of the jacket. Seams shall be sewn with Teflon® coated fiberglass thread or Kevlar® coated stainless steel thread.

.4 Machine stitching shall be used for all sewing. Sewing shall be 6-8 stitches per centimeter.

.5 Draw cords are to be placed along the outer edge of the flap and the outer edge of the flap then rolled back inside and double stitched.

.6 Draw cords are to be of sufficient length to allow 150mm of cord to protrude from each side of the flap.

.7 The inner and outer jacket shall be comprised of a fiberglass fabric impregnated with silicone rubber. The silicone rubber shall be flame retardant and suitable for high temperature usage. Outer jacket density shall be 595 gms/m².

.4 Securement devices:

.1 The securement belts and D-ring belts shall be of the same material as the weather barrier (exterior jacket).

.2 The belts shall be placed 50mm back from the parting seams and on 150mm centers.

.3 Fire retardant Velcro® shall be used to fasten the securement belt to the weather barrier after the belt passed through the Stainless Steel D-rings.

.5 Identification tags:

.1 Each cover shall be identified by a permanently attached stainless steel tag.

.2 An identification legend shall be mechanically embossed into the tag.

.3 The tags shall be located in the same areas on similar type covers.

.4 Should a cover require more than one piece for its construction, each piece to be identified and numbered (i.e. 1of 3).

.5 Each tag shall include at least the following information, but may also include any pertinent information required by the end user.

.1 Type of item being covered.

.2 Location of item.

.3 Recording and tracking information.

.6 Warranty:

.1 Provide a 5-year product Warranty

.7 Acceptable manufacturers:

.1 Advanced Industrial Systems Inc., Thermo Help Canada Inc., Advanced Thermal Corp.

2.6 INSULATION SECUREMENTS

.1 Tape: Self-adhesive, aluminum, reinforced, 50 mm wide minimum.
.2 Contact adhesive: Quick setting.
.3 Canvas adhesive: Washable.
.4 Tie wire: 1.5 mm diameter stainless steel.
.5 Bands: Stainless steel, 19 mm wide, 0.5 mm thick.
.6 Facing: 25 mm galvanized steel hexagonal wire mesh on one face of insulation.
.7 Fasteners: 4 mm diameter pins with 35 mm diameter or square clips. Length of pin to suit thickness of insulation.

2.7 VAPOUR RETARDER LAP ADHESIVE
.1 Water based, fire retardant type, compatible with insulation.

2.8 INDOOR VAPOUR RETARDER FINISH
.1 Vinyl emulsion type acrylic, compatible with insulation.
.2 Reinforcing fabric: Fibrous glass, untreated 305 g/m².

PART 3 EXECUTION

3.1 PRE-INSTALLATION REQUIREMENTS
.1 Pressure testing of equipment and adjacent piping systems complete, witnessed and certified.
.2 Surfaces clean, dry, free from foreign material.

3.2 INSTALLATION
.1 Install in accordance with TIAC National Standards
   .1 Hot equipment: To TIAC code 1503-H.
   .2 Cold equipment: to TIAC code 1503-C or 1503-CA.
.2 Elastomeric Insulation: to remain dry. Overlaps to manufacturer's instructions. Joints tight and sealed properly.
.3 Provide vapour retarder as recommended by manufacturer.
.4 Apply materials in accordance with insulation and equipment manufacturer's instructions and this specification.
.5 Use two layers with staggered joints when required nominal wall thickness exceeds 75 mm.
.6 Maintain uninterrupted continuity and integrity of vapour retarder jacket and finishes.

.1 Hangers, supports outside vapour retarder jacket.

.7 Supports, Hangers:

.1 Apply high compressive strength insulation, suitable for service, at oversized saddles and shoes where insulation saddles have not been provided.

### 3.3 EQUIPMENT INSULATION SCHEDULES

.1 Includes valves, valve bonnets, strainers, flanges and fittings unless otherwise specified.

.2 Hot Equipment:

.1 TIAC code A-1 or C-1 with mechanical fastenings or wire or bands and 13 mm cement reinforced with one layer of reinforcing mesh.

.2 TIAC code A-2 with 25 mm air gap, mechanical fastenings or wire or bands and 13 mm cement reinforced with one layer of reinforcing mesh.

.3 TIAC code C-2 unfaced with wire or bands and 13 mm cement precede by one layer of reinforcing mesh.

.3 Breechings, engine exhausts and mufflers:

.1 TIAC code A-2 with 25 mm air gap, mechanical fastenings or wire or bands and 13 mm cement reinforced with one layer of reinforcing mesh.

.2 Cement reinforced with one layer of reinforcing mesh.

.4 Cold equipment:

.1 TIAC A-3 or C-4 with mechanical fastenings or wire or bands and 13 mm cement reinforced with one layer of reinforcing mesh.

.2 TIAC C-2 faced with vapour retardant jacket and with wire or bands and 13 mm cement preceded by one layer of reinforcing mesh.

.3 TIAC A-6 or C-4 with mechanical fastenings or wire or bands, adhesive.

.1 Thicknesses: Chillers (except factory insulated) 50 mm A-3, A-6 or C-4.

.5 Finishes:

.1 Engine exhaust piping and muffler: To TIAC code CEF-4.

.2 Equipment in mechanical rooms: TIAC code CEF/1 with aluminum jacket.

.3 Equipment elsewhere: TIAC code CEF/2 with 13 mm cement and canvas jacket.

### 3.4 REMOVABLE INSULATION COVERS

.1 Installation to permit movement of expansion joint and to permit periodic removal and replacement without damage to adjacent insulation.

.2 Removable insulation covers shall be provided for the following:

.1 Hydronic heating and chilled water system pump assemblies: -pumps, suction diffusers, triple duty valves.
.2 Hydronic heating and chilled water system air separators.
.3 Balancing valves NPS 2½ and above.

END OF SECTION
PART 1  GENERAL

1.1  SUMMARY

.1  Section Includes:

.1  Thermal insulation for piping and piping accessories in commercial type applications.

1.2  RELATED SECTIONS

.1  Section 01 33 00 – Submittal Procedures.

.2  Section 01 74 21 – Construction/Demolition Waste Management and Disposal

.3  Section 07 92 00 – Joint Sealing.

.4  Section 23 07 16 – HVAC Equipment Insulation.

.5  Section 23 05 53.01 – Mechanical Identification.

1.3  REFERENCES

.1  American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)


.2  American Society for Testing and Materials (ASTM)


.5  ASTM C533 Standard specification for Calium Silicate Insulation Block and Pipe.


.7  ASTM C795, Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel.


.3  Canadian General Standards Board (CGSB)
.1 CGSB 51-GP-52Ma, Vapour Barrier, Jacket and Facing Material for Pipe, Duct and Equipment Thermal Insulation.
.2 CAN/CGSB-51.53, Poly (Vinyl Chloride) Jacketting Sheet, for Insulated Pipes, Vessels and Round Ducts
.4 Department of Justice Canada (Jus)
   .1 Canadian Environmental Assessment Act (CEAA), c. 37.
   .2 Canadian Environmental Protection Act, (CEPA), c. 33.
   .3 Transportation of Dangerous Goods Act (TDGA), c. 34.
.5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
   .1 Material Safety Data Sheets.
.6 Manufacturer's Trade Associations
   .1 Thermal Insulation Association of Canada (TIAC): National Insulation Standards.
.7 Underwriters' Laboratories of Canada (ULC)
   .1 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.
.8 National Energy Code of Canada for Buildings (NECB).

1.4 DEFINITIONS
   .1 For purposes of this section:
      .1 "CONCEALED" - insulated mechanical services in suspended ceilings and non-accessible chases and furred-in spaces.
      .2 "EXPOSED" - will mean "not concealed" as defined herein.
   .2 TIAC ss:
      .1 CRF: Commercial Rectangular Finish
      .2 CPF: Commercial Piping Finish.

1.5 SUBMITTALS
   .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
   .2 Product Data:
      .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures. Include product characteristics, performance criteria, and limitations.
      .1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures.
   .3 Shop Drawings:
.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.4 Samples:
   .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
   .2 Submit for approval: complete assembly of each type of insulation system, insulation, coating, and adhesive proposed. Mount sample on 12 mm plywood board. Affix label beneath sample indicating service.

.5 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.
   .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
   .2 Instructions: submit manufacturer's installation instructions to Owner’s Representative.

1.6 QUALITY ASSURANCE

.1 Qualifications:
   .1 Installer: certified in performing work of this Section, and have at least 5 years successful experience in this size and type of project, qualified to standards of TIAC.

.2 Health and Safety:
   .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Packing, shipping, handling and unloading:
   .1 Deliver, store and handle in accordance with manufacturer's written instructions and Section 01 61 00 - Common Product Requirements.
   .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
   .3 Deliver materials to site in original factory packaging, labeled with manufacturer's name, address.

.2 Storage and Protection:
   .1 Protect from weather, construction traffic.
   .2 Protect against damage.
   .3 Store at temperatures and conditions required by manufacturer.

.3 Waste Management and Disposal:
   .1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
.2 Place excess or unused insulation and insulation accessory materials in designated containers.

.3 Divert unused metal materials from landfill to metal recycling facility approved by Owner’s Representative.

.4 Dispose of unused adhesive material at official hazardous material collections site approved by Owner’s Representative.

PART 2 PRODUCTS

2.1 FIRE AND SMOKE RATING

.1 In accordance with CAN/ULC-S102.

.1 Maximum flame spread rating: 25.

.2 Maximum smoke developed rating: 50.

2.2 INSULATION

.1 Mineral fibre specified includes glass fibre, rock wool, slag wool.

.2 Thermal conductivity ("k" factor) not to exceed specified values at 24 °C mean temperature when tested in accordance with ASTM C335.

.3 TIAC Code A-3: Rigid moulded mineral fibre with factory applied vapour retarder jacket.

.1 Mineral fibre: to CAN/ULC-S702 and ASTM C547.

.2 Jacket: to CGSB 51-GP-52Ma.

.3 Maximum "k" factor: to CAN/ULC-S702.

2.3 INSULATION SECUREMENT

.1 Tape: Self-adhesive, aluminum, plain reinforced, 50 mm wide minimum.

.2 Contact adhesive: Quick setting.

.3 Canvas adhesive: Washable.

.4 Tie wire: 1.5 mm diameter stainless steel.

.5 Bands: Stainless steel, 19 mm wide, 0.5 mm thick.

2.4 CEMENT

.1 Thermal insulating and finishing cement:

.1 Hydraulic setting or air drying on mineral wool, to ASTM C449/C449M.

2.5 VAPOUR RETARDER LAP ADHESIVE

.1 Water based, fire retardant type, compatible with insulation.
2.6 **INDOOR VAPOUR RETARDER FINISH**

.1 Vinyl emulsion type acrylic, compatible with insulation.

2.7 **OUTDOOR VAPOUR RETARDER FINISH**

.1 Vinyl emulsion type acrylic, compatible with insulation.

.2 Reinforcing fabric: Fibrous glass, untreated 305 g/m².

2.8 **JACKETS**

.1 Canvas:

   .1 220gm/m² cotton, plain weave, treated with dilute fire retardant lagging adhesive to ASTM C921.

   .2 Lagging adhesive: Compatible with insulation.

**PART 3**

**EXECUTION**

3.1 **MANUFACTURE’S INSTRUCTIONS**

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

3.2 **PRE-INSTALLATION REQUIREMENT**

.1 Pressure testing of piping systems and adjacent equipment to be complete, witnessed and certified.

.2 Surfaces to be clean, dry, free from foreign material.

3.3 **INSTALLATION**

.1 Install in accordance with TIAC National Standards.

.2 Apply materials in accordance with manufacturers instructions and this specification.

.3 Use two layers with staggered joints when required nominal wall thickness exceeds 75 mm.

.4 Maintain uninterrupted continuity and integrity of vapour retarder jacket and finishes.

   .1 Install hangers, supports outside vapour retarder jacket.

.5 Supports, Hangers:

   .1 Apply high compressive strength insulation, suitable for service, at oversized saddles and shoes where insulation saddles have not been provided.
3.4 **REMOVABLE, PRE-FABRICATED, INSULATION AND ENCLOSURES**

.1 See Section 23 07 16 – HVAC Equipment Insulation.

3.5 **INSTALLATION OF ELASTOMERIC INSULATION**

.1 Insulation to remain dry. Overlaps to manufacturers instructions. Ensure tight joints.

.2 Provide vapour retarder as recommended by manufacturer.

3.6 **PIPING INSULATION SCHEDULES**

.1 Includes valves, valve bonnets, strainers, flanges and fittings unless otherwise specified. Insulate vent pipes 3.0 m from roof penetration.

.2 TIAC Code: A-3.

.1 Securements: Tape at 300 mm oc.

.2 Seals: VR lap seal adhesive, VR lagging adhesive.

.3 Installation: TIAC Code: 1501-C.

.3 Thickness of insulation to be as listed in following table.

.1 Run-outs to individual units and equipment not exceeding 4000 mm long.

.2 Do not insulate exposed runouts to plumbing fixtures, chrome plated piping, valves, fittings.

<table>
<thead>
<tr>
<th>Application</th>
<th>Temp °C</th>
<th>TIAC code</th>
<th>Pipe sizes (NPS) and insulation thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Run out</td>
<td></td>
<td>to 1</td>
</tr>
<tr>
<td>Hot Water Heating</td>
<td>60 - 94</td>
<td>A-3</td>
<td>25</td>
</tr>
</tbody>
</table>

.4 Finishes:

.1 Exposed indoors: PVC jacket.

.2 Exposed in mechanical rooms: PVC jacket.

.3 Concealed, indoors: canvas on valves, fittings. No further finish.

.4 Use vapour retarder jacket on TIAC code A-3 insulation compatible with insulation.

.5 Outdoors: Water-proof Aluminium, or SS jacket.

.6 Finish attachments: SS screws or bands, at 150 mm oc. Seals: wing or closed.

.7 Installation: To appropriate TIAC code CPF/1 through CPF/5.

3.7 **CLEANING**

.1 Proceed in accordance with Section 01 74 11 – Cleaning.
.2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION
PART 1  GENERAL

1.1  RELATED SECTIONS

.1 Section 22 42 01 – Plumbing Specialities and Accessories.

.2 Section 23 05 93 – Testing, Adjusting and Balancing for HVAC.

.3 Section 23 08 02 – Cleaning and Start-up of Mechanical Piping Systems.

.4 Section 23 11 13 – Facility Fuel-Oil Piping.

.5 Section 23 21 13.02 – Hydronic Systems: Steel.

1.2  CLEANING AND START-UP OF MECHANICAL PIPING SYSTEMS

.1 In accordance with Section 23 08 02 - Cleaning and Start-up of Mechanical Piping Systems.

1.3  HYDRONIC SYSTEMS - PERFORMANCE VERIFICATION (PV)

.1 Perform hydronic systems performance verification after cleaning is completed and system is in full operation.

.2 When systems are operational, perform following tests:

.1  Conduct full scale tests at maximum design flow rates, temperatures and pressures for continuous consecutive period of 48 hours to demonstrate compliance with design criteria.

.2  Verify performance of hydronic system circulating pumps as specified in relevant technical sections, recording system pressures, temperatures, fluctuations by simulating maximum design conditions and varying.

  .1  Pump operation.
  .2  Boiler operation.
  .3  Pressure bypass open/closed.
  .4  Control pressure failure.
  .5  Maximum heating demand.
  .6  Maximum cooling demand.
  .7  Boiler failure.
  .8  Outdoor reset. Re-check heat exchanger output supply temperature at 100% and 50% reset, maximum water temperature.

1.4  HYDRONIC SYSTEM CAPACITY TEST

.1 Timing: After:

.1  TAB has been completed
Verification of operating, limit, safety controls.
Verification of primary and secondary pump flow rates.
Verification of accuracy of temperature and pressure sensors and gauges.

.2 Calculate system capacity at test conditions.

.3 Using manufacturer's published data and calculated capacity at test conditions, extrapolate system capacity at design conditions.

.4 When capacity test is completed, return controls and equipment status to normal operating conditions.

.5 Submit sample of system water to approved testing agency to determine if chemical treatment is correct. Include cost.

.6 Heating system capacity test:

.1 Perform capacity test when ambient temperature is within 10% of design conditions. Simulate design conditions by:
  .1 Increasing OA flow rates through heating coils (in this case, monitor heating coil discharge temperatures at all times to ensure that coils are not subjected to freezing conditions) or
  .2 Reducing space temperature by turning off heating system for sufficient period of time before starting testing.

.2 Test procedures:
  .1 Open fully heat exchanger, heating coil and radiation control valves.
  .2 With boilers on full firing and hot water heating supply temperature stabilized, record flow rates and supply and return temperatures simultaneously.
  .3 Conduct flue gas analysis test on boilers at full load and at low fire conditions.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION
PART 1  GENERAL

1.1  SUMMARY
   .1 Section Includes:
      .1 Procedures and cleaning solutions for cleaning mechanical piping systems.

1.2  RELATED SECTIONS
   .1 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

1.3  REFERENCES
   .1 Health Canada / Workplace Hazardous Materials Information System (WHMIS).
      .1 Material Safety Data Sheets (MSDS).

1.4  SUBMITTALS
   .1 Product Data:
      .1 Submit manufacturer’s printed product literature, specifications and datasheet in accordance with Section 01 33 00 – Submittal Procedures. Include product characteristics, performance criteria, and limitations.
      .2 Quality assurance submittals: submit following in accordance with Section 01 33 00 – Submittal Procedures.
         .1 Instructions: submit manufacturer’s installation instructions.
         .1 Owner’s Representative will make available one (1) copy of systems supplier installation instructions.

1.5  QUALITY ASSURANCE
   .1 Health and Safety:
      .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

1.6  DELIVERY, STORAGE, AND HANDLING
   .1 Packing, shipping, handling and unloading.
      .1 Deliver, store and handle in accordance with manufacturer’s written instructions and Section 01 61 00 – Common Product Requirements.
   .2 Waste Management and Disposal:
      .1 Construction / Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction / Demolition Waste Management and Disposal.
PART 2

PRODUCTS

2.1 CLEANING SOLUTIONS

.1 Low foaming detergent at all temperatures
.2 No pH neutralization required
.3 Designed for use on most metals including aluminium
.4 Bio-degradable
.5 Phosphate Free
.6 Nitrite Free

PART 3

EXECUTION

3.1 CLEANING HYDRONIC AND STEAM SYSTEMS

.1 Timing

.1 Systems to be operational, hydrostatically tested and with safety devices functional, before cleaning is carried out.
.2 Cleaning Agency:

.1 Retain qualified water treatment specialist to perform system cleaning.
.3 Install instrumentation such as flow meters, orifice plates, pitot tubes, flow metering valves only after cleaning is certified as complete by water treatment specialist.
.4 Cleaning procedures:

.1 Provide detailed report outlining proposed cleaning procedures at least 4 weeks prior to proposed starting date. Report to include:

.1 Cleaning procedures, flow rates, elapsed time.
.2 Chemicals and concentrations to be used.
.3 Inhibitors and concentrations.
.4 Specific requirements for completion of work.
.5 Special precautions for protecting piping system materials and components.
.6 Complete analysis of water to be used to ensure water will not damage systems or equipment.
.5 Conditions at time of cleaning of systems

.1 Systems to be free from construction debris, dirt and other foreign material.
.2 Control valves to be operational, fully open to ensure that terminal units can be cleaned properly.
.3 Strainers to be clean prior to initial fill.
.4 Install temporary filters on pumps not equipped with permanent filters.
.5 Install pressure gauges on strainers to detect plugging.

.6 Report on Completion of Cleaning

.1 When cleaning is completed, submit report, complete with certificate of compliance with specifications of cleaning component supplier.

.7 Hydronic Systems:

.1 Flush system thoroughly with water, back flush pump, strainers, blow down drain valves and risers to remove all loose debris. Remove accumulated sludge in boilers if necessary.
.2 Then add 2% solution of low foaming detergent to the system through a bypass feeder or another feeding device.
.3 Circulate for 36 hours at 82° C. For chilled systems, circulate at least 48 hours at ambient temperature.
.4 During recirculation, back flush strainers, drain valves and risers at their lowest point once every 8 hours.
.5 Drain cleaning water completely.
.6 Then fill and drain system several times. Circulate 30 minutes every time the system is refilled.
.7 Bleed system at several points until water is clear and non-foaming. Clean pump strainers.
.8 Draw a water sample from the system and send it to out laboratory for analysis.
.9 If the laboratory report is satisfactory, the system must then be treated with the appropriate formula.

3.2 START-UP OF HYDRONIC SYSTEMS

.1 After cleaning is completed and system is filled:

.1 Establish circulation and expansion tank level, set pressure controls.
.2 Ensure air is removed.
.3 Check pumps to be free from air, debris, possibility of cavitation when system is at design temperature.
.4 Dismantle system pumps used for cleaning, inspect, replace worn parts, install new gaskets and new set of seals.
.5 Clean out strainers repeatedly until system is clean.
.6 Commission water treatment systems as specified in Section 23 25 00 - HVAC Water Treatment Systems.
.7 Check water level in expansion tank with cold water with circulating pumps OFF and again with pumps ON.
.8 Repeat with water at design temperature.
.9 Check pressurization to ensure proper operation and to prevent water hammer, flashing, cavitation. Eliminate water hammer and other noises.

.10 Bring system up to design temperature and pressure slowly over a 48 hour period.

.11 Perform TAB as specified in Section 23 05 93 - Testing, Adjusting and Balancing (TAB).

.12 Adjust pipe supports, hangers, springs as necessary.

.13 Monitor pipe movement, performance of expansion joints, loops, guides, anchors.

.14 If sliding type expansion joints bind or if bellows type expansion joints flex incorrectly, shut down system, re-align, repeat start-up procedures.

.15 Re-tighten bolts, etc. using torque wrench, to compensate for heat-caused relaxation. Repeat several times during commissioning.

.16 Check operation of drain valves.

.17 Adjust valve stem packings as systems settle down.

.18 Fully open all balancing valves (except those that are factory-set).

.19 Check operation of over-temperature protection devices on circulating pumps.

.20 Adjust alignment of piping at pumps to ensure flexibility, adequacy of pipe movement, absence of noise or vibration transmission.

3.3 CLEANING

.1 Provide in accordance with Section 01 74 11 – Cleaning.

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

END OF SECTION
PART 1 GENERAL

1.1 SUMMARY

.1 Section includes:

.1 Materials and installation for light fuel oil piping.

1.2 RELATED SECTIONS

.1 Section 01 33 00 – Submittal Procedures.

.2 Section 01 45 00 – Quality Control.

.3 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

.4 Section 01 78 00 - Closeout Submittals.

.5 Section 23 05 05 – Installation of Pipework.

.6 Section 23 05 23.01 – Valves - Bronze.

.7 Section 23 08 01 – Performance Verification of Mechanical Piping Systems.

.8 Section 23 08 02 – Cleaning and Start-Up of Mechanical Piping Systems.

.9 Section 33 56 13 – Aboveground Fuel Storage Tanks

1.3 REFERENCES

.1 American Society of Mechanical Engineers (ASME)


.2 ASME-B16.9, Factory-Made Wrought Steel Buttwelding Fittings.

.2 American Society for Testing and Materials (ASTM)


.2 ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless.

.3 ASTM B61, Standard Specification for Steam or Valve Bronze Castings.

.4 ASTM B75M, Standard Specification for Seamless Copper Tube.

.3 Canadian Standards Association (CSA)

.1 CAN/CSA-B139, Installation Code for Oil Burning Equipment.

.2 CAN/CSA-B140.0, General Requirements for Oil Burning Equipment.

.4 Health Canada/Workplace Hazardous Materials Information Systems

.1 Material Safety Data Sheets (MSDS)
.5 Manufacturers Standardization Society of the Valve and Fitting Industry (MSS)
   .1 MSS-SP-80, Bronze Gate, Globe, Angle and Check Valves.

1.4 SUBMITTALS

   .1 Submittals in accordance with Section 01 33 00 – Submittal Procedures

   .2 Product Data
      .1 Submit manufacturer’s printed product literature, specifications and datasheet
          for piping, fittings and equipment.
          .1 Indicate on manufacturer’s catalogue literature the following: valves

   .3 Submit WHMIS MSDS in accordance with Section. Indicate VOC’s for adhesive and
          solvents during application and curing Section 02 62 00.01 – Hazardous Materials.

   .4 Test Reports: submit certified test reports from approved independent testing
          laboratories indicating compliance with specifications for specified performance
          characteristics and physical properties.

   .5 Certificates: submit certificates signed by manufacturer certifying that materials comply
          with specified performance characteristics and physical properties.

   .6 Instructions: submit manufacturer’s installation instructions.

   .7 Closeout submittals: submit maintenance and engineering data for incorporation into
          manual specified in Section 01 78 00 – Closeout Submittals

1.5 QUALITY ASSURANCE

   .1 Pre-Installation Meeting:
      .1 Convene pre-installation meeting one week prior to beginning work of this
          Section and on-site installations.
      .1 Verify project requirements.
      .2 Review installation and substrate conditions
      .3 Co-ordination with other building subtrades.
      .4 Review manufacturer’s installation instructions and warranty
          requirements.

   .2 Health and Safety:
      .1 Do construction occupational health and safety in accordance with Section 01 35
          29.06– Health and Safety Requirements.
      .3 Trades people to have journeyperson qualifications.

1.6 DELIVERY, STORAGE AND HANDLING

   .1 Waste Management and Disposal:
.1 Separate waste materials for reuse and recycling in accordance with Section 01
74 21 – Construction/Demolition Waste Management and Disposal
.2 Remove from site and dispose of packaging materials at appropriate recycling
facilities.
.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated
cardboard, packaging material in appropriate on-site bins for recycling in
accordance with Waste Management Plan (WMP).
.4 Separate for reuse and recycling and place in designated containers, steel, metal,
plastic waste in accordance WMP.
.5 Place materials defined as hazardous or toxic in designated containers.
.6 Handle and dispose of hazardous materials in accordance with Canadian
Environmental Protection Act (CEPA), Transportation of Dangerous Goods Act
(TDGA), Regional and Municipal regulations.
.7 Divert unused metal materials from landfill to metal recycling facility as
approved by Owner’s Representative.
.8 Unused paint, coating materials must be disposed of at official hazardous
material collection site as approved by Owner’s Representative.
.9 Unused sealant materials must not be disposed of into sewer system, into
streams, lakes, onto ground or in other location where it will pose health or
environmental hazard.

PART 2

PRODUCTS

2.1 FILL, VENT AND CARRIER PIPE (ABOVE GROUND)

.1 Steel: to ASTM A53/A53M, Schedule 40, continuous weld or electric resistance welded,
screwed.

.2 Copper: type K, soft copper tubing, to ASTM B75M, in continuous lengths.

2.2 STEEL PIPE COATING

.1 Bituminous paint: in accordance with manufacturer's recommendations.

2.3 JOINTING MATERIAL

.1 Screwed fittings: Teflon or pulverized lead paste. In accordance with manufacturers
recommendations.

.2 Soldered fittings: 95/5.

2.4 FITTINGS

.1 Steel:

.1 Malleable iron: screwed, banded, Class 150 to ASME-B16.3.
.3 Unions: malleable iron, brass to iron, ground seat, screwed, to ASTM A47/A47M.
.4 Nipples: Schedule 40, to ASTM A53/A53M.

2.5 GATE VALVES
.1 NPS 2 and under, screwed bonnet:
.1 Rising stem: to MSS-SP-80, Class 125, 860 kPa, bronze body, solid wedge disc as specified under Section 23 05 23.01 – Valves - Bronze.

2.6 GLOBE VALVES
.1 NPS 2 and under, screwed:
.1 To MSS-SP-80, Class 125, 860 kPa, bronze body, screwed over bonnet, renewable bronze disc as specified under Section 23 05 23.01 – Valves – Bronze.

2.7 BALL VALVES
.1 NPS 2 and under:
.1 Bronze body, screwed ends, TFE seal, hard chrome ball, 4 MPa, WOG as specified under Section 23 05 23.01 – Valves - Bronze.

2.8 SWING CHECK VALVES
.1 NPS 2 and under, screwed:
.1 To MSS-SP-80, Class 125, 860 kPa, bronze body, renewable composition disc suitable for oil service, screw in cap, regrindable seat as specified under Section 23 05 23.01 – Valves - Bronze.

PART 3 EXECUTION

3.1 PIPING
.1 Install oil piping system in accordance with CAN/CSA-B139 and CAN/CSA-B140.0.
.2 Paint all interior fuel oil piping with anti-corrosion paint. Colour: yellow
.3 Slope piping down in direction of storage tank unless otherwise indicated.
.4 Suction and return piping inside building (above ground):
.1 Steel, with screwed fittings run on floor protected by 6 mm checkered aluminum plate cover in traffic areas.
.2 Install filter and gate valve at burners.

3.2 VALVES

.1 Install valves with stems upright or horizontal unless approved otherwise by Owner’s Representative.

.2 Install ball valves at branch take-offs, to isolate pieces of equipment and as indicated.

.3 Install globe valves for balancing and in by-pass around control valves.

.4 Install swing check valves on discharge of pumps and as indicated.

3.3 FIELD QUALITY CONTROL

.1 Site Tests/Inspection:

.1 Test system in accordance with CSA-B139 and CSA-B140.0 and authorities having jurisdiction.

.2 Isolate tanks from piping pressure tests.

.2 Manufacturer’s Field Services:

.1 Have manufacturer of products, supplied under this Section, review work involved in the handling, installation/application, protection and cleaning, of its products and submit written reports, in acceptable format, to verify compliance of work with contract.

.2 Provide manufacturer’s field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer’s instructions.

.3 Schedule site visits, to review work, at stages listed:

.1 After delivery and storage of products, and when preparatory Work, or other Work, on which the work of this Section depends, is complete but before installation begins.

.2 Twice during progress of work at 25% and 60% complete.

.3 Upon completion of the work, after cleaning is carried out.

.4 Obtain reports, within 3 days of review, and submit, immediately, to Owner’s Representative.

.3 Refer to Section 23 08 01 – Performance Verification Mechanical Piping System

3.4 CLEANING AND START-UP

.1 In accordance with Section 23 08 02 - Cleaning and Start-Up of Mechanical and Piping Systems, supplemented as specified herein.

.2 Flush after pressure test with number 2 fuel oil for a minimum of two hours. Clean strainers and filters.
.3 Dispose of fuel oil used for flushing out in accordance with requirements of authority having jurisdiction.

.4 Check vents from regulators, control valves are terminated in approved location and are protected against blockage and damage.

.5 Check entire installation is approved by authority having jurisdiction.

.6 Perform cleaning operations as specified in Section 01 74 11 – Cleaning and in accordance with manufacturer’s recommendations.

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

3.5 PERFORMANCE VERIFICATION/COMMISSIONING

.1 Refer to Section 23 08 01 – Performance Verification of Mechanical Piping Systems.

.2 Refer to Section 01 91 13 – General Commissioning (Cx) Requirements.

END OF SECTION
PART 1  GENERAL

1.1  SUMMARY

.1 Section Includes.

.1 Materials and installation for steel piping, valves and fittings for hydronic systems in building services piping.

1.2  RELATED SECTIONS.

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 35 29.06 - Health and Safety Requirements.

.3 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.4 Section 01 78 00 - Closeout Submittals.

.5 Section 21 05 01 - Common Work Results -Mechanical.

.6 Section 23 05 00 – Common Work Results for Plumbing.

.7 Section 23 05 05 - Installation of Pipework.

.8 Section 23 05 17 - Pipe Welding.

.9 Section 23 05 23.01 - Valves - Bronze.

.10 Section 23 05 23.02 - Valves - Cast Iron

.11 Section 23 07 13 – Duct Insulation.

.12 Section 23 10 16 – HVAC Equipment Insulation.

.13 Section 23 07 19 – HVAC Piping Insulation.

.14 Section 23 08 01 - Performance Verification of Mechanical Piping.

.15 Section 23 08 02 - Cleaning and Start-up of Mechanical Piping Systems.

1.3  REFERENCES

.1 American Society of Mechanical Engineers (ASME).

.1 ASME B16.1, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.

.2 ASME B16.3, Malleable Iron Threaded Fittings: Classes 150 and 300.

.4 ASME B16.9, Factory-Made Wrought Buttwelding Fittings.
.5 ASME B18.2.1, Square Hex, Heavy Hex and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Loded Head and Lag Screws (Inch Series).
.6 ASME B18.2.2, Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Coupling Nuts (Inch Series).

.2 ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless.
.4 ASTM B61, Standard Specification for Steam or Valve Bronze Castings.
.5 ASTM B62, Standard Specification for Composition Bronze or Ounce Metal Castings.

.3 American Water Works Association (AWWA).
.1 AWWA C111, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

.4 Canadian Standards Association (CSA International).
.1 CSA B242, Groove and Shoulder Type Mechanical Pipe Couplings.
.2 CAN/CSA W48, Filler Metals and Allied Materials for Metal Arc Welding.

.5 Manufacturer's Standardization of the Valve and Fittings Industry (MSS).
.1 MSS-SP-67, Butterfly Valves.
.2 MSS-SP-70, Cast Iron Gate Valves, Flanged and Threaded Ends.
.3 MSS-SP-71, Cast Iron Swing Check Valves Flanged and Threaded Ends.
.4 MSS-SP-80, Bronze Gate, Globe, Angle and Check Valves.
.5 MSS-SP-85, Cast Iron Globe and Angle Valves, Flanged and Threaded Ends.

.6 Province of Newfoundland and Labrador Boiler, Pressure Vessel and Compressed Gas Regulations.

1.4 SUBMITTALS
.1 Submit shop drawings in accordance with Section 01 33 00 – Submittal Procedures.

.2 Closeout Submittals.
.1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 – Closeout Submittals, and include the following:
.1 Special servicing requirements.

.3 Grooved joint couplings and fittings to be indicated on product submittals and to be specifically identified with the applicable style or series designation.
.4 Grooved products manufacturer to supply on site tools and products for installation training.

.5 All grooved products to be of one manufacturer.

.6 Groove products to have current CRN numbers.

1.5 QUALITY ASSURANCE

.1 Health and Safety.

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Waste Management and Disposal.

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Fold up metal and plastic banding, flatten and place in designated area for recycling.

1.7 MAINTENANCE

.1 Extra Materials.

.1 Provide following spare parts:

.1 Valve seats: one for every ten valves, each size. Minimum one.

.2 Discs: one for every ten valves, each size. Minimum one.

.3 Stem packing: one for every ten valves, each size. Minimum one.

.4 Valve handles: two of each size.

.5 Gaskets for flanges: one for every ten flanges.

PART 2 PRODUCTS

2.1 PIPE

.1 Steel pipe: to ASTM A53/A53M, Grade B as follows:

.1 To NPS 6: schedule 40.

.2 NPS 8 and 10: schedule 40.

.3 NPS 12 and over, 10 mm wall thickness.
2.2 PIPE JOINTS

.1 NPS 2 and under: screwed fittings with PTFE tape or lead-free pipe dope.

.2 NPS 2-1/2 and over: welding fittings and flanges to CAN/CSA W48.

.3 Roll grooved: rigid coupling to CSA B242.

.4 Flexible couplings to CSA B242 to be used where noted on drawings and on elbows utilized on expansion joints.

.5 Flanges: plain ASME, B16.1, raised face, slip-on or weld neck to ASME B16.5.

.6 Orifice flanges: slip-on raised face, 2100 kPa.

.7 Flange gaskets: to AWWA C111

.8 Pipe thread: taper.

.9 Bolts and nuts: to ASME B18.2.1 and ASME B18.2.2.

.10 Roll grooved coupling gaskets: NPS 2 to 8, type EHP, EPDM high performance, -40°C to +120°C for continuous operation, NPS 10 and above type EPDM, -30°C to +110°C for continuous acceptable on hot water.

2.3 FITTINGS

.1 Screwed fittings: malleable iron, to ASME B16.3, Class 150.

.2 Pipe flanges and flanged fittings:

.1 Cast iron: to ASME B16.1, Class 125.

.2 Steel: to ASME B16.5.

.3 Butt-welding fittings: steel, to ASME B16.9.

.4 Unions: malleable iron, to ASTM A47/A47M and ASME B16.3.

.5 Fittings for roll grooved piping: malleable iron to ASTM A47/A47M, ductile iron to ASTM A536.

2.4 VALVES

.1 Connections:

.1 NPS2 and smaller: screwed ends.

.2 NPS2.1/2 and larger: Flanged or grooved ends.

.2 Gate valves: to MSS-SP-70 and MSS-SP-80 Application: Isolating equipment, control valves, pipelines:

.1 NPS 2 and under:
.1 Mechanical Rooms: Class 125 rising stem, solid wedge disc, as specified Section 23 05 23.01 – Valves – Bronze.

.2 Elsewhere: Class 125, non-rising stem, solid wedge disc, as specified Section 23 05 23.01 – Valves – Bronze.

.2 NPS 2 1/2 and over:
.1 Mechanical Rooms: rising stem, solid wedge disc, lead free bronze trim, as specified Section 23 05 23.02 – Valves – Cast Iron.

.2 Elsewhere: Non-rising stem, solid wedge disc, lead free bronze trim, as specified Section 23 05 23.02 – Valves – Cast Iron.

.3 Butterfly valves: to MSS-SP-67 Application: Isolating cells or section of multiple component equipment (eg. multi-section coils, multi-cell cooling towers).

.1 NPS 2 1/2 and over: Lug type or Grooved ends: as specified Section 23 05 17 – Pipe Welding.

.4 Globe valves: to MSS-SP-80 and 85 Application: Throttling, flow control, emergency bypass.

.1 NPS 2 and under:
.1 Mechanical Rooms: with plug disc, as specified Section 23 05 23.01 – Valves – Bronze.

.2 Elsewhere: Globe, with composition disc, as specified Section 23 05 23.01 – Valves - Bronze.

.2 NPS 2 1/2 and over:
.1 With composition bronze disc, bronze trim, as specified Section 23 05 23.02 – Valves – Cast Iron.

.5 Balancing, for TAB:

.1 Sizes: Calibrated balancing valves, as specified this section.

.2 NPS 2 and under:
.1 Copper alloy body threaded and, 2.1 MPa rating, globe style, self sealing measuring ports for temperature or pressure probes, locking tamper proof setting.

.2 Mechanical Rooms and Elsewhere: Globe, with plug disc as specified Section 23 05 23.01 - Valves – Bronze.

.3 In lieu of standard malleable iron or copper fittings the Contractor may install the following component system:
.1 Union port fitting with air vent and pressure/temperature port.

.2 Balancing valve, strainer with drain valve, ball valve combination may also be used.

.3 NPS 2 1/2 and over:
.1 Ductile iron body, flanged or grooved connections, 1700 kPa rating minimum, globe style, self sealing measurement parts for temperature or pressure probes, locking tamper proof setting.
Drain valves: Gate, Class 125 non-rising stem, solid wedge disc, as specified Section 23 05 23.01 – Valves - Bronze.

Bypass valves on gate and globe valves NPS 8 and larger: NPS ¾ as specified Section 23 05 23.01 – Valves - Bronze.

Swing check valves: to MSS-SP-71.

NPS 2 and under:
.1 Class 125 swing, with composition disc, as specified Section 23 05 23.01 – Valves - Bronze.

NPS 2 1/2 and over:
.1 Flanged or grooved ends: as specified Section 23 05 23.02 – Valves – Cast Iron.

Silent check valves:

NPS 2 and under:
.1 As specified Section 23 05 23.01 – Valves – Bronze.

NPS 2 1/2 and over:
.1 Flanged or grooved or wafer style ends: as specified Section 23 05 23.02 – Valves – Cast Iron.

Ball valves:

NPS 2 and under: as specified Section 23 05 23.01 – Valves - Bronze.

PART 3  EXECUTION

3.1  PIPING INSTALLATION
.1 Install pipework in accordance with Section 23 05 05 – Installation of Pipework by certified journeyperson and authority having jurisdiction.

3.2  CLEANING, FLUSHING AND START-UP
.1 In accordance with Section 23 08 02 – Cleaning and Start-up of Mechanical Piping Systems.

3.3  TESTING
.1 Test system in accordance with Section 21 05 01 – Common Work Results - Mechanical. Minimum 1.5 times working pressure or 1000 kPa.

3.4  PERFORMANCE VERIFICATION
.1 In accordance with Section 23 08 01 – Performance Verification of Mechanical Systems.
.2 Provide copies of test reports for Commissioning Manuals.

END OF SECTION
PART 1  GENERAL

1.1  SUMMARY
.
.1  Section includes:
   .1  Materials, accessories, and installation for breeching, chimney’s, and stacks.

1.2  RELATED SECTIONS
.
.1  Section 01 33 00 - Submittal Procedures.
.2  Section 01 74 21 – Construction/Demolition Waste Management and Disposal
.3  Section 01 78 00 - Closeout Submittals.
.4  Section 03 30 00 - Cast-in-Place Concrete.

1.3  REFERENCES
.
.1  Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
.2  Underwriters' Laboratories of Canada (ULC)
.3  Health Canada/Workplace Hazardous Materials Information System (WHMIS)
   .1  Material Safety Data Sheets (MSDS)

1.4  SUBMITTALS
.
.1  Product Data
   .1  Submit manufacturer’s printed product literature, specifications and datasheet in accordance with Section 01 33 00 – Submittal Procedures. Include product characteristics, performance criteria, and limitations.
   .1  Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 – Submittal Procedures.

.2  Shop Drawings
   .1  Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
   .2  Indicate following:
      .1  Methods of sealing sections.
      .2  Methods of expansion.
      .3  Details of thimbles.
      .4  Bases/Foundations.
      .5  Supports.
.6 Guy details.
.7 Rain caps.
.8 Installation procedures.

.3 Quality assurance submittals: submit following in accordance with Section 01 33 00 – Submittal Procedures.

.1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.4 Closeout Submittals

.1 Submit operation and maintenance data for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.

1.5 QUALITY ASSURANCE

.1 Regulatory Requirements: work to be performed in compliance with Canadian Environmental Protection Act (CEPA), Canadian Environmental Assessment Act (CEAA), Transportation of Dangerous Goods Act (TDGA), and applicable Provincial regulations.

.2 Health and Safety:

.1 Do construction occupational health and safety in accordance with Section 01 35 90.06 – Health and Safety Requirements.

.3 Certificates:

.1 Catalogued or published ratings: obtained from tests carried out by independent testing agency or manufacturer signifying adherence to codes and standards.

1.6 DELIVERY, STORAGE, AND HANDLING

.1 Packing, shipping, handling and unloading:

.1 Deliver, store and handle in accordance with manufacturer's written instructions and Section 01 61 00 - Common Product Requirements.

.2 Waste Management and Disposal:

.1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 BREECHING

.1 Shop fabricated 3.5 mm thick mild steel, or stainless welded, with sweep bends from boiler outlet to thimble or chimney as indicated per 2.2 below.
.2 Verify existing breaching connection size to chimney and all confirm all dimensions on site prior to fabrication.

2.2 ACCESSORIES

.1 Cleanouts: bolted, gasketted type, full size of breeching, as indicated.

.2 Barometric dampers: single or double acting, 70% of full size of breeching area, as recommended by manufacturer.

.3 Hangers and supports: in accordance with recommendations of Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA).

.4 Expansion sleeves with heat resistant caulking, held in place as indicated.

PART 3 EXECUTION

3.1 MANUFACTURER’S INSTRUCTIONS

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

3.2 INSTALLATION - GENERAL

.1 Follow manufacturer's and SMACNA installation recommendations for shop fabricated components.

.2 Suspend breeching at 1.5 m centres and at each joint.

3.3 CLEANING

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

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

END OF SECTION
PART 1  GENERAL

1.1  SUMMARY

.1  Section Includes:

.1  Heating boiler units:

.1  Cast iron.

.2  Oil burners.

.3  Installation.

.4  Commissioning.

.2  Sectional boilers to be assembled onsite or field verified prior to shop drawing submittal that they can be supplied fully assembled and moved into the boiler room.

1.2  RELATED SECTIONS

.1  Section 01 33 00 - Submittal Procedures.

.2  Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.3  Section 01 78 00 - Closeout Submittals.

.4  Section 23 05 19.01 – Thermometers and Pressure Gauges – Piping Systems.

1.3  REFERENCES

.1  American Boiler Manufacturer's Association (ABMA)

.2  American National Standards Institute (ANSI)/ American Society of Mechanical Engineers (ASME)

.1  ANSI/ASME Boiler and Pressure Vessel Code, Section IV.

.3  Canadian Standards Association (CSA)

.1  CSA B51, Boiler, Pressure Vessel, and Pressure Piping Code.

.2  CSA B139, Installation Code for Oil Burning Equipment.

.3  CSA B140.7.2 Oil-Fired Steam and Hot Water Boilers for Commercial and Industrial Use.

.4  National Electrical Manufacturers Association (NEMA)

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

.1  Material Safety Data Sheets (MSDS)

.6  Province of Newfoundland and Labrador Boiler, Pressure Vessel and Compressed Gas Regulations.
1.4 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer’s printed product literature, specifications and datasheet in accordance with Section 01 33 00 – Submittals Procedures. Include product characteristics, performance criteria, and limitations.

.1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 – Submittal Procedures.

.2 Shop Drawings:

.1 Submit shop drawings in accordance with Section 01 33 00 – Submittal Procedures.

.2 Indicate the following:

.1 General arrangement showing terminal points, instrumentation test connections.

.2 Clearances for operation, maintenance, servicing, tube cleaning, tube replacement.

.3 Foundations with loadings, anchor bolt arrangements.

.4 Piping hook ups.

.5 Equipment electrical drawings.

.6 Burners and controls.

.7 All miscellaneous equipment.

.8 Flame safety control systems.

.9 Breeching and stack configuration.

.10 Stack emission continuous monitoring system to measure CO, O, NOx, SO, stack temperature and smoke density of flue gases.

.3 Engineering data to include:

.1 Boiler efficiency at 25%, 50%, 75%, 100%, and 110% of design capacity.

.2 Radiant heat loss at 100% design capacity.

.3 Quality assurance submittals: submit following in accordance with Section 01 33 00 – Submittal Procedures.

.1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.2 Instructions: submit manufacturer’s installation instructions.

.4 Closeout Submittals:

.1 Submit operation and maintenance data for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.

1.5 QUALITY ASSURANCE

.1 Regulatory Requirements: work to be performed in compliance with Canadian Environmental Protection Act (CEPA), Canadian Environmental Assessment Act
(CEAA), Transportation of Dangerous Goods Act (TDGA), and applicable Provincial regulations.

.2 Health and Safety:
  .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 – Health and Safety Requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

.1 Packing, shipping, handling and unloading:
  .1 Deliver, store and handle in accordance with manufacturer’s written instructions and Section 01 61 00 – Common Product Requirements.

.2 Waste Management and Disposal:
  .1 Construction/demolition waste management and disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
  .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

1.7 MAINTENANCE

.1 Extra materials:
  .1 Special tools for burners, manholes, handholes and operation and maintenance.
  .2 Spare parts for 1 year of operation.
  .3 Spare gaskets – 1 set.
  .4 Spare gauge glass inserts – 1 of each size and type.
  .5 Probes and sealants for electronic indications – 1 set.
  .6 Spare burner tips – 1 set.
  .7 Spare burner gun – 1.
  .8 Safety valve test gauge – 1.

PART 2 PRODUCTS

2.1 GENERAL

.1 Packaged boiler:
  .1 Complete with burner and necessary accessories and controls.
  .2 Laboratory tested at rated capacity to, and bearing seal or nameplate certifying compliance with, CSA B140.7.2.
  .3 Ready for attachment to piping, electrical power, controls, flue gases exhaust.
  .4 Designed and constructed to ANSI/ASME Boiler and Pressure Vessel Code.
  .5 CRN (Canadian Registration Number), to CSA B51 and authority having jurisdiction.
Boiler/burner package to bear ULC label.

Performance:

1. In accordance with American Boiler Manufacturers Association (ABMA) testing procedures.
2. Steam: Refer to drawings.
3. Firing rate: #2 oil. As indicated.
4. Boiler efficiency: 80% minimum at 30% to 100% firing rates.
5. Flue gas temperature leaving boiler:
   1. Not to exceed 260°C.
   2. Above dewpoint conditions at minimum firing rate.

Electrical:

1. Power: as indicated.
2. Controls: as indicated.
3. Electrical components: CSA approved.
4. Controls: factory wired. NEMA 1 steel cabinet

Thermal insulation:

1. 50 mm thick mineral fibre. Seal insulation at handholes, manholes, mudholes, piping connections with insulating cement or asphaltic paint. Finish with heat resisting paint.

Jackets: heavy gauge metal, finished with heat resisting paint.

Mounting:

1. Structural steel base, lifting lugs.

Anchor bolts and templates:

1. Anchor bolts to be sized in accordance with manufacturer requirements.

Start-up, instruction, on-site performance tests: three (3) working days per boiler.

Trial usage:

1. Owner’s Representative may use boilers for test purposes prior to acceptance and commencement of warranty period.
2. Supply labour, materials and instruments required for tests.

Temporary use by contractor:

1. Contractor may use boilers providing warranty is not affected and only after written approval from Owner’s Representative.
3. Refurbish to as-new condition before final inspection and acceptance.
2.2 CAST IRON BOILER

.1 Sectional, forced draft firing, waterwall design, complete with factory assembled or site assembled water cooled sections, front plate and removable panels.

.2 Design of sections to provide balanced water circulation and flue gas travel. Make sections gas-tight and water-tight through use of high temperature rope, nipples, pull-up bolts.

.3 Flue passages: readily accessible without use of special tools.

.4 Provide supply and return headers, elbows to manufacturers recommendations and to suit installation.

.5 Include mudholes, inspection and cleanout handholes.

.6 ASME Safety Relief.

.7 Built in Air Eliminator.

.8 High/low limit control.

2.3 AUXILIARIES

.1 Provide for each boiler and to meet ANSI/ASME requirements.

.2 Hot water boilers:

.1 Relief valves: ANSI/ASME rated, set at 344 kPa, to release entire boiler capacity.

.2 Pressure gauge: to Section 23 05 19.01 – Thermometers and Pressure Gauges – Piping Systems, two times normal operating range.

.3 Thermometer: to Section 23 05 19.01 – Thermometers and Pressure Gauges – Piping Systems range two times normal operating range.

.4 Float operated Low water cut-off: with visual and audible alarms and blow down test valve and piping.

.5 Isolating butterfly valves: on supply and return connections.

.6 Drain valve: NPS 2.

.7 Stack thermometer: Range 65 to 400 °C.

.8 One 1 set of cleaning tools.

2.4 OIL BURNERS

.1 General:

.1 2 stage pressure-mechanical atomizing natural draft with:

.1 Built-in blower to supply combustion air, complete with motor, silencer and damper.
Two stage oil pump driven by blower motor and complete with integral relief valve.

Oil filter.

Pressure gauge.

High voltage ignition transformer.

Flame observation port.

Easy access to nozzles and electrodes.

Oil and air metering controls for maximum burner efficiency throughout operating range.

Turndown ratio: at least: 2:1.

Controls:

1. Electronic combustion control relay with scanner for combustion control and flame supervision.

2. Control to shut off fuel within 5 seconds upon flame failure or upon signal of safety interlock and to ensure, when restarted, in sequence, ignition and resumption of supervision of burner operation.

3. Burner operation to include:
   1. Pre-purge.
   2. Pilot ignition and supervision.
   4. Post-purge upon burner shut-down.

4. Immersion controllers:
   1. Operating: to start and stop burner, and operating between adjustable setpoints.
   2. High-low: to shift burner operation to high or low fire.
   4. High limit: manual reset, As indicated.
   5. Controller range: As indicated.

5. Visual and audible alarms: to indicate burner shutdown due to flame failure, low water level, high pressure, low air pressure, low fuel pressure, low fuel temperature.

6. Selector switch: to permit manual and automatic firing at any rate between low and high fire.

7. Pilot lights: to indicate:
   1. Normal burner operation
   2. All stages of burner operation.

8. Burner to start up in low fire position.

2.5 EMISSION CONTROL

1. Rate of discharge of air contaminants from boiler not to exceed NL regulations on air pollution control.
PART 3  EXECUTION

3.1 INSTALLATION

.1 Install in accordance with ANSI/ASME Boiler and Pressure Vessels Code Section IV, regulations of Province having jurisdiction, except where specified otherwise, and manufacturers recommendations.

.2 Make required piping connections to inlets and outlets recommended by boiler manufacturer.

.3 Maintain clearances as indicated or if not indicated, as recommended by manufacturer for operation, servicing and maintenance without disruption of operation of any other equipment/system.

.4 Mount unit level.

.5 Pipe hot water relief valves full size to nearest drain.

.6 Pipe steam relief valve through roof with drip pan elbow piped to nearest drain.

.7 Pipe blowdown/drain to blowdown tank/floor drain.

.8 Oil fired installations - in accordance with CSA-B139.

.9 All boilers to be approved by the local authorities having jurisdiction. Obtain all required inspections and approvals prior to start-up and commissioning. Provide copies of affidavits, approval letters, etc., to the Owner’s Representative for record purposes.

3.2 MOUNTINGS AND ACCESSORIES

.1 Safety valves and relief valves:

   .1 Run separate discharge from each valve.

   .2 Terminate discharge pipe as indicated.

   .3 Run drain pipe from each valve outlet and drip pan elbow to above nearest drain.

.2 Blowdown valves:

   .1 Run discharge to terminate as indicated.

3.3 FACTORY TESTING

.1 After testing and prior to shipment, the equipment to be thoroughly cleaned, flushed, dried and painted.

3.4 FIELD QUALITY CONTROL

.1 Commissioning

   .1 Manufacturer to:
.1 Certify installation.
.2 Start up and commission installation.
.3 Carry out on-site performance verification tests.
.4 Demonstrate operation and maintenance.

.2 Provide Owner’s Representative at least two (2) working days notice prior to inspections, tests, and demonstrations. Submit written report of inspections and test results.

.3 Commission in accordance with Section 01 91 13 – General Commissioning (Cx) Requirements.

.4 Final commissioning to occur between November and March when ambient temperature is 10° C or lower.

END OF SECTION
ASBESTOS MATERIALS RE-ASSESSMENT
TWILLINGATE HOSPITAL
TWILLINGATEE, NL

Prepared for:
Central East Health Care Institute Board
Trans Canada Highway
Gander, Newfoundland and Labrador

Attention: Brian Kinden

Pinchin LeBlanc Environmental Ltd. Project 02-8812-02

August 5, 2008
Summary

Pinchin LeBlanc Environmental Limited (PLEL) was retained by Mr. Brian Kinden to complete an asbestos materials re-assessment of the Twillingate Hospital in Twillingate, Newfoundland and Labrador.

The Re-assessment has identified the following conclusions:

- Friable and non-friable asbestos-containing materials were identified throughout the site building.
# TABLE OF CONTENTS

1.0 INTRODUCTION ................................................................................................................1
2.0 SURVEY CRITERIA ...........................................................................................................1
3.0 ASBESTOS-CONTAINING MATERIALS ........................................................................2
4.0 RE-ASSESSMENT CONDITION ..................................................................................3
5.0 RECOMMENDATIONS ................................................................................................10
6.0 LIMITATIONS .............................................................................................................11
7.0 CLOSURE ......................................................................................................................12
1.0 INTRODUCTION

Pinchin LeBlanc Environmental Limited (PLEL) was retained by Mr. Brian Kinden to complete an asbestos materials re-assessment of the Twillingate Hospital in Twillingate, Newfoundland and Labrador.

This report will present the results of the survey including methodology, general survey notes.

1.1 Scope of Work

The objective of the survey was to re-assess the presence, condition and location of asbestos containing building materials within the building.

2.0 SURVEY CRITERIA

2.1 Methodology

The surveyor entered rooms and basement areas where access was possible. The surveyor re-assessed the site for the presence of asbestos containing materials (ACM) that were previously identified in the February 2007 report.

2.2 Basis of Evaluation and Recommendation

The condition of any identified ACM is evaluated as well as the potential for its disturbance. These evaluation criteria are based on the conclusions of published studies, particularly the “Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario”, existing Ontario regulation, regulations from other provinces, and our experience involving buildings that contain friable ACM.

ACM material was considered damaged if it is: sprayed material that is delaminating, mechanical insulation with damaged/missing insulation or jacketing, non-friable materials that have been pulverized, exposed underpad on vinyl sheet flooring, etc.

The priority for remedial action is based not only on the evaluation of condition but is also based on several other factors which include:

- Accessibility or potential for direct contact and disturbance, which can cause the release of asbestos to the air.
- Practicality of repair (for example will damage to the ACM continue even if it is repaired).
• Efficiency of the work (for example if damaged ACM is being removed in an area, it may be most practical to remove all ACM in the area even if it is in GOOD condition).

Recommendations also include those that are mandatory regulated requirements, such as some provincial requirements for institution of an asbestos management plan, training, record keeping etc.

3.0 ASBESTOS-CONTAINING MATERIALS (ACM)

Sample numbers referenced below correspond to the bulk analysis reported in the previous report.

Table 3.0.1 Asbestos Sample Results

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Location/Description</th>
<th>Asbestos (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Room 138 – Mechanical Room Basement Insulation – Expansion Tank</td>
<td>50-75% Chrysotile</td>
</tr>
<tr>
<td>002</td>
<td>Room 138 – Mechanical Room Basement Insulation – DHW Tank</td>
<td>50-75% Chrysotile</td>
</tr>
<tr>
<td>003</td>
<td>Room 138 – Mechanical Room Basement Insulation – Header</td>
<td>50-75% Chrysotile</td>
</tr>
<tr>
<td>004</td>
<td>Room 138 – Mechanical Room Basement Insulation – Pipe Elbows</td>
<td>50-75% Chrysotile</td>
</tr>
<tr>
<td>005</td>
<td>Boiler Room – Basement Insulation – Boiler Exhaust</td>
<td>None Detected</td>
</tr>
<tr>
<td>006</td>
<td>Boiler Room – Basement Insulation – Generator Exhaust</td>
<td>50-75% Chrysotile and &gt;75% Chrysotile</td>
</tr>
<tr>
<td>007</td>
<td>Boiler Room – Basement Debris – On Electrical Equipment</td>
<td>None Detected</td>
</tr>
<tr>
<td>008</td>
<td>Room 125 – Basement Wall – Drywall Joint Filler</td>
<td>1-5% Chrysotile</td>
</tr>
<tr>
<td>009</td>
<td>Room 133 – Contaminated Area Basement Ceiling – Acoustic Ceiling Tile 2x4</td>
<td>None Detected</td>
</tr>
<tr>
<td>010</td>
<td>Room 112 – Male Washroom Basement 12x12 beige with speck floor tiles</td>
<td>None Detected</td>
</tr>
<tr>
<td>011</td>
<td>Stores – Basement Skim Coat on Concrete Walls</td>
<td>0.1-1% Chrysotile</td>
</tr>
<tr>
<td>012</td>
<td>2x4 Acoustic Ceiling Tile Room 135</td>
<td>None Detected</td>
</tr>
<tr>
<td>013</td>
<td>Room 144 – Health Records Room</td>
<td>None Detected</td>
</tr>
</tbody>
</table>
Asbestos Re-assessment  
Twillingate Hospital  
PLEL Project No. 02-8812-02

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Location/Description</th>
<th>Asbestos (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>014</td>
<td>Waiting Area – 2nd Floor Drywall Joint filler</td>
<td>None Detected</td>
</tr>
<tr>
<td>015</td>
<td>Exam Room #2 - 2nd floor Drywall Joint Filler</td>
<td>1-5% Chrysotile</td>
</tr>
<tr>
<td>016</td>
<td>Exam Room # 7 2x2 Ceiling Tile – Pinhole Fleck Pattern</td>
<td>None Detected</td>
</tr>
<tr>
<td>017</td>
<td>Room 223 Blown In Insulation</td>
<td>None Detected</td>
</tr>
<tr>
<td>018</td>
<td>Room 239 Transite Sheeting</td>
<td>10-25% Chrysotile</td>
</tr>
<tr>
<td>019</td>
<td>Room 263 Drywall Joint Filler</td>
<td>1-5% Chrysotile</td>
</tr>
<tr>
<td>020</td>
<td>Room 260 – Lounge (Woman’s) 2x2 Acoustic Ceiling Tile (pinhole with speckle pattern)</td>
<td>None Detected</td>
</tr>
<tr>
<td>021</td>
<td>Room 305 – 3rd Floor Drywall Joint Filler</td>
<td>1-5% Chrysotile</td>
</tr>
<tr>
<td>022</td>
<td>O.R. Lounge &amp; Corridor 3rd Floor Drywall Joint Filler</td>
<td>1-5% Chrysotile</td>
</tr>
<tr>
<td>023</td>
<td>Room 391 – Male Lockers Heat Guard in Lights</td>
<td>&gt; 75% Chrysotile</td>
</tr>
<tr>
<td>024</td>
<td>Mechanical Penthouse Above O.R. Fire stop Around Pipes</td>
<td>50-75% Chrysotile</td>
</tr>
</tbody>
</table>

The department of Environment and Labour recognises asbestos containing materials as those having greater than 1% asbestos by volume.

4.0 RE-ASSESSMENT CONDITION

A summary of the re-assessment findings is defined in the following table:

Table 4.0.1 Re-assessment Findings

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ASBESTOS PRESENT</th>
<th>RECOMMENDATIONS 2002</th>
<th>RECOMMENDATIONS 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room 138 – Mechanical</td>
<td>Drywall Pipe Fittings DHW Tanks (2) Headers</td>
<td>Repair 13 elbows, remove 25 and maintain remaining in Good Condition</td>
<td>All repairs complete. There are 25 elbows removed and there are 2</td>
</tr>
<tr>
<td>LOCATION</td>
<td>ASBESTOS PRESENT</td>
<td>RECOMMENDATIONS 2002</td>
<td>RECOMMENDATIONS 2008</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------</td>
<td>----------------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Expansion Tanks</td>
<td></td>
<td>elbows that need repair</td>
<td></td>
</tr>
<tr>
<td>Room 139A – Boiler Room</td>
<td>Drywall</td>
<td>Repair 5 elbows, remove 195 and maintain remaining in Good Condition</td>
<td>Elbows repaired and removal complete</td>
</tr>
<tr>
<td>Tunnel</td>
<td>Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 123</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 125</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Carpentry Shop</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Storage Room</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 118 - Morgue</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 133</td>
<td>Drywall Pipe Fittings</td>
<td>Remove 5 Elbows and Maintain remaining in Good Condition. 40 sf of drywall need repairs.</td>
<td>Same</td>
</tr>
<tr>
<td>Rooms 131, 127, 128, 126</td>
<td>Drywall Pipe Fittings</td>
<td>Remove 25 elbows, clean ceiling space and debris and maintain remaining in GOOD Condition.</td>
<td>Same</td>
</tr>
<tr>
<td>Room 115A</td>
<td>Drywall Pipe Fittings</td>
<td>Remove 2 elbows and Maintain remaining in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 114, 112, 142, 148</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 108</td>
<td>Drywall Pipe Fittings</td>
<td>Remove 1 elbow and Maintain remaining in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 151</td>
<td>Drywall Pipe Fittings Debris</td>
<td>Remove 5 elbows, clean ceiling space and debris and maintain remaining in GOOD Condition.</td>
<td>Work done good</td>
</tr>
<tr>
<td>Room 107</td>
<td>Drywall Pipe Fittings Debris</td>
<td>Remove 18 elbows, clean ceiling space and debris and maintain remaining in</td>
<td>4 poor while rest is good</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td>ASBESTOS PRESENT</td>
<td>RECOMMENDATIONS 2002</td>
<td>RECOMMENDATIONS 2008</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Room 143B</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>Skim Coat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GOOD Condition. 2 below ceiling</td>
<td></td>
</tr>
<tr>
<td>Room 103</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Debris</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clean ceiling space and debris and maintain remaining in GOOD Condition.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 102</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Repair 2 elbows</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 144</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>Skim Coat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 141, 146</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 135</td>
<td>Drywall Pipe Fittings</td>
<td>Repair 10 elbows and Maintain remaining in Good Condition</td>
<td>Repairs complete</td>
</tr>
<tr>
<td></td>
<td>Skim Coat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 137</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Corridor</td>
<td>Drywall Pipe Fittings</td>
<td>Repair 5 elbows and Maintain remaining in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Corridor</td>
<td>Drywall Pipe Fittings</td>
<td>Repair 20 elbows, clean ceiling space and debris and maintain remaining in GOOD Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Corridor</td>
<td>Drywall Pipe Fittings</td>
<td>Repair 5 elbows and Maintain remaining in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td>Skim Coat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 271</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridor 2nd Floor All Wings</td>
<td>Drywall Pipe Fittings</td>
<td>Remove 12 elbows, Repair 7 and Maintain remaining in Good Condition</td>
<td>Done</td>
</tr>
<tr>
<td>Room 243</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Male Wash</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>LOCATION</td>
<td>ASBESTOS PRESENT</td>
<td>RECOMMENDATIONS 2002</td>
<td>RECOMMENDATIONS 2008</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Room Exam Area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hallway By Exam Rooms</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Exam Room /Reception/Dr’s Office</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Janitors Closet</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 218, 221, 220</td>
<td>Drywall Pipe Fittings Debris Transite Fume Hoods</td>
<td>Repair 5 elbows, clean ceiling space and debris and maintain remaining in GOOD Condition</td>
<td>2 are still poor while the rest is good</td>
</tr>
<tr>
<td>Room 222, 225, 226, 231</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 223 &amp; Canopy</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>X239 &amp; Canopy</td>
<td>Drywall Transite Sheeting</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 239B</td>
<td>Drywall Pipe Fittings Debris</td>
<td>Repair 4 elbows, clean ceiling space and debris and maintain remaining in GOOD Condition</td>
<td>Same for debris of spray non asbestos</td>
</tr>
<tr>
<td>Room 233</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>X-Ray Change Room</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 229A / 234</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 230</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 217A</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Nurses Treatment</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Nurses Station</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Medical Records/Business Office</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>LOCATION</td>
<td>ASBESTOS PRESENT</td>
<td>RECOMMENDATIONS 2002</td>
<td>RECOMMENDATIONS 2008</td>
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</tr>
<tr>
<td>Room 290C 290D, 291</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 295</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 200A Main Foyer</td>
<td>Drywall Pipe Fittings Debris</td>
<td>Clean ceiling space and debris and maintain remaining in GOOD Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Waiting Room</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Gift Shop</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Exam Room #1, #2, #3, #7, #6, #4, #5</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Infant Weight Room $ Washrooms</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 209</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Medical Secretaries Room</td>
<td>Drywalls</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Washrooms Exam Areas</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Exam Room</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Dr’s Office West Wing 2nd Floor</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 291C</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Exam Room / West Wing 2nd Floor</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Exam Room Next to Dr’s Office</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Corridor Near Med Science</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>ER Foyer</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>LOCATION</td>
<td>ASBESTOS PRESENT</td>
<td>RECOMMENDATIONS 2002</td>
<td>RECOMMENDATIONS 2008</td>
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<td>----------------------</td>
</tr>
<tr>
<td>Room 278, 273, 274, 275, Pipe Fittings</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 217B Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 263 - Lockers Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 264 Drywall Pipe Fittings</td>
<td>Repair 4 elbows and Maintain remaining in Good Condition</td>
<td>Repair 1 elbow</td>
<td></td>
</tr>
<tr>
<td>Room 256 – Corridor to Staff Lounge Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 260 Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 262 Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Male Lounge Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Foyer by Garage Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 258, 252, Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>OR – Room 305, 306, 307, 308, Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 309, 311 Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>OR lounge Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 398A, 395, 394, 396, Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Room 391 Drywall Pipe Fittings Light Fixtures</td>
<td>Maintain in Good Condition</td>
<td>Lights gone but rest are good</td>
<td></td>
</tr>
<tr>
<td>Room 302 Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Mechanical Penthouse over OR Drywall Pipe Fittings Pipe Chase Fire Stop</td>
<td>Remove 25 elbows, Clean 9 fire stops, Repair 30 elbows and Maintain remaining in Good Condition</td>
<td>All removal and repairs are done</td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td>ASBESTOS PRESENT</td>
<td>RECOMMENDATIONS 2002</td>
<td>RECOMMENDATIONS 2008</td>
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</tr>
<tr>
<td>Room 400</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 335, 367B, 334, Washrooms, 385, 384A, 320, Social Workers, 324, 326, Office</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Chapel/Quiet Room</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 319, 318, 316,</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 317</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Corridor Around public Health &amp; Diabetes</td>
<td>Drywall Pipe Fittings Debris</td>
<td>Remove 26 elbows, repair 17 elbows, clean ceiling space and debris and maintain remaining in GOOD Condition</td>
<td>Work done all good</td>
</tr>
<tr>
<td>Room 380, 379, 378, 377, 375, 381, 372,</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 376A</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Nurses Station / Room 366</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Coronary Care</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 370, 369, 368, 361, 360, 359, 358, 365,</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 373 – WRM Staff</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 364 – Elect. Room</td>
<td>Drywall Pipe Fittings</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Room 363, 362, 333,</td>
<td>Drywall</td>
<td>Maintain in Good Condition</td>
<td>Same</td>
</tr>
<tr>
<td>Corridor Around</td>
<td>Drywall Pipe Fittings</td>
<td>Remove 6 elbows, clean</td>
<td>All good</td>
</tr>
<tr>
<td>LOCATION</td>
<td>ASBESTOS PRESENT</td>
<td>RECOMMENDATIONS 2002</td>
<td>RECOMMENDATIONS 2008</td>
</tr>
<tr>
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<td>----------------------</td>
</tr>
<tr>
<td>Elevators</td>
<td>Debris ceiling space and debris and maintain remaining in GOOD Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 322, 374A, 355, 353, 352, 351,</td>
<td>Pipe Fittings Drywall Maintain in Good Condition Same</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Room 347</td>
<td>Drywall Pipe Fittings Maintain in Good Condition Same</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corridor @ Rooms 342-347</td>
<td>Drywall Pipe Fittings Maintain in Good Condition Same</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P04 – Mechanical Penthouse</td>
<td>Drywall Pipe Fittings AHU Parging Around Doors Fire Stop Remove 7 fire stops, remove 5 elbows, remove parging around ventilation doors, and remove stored pipe with asbestos and Maintain remaining in Good Condition All complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior</td>
<td>Transite Soffits Maintain in Good Condition Same</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5.0 RECOMMENDATIONS

This re-assessment has identified the presence of asbestos-containing materials in the building. The disturbance of these materials will require special handling, packaging and disposal. Such disturbance is typically brought about during building renovation, alteration or demolition.

The following recommendations are offered:
1. The scheduled removal or repair of asbestos-containing pipe insulation should be completed following Type 2 (moderate risk, glove bag method) asbestos abatement procedures.

2. The removal or repair of asbestos containing drywall joint compounds should be completed following Type 1 or Type 2 asbestos abatement procedures.

3. The scheduled removal and handling of non-friable materials should be completed using Type 1 (low risk) asbestos abatement procedures.

4. Future occupancy personnel and outside contractors should be informed of the presence and location of asbestos-containing materials within this structure.

5. The Newfoundland Asbestos Abatement Regulation (111/98) requires that an asbestos management plan be implemented when any type of asbestos has been identified within a building. The owner should adopt such a plan to manage the asbestos identified in this survey.

6. All asbestos abatement should be completed by a certified asbestos abatement contractor or in house personnel who are adequately trained and equipped to do so. All work must comply with the Newfoundland and Labrador Asbestos Abatement Regulation 111/98.

6.0 LIMITATIONS

This report was produced for the sole benefit of Central East Health Care. A number of limitations are described throughout this report. The intent of the limitations is to clearly identify to the user of this report that, due to the nature of building construction, some limitations exist as to the possible thoroughness of a survey.

Pinchin LeBlanc Environmental Limited warrants that the findings and conclusions contained herein have been derived in accordance with generally accepted inventory methods. The work has been completed in accordance with client request and agreed upon scope of work, schedule and budget. These evaluation methods have been developed to provide the client with information regarding apparent indications of existing or potentially asbestos conditions relating to the site and are limited to the conditions observed and information available at the time of the site visit. There is a distinct possibility that conditions may exist which could not be reasonably identified within the scope of the survey or which were not apparent during the site visit.
This investigation was not exhaustive and cannot be construed as a certification of the absence of any asbestos materials from the site. Conclusions derived are specific and limited to the immediate area of investigation. Representative samples have been analyzed for substances that are expected, based on the data available at the time of the study. The absence of information relating to a specific substance does not preclude its presence. This investigation satisfies the client’s requirements for the proposed renovation inside this building. However, should major demolition of the structure be required, additional sampling for the purpose of delineation of the asbestos containing materials may be required. In conjunction with this investigation an intrusive investigation into concealed spaces such as wall cavities and ceiling plenums, not considered a part of this project, should be conducted to identify asbestos materials if present.

Third party use of this report, or any reliance on or decisions made based on the findings of this report, are the sole responsibility of such third parties. Pinchin LeBlanc Environmental Limited accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted based on this report.

7.0 CLOSURE

Should there be any questions regarding the contents of this report, please contact the undersigned at (709) 754-4490.

Prepared by:       Reviewed by:

______________________  ______________________
Glenn Coates           Paul Staeben
Project Technologist   Senior Project Manager